

# User Manual for glossaries.sty v4.6

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This document is also available as HTML (`glossaries-user.html`).

## Abstract

The glossaries package provides a means to define terms or acronyms or symbols that can be referenced within your document. Sorted lists with collated locations can be generated either using  $\TeX$  or using a supplementary indexing application. Sample documents are provided with the glossaries package. These are listed in §18.

### glossaries-extra

Additional features not provided here may be available through the extension package `glossaries-extra` which, if required, needs to be installed separately. New features will be added to `glossaries-extra`. Versions of the glossaries package after v4.21 will mostly be just bug fixes or minor maintenance. The most significant updates to the glossaries package since then is version 4.50, which involved the integration of `mfirstuc` v2.08 and the phasing out the use of the now deprecated `textcase` package, and version 4.55, which involved the integration of `datatool-base` v3.0.

Note that `glossaries-extra` provides an extra indexing option (`bib2gls`) which isn't available with just the base glossaries package.

If you require multilingual support you must also install the relevant language module. Each language module is called `glossaries-⟨language⟩`, where `⟨language⟩` is the root language name. For example, `glossaries-french` or `glossaries-german`. If a language module is required, the glossaries package will automatically try to load it and will give a warning if the module isn't found. See §1.5 for further details. If there isn't any support available for your language, use the `nolangwarn` package option to suppress the warning and provide your own translations. (For example, use the `title` key in `\printglossary`.)



Documents have wide-ranging styles when it comes to presenting glossaries or lists of terms or notation. People have their own preferences and to a large extent this is determined by the kind of information that needs to go in the glossary. They may just have symbols with terse descriptions or they may have long technical words with complicated descriptions. The `glossaries` package is flexible enough to accommodate such varied requirements, but this flexibility comes at a price: a big manual.

👉 If you're freaking out at the size of this manual, start with “The `glossaries` package: a guide for beginners” (`glossariesbegin.pdf`). You should find it in the same directory as this document or try

```
texdoc glossariesbegin
```

Once you've got to grips with the basics, then come back to this manual to find out how to adjust the settings.

The `glossaries` bundle includes the following documentation:

The `glossaries` package: a guide for beginners (`glossariesbegin.pdf`)

If you want some brief information and examples to get you going, start with the guide for beginners.

User Manual for `glossaries.sty` (`glossaries-user.pdf`)

This document is the manual for the `glossaries` package and is divided into two parts: Part I is the user guide that describes all available commands and options with examples. Part II has alphabetical summaries of those commands and options for quick reference.

Documented Code for `glossaries` (`glossaries-code.pdf`)

Advanced users wishing to know more about the inner workings of all the packages provided in the `glossaries` bundle should read “Documented Code for `glossaries` v4.6”.

CHANGES

Change log.

README.md

Package summary.

Depends.txt

List of all packages unconditionally required by `glossaries`. Other unlisted packages may be required under certain circumstances. For help on installing packages see, for example, [How do I update my T<sub>E</sub>X distribution?](#)<sup>1</sup> or (for Linux users) [Updating T<sub>E</sub>X on Linux.](#)<sup>2</sup>

<sup>1</sup>[tex.stackexchange.com/questions/55437](https://tex.stackexchange.com/questions/55437)

<sup>2</sup>[tex.stackexchange.com/questions/14925](https://tex.stackexchange.com/questions/14925)

Related resources:

- [glossaries-extra and bib2gls: An Introductory Guide](#).<sup>3</sup>
- [glossaries FAQ](#)<sup>4</sup>
- [glossaries gallery](#)<sup>5</sup>
- [a summary of all glossary styles provided by glossaries and glossaries-extra](#)<sup>6</sup>
- [glossaries performance](#)<sup>7</sup> (comparing document build times for the different options provided by glossaries and glossaries-extra).
- [Using LaTeX to Write a PhD Thesis](#)<sup>8</sup> (chapter 6).
- [Incorporating makeglossaries or makeglossaries-lite or bib2gls into the document build](#)<sup>9</sup>
- [The glossaries-extra package](#)<sup>10</sup>
- [bib2gls](#)<sup>11</sup>



If you use `hyperref` and `glossaries`, you must load `hyperref` *first* (although, in general, `hyperref` should be loaded after other packages).

---

<sup>3</sup>[mirrors.ctan.org/support/bib2gls/bib2gls-begin.pdf](http://mirrors.ctan.org/support/bib2gls/bib2gls-begin.pdf)

<sup>4</sup>[dickimaw-books.com/faq.php?category=glossaries](http://dickimaw-books.com/faq.php?category=glossaries)

<sup>5</sup>[dickimaw-books.com/gallery/#glossaries](http://dickimaw-books.com/gallery/#glossaries)

<sup>6</sup>[dickimaw-books.com/gallery/glossaries-styles/](http://dickimaw-books.com/gallery/glossaries-styles/)

<sup>7</sup>[dickimaw-books.com/gallery/glossaries-performance.shtml](http://dickimaw-books.com/gallery/glossaries-performance.shtml)

<sup>8</sup>[dickimaw-books.com/latex/thesis/](http://dickimaw-books.com/latex/thesis/)

<sup>9</sup>[dickimaw-books.com/latex/buildglossaries/](http://dickimaw-books.com/latex/buildglossaries/)

<sup>10</sup>[ctan.org/pkg/glossaries-extra](http://ctan.org/pkg/glossaries-extra)

<sup>11</sup>[ctan.org/pkg/bib2gls](http://ctan.org/pkg/bib2gls)

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```
texdoc -l glossaries-user-example<nnn>
```

where *<nnn>* is the example number zero-padded to three digits to find out if the example files are installed on your device.

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**Part I.**  
**User Guide**

# 1. Introduction



```
\usepackage[<options>] {glossaries}
```

The `glossaries` package is provided to assist generating lists of terms, symbols or acronyms. For convenience, these lists are all referred to as glossaries in this manual. The terms, symbols and acronyms are collectively referred to as glossary entries.

The package has a certain amount of flexibility, allowing the user to customize the format of the glossary and define multiple glossaries. It also supports glossary styles that include an associated symbol (in addition to a name and description) for each glossary entry.

There is provision for loading a database of glossary entries. Only those entries indexed in the document will be displayed in the glossary. (Unless you use Option 5, which doesn't use any indexing but will instead list all defined entries in order of definition.)

It's not necessary to actually have a glossary in the document. You may be interested in using this package just as means to consistently format certain types of terms, such as acronyms, or you may prefer to have descriptions scattered about the document and be able to easily link to the relevant description (Option 6).

Example 1 demonstrates a basic document without a glossary. For simplicity, the `article` class is used and the only package loaded is `glossaries`. Note that the terms must be defined before they can be referenced in the document:



```
\documentclass{article}
\usepackage[
  sort=none % no sorting or indexing required
]
{glossaries}

\newglossaryentry
{cafe}% label
{% definition:
  name={café},
  description={small restaurant selling
refreshments}
}
```



```

\setacronymstyle{long-short}
\newacronym
  {html}% label
  {HTML}% short form
  {hypertext markup language}% long form

\newglossaryentry
  {pi}% label
  {% definition:
   name={\ensuremath{\pi}},
   description={Archimedes' Constant}
  }

\newglossaryentry
  {distance}% label
  {% definition:
   name={distance},
   description={the length between two points},
   symbol={m}
  }

\begin{document}
First use: \gls{cafe}, \gls{html}, \gls{pi}.
Next use: \gls{cafe}, \gls{html}, \gls{pi}.

\Gls{distance}
(\glsentrydesc{distance})
is measured in \gls{symbol}{distance}.
\end{document}

```

(This is a trivial example. For a real document I recommend you use siunitx for units.)

↑ Example 1: Simple document with no glossary



First use: café, hypertext markup language (HTML),  $\pi$ . Next use: café, HTML,  $\pi$ .

Distance (the length between two points) is measured in m.

The `glossaries-extra` package, which is distributed as a separate bundle, extends the capabilities of the `glossaries` package. The simplest document with a glossary can be created with `glossaries-extra` (which internally loads the `glossaries` package). Example 2 demonstrates this:

glossaries  
-extra





```

\documentclass{article}
\usepackage[
  sort=none,% no sorting or indexing required
  abbreviations,% create list of abbreviations
  symbols,% create list of symbols
  postdot,% append a full stop after the descriptions
  stylemods,style=index % set the glossary style
]{glossaries-extra}

\newglossaryentry % glossaries.sty
{cafe}% label
{% definition:
  name={café},
  description={small restaurant selling
refreshments}
}

\setabbreviationstyle{long-short}
% glossaries-extra.sty

\newabbreviation % glossaries-extra.sty
{html}% label
{HTML}% short form
{hypertext markup language}% long form

% requires glossaries-extra.sty 'symbols' option
\glstrnewsymbol
[description={Archimedes' constant}]% options
{pi}% label
{\ensuremath{\pi}}% symbol

\newglossaryentry % glossaries.sty
{distance}% label
{% definition:
  name={distance},
  description={the length between two points},
  symbol={m}
}

\begin{document}
First use: \gls{cafe}, \gls{html}, \gls{pi}.

```

```
Next use: \gls{cafe}, \gls{html}, \gls{pi}.

\Gls{distance} is measured in \gls{symbol}{distance}.
\printunsrtglossaries % list all defined entries
\end{document}
```

↑ Example 2: Simple document with unsorted glossaries



First use: café, hypertext markup language (HTML),  $\pi$ . Next use: café, HTML,  $\pi$ .

Distance is measured in m.

## Glossary

**café** small restaurant selling refreshments.

**distance** (m) the length between two points.

## Symbols

$\pi$  Archimedes' constant.

## Abbreviations

**HTML** hypertext markup language.

Note the difference in the way the **abbreviation** (HTML) and symbol ( $\pi$ ) are defined in the two above examples. The `abbreviations`, `postdot` and `stylemods` options are specific to `glossaries-extra`. Other options are passed to the base `glossaries` package.

### glossaries-extra

In this user manual, commands and options displayed in **tan**, such as `\new-abbreviation` and `stylemods`, are only available with the `glossaries-extra` package. There are also some commands and options (such as `\makeglossaries` and `symbols`) that are provided by the base `glossaries` package but are redefined by the `glossaries-extra` package. See the `glossaries-extra` user manual for further details of those commands.

One of the strengths of the `glossaries` package is its flexibility, however the drawback of this is the necessity of having a large manual that covers all the various settings. If you are



daunted by the size of the manual, try starting off with the much shorter guide for beginners (`glossariesbegin.pdf`).



There's a common misconception that you have to have Perl installed in order to use the `glossaries` package. Perl is *not* a requirement (as demonstrated by the above examples). It's only required if you want to use `xindy` or `makeglossaries`. Perl is used by other T<sub>E</sub>X-related applications, such as `latexmk`, so you may already have it installed. If you want to use `bib2gls`, you will need to have the Java runtime environment installed. Java is used by other T<sub>E</sub>X-related applications, such as `arara` and `JabRef`, so you may already have it installed.

This user manual uses the `glossaries-extra` package with `bib2gls` (Option 4). For example, when viewing the PDF version of this document in a hyperlinked-enabled PDF viewer (such as Adobe Reader or Okular) if you click on the word “indexing” you'll be taken to the entry in the main glossary where there's a brief description of the term. This is the way that the `glossaries` mechanism works. An indexing application (`bib2gls` in this case) is used to generate the sorted list of terms. The indexing applications are CLI tools, which means they can be run directly from a command prompt or terminal, or can be integrated into some text editors, or you can use a build tool such as `arara` to run them.

In addition to standard glossaries, this document has “standalone” definitions (Option 6). For example, if you click on the command `\gls`, the hyperlink will take you to the main part of the document where the command is described. The index and summaries are also glossaries. The technique used is too complicated to describe in this manual, but an example can be found in “`bib2gls`: Standalone entries and repeated lists (a little book of poisons)” *TUGboat*, Volume 43 (2022), No. 1.

Neither of the above two examples require an indexing application. The first is just using the `glossaries` package for consistent formatting, and there is no list. The second has lists but they are unsorted (see Option 5).

The remainder of this introductory section covers the following:

- §1.3 lists the available indexing options.
- §1.4 lists the files provided that contain dummy glossary entries which may be used for testing.
- §1.5 provides information for users who wish to write in a language other than English.
- §1.6 describes how to use an indexing application to create the sorted glossaries for your document (Options 2 or 3).

In addition to the examples provided in this document, there are some sample documents provided with the `glossaries` package. They are described in §18.

## 1.1. Rollback



Rollback provides a useful way of reverting back to an earlier release if there's a problem with a new version. However, the further away the rollback date is from the current LaTeX kernel, the more likely that incompatibilities will occur. If you have historic documents that you need to compile, consider using the historic T<sub>E</sub>X Live Docker images. (See, for example, Legacy Documents and T<sub>E</sub>X Live Docker Images.<sup>a</sup>)

<sup>a</sup>[dickimaw-books.com/blog/legacy-documents-and-tex-live-docker-images](https://dickimaw-books.com/blog/legacy-documents-and-tex-live-docker-images)

The following rollback releases are available:

- Version 4.54 (2024-04-03):

```
\usepackage{glossaries}[=v4.54]
```

This version is the last version that doesn't test for the newer datatool-base commands that may now be used to sort glossaries with `\printnoidxglossary`. It will always use the older, slower method.

- Version 4.52 (2022-11-03):

```
\usepackage{glossaries}[=v4.52]
```

This is the last version that uses an internal comma-separated list for the hyper group information in `glossary-hypernav`. Version 4.53 has switched to using a sequence.

- Version 4.49 (2021-11-01):

```
\usepackage{glossaries}[=v4.49]
```

Note that this should also rollback `mfirstuc` to version 2.07 if you have a later version installed.

- Version 4.46 (2020-03-19):

```
\usepackage{glossaries}[=v4.46]
```

If you rollback using `latexrelease` to an earlier date, then you will need to specify v4.46 for `glossaries` as there are no earlier rollback versions available. You may want to consider using one of the historic TeX Live Docker images instead. See, for example, [Legacy Documents and TeX Live Docker Images](#).<sup>1</sup>

## 1.2. Integrating Other Packages and Known Issues

If you use `hyperref` and `glossaries`, you must load `hyperref` *first* (although, in general, `hyperref` should be loaded after other packages).

Occasionally you may find that certain packages need to be loaded *after* packages that are required by `glossaries` but need to also be loaded before `glossaries`. For example, a package  $\langle X \rangle$  might need to be loaded after `amsgen` but before `hyperref` (which needs to be loaded before `glossaries`). In which case, load the required package first (for example, `amsgen`), then  $\langle X \rangle$ , and finally load `glossaries`.

```
\usepackage{amsgen}% load before <X>
\usepackage{<X>}% must be loaded after amsgen
\usepackage{hyperref}% load after <X>
\usepackage{glossaries}% load after hyperref
```

Some packages don't work with some glossary styles. For example, `classicthesis` doesn't work with the styles that use the `description` environment, such as the `list` style. Since this is the default style, the `glossaries` package checks for `classicthesis` and will change the default to the `index` style if it has been loaded.

Some packages conflict with a package that's required by a glossary style package. For example, `xtab` conflicts with `supertabular`, which is required by `glossary-super`. In this case, ensure the problematic glossary style package isn't loaded. For example, use the `nosuper` option and (with `glossaries-extra`) don't use `stylemods=super` or `stylemods=all`. The `glossaries` package now (v4.50+) checks for `xtab` and will automatically implement `nosuper` if it has been loaded.

The language-support is implemented using `tracklang`. See §1.5 for further details.

## 1.3. Indexing Options

The basic idea behind the `glossaries` package is that you first define your entries (terms, symbols or acronyms). Then you can reference these within your document (analogous to `\cite` or `\ref`). You can also, optionally, display a list of the entries you have referenced in your document (the glossary). This last part, displaying the glossary, is the part that most new users find difficult. There are three options available with the base `glossaries` package (Options 1–3). The `glossaries-extra` extension package provides two extra options for lists (Options 4 and 5) as well as an option for standalone descriptions within the document body (Option 6).

---

<sup>1</sup>[dickimaw-books.com/blog/legacy-documents-and-tex-live-docker-images](http://dickimaw-books.com/blog/legacy-documents-and-tex-live-docker-images)

An overview of Options 1–5 is given in Table 1.1. Option 6 is omitted from the table as it doesn't produce a list. For a more detailed comparison of the various methods, see the glossaries performance page.<sup>2</sup> If, for some reason, you want to know what indexing option is in effect, you can test the expansion of:

```
\glsindexingsetting
```

The definition is initialised to:

```
\ifglxindy xindy\else makeindex\fi
```

If the `sort=none` or `sort=clear` options are used, `\glsindexingsetting` will be redefined to `none`. If `\makeglossaries` is used `\glsindexingsetting` will be updated to either `makeindex` or `xindy` as appropriate (that is, the conditional will no longer be part of the definition). If `\makenoidxglossaries` is used then `\glsindexingsetting` will be updated to `noidx`. This means that `\glsindexingsetting` can't be fully relied on until the start of the document environment. (If you are using `glossaries-extra` v1.49+, then this command will also be updated to take the `record` setting into account.)

If you are developing a class or package that loads `glossaries`, I recommend that you don't force the user into a particular indexing method by adding an unconditional `\makeglossaries` into your class or package code. Aside from forcing the user into a particular indexing method, it means that they're unable to use any commands that must come before `\makeglossaries` (such as `\newglossary`) and they can't switch off the indexing whilst working on a draft document. (If you are using a class or package that has done this, pass the `disablemakegloss` option to `glossaries`. For example, via the document class options.)

Strictly speaking, Options 5 and 6 aren't actually indexing options as no indexing is performed. In the case of Option 5, all defined entries are listed in order of definition. In the case of Option 6, the entry `hypertargets` and descriptions are manually inserted at appropriate points in the document. These two options are included here for completeness and for comparison with the actual indexing options.

### 1.3.1. Option 1 (“noidx”)

For alphabetical sorting, ensure you have at least version 3.0 of `datatool` and, where available, `datatool` language support. If an older version is detected, a slower, less efficient sort method will be used. Note that this method doesn't form location ranges.

Example 3 demonstrates this method:

<sup>2</sup>[dickimaw-books.com/gallery/glossaries-performance.shtml](http://dickimaw-books.com/gallery/glossaries-performance.shtml)

Table 1.1.: Glossary Options: Pros and Cons

Option	1	2	3	4	5
Requires glossaries–extra?	✗	✗	✗	✓	✓
Requires an external application?	✗	✓	✓	✓	✗
Requires Perl?	✗	✗	✓	✗	✗
Requires Java?	✗	✗	✗	✓	✗
Designed for glossaries[-extra]?	✓	✗‡	✗‡	✓	✓
Can sort extended Latin alphabets or non-Latin alphabets?	✗*	✗	✓	✓	N/A
Efficient sort algorithm?	✗	✓	✓	✓	N/A
Can use a different sort method for each glossary?	✓	✗†	✗†	✓	N/A
Any problematic sort values?	✓	✓	✓	✗	N/A
Are entries with identical sort values treated as separate unique entries?	✓	✓	✗§	✓	✓
Can automatically form ranges in the location lists?	✗	✓	✓	✓	✗
Can have non-standard locations in the location lists?	✓	✗	✓◇	✓	✓¶
Maximum hierarchical depth (style-dependent)	∞ <sup>#</sup>	3	∞	∞	∞
<code>\glsdisplaynumberlist</code> reliable?	✓	✗	✗	✓	✗
<code>\newglossaryentry</code> allowed in document environment? (Not recommended.)	✗	✓	✓	✗*	✓**
Requires additional write registers?	✗	✓	✓	✗	✗*
Default value of <code>sanitizesort</code> package option	false	true	true	true*	true*

‡Both `makeindex` and `xindy` are general purpose indexing applications developed independently of `glossaries` and `glossaries–extra`.

\*Localisation support may be available via `datatool`.

†Only with the hybrid method provided with `glossaries–extra`.

§Entries with the same sort value are merged.

◇Requires some setting up.

¶The locations must be set explicitly through the custom `location` field provided by `glossaries–extra`.

#Unlimited but unreliable.

\*Entries are defined in `bib` format. `\newglossaryentry` should not be used explicitly.

\*\*Provided `docdef=true` or `docdef=restricted` but not recommended.

\*Provided `docdef=false` or `docdef=restricted`.

\*Irrelevant with `sort=none`. (The `record=only` option automatically switches this on.)

```

\documentclass{article}
\usepackage[style=indexgroup]{glossaries}
\makenoidxglossaries % use TeX to sort
\newglossaryentry{parrot}{name={parrot},
  description={a brightly coloured tropical bird}}
\newglossaryentry{duck}{name={duck},
  description={a waterbird}}
\newglossaryentry{puffin}{name={puffin},
  description=
{a seabird with a brightly coloured bill}}
\newglossaryentry{penguin}{name={penguin},
  description={a flightless black and white seabird}}
}
% a symbol:
\newglossaryentry{alpha}{name={\ensuremath{\alpha}},
  sort={alpha}, description={a variable}}
% an acronym:
\setacronymstyle{short-long}
\newacronym{arpanet}{ARPANET}
{Advanced Research Projects Agency Network}
\begin{document}
\Gls{puffin}, \gls{duck} and \gls{parrot}.
\gls{arpanet} and \gls{alpha}.
Next use: \gls{arpanet}.
\printnoidxglossary
\end{document}

```

You can place all your entry definitions in a separate file and load it in the document preamble with `\loadglsentries` (*after* `\makenoidxglossaries`). Note that six entries have been defined but only five are referenced (indexed) in the document so only those five appear in the glossary.

↑ Example 3: Simple document that uses  $\text{\TeX}$  to sort entries

Puffin, duck and parrot. ARPANET (Advanced Research Projects Agency Network) and  $\alpha$ . Next use: ARPANET.

## Glossary

### A

$\alpha$  a variable. 1  
**ARPANET** Advanced Research Projects Agency Network. 1

### D

**duck** a waterbird. 1

### P

**parrot** a brightly coloured tropical bird. 1  
**puffin** a seabird with a brightly coloured bill. 1

This uses the `indexgroup` style, which puts a heading at the start of each letter group. The letter group is determined by the first character of the sort value. For a preview of all available styles, see [Gallery: Predefined Styles](#).<sup>3</sup> The number 1 after each description is the number list (or location list). This is the list of locations (page numbers, in this case) where the entry was indexed. In this example, all entries were indexed on page 1.

As from version 4.55, the `glossaries` package will check for a new command added to `datatool-base v3.0`, that provides better sorting. The method is faster and works better with UTF-8 characters. See the `datatool v3.0+` documentation, in particular the sections on localisation and on sorting lists.

This option doesn't require an external indexing application but, with the default alphabetic sorting and old versions of `datatool`, it's very slow with severe limitations, particularly if the sort value contains extended Latin characters or non-Latin characters. However, if you have both `datatool v3.0+` and `datatool-english` installed, and at least `glossaries v4.56`, then make sure you specify the locale. For example:

<sup>3</sup>[dickimaw-books.com/gallery/index.php?label=glossaries-styles](http://dickimaw-books.com/gallery/index.php?label=glossaries-styles)

```
\usepackage[locales=en]{datatool-base}
\usepackage{glossaries}
```

Or:

```
\usepackage[locales=en]{glossaries}
```

Other languages will need to have the appropriate datatool localisation support provided. Examples are provided in the datatool manual. **In general, it's best to use `xindy` or `bib2gls` if you need to sort terms that use an extended Latin alphabet or non-Latin alphabet.**

If you have any commands that cause problems when expanding, such as `\alpha`, then you must use `sanitizesort=true` or change the sort method (`sort=use` or `sort=def`) in the package options or explicitly set the `sort` key when you define the relevant entries, as shown in the above example which has:

```
\newglossaryentry{alpha}{name={\ensuremath{\alpha}},
  sort={alpha},description={a variable}
}
```

#### glossaries-extra

The `glossaries-extra` package has a modified `symbols` package option that provides `\glstrnewsymbol`, which automatically sets the `sort` key to the entry label (instead of the `name`).

This option works best with datatool v3.0+. If using a word or letter sort, be sure to also install the applicable datatool language file, if available. This option allows a mixture of sort methods. (For example, sorting by word order for one glossary and order of use for another.) This option can be problematic with hierarchical glossaries and does not form ranges in the location lists.

Summary:

1. Add

```
\makenoidxglossaries
```

to your preamble (before you start defining your entries, as described in §4).

2. Put



```
\printnoidxglossary
```

where you want your list of entries to appear (described in §8). Alternatively, to display all glossaries use the iterative command:

```
\printnoidxglossaries
```

3. Run  $\LaTeX$  twice on your document. (As you would do to make a table of contents appear.) For example, click twice on the “typeset” or “build” or “pdf $\LaTeX$ ” button in your editor.

### 1.3.2. Option 2 (makeindex)

Since `makeindex` was designed for indexes, it doesn't fully integrate with the glossaries package, which has more complex use cases than a simple index. A better solution is to use `bib2gls` which is developed alongside `glossaries-extra` and so provides better integration.

Example 4 demonstrates a simple document that requires `makeindex`:

```
\documentclass{article}
\usepackage[style=indexgroup]{glossaries}
\makeglossaries % open indexing files
\newglossaryentry{parrot}{name={parrot},
  description={a brightly coloured tropical bird}}
\newglossaryentry{duck}{name={duck},
  description={a waterbird}}
\newglossaryentry{puffin}{name={puffin},
  description=
{a seabird with a brightly coloured bill}}
\newglossaryentry{penguin}{name={penguin},
  description={a flightless black and white seabird}}
}
% a symbol:
\newglossaryentry{alpha}{name={\ensuremath{\alpha}},
  sort={alpha}, description={a variable}}
% an acronym:
\setacronymstyle{short-long}
```

```

\newacronym{arpanet}{ARPANET}
{Advanced Research Projects Agency Network}
\begin{document}
\Gls{puffin}, \gls{duck} and \gls{parrot}.
\gls{arpanet} and \gls{alpha}.
Next use: \gls{arpanet}.
\printglossary
\end{document}

```

You can place all your entry definitions in a separate file and load it in the preamble with `\loadglsentries` (*after* `\makeglossaries`). The result is the same as for Example 3.

↑ Example 4: Simple document that uses `makeindex` to sort entries



Puffin, duck and parrot. ARPANET (Advanced Research Projects Agency Network) and  $\alpha$ . Next use: ARPANET.

## Glossary

### A

$\alpha$  a variable. 1

**ARPANET** Advanced Research Projects Agency Network. 1

### D

**duck** a waterbird. 1

### P

**parrot** a brightly coloured tropical bird. 1

**puffin** a seabird with a brightly coloured bill. 1

This option uses a CLI application called `makeindex` to sort the entries. This application comes with all modern  $\text{T}_{\text{E}}\text{X}$  distributions, but it's hard-coded for the non-extended Latin alphabet. It can't correctly sort accent commands (such as `\'` or `\c`) and fails with UTF-8 characters, especially for any sort values that start with a UTF-8 character (as it separates the octets resulting in an invalid file encoding). This process involves making  $\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$  write the glossary information to a temporary file which `makeindex` reads. Then `makeindex` writes a new file containing the code to typeset the glossary. Then `\printglossary` reads this file in on the next run.



There are other applications that can read `makeindex` files, such as `texindy` and `xindex`, but the `glossaries` package uses a customized `ist` style file (created by `\makeglossaries`) that adjusts the special characters and input keyword and also ensures that the resulting file (which is input by `\printglossary`) adheres to the glossary style. If you want to use an alternative, you will need to ensure that it can honour the settings in the `ist` file or find some way to convert the `ist` file into an equivalent set of instructions.

This option works best if you want to sort entries according to the Basic Latin alphabet and you don't want to install Perl or Java. This method can also work with the restricted shell escape since `makeindex` is considered a trusted application, which means you should be able to use the `automake=immediate` or `automake=true` package option provided the shell escape hasn't been completely disabled.

This method can form ranges in the number list but only accepts limited number formats: `\arabic`, `\roman`, `\Roman`, `\alph` and `\Alph`.

This option does not allow a mixture of sort methods. All glossaries must be sorted according to the same method: word/letter ordering or order of use or order of definition. If you need word ordering for one glossary and letter ordering for another you'll have to explicitly call `makeindex` for each glossary type.

#### glossaries-extra

The `glossaries-extra` package allows a hybrid mix of Options 1 and 2 to provide word/letter ordering with Option 2 and order of use/definition with Option 1. See the `glossaries-extra` documentation for further details. See also the `glossaries-extra` alternative to `sampleSort.tex` in §18.5.

#### Summary:

1. If you want to use `makeindex`'s `-g` option you must change the quote character using `\GlsSetQuote`. For example:

```
\GlsSetQuote{+}
```

This must be used before `\makeglossaries`. Note that if you are using `babel`, the shorthands aren't enabled until the start of the document, so you won't be able to use the shorthands in definitions that occur in the preamble.

2. Add

```
\makeglossaries
```

to your preamble (before you start defining your entries, as described in §4).

3. Put

```
\printglossary
```

where you want your list of entries to appear (described in §8). Alternatively, to display all glossaries use the iterative command:

```
\printglossaries
```

4. Run `LATEX` on your document. This creates files with the extensions `glo` and `ist` (for example, if your `LATEX` document is called `myDoc.tex`, then you'll have two extra files called `myDoc.glo` and `myDoc.ist`). If you look at your document at this point, you won't see the glossary as it hasn't been created yet. (If you use `glossaries-extra` you'll see the section heading and some boilerplate text.)

If you have used package options such as `symbols` there will also be other sets of files corresponding to the extra glossaries that were created by those options.

5. Run `makeindex` with the `glo` file as the input file and the `ist` file as the style so that it creates an output file with the extension `gls`:

```
makeindex -s myDoc.ist -o myDoc.gls myDoc.glo
```

(Replace `myDoc` with the base name of your `LATEX` document file. Avoid spaces in the file name if possible.)

The file extensions vary according to the glossary `type`. See §1.6.4 for further details. `makeindex` must be called for each set of files.

If you don't know how to use the command prompt, then you can probably access `makeindex` via your text editor, but each editor has a different method of doing this. See `Incorporating makeglossaries` or `makeglossaries-lite` or `bib2gls` into the document build<sup>4</sup> for some examples.

Alternatively, run `makeindex` indirectly via the `makeglossaries` script:

<sup>4</sup>[dickimaw-books.com/latex/buildglossaries/](http://dickimaw-books.com/latex/buildglossaries/)

```
makeglossaries myDoc
```

Note that the file extension isn't supplied in this case. (Replace `makeglossaries` with `makeglossaries-lite` if you don't have Perl installed.) This will pick up all the file extensions from the `aux` file and run `makeindex` the appropriate number of times with all the necessary switches.

The simplest approach is to use `arara` and add the following comment lines to the start of your document:

```
% arara: pdflatex
% arara: makeglossaries
% arara: pdflatex
```

(Replace `makeglossaries` with `makeglossarieslite` in the second line above if you don't have Perl installed. Note that there's no hyphen in this case.)

The default sort is word order ("sea lion" comes before "seal"). If you want letter ordering you need to add the `-l` switch:

```
makeindex -l -s myDoc.ist -o myDoc.gls myDoc.glo
```

(See §1.6.4 for further details on using `makeindex` explicitly.) If you use `makeglossaries` or `makeglossaries-lite` then use the `order=letter` package option and the `-l` option will be added automatically.

6. Once you have successfully completed the previous step, you can now run  $\LaTeX$  on your document again.

You'll need to repeat the last step if you have used the `toc` option (unless you're using `glossaries-extra`) to ensure the section heading is added to the table of contents. You'll also need to repeat steps 5 and 6 if you have any cross-references which can't be indexed until the indexing file has been created.

### 1.3.3. Option 3 (`xindy`)

Since `xindy` was designed for indexes, it doesn't fully integrate with the `glossaries` package, which has more complex use cases than a simple index. A better solution is to use `bib2gls` which is developed alongside `glossaries-extra` and so provides better integration. See the `xindy` home page <http://www.xindy.org/> for the `xindy` documentation, and links to the mailing list and issue tracker.

Example 5 demonstrates a simple document that requires `xindy`:



```

\documentclass{article}
\usepackage[xindy,style=indexgroup]{glossaries}
\makeglossaries % open indexing files
\newglossaryentry{parrot}{name={parrot},
  description={a brightly coloured tropical bird}}
\newglossaryentry{duck}{name={duck},
  description={a waterbird}}
\newglossaryentry{puffin}{name={puffin},
  description=
{a seabird with a brightly coloured bill}}
\newglossaryentry{penguin}{name={penguin},
  description={a flightless black and white seabird}}
}
% a symbol:
\newglossaryentry{alpha}{name={\ensuremath{\alpha}},
  sort={alpha},description={a variable}}
% an acronym:
\setacronymstyle{short-long}
\newacronym{arpanet}{ARPANET}
{Advanced Research Projects Agency Network}
\begin{document}
\Gls{puffin}, \gls{duck} and \gls{parrot}.
\gls{arpanet} and \gls{alpha}.
Next use: \gls{arpanet}.
\printglossary
\end{document}

```

You can place all your entry definitions in a separate file and load it in the preamble with `\loadglsentries` (after `\makeglossaries`). The result is the same as for Example 3 and Example 4.

↑ Example 5: Simple document that uses `xindy` to sort entries

Puffin, duck and parrot. ARPANET (Advanced Research Projects Agency Network) and  $\alpha$ . Next use: ARPANET.

## Glossary

### A

$\alpha$  a variable. 1  
**ARPANET** Advanced Research Projects Agency Network. 1

### D

**duck** a waterbird. 1

### P

**parrot** a brightly coloured tropical bird. 1  
**puffin** a seabird with a brightly coloured bill. 1

This option uses a CLI application called `xindy` to sort the entries. This application is more flexible than `makeindex` and is able to sort extended Latin alphabets or non-Latin alphabets, however it does still have some limitations. (See Example 9 for an example with UTF-8 characters.)

The `xindy` application comes with both  $\text{T}_{\text{E}}\text{X}$  Live and  $\text{MikT}_{\text{E}}\text{X}$ , but since `xindy` is a Perl script, you will also need to install Perl, if you don't already have it. In a similar way to Option 2, this option involves making  $\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$  write the glossary information to a temporary file which `xindy` reads. Then `xindy` writes a new file containing the code to typeset the glossary. Then `\printglossary` reads this file in on the next run.

This is the best option with just the base `glossaries` package if you want to sort according to a language other than English or if you want non-standard location lists, but it can require some setting up (see §14). There are some problems with certain sort values:

- entries with the same sort value are merged by `xindy` into a single glossary line so you must make sure that each entry has a unique sort value;
- `xindy` forbids empty sort values;
- `xindy` automatically strips control sequences, the math-shift character `$` and braces `{ }` from the sort value, which is usually desired but this can cause the sort value to collapse to an empty string which `xindy` forbids.

In these problematic cases, you must set the `sort` field explicitly, as in the above example which has:

```
\newglossaryentry{alpha}{name={\ensuremath{\alpha}},
sort={alpha},description={a variable}
}
```

glossaries-extra

The `glossaries-extra` package has a modified `symbols` package option that provides `\glsxtrnewsymbol`, which automatically sets the `sort` key to the entry label (instead of the `name`).

All glossaries must be sorted according to the same method (word/letter ordering, order of use, or order of definition).

glossaries-extra

The `glossaries-extra` package allows a hybrid mix of Options 1 and 3 to provide word/letter ordering with Option 3 and order of use/definition with Option 2. See the `glossaries-extra` documentation for further details.

Summary:

1. Add the `xindy` option to the `glossaries` package option list:

```
\usepackage[xindy]{glossaries}
```

If you are using a non-Latin script you'll also need to either switch off the creation of the number group:

```
\usepackage[xindy={glsnumbers=false}]
{glossaries}
```

or use either `\GlsSetXdyFirstLetterAfterDigits{<letter>}` (to indicate the first letter group to follow the digits) or `\GlsSetXdyNumberGroupOrder{<spec>}` to indicate where the number group should be placed (see §14).

2. Add `\makeglossaries` to your preamble (before you start defining your entries, as described in §4).
3. Run  $\LaTeX$  on your document. This creates files with the extensions `glo` and `xdy` (for example, if your  $\LaTeX$  document is called `myDoc.tex`, then you'll have two extra files called `myDoc.glo` and `myDoc.xdy`). If you look at your document at this point, you won't see the glossary as it hasn't been created yet. (If you're using the `glossaries-extra` extension package, you'll see the section header and some boilerplate text.)



## 1. Introduction

If you have used package options such as `symbols` there will also be other sets of files corresponding to the extra glossaries that were created by those options.

4. Run `xindy` with the `glo` file as the input file and the `xdy` file as a module so that it creates an output file with the extension `gls`. You also need to set the language name and input encoding, as follows (all on one line):

```
xindy -L english -C utf8 -I xindy -M myDoc -t
myDoc.glg -o myDoc.gls myDoc.glo
```

(Replace `myDoc` with the base name of your  $\text{\LaTeX}$  document file. Avoid spaces in the file name. If necessary, also replace `english` with the name of your language and `utf8` with your input encoding, for example, `-L german -C din5007-utf8`.)

The file extensions vary according to the glossary `type`. See §1.6.3 for further details. `xindy` must be called for each set of files.

It's much simpler to use `makeglossaries` instead:

```
makeglossaries myDoc
```

Note that the file extension isn't supplied in this case. This will pick up all the file extensions from the `aux` file and run `xindy` the appropriate number of times with all the necessary switches.

There's no benefit in using `makeglossaries-lite` with `xindy`. (Remember that `xindy` is a Perl script so if you can use `xindy` then you can also use `makeglossaries`, and if you don't want to use `makeglossaries` because you don't want to install Perl, then you can't use `xindy` either.)

If you don't know how to use the command prompt, then you can probably access `xindy` or `makeglossaries` via your text editor, but each editor has a different method of doing this. See [Incorporating makeglossaries or makeglossaries-lite or bib2gls into the document build](#)<sup>5</sup> for some examples.

Again, a convenient method is to use `arara` and add the follow comment lines to the start of your document:

```
% arara: pdflatex
% arara: makeglossaries
```

<sup>5</sup>[dickimaw-books.com/latex/buildglossaries/](http://dickimaw-books.com/latex/buildglossaries/)

```
% arara: pdflatex
```

The default sort is word order (“sea lion” comes before “seal”). If you want letter ordering you need to add the `order=letter` package option:

```
\usepackage[xindy, order=letter]{glossaries}
```

(and return to the previous step). This option is picked up by `makeglossaries`. If you are explicitly using `xindy` then you’ll need to add `-M ord/letorder` to the options list. See §1.6.3 for further details on using `xindy` explicitly.

5. Once you have successfully completed the previous step, you can now run  $\LaTeX$  on your document again. As with `makeindex` (Option 2), you may need to repeat the previous step and this step to ensure the table of contents and cross-references are resolved.

### 1.3.4. Option 4 (`bib2gls`)

This option is only available with the `glossaries-extra` extension package. This method uses `bib2gls` to both fetch entry definitions from `bib` files and to hierarchically sort and collate. The `bib2gls` application is designed specifically for, and developed alongside, the `glossaries-extra` package.

`glossaries-extra`

Example 6 demonstrates a simple document that requires `bib2gls`:

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```
\documentclass{article}
\usepackage[record, style=indexgroup]{glossaries-
extra}
\setabbreviationstyle{short-long}
% data in sample-entries.bib:
\GlsXtrLoadResources[src={sample-entries}]
\begin{document}
\Gls{puffin}, \gls{duck} and \gls{parrot}.
\gls{arpanet} and \gls{alpha}.
Next use: \gls{arpanet}.
\printunsrtglossary
\end{document}
```

Note that the `abbreviation` style must be set before `\GlsXtrLoadResources`. The file `sample-entries.bib` contains:

```

@entry{parrot,
  name={parrot},
  description={a brightly coloured tropical bird}
}
@entry{duck,
  name={duck},
  description={a waterbird}
}
@entry{puffin,
  name={puffin},
  description={a seabird with a brightly
coloured bill}
}
@entry{penguin,
  name={penguin},
  description={a flightless black and white seabird}
}
@symbol{alpha,
  name={\ensuremath{\alpha}},
  description={a variable}
}
@abbreviation{arpanet,
  short={ARPANET},
  long={Advanced Research Projects Agency Network}
}

```

The result is slightly different from the previous examples. Letter groups aren't created by default with `bib2gls` so, even though the glossary style supports letter groups, there's no group information. This can be added by invoking `bib2gls` with the `--group` switch.

↑ Example 6: Simple document that uses `bib2gls` to sort entries

Puffin, duck and parrot. ARPANET (Advanced Research Projects Agency Network) and  $\alpha$ . Next use: ARPANET.

## Glossary

$\alpha$  a variable 1

**ARPANET** Advanced Research Projects Agency Network 1

**duck** a waterbird 1

**parrot** a brightly coloured tropical bird 1

**puffin** a seabird with a brightly coloured bill 1

All entries must be provided in one or more `bib` files. (See the `bib2gls` user manual for the required format.) In this example, the terms “parrot”, “duck”, “puffin” and “penguin” are defined using `@entry`, the symbol alpha ( $\alpha$ ) is defined using `@symbol` and the abbreviation “ARPANET” is defined using `@abbreviation`. See Example 10 for an example with UTF-8 content.

Note that the `sort` key should not be used. Each entry type (`@entry`, `@symbol`, `@abbreviation`) has a particular field that’s used for the sort value by default (`name`, the label, `short`). You will break this mechanism if you explicitly use the `sort` key. See [bib2gls gallery: sorting](#) for examples.

[“dickimaw-books.com/gallery/index.php?label=bib2gls-sorting](http://dickimaw-books.com/gallery/index.php?label=bib2gls-sorting)

The `glossaries-extra` package needs to be loaded with the `record` package option:

```
\usepackage[record]{glossaries-extra}
```

or (equivalently)

```
\usepackage[record=only]{glossaries-extra}
```

or (with `glossaries-extra` v1.37+ and `bib2gls` v1.8+):

```
\usepackage[record=nameref]{glossaries-extra}
```

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The `record=nameref` option is the best method if you are using `hyperref`.

Each resource set is loaded with `\GlsXtrLoadResources`. For example:

```
\GlsXtrLoadResources
[% definitions in entries1.bib and entries2.bib:
 src={entries1,entries2},
 sort={de-CH-1996}% sort according to this locale
]
```

The `bib` files are identified as a comma-separated list in the value of the `src` key. The `sort` option identifies the sorting method. This may be a locale identifier for alphabetic sorting, but there are other sort methods available, such as character code or numeric. One resource set may cover multiple glossaries or one glossary may be split across multiple resource sets, forming logical sub-blocks.

If you want to ensure that all entries are selected, even if they haven't been referenced in the document, then add the option `selection=all`. (There are also ways of filtering the selection or you can even have a random selection by shuffling and truncating the list. See the `bib2gls` user manual for further details.)

The glossary is displayed using:

```
\printunsrtglossary
```

Alternatively all glossaries can be displayed using the iterative command:

```
\printunsrtglossaries
```

The document is built using:

```
pdflatex myDoc
bib2gls myDoc
pdflatex myDoc
```

If letter groups are required, you need the `--group` switch:

```
bib2gls --group myDoc
```

or with `arara`:

```
% arara: bib2gls: { group: on }
```

(You will also need an appropriate glossary style.)

Unlike Options 2 and 3, this method doesn't create a file containing the typeset glossary but simply determines which entries are needed for the document, their associated locations and (if required) their associated letter group. This option allows a mixture of sort methods. For example, sorting by word order for one glossary and order of use for another or even sorting one block of the glossary differently to another block in the same glossary. See `bib2gls` gallery: `sorting`.<sup>6</sup>

This method supports Unicode and uses the CLDR, which provides more extensive language support than `xindy`. (Except for Klingon, which is supported by `xindy`, but not by the CLDR.) The locations in the number list may be in any format. If `bib2gls` can deduce a numerical value it will attempt to form ranges otherwise it will simply list the locations.

Summary:

1. Use `glossaries-extra` with the `record` package option:

```
\usepackage[record]{glossaries-extra}
```

2. Use `\GlsXtrLoadResources` to identify the `bib` file(s) and `bib2gls` options. The `bib` extension may be omitted:

```
\GlsXtrLoadResources[src=
{terms.bib,abbreviations.bib},sort=en]
```

3. Put

```
\printunsrtglossary
```

where you want your list of entries to appear. Alternatively to display all glossaries use the iterative command:

```
\printunsrtglossaries
```

<sup>6</sup>[dickimaw-books.com/gallery/index.php?label=bib2gls-sorting](http://dickimaw-books.com/gallery/index.php?label=bib2gls-sorting)

4. Run  $\LaTeX$  on your document.
5. Run `bib2gls` with just the document base name.
6. Run  $\LaTeX$  on your document.

See `glossaries-extra` and `bib2gls: An Introductory Guide`<sup>7</sup> or the `bib2gls` user manual for further details of this method, and also Incorporating `makeglossaries` or `makeglossaries-lite` or `bib2gls` into the document build.<sup>8</sup>

### 1.3.5. Option 5 (“unsrt”)

This option is only available with the extension package `glossaries-extra`. No indexing application is required.

Example 7 demonstrates this method:

`glossaries-extra`

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```

\documentclass{article}
\usepackage[style=indexgroup]{glossaries-extra}
\newglossaryentry{parrot}{name={parrot},
  description={a brightly coloured tropical bird}}
\newglossaryentry{duck}{name={duck},
  description={a waterbird}}
\newglossaryentry{puffin}{name={puffin},
  description=
{a seabird with a brightly coloured bill}}
\newglossaryentry{penguin}{name={penguin},
  description={a flightless black and white seabird}
}
% a symbol:
\newglossaryentry{alpha}{name={\ensuremath{\alpha}},
  description={a variable}}
% an abbreviation:
\setabbreviationstyle{short-long}
\newabbreviation{arpanet}{ARPANET}
{Advanced Research Projects Agency Network}
\begin{document}
\Gls{puffin}, \gls{duck} and \gls{parrot}.
\gls{arpanet} and \gls{alpha}.
Next use: \gls{arpanet}.
\printunsrtglossary
\end{document}

```


<sup>7</sup>[mirrors.ctan.org/support/bib2gls/bib2gls-begin.pdf](http://mirrors.ctan.org/support/bib2gls/bib2gls-begin.pdf)




<sup>8</sup>[dickimaw-books.com/latex/buildglossaries/](http://dickimaw-books.com/latex/buildglossaries/)

## 1. Introduction

You can place all your entry definitions in a separate file and load it in the preamble with `\loadglsentries`. There’s no “activation” command (such as `\makeglossaries` for Options 2 and 3).

The result is different from the previous examples. Now all entries are listed in the glossary, including “penguin” which hasn’t been referenced in the document, and the list is in the order that the entries were defined. There are no number lists.



↑ Example 7: Simple document with an unsorted list of all defined entries   

Puffin, duck and parrot. ARPANET (Advanced Research Projects Agency Network) and  $\alpha$ . Next use: ARPANET.

### Glossary

**P**

**parrot** a brightly coloured tropical bird

**D**

**duck** a waterbird

**P**

**puffin** a seabird with a brightly coloured bill  
**penguin** a flightless black and white seabird

**A**

$\alpha$  a variable  
**ARPANET** Advanced Research Projects Agency Network

Note that the letter groups are fragmented because the list isn’t in alphabetical order, so there are two “P” letter groups.

The `\printunsrtglossary` command simply iterates over the set of all defined entries associated with the given glossary and lists them in the order of definition. This means that child entries must be defined immediately after their parent entry if they must be kept together in the glossary. Some glossary styles indent entries that have a parent but it’s the indexing application that ensures the child entries are listed immediately after the parent. If you’re opting to use this manual approach then it’s your responsibility to define the entries in the correct order.

The `glossaries-extra` package requires entries to be defined in the preamble by default. It’s possible to remove this restriction, but bear in mind that any entries defined after `\printunsrtglossary` won’t be listed.

The glossary is displayed using:



```
\printunsrtglossary
```

Alternatively all glossaries can be displayed using the iterative command:

```
\printunsrtglossaries
```

This method will display *all* defined entries, regardless of whether or not they have been used in the document. Note that this uses the same command for displaying the glossary as Option 4. This is because `bib2gls` takes advantage of this method by defining the wanted entries in the required order and setting the locations (and letter group information, if required). See the `glossaries-extra` manual for further details.

Therefore, the above example document has a glossary containing the entries: parrot, duck, puffin, penguin,  $\alpha$  and ARPANET (in that order). Note that the “penguin” entry has been included even though it wasn’t referenced in the document.

This just requires a single  $\LaTeX$  call:

```
pdflatex myDoc
```

unless the glossary needs to appear in the table of contents, in which case a second run is required:

```
pdflatex myDoc
pdflatex myDoc
```

(Naturally if the document also contains citations, and so on, then additional steps are required. Similarly for all the other options above.)

See the `glossaries-extra` documentation for further details of this method.

### 1.3.6. Option 6 (“standalone”)

This option is only available with the `glossaries-extra` extension package. (You can just use the base `glossaries` package for the first case, but it’s less convenient. You’d have to manually insert the entry target before the sectioning command and use `\glsentryname{<label>}` or `\Glsentryname{<label>}` to display the entry name.) Instead of creating a list, this has standalone definitions throughout the document. The entry name may or may not be in a section heading.

You can either define entries in the preamble (or in an external file loaded with `\loadglsentries`), as with Option 5, or use `bib2gls` if you want to manage a large database of terms.

Example 8 demonstrates standalone definitions without `bib2gls`:

`glossaries`  
`-extra`

8



```

\documentclass{article}

\usepackage[colorlinks]{hyperref}
\usepackage[sort=none,
  nostyles% <- no glossary styles are required
]{glossaries-extra}

\newglossaryentry{set}{name={set},
  description={a collection of any kind of objects},
  symbol={\ensuremath{\mathcal{S}}}}
}

\newglossaryentry{function}{name={function},
  description=
{a rule that assigns every element in the
  domain \gls{set} to an element in the range \gls
{set}},
  symbol={\ensuremath{f(x)}}}
}
\newcommand*{\termdef}[1]{%
  \section{\Glsxtrglossentry{#1} \glsentrysymbol{#1}}
}%
  \begin{quote}\em\Glsentrydesc{#1}.\end{quote}%
}
\begin{document}
\tableofcontents

\section{Introduction}
Sample document about \glspl{function} and \glspl
{set}.

\termdef{set}

More detailed information about \glspl{set}
with examples.

\termdef{function}

More detailed information about \glspl{function}
with examples.

```

```
\end{document}
```

This allows the references to hyperlink to the standalone definitions rather than to a glossary.

↑ Example 8: Simple document with standalone entries

## Contents

<b>1</b>	<b>Introduction</b>	1
<b>2</b>	<b>Set <math>\mathcal{S}</math></b>	1
<b>3</b>	<b>Function <math>f(x)</math></b>	1

### 1 Introduction

Sample document about **functions** and **sets**.

### 2 Set $\mathcal{S}$

*A collection of any kind of objects.*

More detailed information about **sets** with examples.

### 3 Function $f(x)$

*A rule that assigns every element in the domain **set** to an element in the range **set**.*

More detailed information about **functions** with examples.

The above example can be modified to use `bib2gls` if the terms are defined in one or more `bib` files:

```
\documentclass{article}

\usepackage[colorlinks]{hyperref}
\usepackage[record,
  nostyles% <- no glossary styles are required
```

```

] {glossaries-extra}

\GlsXtrLoadResources[src={terms}, sort=none, save
-locations=false]

\newcommand*{\termdef}[1]{%
  \section{\Glsxtrglossentry{#1} \glossentrysymbol
{#1}}%
  \glsadd{#1}% <- index this entry
  \begin{quote}\em\Glsentrydesc{#1}.\end{quote}%
}
\begin{document}
\tableofcontents

\section{Introduction}
Sample document about \glspl{function} and \glspl
{set}.

\termdef{set}


More detailed information about \glspl{set}
with examples.

\termdef{function}

More detailed information about \glspl{function}
with examples.
\end{document}

```

Where the file `terms.bib` contains:



```

@entry{set,
  name={set},
  description={a collection of any kind of objects},
  symbol={\ensuremath{\mathcal{S}}}
}
@entry{function,
  name={function},
  description=
{a rule that assigns every element in the domain
\gls{set} to an element in the range \gls{set}},

```

```
symbol={\ensuremath{f(x)}}
}
```

The advantage in this approach (with `\loadglsentries` or `bib2gls`) is that you can use an existing database of entries shared across multiple documents, ensuring consistent notation for all of them.

In both cases, there's no need to load all the glossary styles packages, as they're not required, so I've used the `nostyles` package option to prevent them from being loaded.

In the first case, you just need to define the terms (preferably in the preamble or in a file that's input in the preamble). No external tool is required. Just run L<sup>A</sup>T<sub>E</sub>X as normal. (Twice to ensure that the table of contents is up to date.)

```
pdflatex myDoc
pdflatex myDoc
```

In the second case, you need the `record` package option (as in Option 4) since `bib2gls` is needed to select the required entries, but you don't need a sorted list:

```
\GlsXtrLoadResources[src={terms}, sort=none]
```

This will ensure that any entries indexed in the document (through commands like `\gls` or `\glsadd`) will be selected by `bib2gls`, but it will skip the sorting step. (The chances are you probably also won't need location lists either. If so, you can add the option `save-locations=false`.)

Remember that for this second case you need to run `bib2gls` as per Option 4:

```
pdflatex myDoc
bib2gls myDoc
pdflatex myDoc
pdflatex myDoc
```

For both cases (with or without `bib2gls`), instead of listing all the entries using `\printunsrtglossary`, you use `\glsxtrglossentry{<label>}` where you want the name (and anchor with `hyperref`) to appear in the document. This will allow the link text created by commands like `\gls` to link to that point in the document. The description can simply be displayed with `\glsentrydesc{<label>}` or `\Glsentrydesc{label}`, as in the above examples. In both examples, I've defined a custom command `\termdef` to simplify the code and ensure consistency. Extra styling, such as placing the description in a coloured frame, can be added to this custom definition as required.

(Instead of using `\glsentrydesc` or `\Glsentrydesc`, you can use `\glossentrydesc{<label>}`, which will obey category attributes such as `glossdesc` and `gloss-`

## 1. Introduction

`descfont`. See the `glossaries-extra` manual for further details.)

The symbol (if required) can be displayed with either `\glsentrysymbol{<label>}` or `\glossentrysymbol{<label>}`. In the first example, I've used `\glsentrysymbol`. In the second I've used `\glossentrysymbol`. The latter is necessary with `bib2gls` if the symbol needs to go in a section title as the entries aren't defined on the first  $\LaTeX$  run.

In normal document text, `\glsentrysymbol` will silently do nothing if the entry hasn't been defined, but when used in a section heading it will expand to an undefined internal command when written to the `aux` file, which triggers an error.

The `\glossentrysymbol` command performs an existence check, which triggers a warning if the entry is undefined. (All entries will be undefined before the first `bib2gls` call.) You need at least `glossaries-extra v1.42` to use this command in a section title. (`\glossentrysymbol` is defined by the base `glossaries` package but is redefined by `glossaries-extra`.) If `hyperref` has been loaded, this will use `\texorpdfstring` to allow a simple expansion for the PDF bookmarks (see the `glossaries-extra` user manual for further details).

If you want to test if the `symbol` field has been set, you need to use `\ifglshassymbol` outside of the section title. For example:

```
\ifglshassymbol{#1}%  
{\section{\glstrglossentry{#1} \glossentrysymbol  
{#1}}}  
\section{\glstrglossentry{#1}}}
```

In both of the above examples, the section titles start with a lowercase character (because the `name` value is all lowercase in entry definitions). You can apply automatic case change with the `glossname` category attribute. For example:

```
\glsssetcategoryattribute{general}{glossname}  
{firstuc}
```

or (for title-case)

```
\glsssetcategoryattribute{general}{glossname}{title}
```

However, this won't apply the case change in the table of contents or bookmarks. Instead you can use helper commands provided by `glossaries-extra v1.49+` but make sure you have up-to-date versions of `glossaries` and `mfirstuc`.

In the second example, you can instead use `bib2gls` to apply a case change. For example, to apply sentence case to the `name` field:

```
\GlsXtrLoadResources[src={terms},
  sort=none,save-locations=false,
  replicate-fields={name=text},
  name-case-change=firstuc
]
```

(Or `name-case-change=title` for title case.) This copies the `name` value to the `text` field and then applies a case change to the `name` field (leaving the `text` field unchanged). The name in the section titles now starts with a capital but the link text produced by commands like `\gls` is still lowercase.

In the first example (without `bib2gls`) you can do this manually. For example:

```
\newglossaryentry{set}{name={Set},text={set},
  description={a collection of any kind of objects},
  symbol={\ensuremath{\mathcal{S}}}
}
```

A more automated solution can be obtained with the standalone helper commands for the PDF bookmark and heading text (`glossaries-extra` v1.49+).

Note that if you use the default `save-locations=true` with `bib2gls`, it's possible to combine Options 4 and 6 to have both standalone definitions and an index. In this case, a glossary style is required. In the example below, I've use `bookindex`, which is provided in the `glossary-bookindex` package (bundled with `glossaries-extra`). I don't need any of the other style packages, so I can still keep the `nostyles` option and just load `glossary-bookindex`:

```
\usepackage[record=nameref,% <- using bib2gls
  nostyles,% <- don't load default style packages
  stylemods=
  bookindex,% <- load glossary-bookindex.sty
  style=book-
  index% <- set the default style to 'bookindex'
]{glossaries-extra}
```

I also need to sort the entries, so the resource command is now:

```
\GlsXtrLoadResources[src={terms}
,% definitions in terms.bib
  sort=en-GB,% sort by this locale
```

```

replicate-fields={name=text},
name-case-change=firstuc
]

```

At the end of the document, I can add the glossary:

```

\printunsrtglossary[title=Index,target=false]

```

Note that I've had to switch off the hypertargets with `target=false` (otherwise there would be duplicate targets). If you want letter group headings you need to use the `--group` switch:

```

bib2gls --group myDoc

```

or if you are using `arara`:

```

% arara: bib2gls: { group: on }

```

The `bookindex` style doesn't show the description, so only the name and location is displayed. Remember that the name has had a case change so it now starts with an initial capital. If you feel this is inappropriate for the index, you can adjust the `bookindex` style so that it uses the `text` field instead. For example:

```

\renewcommand*{\glsxtrbookindexname}[1]{%
  \glossentrynameother{#1}{text}}

```

See the `glossaries-extra` user manual for further details about this style.

Note that on the first  $\LaTeX$  run none of the entries will be defined. Once they are defined, the page numbers may shift due to the increased amount of document text. You may therefore need to repeat the document build to ensure the page numbers are correct.

If there are extra terms that need to be included in the index that don't have a description, you can define them with `@index` in the `bib` file. For example:

```

@index{element}
@index{member,alias={element}}

```

They can be used in the document as usual:



```
The objects that make up a set are the \glspl
{element}
or \glspl{member}.
```

See `glossaries-extra` and `bib2gls: An Introductory Guide`<sup>9</sup> or the `bib2gls` user manual for further details.

## 1.4. Dummy Entries for Testing

In addition to the sample files described in §18, `glossaries` also provides some files containing `lorum ipsum` dummy entries. These are provided for testing purposes and are on `TEX`'s path (in `tex/latex/glossaries/test-entries`) so they can be included via `\input` or `\loadglsentries`. The `glossaries-extra` package provides `bib` versions of all these files for use with `bib2gls`. The files are as follows:

☐ `example-glossaries-brief.tex`

These entries all have brief descriptions. For example:

```
\newglossaryentry{lorem}{name={lorem},description=
{ipsum}}
```

☐ `example-glossaries-utf8.tex`

This file is based on `example-glossaries-brief.tex` but random characters have been converted to accented characters to test UTF-8 support.

☐ `example-glossaries-long.tex`

These entries all have long descriptions. For example:

```
\newglossaryentry{loremipsum}{name={lorem ipsum},
description={dolor sit amet, consectetur adipiscing
elit. Ut purus elit, vestibulum ut, placerat ac,
adipiscing vitae, felis. Curabitur dictum gravida
mauris.}}
```

☐ `example-glossaries-multipar.tex`

These entries all have multi-paragraph descriptions. For example:

<sup>9</sup>[mirrors.ctan.org/support/bib2gls/bib2gls-begin.pdf](http://mirrors.ctan.org/support/bib2gls/bib2gls-begin.pdf)

```

\longnewglossaryentry{loremi-ii}{name={lorem 1--2}}
%
{%
Lorem ipsum ...

Nam dui ligula...
}

```

example-glossaries-symbols.tex

These entries all use the `symbol` key. For example:

```

\newglossaryentry{alpha}{name={alpha},
symbol={\ensuremath{\alpha}},
description={Quisque ullamcorper placerat ipsum.}}

```

example-glossaries-symbolnames.tex

Similar to the previous file but the `symbol` key isn't used. Instead the symbol is stored in the `name` key. For example:

```

\newglossaryentry{sym.alpha}{sort={alpha},
name={\ensuremath{\alpha}},
description={Quisque ullamcorper placerat ipsum.}}

```

example-glossaries-constants.tex

Sample set of entries that represent mathematical constants. Some commands are provided that are used in the `name` field. For example:

```

\providecommand{\constanti}{\ensuremath{i}}
\providecommand{\constantpi}{\ensuremath{\pi}}

```

The `symbol` may also be set (but not for all entries). The `user1` key is set to the approximate numeric value for most but not all entries. The symbols are of varying widths and heights, which may be useful for style alignment tests. One entry has a cross-reference with the `see` key. For example:

```

\newglossaryentry{i-constant}{name={\constanti},
symbol={\ensuremath{\sqrt{-1}}},
sort={i},
description={imaginary unit}
}

\newglossaryentry{pi-constant}{name={\constantpi},
sort={pi},
description=
{ratio of a circle's circumference to its diameter},
user1={3.14159265358979323846}
}

\newglossaryentry{tau-constant}{name={\constanttau},
sort={tau},
symbol={\ensuremath{2\constantpi}},
description=
{ratio of a circle's circumference to its radius},
user1={6.28318530717958647692},
see={pi-constant}
}

```

example-glossaries-user.tex

The top level (level 0) entries have the `symbol` key and all `user1`, ..., `user6` keys set. For example:

```

\newglossaryentry{sample-a}
{name={a name},
description={a description},
symbol={\ensuremath{\alpha}},
user1={A},
user2={1},
user3={i},
user4={A-i},
user5={25.2020788573521},
user6={1585-11-06}}

```

There are also some level 1 entries, which may or may not have the `symbol` and user keys set. For example:

```

\newglossaryentry{sample-b-0}
{parent={sample-b},
name={b/0 name},
description={child 0 of b},
symbol={\ensuremath{\sigma}},
user2={0},
user4={a-i}}

```

There are no deeper hierarchical entries. Where set, the `user1` key is an uppercase letter (A–Z), the `user2` key is an integer, the `user3` key is a lowercase Roman numeral, the `user4` key is in the form  $\langle\mathit{alpha}\rangle\text{-}\langle\mathit{roman}\rangle$  where  $\langle\mathit{alpha}\rangle$  is either an upper or lowercase letter (a–z or A–Z) and  $\langle\mathit{roman}\rangle$  is either an upper or lowercase Roman numeral. The `user5` key is a random number (in the range  $(-50, +50)$  for top level (level 0) entries and  $(-1, +1)$  for child entries). The `user6` key is a random date between 1000-01-01 and 2099-12-31.

example-glossaries-images.tex

These entries use the `user1` key to store the name of an image file. (The images are provided by the `mwe` package and should be on  $\text{T}_{\text{E}}\text{X}$ 's path.) One entry doesn't have an associated image to help test for a missing key. The descriptions are long to allow for tests with the text wrapping around the image. For example:

```

\longnewglossaryentry{sedfeugiat}{name={sed feugiat}
,
user1={example-image}}%
{%
Cum sociis natoque...

Etiam...
}

```

example-glossaries-acronym.tex

These entries are all acronyms. For example:

```

\newacronym[type={\glsdefaulttype}]{lid}{LID}
{lorem ipsum
dolor}

```

glossaries-extra

If you use the `glossaries-extra` extension package, then `\newacronym` is redefined to use `\newabbreviation` with the `category` key set to `acronym` (rather than the default `abbreviation`). This means that you need to set the `abbreviation` style for the `acronym` category. For example:

```
\setabbreviationstyle[acronym]{long-short}
```

example-glossaries-acronym-desc.tex

This file contains entries that are all acronyms that use the `description` key. For example:

```
\newacronym[type={\glsdefaulttype},
description={fringilla a, euismod sodales,
sollicitudin vel, wisi}]{ndl}{NDL}{nam dui ligula}
```

glossaries-extra

If you use the `glossaries-extra` extension package, then `\newacronym` is redefined to use `\newabbreviation` with the `category` key set to `acronym` (rather than the default `abbreviation`). This means that you need to set the `abbreviation` style for the `acronym` category. For example:

```
\setabbreviationstyle[acronym]{long-short-desc}
```

example-glossaries-acronyms-lang.tex

These entries are all acronyms, where some of them have a translation supplied in the `user1` key. For example:

```
\newacronym[type={\glsdefaulttype},user1=
{love itself}]
{li}{LI}{lorem ipsum}
```

glossaries-extra

If you use the `glossaries-extra` extension package, then `\newacronym` is redefined to use `\newabbreviation` with the `category` key set to `acronym` (rather than

the default `abbreviation`). This means that you need to set the `abbreviation` style for the `acronym` category. For example:

```
\setabbreviationstyle[acronym]{long-short-user}
```

example-glossaries-parent.tex

These are hierarchical entries where the child entries use the `name` key. For example:

```
\newglossaryentry{sedmattis}{name={sed mattis},  
description={erat sit amet}}  
  
\newglossaryentry{gravida}{parent={sedmattis},  
name={gravida},description={malesuada}}
```

example-glossaries-childnoname.tex

These are hierarchical entries where the child entries don't use the `name` key. For example:

```
\newglossaryentry{scelerisque}{name={scelerisque},  
description={at}}  
  
\newglossaryentry{vestibulum}{parent={scelerisque},  
description={eu, nulla}}
```

example-glossaries-longchild.tex

These entries all have long descriptions and there are some child entries. For example:

```
\newglossaryentry{longsedmattis}{name={sed mattis},  
description=  
{erat sit amet dolor sit amet, consectetur adipiscing elit.  
Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, fe  
Curabitur dictum gravida mauris.}}
```

```
\newglossaryentry{longgravida}{parent=  
{longsedmattis},name={gravida},  
description=  
{malesuada libero, nonummy eget, consectetur id, vulputate a,
```

```
magna. Donec vehicula augue eu neque. Pellentesque habitant morbi
senectus et netus et malesuada fames ac turpis egestas. Mauris u
leo.}}
```

 `example-glossaries-childmultipar.tex`

This consists of parent entries with single paragraph descriptions and child entries with multi-paragraph descriptions. Some entries have the `user1` key set to the name of an image file provided by the `mwe` package. For example:

```
\newglossaryentry{hiersedmattis}{name={sed mattis}
, user1={example-image},
description=
{Erat sit amet dolor sit amet, consectetur adipiscing elit.
Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, fe
dictum gravida mauris. Ut pellentesque augue sed urna. Vestibulu
diam eros, fringilla et, consectetur eu, nonummy id, sapien. Nu
at lectus. In sagittis ultrices mauris. Curabitur malesuada erat
amet massa. Fusce blandit. Aliquam erat volutpat.}}
```

```
\longnewglossaryentry{hierloremi-ii}
{name={lorem 1--2}, parent={hiersedmattis}}%
{%
Lorem ipsum ...

Nam dui ligula...
}
```

 `example-glossaries-cite.tex`

These entries use the `user1` key to store a citation key (or comma-separated list of citation keys). The citations are defined in `xampl.bib`, which should be available on all modern `TEX` distributions. One entry doesn't have an associated citation to help test for a missing key. For example:

```
\newglossaryentry{fusce}{name={fusce},
description={suscipit cursus sem}, user1={article-
minimal}}
```

 `example-glossaries-url.tex`

These entries use the `user1` key to store an URL associated with the entry. For example:

```
\newglossaryentry{aenean-url}{name={aenean},
description={adipiscing auctor est},
user1={http://uk.tug.org/}}
```

The sample file `glossary-lipsum-examples.tex` in the `doc/latex/glossaries/san` directory uses all these files. See also `glossaries gallery`.<sup>10</sup>

The `glossaries-extra` package provides the additional test file:

`example-glossaries-xr.tex`

glossaries  
-extra

These entries use the `see` key provided by the base `glossaries` package and also the `alias` and `seealso` keys that require `glossaries-extra`. For example:

```
\newglossaryentry{alias-lorem}{name={alias-lorem},
description={ipsum}, alias={lorem}}

\newglossaryentry{amet}{name={amet}, description=
{consectetuer},
see={dolor}}

\newglossaryentry{arcu}{name={arcu}, description=
{libero},
seealso={placemat, vitae, curabitur}}
```

## 1.5. Multi-Lingual Support

The `glossaries` package uses the `tracklang` package to determine the document languages. Unfortunately, because there isn't a standard language identification framework provided with `LATEX`, `tracklang` isn't always able to detect the selected languages either as a result of using an unknown interface or where the interface doesn't provide a way of detecting the language.

You will need at least version 1.6.4 of `tracklang` to support `babel`'s `\babelprovide`. All instances of `\babelprovide` need to occur before `tracklang` is loaded. In the event that `tracklang` can't detect the language, use the `languages` or `locales` package option. See §1.2 and also `Localisation with tracklang.tex`<sup>a</sup> for further details.

<sup>a</sup>[dickimaw-books.com/latex/tracklang/](http://dickimaw-books.com/latex/tracklang/)

<sup>10</sup>[dickimaw-books.com/gallery/#glossaries](http://dickimaw-books.com/gallery/#glossaries)



## 1. Introduction

For example (using babel):

```
\documentclass{article}
\usepackage[german]{babel}
\usepackage{glossaries}
```

This can pick up the language setting but will also automatically load translator. Compare this with:

```
\documentclass{article}
\usepackage[german]{babel}
\usepackage{glossaries-extra}
```

This will pick up the language setting but won't automatically load translator.

In both the above cases, `tracklang` will automatically be loaded and the language-sensitive commands provided by `glossaries` will use the definitions in `glossaries-german.lda` (which needs to be installed separately).

Another example (no language package):

```
\documentclass[german]{article}
\usepackage[translate=true]{glossaries}
```

The above document doesn't load `babel` or `polyglossia` or `translator`, but the `translate=true` setting will ensure that `tracklang` is loaded, which will pick up the document class option.

Alternatively, using the `locales` package option:

```
\usepackage[locales={de-DE,en-GB}]{glossaries}
```

This will require both `glossaries-german.lda` and `glossaries-english.lda` to be installed. Note that the `locales` option is a synonym of the `languages` option, but semantically `locales` makes more sense when using language identifiers that include regions.

Note that if another package has already been loaded that uses `tracklang`, then the list of supported locales will be picked up from that package. For example:

```
\usepackage[de-DE,en-GB]{datatime2}
\usepackage{glossaries}
```

You may find that you get a warning from `datatool`, such as “No ‘datatool’ support for dialect ‘ngerman’”. This is because the `datatool-base` package, which is automatically loaded

by glossaries, also provides localisation support. In the case of `datatool`, the localisation support is split into region (for currency and number parsing) and language. Only the language part is applicable to the `glossaries` package, and that's specific to the word or letter sorting with `\printnoidxglossary` (`sort=word` or `sort=letter`).

If there is no `datatool` localisation support, either because none has been provided or your version of `datatool` is too old, then `\printnoidxglossary` will only be able to sort according to the Basic Latin alphabet. Any extended Latin alphabet or non-Latin alphabet will be ordered by character code.

The absence of `datatool` localisation support doesn't affect the `glossaries` package's own localisation support and is not relevant with `\printglossary` or `\printunsrtglossary`. You can suppress the warning either by loading `datatool-base` earlier with the option `lang-warn=false`:

```
\usepackage[german]{babel}
\usepackage[lang-warn=false]{datatool-base}
\usepackage{glossaries}
```

Or pass the option before `datatool-base` is loaded:

```
\PassOptionsToPackage{lang-warn=false}{datatool-
base}
```

See the `datatool` documentation for further details.

The best method to sort terms that use an extended Latin alphabet or non-Latin alphabet is with `glossaries-extra` and `bib2gls`. This means using a `bib` file to store the entry data (see Option 4). If you prefer to only use the base `glossaries` package, then `xindy` (Option 3) is the best option, but be aware that `xindy` is a general purpose indexing application that's developed independently of `glossaries` (as opposed to `bib2gls`, which is specifically designed for, and developed alongside, `glossaries-extra` and therefore provides better integration).

Note also that `bib2gls` can support any language provided by the CLDR, whereas `xindy` only has a limited number of built-in languages (although more can be added).

If you are using a non-Latin script with `xindy`, you may need the `xindynogls-numbers` option or use `\GlsSetXdyFirstLetterAfterDigits` to indicate the first letter group that should follow the number group.

Example 9 demonstrates a document with UTF-8 characters that requires `xindy`. If you try this example and encounter errors, check that you have an up-to-date `TEX` distribution. Note that with the modern `LATEX` kernel, the default encoding is assumed to be UTF-8 so I haven't bothered loading the `inputenc` package.

```
\documentclass{article}
\usepackage[T1]{fontenc}
\usepackage[main=english,brazilian]{babel}
\usepackage[xindy]{glossaries}
```

Note the use of the `xindy` package option, which ensures that all the indexing information is written in the correct format.

This example is a multilingual document so a second glossary is defined for the Brazilian terms:

```
\newglossary*{dictionary}{\glossaryname}
```

I could just supply the actual title, but using the language-sensitive `\glossaryname` (which is also the title provided for the main glossary) demonstrates the language support.

This document will need to have both `glossaries-english` and `glossaries-portuges` installed in addition to the base `glossaries` package.

To ensure that the files required by `xindy` are opened:

```
\makeglossaries
```

Now define some English terms:

```
\newglossaryentry{élite}{name={élite},
description={select group or class}}
\newglossaryentry{elephant}{name={elephant},
description={large animal with trunk and tusks}}
\newglossaryentry{elk}{name={elk}, description=
{large deer}}
```

And here are the terms that need to go in the custom “dictionary” glossary:

```
\newglossaryentry{água}{name={água},
type={dictionary},
description={water}}
\newglossaryentry{árvore}{name={árvore},
type={dictionary},
description={tree}}
\newglossaryentry{ano}{name={ano},
```

## 1. Introduction

```
type={dictionary},  
description={year}}
```

The main body of the document contains references using the labels provided in the first argument of `\newglossaryentry` and the glossary lists are placed at the desired location, at the end of each section:

```
\begin{document}  
\section{English}  
An \gls{elk} and an \gls{elephant} belonged to an  
\gls{élite} group.  
  
\printglossary  
  
\selectlanguage{brazilian}  
\section{Brasileiro}  
A \gls{árvore} tive \gls{água} este \gls{ano}.  
  
\printglossary[type=dictionary]  
\end{document}
```

If the document is saved in the file `myDoc.tex` then the document build is:

```
pdflatex myDoc  
makeglossaries myDoc  
pdflatex myDoc
```

↑ Example 9: UTF-8 and xindy



## 1 English

An elk and an elephant belonged to an élite group.

### Glossary

**elephant** large animal with trunk and tusks. 1

**élite** select group or class. 1

**elk** large deer. 1

## 2 Brasileiro

A árvore tive água este ano.

### Glossário

**água** water. 1

**ano** year. 1

**árvore** tree. 1

Both the above Example 9 and the following Example 10 may trigger the warning “No ‘datatool’ support for dialect ‘brazilian’”. This warning comes from the `datatool-base` package that’s internally loaded by `glossaries`. The `datatool` localisation support is only applicable to `\printnoidxglossary` when alphabetical sorting is required. (The `datatool-base` sorting function is used for localised alphabetical sorting.)

The lack of `datatool` localisation support doesn’t affect the `glossaries` package’s own localisation support and is not relevant with `\printglossary` or `\printunsrtglossary`. You can suppress the warning either by loading `datatool-base` earlier with the option `lang-warn=false`:

```
\usepackage[main=english,brazilian]{babel}
\usepackage[lang-warn=false]{datatool-base}
\usepackage[xindy]{glossaries}
```

Or pass the option before `datatool-base` is loaded:

```
\PassOptionsToPackage{lang-warn=false}{datatool-
base}
\usepackage[main=english,brazilian]{babel}
\usepackage[xindy]{glossaries}
```

Example 10 is a modification of the previous example which uses `bib2gls` (and therefore requires `glossaries-extra`). The entry data must now be provided in one or more `bib` files. For example, the file `sample-utf8-en.bib` contains:

glossaries  
-extra  
10

```
% Encoding: UTF-8
@entry{élite,
  name={élite},
  description={select group or class}
}

@entry{elephant,
  name={elephant},
  description={large animal with trunk and tusks}
}

@entry{elk,
  name={elk},
  description={large deer}
}
```

and the file `sample-utf8-pt.bib` contains:

```
% Encoding: UTF-8
@entry{água,
  name={água},
  description={water}
}

@entry{árvore,
  name={árvore},
  description={tree}
}
```

```
@entry{ano,
  name={ano},
  description={year}
}
```

The document now requires `glossaries-extra` with the `record` option:

```
\documentclass{article}
\usepackage[T1]{fontenc}
\usepackage[main=english,brazilian]{babel}
\usepackage[record]{glossaries-extra}
```

As before a custom glossary is defined:

```
\newglossary*{dictionary}{\glossaryname}
```

Instead of using `\makeglossaries`, the document now needs:

```
\GlsXtrLoadResources [
  sort=en,% sort according to English language rules
  src={sample-utf8-en}% data in sample-utf8-en.bib
]

\GlsXtrLoadResources [
  sort=pt-BR,% sort according to pt-BR language rules
  src={sample-utf8-pt},% data in sample-utf8-pt.bib
  type=dictionary
]
```

The main body of the document is similar to the previous example, but a different command is needed to display the glossary.

```
\begin{document}
\section{English}
An \gls{elk} and an \gls{elephant} belonged to an
\gls{élite} group.

\printunsrtglossary
```

```
\selectlanguage{brazilian}
\section{Brasileiro}
A \gls{árvore} tive \gls{água} este \gls{ano}.

\printunsrtglossary[type=dictionary]
\end{document}
```

The document build is slightly different:

```
pdflatex myDoc
bib2gls myDoc
pdflatex myDoc
```

↑ Example 10: UTF-8 and bib2gls

## 1 English

An elk and an elephant belonged to an élite group.

### Glossary

**elephant** large animal with trunk and tusks 1

**élite** select group or class 1

**elk** large deer 1

## 2 Brasileiro

A árvore tive água este ano.

### Glossário

**água** water 1

**ano** year 1

**árvore** tree 1





Note that although a non-Latin character, such as `é`, looks like a plain character in your `tex` file, with `pdfLATEX` it's actually a macro and can therefore cause problems. (This issue doesn't occur with `XYLATEX` or `LuaLATEX` which both natively support UTF-8.) Recent versions of the `LATEX` kernel have made significant improvements in handling UTF-8. To ensure you have the best UTF-8 support, use at least `mfirstuc v2.08+` with `glossaries v4.50+` (and, if required, `glossaries-extra v1.49+`). With old `TEX` distributions, you can't use UTF-8 characters in labels.

With old versions of `mfirstuc` (pre `v2.08`), if you use a UTF-8 character at the start of an entry name, you must place it in a group, or it will cause a problem for sentence case commands (e.g. `\Gls`). For example:



```
% mfirstuc v2.07:
\newglossaryentry{elite}{name={{é}lite},
description={select group or class}}
```

This isn't necessary with `glossaries v4.50+` and `mfirstuc v2.08+`, and with a newer `LATEX` kernel the UTF-8 character may occur in the label:



```
% mfirstuc v2.08:
\newglossaryentry{éelite}{name={éelite},
description={select group or class}}
```

If you are using `xindy` or `bib2gls`, the application needs to know the encoding of the `tex` file. This information is added to the `aux` file and can be picked up by `makeglossaries` and `bib2gls`.

Note that `makeindex` doesn't support UTF-8 so, although it can be used with some Latin alphabet languages, you will need to ensure that the sort value doesn't contain any UTF-8. If you have the double-quote character (`"`) as an active character (for example, a `babel` shorthand) and you want to use `makeindex`'s `-g` (German) option, you'll need to change `makeindex`'s quote character using:



```
\GlsSetQuote{<character>}
```

Note that `<character>` may not be one of `?` (question mark), `|` (pipe) or `!` (exclamation mark). For example:



```
\GlsSetQuote{+}
```

This must be done before `\makeglossaries` and any entry definitions. It's only applicable for `makeindex`. This option in conjunction with `ngerman` will also cause `makeglossaries` to use the `-g` switch when invoking `makeindex`. For example:

```
\documentclass{article}

\usepackage[ngerman]{babel}
\usepackage{glossaries}

\GlsSetQuote{+}

\makeglossaries

\newglossaryentry{rna}{name=ribonukleinsäure,
  sort={ribonukleins"aure},
  description={eine Nukleinsäure}}

\begin{document}
\gls{rna}

\printglossaries
\end{document}
```

### 1.5.1. Changing the Fixed Names

The fixed names are produced using the commands listed in Table 1.2. If you aren't using a language package such as `babel` or `polyglossia` that uses caption hooks, you can just redefine these commands as appropriate. If you are using `babel` or `polyglossia`, you need to use their caption hooks to change the defaults. See changing the words `babel` uses or read the `babel` or `polyglossia` documentation. If you have loaded `babel`, then `glossaries` will attempt to load `translator`, unless you have used the `notranslate`, `translate=false` or `translate=babel` package options.

#### glossaries-extra

The `glossaries-extra` package defaults to `translate=babel` if `babel` has been loaded.

If the `translator` package is loaded, the translations are provided by dictionary files (for example, `glossaries-dictionary-English.dict`). See the `translator` package for advice on changing translations provided by `translator` dictionaries. If you can't work out how to modify these dictionary definitions, try switching to `babel`'s interface using `translate=babel`:

```

\documentclass[english,french]{article}
\usepackage{babel}
\usepackage[translate=babel]{glossaries}

```

and then use `babel`'s caption hook mechanism. Note that if you pass the language options directly to `babel` rather than using the document class options or otherwise passing the same options to `translator`, then `translator` won't pick up the language and no dictionaries will be loaded and `babel`'s caption hooks will be used instead.

Table 1.2.: Customised Text

Command Name	Translator Key Word	Purpose
<code>\glossaryname</code>	Glossary	Title of the main glossary.
<code>\acronymname</code>	Acronyms	Title of the list of acronyms (when used with package option <code>acronym</code> ).
<code>\entryname</code>	Notation ( <code>glossaries</code> )	Header for first column in the glossary (for 2, 3 or 4 column glossaries that support headers).
<code>\descriptionname</code>	Description ( <code>glossaries</code> )	Header for second column in the glossary (for 2, 3 or 4 column glossaries that support headers).
<code>\symbolname</code>	Symbol ( <code>glossaries</code> )	Header for symbol column in the glossary for glossary styles that support this option.
<code>\pagelistname</code>	Page List ( <code>glossaries</code> )	Header for the page list column in the glossary for glossaries that support this option.
<code>\glssymbolsgroupname</code>	Symbols ( <code>glossaries</code> )	Header for symbols section of the glossary for glossary styles that support this option.
<code>\glsnumbersgroupname</code>	Numbers ( <code>glossaries</code> )	Header for numbers section of the glossary for glossary styles that support this option.

As from version 4.12, multilingual support is provided by separate language modules that need to be installed in addition to installing the `glossaries` package. You only need to install the modules for the languages that you require. If the language module has an unmaintained status, you can volunteer to take over the maintenance by contacting me at <https://www.dickimaw-books.com/contact>. The `translator` dictionary files for `glossaries` are now provided by the appropriate language module. For further details about information specific to a given language, please see the documentation for that language module.

Examples of use:

- Using babel and translator:

```
\documentclass[english,french]{article}
\usepackage{babel}
\usepackage{glossaries}
```

(translator is automatically loaded).

- Using babel:

```
\documentclass[english,french]{article}
\usepackage{babel}
\usepackage[translate=babel]{glossaries}
```

(translator isn't loaded). The `glossaries-extra` package has `translate=babel` as the default if `babel` has been loaded.

- Using polyglossia:

```
\documentclass{article}
\usepackage{polyglossia}
\setmainlanguage{english}
\usepackage{glossaries}
```

Due to the varied nature of glossaries, it's likely that the predefined translations may not be appropriate. If you are using the `babel` package and the `glossaries` package option `translate=babel`, you need to be familiar with the advice given in changing the words `babel` uses. If you are using the `translator` package, then you can provide your own dictionary with the necessary modifications (using `\deftranslation`) and load it using `\usedictionary`. If you simply want to change the title of a glossary, you can use the `title` key in commands like `\printglossary` (but not the iterative commands like `\printglossaries`).

Note that the translator dictionaries are loaded at the beginning of the document, so it won't have any effect if you put `\deftranslation` in the preamble. It should be put in your personal dictionary instead (as in the example below). See the translator documentation for further details.

Your custom dictionary doesn't have to be just a translation from English to another language. You may prefer to have a dictionary for a particular type of document. For example,

suppose your institution’s in-house reports have to have the glossary labelled as “Nomenclature” and the location list should be labelled “Location”, then you can create a file called, say, `myinstitute-glossaries-dictionary-English.dict` that contains the following:

```
\ProvidesDictionary{myinstitute-glossaries-
dictionary}{English}
\deftranslation{Glossary}{Nomenclature}
\deftranslation{Page List (glossaries)}{Location}
```

You can now load it using:

```
\usedictionary{myinstitute-glossaries-dictionary}
```

(Make sure that `myinstitute-glossaries-dictionary-English.dict` can be found by  $\TeX$ .) If you want to share your custom dictionary, you can upload it to CTAN.

If you are using `babel` and don’t want to use the translator interface, you can use the package option `translate=babel`. For example:

```
\documentclass[british]{article}

\usepackage{babel}
\usepackage[translate=babel]{glossaries}

\addto\captionsbritish{%
  \renewcommand*{\glossaryname}{List of Terms}%
  \renewcommand*{\acronymname}{List of Acronyms}%
}
```

Note that `xindy` and `bib2gls` provide much better multi-lingual support than `make-index`, so I recommend that you use Options 2 or 3 if you have glossary entries that contain non-Latin characters. See §14 for further details on `xindy`, and see the `bib2gls` user manual for further details of that application.

### 1.5.2. Creating a New Language Module

The `glossaries` package now uses the `tracklang` package to determine which language modules need to be loaded. If you want to create a new language module, you should first read the `tracklang` documentation.

To create a new language module, you need to at least create two files called: `glossaries-⟨lang⟩.ldf` and `glossaries-dictionary-⟨Lang⟩.dict` where `⟨lang⟩` is the root

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language name (for example, english) and  $\langle Lang \rangle$  is the language name used by translator (for example, English).

Here's an example of `glossaries-dictionary-English.dict`:

```
\ProvidesDictionary{glossaries-dictionary}{English}

\providetranslation{Glossary}{Glossary}
\providetranslation{Acronyms}{Acronyms}
\providetranslation{Notation (glossaries)}{Notation}
\providetranslation{Description (glossaries)}
{Description}
\providetranslation{Symbol (glossaries)}{Symbol}
\providetranslation{Page List (glossaries)}
{Page List}
\providetranslation{Symbols (glossaries)}{Symbols}
\providetranslation{Numbers (glossaries)}{Numbers}
```

You can use this as a template for your dictionary file. Change English to the translator name for your language (so that it matches the file name `glossaries-dictionary- $\langle Lang \rangle$ .dict`) and, for each `\providetranslation`, change the second argument to the appropriate translation.

Here's an example of `glossaries-english.ldf`:

```
\ProvidesGlossariesLang{english}

\glsifusedtranslator $\text{dict}$ {English}
{%
  \addglossarytocaptions{\CurrentTrackedLanguage}%
  \addglossarytocaptions{\CurrentTrackedDialect}%
}
{%
  \@ifpackageloaded{polyglossia}%
  {%
    \newcommand*{\glossariescaptionenglish}{%
      \renewcommand*{\glossaryname}{\textenglish
{Glossary}}%
      \renewcommand*{\acronymname}{\textenglish
{Acronyms}}%
      \renewcommand*{\entryname}{\textenglish
{Notation}}%
      \renewcommand*{\descriptionname}{\textenglish
```

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```
{Description}}%
    \renewcommand*{\symbolname}{\textenglish
{Symbol}}}%
    \renewcommand*{\pagelistname}{\textenglish
{Page List}}}%
    \renewcommand*{\glssymbolsgroupname}
{\textenglish{Symbols}}}%
    \renewcommand*{\glsnumbersgroupname}
{\textenglish{Numbers}}}%
    }%
}%
{%
    \newcommand*{\glossariescaptionsenglish}{%
    \renewcommand*{\glossaryname}{Glossary}%
    \renewcommand*{\acronymname}{Acronyms}%
    \renewcommand*{\entryname}{Notation}%
    \renewcommand*{\descriptionname}{Description}
%
    \renewcommand*{\symbolname}{Symbol}%
    \renewcommand*{\pagelistname}{Page List}%
    \renewcommand*{\glssymbolsgroupname}{Symbols}
%
    \renewcommand*{\glsnumbersgroupname}{Numbers}
%
    }%
}%
\ifcsdef{captions\CurrentTrackedDialect}
{%
    \csappto{captions\CurrentTrackedDialect}{%
    {%
        \glossariescaptionsenglish
    }%
}%
}%
\ifcsdef{captions\CurrentTrackedLanguage}
{%
    \csappto{captions\CurrentTrackedLanguage}{%
    {%
        \glossariescaptionsenglish
    }%
}%
}%
%
```

```

    %
  }%
  \glossariescaptionsenglish
}
\renewcommand*{\glspluralsuffix}{s}
\renewcommand*{\glsacrpluralsuffix}{\glsplural-
suffix}
\renewcommand*{\glsupacrpluralsuffix}{\glstextup
{\glspluralsuffix}}

```

This is a somewhat longer file, but again you can use it as a template. Replace English with the translator language label  $\langle Lang \rangle$  used for the dictionary file and replace english with the root language name  $\langle lang \rangle$ . Within the definition of `\glossariescaptions $\langle lang \rangle$` , replace the English text (such as “Glossaries”) with the appropriate translation.

The suffixes used to generate the plural forms when the plural hasn’t been specified are given by `\glspluralsuffix` (for general entries). For acronyms defined with the base `\newacronym`, `\glsupacrpluralsuffix` is used for the small caps acronym styles where the suffix needs to be set using `\glstextup` to counteract the effects of `\textsc` and `\glsacrpluralsuffix` for other acronym styles. There’s no guarantee when these commands will be expanded. They may be expanded on definition or they may be expanded on use, depending on the glossaries configuration.



Therefore these plural suffix command definitions aren’t included in the `\captions- $\langle language \rangle$`  hook as that’s typically not implemented until the start of the document. **This means that the suffix in effect will be for the last loaded language that redefined these commands.** It’s best to initialise these commands to the most common suffix required in your document and use the `plural`, `longplural`, `shortplural` etc keys to override exceptions.

If you want to add a regional variation, create a file called `glossaries- $\langle iso-lang \rangle$ - $\langle iso-region \rangle$ .ldf`, where  $\langle iso-lang \rangle$  is the ISO language code and  $\langle iso-region \rangle$  is the ISO country code. For example, `glossaries-en-GB.ldf`. This file can load the root language file and make the appropriate changes, for example:

```

\ProvidesGlossariesLang{en-GB}
\RequireGlossariesLang{english}
\glsifusedtranslator $\langle dict \rangle$ {British}
{%
  \addglossarytocaptions{\CurrentTrackedLanguage}%
  \addglossarytocaptions{\CurrentTrackedDialect}%
}

```





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```
}
{%
  \@ifpackageloaded{polyglossia}%
  {%
    % Modify \glossariescaptionsenglish as appropriate for
    % polyglossia
  }%
  {%
    % Modify \glossariescaptionsenglish as appropriate for
    % non-polyglossia
  }%
}
```

If the translations includes non-Latin characters, it's a good idea to provide code that's independent of the input encoding. Remember that while some users may use UTF-8 (and it's now the default encoding with modern L<sup>A</sup>T<sub>E</sub>X kernels), others may use Latin-1 or any other supported encoding, but while users won't appreciate you enforcing your preference on them, it's useful to provide a UTF-8 version.

The `glossaries-irish.ldf` file provides this as follows:

```
\ProvidesGlossariesLang{irish}

\glsifusedtranslatordict{Irish}
{%
  \addglossarytocaptions{\CurrentTrackedLanguage}%
  \addglossarytocaptions{\CurrentTrackedDialect}%
}
{%
  \ifdefstring{\inputencodingname}{utf8}
  {\input{glossaries-irish-utf8.ldf}}%
  {%
    \ifdef\XeTeXinputencoding% XeTeX defaults to UTF-8
    {\input{glossaries-irish-utf8.ldf}}%
    {\input{glossaries-irish-noenc.ldf}}
  }
  \ifcsdef{captions\CurrentTrackedDialect}
  {%
    \csappto{captions\CurrentTrackedDialect}%
    {%
      \glossariescaptionsirish
    }%
  }%
}
```

```

}%
{
  \ifcsdef{captions\CurrentTrackedLanguage}
  {
    \csappto{captions\CurrentTrackedLanguage}%
    {%
      \glossariescaptionsirish
    }%
  }%
  {%
  }%
  }%
\glossariescaptionsirish
}

```

(Again you can use this as a template. Replace `irish` with your root language label and `Irish` with the translator dictionary label.)

There are now two extra files: `glossaries-irish-noenc.ldf` (no encoding information) and `glossaries-irish-utf8.ldf` (UTF-8).

These both define `\glossariescaptionsirish` but the `*-noenc.ldf` file uses  $\LaTeX$  accent commands:

```

\@ifpackageloaded{polyglossia}%
{%
  \newcommand*{\glossariescaptionsirish}{%
    \renewcommand*{\glossaryname}{\textirish{Gluais}}
  }%
  \renewcommand*{\acronymname}{\textirish
{Acraimneacha}}%
  \renewcommand*{\entryname}{\textirish{Ciall}}%
  \renewcommand*{\descriptionname}{\textirish
{Tuairisc}}%
  \renewcommand*{\symbolname}{\textirish
{Comhartha}}%
  \renewcommand*{\glsymbolsgroupname}{\textirish
{Comhartha\'i}}%
  \renewcommand*{\pagelistname}{\textirish
{Leathanaigh}}%
  \renewcommand*{\glsnumbersgroupname}{\textirish
{Uimhreacha}}%
  }%
}

```

```

} %
{ %
  \newcommand*{\glossariescaptionsirish}{%
    \renewcommand*{\glossaryname}{Gluais}%
    \renewcommand*{\acronymname}{Acrainmneacha}%
    \renewcommand*{\entryname}{Ciall}%
    \renewcommand*{\descriptionname}{Tuairisc}%
    \renewcommand*{\symbolname}{Comhartha}%
    \renewcommand*{\glssymbolsgroupname}
{Comhartha\'\i}%
    \renewcommand*{\pagelistname}{Leathanaigh}%
    \renewcommand*{\glsnumbersgroupname}{Uimhreacha}
  } %
}

```

whereas the `*-utf8.ldf` file replaces the accent commands with the appropriate UTF-8 characters.

## 1.6. Generating the Associated Glossary Files



This section is only applicable if you have chosen Options 2 or 3. You can ignore this section if you have chosen any of the other options. (For Option 4, see the `bib2gls` manual for details.) If you want to alphabetically sort your entries always remember to use the `sort` key if the `name` contains any  $\LaTeX$  commands (except if you're using `bib2gls`).

If this section seriously confuses you, and you can't work out how to run external tools like `makeglossaries` or `makeindex`, you can try using the `automake` package option, described in §2.5, but you will need  $\TeX$ 's shell escape enabled. See also Incorporating `makeglossaries` or `makeglossaries-lite` or `bib2gls` into the document build.<sup>11</sup> Since `makeindex` is on the trusted list, the restricted shell escape may be used, which is safer than the unrestricted mode. For example:



```

\usepackage[automake]{glossaries}
\makeglossaries

```

If the document source is in the file `myDoc.tex` then this requires:

<sup>11</sup>[dickimaw-books.com/latex/buildglossaries/](http://dickimaw-books.com/latex/buildglossaries/)

```
pdflatex -shell-restricted myDoc
pdflatex -shell-restricted myDoc
```

(you may find that `-shell-restricted` is the default for your system, in which case it may be omitted). Whereas:

```
\usepackage[xindy, automake]{glossaries}
\makeglossaries
```

requires:

```
pdflatex -shell-escape myDoc
pdflatex -shell-escape myDoc
```

Be aware that this unrestricted mode is a security risk, so it's best avoided.

In order to generate a sorted glossary with compact number lists, it is necessary to use an external indexing application as an intermediate step (Option 1, which uses  $\TeX$  to do the sorting, can't compact number lists). It is this application that creates the file containing the code required to typeset the glossary. **If this step is omitted, the glossaries will not appear in your document.**

The two oldest indexing applications most commonly used with  $\LaTeX$  are `makeindex` and `xindy`. The `glossaries` package can be used with either of these applications. Any other application that can support `makeindex`'s syntax and style file may be used instead of `makeindex`. Simply follow the `makeindex` instructions and substitute the call to `makeindex` with the appropriate call to the alternative.

Commands that only have an effect when `xindy` is used are described in §14.

This is a multi-stage process, but there are methods of automating document compilation using applications such as `latexmk` and `arara`. With `arara` you can just add special comments to your document source:

```
% arara: pdflatex
% arara: makeglossaries
% arara: pdflatex
```

With `latexmk` you need to set up the required dependencies.

The `glossaries` package comes with the Perl script `makeglossaries` which will run `makeindex` or `xindy` on all the indexing files using a customized style file (which is cre-

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ated by `\makeglossaries`). See §1.6.1 for further details. Perl is stable, cross-platform, open source software that is used by a number of  $\text{T}_{\text{E}}\text{X}$ -related applications (including `xindy` and `latexmk`). Most Unix-like operating systems come with a Perl interpreter.  $\text{T}_{\text{E}}\text{X}$  Live also comes with a Perl interpreter. As far as I know, Mik $\text{T}_{\text{E}}\text{X}$  doesn't come with a Perl interpreter so if you are a Windows Mik $\text{T}_{\text{E}}\text{X}$  user you will need to install Perl if you want to use `makeglossaries` or `xindy`. Further information is available at <http://www.perl.org/about.html> and Mik $\text{T}_{\text{E}}\text{X}$  and Perl scripts (and one Python script).<sup>12</sup>

The advantages of using `makeglossaries`:

- It automatically detects whether to use `makeindex` or `xindy` and sets the relevant application switches.
- One call of `makeglossaries` will run `makeindex/xindy` for each glossary type.
- If things go wrong, `makeglossaries` will scan the messages from `makeindex` or `xindy` and attempt to diagnose the problem in relation to the `glossaries` package. This will hopefully provide more helpful messages in some cases. If it can't diagnose the problem, you will have to read the relevant transcript file and see if you can work it out from the `makeindex` or `xindy` messages.
- If `makeindex` warns about multiple `encap` values, `makeglossaries v2.18+` will detect this and attempt to correct the problem. This correction is only provided by `makeglossaries` when `makeindex` is used since `xindy` uses the order of the attributes list to determine which format should take precedence. (see §14.3.) This correction can be switched off with the `-e` switch.
- If `makeindex` warns about invalid or empty locations, `makeglossaries v4.50+` will detect this and attempt to alter the location to fit `makeindex`'s syntax. This may or may not cause unexpected results in the location list, but it's useful if the `nonumberlist` option is used.
- If `makeindex` has a warning that could be the result of a command occurring within the location, `makeglossaries v4.50+` will attempt to repair it by moving the command out of the location and into the `encap`.
- If the output directory has been set when running  $\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$  (which puts all the associated files in another directory), `makeglossaries` has a `-d` switch that can be used to identify the output directory. This means that `makeglossaries` can change to that directory before running `makeindex` or `xindy`.

The first two items also apply to `makeglossaries-lite`.

As from version 4.16, the `glossaries` package also comes with a Lua script called `makeglossaries-lite`. This is a *trimmed-down* alternative to the `makeglossaries` Perl script. It doesn't have some of the options that the Perl version has and it doesn't attempt to diagnose

---

<sup>12</sup>[tex.stackexchange.com/questions/158796](http://tex.stackexchange.com/questions/158796)

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any problems, but since modern T<sub>E</sub>X distributions come with LuaT<sub>E</sub>X (and therefore have a Lua interpreter) you don't need to install anything else in order to use `makeglossaries-lite` so it's an alternative to `makeglossaries` if you want to use Option 2 (`makeindex`).

If things go wrong and you can't work out why your glossaries aren't being generated correctly, you can use `makeglossariesgui` as a diagnostic tool. Once you've fixed the problem, you can then go back to using `makeglossaries` or `makeglossaries-lite`.

Whilst I strongly recommended that you use the `makeglossaries` Perl script or the `makeglossaries-lite` Lua script, it is possible to use the `glossaries` package without using those applications. However, note that some commands and package options have no effect if you explicitly run `makeindex/xindy`. These are listed in Table 1.3.



If you are choosing not to use `makeglossaries` because you don't want to install Perl, you will only be able to use `makeindex` as `xindy` also requires Perl. (Other useful Perl scripts include `epstopdf` and `latexmk`, so it's well-worth the effort to install Perl.) Alternatively, if you have Java installed, switch to `glossaries-extra` and `bib2gls`.

Below, references to `makeglossaries` can usually be substituted with `makeglossaries-lite`, except where noted otherwise.

If any of your entries use an entry that is not referenced outside the glossary (for example, the entry is only referenced in the description of another entry), you will need to do an additional `makeglossaries`, `makeindex` or `xindy` run, as appropriate. For example, suppose you have defined the following entries:



```
\newglossaryentry{citrusfruit}{name={citrus fruit},
description={fruit of any citrus tree. (See also
\gls{orange})}}

\newglossaryentry{orange}{name={orange},
description={an orange coloured fruit.}}
```

and suppose you have `\gls{citrusfruit}` in your document but don't reference the "orange" entry, then the orange entry won't appear in your glossary until you first create the glossary and then do another run of `makeglossaries`, `makeindex` or `xindy`. For example, if the document is called `myDoc.tex`, then you must do:



```
pdflatex myDoc
makeglossaries myDoc
pdflatex myDoc
makeglossaries myDoc
pdflatex myDoc
```

(In the case of Option 4, `bib2gls` will scan the description for instances of commands like `\gls` to ensure they are selected but an extra `bib2gls` call is required to ensure the locations are included, if location lists are required. See the `bib2gls` manual for further details.)

Likewise, an additional `makeglossaries` and  $\LaTeX$  run may be required if the document pages shift with re-runs. For example, if the page numbering is not reset after the table of contents, the insertion of the table of contents on the second  $\LaTeX$  run may push glossary entries across page boundaries, which means that the number lists in the glossary may need updating.

The examples in this document assume that you are accessing `makeglossaries`, `xindy` or `makeindex` via a terminal. Windows users can use the command prompt which is usually accessed via the Start → All Programs menu or Start → All Programs → Accessories menu or Start → Windows System.

Alternatively, your text editor may have the facility to create a function that will call the required application. See Incorporating `makeglossaries` or `makeglossaries-lite` or `bib2gls` into the document build.<sup>13</sup>

If any problems occur, remember to check the transcript files (e.g. `glg` or `alg`) for messages.

Table 1.3.: Commands and package options that have no effect when using `xindy` or `makeindex` explicitly

Command or Package Option	<code>makeindex</code>	<code>xindy</code>
<code>order=letter</code>	use <code>-l</code>	use <code>-M ord/letord</code>
<code>order=word</code>	default	default
<code>xindy={language={lang}, codepage={code}}</code>	N/A	use <code>-L &lt;lang&gt; -C &lt;code&gt;</code>
<code>\GlsSetXdyLanguage{&lt;lang&gt;}</code>	N/A	use <code>-L &lt;lang&gt;</code>
<code>\GlsSetXdyCodePage{&lt;code&gt;}</code>	N/A	use <code>-C &lt;code&gt;</code>

### 1.6.1. Using the `makeglossaries` Perl Script

```
makeglossaries <options> <aux-file>
```

The `makeglossaries` script picks up the relevant information from the auxiliary (`aux`) file and will either call `xindy` or `makeindex`, depending on the supplied information. Therefore, you only need to pass the document's name without the extension to `makeglossaries`. For example, if your document is called `myDoc.tex`, type the following in your terminal:

```
pdflatex myDoc
makeglossaries myDoc
pdflatex myDoc
```

<sup>13</sup>[dickimaw-books.com/latex/buildglossaries/](http://dickimaw-books.com/latex/buildglossaries/)

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If you only want one glossary processed (for example, if you are working on a draft of a large document and want to concentrate on one specific glossary) then include the `<out-ext>` extension supplied to `\newglossary`, such as `glo` for the `main` glossary. Note that if you do specify the extension and your document has multiple glossaries defined, then `makeglossaries` will tell you how many glossaries have been ignored unless the `-q` switch has been used.

Windows users:  $\text{T}_{\text{E}}\text{X}$  Live on Windows has its own internal Perl interpreter and provides `makeglossaries.exe` as a convenient wrapper for the `makeglossaries` Perl script.  $\text{MikT}_{\text{E}}\text{X}$  also provides a wrapper `makeglossaries.exe` but doesn't provide a Perl interpreter (as far as I know), which is still required even if you run  $\text{MikT}_{\text{E}}\text{X}$ 's `makeglossaries.exe`, so with  $\text{MikT}_{\text{E}}\text{X}$  you'll need to install Perl. There's more information about this at  $\text{MikT}_{\text{E}}\text{X}$  and Perl scripts (and one Python script).<sup>14</sup>



When upgrading the glossaries package, make sure you also upgrade your version of `makeglossaries`. The current version is 4.6.

Some of the options are only applicable to `makeindex` and some are only applicable to `xindy`.



```
--help
```

Shows a summary of all available options.



```
--version
```

Shows the version details.



```
-n
```

Dry run mode. This doesn't actually run `makeindex/xindy` but just prints the command it would execute based on the information given in the `aux` file and the supplied options.



```
-d <directory>
```

Instructs `makeglossaries` to change to the given directory, which should be where the `aux`, `glo` etc files are located. For example:



```
pdflatex -output-directory myTmpDir myDoc  
makeglossaries -d myTmpDir myDoc
```

<sup>14</sup>[tex.stackexchange.com/questions/158796](http://tex.stackexchange.com/questions/158796)



-e

Don't check for multiple encap (only applicable with `makeindex`). By default, if you are using `makeindex`, `makeglossaries` will check the `makeindex` transcript for multiple encap warnings.

The multiple encap warning is where different location encap values (location formats) are used on the same location for the same entry. For example:

```
\documentclass{article}

\usepackage{glossaries}
\makeglossaries

\newglossaryentry{sample}{name={sample},description=
{an example}}

\begin{document}
\gls{sample}, \gls[format=textbf]{sample}.
\printglossaries
\end{document}
```

If you explicitly use `makeindex`, this will cause a warning and the location list will be “1, 1”. That is, the page number will be repeated with each format. As from v2.18, `makeglossaries` will check for this warning and, if found, will attempt to correct the problem by removing duplicate locations and retrying. If you actually want the duplicate location, you can prevent `makeglossaries` from checking and correcting the duplicates with `-e`.

There's no similar check for `xindy` as `xindy` won't produce any warning and will simply discard duplicates.

-q

Suppresses messages. The `makeglossaries` script attempts to fork the `makeindex/xindy` process using `open()` on the piped redirection `2>&1 |` and parses the processor output to help diagnose problems. If this method fails `makeglossaries` will print an “Unable to fork” warning and will retry without redirection. Without this redirection, the `-q` switch doesn't work as well. Some operating systems don't support redirection.

-Q

Suppresses the “Unable to fork” warning.

`-k`

Don't attempt redirection.

`-m <application>`

The `makeindex` application. Only the name is required if it's on the operating system's path, otherwise the full path name will be needed.

If you want to use an application that is capable of reading `makeindex` files (including support for `makeindex` style files via `-s`), then you can use `-m` to specify the alternative application to use instead of `makeindex`. Note that both `xindex` and `texindy` can read `makeindex` files using the default `makeindex` syntax but, as of the time of writing this, they don't support `makeindex` style files.

`-x <application>`

The `xindy` application. Only the name is required if it's on the operating system's path, otherwise the full path name will be needed.

`-c`

Compress intermediate blanks. This will pass `-c` to `makeindex`. (Ignored if `xindy` should be called.)

`-r`

Disable implicit page range formation. This will pass `-r` to `makeindex`. (Ignored if `xindy` should be called.)

`-p <num>`

Set the starting page number. This will pass `-p <num>` to `makeindex`. (Ignored if `xindy` should be called.)

The following switches may be used to override settings written to the `aux` file.

`-l`

Use letter ordering. This will pass `-l` to `makeindex` or `-M ord/letorder` to `xindy`.

`-L <language>`

The language to pass to `xindy`. (Ignored if `makeindex` should be called.)

```
-g
```

Employ German word ordering. This will pass `-g` to `makeindex`. (Ignored if `xindy` should be called.)

```
-s <filename>
```

Set the style file. This will pass `-s <filename>` to `makeindex` or `-M <basename>` to `xindy` (where `<basename>` is `<filename>` with the `xdy` extension removed). This will generate an error if the extension is `xdy` when `makeindex` should be called, or if the extension isn't `xdy` when `xindy` should be called.

```
-o <filename>
```

Sets the output file name. Note that this should only be used when only one glossary should be processed. The default is to set the output filename to the basename supplied to `makeglossaries` with the extension associated with the glossary (the `<in-ext>` argument of `\newglossary`).

```
-t <filename>
```

Sets the transcript file name. Note that this should only be used when only one glossary should be processed. The default is to set the transcript filename to the basename supplied to `makeglossaries` with the extension associated with the glossary (the `<log-ext>` argument of `\newglossary`).

### 1.6.2. Using the `makeglossaries-lite` Lua Script

```
makeglossaries-lite <options> <aux-file>
```

The Lua alternative to the `makeglossaries` Perl script requires a Lua interpreter, which should already be available if you have a modern  $\text{T}\text{E}\text{X}$  distribution that includes `Lua $\text{T}\text{E}\text{X}$` . Lua is a light-weight, cross-platform scripting language, but because it's light-weight it doesn't have the full-functionality of heavy-weight scripting languages, such as Perl. The `makeglossaries-lite` script is therefore limited by this and some of the options available to the `makeglossaries` Perl script aren't available here. (In particular the `-d` option.) Whilst it may be possible to implement those features by requiring Lua packages, this would defeat the purpose of providing this script for those don't want the inconvenience of learning how to install interpreters or their associated packages.



The script is actually supplied as `makeglossaries-lite.lua` but T<sub>E</sub>X distributions on Windows convert this to an executable wrapper `makeglossaries-lite.exe` and T<sub>E</sub>X Live on Unix-like systems provide a symbolic link without the extension.

The `makeglossaries-lite` script can be invoked in the same way as `makeglossaries`. For example, if your document is called `myDoc.tex`, then do

```
makeglossaries-lite myDoc
```

Note that the `arara` rule doesn't contain the hyphen:

```
% arara: makeglossarieslite
```

Some of the options are only applicable to `makeindex` and some are only applicable to `xindy`. There's no equivalent to the `-d` available to `makeglossaries` but it may work if you prefix the basename with the path.

```
--help
```

Shows a summary of all available options.

```
--version
```

Shows the version details.

```
-n
```

Dry run mode. This doesn't actually run `makeindex/xindy` but just prints the command it would execute based on the information given in the `aux` file and the supplied options.

```
-q
```

Quiet mode. This suppresses some but not all messages.

```
-m <application>
```

The `makeindex` application. Only the name is required if it's on the operating system's path, otherwise the full path name will be needed.

`-x <application>`

The `xindy` application. Only the name is required if it's on the operating system's path, otherwise the full path name will be needed.

`-c`

Compress intermediate blanks. This will pass `-c` to `makeindex`. (Ignored if `xindy` should be called.)

`-r`

Disable implicit page range formation. This will pass `-r` to `makeindex`. (Ignored if `xindy` should be called.)

`-p <num>`

Set the starting page number. This will pass `-p <num>` to `makeindex`. (Ignored if `xindy` should be called.)

The following switches may be used to override settings written to the `aux` file.

`-l`

Use letter ordering. This will pass `-l` to `makeindex` or `-M ord/letorder` to `xindy`.

`-L <language>`

The language to pass to `xindy`. (Ignored if `makeindex` should be called.)

`-g`

Employ German word ordering. This will pass `-g` to `makeindex`. (Ignored if `xindy` should be called.)

`-s <filename>`

Set the style file.

`-o <filename>`

Sets the output file name. Note that this should only be used when only one glossary should be processed. The default is to set the output filename to the basename supplied to `makeglos-`

saries with the extension associated with the glossary (the *<in-ext>* argument of `\newglossary`).

```
-t <filename>
```

Sets the transcript file name. Note that this should only be used when only one glossary should be processed. The default is to set the transcript filename to the basename supplied to `makeglossaries` with the extension associated with the glossary (the *<log-ext>* argument of `\newglossary`).

### 1.6.3. Using `xindy` explicitly (Option 3)

`xindy` comes with T<sub>E</sub>X Live. It has also been added to MikT<sub>E</sub>X, but if you don't have it installed, see [How to use Xindy with MikTeX](#).<sup>15</sup>

If you want to use `xindy` to process the glossary files, you must make sure you have used the `xindy` package option:

```
\usepackage[xindy]{glossaries}
```

This is required regardless of whether you use `xindy` explicitly or whether it's called implicitly via applications such as `makeglossaries`. This causes the glossary entries to be written in raw `xindy` format, so you need to use `-I xindy not -I tex`.

To run `xindy` type the following in your terminal (all on one line):

```
xindy -L <language> -C <encoding> -I xindy -M <style> -t
<base>.glg -o <base>.gls <base>.glo
```

where *<language>* is the required language name, *<encoding>* is the encoding, *<base>* is the name of the document without the `tex` extension and *<style>* is the name of the `xindy` style file without the `xdy` extension. The default name for this style file is *<base>xdy* but can be changed via `\setStyleFile`. As usual for command line applications, if any of the file names contain spaces, you must delimit them using double-quotes.

For example, if your document is called `myDoc.tex` and you are using UTF-8 encoding in English, then type the following in your terminal:

```
xindy -L english -C utf8 -I xindy -M myDoc -t
myDoc.glg -o myDoc.gls myDoc.glo
```

Note that this just creates the `main` glossary. You need to do the same for each of the other glossaries (including the list of acronyms if you have used the `acronym` package option),

<sup>15</sup>[tex.stackexchange.com/questions/71167](http://tex.stackexchange.com/questions/71167)

substituting `glg`, `gls` and `glo` with the relevant extensions. For example, if you have used the `acronym` package option, then you would need to do:

```
xindy -L english -C utf8 -I xindy -M myDoc -t
myDoc.glg -o myDoc.acr myDoc.acn
```

For additional glossaries, the extensions are those supplied when you created the glossary with `\newglossary`.

Note that if you use `makeglossaries` instead, you can replace all those calls to `xindy` with just one call to `makeglossaries`:

```
makeglossaries myDoc
```

Note also that some commands and package options have no effect if you use `xindy` explicitly instead of using `makeglossaries`. These are listed in Table 1.3.

#### 1.6.4. Using `makeindex` explicitly (Option 2)

If you want to use `makeindex` explicitly, you must make sure that you haven't used the `xindy` package option or the glossary entries will be written in the wrong format. To run `makeindex`, type the following in your terminal:

```
makeindex -s <style>.ist -t <base>.glg -o <base>.gls
<base>.glo
```

where `<base>` is the name of your document without the `tex` extension and `<style>.ist` is the name of the `makeindex` style file. By default, this is `<base>.ist`, but may be changed via `\setStyleFile`. Note that there are other options, such as `-l` (letter ordering). See the `makeindex` manual for further details.

For example, if your document is called `myDoc.tex`, then type the following at the terminal:

```
makeindex -s myDoc.ist -t myDoc.glg -o myDoc.gls
myDoc.glo
```

Note that this only creates the `main` glossary. If you have additional glossaries (for example, if you have used the `acronym` package option) then you must call `makeindex` for each glossary, substituting `glg`, `gls` and `glo` with the relevant extensions. For example, if you have used the `acronym` package option, then you need to type the following in your terminal:

```
makeindex -s myDoc.ist -t myDoc.alg -o myDoc.acr
myDoc.acn
```

For additional glossaries, the extensions are those supplied when you created the glossary with `\newglossary`.

Note that if you use `makeglossaries` instead, you can replace all those calls to `makeindex` with just one call to `makeglossaries`:

```
makeglossaries myDoc
```

Note also that some commands and package options have no effect if you use `makeindex` explicitly instead of using `makeglossaries`. These are listed in Table 1.3.

## 1.7. Note to Front-End and Script Developers

The information needed to determine whether to use `xindy`, `makeindex` or `bib2gls` is stored in the `aux` file. This information can be gathered by a front-end, editor or script to make the glossaries where appropriate. This section describes how the information is stored in the auxiliary file. See also “Decyphering the Aux File Commands Provided by `glossaries.sty` and `glossaries-extra.sty`<sup>16</sup>”.

### 1.7.1. MakeIndex and Xindy

The file extension of the indexing files used for each defined glossary (not including any ignored glossaries) are given by:

```
\@newglossary{<glossary-label>}{<log>}{<out-ext>}{<in-ext>}
```

where `<in-ext>` is the extension of the *indexing application's* input file (the output file from the `glossaries` package's point of view), such as `glo`, `<out-ext>` is the extension of the *indexing application's* output file (the input file from the `glossaries` package's point of view), such as `gls`, and `<log>` is the extension of the indexing application's transcript file, such as `glg`. The label for the glossary is also given. This isn't required with `makeindex`, but with `xindy` it's needed to pick up the associated language and encoding (see below). For example, the information for the default `main` glossary is written as:

```
\@newglossary{main}{glg}{gls}{glo}
```

<sup>16</sup>[dickimaw-books.com/latex/auxglossaries](http://dickimaw-books.com/latex/auxglossaries)



## 1. Introduction

If `glossaries-extra`'s hybrid method has been used (with `\makeglossaries[⟨sub-list⟩]`), then the sub-list of glossaries that need to be processed will be identified with:

```
\glstr@makeglossaries{⟨label-list⟩}
```

The indexing application's style file is specified by:

```
\@istfilename{⟨filename⟩}
```

The file extension indicates whether to use `makeindex` (`ist`) or `xindy` (`xdy`). Note that the glossary information has a different syntax depending on which indexing application is supposed to be used, so it's important to call the correct one.

For example, with `arara` you can easily determine whether to run `makeglossaries`:

```
% arara:  
makeglossaries if found("aux", "@istfilename")
```

It's more complicated if you want to explicitly run `makeindex` or `xindy`.

Note that if you choose to explicitly call `makeindex` or `xindy` then the user will miss out on the diagnostic information and the `encap-clash` fix that `makeglossaries` also provides.

Word or letter ordering is specified by:

```
\@glsorder{⟨order⟩}
```

where `⟨order⟩` can be either `word` or `letter` (obtained from the `order` package option).

If `xindy` should be used, the language for each glossary is specified by:

```
\@xdylanguage{⟨glossary-label⟩}{⟨language⟩}
```

where `⟨glossary-label⟩` identifies the glossary and `⟨language⟩` is the root language (for example, `english`).

The codepage (file encoding) for all glossaries is specified by:

```
\@gls@codepage{⟨code-page⟩}
```

where  $\langle code \rangle$  is the encoding (for example, `utf8`). The above two commands are omitted if `makeindex` should be used.

If Option 1 has been used, the `aux` file will contain

```
\@gls@reference{\langle type \rangle}{\langle label \rangle}{\langle location \rangle}
```

for every time an entry has been referenced.

### 1.7.2. Entry Labels

If you need to gather labels for auto-completion, the `writeglslabels` package option will create a file containing the labels of all defined entries (regardless of whether or not the entry has been used in the document). As from v4.47, there is a similar option `writeglslabel-names` that writes both the label and name (separated by a tab).

`glossaries-extra`

The `glossaries-extra` package also provides `docdef=atom`, which will create the `glsdefs` file but will act like `docdef=restricted`.

### 1.7.3. Bib2Gls

If Option 4 has been used, the `aux` file will contain one or more instances of:

`bib2gls`

```
\glsxtr@resource{\langle options \rangle}{\langle basename \rangle}
```

where  $\langle basename \rangle$  is the basename of the `gls.tex` file that needs to be created by `bib2gls`. If `src={\langle bib list \rangle}` isn't present in  $\langle options \rangle$  then  $\langle basename \rangle$  also indicates the name of the associated `bib` file.

For example, with `arara` you can easily determine whether or not to run `bib2gls`:

```
% arara: bib2gls if found("aux", "glsxtr@resource")
```

(It gets more complicated if both `\glsxtr@resource` and `\@istfilename` are present as that indicates the hybrid `record=hybrid` option.)

Remember that with `bib2gls`, the glossary entries will never be defined on the first  $\LaTeX$  call (because their definitions are contained in the `gls.tex` file created by `bib2gls`). You can also pick up labels from the records in `aux` file, which will be in the form:

```
\glsxtr@record{\langle label \rangle}{\langle h-prefix \rangle}{\langle counter \rangle}{\langle format \rangle}{\langle loc \rangle}
```

or (with `record=nameref`):

```
\glsxtr@record@nameref{\langle label \rangle}{\langle href  
prefix \rangle}{\langle counter \rangle}{\langle format \rangle}{\langle location \rangle}{\langle title \rangle}{\langle href anchor \rangle}{\langle href value \rangle}
```

or (with `\glssee`):

```
\glsxtr@recordsee{\langle label \rangle}{\langle xr list \rangle}
```

You can also pick up the commands defined with `\glsxtrnewglslike`, which are added to the aux file for bib2gls's benefit:

```
\@glsxtr@newglslike{\langle label-prefix \rangle}{\langle cs \rangle}
```

If `\GlsXtrSetAltModifier` is used, then the modifier is identified with:

```
\@glsxtr@altmodifier{\langle character \rangle}
```

Label prefixes (for the `\dgl`s set of commands) are identified with:

```
\@glsxtr@prefixlabellist{\langle list \rangle}
```

## 2. Package Options

This section describes the available glossaries package options. You may omit the `=true` for boolean options. (For example, `acronym` is equivalent to `acronym=true`).

`glossaries-extra`

The `glossaries-extra` package has additional options described in the `glossaries-extra` manual. The extension package also has some different default settings to the base package. Those that are available at the time of writing are included here. Future versions of `glossaries-extra` may have additional package options or new values for existing settings that aren't listed here.

**i**

Note that `<key>=<value>` package options can't be passed via the document class options. (This includes options where the `<value>` part may be omitted, such as `acronym`.) This is a general limitation not restricted to the `glossaries` package. Options that aren't `<key>=<value>` (such as `makeindex`) may be passed via the document class options.

### 2.1. General Options

`nowarn`

This suppresses all warnings generated by the `glossaries` package. Don't use this option if you're new to using `glossaries` as the warnings are designed to help detect common mistakes (such as forgetting to use `\makeglossaries`). Note that if you use `debug` with any value other than `false` it will override this option.

`nolangwarn`

This suppresses the warning generated by a missing language module.

`noredefwarn`

If you load `glossaries` with a class or another package that already defines glossary related commands, by default `glossaries` will warn you that it's redefining those commands. If you are aware of the consequences of using `glossaries` with that class or package and you don't want to be

## 2. Package Options

warned about it, use this option to suppress those warnings. Other warnings will still be issued unless you use the `nowarn` option described above. (This option is automatically switched on by `glossaries-extra`.)

```
debug=<value>
```

```
initial: false
```

Debugging mode may write information to the transcript file or add markers to the document. The following values are available:

```
debug=false
```

Switches off debugging mode.

```
debug=true
```

This will write the following line to the transcript file if any attempt at indexing occurs before the associated files have been opened by `\makeglossaries`:

```
wrglossary(<glossary-type>) (<indexing info>)
```

Note that this setting will also cancel `nowarn`.

```
debug=showtargets
```

As `debug=true` but also adds a marker where the glossary-related hyperlinks and targets occur in the document.

The `debug=showtargets` option will additionally use:

```
\glsshowtarget{<target name>}
```

to show the hypertarget or hyperlink name when `\glsdohypertarget` is used by commands like `\glstarget` and when `\glsdohyperlink` is used by commands like `\gls`. In math mode or inner mode, this uses:

```
\glsshowtargetinner{<target name>}
```

which typesets the target name as:

```
[\glsshowtargetfonttext{<target name>}]
```

just before the link or anchor. This uses the text-block command:

## 2. Package Options

```
\glsshowtargetfonttext{<text>}
```

which checks for math-mode before applying the font change. In outer mode `\glsshowtarget` uses:

```
\glsshowtargetouter{<target name>}
```

which by default places the target name in the margin with a symbol produced with:

```
\glsshowtargetsymbol{<target name>}
```

which defaults to a small right facing triangle.

The font used by both `\glsshowtargetfonttext` and `\glsshowtargetouter` is given by the declaration:

```
\glsshowtargetfont                   initial: \ttfamily\footnotesize
```

**debug=showaccsupp**

As `debug=true` but also adds a marker where the glossary-related accessibility information occurs (see `glossaries-accsupp`) using:

```
\glsshowaccsupp{<options>}{<PDF element>}{<value>}
```

### glossaries-extra

The `glossaries-extra` package provides extra values `debug=showwrgloss`, that may be used to show where the indexing is occurring, and `debug=all`, which switches on all debugging options. See the `glossaries-extra` manual for further details.

The purpose of the debug mode can be demonstrated with the following example document:

```
\documentclass{article}
\usepackage{glossaries}
\newglossaryentry{sample1}{name={sample1}
,description={example}}
```

## 2. Package Options

```
\newglossaryentry{sample2}{name={sample2}
,description={example}}
\glsadd{sample2}% <- does nothing here
\makeglossaries
\begin{document}
\gls{sample1}.
\printglossaries
\end{document}
```

In this case, only the “sample1” entry has been indexed, even though `\glsadd{sample2}` appears in the source code. This is because `\glsadd{sample2}` has been used before the associated file is opened by `\makeglossaries`. Since the file isn’t open yet, the information can’t be written to it, which is why the “sample2” entry doesn’t appear in the glossary.

Without `\makeglossaries` the indexing is suppressed with Options 2 and 3 but, other than that, commands like `\gls` behave as usual.

This situation doesn’t cause any errors or warnings as it’s perfectly legitimate for a user to want to use glossaries to format the entries (for example, to show a different form on first use) but not display any glossaries (or the user may prefer to use the unsorted Options 5 or 6). It’s also possible that the user may want to temporarily comment out `\makeglossaries` in order to suppress the indexing while working on a draft version to speed compilation, or the user may prefer to use Options 1 or 4 for indexing, which don’t use `\makeglossaries`.

Therefore `\makeglossaries` can’t be used to enable `\newglossaryentry` and commands like `\gls` and `\glsadd`. These commands must be enabled by default. (It does, however, enable the `see` key as that’s a more common problem. See below.)

The debug mode, enabled with the `debug` option,

```
\usepackage[debug]{glossaries}
```

will write information to the log file when the indexing can’t occur because the associated file isn’t open. The message is written in the form

```
Package glossaries Info: wrglossary(<type>) (<text>) on
input line <line number>.
```

where `<type>` is the glossary label and `<text>` is the line of text that would’ve been written to the associated file if it had been open. So if any entries haven’t appeared in the glossary but you’re sure you used commands like `\glsadd` or `\glsaddall`, try switching on the `debug` option and see if any information has been written to the log file.

**savewrites**=*(boolean)*

*default: true; initial: false*

This is a boolean option to minimise the number of write registers used by the glossaries package. The default is `savewrites=false`. With Options 2 and 3, one write register is required per (non-ignored) glossary and one for the style file.

In general, this package option is best avoided.

With all options except Options 1 and 4, another write register is required if the `glsdefs` file is needed to save document definitions. With both Options 1 and 4, no write registers are required (document definitions aren't permitted and indexing information is written to the `aux` file). If you really need document definitions but you want to minimise the number of write registers then consider using `docdef=restricted` with `glossaries-extra`.

There are only a limited number of write registers, and if you have a large number of glossaries or if you are using a class or other packages that create a lot of external files, you may exceed the maximum number of available registers. If `savewrites` is set, the glossary information will be stored in token registers until the end of the document when they will be written to the external files.

This option can significantly slow document compilation and may cause the indexing to fail. Page numbers in the number list will be incorrect on page boundaries due to  $\TeX$ 's asynchronous output routine. As an alternative, you can use the `scrfile` package (part of the KOMA-Script bundle) and not use this option.

By way of comparison, `sample-multi2.tex` provided with `bib2gls` has a total of 15 glossaries. With Options 2 or 3, this would require 46 associated files and 16 write registers. (These figures don't include standard files and registers provided by the kernel or `hyperref`, such as `aux` and `out`.) With `bib2gls`, no write registers are required and there are only 10 associated files for that particular document (9 resource files and 1 transcript file).

If you want to use  $\TeX$ 's shell escape to call `makeindex` or `xindy` from your document and use `savewrites`, then use `automake=immediate` or `automake=makegloss` or `automake=lite`.

**translate**=*(value)*

*default: true; initial: varies*

This can take one of the values listed below. If no supported language package has been loaded the default is `translate=false` otherwise the default is `translate=true` for the



## 2. Package Options

base glossaries package and `translate=babel` for glossaries-extra.

**`translate=true`**

If babel has been loaded and the translator package is installed, translator will be loaded and the translations will be provided by the translator package interface. You can modify the translations by providing your own dictionary. If the translator package isn't installed and babel is loaded, the glossaries-babel package will be loaded and the translations will be provided using babel's `\addto\captions⟨language⟩` mechanism. If polyglossia has been loaded, glossaries-polyglossia will be loaded.

**`translate=false`**

Don't provide translations, even if babel or polyglossia has been loaded. (Note that babel provides the command `\glossaryname` so that will still be translated if you have loaded babel.)

**`translate=babel`**

Don't load the translator package. Instead load glossaries-babel.

I recommend you use `translate=babel` if you have any problems with the translations or with PDF bookmarks, but to maintain backward compatibility, if babel has been loaded the default is `translate=true`.

See §1.5.1 for further details.

**`notranslate`**

This is equivalent to `translate=false` and may be passed via the document class options.

**`languages`**

This automatically implements `translate=babel` (which means that translator won't automatically be loaded) but will also add the list of languages to tracklang's list of tracked languages. Each element in the `⟨list⟩` may be an ISO language tag (such as `pt-BR`) or one of tracklang's known language labels (such as `british`).

**`locales`**

*alias:* **`languages`**

Synonym of `languages`.

**hyperfirst**=(*boolean*)

default: **true**; initial: **true**

If true, terms on first use will have a hyperlink, if supported, unless the hyperlink is explicitly suppressed using starred versions of commands such as `\gls*`. If false, only subsequent use instances will have a hyperlink (if supported).

Note that `nohypertypes` overrides `hyperfirst=true`. This option only affects commands that check the first use flag, such as the `\gls`-like commands (for example, `\gls` or `\glsdisp`), but not the `\gls`text-like commands (for example, `\glslink` or `\gls`text).

The `hyperfirst` setting applies to all glossary types (unless identified by `nohypertypes` or defined with `\newignoredglossary`). It can be overridden on an individual basis by explicitly setting the `hyper` key when referencing an entry (or by using the plus or starred version of the referencing command).

It may be that you only want to suppress hyperlinks for just the acronyms (where the first use explains the meaning of the acronym) but not for ordinary glossary entries (where the first use is identical to subsequent use). In this case, you can use `hyperfirst=false` and apply `\glsunsetall` to all the regular (non-acronym) glossaries. For example:

```
\usepackage[acronym,hyperfirst=false]{glossaries}
% acronym and glossary entry definitions

% at the end of the preamble
\glsunsetall[main]
```

Alternatively you can redefine the hook

`\glslinkcheckfirsthyperhook`

which is used by the commands that check the first use flag, such as `\gls`. Within the definition of this command, you can use `\glslabel` to reference the entry label and `\gls`type to reference the glossary type. You can also use `\ifglsused` to determine if the entry has been used. You can test if an entry is an acronym by checking if it has the `long` key set using `\ifgls`haslong (or if the `short` key has been set using `\ifgls`hasshort). For example, to switch off the hyperlink on first use just for acronyms:

```
\renewcommand*{\glslinkcheckfirsthyperhook}{%
\ifglsused{\glslabel}}{%
{%
\ifgls
```

## 2. Package Options

```
false}}%  
  }%  
}
```

Note that this hook isn't used by the commands that don't check the first use flag, such as `\glsstext`. (You can, instead, redefine `\glslinkpostsetkeys`, which is used by both the `\gls`-like and `\glsstext`-like commands.)

### glossaries-extra

The `glossaries-extra` package provides a method of disabling the first use hyperlink according to the entry's associated `category`. For example, if you only want to switch off the first use hyperlink for `abbreviations` then you simply need to set the `nohyperfirst` attribute for the `abbreviation` and, if appropriate, `acronym` categories. (Instead of using the `hyperfirst` package option.) See the `glossaries-extra` manual for further details.

### writeglslabels

This option will create a file called `\jobname.glslabels` at the end of the document. This file simply contains a list of all defined entry labels (including those in any ignored glossaries). It's provided for the benefit of text editors that need to know labels for auto-completion. If you also want the name, use `writeglslabelnames`. (See also `glossaries-extra`'s `docdef=atom` package option.)

### bib2gls

Note that with `bib2gls` the file will only contain the entries that `bib2gls` has selected from the `bib` files.

### writeglslabelnames

Similar to `writeglslabels` but writes both the label and name (separated by a tab).

**undefaction**=*<value>*

*initial:* **error**

Only available with `glossaries-extra`, the value for this option may be one of:

**undefaction=error**

Generates an error if a referenced entry is undefined (default, and the only available setting with just the base `glossaries` package).

**undefaction=warn**

Only warns if a referenced entry is undefined (automatically activated with Option 4).

**docdef**=*<value>*

*default: true; initial: false*

Only available with `glossaries-extra`, this option governs the use of `\newglossaryentry`. Available values:

**docdef=false**

This setting means that `\newglossaryentry` is not permitted in the document environment (default with `glossaries-extra` and for Option 1 with just the base `glossaries` package).

**docdef=restricted**

This setting means that `\newglossaryentry` is only permitted in the document environment if it occurs before `\printglossary` (not available for some indexing options, such as Option 4).

**docdef=atom**

This setting is as `docdef=restricted` but creates the `glsdefs` file for use by `atom` (without the limitations of `docdef=true`).

**docdef=true**

This setting means that `\newglossaryentry` is permitted in the document environment where it would normally be permitted by the base `glossaries` package. This will create the `glsdefs` file if `\newglossaryentry` is found in the document environment.

## 2.2. Sectioning, Headings and TOC Options

**toc**=*<boolean>*

*default: true; initial: varies*

Adds the glossaries to the table of contents (`toc` file). Note that an extra  $\LaTeX$  run is required with this option. Alternatively, you can switch this function on and off using

`\glstoctrue`

## 2. Package Options

and

```
\glstocfalse
```

You can test whether or not this option is set using:

```
\ifglstoc <true>\else <false>\fi initial: \iffalse
```

The default value is `toc=false` for the base glossaries package and `toc=true` for glossaries-extra. This option has no effect if `numberedsection` has been used to switch to a numbered (unstarred) sectioning command.

This option simply governs whether or not `\glossarysection` should use `\addcontentsline` after the applicable starred section command. The document class you are using may have its own behaviour for starred sections, such as adding the title to the PDF bookmarks.

```
numberline=<boolean> default: true; initial: false
```

When used with `toc=true` option, this will add `\numberline{ }` in the final argument of `\addcontentsline`. This will align the table of contents entry with the numbered section titles. Note that this option has no effect with `toc=false`. If `toc=true` is used without `numberline`, the glossary title will be aligned with the section numbers rather than the section titles.

```
section=<name> default: section
```

This option indicates the sectional unit to use for the glossary. The value `<name>` should be the control sequence `name` without the leading backslash or following star (for example, just `chapter` not `\chapter` or `chapter*`).

The default behaviour is for the glossary heading to use `\chapter`, if that command exists, or `\section` otherwise. The starred or unstarred form is determined by the `numberedsection` option.

Example:

```
\usepackage [section=subsection] {glossaries}
```

You can omit the value if you want to use `\section`:

## 2. Package Options

```
\usepackage[section]{glossaries}
```

is equivalent to

```
\usepackage[section=section]{glossaries}
```

You can change this value later in the document using

```
\setglossarysection{name}
```

where *name* is the sectional unit.

The start of each glossary adds information to the page header via `\glsglossarymark` (see §8.2).

```
ucmark=boolean
```

*default: true; initial: varies*

If `ucmark=true`, this will make `\glsglossarymark` use all caps in the header, otherwise no case change will be applied. The default is `ucmark=false`, unless `memoir` has been loaded, in which case the default is `ucmark=true`.

You can test if this option has been set using:

```
\ifglsucmark true\else false\fi
```

*initial: varies*

For example:

```
\renewcommand{\glsglossarymark}[1]{%  
  \ifglsucmark  
    \markright{\glsuppercase{#1}}%  
  \else  
    \markright{#1}%  
  \fi}
```

```
numberedsection=value
```

*default: nolabel; initial: false*

The glossaries are placed in unnumbered sectional units by default, but this can be changed using `numberedsection`. This option can take one of the following values:

```
numberedsection=false
```

No number, that is, use the starred form of sectioning command (for example, `\chapter*` or `\section*`).

```
numberedsection=nolabel
```

Use a numbered section, that is, the unstarred form of sectioning command (for example, `\chapter` or `\section`), but no label is automatically added.

```
numberedsection=autolabel
```

Use numbered sections with automatic labelling. Each glossary uses the unstarred form of a sectioning command (for example, `\chapter` or `\section`) and is assigned a label (via `\label`). The label is formed from the glossary's label prefixed with:

```
\glsautoprefix
```

The default value of `\glsautoprefix` is empty. For example, if you load glossaries using:

```
\usepackage[section,numberedsection=autolabel]{glossaries}
```

then each glossary will appear in a numbered section, and can be referenced using something like:

```
The main glossary is in section~\ref{main} and  
the list of acronyms is in section~\ref{acronym}.
```

If you can't decide whether to have the acronyms in the main glossary or a separate list of acronyms, you can use `\acronymtype` which is set to `main` if the `acronym` option is not used and is set to `acronym` if the `acronym` option is used. For example:

```
The list of acronyms is in section~\ref{\acronym-  
type}.
```

You can redefine the prefix if the default label clashes with another label in your document. For example:

## 2. Package Options

```
\renewcommand*{\glsautoprefix}{glo:}
```

will add `glo:` to the automatically generated label, so you can then, for example, refer to the list of acronyms as follows:

```
The list of acronyms is in  
section~\ref{glo:\acronymtype}.
```

Or, if you are undecided on a prefix:

```
The list of acronyms is in  
section~\ref{\glsautoprefix\acronymtype}.
```

**numberedsection=nameref**

This setting is like `numberedsection=autolabel` but uses an unnumbered sectioning command (for example, `\chapter*` or `\section*`). It's designed for use with the `nameref` package. For example:

```
\usepackage{nameref}  
\usepackage[numberedsection=nameref]{glossaries}
```

Alternatively, since `nameref` is automatically loaded by `hyperref`:

```
\usepackage{hyperref}  
\usepackage[numberedsection=nameref]{glossaries}
```

Now `\nameref{main}` will display the (table of contents) section title associated with the `main` glossary. As above, you can redefine `\glsautoprefix` to provide a prefix for the label.



## 2.3. Glossary Appearance Options

**savenumberlist**= $\langle$ boolean $\rangle$

default: **true**; initial: **false**  
Options 2 and 3 only

This is a boolean option that specifies whether or not to gather and store the number list for each entry. The default is `savenumberlist=false` with Options 2 and 3. (See `\glsentrynumberlist` and `\glsdisplaynumberlist` in §5.2.) This setting is always true if you use Option 1 as a by-product of the way that indexing method works.

bib2gls

If you use the `record` option (with either no value or `record=only` or `record=nameref`) then this package option has no effect. With `bib2gls`, the number lists are automatically saved with the default `save-locations=true` and `save-loclist=true` resource settings.

**entrycounter**= $\langle$ boolean $\rangle$

default: **true**; initial: **false**

If set, this will create the counter:

**glossaryentry**

Each top level (level 0) entry will increment and display that counter at the start of the entry line when using glossary styles that support this setting. Note that if you also use `subentrycounter` the option order makes a difference. If `entrycounter` is specified first, the sub-entry counter will be dependent on the `glossaryentry` counter.

If you use this option (and are using a glossary style that supports this option) then you can reference the entry number within the document using:

`\glsrefentry{ $\langle$ label $\rangle$ }`

where  $\langle$ label $\rangle$  is the label associated with that glossary entry. This will use `\ref` if either `entrycounter=true` or `subentrycounter=true`, with the label  $\langle$ prefix $\rangle$  $\langle$ label $\rangle$ , where  $\langle$ label $\rangle$  is the entry's label and  $\langle$ prefix $\rangle$  is given by:

`\GlsEntryCounterLabelPrefix`

initial: `glsentry-`

If both `entrycounter=false` and `subentrycounter=false`, `\gls{ $\langle$ label $\rangle$ }` will be used instead.



If you use `\glsrefentry`, you must run  $\LaTeX$  twice after creating the indexing files using `makeglossaries`, `makeindex` or `xindy` (or after creating the `glsstex` file with `bib2gls`) to ensure the cross-references are up-to-date. This is because the counter can't be incremented and labelled until the glossary is typeset.

The `glossaryentry` counter can be reset back to zero with:



```
\glsresetentrycounter
```

This does nothing if `entrycounter=false`. The `glossaryentry` counter can be simultaneously incremented and labelled (using `\refstepcounter` and `\label`) with:



```
\glsstepentry{<label>}
```

This command is within the definition of `\glsentryitem`, which is typically used in glossary styles at the start of top level (level 0) entries. The argument is the entry label.

The value of the `glossaryentry` counter can be displayed with:



```
\theglossaryentry
```

This command is defined when the `glossaryentry` counter is defined, so won't be available otherwise. The formatted value is more usually displayed with:



```
\glsentrycounterlabel
```

This will do `\theglossaryentry .\space` if `entrycounter=true`, otherwise does nothing. This is therefore more generally useful in glossary styles as it will silently do nothing if the setting isn't on. This command is used within the definition of `\glsentryitem`.

If you want to test whether or not this option is currently enabled, use the conditional:



```
\ifglsentrycounter <true>\else <false>\fi      initial: \iffalse
```

You can later switch it off using:



```
\glsentrycounterfalse
```

and switch it back on with:



```
\glsentrycountertrue
```

## 2. Package Options

but note that this won't define `glossaryentry` if `entrycounter=true` wasn't used initially. You can also locally enable or disable this option for a specific glossary using the `entrycounter \print<...>glossary` option.

```
counterwithin=<parent-counter>
```

If used, this option will automatically set `entrycounter=true` and the `glossaryentry` counter will be reset every time *<parent-counter>* is incremented. An empty value indicates that `glossaryentry` has no parent counter (but `glossaryentry` will still be defined).

The `glossaryentry` counter isn't automatically reset at the start of each glossary, except when glossary section numbering is on and the counter used by `counterwithin` is the same as the counter used in the glossary's sectioning command.

If you want the counter reset at the start of each glossary, you can modify the glossary preamble (`\glossarypreamble`) to use `\glsresetentrycounter`. For example:

```
\renewcommand{\glossarypreamble}{%  
  \glsresetentrycounter  
}
```

or if you are using `\setglossarypreamble`, add it to each glossary preamble, as required. For example:

```
\setglossarypreamble[acronym]{%  
  \glsresetentrycounter  
  The preamble text here for the list of acronyms.  
}  
\setglossarypreamble{%  
  \glsresetentrycounter  
  The preamble text here for the main glossary.  
}
```

```
subentrycounter=<boolean>
```

*default: true; initial: false*

If set, each level 1 glossary entry will be numbered at the start of its entry line when using `glossary`

styles that support this option. This option creates the counter

**glossarysubentry**

No

If the `entrycounter` option is used before `subentrycounter`, then `glossarysubentry` will be added to the reset list for `glossaryentry`. If `subentrycounter` is used without `entrycounter` then the `glossarysubentry` counter will be reset by `\glsentryitem`. If `subentrycounter` is used before `entrycounter` then the two counters are independent.

i

There's no support for deeper hierarchical levels. Some styles, such as those that don't support any hierarchy, may not support this setting or, for those that only support level 0 and level 1, may use this setting for all child entries.

As with the `entrycounter` option, you can reference the number within the document using `\glsrefentry`. There are analogous commands to those for `entrycounter`.

The `glossarysubentry` counter can be reset back to zero with:

`\glsresetsubentrycounter`

P

This does nothing if `subentrycounter=false`. This command is used within the definition of `\glsentryitem` if `entrycounter=false`.

The `glossarysubentry` counter can be simultaneously incremented and labelled (using `\refstepcounter` and `\label`) with:

`\glsstepsubentry{<label>}`

P

This command is used in `\glsentryitem` if `subentrycounter=true`, otherwise it does nothing. The argument is the entry label and is passed to `\label` as for `\glsrefentry`.

The value of the `glossarysubentry` counter can be displayed with:

`\theglossarysubentry`

P

This command is defined when the `glossarysubentry` counter is defined, so won't be available otherwise. The formatted value is more usually displayed with:

`\glsentrycounterlabel`

P

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This will do `\theglossarysubentry) \space` if `subentrycounter=true`, otherwise does nothing. This is therefore more generally useful in glossary styles as it will silently do nothing if the setting isn't on. This command is used in `\glssubentryitem`.

If you want to test whether or not this option is currently enabled, use the conditional:

```
\ifglssubentrycounter <true>\else <false>\fi initial: \iffalse
```

You can later switch it off using:

```
\glssubentrycounterfalse
```

and switch it back on with:

```
\glssubentrycountertrue
```

but note that this won't define `glossarysubentry` if `subentrycounter=true` wasn't used initially. You can also locally enable or disable this option for a specific glossary using the `subentrycounter \print<...>glossary` option.

```
style=<style-name> initial: varies
```

This option sets the default glossary style to `<style-name>`. This is initialised to `style=list` unless `classicthesis` has been loaded, in which case the default is `style=index`. (The styles that use the description environment, such as the list style, are incompatible with `classicthesis`.)

This setting may only be used for styles that are defined when the glossaries package is loaded. This will usually be the styles in the packages `glossary-list`, `glossary-long`, `glossary-super` or `glossary-tree`, unless they have been suppressed through options such as `nostyles`. Style packages can also be loaded by the `stylemods` option provided by `glossaries-extra`.

Alternatively, you can set the style later using:

```
\setglossarystyle{<style-name>}
```

or use the `style \print<...>glossary` option. (See §13 for further details.)

```
style-options={<options>}
```

The newer predefined glossary styles, such as `tree*` and `mcoltree*`, can be adjusted using `<key>=<value>` options. This is different from the older styles that are mostly modified by redefining commands provided with the style. The `style-options` value should be a `<key>=<value>` list where each key is the style name. Unsupported styles will trigger an error. For example:

## 2. Package Options

```
\setupglossaries{
  style-options={
    tree*={
      group-headings,
      pre-location=\dotfill
    },
    mcoltree*={
      balance,
      columns={3}
    }
  }
}
```

See §13.1.7.1 for the `tree*` options and §13.1.8 for the `mcoltree*` options.

The style options will only be available once the applicable style package has been loaded.

### `nolong`

This prevents the `glossaries` package from automatically loading `glossary-long` (which means that the `longtable` package also won't be loaded). This reduces overhead by not defining unwanted styles and commands. Note that if you use this option, you won't be able to use any of the `glossary` styles defined in the `glossary-long` package (unless you explicitly load `glossary-long`).

Some style packages implicitly load `glossary-long`, so this package may still end up being loaded even if you use `nolong`.

### `nosuper`

This prevents the `glossaries` package from automatically loading `glossary-super` (which means that the `supertabular` package also won't be loaded). This reduces overhead by not defining unwanted styles and commands. Note that if you use this option, you won't be able to use any of the `glossary` styles defined in the `glossary-super` package (unless you explicitly load `glossary-super`).



This option is automatically implemented if `xtab` has been loaded as it's incompatible with `supertabular`. This option is also automatically implemented if `supertabular` isn't installed.



### `nolist`

This prevents the `glossaries` package from automatically loading `glossary-list`. This reduces overhead by not defining unwanted styles. Note that if you use this option, you won't be able to use any of the glossary styles defined in the `glossary-list` package (unless you explicitly load `glossary-list`). Note that since the default style is `list` (unless `classicthesis` has been loaded), you will also need to use the `style` option to set the style to something else.



### `notree`

This prevents the `glossaries` package from automatically loading `glossary-tree`. This reduces overhead by not defining unwanted styles. Note that if you use this option, you won't be able to use any of the glossary styles defined in the `glossary-tree` package (unless you explicitly load `glossary-tree`). Note that if `classicthesis` has been loaded, the default style is `index`, which is provided by `glossary-tree`.



Some style packages implicitly load `glossary-tree`, so this package may still end up being loaded even if you use `notree`.



### `nostyles`

This prevents all the predefined styles from being loaded. If you use this option, you need to load a glossary style package (such as `glossary-mcols`). Also if you use this option, you can't use the `style` package option (unless you use `stylemods` with `glossaries-extra`). Instead you must either use `\setglossarystyle` or the `style \print<...>glossary` option. Example:



```
\usepackage[nostyles]{glossaries}
\usepackage{glossary-mcols}
\setglossarystyle{mcoltree}
```

Alternatively:

```
\usepackage[nostyles,stylemods=mcols,style=mcoltree]
{glossaries-extra}
```

### nonumberlist

This option will suppress the associated number lists in the glossaries (see also §12). This option can also be locally switched on or off for a specific glossary with the `nonumberlist` `\print<...>glossary` options.

Note that if you use Options 2 or 3 (`makeindex` or `xindy`) then the locations must still be valid even if this setting is on. This package option merely prevents the number list from being displayed, but both `makeindex` and `xindy` still require a location or cross-reference for each term that's indexed.

Remember that number list includes any cross-references, so suppressing the number list will also hide the cross-references (in which case, you may want to use `seeautonumberlist`).

### bib2gls

With `bib2gls`, it's more efficient to use `save-locations=false` in the resource options if no locations are required.

### seeautonumberlist

If you suppress the number lists with `nonumberlist`, described above, this will also suppress any cross-referencing information supplied by the `see` key in `\newglossaryentry` or `\glssee`. If you use `seeautonumberlist`, the `see` key will automatically implement `nonumberlist=false` for that entry. (Note this doesn't affect `\glssee`.) For further details see §11.

**counter**=*<counter-name>* *initial: page*

This setting indicates that *<counter-name>* should be the default counter to use in the number lists (see §12). This option can be overridden for a specific glossary by the *<counter>* optional argument of `\newglossary` or the `counter` key when defining an entry or by the `counter` option when referencing an entry.

This option will redefine:

`\glscounter` *initial: page*



## 2. Package Options

to  $\langle counter-name \rangle$ .

**nopostdot**= $\langle boolean \rangle$

default: **true**; initial: **true**

If true, this option suppresses the default terminating full stop in glossary styles that use the post-description hook `\glspostdescription`.

The default setting is `nopostdot=false` for the base glossaries package and `nopostdot=true` for `glossaries-extra`.

glossaries-extra

The `glossaries-extra` package provides `postdot`, which is equivalent to `nopostdot=false`, and also `postpunc`, which allows you to choose a different punctuation character.

**nogroupskip**= $\langle boolean \rangle$

default: **true**; initial: **false**

If true, this option suppresses the default vertical gap between letter groups used by some of the predefined glossary styles. This option can also be locally switched on or off for a specific glossary with the `nogroupskip \print<...>glossary` options.

This option is only relevant for glossary styles that use the conditional:

```
\ifglsnogroupskip  $\langle true \rangle$ \else  $\langle false \rangle$ \fi
```

initial: `\iffalse`

to test for this setting.

bib2gls

If you are using `bib2gls` without the `--group` (or `-g`) switch then this option is irrelevant as there won't be any letter groups.

**stylemods**= $\langle list \rangle$

default: **default**

Loads the `glossaries-extra-stylemods` package, which patches the predefined glossary styles. The  $\langle list \rangle$  argument is optional. If present, this will also load `glossary- $\langle element \rangle$ .sty` for each  $\langle element \rangle$  in the comma-separated  $\langle list \rangle$ . See the `glossaries-extra` manual for further details.

## 2.4. Indexing Options

**seenoidex**=*<value>*

*initial: error*

(This option is only relevant with `makeindex` and `xindy`.) The `see` key automatically indexes the cross-referenced entry using `\glssee`. This means that if this key is used in an entry definition before the relevant indexing file has been opened, the indexing can't be performed. Since this is easy to miss, the `glossaries` package by default issues an error message if the `see` key is used before `\makeglossaries`.

This option may take one of the following values:

**seenoidex=error**

This is the default setting that issues an error message.

**seenoidex=warn**

This setting will trigger a warning rather than an error.

**seenoidex=ignore**

This setting will do nothing.

For example, if you want to temporarily comment out `\makeglossaries` to speed up the compilation of a draft document by omitting the indexing, you can use `seenoidex=warn` or `seenoidex=ignore`.

**esclocations**=*<boolean>*

*default: true; initial: false*

Only applicable to `makeindex` and `xindy`. As from v4.50, the initial setting is now `esclocations=false`. Previously it was `esclocations=true`.

Both `makeindex` and `xindy` are fussy about the location syntax (`makeindex` more so than `xindy`) so, if `esclocations=true`, the `glossaries` package will try to ensure that special characters are escaped, which allows for the location to be substituted for a format that's more acceptable to the indexing application. This requires a bit of trickery to circumvent the problem posed by `TeX`'s asynchronous output routine, which can go wrong and also adds to the complexity of the document build.

If you're sure that your locations will always expand to an acceptable format (or you're prepared to post-process the glossary file before passing it to the relevant indexing application) then use `esclocations=false` to avoid the complex escaping of location values. This is now the default.

If, however, your locations (for example, `\thepage` with the default `counter=page`)

## 2. Package Options

expand to a robust command then you may need to use `esclocations=true`. You may additionally need to set the following conditional to true:

```
\ifglswrallowprimitivemods <true>\else <false>\fi  
initial: \iffalse
```

which will locally redefine some primitives in order to escape special characters without prematurely expanding `\thepage`. Since this hack may cause some issues and isn't necessary for the majority of documents, this is off by default.

This conditional can be switched on with:

```
\glswrallowprimitivemodstrue
```

but remember that it will have no effect with `esclocations=false`. It can be switched off with:

```
\glswrallowprimitivemodsfalse
```

If you are using `makeindex` and your location expands to content in the form `<cs> {<num>}`, where `<cs>` is a command (optionally preceded by `\protect`) and `<num>` is a location acceptable to `makeindex`, then you can use `makeglossaries` to make a suitable adjustment without `esclocations=true`. See §12.5 for further details.

This isn't an issue for Options 1 or 4 as the locations are written to the aux file and both methods use  $\text{\LaTeX}$  syntax, so no conversion is required.

```
indexonlyfirst=<boolean> default: true; initial: false
```

If true, this setting will only index on first use. The default setting `indexonlyfirst=false`, will index the entry every time one of the `\gls`-like or `\glstext`-like commands are used. Note that `\glsadd` will always add information to the external glossary file (since that's the purpose of that command).

You can test if this setting is on using the conditional:

```
\ifglindexonlyfirst <true>\else <false>\fi initial: \iffalse
```

This setting can also be switched on with:

```
\glindexonlyfirsttrue
```

and off with:

```
\glsindexonlyfirstfalse
```

Resetting the first use flag with commands like `\glsreset` after an entry has been indexed will cause that entry to be indexed multiple times if it's used again after the reset. Likewise unsetting the first use flag before an entry has been indexed will prevent it from being indexed (unless specifically indexed with `\glsadd`).

You can customise the default behaviour by redefining

```
\glswriteentry{<label>}{<indexing code>}
```

where `<label>` is the entry's label and `<indexing code>` is the code that writes the entry's information to the external file. The default definition of `\glswriteentry` is:

```
\newcommand*{\glswriteentry}[2]{%
  \ifglsindexonlyfirst
    \ifglsused{#1}{}{#2}%
  \else
    #2%
  \fi
}
```

This does `<indexing code>` unless `indexonlyfirst=true` and the entry identified by `<label>` has been marked as used

For example, suppose you only want to index the first use for entries in the `acronym` glossary and not in the `main` (or any other) glossary:

```
\renewcommand*{\glswriteentry}[2]{%
  \ifthenelse\equal{\glsentrytype{#1}}{acronym}
  {\ifglsused{#1}{}{#2}}%
  {#2}%
}
```

Here I've used `\ifthenelse` to ensure the arguments of `\equal` are fully expanded before the comparison is made. There are other methods of performing an expanded string comparison, which you may prefer to use.

With the `glossaries-extra` package it's possible to only index first use for particular categories. For example, if you only want this enabled for `abbreviations` then you can set the `indexonly-`

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`first` attribute for the `abbreviation` and, if appropriate, `acronym` categories. (Instead of using the `indexonlyfirst` package option.) See the `glossaries-extra` manual for further details.

**`indexcrossrefs`**=*<boolean>*

*default: true; initial: true*



This option is only available with `glossaries-extra`. If true, this will automatically index (`\glsadd`) any cross-referenced entries that haven't been marked as used at the end of the document. Note that this increases the document build time. See `glossaries-extra` manual for further details.

`bib2gls`

Note that `bib2gls` can automatically find dependent entries when it parses the `bib` file. Use the `selection` option to determine the selection of dependencies.

**`autoseeindex`**=*<boolean>*

*default: true; initial: true*



This option is only available with `glossaries-extra`. The base `glossaries` package always implements `autoseeindex=true`.

If true, this makes the `see` and `seealso` keys automatically index the entry (with `\gls-see`) when the entry is defined. This means that any entry with the `see` (or `seealso`) key will automatically be added to the glossary. See the `glossaries-extra` manual for further details.

`bib2gls`

With `bib2gls`, use the `selection` resource option to determine the selection of dependencies.

**`record`**=*<value>*

*default: only; initial: off*



This option is only available with `glossaries-extra`. See `glossaries-extra` manual for further details. A brief summary of available values:

**`record=off`**



This default setting indicates that `bib2gls` isn't being used.

**`record=only`**



This setting indicates that `bib2gls` is being used to fetch entries from one or more `bib` files, to sort the entries and collate the number lists, where the location information is the same as for Options 1, 2 and 3.

**record=nameref**

This setting is like `record=only` but provides extra information that allows the associated title to be used instead of the location number and provides better support for hyperlinked locations.

**record=hybrid**

This setting indicates a hybrid approach where `bib2gls` is used to fetch entries from one or more `bib` files but `makeindex` or `xindy` are used for the indexing. This requires a more complicated document build and isn't recommended.

**equations**=*<boolean>*

*default: true; initial: false*

This option is only available with `glossaries-extra`. If true, this option will cause the default location counter to automatically switch to equation when inside a numbered equation environment.

**floats**=*<boolean>*

*default: true; initial: false*

This option is only available with `glossaries-extra`. If true, this option will cause the default location counter to automatically switch to the corresponding counter when inside a float. (Remember that with floats it's the `\caption` command that increments the counter so the location will be incorrect if an entry is indexed within the float before the caption.)

**indexcounter**

This option is only available with `glossaries-extra`. This valueless option is primarily intended for use with `bib2gls` and `hyperref` allowing the page location hyperlink target to be set to the relevant point within the page (rather than the top of the page). Unexpected results will occur with other indexing methods. See `glossaries-extra` manual for further details.

## 2.5. Sorting Options

This section is mostly for Options 2 and 3. Only the `sort` and `order` options are applicable for Option 1.

`glossaries-extra`

With Options 4, 5 and 6, only `sort=none` is applicable (and this is automatically implemented by `record=only` and `record=nameref`). With `bib2gls`, the sort method is provided in the optional argument of `\GlsXtrLoadResources` not with

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the `sort` package option. There's no sorting with Options 5 and 6.

**`sanitizesort`**= $\langle$ *boolean* $\rangle$

*default: true; initial: varies*

This option determines whether or not to sanitize the sort value when writing to the external indexing file. For example, suppose you define an entry as follows:

```
\newglossaryentry{hash}{name={\#}, sort={},  
description={hash symbol}}
```

The sort value (`()`) must be sanitized before writing it to the indexing file, otherwise  $\LaTeX$  will try to interpret it as a parameter reference. If, on the other hand, you want the sort value expanded, you need to switch off the sanitization. For example, suppose you do:

```
\newcommand{\mysortvalue}{AAA}  
\newglossaryentry{sample}{%  
name={sample},  
sort={\mysortvalue},  
description={an example}}
```

and you actually want `\mysortvalue` expanded, so that the entry is sorted according to AAA, then use the package option `sanitizesortfalse`.

The default for Options 2 and 3 is `sanitizesort=true`, and the default for Option 1 is `sanitizesort=false`.

**`preprocess-sort`**= $\langle$ *boolean* $\rangle$

*default: true*

This option is designed for use with Option 1. Regardless of the value, this option will switch off sanitization of the sort value but will also inhibit the initial field expansion for `sort` (unlike `sanitizesort=false`).

The next part only affects Option 1 with `sort=standard`: If true, the sort value will be processed using the `datatool`-base sort preprocessing function when the entry is defined (default). If false, the sort value won't be processed until just before the list is sorted. The preprocessing function requires `datatool v3.0+` (ideally `v3.2+`).

If you switch off preprocessing before the entries are defined and then switch it on after they have been defined, the value won't be expanded when the localisation support is implemented (for word or letter sort). This may prevent the localisation support from

working correctly.

**sort**= $\langle value \rangle$

*initial:* **standard**

If you use Options 2 or 3, this package option is the only way of specifying how to sort the glossaries. Only Option 1 allows you to specify sort methods for individual glossaries via the `sort` key in the optional argument of `\printnoidxglossary`. If you have multiple glossaries in your document and you are using Option 1, only use the package options `sort=def` or `sort=use` if you want to set this sort method for *all* your glossaries.

**sort=none**

This setting is only for documents that don't use `\makeglossaries` (Options 2 or 3) or `\makenoidxglossaries` (Option 1). It omits the code used to sanitize or escape the sort value, since it's not required. This can help to improve the document build speed, especially if there are a large number of entries. This setting may be used if no glossary is required or if `\printunsrtglossary` is used (Option 5). If you want an unsorted glossary with `bib2gls`, use the resource option `sort=none` instead. This option will redefine `\glsindexingsetting` to `none`.

This option will still assign the `sort` key to its default value. It simply doesn't process it. If you want the `sort` key set to an empty value instead, use `sort=clear` instead.

**sort=clear**

As `sort=none` but sets the `sort` key to an empty value. This will affect letter group formations in `\printunsrtglossary` with Option 5. See the `glossaries-extra` manual for further details. This option will redefine `\glsindexingsetting` to `none`. The remaining `sort` options listed below don't change `\glsindexingsetting`.

**sort=def**

Entries are sorted in the order in which they were defined. With Option 1, this is implemented by simply iterating over all defined entries so there's no actual sorting. With Options 2 and 3, sorting is always performed (since that's the purpose of `makeindex` and `xindy`). This means that to obtain a list in order of definition, the `sort` key is assigned a numeric value that's incremented whenever a new entry is defined.



**sort=use**

Entries are sorted according to the order in which they are used in the document. With Option 1, this order is obtained by iterating over a list that's formed with the `aux` file is input at the start of the document. With Options 2 and 3, again the `sort` key is assigned a numeric value, but in this case the value is incremented, and the `sort` key is assigned, the first time an entry is indexed.

Both `sort=def` and `sort=use` zero-pad the sort key to a six digit number using:

```
\glssortnumberfmt {<number>}
```

This can be redefined, if required, before the entries are defined (in the case of `sort=def`) or before the entries are used (in the case of `sort=use`).

Note that the group styles (such as `listgroup`) are incompatible with the `sort=use` and `sort=def` options.

**sort=standard**

Entries are sorted according to the value of the `sort` key used in `\newglossaryentry` (if present) or the `name` key (if `sort` key is missing).

When the standard sort option is in use, you can hook into the sort mechanism by redefining:

```
\glsprestandardsort {<sort cs>} {<type>} {<entry-label>}
```

where `<sort cs>` is a temporary control sequence that stores the sort value (which was either explicitly set via the `sort` key or implicitly set via the `name` key) before any escaping of the `makeindex/xindy` special characters is performed. By default `\glsprestandardsort` just does:

```
\glsdosanitizesort
```

which sanitizes `<sort cs>` if `sanitizesort=true` (or does nothing if `sanitizesort=false`).

The other arguments, `<type>` and `<entry-label>`, are the glossary type and the entry label for the current entry. Note that `<type>` will always be a control sequence, but `<label>` will be in the form used in the first argument of `\newglossaryentry`.

Redefining `\glsprestandardsort` won't affect any entries that have already been defined and will have no effect at all if you use another `sort` setting.

**Example 11: Mixing Alphabetical and Order of Definition Sorting**

Suppose I have three glossaries: `main`, `acronym` and `notation`, and let's suppose I want the `main` and `acronym` glossaries to be sorted alphabetically, but the `notation` type should be sorted in order of definition.

For Option 1, the `sort` option can be used in `\printnoidxglossary`:

```
\printnoidxglossary[sort=word]
\printnoidxglossary[type=acronym,sort=word]
\printnoidxglossary[type=notation,sort=def]
```

For Options 2 or 3, I can set `sort=standard` (which is the default), and I can either define all my `main` and `acronym` entries, then redefine `\glsprestandardsort` to set `\sortcs` to an incremented integer, and then define all my `notation` entries. Alternatively, I can redefine `\glsprestandardsort` to check for the glossary type and only modify `\sortcs` if `\type` is `notation`.

The first method can be achieved as follows:

```
\newcounter{sortcount}

\renewcommand{\glsprestandardsort}[3]{%
  \stepcounter{sortcount}%
  \edef#1{\glsortnumberfmt{\arabic{sortcount}}}%
}
```

The second method can be achieved as follows:

```
\newcounter{sortcount}

\renewcommand{\glsprestandardsort}[3]{%
  \ifdefstring{#2}{notation}%
  {%
    \stepcounter{sortcount}%
    \edef#1{\glsortnumberfmt{\arabic{sortcount}}}}
  %
}%
{%
  \glsdosanitizesort
}%
}
```

(`\ifdefstring` is defined by the `etoolbox` package, which is automatically loaded by `glossaries`.)  
For a complete document, see the sample file `sampleSort.tex`.

### Example 12: Customizing Standard Sort (Options 2 or 3)

Suppose you want a glossary of people and you want the names listed as  $\langle first-name \rangle \langle surname \rangle$  in the glossary, but you want the names sorted by  $\langle surname \rangle, \langle first-name \rangle$ . You can do this by defining a command called, say, `\name{first-name}{surname}` that you can use in the `name` key when you define the entry, but hook into the standard sort mechanism to temporarily redefine `\name` while the sort value is being set.

First, define two commands to set the person's name:

```
\newcommand{\sortname}[2]{#2, #1}
\newcommand{\textname}[2]{#1 #2}
```

and `\name` needs to be initialised to `\textname`:

```
\let\name\textname
```

Now redefine `\glsprestandardsort` so that it temporarily sets `\name` to `\sortname` and expands the sort value, then sets `\name` to `\textname` so that the person's name appears as  $\langle first-name \rangle \langle surname \rangle$  in the text:

```
\renewcommand{\glsprestandardsort}[3]{%
\let\name\sortname
\edef#1{\expandafter\expandonce\expandafter{#1}}%
\let\name\textname
\glsdosanitizesort
}
```

(The somewhat complicate use of `\expandafter` etc helps to protect fragile commands, but care is still needed.)

Now the entries can be defined:

```
\newglossaryentry{joebloggs}name={\name{Joe}{Bloggs}}
,
description={some information about Joe Bloggs}
```

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```
\newglossaryentry{johnsmith}{name={\name{John}
{Smith}},
  description={some information about John Smith}}
```

For a complete document, see the sample file `samplePeople.tex`.

**order**

This may take two values:

**order=word**

Word order (“sea lion” before “seal”).

**order=letter**

Letter order (“seal” before “sea lion”).

Note that with Options 2 and 3, the `order` option has no effect if you explicitly call `makeindex` or `xindy`.

If you use Option 1, this setting will be used if you use `sort=standard` in the optional argument of `\printnoidxglossary`:

```
\printnoidxglossary[sort=standard]
```

Alternatively, you can specify the order for individual glossaries:

```
\printnoidxglossary[sort=word]
\printnoidxglossary[type=acronym, sort=letter]
```

**bib2gls**

With `bib2gls`, use the `break-at` option in `\GlsXtrLoadResources` instead of `order`.

**makeindex**

Option 2

The glossary information and indexing style file will be written in `makeindex` format. If you use `makeglossaries` or `makeglossaries-lite`, it will automatically detect that it needs to call `makeindex`. If you don't use `makeglossaries`, you need to remember to use `makeindex` not `xindy`. The indexing style file will be given a `ist` extension.

You may omit this package option if you are using Option 2 as this is the default. It's available in case you need to override the effect of an earlier occurrence of `xindy` in the package option list.

**xindy**={*options*}

Option 3

The glossary information and indexing style file will be written in `xindy` format. If you use `makeglossaries`, it will automatically detect that it needs to call `xindy`. If you don't use `makeglossaries`, you need to remember to use `xindy` not `makeindex`. The indexing style file will be given a `xdy` extension.

This package option may additionally have a value that is a `<key>=<value>` comma-separated list to override some default options. Note that these options are irrelevant if you explicitly call `xindy`. See §14 for further details on using `xindy` with the `glossaries` package.

You can test if this option has been set using the conditional:

`\ifglxindy <true>\else <false>\fi` *initial: \iffalse*

Note that this conditional should not be changed after `\makeglossaries` otherwise the syntax in the glossary files will be incorrect. If this conditional is false, it means that any option other than Option 3 is in effect. (If you need to know which indexing option is in effect, check the definition of `\glxindexingsetting` instead.)

The `<options>` value may be omitted. If set, it should be a `<key>=<value>` list, where the following three options may be used:

**language**={*value*}

The `language` module to use, which is passed to `xindy` with the `-L` switch. The default is obtained from `\language` but note that this may not be correct as `xindy` has a different labelling system to `babel` and `polyglossia`.

The `makeglossaries` script has a set of mappings of known `babel` language names to `xindy` language names, but new `babel` dialect names may not be included. The `makeglossaries-lite` script doesn't have this feature (but there's no benefit in use `makeglossaries-lite` instead of `makeglossaries` when using `xindy`). The `automake` option that calls `xindy` explicitly also doesn't use any mapping.

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However, even if the appropriate mapping is available, `\language` may still not expand to the language required for the glossary. In which case, you need to specify the correct `xindy` language. For example:

```
\usepackage[brazilian,english]{babel}
\usepackage[xindy=language=portuguese]{glossaries}
```

If you have multiple glossaries in different languages, use `\GlsSetXdyLanguage` to set the language for each glossary.

```
codepage={\langle value \rangle}
```

The `codepage` is the file encoding for the `xindy` files and is passed to `xindy` with the `-C` switch. The default `codepage` is obtained from `\inputencodingname`. As from v4.50, if `\inputencodingname` isn't defined, UTF-8 is assumed (which is identified by the label `utf8`). If this is incorrect, you will need to use the `codepage` option but make sure you use the `xindy` `codepage` label (for example, `cp1252` or `latin9`). See the `xindy` documentation for further details.

The `codepage` may not simply be the encoding but may include a sorting rule, such as `ij-as-y-utf8` or `din5007-utf8`. See §14.2.

For example:

```
\usepackage[xindy=language=english,codepage=cp1252]
{glossaries}
```

```
glsnumbers={\langle boolean \rangle} default: true; initial: true
```

If true, this option will define the number group in the `xindy` style file, which by default will be placed before the “A” letter group. If you don't want this letter group, set this option to false. Note that the “A” letter group is only available with Latin alphabets, so if you are using a non-Latin alphabet, you will either need to switch off the number group or identify the letter group that it should come before with `\GlsSetXdyNumberGroupOrder`.

```
xindygloss
```

Option 3

This is equivalent to `xindy` without any value supplied and may be used as a document class

## 2. Package Options

option. The language and code page can be set via `\GlsSetXdyLanguage` and `\GlsSetXdyCodePage` if the defaults are inappropriate (see §14.2.)

### `xindynoglsnumbers`

Option 3

This is equivalent to `xindy={glsnumbers=false}` and may be used as a document class option.

### `automake=<value>`

default: **immediate**; initial: **false**

This option will attempt to use the shell escape to run the appropriate indexing application. You will still need to run  $\text{\LaTeX}$  twice. For example, if the document in the file `myDoc.tex` contains:

```
\usepackage[automake]{glossaries}
\makeglossaries
\newglossaryentry{sample}{name={sample},description=
{an example}}
\begin{document}
\gls{sample}
\printglossaries
\end{document}
```

Then the document build is now:

```
pdflatex myDoc
pdflatex myDoc
```

This will run `makeindex` on every  $\text{\LaTeX}$  run. If you have a large glossary with a complex document build, this can end up being more time-consuming than simply running `makeindex` (either explicitly or via `makeglossaries`) the minimum number of required times.

Note that you will need to have the shell escape enabled (restricted mode for a direct call to `makeindex` and unrestricted mode for `xindy`, `makeglossaries` or `makeglossaries-lite`). If you switch this option on and you are using  $\text{\LuaTeX}$ , then the `shellesc` package will be loaded.

If this option doesn't seem to work, open the `log` file in your text editor and search for “`runsystem`”. For example, if the document is in a file called `myDoc.tex` and it has:

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```
\usepackage[automake]{glossaries}
```

and you run  $\LaTeX$  in restricted mode, then if call was successful, you should find the following line in the file `myDoc.log`:

```
runsystem(makeindex -s myDoc.ist -t myDoc.glg -o  
myDoc.gls myDoc.glo)...executed safely (allowed).
```

The parentheses immediately after “`runsystem`” show how the command was called. The bit after the three dots `...` indicates whether or not the command was run and, if so, whether it was successful. In the above case, it has “executed safely (allowed)”. This means that it was allowed to run in restricted mode because `makeindex` is on the list of trusted applications.

If you change the package option to:

```
\usepackage[automake=makegloss]{glossaries}
```

and rerun  $\LaTeX$  in restricted mode, then the line in `myDoc.log` will now be:

```
runsystem(makeglossaries myDoc)...disabled  
(restricted).
```

This indicates that an attempt was made to run `makeglossaries` (rather than a direct call to `makeindex`), which isn’t permitted in restricted mode. There will be a similar message with `automake=lite` or if the `xindy` option is used. These cases require the unrestricted shell escape.

Think carefully before enabling unrestricted mode. Do you trust all the packages your document is loading (either explicitly or implicitly via another package)? Do you trust any code that you have copied and pasted from some third party? First compile your document in restricted mode (or with the shell escape disabled) and search the `log` file for “`runsystem`” to find out exactly what system calls are being attempted.

If the document is compiled in unrestricted mode, the corresponding line in the `log` file should now be:

```
runsystem(makeglossaries myDoc)...executed.
```

This means that `makeglossaries` was run. If it has “failed” instead of “executed”, then it means there was a fatal error. Note that just because the `log` file has “executed” doesn’t mean



## 2. Package Options

that the application ran without a problem as there may have been some warnings or non-fatal errors. If you get any unexpected results, check the indexing application's transcript file (for example, the `glg` file, `myDoc.glg` in the above, for the `main` glossary).

**`automake=false`**

No attempt is made to use the shell escape.

**`automake=true`**

*alias:* **`delayed`** 

This is now a deprecated synonym for `automake=delayed`. This used to be the default if the value to `automake` wasn't supplied, but the default switched to the less problematic `automake=immediate` in version 4.50.

**`automake=delayed`**

A direct call to `makeindex` or `xindy` (as appropriate) for each non-empty glossary will be made at the end of the document using a delayed write to ensure that the glossary files are complete. (It's necessary to delay writing to the indexing files in order to ensure that `\thepage` is correct.) Unfortunately, there are situations where the delayed write never occurs, for example, if there are floats on the final page. In those cases, it's better to use an immediate write (any of the following options).

**`automake=immediate`**

A direct call to `makeindex` or `xindy` (as appropriate) for each non-empty glossary will be made at the start of `\makeglossaries` using an immediate write. This ensures that the indexing files are read by the indexing application before they are opened (which will clear their content).

If you are using `xindy`, then `automake=makegloss` is a better option than this one. Either way, you will need Perl and the unrestricted mode, but with `makeglossaries` you get the benefit of the language mappings and diagnostics.

**`automake=makegloss`**

A call to `makeglossaries` will be made at the start of `\makeglossaries` using an immediate write if the `aux` file exists. On the one hand, it's better to use `makeglossaries` as it has some extra diagnostic functions, but on the other hand it both requires Perl and the unrestricted shell escape.

**`automake=lite`**

A call to `makeglossaries-lite` will be made at the start of `\makeglossaries`

using an immediate write if the `aux` file exists. There's little benefit in this option over `automake=immediate` and it has the added disadvantage of requiring the unrestricted mode.

**automakegloss**

alias: **makegloss**

This valueless option is equivalent to `automake=makegloss`.

**automakeglosslite**

alias: **lite**

This valueless option is equivalent to `automake=lite`.

**disablemakegloss**

This valueless option indicates that `\makeglossaries` and `\makenoidxglossaries` should be disabled. This option is provided in the event that you have to use a class or package that disregards the advice in §1.3 and automatically performs `\makeglossaries` or `\makenoidxglossaries` but you don't want this. (For example, you want to use a different indexing method or you want to disable indexing while working on a draft document.)

Naturally, if there's a particular reason why the class or package insists on a specific indexing method, for example, it's an editorial requirement, then you will need to abide by that decision.

This option may be passed in the standard document class option list or passed using `\PassOptionsToPackage` before `glossaries` is loaded. Note that this does nothing if `\makeglossaries` or `\makenoidxglossaries` has already been used whilst enabled.

**restoremakegloss**

Cancels the effect of `disablemakegloss`. This option may be used in `\setupglossaries`. It issues a warning if `\makeglossaries` or `\makenoidxglossaries` has already been used whilst enabled. Note that this option removes the check for `\nofiles`, as this option is an indication that the output files are actually required.

For example, suppose the class `customclass.cls` automatically loads `glossaries` and does `\makeglossaries` but you need an extra glossary, which has to be defined before `\makeglossaries`, then you can do:

```
\documentclass[disablemakegloss]{customclass}
\newglossary*{functions}{Functions}
\setupglossaries{restoremakegloss}
\makeglossaries
```

or

```

\PassOptionsToPackage{disablemakegloss}{glossaries}
\documentclass{customclass}
\newglossary*{functions}{Functions}
\setupglossaries{restoremakegloss}
\makeglossaries

```

Note that restoring these commands doesn't necessarily mean that they can be used. It just means that their normal behaviour given the current settings will apply. For example, if you use the `record=only` or `record=nameref` options with `glossaries-extra` then you can't use `\makeglossaries` or `\makenoidxglossaries` regardless of `restoremakegloss`.

## 2.6. Glossary Type Options

```
nohypertypes={list}
```

Use this option if you have multiple glossaries and you want to suppress the entry hyperlinks for a particular glossary or glossaries. The value of this option should be a comma-separated list of glossary types where `\gls` etc shouldn't have hyperlinks by default. Make sure you enclose the value in braces if it contains any commas. Example:

```

\usepackage[acronym,nohypertypes={acronym,notation}]
{glossaries}
\newglossary[nlg]{notation}{not}{ntn}{Notation}

```

As illustrated above, the glossary doesn't need to exist when you identify it in `nohypertypes`.

The values must be fully expanded, so **don't** try, for example, `nohypertypes=\acronymtype`.

You may also use:

```
\GlsDeclareNoHyperList{list}
```

instead or additionally. See §5.1 for further details.

glossaries-extra

The `glossaries-extra` package has the `nohyper` category attribute which will suppress the hyperlink for entries with the given category, which can be used as an alternative to suppressing the hyperlink on a per-glossary basis.

**nomain**

This suppresses the creation of the `main` glossary and associated `glo` file, if unrequired. Note that if you use this option, you must create another glossary in which to put all your entries (either via the `acronym` (or `acronyms`) package option described in §2.7 or via the `symbols`, `numbers` or `index` options described in §2.9 or via `\newglossary` described in §9). Even if you don't intend to display the glossary, a default glossary is still required.

If you don't use the `main` glossary and you don't use this option to suppress its creation, `makeglossaries` will produce a warning:

```
Warning: File '<filename>.glo' is empty.
Have you used any entries defined in glossary
'main'?
Remember to use package option 'nomain' if
you don't want to use the main glossary.
```

If you did actually want to use the `main` glossary and you see this warning, check that you have referenced the entries in that glossary via commands such as `\gls`.

**symbols**

This valueless option defines a new glossary type with the label `symbols` via

```
\newglossary[slg]{symbols}{sls}{slo}{\glssymbols-
groupname}
```

It also defines

```
\printsymbols[<options>]
```

which is a synonym for

```
\printglossary[type=symbols,<options>]
```

If you use Option 1, you need to use:

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```
\printnoidxglossary[type=symbols, <options>]
```

to display the list of symbols.



Remember to use the `nomain` package option if you're only interested in using this `symbols` glossary and don't intend to use the `main` glossary.

**glossaries-extra**

The `glossaries-extra` package has a slightly modified version of this option which additionally provides `\glsxtrnewsymbol` as a convenient shortcut method for defining symbols. See the `glossaries-extra` manual for further details.



### **numbers**

This valueless option defines a new glossary type with the label `numbers` via

```
\newglossary[nlg]{numbers}{nls}{nlo}{\glsnumbers-  
groupname}
```

It also defines



```
\printnumbers[<options>]
```

which is a synonym for

```
\printglossary[type=numbers, <options>]
```

If you use Option 1, you need to use:

```
\printnoidxglossary[type=numbers, <options>]
```

to display the list of numbers.



Remember to use the `nomain` package option if you're only interested in using this `numbers` glossary and don't intend to use the `main` glossary.

glossaries-extra

The `glossaries-extra` package has a slightly modified version of this option which additionally provides `\glsxtrnewnumber` as a convenient shortcut method for defining numbers. See the `glossaries-extra` manual for further details.

## index

This valueless option defines a new glossary type with the label `index` via

```
\newglossary[ilg]{index}{ind}{idx}{\indexname}
```

It also defines

```
\newterm[⟨key=value list⟩]{⟨entry-label⟩}
```

which is a synonym for

```
\newglossaryentry{⟨entry-label⟩}{type={index}, name={entry-label},
description={\nopostdesc}, ⟨options⟩}
```

and

```
\printindex[⟨options⟩] v4.02+
```

which is a synonym for

```
\printglossary[type=index, ⟨options⟩]
```

If you use Option 1, you need to use:

```
\printnoidxglossary[type=index, ⟨options⟩]
```

to display this glossary.

Remember to use the `nomain` package option if you're only interested in using this `index` glossary and don't intend to use the `main` glossary. Note that you can't mix this option with `\index`. Either use `glossaries` for the indexing or use a custom indexing package, such as `makeidx`, `imakeidx`. (You can, of course, load one of those packages and load `glossaries` without the `index` package option.)

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Since the index isn't designed for terms with descriptions, you might also want to disable the hyperlinks for this glossary using the package option `nohypertypes=index` or the command

```
\GlsDeclareNoHyperList{index}
```

However, it can also be useful to link to the index in order to look up the term's location list to find other parts of the document where it might be used. For example, this manual will have a hyperlink to the index for general terms, such as “table of contents”, or general commands, such as `\index`, that aren't defined anywhere in the document.

The example file `sample-index.tex` illustrates the use of the `index` package option.

```
noglossaryindex
```

This valueless option switches off `index` if `index` has been passed implicitly (for example, through global document options). This option can't be used in `\setupglossaries`.

### 2.7. Acronym and Abbreviation Options

```
acronym=<boolean> default: true; initial: false
```

If true, this creates a new glossary with the label `acronym`. This is equivalent to:

```
\newglossary[alg]{acronym}{acr}{acn}{\acronymname}
```

It will also provide (if not already defined)

```
\printacronyms[<options>]
```

that's equivalent to

```
\printglossary[type=acronym, <options>]
```

If you are using Option 1, you need to use

```
\printnoidxglossary[type=acronym, <options>]
```

to display the list of acronyms.

If the `acronym` package option is used, `\acronymtype` is set to `acronym` otherwise it is set to `\glsdefaulttype` (which is normally the `main` glossary.) Entries that are

## 2. Package Options

defined using `\newacronym` are placed in the glossary whose label is given by `\acronymtype`, unless another glossary is explicitly specified with the `type` key.



Remember to use the `nomain` package option if you're only interested in using this `acronym` glossary. (That is, you don't intend to use the `main` glossary.)

### glossaries-extra

The `glossaries-extra` extension package comes with an analogous `abbreviations` option, which creates a new glossary with the label `abbreviations` and sets the command `\glsxtrabbrvtype` to this. If the `acronym` option hasn't also been used, then `\acronymtype` will be set to `\glsxtrabbrvtype`. This enables both `\newacronym` and `\newabbreviation` to use the same glossary.

Make sure you have at least v1.42 of `glossaries-extra` if you use the `acronym` (or `acronyms`) package option with the extension package to avoid a bug that interferes with the `abbreviation` style.



### acronyms

This is equivalent to `acronym=true` and may be used in the document class option list.



### abbreviations

This valueless option provided by `glossaries-extra` creates a new glossary type with the label `abbreviations` using:

```
\newglossary[glg-abr]{abbreviations}{gls-abr}{glo-abr}{\abbreviationsname}
```

The label can be accessed with `\glsxtrabbrvtype`, which is analogous to `\acronymtype`. See `glossaries-extra` manual for further details.



### acronymlists={⟨label-list⟩}

This option is used to identify the glossaries that contain acronyms so that they can have their entry format adjusted by `\setacronymstyle`. (It also enables `\forallacronyms` to work.)

By default, if the list is empty when `\setacronymstyle` is used then it will automatically add `\acronymtype` to the list.

If you have other lists of acronyms, you can specify them as a comma-separated list in the value of `acronymlists`. For example, if you use the `acronym` package option but you also want the `main` glossary to also contain a list of acronyms, you can do:



```
\usepackage[acronym,acronymlists=main]{glossaries}
```

No check is performed to determine if the listed glossaries exist, so you can add glossaries you haven't defined yet. For example:

```
\usepackage[acronym,acronymlists={main,acronym2}]
{glossaries}
\newglossary[alg2]{acronym2}{acr2}{acn2}%
{Statistical Acronyms}
```

You can use

```
\DeclareAcronymList{<list>}
```

instead of or in addition to the `acronymlists` option. This will add the glossaries given in `<list>` to the list of glossaries that are identified as lists of acronyms. To replace the list of acronym lists with a new list use:

```
\SetAcronymLists{<list>}
```

If the list is changed after `\setacronymstyle` then it will result in inconsistencies in the formatting. If this does happen, and is for some reason unavoidable (such as `\setacronymstyle` occurring in a package that loads `glossaries`), you will need to set the entry format to match the style:

```
\DeclareAcronymList{<glossary-label>}
\defglsentryfmt[<glossary-label>]{\GlsUseAcrEntryDispStyle}
{<style-name>}
```

You can determine if a glossary has been identified as being a list of acronyms using:

```
\glsIfListOfAcronyms{<glossary-label>}{<true>}{<false>}
```

#### glossaries-extra

This option and associated commands are incompatible with `glossaries-extra`'s `abbreviation` mechanism. Lists of `abbreviations` don't need identifying.

```
shortcuts={ (boolean) }
```

*default: false; initial: false*

This option provides shortcut commands for acronyms. See §6 for further details. Alternatively you can use:

```
\DefineAcronymSynonyms
```

**glossaries-extra**

The `glossaries-extra` package provides additional shortcuts.

## 2.8. Deprecated Acronym Style Options

The package options listed in this section were deprecated in version 4.02 (2013-12-05) and have now been removed. You will need to use `rollback` with them (see §1.1). These options started generating warnings in version 4.47 (2021-09-20) and as from version 4.50 will now generate an error unless you use `rollback`.

If you want to change the acronym style, use `\setacronymstyle` instead. See §6 for further details.

```
description
```

Deprecated

This option changed the definition of `\newacronym` to allow a description. This option may be replaced by:

```
\setacronymstyle{long-short-desc}
```

or (with `smallcaps`)

```
\setacronymstyle{long-sc-short-desc}
```

or (with `smaller`)

```
\setacronymstyle{long-sm-short-desc}
```

or (with `footnote`)

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```
\setacronymstyle{footnote-desc}
```

or (with `footnote` and `smallcaps`)

```
\setacronymstyle{footnote-sc-desc}
```

or (with `footnote` and `smaller`)

```
\setacronymstyle{footnote-sm-desc}
```

or (with `dua`)

```
\setacronymstyle{dua-desc}
```

**smallcaps**

Deprecated

This option changed the definition of `\newacronym` and the way that acronyms are displayed. This option may be replaced by:

```
\setacronymstyle{long-sc-short}
```

or (with `description`)

```
\setacronymstyle{long-sc-short-desc}
```

or (with `description` and `footnote`)

```
\setacronymstyle{footnote-sc-desc}
```

**smaller**

Deprecated

This option changed the definition of `\newacronym` and the way that acronyms are displayed. This option may be replaced by:

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```
\setacronymstyle{long-sm-short}
```

or (with `description`)

```
\setacronymstyle{long-sm-short-desc}
```

or (with `description` and `footnote`)

```
\setacronymstyle{footnote-sm-desc}
```

**footnote**

Deprecated

This option changed the definition of `\newacronym` and the way that acronyms are displayed. This option may be replaced by:

```
\setacronymstyle{footnote}
```

or (with `smallcaps`)

```
\setacronymstyle{footnote-sc}
```

or (with `smaller`)

```
\setacronymstyle{footnote-sm}
```

or (with `description`)

```
\setacronymstyle{footnote-desc}
```

or (with `smallcaps` and `description`)

```
\setacronymstyle{footnote-sc-desc}
```

or (with `smaller` and `description`)

```
\setacronymstyle{footnote-sm-desc}
```

**dua**

Deprecated

This option changed the definition of `\newacronym` so that acronyms are always expanded. This option may be replaced by:

```
\setacronymstyle{dua}
```

or (with `description`)

```
\setacronymstyle{dua-desc}
```

## 2.9. Other Options

Other available options that don't fit any of the above categories are described below.

**accsupp**

Only available with `glossaries-extra`, this option loads the `glossaries-accsupp` package, which needs to be loaded either before `glossaries-extra` or while `glossaries-extra` is loaded to ensure both packages are properly integrated.

**prefix**

Only available with `glossaries-extra`, this option loads the `glossaries-prefix` package.

**nomissingglostext**=*<boolean>**default: true; initial: false*

This option may be used to suppress the boilerplate text generated by `\printglossary` if the indexing file is missing.

**mfirstuc**=*<value>**initial: unexpanded*

The value may be either `expanded` or `unexpanded` and performs the same function as `mfirstuc`'s `expanded` and `unexpanded` package options. Note that there's no value corresponding to `mfirstuc`'s other package option.

## 2. Package Options

The default is `mfirstuc=unexpanded` to safeguard against glossary styles that convert the description to sentence case. With older versions of `mfirstuc` (pre v2.08), fragile commands in the description would not have been affected by the case change, but now, if the entire description is passed to `\MFUsentencecase`, it will be expanded, which could break existing documents.

As from glossaries v4.58, the `mfirstuc` option will redefine `\glsmakefirstuc` as a long command to allow paragraph breaks.

**`compatible-2.07`**

Deprecated

Compatibility mode for old documents created using version 2.07 or below. This option is now only available with `rollback` (see §1.1).

**`compatible-3.07`**

Deprecated

Compatibility mode for old documents created using version 3.07 or below. This option is now only available with `rollback` (see §1.1).

**`kernelglossredefs`**=*<value>*

*default: true; initial: false*

As a legacy from the precursor `glossary` package, the standard glossary commands provided by the L<sup>A</sup>T<sub>E</sub>X kernel (`\makeglossary` and `\glossary`) are redefined in terms of the `glossaries` package's commands. However, they were never documented in this user manual, and the conversion guide ("Upgrading from the `glossary` package to the `glossaries` package" (`glossary2glossaries.pdf`)) explicitly discourages their use.

The redefinitions of these commands was removed in v4.10, but unfortunately it turned out that some packages had hacked the internal commands provided by `glossaries` and no longer worked when they were removed, so they were restored in v4.41 with this option to undo the effect with `kernelglossredefs=true` as the default. As from v4.50, the default is now `kernelglossredefs=false`.

**`kernelglossredefs=false`**

Don't redefine `\glossary` and `\makeglossary`. If they have been previously redefined by `kernelglossredefs` their original definitions (at the time `glossaries` was loaded) will be restored.

```
kernelglossredefs=true
```

Redefine `\glossary` and `\makeglossary`, but their use will trigger warnings.

```
kernelglossredefs=nowarn
```

Redefine `\glossary` and `\makeglossary` without any warnings.

The only glossary-related commands provided by the L<sup>A</sup>T<sub>E</sub>X kernel are `\makeglossary` and `\glossary`. Other packages or classes may provide additional glossary-related commands or environments that conflict with glossaries (such as `\printglossary` and `theglossary`). These non-kernel commands aren't affected by this package option, and you will have to find some way to resolve the conflict if you require both glossary mechanisms. (The `glossaries` package will override the existing definitions of `\printglossary` and `theglossary`.)

In general, if possible, it's best to stick with just one package that provides a glossary mechanism. (The `glossaries` package does check for the `doc` package and patches `\PrintChanges`.)

## 2.10. Setting Options After the Package is Loaded

Some of the options described above may also be set after the `glossaries` package has been loaded using

```
\setupglossaries{<options>}
```

The following package options **can't** be used in `\setupglossaries`: `xindy`, `xindy-gloss`, `xindynoglsnumbers`, `makeindex`, `nolong`, `nosuper`, `nolist`, `notree`, `nostyles`, `nomain`, `compatible-2.07`, `translate`, `notranslate`, `languages`, `acronym`. These options have to be set while the package is loading, except for the `xindy` sub-options which can be set using commands like `\GlsSetXdyLanguage` (see §14 for further details).

If you need to use this command, use it as soon as possible after loading `glossaries` otherwise you might end up using it too late for the change to take effect. If you try changing the `sort` option after you have started to define entries, you may get unexpected results.

`glossaries-extra`

With `glossaries-extra`, use `\glossariesextrasetup` instead.

## 3. Setting Up

In the preamble you need to indicate which method you want to use to generate the glossary (or glossaries). The available options with both `glossaries` and `glossaries-extra` are summarized in §1.3. This chapter documents Options 1, 2 and 3, which are provided by the base package. See the `glossaries-extra` and `bib2gls` manuals for the full documentation of the other options.

If you don't need to display any glossaries, for example, if you are just using the `glossaries` package to enable consistent formatting, then skip ahead to §4.

### 3.1. Option 1

The command

```
\makenoidxglossaries
```

must be placed in the document preamble. This sets up the internal commands required to make Option 1 work. **If you omit `\makenoidxglossaries` none of the glossaries will be displayed.**

### 3.2. Options 2 and 3

The command

```
\makeglossaries
```

must be placed in the document preamble in order to create the customised `makeindex` (`ist`) or `xindy` (`xdy`) style file (for Options 2 or 3, respectively) and to ensure that glossary entries are written to the appropriate output files. **If you omit `\makeglossaries` none of the indexing files will be created.**

`glossaries-extra`

If you are using `glossaries-extra`, `\makeglossaries` has an optional argument that allows you to have a hybrid of Options 1 or 2 or Options 1 or 3. See `glossaries-extra` manual for further details.





Note that some of the commands provided by the `glossaries` package must not be used after `\makeglossaries` as they are required when creating the customised style file. If you attempt to use those commands after `\makeglossaries` you will generate an error. Similarly, there are some commands that must not be used before `\makeglossaries` because they require the associated indexing files to be open, if those files should be created. These may not necessarily generate an error or warning as a different indexing option may be chosen that doesn't require those files (such as Options 5 or 6).

The `\makeglossaries` command internally uses:



```
\writeist
```

to create the custom `makeindex/xindy` style file. This command disables itself by setting itself to `\relax` so that it can only be used once. In general, there should be no reason to use or alter this command.

The default name for the customised style file is given by `\jobname.ist` (Option 2) or `\jobname.xdy` (Option 3). This name may be changed using:



```
\setStyleFile{<name>}
```

where `<name>` is the name of the style file without the extension.

There is a hook near the end of `\writeist` that can be set with:



```
\GlsSetWriteIstHook{<code>}
```

The `<code>` will be performed while the style file is still open, which allows additional content to be added to it. The associated write register is:



```
\glswrite
```

Note that this register is defined by `\writeist` to prevent an unnecessary write register from being created in the event that neither `makeindex` nor `xindy` is required.

If you use the `\GlsSetWriteIstHook` hook to write extra information to the style file, make sure you use the appropriate syntax for the desired indexing application. For example, with `makeindex`:



```
\GlsSetWriteIstHook{%
  \write\glswrite{page_precedence "arnAR"}%
  \write\glswrite{line_max 80}%}
```

### 3. Setting Up

```
}
```

This changes the page precedence and the maximum line length used by `makeindex`.

Remember that if you switch to `xindy`, this will no longer be valid code.

You can suppress the creation of the customised `xindy` or `makeindex` style file using:

```
\noist
```

This is provided in the event that you want to supply your own customized style file that can't be replicated with the available options and commands provided by the `glossaries` package. This command sets `\writeist` to `\relax` (making it do nothing) but will also update the `xindy` attribute list if applicable.

If you have a custom `xdy` file created when using `glossaries` version 2.07 (2010-0710) or below, you will need to use `rollback` and the `compatible-2.07` package option with it. However, that is now so dated and the  $\text{\LaTeX}$  kernel has changed significantly since that time that you may need to use a legacy distribution (see [Legacy Documents and TeX Live Docker Images](#)<sup>1</sup>).

Each glossary entry is assigned a number list that lists all the locations in the document where that entry was used. By default, the location refers to the page number but this may be overridden using the `counter` package option. The default form of the location number assumes a full stop compositor (for example, 1.2), but if your location numbers use a different compositor (for example, 1-2) you need to set this using

```
\glsSetCompositor{<character>}
```

{symbol} For example:

```
\glsSetCompositor{-}
```

This command must not be used after `\makeglossaries`. Note that with `makeindex`, any locations with the wrong compositor (or one that hasn't been correctly identified with `\glsSetCompositor`) will cause `makeindex` to reject the location with an invalid number/digit message. As from v4.50, `makeglossaries` will check for this message and attempt a correction, but this can result in an incorrectly formatted location in the number list. See the information about `makeglossaries`'s `-e` switch in §1.6.1 for further details.

An invalid page number will also cause `xindy` to fail with a “did not match any location-class” warning. This is also something that `makeglossaries` will check for and will provide diagnostic information, but it won't attempt to make any correction.

If you use Option 3, you can have a different compositor for page numbers starting with an upper case alphabetical character using:

---

<sup>1</sup>[dickimaw-books.com/blog/legacy-documents-and-tex-live-docker-images](http://dickimaw-books.com/blog/legacy-documents-and-tex-live-docker-images)

### 3. Setting Up

```
\glsSetAlphaCompositor{<character>}
```

This command is only available with `xindy`. For example, if you want number lists containing a mixture of A-1 and 2.3 style formats, then do:

```
\glsSetCompositor{.}\glsSetAlphaCompositor{-}
```

See §12 for further information about number lists.

## 4. Defining Glossary Entries

bib2gls

If you want to use `bib2gls`, entries must be defined in `bib` files using the syntax described in the `bib2gls` user manual.

Acronyms are covered in §6 but they use the same underlying mechanism as all the other glossary entries, so it's a good idea to read this chapter first. The keys provided for `\newglossaryentry` can also be used in the optional argument of `\newacronym`, although some of them, such as `first` and `plural`, interfere with the acronym styles.

All glossary entries must be defined before they are used, so it is better to define them in the document preamble to ensure this. In fact, some commands such as `\longnewglossaryentry` may only be used in the preamble. See §4.8 for a discussion of the problems with defining entries within the document instead of in the preamble. (The `glossaries-extra` package has an option that provides a restricted form of document definitions that avoids some of the issues discussed in §4.8.)

i

Option 1 enforces the preamble-only restriction on `\newglossaryentry`. Option 4 requires that definitions are provided in `bib` format. Options 5 and 6 work best with either preamble-only definitions or the use of the `glossaries-extra` package option `docdef=restricted`.

Bear in mind that with `docdef=restricted`, the entries must be defined before any entries are used, including when they are displayed in the glossary (for example, with `\printunsrtglossary`) or where they appear in the table of contents or list of floats. This is essentially the same problem as defining a robust command mid-document and using it in a section title or caption.

Only those entries that are indexed in the document (using any of the commands described in §5.1, §10 or §11) will appear in the glossary. See §8 to find out how to display the glossary.

New glossary entries are defined using the command:

⌘

```
\newglossaryentry{⟨entry-label⟩}{⟨key=value list⟩}
```

This is a short command, so values in `⟨key=value list⟩` can't contain any paragraph breaks. Take care to enclose values containing any commas (,) or equal signs (=) with braces to hide them from the `⟨key⟩=⟨value⟩` list parser.

If you have a long description that needs to span multiple paragraphs, use the following instead:

#### 4. Defining Glossary Entries

```
\longnewglossaryentry{⟨entry-label⟩}{⟨key=value list⟩}{⟨description⟩}
```

Note that this command may only be used in the preamble (regardless of `docdef`).

Be careful of unwanted spaces.

`\longnewglossaryentry` will remove trailing spaces in the description (via `\unskip`) but won't remove leading spaces. This command also appends `\nopostdesc` to the end of the description, which suppresses the post-description hook (since the terminating punctuation is more likely to be included in a multi-paragraph description). The `glossaries-extra` package provides a starred version of `\longnewglossaryentry` that doesn't append either `\unskip` or `\nopostdesc`.

There are also commands that will only define the entry if it hasn't already been defined:

```
\provideglossaryentry{⟨entry-label⟩}{⟨key=value list⟩}
```

and

```
\longprovideglossaryentry{⟨entry-label⟩}{⟨key=value list⟩}{⟨description⟩}
```

(These are both preamble-only commands.)

For all the above commands, the first argument, `⟨entry-label⟩`, must be a unique label with which to identify this entry. **This can't contain any non-expandable or fragile commands.** The reason for this restriction is that the label is used to construct internal commands that store the associated information (similarly to commands like `\label`) and therefore must be able to expand to a valid control sequence name. With modern  $\text{\LaTeX}$  kernels, you should now be able to use UTF-8 characters in the label.

Be careful of `babel`'s options that change certain punctuation characters, such as colon (`:`) or double-quote (`"`), to active characters.

The second argument, `⟨key=value list⟩`, is a `⟨key⟩=⟨value⟩` list that supplies the relevant information about this entry. There are two required fields: `description` and either `name` or `parent`. The description is set in the third argument of `\longnewglossaryentry` and `\longprovideglossaryentry`. With the other commands it's set via the `description` key.

As is typical with `⟨key⟩=⟨value⟩` lists, values that contain a comma (`,`) or equal sign (`=`) must be enclosed in braces. Available fields are listed below. Additional fields are provided by

#### 4. Defining Glossary Entries

the supplementary packages `glossaries–prefix` (§16) and `glossaries–accsupp` (§17) and also by `glossaries–extra`. You can also define your own custom keys (see §4.3).

```
name= { text }
```

The name of the entry (as it will appear in the glossary). If this key is omitted and the `parent` key is supplied, this value will be the same as the parent’s name.

If the `name` key contains any commands, you must also use the `sort` key (described below) if you intend sorting the entries alphabetically with Options 1, 2 or 3, otherwise the entries can’t be sorted correctly.

```
description= { text }
```

A brief description of this term (to appear in the glossary). Within this value, you can use:

```
\nopostdesc
```

to suppress the description terminator for this entry. For example, if this entry is a parent entry that doesn’t require a description, you can do `description={\nopostdesc}`. If you want a paragraph break in the description use:

```
\glspar
```

or, better, use `\longnewglossaryentry`. However, note that not all glossary styles support multi-line descriptions. If you are using one of the tabular-like glossary styles that permit multi-line descriptions and you really need an explicit line break, use `\newline` not `\\` (but in general, avoid `\\` outside of tabular contexts anyway and use a ragged style if you are having problems with line breaks in a narrow column).

`glossaries–extra`

With `glossaries–extra`, use `\glsxtrnopostpunc` instead of `\nopostdesc` to suppress the post-description punctuation.

```
parent=parent-label
```

This key establishes the entry’s hierarchical level. The value must be the *label* of the parent entry (not the `name`, although they may be the same). The `<parent-label>` value must match the `<entry-label>` used when the parent entry was defined. See §4.5 for further details.



The parent entry must be defined before it's referenced in the `parent` key of another entry.



**descriptionplural**={ *⟨text⟩* }

The plural form of the description, if required. If omitted, the value is set to the same as the `description` key.



**text**={ *⟨text⟩* }

How this entry will appear in the document text when using `\gls` on subsequent use. If this field is omitted, the value of the `name` key is used.

This key is automatically set by `\newacronym`. Although it is possible to override it by using `text` in the optional argument of `\newacronym`, it will interfere with the acronym style and cause unexpected results.



**first**={ *⟨first⟩* }

How the entry will appear in the document text on first use with `\gls`. If this field is omitted, the value of the `text` key is used. Note that if you use `\glspl`, `\Glspl`, `\GLSpl`, `\glsdisp` before using `\gls`, the `first` value won't be used with `\gls`.

You may prefer to use acronyms (§6) or the `abbreviations` or the category post-link hook (`\glsdefpostlink`) provided by `glossaries-extra` if you would like to automatically append content on first use in a consistent manner. See, for example, Gallery: Units (`glossaries-extra.sty`).<sup>1</sup>

Although it is possible to use `first` in the optional argument of `\newacronym`, it can interfere with the acronym style and cause unexpected results.



**plural**={ *⟨text⟩* }

How the entry will appear in the document text when using `\glspl` on subsequent use. If this field is omitted, the value is obtained by appending `\glspluralsuffix` to the value of the `text` field.

Although it is possible to use `plural` in the optional argument of `\newacronym`, it can interfere with the acronym style and cause unexpected results. Use `shortplural` instead, if the default value is inappropriate.

<sup>1</sup>[dickimaw-books.com/gallery/index.php?label=sample-units](http://dickimaw-books.com/gallery/index.php?label=sample-units)

**firstplural**={ *text* }

How the entry will appear in the document text on first use with `\glspl`. If this field is omitted, the value is obtained from the `plural` key, if the `first` key is omitted, or by appending `\glspluralsuffix` to the value of the `first` field, if the `first` field is present. Note that if you use `\gls`, `\Gls`, `\GLS`, `\glsdisp` before using `\glspl`, the `firstplural` value won't be used with `\glspl`.

Although it is possible to use `firstplural` in the optional argument of `\newacronym`, it can interfere with the acronym style and cause unexpected results. Use `shortplural` and `longplural` instead, if the default value is inappropriate.

Prior to version 1.13, the default value of `firstplural` was always taken by appending “s” to the `first` key, which meant that you had to specify both `plural` and `firstplural`, even if you hadn't used the `first` key.

**symbol**={ *symbol* }

*initial*: `\relax`

This field is provided to allow the user to specify an associated symbol. If omitted, the value is set to `\relax`. Note that not all glossary styles display the symbol.

**symbolplural**={ *symbol plural* }

This is the plural form of the symbol. If omitted, the value is set to the same as the `symbol` key.

**sort**={ *value* }

*initial*: *entry name*

This value indicates the text to be used by the sort comparator when ordering all the glossary entries. If omitted, the value is given by the `name` field unless one of the package options `sort=def` and `sort=use` have been used. With Option 2 it's best to use the `sort` key if the `name` contains commands (for example, `\ensuremath{\alpha}`) and with Options 2 and 3, it's strongly recommended as the indexing may fail if you don't (see below).

You can also override the `sort` key by redefining `\glsprestandardsort` (see §2.5).

**bib2gls**

The `sort` key shouldn't be used with `bib2gls`. It has a system of fallbacks that allow different types of entries to obtain the sort value from the most relevant field. See the `bib2gls` manual for further details, and see also `bib2gls gallery: sorting`.<sup>a</sup>



#### 4. Defining Glossary Entries

["dickimaw-books.com/gallery/index.php?label=bib2gls-sorting](http://dickimaw-books.com/gallery/index.php?label=bib2gls-sorting)

Option 1 by default strips the standard L<sup>A</sup>T<sub>E</sub>X accents (that is, accents generated by core L<sup>A</sup>T<sub>E</sub>X commands) from the `name` key when it sets the `sort` key. So with Option 1:

```
\newglossaryentry{elite}{
  name={\'elite},
  description={select group of people}
}
```

This is equivalent to:

```
\newglossaryentry{elite}{
  name={\'elite},
  description={select group of people}
  sort={elite}
}
```

Unless you use the package option `sanitizesort=true`, in which case it's equivalent to:

```
\newglossaryentry{elite}{
  name={\'elite},
  description={select group of people}
  sort={\'elite},
}
```

This will place the entry before the “A” letter group since the sort value starts with a symbol (a literal backslash `\`). Note that Option 1 shouldn't be used with UTF-8 characters. With old L<sup>A</sup>T<sub>E</sub>X kernels, it was able to convert a UTF-8 character, such as `é`, to an ASCII equivalent but this is no longer possible.

With Options 2 and 3, the default value of `sort` will either be set to the `name` key (if `sanitizesort=true`) or it will set it to the expansion of the `name` key (if `sanitizesort=false`).

Take care with `xindy` (Option 3): if you have entries with the same `sort` value they will be treated as the same entry. If you use `xindy` and aren't using the `def` or `use sort` methods, **always** use the `sort` key for entries where the name just consists of commands (for example `name={\alpha}`).

#### 4. Defining Glossary Entries

Take care if you use Option 1 and the `name` contains fragile commands. You will either need to explicitly set the `sort` key or use the `sanitizesort=true` package option (unless you use the `def` or `use sort` methods).

**type**=*<glossary-label>*

*initial:* `\glsdefaulttype`

This specifies the label of the glossary in which this entry belongs. If omitted, the default glossary identified by `\glsdefaulttype` is assumed unless `\newacronym` is used (see §6).

Six keys are provided for any additional information the user may want to specify. (For example, an associated dimension or an alternative plural or some other grammatical construct.) Alternatively, you can add new keys using `\glsaddkey` or `\glsaddstoragekey` (see §4.3).

**user1**=*{ <text> }*

The first user key.

**user2**=*{ <text> }*

The second user key.

**user3**=*{ <text> }*

The third user key.

**user4**=*{ <text> }*

The fourth user key.

**user5**=*{ <text> }*

The fifth user key.

**user6**=*{ <text> }*

The sixth user key.

**nonumberlist**=*{ <boolean> }*

*default:* `true`; *initial:* `false`

If the value is missing or is `true`, this will suppress the number list just for this entry. Con-

#### 4. Defining Glossary Entries

versely, if you have used the package option `nonumberlist=true`, you can activate the number list just for this entry with `nonumberlist={false}`. (See §12.)

This key works by adding `\glsnonextpages (nonumberlist={true})` or `\glsnextpages (nonumberlist={false})` to the indexing information for Options 2 and 3. Note that this means that if the entry is added to the glossary simply because it has an indexed descendent (and has not been indexed itself) then the first indexed sub-entry that follows will have its number list suppressed instead.

With Option 1, this key saves the appropriate command in the `prenumberlist` internal field, which is used by `\glsnoidxprenumberlist`.

```
see={ [ <tag> ] <xr-list> }
```

This key essentially provides a convenient shortcut that performs

```
\glssee [ <tag> ] { <entry-label> } { <xr-list> }
```

after the entry has been defined. (See §11.) It was originally designed for synonyms that may not occur in the document text but needed to be included in the glossary in order to redirect the reader. Note that it doesn't index the cross-referenced entry (or entries) as that would interfere with their number lists.

Using the `see` key will *automatically add this entry to the glossary*, but will not automatically add the cross-referenced entry.

For example:

```
\newglossaryentry{courgette}{name={courgette},  
  description={variety of small marrow}}  
\newglossaryentry{zucchini}{name={zucchini},  
  description={(North American)},  
  see={courgette}}
```

This defines two entries (courgette and zucchini) and automatically adds a cross-reference from zucchini to courgette. (That is, it adds “*see courgette*” to zucchini’s number list.) This doesn’t automatically index courgette since this would create an unwanted location in courgette’s number list. (Page 1, if the definitions occur in the preamble.)

Note that while it’s possible to put the cross-reference in the description instead, for example:

```
\newglossaryentry{zucchini}{name={zucchini},
  description={ (North American) see \gls{courgette}}
}
```

this won't index the zucchini entry, so if zucchini isn't indexed elsewhere (with commands like `\gls` or `\glsadd`) then it won't appear in the glossary even if `courgette` does.

The referenced entry should be supplied as the value to this key. If you want to override the “see” tag, you can supply the new tag in square brackets before the label. For example `see=[see also]{anotherlabel}`.

If you have suppressed the number list, the cross-referencing information won't appear in the glossary, as it forms part of the number list.

You can override this for individual glossary entries using `nonumberlist={false}`. Alternatively, you can use the `seeautonumberlist` package option. For further details, see §11.

For Options 2 and 3, `\makeglossaries` must be used before any occurrence of `\newglossaryentry` that contains the `see` key.

Since it's useful to suppress the indexing while working on a draft document, consider using the `seenoindex` package option to warn about or ignore the `see` key while `\makeglossaries` is commented out.

If you use the `see` key, you may want to consider using the `glossaries-extra` package which additionally provides a `seealso` and `alias` key. If you want to avoid the automatic indexing triggered by the `see` key, consider using Option 4. See also the FAQ item [Why does the see key automatically index the entry?](#)<sup>2</sup>

`bib2gls`

The analogous `bib2gls` `see`, `seealso` and `alias` fields have a slightly different meaning. The `selection` resource option determines the behaviour.

```
seealso={\xr-list}
```

This key is only available with `glossaries-extra` and is similar to `see` but it doesn't allow for the optional tag. The `glossaries-extra` package provides `\seealso` and `seealso={xr-list}` is essentially like `see=[\seealso] \xr-list` (Options 3 and 4

<sup>2</sup>[dickimaw-books.com/faq.php?itemlabel=whyseekeyautoindex](http://dickimaw-books.com/faq.php?itemlabel=whyseekeyautoindex)

may treat these differently).

**alias**= $\{ \langle xr\text{-label} \rangle \}$

This key is only available with `glossaries-extra` and is another form of cross-referencing. An entry can be aliased to another entry with `alias=\{other-label\}`. This behaves like `see=\{other-label\}` but also alters the behaviour of commands like `\gls` so that they index the entry given by  $\langle label \rangle$  instead of the original entry. (See, for example, Gallery: Aliases.<sup>3</sup>)

`bib2gls`

More variations with the `alias` key are available with `bib2gls`.

**counter**= $\{ \langle counter\text{-name} \rangle \}$

This key will set the default location counter for the given entry. This will override the counter assigned to the entry's glossary in the final optional argument of `\newglossary` (if provided) and the counter identified by the `counter` package option. The location counter can be overridden by the `counter` option when using the `\gls`-like and `\gls`text-like commands.

**category**= $\langle category\text{-label} \rangle$

*initial:* **general**

This key is only available with `glossaries-extra` and is used to assign a category to the entry. The value should be a label that can be used to identify the category. See `glossaries-extra` manual for further details.

The following keys are reserved for `\newacronym` (see §6) and also for `\newabbreviation` (see the `glossaries-extra` manual): `long`, `longplural`, `short` and `shortplural`. You can use `longplural` and `shortplural` in the optional argument of `\newacronym` (or `\newabbreviation`) to override the defaults, but don't explicitly use the `long` or `short` keys as that may interfere with acronym style (or `abbreviation` style).

`bib2gls`

There are also special internal field names used by `bib2gls`. See the `bib2gls` manual for further details.

The supplementary packages `glossaries-prefix` (§16) and `glossaries-accsupp` (§17) provide additional keys.

<sup>3</sup>[dickimaw-books.com/gallery/index.php?label=aliases](http://dickimaw-books.com/gallery/index.php?label=aliases)



Avoid using any of the `\gls`-like or `\gls`text-like commands within the `text`, `first`, `short` or `long` keys (or their plural equivalent) or any other key that you plan to access through those commands. (For example, the `symbol` key if you intend to use `\gls`symbol.) Otherwise you can up with nested links, which can cause complications. You can use them within the value of keys that won't be accessed through those commands. For example, the `description` key if you don't use `\gls`desc. Additionally, they'll confuse the formatting placeholder commands, such as `\gls`label. The `glossaries-extra` package provides `\gls`xtrp for this type of situation.

With older  $\text{\LaTeX}$  kernels and pre-2.08 versions of `mfirstuc`, if the name starts with non-Latin character, you need to group the character, otherwise it will cause a problem for commands like `\Gls` and `\Gls`pl. For example:



```
% mfirstuc v2.07
\newglossaryentry{elite}{name={{\'}e}lite},
description={select group or class}}
```

Note that the same applies with `inputenc`:



```
% mfirstuc v2.07
\newglossaryentry{elite}{name={{é}lite},
description={select group or class}}
```

This doesn't apply for  $\text{\XeLaTeX}$  or  $\text{\LuaLaTeX}$  documents or with `mfirstuc` v2.08+.



```
% mfirstuc v2.08
\newglossaryentry{elite}{name={é}lite},
description={select group or class}}
```

See the `mfirstuc` manual for further details.

Note that in the above UTF-8 examples, you will also need to supply the `sort` key if you are using Options 1 or 2 whereas `xindy` (Option 3) is usually able to sort non-Latin characters correctly.

## 4.1. Plurals

You may have noticed from above that you can specify the plural form when you define an entry. If you omit this, the plural will be obtained by appending:

#### 4. Defining Glossary Entries

`\glspluralsuffix`

*initial: s*

to the singular form. This command may expand when the entry is defined, if expansion is on for the relevant keys, or may not expand until the entry is referenced, if expansion is off or if the suffix has been hidden inside non-expanding context (which can happen when defining acronyms or [abbreviations](#)).

For example:

```
\newglossaryentry{cow}{name={cow},description={a fully grown female of any bovine animal}}
```

defines a new entry whose singular form is “cow” and plural form is “cows”. However, if you are writing in archaic English, you may want to use “kine” as the plural form, in which case you would have to do:

```
\newglossaryentry{cow}{name={cow},plural={kine},description={a fully grown female of any bovine animal}}
```

If you are writing in a language that supports multiple plurals (for a given term) then use the `plural` key for one of them and one of the user keys to specify the other plural form. For example:

```
\newglossaryentry{cow}{name={cow},description={a fully grown female of any bovine animal (plural cows, archaic plural kine)},user1={kine}}
```

You can then use `\glspl{cow}` to produce “cows” and `\glsuseri{cow}` to produce “kine”. You can, of course, define an easy to remember synonym. For example:

```
\let\glsaltpl\glsuseri
```

Then you don’t have to remember which key you used to store the second plural. (Be careful with using `\let` as it doesn’t check if the command already exists.)

## 4. Defining Glossary Entries

Alternatively, you can define your own keys using `\glsaddkey`, described in §4.3 (or simply use `\glsdisp` or `\glslink` with the appropriate text).

If you are using a language that usually forms plurals by appending a different letter, or sequence of letters, you can redefine `\glspluralsuffix` as required. However, this must be done *before* the entries are defined and is unreliable for multilingual documents. For languages that don't form plurals by simply appending a suffix, all the plural forms must be specified using the `plural` key (and the `firstplural` key where necessary).

### 4.2. Other Grammatical Constructs

You can use the six user keys to provide alternatives, such as participles. For example:

```
\let\glsing\glsuseri
\let\glsd\glsuserii

\newcommand*\\ingkey}{user1}
\newcommand*\\edkey}{user2}

\newcommand*\newword}[3][]{%
  \newglossaryentry{#2}{%
    name={#2},%
    description={#3},%
    \edkey={#2ed},%
    \ingkey={#2ing},#1%
  }}

```

With the above definitions, I can now define terms like this:

```
\newword{play}
{to take part in activities for enjoyment}
\newword[\edkey={ran},\ingkey={running}]{run}
{to move fast using
the legs}

```

and use them in the text:

```
Peter is \glsing{play} in the park today.

Jane \glsd{play} in the park yesterday.

```



```
Peter and Jane \glsd{run} in the park last week.
```

Alternatively, you can define your own keys using `\glsaddkey`, described below in §4.3. It may, however, be simpler just to use `\glslink` or `\glsdisp` with the appropriate link text.

### 4.3. Additional Keys

You can define your own custom keys using the commands described in this section. There are two types of keys: those for use within the document and those to store information used behind the scenes by other commands.

For example, if you want to add a key that indicates the associated unit for a term, you might want to reference this unit in your document. In this case use `\glsaddkey` described in §4.3.1. If, on the other hand, you want to add a key to indicate to a glossary style or acronym style that this entry should be formatted differently to other entries, then you can use `\glsaddstoragekey` described in §4.3.2.

In both cases, a new command *⟨no link cs⟩* will be defined that can be used to access the value of this key (analogous to commands such as `\glsentrytext`). This can be used in an expandable context (provided any fragile commands stored in the key have been protected). The new keys must be added using `\glsaddkey` or `\glsaddstoragekey` before glossary entries are defined.

#### 4.3.1. Document Keys

A custom key that can be used in the document is defined using:

```
\glsaddkey{⟨key⟩}{⟨default value⟩}{⟨no link cs⟩}{⟨no link ucfirst cs⟩}{⟨link cs⟩}{⟨link ucfirst cs⟩}{⟨link allcaps cs⟩}
```

where the arguments are as follows:

*⟨key⟩* is the new key to use in `\newglossaryentry` (or similar commands such as `\longnewglossaryentry`);

*⟨default value⟩* is the default value to use if this key isn't used in an entry definition (this may reference the current entry label via `\glslabel`, but you will have to switch on expansion via the starred version of `\glsaddkey` and protect fragile commands);

*⟨no link cs⟩* is the control sequence to use analogous to commands like `\glsentrytext`;

*⟨no link ucfirst cs⟩* is the control sequence to use analogous to commands like `\Glsentrytext`;

*⟨link cs⟩* is the control sequence to use analogous to commands like `\glsstext`;

#### 4. Defining Glossary Entries

`<link ucfirst cs>` is the control sequence to use analogous to commands like `\Glstext`;

`<link allcaps cs>` is the control sequence to use analogous to commands like `\GLStext`.

The starred version of `\glsaddkey` switches on expansion for this key. The unstarred version doesn't override the current expansion setting.

### Example 13: Defining Custom Keys

Suppose I want to define two new keys, `ed` and `ing`, that default to the entry text followed by “ed” and “ing”, respectively. The default value will need expanding in both cases, so I need to use the starred form:

```
% Define "ed" key:
\glsaddkey*
{ed}% key
{\glsentrytext{\glslabel}ed}% default value
{\glsentryed}% command analogous to \glsentrytext
{\Glsentryed}% command analogous to \Glsentrytext
{\glsed}% command analogous to \glstext
{\Glsed}% command analogous to \Glstext
{\GLSed}% command analogous to \GLStext

% Define "ing" key:
\glsaddkey*
{ing}% key
{\glsentrytext{\glslabel}ing}% default value
{\glsentrying}% command analogous to \glsentrytext
{\Glsentrying}% command analogous to \Glsentrytext
{\glsing}% command analogous to \glstext
{\Glsing}% command analogous to \Glstext
{\GLSing}% command analogous to \GLStext
```

Now I can define some entries:

```
% No need to override defaults for this entry:
\newglossaryentry{jump}{name={jump},description={}}

% Need to override defaults on these entries:
\newglossaryentry{run}{name={run},
  ed={ran},
  ing={running},
```

## 4. Defining Glossary Entries

```
description={}}

\newglossaryentry{waddle}{name={waddle},
  ed={waddled},
  ing={waddling},
  description={}}
```

These entries can later be used in the document:

```
The dog \glsed{jump} over the duck.

The duck was \glsing{waddle} round the dog.

The dog \glsed{run} away from the duck.
```

For a complete document, see the sample file `sample-newkeys.tex`.

---

### 4.3.2. Storage Keys

A custom key that can be used for simply storing information is defined using:

```
\glsaddstoragekey{<key>}{<default value>}{<no link cs>}
```

where the arguments are as the first three arguments of `\glsaddkey`, described above in §4.3.1.

This is essentially the same as `\glsaddkey` except that it doesn't define the additional commands. You can access or update the value of your new field using the commands described in §15.6.

#### Example 14: Defining Custom Storage Key (Acronyms and Initialisms)

Suppose I want to define acronyms (an abbreviation that is pronounced as a word) and other forms of abbreviations, such as initialisms, but I want them all in the same glossary and I want the acronyms on first use to be displayed with the short form followed by the long form in parentheses, but the opposite way round for other forms of abbreviations. (The `glossaries-extra` package provides a simpler way of achieving this.)

Here I can define a new key that determines whether the term is actually an acronym rather than some other form of abbreviation. I'm going to call this key `abbrtype` (since `type` already exists):

#### 4. Defining Glossary Entries

```
\glsaddstoragekey
{abbrtype}% key/field name
{word}% default value if not explicitly set
{\abbrtype}
% custom command to access the value if required
```

Now I can define a style that looks up the value of this new key to determine how to display the full form:

```
\newacronymstyle
{mystyle}% style name
{% Use the generic display
  \ifglsashaslong{\glslabel}{\glsacronym}{\glsacronym-
entryfmt}%
}%
{% Put the long form in the description
  \renewcommand*{\GenericAcronymFields}{%
    description={\the\glslongtok}}%
  % For the full format, test the value of the "abbrtype" key.
  % If it's set to "word" put the short form first with
  % the long form in brackets.
  \renewcommand*{\genacrfullformat}[2]{%
    \ifglsfieldeq{##1}{abbrtype}{word}
    {% is a proper acronym
      \protect\firstacronymfont{\glsentryshort{##1}}
    ##2\space
      (\glsentrylong{##1})%
    }%
    {% is another form of abbreviation
      \glsentrylong{##1}##2\space
      (\protect\firstacronymfont{\glsentryshort{##1}}
    )}%
  }%
}%
% sentence case version:
\renewcommand*{\Genacrfullformat}[2]{%
  \ifglsfieldeq{##1}{abbrtype}{word}
  {% is a proper acronym
    \protect\firstacronymfont{\Glsentryshort{##1}}
  ##2\space
```

#### 4. Defining Glossary Entries

```

    (\glsentrylong{##1})%
  }
  {% is another form of abbreviation
    \Glsentrylong{##1}##2\space
    (\protect\firstacronymfont{\glsentryshort{##1}}
  })%
  }%
}%
% plural
\renewcommand*{\genplacrfullformat}[2]{%
  \ifglsfieldeq{##1}{abbrtype}{word}%
  {% is a proper acronym
    \protect\firstacronymfont{\glsentryshortpl
{##1}}##2\space
    (\glsentrylong{##1})%
  }%
  {% is another form of abbreviation
    \glsentrylongpl{##1}##2\space
    (\protect\firstacronymfont{\glsentryshortpl
{##1}})%
  }%
}%
% plural and sentence case
\renewcommand*{\Genplacrfullformat}[2]{%
  \ifglsfieldeq{##1}{abbrtype}{word}%
  {% is a proper acronym
    \protect\firstacronymfont{\Glsentryshortpl
{##1}}##2\space
    (\glsentrylong{##1})%
  }%
  {% is another form of abbreviation
    \Glsentrylongpl{##1}##2\space
    (\protect\firstacronymfont{\glsentryshortpl
{##1}})%
  }%
}%
% Just use the short form as the name part in the glossary:
\renewcommand*{\acronymentry}[1]{%
  \acronymfont{\glsentryshort{##1}}}%
% Sort by the short form:
\renewcommand*{\acronymssort}[2]{##1}%
% Just use the surrounding font for the short form:
```

#### 4. Defining Glossary Entries

```
\renewcommand*{\acronymfont}[1]{##1}%  
% Same for first use:  
\renewcommand*{\firstacronymfont}[1]{\acronymfont  
{##1}}%  
% Default plural suffix if the plural isn't explicitly set  
\renewcommand*{\acrpluralsuffix}{\glspluralsuffix}  
%  
}
```

Remember that the new style needs to be set before defining any terms:

```
\setacronymstyle{mystyle}
```

Since it may be a bit confusing to use `\newacronym` for something that's not technically an acronym, let's define a new command for initialisms:

```
\newcommand*{\newinitialism}[4][[]]{%  
  \newacronym[abbrtype=initialism,#1]{#2}{#3}{#4}%  
}
```

Now the entries can all be defined:

```
\newacronym{radar}{radar}  
{radio detecting and ranging}  
\newacronym{laser}{laser}  
{light amplification by stimulated  
emission of radiation}  
\newacronym{scuba}{scuba}{self-  
contained underwater breathing  
apparatus}  
\newinitialism{dsp}{DSP}{digital signal processing}  
\newinitialism{atm}{ATM}{automated teller machine}
```

On first use, `\gls{radar}` will produce “radar (radio detecting and ranging)” but `\gls{dsp}` will produce “DSP (digital signal processing)”.

For a complete document, see the sample file `sample-storage-abbr.tex`.

---

In the above example, if `\newglossaryentry` is explicitly used (instead of through `\newacronym`) the `abbrtype` key will be set to its default value of “word” but the `\ifglsashaslong` test in the custom acronym style will be false (since the `long` key hasn't been

set) so the display style will switch to that given by `\glsgetentryfmt` and they'll be no test performed on the `abbrtype` field.

### Example 15: Defining Custom Storage Key (Acronyms and Non-Acronyms with Descriptions)

The previous example can be modified if the `description` also needs to be provided. Here I've changed “word” to “acronym”:

```
\glsaddstoragekey
{abbrtype}% key/field name
{acronym}% default value if not explicitly set
{\abbrtype}
% custom command to access the value if required
```

This may seem a little odd for non-abbreviated entries that are defined using `\newglossaryentry` directly, but `\ifglsishaslong` can be used to determine whether or not to reference the value of this new `abbrtype` field.

The new acronym style has a minor modification that forces the user to specify a description. In the previous example, the line:

```
\renewcommand*{\GenericAcronymFields}{%
description={\the\glslongtok}}%
```

needs to be changed to:

```
\renewcommand*{\GenericAcronymFields}{}%
```

Additionally, to accommodate the change in the default value of the `abbrtype` key, all instances of

```
\ifglsfieldeq{##1}{abbrtype}{word}
```

need to be changed to:

```
\ifglsfieldeq{##1}{abbrtype}{acronym}
```

Once this new style has been set, the new acronyms can be defined using the optional argument to set the description:

#### 4. Defining Glossary Entries

```
\newacronym[description=  
{system for detecting the position and  
speed of aircraft, ships, etc}]{radar}{radar}  
{radio detecting  
and ranging}
```

No change is required for the definition of `\newinitialism` but again the optional argument is required to set the description:

```
\newinitialism[description=  
{mathematical manipulation of an  
information signal}]{dsp}{DSP}  
{digital signal processing}
```

We can also accommodate contractions in a similar manner to the initialisms:

```
\newcommand*{\newcontraction}[4][[]]{%  
  \newacronym[abbrtype=contraction,#1]{#2}{#3}{#4}%  
}
```

The contractions can similarly be defined using this new command:

```
\newcontraction[description=  
{front part of a ship below the  
deck}]{focsle}{fo'c's'le}{forecastle}
```

Since the custom acronym style just checks if `abbrtype` is “acronym”, the contractions will be treated the same as the initialisms, but the style could be modified by a further test of the `abbrtype` value if required.

To test regular non-abbreviated entries, I’ve also defined a simple word:

```
\newglossaryentry{apple}{name={apple},description=  
{a fruit}}
```

Now for a new glossary style that provides information about the abbreviation (in addition to the description):



```

\newglossarystyle
{mystyle}% style name
{% base it on the "list" style
  \setglossarystyle{list}%
  \renewcommand*{\glossentry}[2]{%
    \item[\glsentryitem{##1}]%
      \glstarget{##1}{\glossentryname{##1}}]
    \ifglshaslong{##1}%
      { (\abbrtype{##1}: \glsentrylong{##1}) \space}
  }%
    \glossentrydesc{##1}\glspostdescrip-
tion\space ##2}%
}

```

This uses `\ifglshaslong` to determine whether or not the term is an abbreviation. (An alternative is to use `\ifglshasshort`. The `long` and `short` keys are only set for acronyms/abbreviations.)

If the entry has an `short/long` value, the full form is supplied in parentheses and `\abbrtype` (defined by `\glsaddstoragekey` earlier) is used to indicate the type of abbreviation.

With this style set, the “apple” entry is simply displayed in the glossary as:

**apple** a fruit.

but the abbreviations are displayed in the form

**laser** (acronym: light amplification by stimulated emission of radiation) device that creates a narrow beam of intense light.

(for acronyms) or

**DSP** (initialism: digital signal processing) mathematical manipulation of an information signal.

(for initialisms) or

**fo’c’s’le** (contraction: forecastle) front part of a ship below the deck.

(for contractions).

For a complete document, see `sample-storage-abbr-desc.tex`.

---

## 4.4. Expansion

When you define new glossary entries expansion is performed by default, except for the `name`, `description`, `descriptionplural`, `symbol`, `symbolplural` and `sort` keys (these keys all have expansion suppressed via `\glssetnoexpandfield`).

#### 4. Defining Glossary Entries

You can switch expansion on or off for individual keys using:

```
\glssetexpandfield{<field>}
```

or

```
\glssetnoexpandfield{<field>}
```

respectively, where *<field>* is the internal field label corresponding to the key. In most cases, this is the same as the name of the key except for those listed in Table 4.1.

Table 4.1.: Key to Field Mappings

Key	Field
sort	sortvalue
firstplural	firstpl
description	desc
descriptionplural	descplural
user1	useri
user2	userii
user3	useriii
user4	useriv
user5	userv
user6	uservi
longplural	longpl
shortplural	shortpl

Any keys that haven't had the expansion explicitly set using `\glssetexpandfield` or `\glssetnoexpandfield` are governed by

```
\glsexpandfields
```

and

```
\glsnoexpandfields
```

If your entries contain any fragile commands, I recommend you switch off expansion via `\glsnoexpandfields`. (This should be used before you define the entries.)



Both `\newacronym` and `\newabbreviation` partially suppress expansion of some keys regardless of the above expansion settings.

## 4.5. Sub-Entries

A sub-entry is created by setting the `parent` key. These will normally be sorted so that they are placed immediately after their parent entry. However, some sort methods aren't suitable when there are sub-entries. In particular, sub-entries are problematic with Option 1, and with Option 5 the sub-entries must be defined immediately after their parent entry (rather than at any point after the parent entry has been defined).

The hierarchical level indicates the sub-entry level. An entry with no parent (a top level entry) is a hierarchical level 0 entry. An entry with a parent has a hierarchical level that's one more than its parent's level. The level is calculated when an entry is defined.



The hierarchical level is stored in the `level` internal field. It can be accessed using commands like `\glsfieldfetch` or (with `glossaries-extra`) `\glsxtrusefield`, but neither the `level` nor the `parent` values should be altered as it can cause inconsistencies in the sorting and glossary formatting. The indexing syntax for Options 2 and 3 is generated when the entry is first defined, so it's too late to change the hierarchy after that, and `bib2gls` obtains the hierarchical information from the `bib` files and the resource options. Note, however, that `glossaries-extra` does allow the ability to locally alter the level with the `leveloffset` option, which is mainly intended for nested glossary. See the `glossaries-extra` manual for further details and also Gallery: Inner or Nested Glossaries.<sup>a</sup>

<sup>a</sup>[dickimaw-books.com/gallery/index.php?label=bib2gls-inner](http://dickimaw-books.com/gallery/index.php?label=bib2gls-inner)

There are two different types of sub-entries: those that have the same name as their parent (homographs, see §4.5.2) and those that establish a hierarchy (see §4.5.1). Both types are considered hierarchical entries from the point of view of the `glossaries` package and the indexing applications, but typically homographs will have the `name` key obtained from the parent, rather than have it explicitly set, and have a maximum hierarchical level of 1.

Not all glossary styles support hierarchical entries and may display all the entries in a flat format. Of the styles that support sub-entries, some display the sub-entry's name whilst others don't. Therefore you need to ensure that you use a suitable style. (See §13 for a list of predefined glossary styles.) If you want level 1 sub-entries automatically numbered (in glossary styles that support it) use the `subentrycounter` package option (see §2.3 for further details).

Note that the parent entry will automatically be added to the glossary if any of its child entries are used in the document. If the parent entry is not referenced in the document, it will not have a number list. Note also that `makeindex` has a restriction on the maximum hierarchical depth.

### 4.5.1. Hierarchy

To create a glossary with hierarchical divisions, you need to first define the division, which will be a top level (level 0) entry, and then define the sub-entries using the relevant higher level entry as the value of the `parent` key. (In a hierarchical context, a higher level indicates a numerically smaller level number, so level 0 is one level higher than level 1.) The top level entry may represent, for example, a topic or classification. A level 1 entry may represent, for example, a sub-topic or sub-classification.

#### Example 16: Hierarchical Divisions — Greek and Roman Mathematical Symbols

Suppose I want a glossary of mathematical symbols that are divided into Greek letters and Roman letters. Then I can define the divisions as follows:

```
\newglossaryentry{greekletter}{name={Greek letters},
description={\nopostdesc}}

\newglossaryentryromanletter{name={Roman letters},
description={\nopostdesc}}
```

Note that in this example, the top level entries don't need a description so I have set the descriptions to `\nopostdesc`. This gives a blank description and suppresses the description terminator.

I can now define my sub-entries as follows:

```
\newglossaryentry{pi}{name={\ensuremath{\pi}}, sort=
{pi},
description=
{ratio of the circumference of a circle to
the diameter},
parent={greekletter}

\newglossaryentry{C}{name={\ensuremath{C}}, sort={C},
description={Euler's constant},
parent={romanletter}}
```

For a complete document, see the sample file `sampletree.tex`.

If you want to switch to Option 5, you will need to move the definitions of the sub-entries to immediately after the definition of their parent entry. So, in this case, “pi” needs to be defined after “greekletter” and before “romanletter”.

### 4.5.2. Homographs

Sub-entries that have the same name as the parent entry don’t need to have the `name` key explicitly set. For example, the word “glossary” can mean a list of technical words or a collection of glosses. In both cases the plural is “glossaries”. So first define the parent entry:

```
\newglossaryentry{glossary}{name={glossary},
description={\nopostdesc},
plural={glossaries}}
```

As in the previous example, the parent entry has no description, so the description terminator needs to be suppressed using `\nopostdesc`.

Now define the two different meanings of the word with the `parent` key set to the above parent entry label:

```
\newglossaryentry{glossarylist}{
description={list of technical words},
sort={1},
parent={glossary}}

\newglossaryentry{glossarycol}{
description={collection of glosses},
sort={2},
parent={glossary}}
```

Note that if I reference the parent entry (for example, `\gls{glossary}`), the location will be added to the parent’s number list, whereas if I reference any of the child entries (for example, `\gls{glossarylist}`), the location will be added to the child entry’s number list. Note also that since the sub-entries have the same name, the `sort` key is required with Option 3 (`xindy`) and recommended with Option 2 (`makeindex`). You can use the `subentry-counter` package option to automatically number the level 1 child entries in the glossary (if you use a glossary style that supports it). See §2.3 for further details.

## 4. Defining Glossary Entries

In the above example, the plural form for both of the child entries is the same as the parent entry, so the `plural` key was not required for the child entries. However, if the sub-entries have different plurals, they will need to be specified. For example:

```
\newglossaryentry{bravo}{name={bravo},
description={\nopostdesc}}

\newglossaryentry{bravocry}{description=
{cry of approval
(pl. bravos)},
sort={1},
plural={bravos},
parent={bravo}}

\newglossaryentry{bravoruffian}{description={hired
ruffian or killer (pl. bravo'es)},
sort={2},
plural={bravo'es},
parent={bravo}}
```

For a complete document, see the sample file `sample.tex`.

### 4.6. Loading Entries From a File

You can store all your glossary entry definitions in another file and use:

```
\loadglsentries[<type>]{<filename>}
```

where *<filename>* is the name of the file containing all the `\newglossaryentry`, `\longnewglossaryentry`, `\newacronym` etc commands. The optional argument *<type>* is the name of the glossary to which those entries should belong, for those entries where the `type` key has been omitted (or, more specifically, for those entries whose `type` has been set to `\glsdefaulttype`, which is what `\newglossaryentry` uses by default). See `sampleDB.tex` for a complete example document.

Commands like `\newacronym`, `\newabbreviation`, `\newterm`, `\glsxtnewsymbol` and `\glsxtnewnumber` all set the `type` key to the appropriate glossary. This means that the *<type>* optional argument won't apply to those commands, unless they have `type={\glsdefaulttype}`.

#### 4. Defining Glossary Entries

This is a preamble-only command. You may also use `\input` to load the file but don't use `\include`. If you find that your file is becoming unmanageably large, you may want to consider switching to `bib2gls` and use an application such as JabRef to manage the entry definitions.



If you want to use `\AtBeginDocument` to `\input` all your entries automatically at the start of the document, add the `\AtBeginDocument` command *before* you load the `glossaries` package (and `babel`, if you are also loading that) to avoid the creation of the `glsdefs` file and any associated problems that are caused by defining commands in the document environment. (See §4.8.) Alternatively, if you are using `glossaries-extra`, use the `docdef=restricted` package option.

#### Example 17: Loading Entries from Another File

Suppose I have a file called `myentries.tex` which contains:



```
\newglossaryentry{perl}{type={main},
name={Perl},
description={A scripting language}}

\newglossaryentry{tex}{name={\TeX},
description={A typesetting language}, sort={TeX}}

\newglossaryentry{html}{type={\glsdefaulttype},
name={html},
description={A mark up language}}
```

and suppose in my preamble I use the command:



```
\loadglsentries[languages]{myentries}
```

then this will add the entries “tex” and “html” to the glossary whose type is given by `languages`, but the entry “perl” will be added to the `main` glossary, since it explicitly sets the `type` to `main`.

---

Now suppose I have a file `myacronyms.tex` that contains:



```
\newacronym{aca}{aca}{a contrived acronym}
```

#### 4. Defining Glossary Entries

then (supposing I have defined a new glossary type called `altacronym`)

```
\loadglsentries[altacronym]{myacronyms}
```

will add “aca” to the glossary type `acronym`, if the package option `acronym` has been specified, or will add “aca” to the glossary type `altacronym`, if the package option `acronym` is not specified. This is because `\acronymtype` is set to `\glsdefaulttype` if the `acronym` package option is not used so the optional argument of `\loadglsentries` will work in that case, but if the `acronym` option is used then `\acronymtype` will be redefined to `acronym`.

If you want to use `\loadglsentries` with the `acronym` package option set, there are two possible solutions to this problem:

1. Change `myacronyms.tex` so that entries are defined in the form:

```
\newacronym[type={\glsdefaulttype}]{aca}{aca}{a  
contrived acronym}
```

and do:

```
\loadglsentries[altacronym]{myacronyms}
```

2. Temporarily change `\acronymtype` to the target glossary:

```
\let\orgacronymtype\acronymtype  
\renewcommand{\acronymtype}{altacronym}  
\loadglsentriesmyacronyms  
\let\acronymtype\orgacronymtype
```

Note that only those entries that have been indexed in the text will appear in the relevant glossaries. Note also that `\loadglsentries` may only be used in the preamble.

Don't use the `see` key in a large file of entries that may or may not be indexed in the document. Similarly for `seealso` and `alias` with `glossaries-extra`. If you need them and you need a large database of entries, consider switching to `bib2gls`.



## 4. Defining Glossary Entries

Remember that you can use `\provideglossaryentry` rather than `\newglossaryentry`. Suppose you want to maintain a large database of acronyms or terms that you're likely to use in your documents, but you may want to use a modified version of some of those entries. (Suppose, for example, one document may require a more detailed description.) Then if you define the entries using `\provideglossaryentry` in your database file, you can override the definition by simply using `\newglossaryentry` before loading the file. For example, suppose your file (called, say, `terms.tex`) contains:

```
\provideglossaryentry{mallard}{name={mallard},
description={a type of duck}}
```

but suppose your document requires a more detailed description, you can do:

```
\usepackage{glossaries}
\makeglossaries

\newglossaryentry{mallard}{name={mallard},
description=
{a dabbling duck where the male has a green head}}

\loadglsentries{terms}
```

Now the “mallard” definition in the `terms.tex` file will be ignored.

### 4.7. Moving Entries to Another Glossary

You can move an entry from one glossary to another using:

```
\glsmoveentry{<entry-label>}{<target glossary label>}
```

where *<entry-label>* is the unique label identifying the required entry and *<target glossary label>* is the unique label identifying the glossary in which to put the entry. If you are using Options 2 or 3, entries shouldn't be moved after the indexing files have been opened by `\makeglossaries`.

Simply changing the value of the `type` field using a command like `\glsfielddef` won't correctly move the entry, since the label needs to be removed from the old glossary's internal list and added to the new glossary's internal list to allow commands such as `\glsaddall` and `\glsunsetall` to work.

Note that no check is performed to determine the existence of the target glossary. If you want to move an entry to a glossary that's skipped by `\printglossaries`, then define an ignored glossary with `\newignoredglossary`. (See §9.) With Options 4 and 5, it's also possible to copy an entry to another glossary with `\glstxtrcopytoglossary`. See the `glossaries-extra` manual for further details.



Unpredictable results may occur if you move an entry to a different glossary from its parent or children.

### 4.8. Drawbacks With Defining Entries in the Document Environment

Originally, `\newglossaryentry` (and `\newacronym`) could only be used in the preamble. I reluctantly removed this restriction in version 1.13, but there are issues with defining commands in the document environment instead of the preamble, which is why the restriction is maintained for newer commands. This restriction is also reimposed for `\newglossaryentry` by Option 1 because in that case the entries must be defined before the `aux` file is input. (The `glossaries-extra` package automatically reimposes the preamble-only restriction but provides the `docdef` package option to allow document definitions for Options 2 and 3 if necessary.)

`bib2gls`

With Option 4, all entry data should be supplied in `bib` files. From `bib2gls`'s point of view, the entries are defined in the `bib` files. From `TEX`'s point of view, the entries are defined in the `glstex` files that are input by `\GlsXtrLoadResources`, which is a preamble-only command.

#### 4.8.1. Technical Issues

1. If you define an entry mid-way through your document, but subsequently shuffle sections around, you could end up using an entry before it has been defined. This is essentially the same problem as defining a command with `\newcommand` in the middle of the document and then moving things around so that the command is used before it has been defined.
2. Entry information is required when displaying the glossary. If this occurs at the start of the document, but the entries aren't defined until later, then the entry details are being looked up before the entry has been defined. This means that it's not possible to display the content of the glossary unless the entry definitions are saved on the previous `LATEX` run and can be picked up at the start of the document environment on the next run (in a similar way that `\label` and `\ref` work).

## 4. Defining Glossary Entries

3. If you use a package, such as `babel`, that makes certain characters active at the start of the document environment, there can be a problem if those characters have a special significance when defining glossary entries. These characters include " (double-quote), ! (exclamation mark), ? (question mark), and | (pipe). They must not be active when defining a glossary entry where they occur in the `sort` key (and they should be avoided in the label if they may be active at any point in the document). Additionally, the comma (,) character and the equals (=) character should not be active when using commands that have  $\langle key \rangle = \langle value \rangle$  arguments.

To overcome the first two problems, as from version 4.0 the `glossaries` package modifies the definition of `\newglossaryentry` at the beginning of the document environment so that the definitions are written to an external file (`\jobname.glsdefs`) which is then read in at the start of the document on the next run. This means that the entry can now be looked up in the glossary, even if the glossary occurs at the beginning of the document.

There are drawbacks to this mechanism: if you modify an entry definition, you need a second run to see the effect of your modification in `\printglossary` (if it occurs at the start of the document); this method requires an extra `\newwrite`, which may exceed  $\text{T}_{\text{E}}\text{X}$ 's maximum allocation; unexpected expansion issues could occur.

Version 4.47 has introduced changes that have removed some of the issues involved, and there are now warning messages if there is an attempt to multiply define the same entry label.

The `glossaries-extra` package provides a setting that allows `\newglossaryentry` to occur in the document environment but doesn't create the `glsdefs` file. This circumvents some problems but it means that you can't display any of the glossaries before all the entries have been defined (so it's all right if all the glossaries are at the end of the document but not if any occur in the front matter). This isn't applicable with Option 4 as the entry data is provided in `bib` files.

### 4.8.2. Good Practice Issues

§4.8.1 above covers technical issues that can cause your document to have compilation errors or produce incorrect output. This section focuses on good writing practice. The main reason cited by users wanting to define entries within the document environment rather than in the preamble is that they want to write the definition as they type in their document text. This suggests a "stream of consciousness" style of writing that may be acceptable in certain literary genres but is inappropriate for factual documents.

When you write technical documents, regardless of whether it's a PhD thesis or an article for a journal or proceedings, you must plan what you write in advance. If you plan in advance, you should have a fairly good idea of the type of terminology that your document will contain, so while you are planning, create a new file with all your entry definitions. If, while you're writing your document, you remember another term you need, then you can switch over to your definition file and add it. Most text editors have the ability to have more than one file open at a time. The other advantage to this approach is that if you forget the label, you can look it up in the definition file rather than searching through your document text to find the definition.

## 5. Referencing Entries in the Document

Once you have defined a glossary entry using a command such as `\newglossaryentry` (§4) or `\newacronym` (§6), you can refer to that entry in the document with one of the provided commands that are describe in this manual. (There are some additional commands provided by `glossaries-extra`.) The text produced at that point in the document (the link text) is determined by the command and can also be governed by whether or not the entry has been marked as used.

Some of these commands are more complicated than others. Many of them are robust and can't be used in fully expandable contexts, such as in PDF bookmarks.

The commands are broadly divided into:

1. Those that display text in the document (where the formatting can be adjusted by a style or hook) and also index the entry (so that it's added to the glossary) are described in §5.1. This set of commands can be further sub-divided into those that mark the entry as having been used (the `\gls`-like commands, §5.1.2) and those that don't (the `\gls-text`-like commands, §5.1.3).
2. Those that display text in the document without indexing or applying any additional formatting (§5.2). These typically aren't robust or can partially expand so that they can be used in PDF bookmarks (with a few exceptions).

There are additional commands specific to entries defined with `\newacronym` that are described in §6.1.

### 5.1. Links to Glossary Entries

The text which appears at the point in the document when using any of the commands described in §5.1.2 or §5.1.3 is referred to as the link text (even if there are no hyperlinks). These commands also add content to an external indexing file that is used to generate the relevant entry line in the glossary. This information includes an associated location that is added to the number list for that entry. By default, the location refers to the page number. For further information on number lists, see §12. These external indexing file need to be post-processed by `makeindex` or `xindy` if you have chosen Options 2 or 3. If you don't use `\makeglossaries` these external files won't be created. (Options 1 and 4 write the information to the `aux` file instead.)



The link text isn't scoped by default as grouping can interfere with spacing in math mode. Any unscoped declarations in the link text may affect subsequent text.

## 5. Referencing Entries in the Document

Note that repeated use of these commands for the same entry can cause the number list to become quite long, which may not be particularly helpful to the reader. In this case, you can use the non-indexing commands described in §5.2 or you can use the `glossaries-extra` package, which provides a means to suppress the automated indexing of the commands listed in this chapter. (For example, in this manual, common terms such as `glossary` have too many references in the document to list them all in their number list in the index. They have a custom key created with `\glsaddstoragekey` that's used to set their default indexing option.)



I strongly recommend that you don't use the commands defined in this chapter in the arguments of sectioning or caption commands, such as `\chapter` or `\caption`.

Aside from problems with expansion issues, PDF bookmarks and possible nested hyperlinks in the table of contents (or list of whatever) any use of the commands described in §5.1.2 will have their first use flag unset when they appear in the table of contents (or list of whatever) which is usually too soon and will not match the actual heading or caption in the document if there is a different first/subsequent use.

The above warning is particularly important if you are using the `glossaries` package in conjunction with the `hyperref` package. Instead, use one of the *expandable* commands listed in §5.2 (such as `\glsentrytext`). Alternatively, provide an alternative via the optional argument to the sectioning/caption command or use `hyperref`'s `\texorpdfstring`. Examples:



```
\chapterAn overview of \glsentrytext{perl}
\chapter[An overview of Perl]An overview of \gls
{perl}
\chapter{An overview of \texorpdfstring{\gls{perl}}
{Perl}}
```

(You can use `\glstexorpdfstring` instead of `\texorpdfstring` if you don't know whether or not `hyperref` will be needed.)

### glossaries-extra

The `glossaries-extra` package provides commands for use in captions and section headings, such as `\glsfmttext`, that overcome some of the problems.

If you want the link text to produce a hyperlink to the corresponding entry line in the glossary, you should load the `hyperref` package *before* the `glossaries` package. That's what I've done in this manual, so if you encounter a hyperlinked term, such as `link text`, you can click on the word or phrase and it will take you to a brief description in this document's glossary or you can click on a command name, such as `\gls`, and it will take you to the relevant part of the document where the command is described or you can click on a general word or phrase, such as `table of contents`, and it will take you to the relevant line in the index where you can find the number list to navigate to other parts of the document that are pertinent. If, however, you click on “number

list”, you’ll find it leads you to the location list entry in the index instead. This is because number list has been aliased to location list using the `alias` key. Whereas if you click on “page list” it will take you to the corresponding page list entry in the glossary that has a cross-reference to location list, because the `see` key was used instead.



If you use the `hyperref` package, I strongly recommend you use `pdflatex` rather than `latex` to compile your document, if possible. The DVI format of  $\text{\LaTeX}$  has limitations with the hyperlinks that can cause a problem when used with the `glossaries` package. Firstly, the DVI format can’t break a hyperlink across a line whereas `pdf\LaTeX` can. This means that long glossary entries (for example, the full form of an acronym) won’t be able to break across a line with the DVI format. Secondly, the DVI format doesn’t correctly size hyperlinks in subscripts or superscripts. This means that if you define a term that may be used as a subscript or superscript, if you use the DVI format, it won’t come out the correct size.

These are limitations of the DVI format not of the `glossaries` package.

It may be that you only want terms in certain glossaries to have hyperlinks, but not for other glossaries. In this case, you can use the package option `nohypertypes` to identify the glossary lists that shouldn’t have hyperlinked link text. See §2.1 for further details.

The way the link text is displayed depends on



```
\glstextformat{<text>}
```

For example, to make all link text appear in a sans-serif font, do:



```
\renewcommand*{\glstextformat}[1]{\textsf{#1}}
```

Further customisation can be done via `\defglsentryfmt` or by redefining `\glsentryfmt`. See §5.1.4 for further details.

Each entry has an associated conditional referred to as the first use flag. Some of the commands described in this chapter automatically unset this flag and can also use it to determine what text should be displayed. These types of commands are the `\gls`-like commands and are described in §5.1.2. The commands that don’t reference or change the first use flag are `\glstext`-like commands and are described in §5.1.3. See §7 for commands that unset (mark the entry as having been used) or reset (mark the entry as not used) the first use flag without referencing the entries.

The `\gls`-like and `\glstext`-like commands all take a first optional argument that is a comma-separated list of `<key>=<value>` options, described below. They also have a star-variant, which inserts `hyper=false` at the start of the list of options and a plus-variant, which inserts `hyper=true` at the start of the list of options. For example `\gls*{sample}` is the same as `\gls[hyper=false]{sample}` and `\gls+{sample}` is the same as

`\gls[hyper=true]{sample}`, whereas just `\gls{sample}` will use the default hyperlink setting which depends on a number of factors (such as whether the entry is in a glossary that has been identified in the `nohypertypes` list). You can override the `hyper` key in the variant's optional argument, for example, `\gls*[hyper=true]{sample}` but this creates redundancy and is best avoided. The `glossaries-extra` package provides the option to add a third custom variant and commands to override the behaviour of the star and plus variants.



Avoid nesting these commands. For example don't do `\glslink{<label>}{\gls{<label2>}}` as this is likely to cause problems. By implication, this means that you should avoid using any of these commands within the `text`, `first`, `short` or `long` keys (or their plural equivalent) or any other key that you plan to access through these commands. (For example, the `symbol` key if you intend to use `\glsymbol`.) The `glossaries-extra` package provides `\glsxtrp` to use instead, which helps to mitigate against nesting problems.

### 5.1.1. Options

The keys listed below are available for the optional first argument of the `\gls`-like and `\gls-text`-like commands. The `glossaries-extra` package provides additional keys. (See the `glossaries-extra` manual for further details.)



**hyper**=*<boolean>*

default: **true**; initial: **true**

If true, this option can be used to enable/disable the hyperlink to the relevant entry line in the glossary. If this key is omitted, the value is determined by the current settings. For example, when used with a `\gls`-like command, if this is the first use and the `hyperfirst=false` package option has been used, then the default value is `hyper=false`. The hyperlink can be forced on using `hyper=true` unless the hyperlinks have been suppressed using `\gls-disablehyper`. You must load the `hyperref` package before the `glossaries` package to ensure the hyperlinks work.



**format**=*<cs-name>*

This specifies how to format the associated location number within the location list (see §12.1).



There is a special format `glsignore` which simply ignores its argument to create an invisible location.

**counter**=*<counter-name>*

This specifies which counter to use for this location. This overrides the default `counter` used by the entry, the default counter associated with the glossary (supplied in the final optional argument of `\newglossary`) and the default counter identified by the `counter` package option. See also §12. The `glossaries-extra` package has additional options that affect the counter used, such as `floats` and `equations`. This manual uses the `floats` option to automatically switch the counter to `table` for any entries indexed in tables (such as those in Table 12.1).

**local**=*<boolean>*

*default: true; initial: false*

This is a boolean key that only makes a difference when used with `\gls`-like commands that change the entry's first use flag. If `local=true`, the change to the first use flag will be localised to the current scope.

**noindex**=*<boolean>*

*default: true; initial: false*

If true, this option will suppress the indexing. Only available with `glossaries-extra`. This manual doesn't use `noindex` for common entries. Instead it uses `format=glsignore`, which is preferable with `bib2gls`.

**hyperoutside**=*<boolean>*

*default: true; initial: true*

If true, this will put the hyperlink outside of `\gls{textformat}`. Only available with `glossaries-extra`.

**wrgloss**=*<position>*

*initial: before*

This key determines whether to index before (`wrgloss=before`) or after (`wrgloss=after`) the link text, which alters where the whatsit occurs. Only available with `glossaries-extra`.

**textformat**=*<csname>*

The value is the name of the control sequence (without the leading backslash) to encapsulate the link text instead of the default `\gls{textformat}`. Only available with `glossaries-extra`.

**prefix**=*<link-prefix>*

This key locally redefines `\glslinkprefix` to the given value. Only available with `glossaries-extra`.



**thevalue**= $\langle$ location $\rangle$

This key explicitly sets the location value instead of obtaining it from the location counter. Only available with `glossaries-extra`.

**theHvalue**= $\langle$ the-H-value $\rangle$

This key explicitly sets the hyperlink location value instead of obtaining it from the location counter. Only available with `glossaries-extra`.

**prereset**= $\langle$ value $\rangle$  *default: local; initial: none*

Determines whether or not to reset the first use flag before the link text. Only available with `glossaries-extra`.

**preunset**= $\langle$ value $\rangle$  *default: local; initial: none*

Determines whether or not to unset the first use flag before the link text. Only available with `glossaries-extra`.

**postunset**= $\langle$ value $\rangle$  *default: global; initial: global*

Determines whether or not to unset the first use flag after the link text. Only available with `glossaries-extra`.

### 5.1.2. The `\gls`-Like Commands (First Use Flag Queried)

This section describes the `\gls`-like commands that unset (mark as used) the first use flag after the link text, and in most cases they use the current state of the flag to determine the text to be displayed. As described above, these commands all have a star-variant (`hyper=false`) and a plus-variant (`hyper=true`) and have an optional first argument that is a  $\langle$ key $\rangle$ = $\langle$ value $\rangle$  list. These commands use `\glsentryfmt` or the equivalent definition provided by `\defglsentryfmt` to determine the automatically generated text and its format (see §5.1.4).

Apart from `\glsdisp`, the commands described in this section also have a *final* optional argument  $\langle$ insert $\rangle$  which may be used to insert material into the automatically generated text.

Since the commands have a *final* optional argument, take care if you actually want to display an open square bracket after the command when the *final* optional argument is absent. Insert an empty optional argument or `\relax` or an empty set of braces `{ }` immediately before the opening square bracket to prevent it from being interpreted as the

final argument. For example:

```
\gls{sample}[] [Editor's comment]
\gls{sample}{} [Editor's comment]
\gls{sample} \relax[Editor's comment]
```

Use of a semantic command can also help avoid this problem. For example:

```
\newcommand{\edcom}[1][#1]
% later:
\gls{sample} \edcom{Editor's comment}
```

Don't use any of the `\gls`-like or `\gls`text-like commands in the `\insert` argument.

Take care using these commands within commands or environments that are processed multiple times as this can confuse the first use flag query and state change. This includes frames with overlays in `beamer` and the `tabularx` environment provided by `tabularx`. The `glossaries` package automatically deals with this issue in `amsmath`'s `align` environment. You can apply a patch to `tabularx` by placing the command `\glspatchtabularx` in the preamble. This does nothing if `tabularx` hasn't been loaded. There's no patch available for `beamer`. See §7 for more details and also §15.5.

Most of the commands below have case-changing variants to convert the link text to sentence case or all caps. The sentence case conversion is performed by `\gls`sentencecase and the all caps is performed by `\gls`supercase. Ensure you have at least version 2.08 of `mfirstuc` to use the modern  $\LaTeX$ 3 case-changing commands instead of the now deprecated `textcase` package. See the `mfirstuc` manual for further details.

```
\gls [options] {entry-label} [insert] modifiers: * +
```

This command typically determines the link text from the values of the `text` or `first` keys supplied when the entry was defined using `\newglossaryentry`. However, if the entry was defined using `\newacronym` and `\setacronymstyle` was used, then the link text will usually be determined from the `long` or `short` keys (similarly for `\newabbreviation`).

The case-changing variants:

```
\Gls [options] {entry-label} [insert] modifiers: * +
```

(sentence case) and

```
\GLS [⟨options⟩] {⟨entry-label⟩} [⟨insert⟩]
```

modifiers: \* +

(all caps).

There are plural forms that are analogous to `\gls`:

```
\glspl [⟨options⟩] {⟨entry-label⟩} [⟨insert⟩]
```

modifiers: \* +

Sentence case:

```
\Glspl [⟨options⟩] {⟨entry-label⟩} [⟨insert⟩]
```

modifiers: \* +

All caps:

```
\GLSpl [⟨options⟩] {⟨entry-label⟩} [⟨insert⟩]
```

modifiers: \* +

These typically determine the link text from the `plural` or `firstplural` keys supplied when the entry was defined using `\newglossaryentry` or, if the entry was defined with `\newacronym` and `\setacronymstyle` was used, from the `longplural` or `shortplural` keys. (Similarly for `\newabbreviation`.)

Be careful when you use glossary entries in math mode especially if you are using `hyperref` as it can affect the spacing of subscripts and superscripts in math mode. For example, suppose you have defined the following entry:

```
\newglossaryentry{Falpha}{name={F\alpha},
description={sample}}
```

and later you use it in math mode:

```
$_\gls{Falpha}2$
```

This will result in  $F_{\alpha}^2$  instead of  $F_{\alpha}^2$ . In this situation it's best to bring the superscript into the hyperlink using the final `⟨insert⟩` optional argument:

```
$_\gls{Falpha}[^2]$
```

```
\glsdisp[⟨options⟩]{⟨entry-label⟩}{⟨text⟩}
```

modifiers: \* +

This behaves in the same way as `\gls`, except that the *⟨link text⟩* is explicitly set. There's no final optional argument as any inserted material can be added to the *⟨link text⟩* argument. Even though the first use flag doesn't influence the link text, it's still unset after the link text and so may influence the post-link hook.

For example:

```
\newglossaryentry{locationcounter}{
  name={location counter},
  description={...}
}
% later in the document:
The \glsdisp{locationcounter}{counter}
identifying the location.
```

This ensures that the entry is indexed and, if enabled, creates a hyperlink to the entry line in the glossary. It will also follow the display style and have the link text encapsulated with `\gls-textformat`.

Since the actual text is being supplied, any case-changing can be placed in the argument. For example:

```
\glsdisp{locationcounter}{Counters}
associated with locations
```

However, a sentence case variant is provided:

```
\Glsdisp[⟨options⟩]{⟨entry-label⟩}{⟨text⟩}
```

modifiers: \* +

This essentially does:

```
\glsdisp[⟨options⟩]{⟨entry-label⟩}{\glsentencecase{⟨text⟩}}
```

The main reason for providing this command is to set up a mapping for `\makefirstuc`. See the `mfirstuc` manual for further details about mappings.

Don't use any of the `\gls`-like or `\gls-text`-like commands in the *⟨link text⟩* argument of `\glsdisp`.

### 5.1.3. The `\gls`-Like Commands (First Use Flag Not Queried)

This section describes the commands that don't change or reference the first use flag. As described above, these commands all have a star-variant (`hyper=false`) and a plus-variant (`hyper=true`) and have an optional first argument that is a `<key>=<value>` list. These commands also don't use `\glsentryfmt` or the equivalent definition provided by `\defglsentryfmt` (see §5.1.4). They do, however, have their link text encapsulated with `\gls-textformat`.

Additional commands for acronyms are described in §6. (Additional commands for [abbreviations](#) are described in the `glossaries-extra` manual.)

Apart from `\glslink`, the commands described in this section also have a *final* optional argument `<insert>` which may be used to insert material into the automatically generated text. See the caveat above in §5.1.2. As with the `\gls`-like commands described in §5.1.2, these commands also have case-changing variants.

`\glslink` [`<options>`] {`<entry-label>`} {`<text>`} modifiers: \* +

This command explicitly sets the link text as given in the final argument. As with `\glsdisp`, there's a sentence case variant to allow a sentence case mapping to be established:

`\Glslink` [`<options>`] {`<entry-label>`} {`<text>`} modifiers: \* +

See the `mfirstuc` package for further details.

Don't use any of the `\gls`-like or `\gls`-like commands in the argument of `\glslink`. By extension, this means that you can't use them in the value of fields that are used to form link text.

`\gls` [`<options>`] {`<entry-label>`} [`<insert>`] modifiers: \* +

This command always uses the value of the `text` key as the link text.

The case-changing variants are:

`\Gls` [`<options>`] {`<entry-label>`} [`<insert>`] modifiers: \* +

(sentence case) and

`\GLS` [`<options>`] {`<entry-label>`} [`<insert>`] modifiers: \* +

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(all caps).

There's no equivalent command for title case, but you can use the more generic command `\glsentrytitlecase` in combination with `\glslink`. For example:

```
\glslink{sample}{\glsentrytitlecase{sample}{text}}
```

(See §5.2.)

```
\glsfirst[⟨options⟩]{⟨entry-label⟩}[⟨insert⟩] modifiers: * +
```

This command always uses the value of the `first` key as the link text.

The case-changing variants are:

```
\Glsfirst[⟨options⟩]{⟨entry-label⟩}[⟨insert⟩] modifiers: * +
```

(sentence case) and

```
\GLSfirst[⟨options⟩]{⟨entry-label⟩}[⟨insert⟩] modifiers: * +
```

(all caps).

The value of the `first` key (and `firstplural` key) doesn't necessarily match the link text produced by `\gls` (or `\glspl`) on first use as the link text used by `\gls` may be modified through entry formatting commands like `\defglsentryfmt`. (Similarly, the value of the `text` and `plural` keys don't necessarily match the link text used by `\gls` or `\glspl` on subsequent use.)

```
\glsplural[⟨options⟩]{⟨entry-label⟩}[⟨insert⟩] modifiers: * +
```

This command always uses the value of the `plural` key as the link text.

The case-changing variants are:

```
\Glsplural[⟨options⟩]{⟨entry-label⟩}[⟨insert⟩] modifiers: * +
```

(sentence case) and

```
\GLSplural[⟨options⟩]{⟨entry-label⟩}[⟨insert⟩] modifiers: * +
```

(all caps).

`\glsfirstplural` [*options*] {*entry-label*} [*insert*] *modifiers: \* +*

This command always uses the value of the `firstplural` key as the link text.

The case-changing variants are:

`\Glsfirstplural` [*options*] {*entry-label*} [*insert*] *modifiers: \* +*

(sentence case) and

`\GLSfirstplural` [*options*] {*entry-label*} [*insert*] *modifiers: \* +*

(all caps).

`\glsname` [*options*] {*entry-label*} [*insert*] *modifiers: \* +*

This command always uses the value of the `name` key as the link text. Note that this may be different from the values of the `text` or `first` keys. In general it's better to use `\glstext` or `\glsfirst` instead of `\glsname`, unless you have a particular need for the actual name.

The name is displayed in the glossary using `\glossentryname` not `\glsname`.

The case-changing variants are:

`\Glsname` [*options*] {*entry-label*} [*insert*] *modifiers: \* +*

(sentence case) and

`\GLSname` [*options*] {*entry-label*} [*insert*] *modifiers: \* +*

(all caps).

In general it's best to avoid `\glsname` with acronyms. Instead, consider using `\acrlong`, `\acrshort` or `\acrfull`. Alternatively, for abbreviations defined with `glossaries-extra`, use `\glsxtrlong`, `\glsxtrshort` or `\glsxtrfull`.

`\glsymbol` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

This command always uses the value of the `symbol` key as the link text.

The symbol is displayed in the glossary using `\glossentrysymbol` not `\gls-symbol`.

The case-changing variants are:

`\Glsymbol` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

(sentence case) and

`\GLSsymbol` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

(all caps).

`\glsdesc` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

This command always uses the value of the `description` key as the link text.

The description is displayed in the glossary using `\glossentrydesc` not `\gls-desc`.

The case-changing variants are:

`\Glsdesc` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

(sentence case) and

`\GLSdesc` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

(all caps).

`\glsuseri` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

This command always uses the value of the `user1` key as the link text.

The case-changing variants are:



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`\Glsuseri` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

(sentence case) and

`\GLSuseri` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

(all caps).

`\glsuserii` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

This command always uses the value of the `user2` key as the link text.

The case-changing variants are:

`\Glsuserii` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

(sentence case) and

`\GLSuserii` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

(all caps).

`\glsuseriii` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

This command always uses the value of the `user3` key as the link text.

The case-changing variants are:

`\Glsuseriii` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

(sentence case) and

`\GLSuseriii` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

(all caps).

`\glsuseriv` [*options*] {*entry-label*} [*insert*]

*modifiers:* \* +

This command always uses the value of the `user4` key as the link text.

The case-changing variants are:

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`\Glsuseriv[<options>] {<entry-label>} [<insert>]`

*modifiers:* \* +

(sentence case) and

`\GLSuseriv[<options>] {<entry-label>} [<insert>]`

*modifiers:* \* +

(all caps).

`\glsuserv[<options>] {<entry-label>} [<insert>]`

*modifiers:* \* +

This command always uses the value of the `user5` key as the link text.

The case-changing variants are:

`\Glsuserv[<options>] {<entry-label>} [<insert>]`

*modifiers:* \* +

(sentence case) and

`\GLSuserv[<options>] {<entry-label>} [<insert>]`

*modifiers:* \* +

(all caps).

`\glsuservi[<options>] {<entry-label>} [<insert>]`

*modifiers:* \* +

This command always uses the value of the `user6` key as the link text.

The case-changing variants are:

`\Glsuservi[<options>] {<entry-label>} [<insert>]`

*modifiers:* \* +

(sentence case) and

`\GLSuservi[<options>] {<entry-label>} [<insert>]`

*modifiers:* \* +

(all caps).

### 5.1.4. Changing the Format of the `\gls`-like Link Text

glossaries-extra

The `glossaries-extra` package provides ways of altering the display style according to the `category`. See the `glossaries-extra` manual for further details.

The default entry format (display style) of the link text for the `\gls`-like commands is governed by:

```
\glsentryfmt
```

The `glossaries` package defines this to simply use `\glsdefaultentryfmt`. The `glossaries-extra` package redefines `\glsentryfmt` to allow it to be integrated with the `abbreviation` styles.

The entry format is only applicable to the `\gls`-like commands, not the `\gls`text-like commands. However, both sets of commands use `\gls`textformat for the font.

You can redefine `\glsentryfmt` (but beware of breaking `abbreviations` with `glossaries-extra`), but if you only want to change the display style for a given glossary, use:

```
\defglsentryfmt [<glossary-type>] {<definition>}
```

instead of redefining `\glsentryfmt`. The optional first argument *<glossary-type>* is the glossary type. This defaults to `\glsdefaulttype` if omitted. The second argument is the entry format definition, which needs to use the placeholder commands described in this section.

In the remainder of this section, *<definition>* refers to the argument of `\defglsentryfmt` or to the definition of `\glsentryfmt`.

Note that `\glsentryfmt` is the default display style for glossary entries. Once the display style has been changed for an individual glossary using `\defglsentryfmt`, redefining `\glsentryfmt` won't have an effect on that glossary, you must instead use `\defglsentryfmt` again. Note that glossaries that have been identified as lists of acronyms (via the package option `acronymlists` or the command `\DeclareAcronymList`, see §2.7) use `\defglsentryfmt` to set their display style. (The `glossaries-extra` package provides `abbreviation` support within its redefinition of `\glsentryfmt`.)

Within *<definition>* you may use the following commands:

`\glslabel`

This expands to the label of the entry being referenced.

You can also access the entry's glossary type using:

`\glstype`

This is defined using `\protected@edef` so the replacement text is the actual glossary type rather than `\glsentrytype{\glslabel}`.

`\glsinsert`

Expands to the final *insert* optional argument to `\gls`, `\glspl` and their case-changing variants (or empty if *insert* was omitted).

`\glsifplural{<true>}{<false>}`

If the plural commands `\glspl`, `\Glspl` or `\GLSpl` was used, this command expands to *true* otherwise it expands to *false*.

`\glscapscase{<no change>}{<sentence>}{<all caps>}`

If `\gls`, `\glspl` or `\glsdisp` were used, this expands to *no change*. If the sentence case commands `\Gls` or `\Glspl` were used, this expands to *sentence*. If the all caps commands `\GLS` or `\GLSpl` were used, this expands to *all caps*.

`\glscustomtext`

Expands to the custom text supplied in `\glsdisp`. It's always empty for `\gls`, `\glspl` and their case-changing variants. (You can use `etoolbox`'s `\ifdefempty` to determine if `\glscustomtext` is empty.)

If `\Glsdisp` is used, `\glscustomtext` will include the sentence case command (`\glsentencecase`), but `\glscapscase` will expand to *no change* (since `\Glsdisp` simply uses `\glsdisp` without modifying the placeholder commands). However, the generic `\glsentryfmt` doesn't use `\glscapscase` (or `\glsifplural`) if `\glscustomtext` isn't empty.

```
\glsifhyperon{true}{false}
```

This will do *true* if the hyperlinks are on for the current reference, otherwise it will do *false*. The hyperlink may be off even if it wasn't explicitly switched off with `hyper=false` key or the use of a starred (\*) command. It may be off because the `hyperref` package hasn't been loaded or because `\glsdisablehyper` has been used or because the entry is in a glossary type that's had the hyperlinks switched off (using `nohypertypes`) or because it's the first use and the hyperlinks have been suppressed on first use.

If you want to know if the calling command used to reference the entry was used with the star (\*) or plus (+) variant, you can use:

```
\glslinkvar{unmodified}{star case}{plus case}
```

This will do *unmodified* if the unmodified version was used, or will do *star case* if the starred version was used, or will do *plus case* if the plus version was used. The custom modifier provided by `glossaries-extra`'s `\GlsXtrSetAltModifier` will make `\glslinkvar` expand to *unmodified*.

Note that this doesn't take into account if the `hyper` key was used to override the default setting, so this command shouldn't be used to guess whether or not the hyperlink is on for this reference. This command is therefore of limited use. If you want to make the star or plus behave differently, you can try `\GlsXtrSetStarModifier` or `\GlsXtrSetPlusModifier` instead, if you are using `glossaries-extra`.

Note that you can also use commands such as `\ifglsused` within *definition* (see §7), but don't use `\ifglsused` in the post-link hook.

#### glossaries-extra

The `glossaries-extra` package has additional commands that may be used within *definition* to obtain information about the calling command.

The commands `\glslabel`, `\glstype`, `\glsifplural`, `\glscaps`, `\glsinsert` and `\glscustomtext` are typically updated at the start of the `\gls`-like and `\glstext`-like commands so they can usually be accessed in the hook user commands, such as `\glspostlinkhook` and `\glslinkpostsetkeys`.

This means that using commands like `\gls` within the fields that are accessed using the `\gls`-like or `\glstext`-like commands (such as the `first`, `text`, `long` or `short` keys) will cause a problem. The definitions of the placeholder commands can't be scoped otherwise they won't be available for the post-link hook, and grouping can also cause unwanted spacing issues in math mode.

## 5. Referencing Entries in the Document

If you only want to make minor modifications to `\glsentryfmt`, you can use the generic entry formatting command:

```
\glsgenentryfmt
```

This uses the above commands to display just the `first`, `text`, `plural` or `firstplural` keys (or the custom text) with the insert text appended. For example, to make the symbol appear in parentheses for the `symbols` glossary:

```
\defglsentryfmt [symbols] {\glsgenentryfmt (\glsentry-  
symbol{\glslabel}) }
```

The acronym styles use a similar method to adjust the formatting. For example, the `long-short` style implements:

```
\defglsentryfmt [<type>] {\ifglsashaslong{\glslabel}{\gls-  
genacfmt}{\glsgenentryfmt} }
```

For each glossary that has been identified as a list of acronyms. This uses the generic entry format command `\glsgenentryfmt` for general entries (that don't have the `long` key set), otherwise it uses the generic acronym format:

```
\glsgenacfmt
```

This uses the values from the `long`, `short`, `longplural` and `shortplural` keys, rather than using the `text`, `plural`, `first` and `firstplural` keys. The first use singular text is obtained via:

```
\genacrfullformat {<label>} {<insert>}
```

instead of from the `first` key, and the first use plural text is obtained via:

```
\genplacrfullformat {<label>} {<insert>}
```

instead of from the `firstplural` key. In both cases, `<label>` is the entry's label and `<insert>` is the insert text provided in the final optional argument of commands like `\gls`. The default behaviour is to do the long form (or plural long form) followed by `<insert>` and a space and the short form (or plural short form) in parentheses, where the short form is in the argument of `\firstacronymfont`. There are also sentence case versions:

```
\Genacrfullformat {<label>} {<insert>}
```

and

```
\Genplacrfullformat {<label>} {<insert>}
```

See §6 for details on changing the style of acronyms.

Note that `\glsentryfmt` (or the formatting given by `\defglsentryfmt`) is not used by the `\gls`-like commands.

### Example 18: Custom Entry Display in Text

Suppose you want a glossary of measurements and units, you can use the `symbol` key to store the unit:

```
\newglossaryentry{distance}{name={distance},
description={The length between two points},
symbol={km}}
```

and now suppose you want `\gls{distance}` to produce “distance (km)” on first use, then you can redefine `\glsentryfmt` as follows:

```
\renewcommand*{\glsentryfmt}{%
  \glsgetentryfmt
  \ifglsused{\glslabel}}{\space (\glsentrysymbol
{\glslabel})}%
```

(Note that I’ve used `\glsentrysymbol` rather than `\glsymbol` to avoid nested hyperlinks.)

All of the link text will be formatted according to `\glsformat` (described earlier). So if you do, say:

```
\renewcommand{\glsformat}[1]{\textbf{#1}}
\renewcommand*{\glsentryfmt}{%
  \glsgetentryfmt
  \ifglsused{\glslabel}}{\space (\glsentrysymbol
```

```
{\glslabel}}}%
}
```

then `\gls{distance}` will produce “**distance (km)**”. This is different from using the post-link hook which is outside of `\glsformat`.

For a complete document, see the sample file `sample-entryfmt.tex`.

---

### Example 19: Custom Format for Particular Glossary

Suppose you have created a new glossary called `notation` and you want to change the way the entry is displayed on first use so that it includes the symbol, you can do:

```
\defglsentryfmt[notation]{\glsgetentryfmt
\ifglsused{\glslabel}}{\space
(denoted \glsentrysymbol{\glslabel})}}
```

Now suppose you have defined an entry as follows:

```
\newglossaryentry{set}{type={notation},
name={set},
description={A collection of objects},
symbol={\ensuremath{S}}
}
```

The first time you reference this entry it will be displayed as: “set (denoted  $S$ )” (assuming `\gls` was used).

Remember that if you use the `symbol` key, you need to use a glossary style that displays the symbol, as many of the styles ignore it.

---

#### 5.1.5. Hooks

Both the `\gls`-like and `\glsformat`-like commands use:

```
\glslinkpostsetkeys
```

after the `\glsformat` options are set. This macro does nothing by default but can be redefined. (For example, to switch off the hyperlink under certain conditions.) The `glossaries-extra` package additionally provides `\glslinkpresetkeys`.



There is also a hook (the post-link hook) that's implemented at the end:

```
\glspostlinkhook
```

This is done after the link text has been displayed and also *after* the first use flag has been unset (see example 31). This means that it's too late to use `\ifglsused` in the definition of `\glspostlinkhook`. The `glossaries-extra` package provides `\glsxtrifwasfirstuse` for use in the post-link hook.

glossaries-extra

The `glossaries-extra` package redefines `\glspostlinkhook` to allow for additional hooks that can vary according to the entry's `category`. If you migrate over from only using the base `glossaries` package to `glossaries-extra` and you have redefined `\glspostlinkhook`, consider moving your modifications to the category post-link hook to avoid breaking the extended post-link hook features. See the `glossaries-extra` manual for further details.

### 5.1.6. Enabling and Disabling Hyperlinks to Glossary Entries

If you load `hyperref` prior to loading the `glossaries` package, the `\gls`-like and `\gls-text`-like commands will automatically have hyperlinks to the relevant glossary entry, unless the `hyper` option has been switched off (either explicitly or through implicit means, such as via the `no-hypertypes` package option).

You can disable or enable hyperlinks using `\glsdisablehyper` and `\glsenablehyper` respectively. The effect can be localised by placing the commands within a group. Note that you should only use `\glsenablehyper` if the commands `\hyperlink` and `\hypertarget` have been defined, otherwise you will get undefined control sequence errors. If the `hyperref` package is loaded before `glossaries`, `\glsenablehyper` will be used automatically.

You can disable just the first use links using the package option `hyperfirst=false`. Note that this option only affects the `\gls`-like commands that recognise the first use flag.

### Example 20: First Use With Hyperlinked Footnote Description

Suppose I want the first use to have a hyperlink to the description in a footnote instead of hyperlinking to the relevant place in the glossary. First I need to disable the hyperlinks on first use via the package option `hyperfirst=false`:

```
\usepackage[hyperfirst=false]{glossaries}
```

Now I need to redefine `\glsentryfmt` (see §5.1.4):

```
\renewcommand*{\glsentryfmt}{%
  \glsgetentryfmt
  \ifglsused{\glslabel}{}{\footnote{\glsentrydesc
{\glslabel}}}%
}
```

Now the first use won't have hyperlinked text, but will be followed by a footnote. See the sample file `sample-FnDesc.tex` for a complete document.

---

Note that the `hyperfirst` option applies to all defined glossaries. It may be that you only want to disable the hyperlinks on first use for glossaries that have a different form on first use (such as list of acronyms). This can be achieved by noting that since the entries that require hyperlinking for all instances have identical first and subsequent text, they can be unset via `\glsunsetall` (see §7) so that the `hyperfirst` option doesn't get applied.

### Example 21: Suppressing Hyperlinks on First Use Just For Acronyms

Suppose I want to suppress the hyperlink on first use for acronyms but not for entries in the `main` glossary. I can load the `glossaries` package using:

```
\usepackage[hyperfirst=false,acronym]{glossaries}
```

Once all glossary entries have been defined I then do:

```
\glsunsetall[main]
```

(Alternatively use the `nohyperfirst` category attribute with `glossaries-extra`.)

---

For more complex requirements, you might find it easier to switch off all hyperlinks via `\glsdisablehyper` and put the hyperlinks (where required) within the definition of `\glsentryfmt` (see §5.1.4) via `\gls hyperlink` (see §5.2).

### Example 22: Only Hyperlink in Text Mode Not Math Mode

This is a bit of a contrived example, but suppose, for some reason, I only want the `\gls`-like commands to have hyperlinks when used in text mode, but not in math mode. I can do this by adding the glossary to the list of `nohypertypes` and redefining `\glsentryfmt`:

```

\GlsDeclareNoHyperList{main}

\renewcommand*{\glsentryfmt}{%
  \ifmmode
    \glsgenentryfmt
  \else
    \glsifhyperon
    {\glsgenentryfmt}% hyperlink already on
    {\gls hyperlink[\glsgenentryfmt]{\glslabel}}%
  \fi
}

```

Note that this doesn't affect the `\gls text`-like commands, which will have the hyperlinks off unless they're forced on using the plus variant or with an explicit use of `hypertrue`.

See the sample file `sample-nomathhyper.tex` for a complete document.

### Example 23: One Hyper Link Per Entry Per Chapter

Here's a more complicated example that will only have the hyperlink on the first time an entry is used per chapter. This doesn't involve resetting the first use flag. Instead it adds a new key using `\glsaddstoragekey` (see §4.3.2) that keeps track of the chapter number that the entry was last used in:

```

\glsaddstoragekey{chapter}{0}{\glschapnum}

```

This creates a new user command called `\glschapnum` that's analogous to `\glsentrytext`. The default value for this key is 0. I then define my glossary entries as usual.

Next I redefine the hook `\glslinkpostsetkeys` (see §5.1.4) so that it determines the current chapter number (which is stored in `\currentchap` using `\edef`). This value is then compared with the value of the entry's `chapter` key that I defined earlier. If they're the same, this entry has already been used in this chapter so the hyperlink is switched off using `xkeyval`'s `\setkeys` command. If the chapter number isn't the same, then this entry hasn't been used in the current chapter. The `chapter` field is updated using `\glsfieldxdef` (§15.6) provided the user hasn't switched off the hyperlink. (This test is performed using `\glsifhyperon`.)

```

\renewcommand*{\glslinkpostsetkeys}{%
  \edef\currentchap{\arabic{chapter}}%
}

```

```

\ifnum\currentchap=\glschapnum{\glslabel}\relax
\setkeys{glslink}{hyper=false}%
\else
\glsifhyperon{\glsfieldxdef{\glslabel}{chapter}
{\currentchap}}%
\fi
}

```

Note that this will be confused if you use `\gls` etc when the chapter counter is 0. (That is, before the first `\chapter`.)

See the sample file `sample-chap-hyperfirst.tex` for a complete document.

## 5.2. Using Glossary Terms Without Indexing

The commands described in this section display entry details without adding any information to the glossary. They don't use `\glsentrytext` or the entry format, they don't have any optional arguments, they don't affect the first use flag and, apart from `\gls hyperlink` and the number list commands, they don't produce hyperlinks.

If you want to use the sentence case commands in PDF bookmarks, such as `\Glsentrytext`, ensure you have at least version 2.08 of `mfirstuc`. Inside PDF bookmarks, those commands will expand with the sentence case applied using the expandable `\MFUsentencecase`. Outside of PDF bookmarks those commands will expand to an internal robust command that applies the sentence case with `\gls sentencecase` (which defaults to `\makefirstuc`).

If you want to title case a field, you can use:

```
\glsentrytitlecase{<entry-label>}{<field>}
```

where `<entry-label>` is the label identifying the glossary entry, `<field>` is the internal field label (see Table 4.1). This internally uses `\gls capitalisewords`. Within PDF bookmarks, this command will expand to sentence case using the expandable `\MFUsentencecase`. (The title case command `\capitalisewords` isn't expandable.)

If your field contains formatting commands, you will need to redefine `\gls capitalisewords` to use `\capitalisefmtwords` instead of `\capitalisewords`. See the `mfirstuc` manual for further details.

## 5. Referencing Entries in the Document

For example, to convert the description to title case for the entry identified by the label “sample”:

```
\glsentrytitlecase{sample}{desc}
```

(If you want title-casing in your glossary style, you might want to investigate the `glossaries-extra` package.) This command will trigger an error if the entry is undefined.

If you want a hyperlink to an entry’s line in the glossary but don’t want the indexing or formatting associated with the `\gls`-like and `\glstext`-like commands, you can use:

```
\gls hyperlink[text]{entry-label}
```

This command provides a hyperlink **but does not add any information to the glossary file**. The hyperlink text is given by the optional argument, which defaults to `\glsentrytext{label}`. Note that the hyperlink will be suppressed if you have used `\glsdisablehyper` or if you haven’t loaded the `hyperref` package.

If you use `\gls hyperlink`, you need to ensure that the relevant entry has been added to the glossary using any of the commands described in §5.1 or §10 otherwise you will end up with an undefined hyperlink target.

The following commands in form `\glsentry<field>` expand to the associated field value for the entry identified by `<entry-label>` for the non-case-changing versions. Those commands don’t check if the entry has been defined. The sentence case versions `\Glsentry-<field>` only expand in PDF bookmarks. In both cases, any fragile commands within the field values will need to be protected or made robust if the field values are required in a moving argument.

There are also commands in the form `\glossentry<field>` for the `name`, `description` and `symbol` that are used by the glossary styles. Those commands will issue a warning if the entry hasn’t been defined. See §13 for further information.

```
\glsentryname{entry-label}
```

Expands to the value of the `name` field. Note that within glossary styles, the name is displayed using `\glossentryname`. The corresponding sentence case command is:

```
\Glsentryname{entry-label}
```



In general it's best to avoid `\Glsentryname` with acronyms or abbreviations. Instead, consider using `\Glsentrylong`, `\Glsentryshort` or `\Glsentryfull`.



```
\glsentrytext{<entry-label>}
```

Expands to the value of the `text` field. The corresponding sentence case command is:



```
\Glsentrytext{<entry-label>}
```



```
\glsentryplural{<entry-label>}
```

Expands to the value of the `plural` field. The corresponding sentence case command is:



```
\Glsentryplural{<entry-label>}
```



```
\glsentryfirst{<entry-label>}
```

Expands to the value of the `first` field. The corresponding sentence case command is:



```
\Glsentryfirst{<entry-label>}
```



```
\glsentryfirstplural{<entry-label>}
```

Expands to the value of the `firstplural` field. The corresponding sentence case command is:



```
\Glsentryfirstplural{<entry-label>}
```



```
\glsentrydesc{<entry-label>}
```

## 5. Referencing Entries in the Document

Expands to the value of the `description` field. Note that within glossary styles, the description is displayed using `\glossentrydesc`. The corresponding sentence case command is:

```
\Glsentrydesc{<entry-label>}
```

```
\glsentrydescplural{<entry-label>}
```

Expands to the value of the `descriptionplural` field. The corresponding sentence case command is:

```
\Glsentrydescplural{<entry-label>}
```

```
\glsentrysymbol{<entry-label>}
```

Expands to the value of the `symbol` field. Note that within glossary styles, the description is displayed using `\glsentrysymbol`. The corresponding sentence case command is:

```
\Glsentrysymbol{<entry-label>}
```

```
\glsentrysymbolplural{<entry-label>}
```

Expands to the value of the `symbolplural` field. The corresponding sentence case command is:

```
\Glsentrysymbolplural{<entry-label>}
```

```
\glsentryuseri{<entry-label>}
```

Expands to the value of the `user1` field. The corresponding sentence case command is:

```
\Glsentryuseri{<entry-label>}
```

```
\glsentryuserii{<entry-label>}
```

Expands to the value of the `user2` field. The corresponding sentence case command is:

```
\Glsentryuserii{<entry-label>}
```

```
\glsentryuseriii{<entry-label>}
```

Expands to the value of the `user3` field. The corresponding sentence case command is:

```
\Glsentryuseriii{<entry-label>}
```

```
\glsentryuseriv{<entry-label>}
```

Expands to the value of the `user4` field. The corresponding sentence case command is:

```
\Glsentryuseriv{<entry-label>}
```

```
\glsentryuserv{<entry-label>}
```

Expands to the value of the `user5` field. The corresponding sentence case command is:

```
\Glsentryuserv{<entry-label>}
```

```
\glsentryuservi{<entry-label>}
```

Expands to the value of the `user6` field. The corresponding sentence case command is:

```
\Glsentryuservi{<entry-label>}
```



## 5. Referencing Entries in the Document

The next two commands, `\glsentrynumberlist` and `\glsdisplaynumberlist`, display the entry's number list. This information is readily available with Options 1 and 4 (where the number list is stored in the `loclist` or `location` internal fields) but not for Options 2 and 3 (where the number list is simply part of the code to typeset the glossary written in the glossary file).

If you need to parse the number list, split it into groups based on the location counter, or extract a primary location then Option 4 (`bib2gls`) is your best option.

```
\glsentrynumberlist{<entry-label>}
```

Displays the number list for the given entry in the same format as it's shown by default in the glossary. The locations will have hyperlinks if supported.

This command is at its simplest with Option 4, where it just displays the value of the `location` internal field that's set by `bib2gls` in the `gls.tex` file. This will use the delimiters supplied by `bib2gls` (`\bibglsdelimN` and `\bibglslastDelimN`) for individual locations as well as `\delimR` for ranges, as used in the glossary.

With Option 1, `\glsentrynumberlist` passes the value of the entry's `loclist` internal field (that's created when the aux file is input) to `\glsnoidxloclist` (which is also used by `\printnoidxglossary`). This will result in a simple list with each location separated with `\delimN`, as used in the glossary. Note that this doesn't allow for ranges (as with `\printnoidxglossary`).

With Options 2 and 3, you will need the `savenumberlist` package option, which will attempt to gather the number list information when the glossary file is input by `\printglossary`. Since glossaries often occur at the end of the document, this means that the information has to be saved in the aux file for the next `LATEX` run. Therefore an extra `LATEX` call is required if `\glsentrynumberlist` is needed with `makeindex` or `xindy`. This will use the same `\delimN` and `\delimR` as used in the glossary.

```
\glsdisplaynumberlist{<entry-label>}
```

This attempts to display the number list with the separators:

```
\glsnumlistsep initial: , _
```

between each location except for the last pair and

```
\glsnumlistlastsep initial: _ \& _
```

between the last pair.

As with `\glsentrynumberlist`, this is again at its simplest with Option 4. This works by locally setting `\bibglsdelimN` to `\glsnumlistsep` and `\bibglslastDelimN`

## 5. Referencing Entries in the Document

to `\glsnumlistlastsep` and then displaying the value of the `location` field. You can instead simply redefine `\bibglsdelimN` and `\bibglslastDelimN` as desired and use `\glsentrynumberlist`.

With Option 1, the number list information is stored in the `loclist` internal field, which is in the format of an `etoolbox` internal list. So with Option 1, `\glsdisplaynumberlist` uses `etoolbox`'s `\forlistloop` to iterate over the field value using the handler macro:

```
\glsnoidxdisplayloclisthandler{<location>}
```

Note that this doesn't allow for ranges.

If `hyperref` has been loaded, `\glsdisplaynumberlist` doesn't work with Options 2 and 3. In which case, a warning will be triggered and `\glsentrynumberlist` will be used instead. Without `hyperref`, the `savenumberlist` package option is still required, and an attempt will be made to parse the formatted number list created by `makeindex/xindy` in order to obtain the desired result.

`\glsdisplaynumberlist` is fairly experimental. It works best with Option 4, works with limited results with Option 1, but for Options 2 or 3 it only works when the default location format is used (that is, with the default `formatglsnumberformat`). This command will only work with `hyperref` if you choose Options 1 or 4.

## 6. Acronyms and Other Abbreviations



The term “acronyms” is used here to describe the base glossary package’s mechanism for dealing with acronyms, initialisms, contractions and anything else that may have a shortened form for brevity. The term “**abbreviations**” is used to describe the enhanced mechanism provided by the `glossaries-extra` package, which is incompatible with the base acronym mechanism.

Acronyms internally use `\newglossaryentry`, so you can reference them with `\gls` and `\glspl` as with other entries. Whilst it is possible to simply use `\newglossaryentry` explicitly with the `first` and `text` keys set to provide a full form on first use and a shortened form on subsequent use, using `\newacronym` establishes a consistent format. It also makes it possible to shift the *⟨insert⟩* optional argument of the `\gls`-like commands inside the full form, so that it is placed before the parentheses.

The way the acronym is displayed on first use is governed by the acronym style that’s identified with `\setacronymstyle`. This should be set before you define your acronyms. Example 24 demonstrates the use of `\newacronym`:

24



```
\documentclass{article}
\usepackage{glossaries}
\setacronymstyle{long-short}
\newacronym{html}{HTML}{hypertext markup language}
\newacronym{xml}{XML}{extensible markup language}
\begin{document}
First use: \gls{html} and \gls{xml}.

Next use: \gls{html} and \gls{xml}.
\end{document}
```



↑ Example 24: Simple document with acronyms



First use: hypertext markup language (HTML) and extensible markup language (XML).  
Next use: HTML and XML.

Acronyms are defined using:

```
\newacronym[⟨key=value list⟩]{⟨entry-label⟩}{⟨short⟩}{⟨long⟩}
```

This creates a glossary entry with the given label. This automatically sets `type={\acronym-type}` but if the acronym should go in another glossary you can set the `type` in the optional argument `⟨key=value list⟩`, which is added to the end of the `⟨key=value list⟩` in `\newglossaryentry`.

The `\newacronym` command also uses the `long`, `longplural`, `short` and `shortplural` keys in `\newglossaryentry` to store the long and short forms and their plurals.

glossaries-extra

If you use `\newacronym` with `glossaries-extra`, you need to first set the `abbreviation` style for the `acronym` category with:

```
\setabbreviationstyle[acronym]{⟨style-name⟩}
```

Note that the same restrictions on `⟨entry-label⟩` in `\newglossaryentry` also apply to `\newacronym` (see §4). Since `\newacronym` is defining the entry with `\newglossaryentry`, you can use `\glsreset` to reset the first use flag.

Remember to declare the specified glossary type as a list of acronyms (via the package option `acronymlists` or the command `\DeclareAcronymList`) if you have multiple lists of acronyms. See §2.7. Alternatively, use `glossaries-extra` to have better support for a mixed glossaries.

The optional argument `⟨key=value list⟩` allows you to specify additional information. Any key that can be used in the second argument of `\newglossaryentry` can also be used here in `⟨key=value list⟩`, but be careful about overriding any keys that are set by the acronym style, such as `name`, `short` and `long`.

For example, you may need to supply `description` (when used with one of the styles that require a description, described in §6.2) or you can override plural forms of `⟨short⟩` or `⟨long⟩` using the `shortplural` or `longplural` keys. For example:

```
\newacronym[longplural={diagonal matrices}]
{dm}{DM}{diagonal matrix}
```

If the first use uses the plural form, `\glspl{dm}` will display: diagonal matrices (DMs).

As with `plural`, if `longplural` is missing, it's obtained by appending `\glsplural-suffix` to the singular form. The short plural `shortplural` is obtained (if not explicitly

set in  $\langle key=value list \rangle$  by appending:

`\glsacrpluralsuffix` *initial:* `\glspluralsuffix`

to the short form. These commands may be changed by the associated language files, but they can't be added to the usual caption hooks as there's no guarantee when they'll be expanded (as discussed earlier in §1.5.2).

#### glossaries-extra

A different approach is used by `glossaries-extra`, which has category attributes to determine whether or not to append a suffix when forming the default value of `short-plural`.

Since `\newacronym` implicitly sets `type={\acronymtype}`, if you want to load a file containing acronym definitions using `\loadglsentries`, the optional argument that specifies the glossary will not have an effect unless you explicitly set `type={\glsdefaulttype}` in the optional argument to `\newacronym`. See §4.6.

Example 25 defines the acronym IDN and then uses it in the document text. It then resets the first use flag and uses it again.

25

```
\setacronymstyle{long-short}
\newacronym{idn}{IDN}{identification number}
\begin{document}
First use: \gls{idn}. Next use: \gls{idn}.

\glsreset{idn}% reset first use
The \gls{idn}['s] prefix is a capital letter.
Next use:
the \gls{idn}['s] prefix is a capital letter.
\end{document}
```

The reset (`\glsreset`) makes the next instance of `\gls` behave as first use. Note also the way the final  $\langle insert \rangle$  optional argument is treated.

↑ Example 25: Defining and Using an Acronym

First use: identification number (IDN). Next use: IDN.  
 The identification number's (IDN) prefix is a capital letter. Next use: the IDN's prefix is a capital letter.

If the acronym had simply been defined with:

```
\newglossaryentry{idn}{
  nameIDN,
  firstidentification number (IDN),
  descriptionidentification number
}
```

then the first use of `\gls{idn} [ ' s ]` would have placed in the *⟨insert⟩* after the parentheses:

The identification number (IDN)'s prefix is a capital letter.

If you want to use one of the small caps acronym styles, described in §6.2, you need to use lowercase characters for the shortened form:

```
\setacronymstyle{long-sc-short}
\newacronym{idn}{idn}{identification number}
```

Avoid nested definitions.

Recall from the warning in §4 that you should avoid using the `\gls`-like and `\gls`text-like commands within the value of keys like `text` and `first` due to complications arising from nested links. The same applies to acronyms defined using `\newacronym`.

For example, suppose you have defined:

```
\newacronym{ssi}{SSI}{server side includes}
\newacronym{html}{HTML}{hypertext markup language}
```

you may be tempted to do:

```
\newacronym{shtml}{S\gls{html}}{\gls{ssi}
enabled \gls{html}}
```

**Don't!** This will break the case-changing commands, such as `\Gls`, it will cause inconsistencies on first use, and, if hyperlinks are enabled, will cause nested hyperlinks, and it will index the nested entries every time the dependent entry is indexed, which creates unnecessary locations. It will also confuse the commands used by the entry formatting (such as `\glslabel`).

Instead, consider doing:

```
\newacronym
[description={\gls{ssi} enabled \gls{html}}]
{shtml}{SHTML}{SSI enabled HTML}
```

or if the font needs to match the style:

```
\newacronym
[description={\gls{ssi} enabled \gls{html}}]
{shtml}{SHTML}{\acronymfont{SSI} enabled \acronym-
font{HTML}}
```

Alternatively:

```
\newacronym
[description={\gls{ssi} enabled \gls{html}}]
{shtml}{SHTML}

{server side includes enabled hypertext markup language}
```

Similarly for the `\glsstext`-like commands.

[glossaries-extra](#)

Other approaches are available with `glossaries-extra`. See the sections “Nested Links” and “Multi (or Compound) Entries” in the `glossaries-extra` user manual.

## 6.1. Displaying the Long, Short and Full Forms (Independent of First Use)

It may be that you want the long, short or full form regardless of whether or not the acronym has already been used in the document. You can do so with the commands described in this section.

The `\acr...` commands described below are part of the set of `\glstext`-like commands. That is, they index and can form hyperlinks, and they don't modify or test the first use flag. However, unlike the other `\glstext`-like commands, their display is governed by `\defglstentryfmt` with `\glscustomtext` set to the appropriate link text. So, for example,

```
\acrshort{<label>} [ <insert> ]
```

is similar to:

```
\glsdisp{%
\acronymfont{\glstentryshort{<label>}} <insert>}
```

except that the first use flag isn't unset.

All caveats that apply to the `\glstext`-like commands also apply to the following commands. (Including the above warning about nested links.)

**glossaries-extra**

If you are using `glossaries-extra`, don't use the commands described in this section. The `glossaries-extra` package provides analogous `\glsextr...` or `\glsfmt...` commands. For example, `\glsextrshort` instead of `\acrshort` or, if needed in a heading, `\glsfmtshort`. (Similarly for the case-changing variants.)

The optional arguments are the same as those for the `\glstext`-like commands, and there are similar star (\*) and plus (+) variants that switch off or on the hyperlinks. As with the `\glstext`-like commands, the link text is placed in the argument of `\glstextformat`.

```
\acrshort [ <options> ] { <entry-label> } [ <insert> ]
```

*modifiers: \* +*

This sets the link text to the short form (within the argument of `\acronymfont`) for the acronym given by `<entry-label>`. The short form is as supplied by the `short` key, which `\newacronym` implicitly sets.

There are also analogous case-changing variants:

```
\Acrshort [ <options> ] { <entry-label> } [ <insert> ]
```

*modifiers: \* +*

(sentence case) and



## 6. Acronyms and Other Abbreviations

```
\ACRshort [<options>] {<entry-label>} [<insert>]
```

*modifiers:* \* +

(all caps).

There are also plural versions:

```
\acrshortpl [<options>] {<entry-label>} [<insert>]
```

*modifiers:* \* +

As `\acrshort` but uses the `shortplural` value.

```
\Acrshortpl [<options>] {<entry-label>} [<insert>]
```

*modifiers:* \* +

(sentence case) and

```
\ACRshortpl [<options>] {<entry-label>} [<insert>]
```

*modifiers:* \* +

(all caps).

```
\acrlong [<options>] {<entry-label>} [<insert>]
```

*modifiers:* \* +

This sets the link text to the long form for the acronym given by `<entry-label>`. The long form is as supplied by the `long` key, which `\newacronym` implicitly sets.

There are also analogous case-changing variants:

```
\Acrlong [<options>] {<entry-label>} [<insert>]
```

*modifiers:* \* +

(sentence case) and

```
\ACRlong [<options>] {<entry-label>} [<insert>]
```

*modifiers:* \* +

(all caps).

Again there are also plural versions:

```
\acrlongpl [<options>] {<entry-label>} [<insert>]
```

*modifiers:* \* +

As `\acrlong` but uses the `longplural` value.

```
\Acrlongpl [<options>] {<entry-label>} [<insert>]
```

*modifiers:* \* +

(sentence case) and

```
\ACRlongpl [options] {entry-label} [insert]
```

*modifiers:* \* +

(all caps).

```
\acrfull [options] {entry-label} [insert]
```

*modifiers:* \* +

This sets the link text to show the full form according to the format governed by the acronym style. This may not necessarily be the same format as that produced on the first use of `\gls`. For example, the `footnote` style has the long form in a footnote on the first use of `\gls` but `\acrfull` has the long form in parentheses instead.

There are also analogous case-changing variants:

```
\Acrfull [options] {entry-label} [insert]
```

*modifiers:* \* +

(sentence case) and

```
\ACRfull [options] {entry-label} [insert]
```

*modifiers:* \* +

(all caps).

The plural version is:

```
\acrfullpl [options] {entry-label} [insert]
```

*modifiers:* \* +

with case-changing variants:

```
\Acrfullpl [options] {entry-label} [insert]
```

*modifiers:* \* +

(sentence case) and

```
\ACRfullpl [options] {entry-label} [insert]
```

*modifiers:* \* +

(all caps).

If you find the above commands too cumbersome to write, you can use the `shortcuts` package option to activate the shorter command names listed in Table 6.1.

It is also possible to access the long and short forms without indexing using commands analogous to `\glsentrytext` (described in §5.2). These don't include the acronym font commands, such as `\acronymfont`.

```
\glsentrylong{entry-label}
```

## 6. Acronyms and Other Abbreviations

Table 6.1.: Synonyms provided by the `shortcuts` package option

Shortcut Command	Equivalent Command
<code>\acs</code>	<code>\acrshort</code>
<code>\Acs</code>	<code>\Acrshort</code>
<code>\acsp</code>	<code>\acrshortpl</code>
<code>\Acsp</code>	<code>\Acrshortpl</code>
<code>\acl</code>	<code>\acrlong</code>
<code>\Acl</code>	<code>\Acrlong</code>
<code>\aclp</code>	<code>\acrlongpl</code>
<code>\Aclp</code>	<code>\Acrlongpl</code>
<code>\acf</code>	<code>\acrfull</code>
<code>\Acf</code>	<code>\Acrfull</code>
<code>\acfp</code>	<code>\acrfullpl</code>
<code>\Acfp</code>	<code>\Acrfullpl</code>
<code>\ac</code>	<code>\gls</code>
<code>\Ac</code>	<code>\Gls</code>
<code>\acp</code>	<code>\glspl</code>
<code>\Acp</code>	<code>\Glspl</code>

Expands to the long form (that is, the value of the `long` key, which is internally set by `\new-acronym`). The corresponding sentence case command is:

```
\Glsentrylong{<entry-label>}
```

```
\glsentrylongpl{<entry-label>}
```

Expands to the long plural form (that is, the value of the `longplural`). The corresponding sentence case command is:

```
\Glsentrylongpl{<entry-label>}
```

```
\glsentryshort{<entry-label>}
```

Expands to the short form (that is, the value of the `short` key, which is internally set by `\new-acronym`). The corresponding sentence case command is:

```
\Glsentryshort{\langle entry-label \rangle}
```

An similar command is available for the full form:

```
\glsentryfull{\langle entry-label \rangle}
```

This command is redefined by the acronym style. Unlike `\glsentrylong` and `\glsentryshort`, this does include `\acronymfont`, so if you need to use it in a section heading, you may need to disable it in PDF bookmarks:

```
\pdfstringdefDisableCommands{% provided by hyperref
\let\acronymfont\@firstofone
\let\firstacronymfont\@firstofone
}
```

```
\Glsentryfull{\langle entry-label \rangle}
```

This is like `\glsentryfull` but applies sentence case.

The analogous plural commands are:

```
\glsentryfullpl{\langle entry-label \rangle}
```

(no case change) and

```
\Glsentryfullpl{\langle entry-label \rangle}
```

(sentence case).

## 6.2. Changing the Acronym Style

glossaries-extra

If you are using `glossaries-extra`, don't use the commands described in this section. Use `\setabbreviationstyle` to set the `abbreviation` style. This uses a different (but more consistent) naming scheme. For example, `long-noshort` instead of `dua`. See the "Abbreviations" chapter in the `glossaries-extra` manual for further details.

The acronym style is set using:

```
\setacronymstyle{<style-name>}
```

where *<style name>* is the name of the required style. The style must be set before the acronyms are defined otherwise you will end up with inconsistencies.

For example:

```
\usepackage[acronym]{glossaries}

\makeglossaries

\setacronymstyle{long-sc-short}

\newacronym{html}{html}{hypertext markup language}
\newacronym{xml}{xml}{extensible markup language}
```

Unpredictable results will occur if you try to use multiple styles since each acronym style redefines commands like `\glsentryfull` and `\genacrformat` that govern the way the full form is displayed. The closest you can get to different styles if you only want to use the base glossaries package is to adjust the entry format (see §5.1.4) or to provide a custom acronym style such as in Example 14.

If you need multiple styles, then use the `glossaries-extra` package, which has better **abbreviation** management. See, for example, [Gallery: Mixing Styles](#).<sup>a</sup>

<sup>a</sup>[dickimaw-books.com/gallery/index.php?label=sample-name-font](http://dickimaw-books.com/gallery/index.php?label=sample-name-font)

The `\setacronymstyle` command will redefine `\newacronym` to use the newer acronym mechanism introduced in version 4.02 (2013-12-05). The older mechanism was available, but deprecated, for backward-compatibility until version 4.50 when it was removed. If the pre-4.02 acronym styles are required, you will need to use `rollback`. As from v4.50, if you don't use `\setacronymstyle`, the first instance of `\newacronym` will automatically implement:

```
\setacronymstyle{long-short}
```

which is the closest match to the old default. Example 26 is a modification of the earlier Example 25 so that it uses `rollback` in order to demonstrate the difference:

26

```

\usepackage{glossaries}[=v4.46]% rollback to v4.46
% no \setacronymstyle so old style used
\newacronym{idn}{IDN}{identification number}
\begin{document}
First use: \gls{idn}. Next use: \gls{idn}.

\glsreset{idn}% reset first use
The \gls{idn}['s] prefix is a capital letter.
Next use:
the \gls{idn}['s] prefix is a capital letter.
\end{document}

```

This produces:

↑ Example 26: Defining and Using an Acronym (Rollback)

First use: identification number (IDN). Next use: IDN.  
The identification number (IDN)'s prefix is a capital letter. Next use: the  
IDN's prefix is a capital letter.

The most noticeable difference is the way the *insert* optional argument is treated with `\gls` on first use (`\gls{idn}['s]`). With the old way, `\newacronym` simply set `first` identification number (IDN) when it internally used `\newglossaryentry` to define the acronym. The default entry format simply appends the *insert* after the value of the `first` key.

Unlike the original pre-4.02 behaviour of `\newacronym`, the styles set via `\setacronymstyle` don't use the `first` key, but instead they use `\defglsentryfmt` to set a custom display style that uses the `long` and `short` keys (or their plural equivalents). This means that these styles cope better with plurals that aren't formed by simply appending the singular form with the letter "s". In fact, most of the predefined styles use `\glsngenacfmt` and modify the definitions of commands like `\genacrfullformat`. If the original behaviour is still required for some reason, use `rollback`.

In both the old and new implementation, the `text` key is set to the short form. Since the `first` isn't set with the new form, it will default to the value of the `text` key. This means that with the new implementation, `\glsfirst` will produce the same result as `\gls{text}`. This is why you need to use `\acrlong` or `\acrfull` instead. Alternatively, reset the first use flag and use `\gls`.

When you use `\setacronymstyle` the `name` key is set to:

```
\acronymentry{<entry-label>}
```

and the `sort` key is set to

```
\acronymsort{<short>}{<long>}
```

These commands are redefined by the acronym styles. However, you can redefine them again after the style has been set but before you use `\newacronym`. Protected expansion is performed on `\acronymsort` when the acronym is defined.

### 6.2.1. Predefined Acronym Styles

The glossaries package provides a number of predefined acronym styles. These styles apply:

```
\firstacronymfont{<text>}
```

to the short form on first use and

```
\acronymfont{<text>}
```

on subsequent use. The styles modify the definition of `\acronymfont` and `\firstacronymfont` as required. Usually, `\firstacronymfont{<text>}` simply does `\acronymfont{<text>}`. If you want the short form displayed differently on first use, you can redefine `\firstacronymfont` after the acronym style is set.

The predefined small caps styles that contain “sc” in their name (for example `long-sc-short`) redefine `\acronymfont` to use `\textsc`, which means that the short form needs to be specified in lowercase if it should be rendered in small caps. This is because small caps has small capital glyphs for lowercase letters but normal sized capital glyphs for uppercase letters, which means there’s no visual difference between a normal upright font and a small caps font if the text is in all caps. This is demonstrated in Example 27:

27

```
\setacronymstyle{long-sc
-short}
\newacronym{mathml}
{MathML}
{mathematical markup language}

\begin{document}
\acrshort{mathml}
\end{document}
```

Example 27: Small-Caps Acronym





Some fonts don't support bold small caps, so you may need to redefine `\glsnamefont` (see §8) to switch to medium weight if you are using a glossary style that displays entry names in bold and you have chosen an acronym style that uses `\textsc`. (Alternatively, switch to a font that does support bold small caps.)

The predefined glossary styles that contain “sm” in their name (for example `long-sm-short`) redefine `\acronymfont` to use `\textsmaller`.



Note that the glossaries package doesn't define or load any package that defines `\textsmaller`. If you use one of the acronym styles that set `\acronymfont` to `\textsmaller` you must explicitly load the `resize` package or otherwise define `\textsmaller`.

The remaining predefined styles redefine `\acronymfont` to simply do its argument without any font change.



The predefined styles adjust `\acrfull` and `\glsentryfull` (and their plural and case-changing variants) to reflect the style.

When acronyms are defined, `\newacronym` will set the `sort` key to `\acronymfont`. The acronym styles redefine this to suit the style. This command must fully expand in order for the indexing application to pick up the correct sort value. If the `sort` key is set in the optional argument of `\newacronym`, it will override this.

The `name` key is set to `\acronymfont`. Again, the acronym styles redefine this to suit the style. If the `name` key is set in the optional argument of `\newacronym`, it will override this.

The `type` key is set to `\acronymfont`. If the `type` key is set in the optional argument of `\newacronym`, it will override this.

The `shortplural` is set to the short form appended by:



```
\acrpluralsuffix          initial: \glsacrpluralsuffix
```

This is redefined by the acronym styles to the appropriate suffix. In most cases, it will simply be defined to `\glspluralsuffix`, but the small caps styles define it to:



```
\glsupacrpluralsuffix
```

This uses:



```
\glstextup{<text>}
```

to cancel the effect of the small caps font command `\textsc`.

If the `shortplural` key is set in the optional argument of `\newacronym`, it will override this default.

The `longplural` is set to the long form appended by `\glspluralsuffix`. If the `longplural` key is set in the optional argument of `\newacronym`, it will override this default.

Some styles set the `description` key to the long form, but others don't. If you use a style that doesn't set it, you will have to supply the `description` in the optional argument of `\newacronym`.

### 6.2.1.1. Long (Short)

With the “long (short)” styles, acronyms are displayed in the form:

```
<long> (\firstacronymfont{<short>})
```

on first use and

```
\acronymfont{<short>}
```

on subsequent use.

They also set `\acronymssort` so that it just expands to its first argument `<short>`. This means that the acronyms are sorted according to their short form. In addition, `\acronymentry{label}` is set to just the short form (enclosed in `\acronymfont`) and the `description` key is set to the long form.

```
long-short
```

This is the default style that will be implemented if `\setacronymstyle` isn't used (as from v4.50, which has removed the default deprecated style). This shows the long form followed by the short form in parentheses on first use and also with `\acrfull`. This redefines `\acronymfont` to simply do its argument.

```
long-sc-short
```

This is like `long-short` but uses small caps for the short form, so it redefines `\acronymfont` to use `\textsc` and `\acrpluralsuffix` to `\glsacrpluralsuffix`.

`long-sm-short`

This is like `long-short` but uses `\textsmaller` for the short form, so it redefines `\acronymfont` to use `\textsmaller`. This style will require `releseize` to be loaded.

`long-sp-short`

This is like `long-short` but instead of simply using a space between the long and short form, it uses:

`\glsacspace{<label>}`

This measures the short form for the given entry and, if the width is smaller than 3em, it will use non-breaking space (`~`). Otherwise it will use `\space`.

`glossaries-extra`

Although the `glossaries-extra` package doesn't support the base acronym styles, it does redefine `\glsacspace` to use `\glsacspacemax` instead of the hard-coded 3em, as `\glsacspace` may also be useful in `abbreviation` styles.

### Example 28: Adapting a Predefined Acronym Style

Suppose I want to use the `footnote-sc-desc` style, but I want the `name` key set to the short form followed by the long form in parentheses and the `sort` key set to the short form. Then I need to specify the `footnote-sc-desc` style:

```
\setacronymstyle{footnote-sc-desc}
```

and then redefine `\acronymsort` and `\acronymentry`:

```
\renewcommand*{\acronymsort}[2]{#1}
% sort by short form
\renewcommand*{\acronymentry}[1]{% short (long) name
  \acronymfont{\glsentryshort{#1}}\space (\glsentry-
long{#1})}%
```

(I've used `\space` for extra clarity, but you can just use an actual space instead.)

Note that the default Computer Modern fonts don't support bold small caps, so another font is required. For example:

```
\usepackage[T1]{fontenc}
```

The alternative is to redefine `\acronymfont` so that it always switches to medium weight to ensure the small caps setting is used. For example:

```
\renewcommand*{\acronymfont}[1]{\textmd{\scshape #1}}
}
```

The sample file `sampleFnAcrDesc.tex` illustrates this example.

### 6.2.1.2. Short (Long)

With the “short (long)” styles, acronyms are displayed in the form:

```
\firstacronymfont{<short> } (<long> )
```

on first use and

```
\acronymfont{<short>}
```

on subsequent use.

They also set `\acronymfont{short}{long}` to just `<short>`. This means that the acronyms are sorted according to their short form. In addition, `\acronymentry{label}` is set to just the short form (enclosed in `\acronymfont`) and the `description` key is set to the long form.

```
short–long
```

This shows the short form followed by the long form in parentheses on first use and also with `\acrfull`. This redefines `\acronymfont` to simply do its argument.

```
sc–short–long
```

This is like `short–long` but uses small caps for the short form, so it redefines `\acronymfont` to use `\textsc` and `\acrpluralsuffix` to `\glsacrpluralsuffix`.

```
sm–short–long
```

This is like `short–long` but uses `\textsmaller` for the short form, so it redefines `\acronymfont` to use `\textsmaller`. This style will require `relsize` to be loaded.

**6.2.1.3. Long (Short) User Supplied Description**

`long-short-desc`

This is like `long-short` but the `description` key must be provided in the optional argument of `\newacronym`. The sort value command `\acronymssort` is redefined to expand to its second argument (`\long`), and `\acronymentry` is redefined to show the long form followed by the short form in parentheses.

`long-sc-short-desc`

This is like `long-short-desc` except that it uses small caps, as `long-sc-short`.

`long-sm-short-desc`

This is like `long-short-desc` except that it uses `\textsmaller`, as `long-sm-short`.

`long-sp-short-desc`

This is like `long-short-desc` except that it uses `\glscspace`, as `long-sp-short`.

**6.2.1.4. Short (Long) User Supplied Description**

`short-long-desc`

This is like `short-long` but the `description` key must be provided in the optional argument of `\newacronym`. The sort value command `\acronymssort` is redefined to expand to its second argument (`\long`), and `\acronymentry` is redefined to show the long form followed by the short form in parentheses.

`sc-short-long-desc`

This is like `short-long-desc` except that it uses small caps, as `long-sc-short`.

`sm-short-long-desc`

This is like `short-long-desc` except that it uses `\textsmaller`, as `long-sm-short`.

**6.2.1.5. Do Not Use Acronym (DUA)**

With these styles, the `\glsc`-like commands always display the long form regardless of whether the entry has been first used or not. However, `\acrfull` and `\glscentryfull` will

display the long form followed by the short form, as per the [long–short](#) style.

`dua`

The sort value command `\acronymsort` expands to just its second argument (the long form), and `\acronymentry` shows just the long form.

`dua–desc`

The sort value command `\acronymsort` expands to just its second argument (the long form), and `\acronymentry` shows just the long form.

#### 6.2.1.6. Footnote

With these styles, the `\gls`-like commands show the short form followed by the long form in a footnote on first use. The footnote is simply added with `\footnote`. The `\acrfull` set of commands show the short form followed by the long form in parentheses (as per styles like [short–long](#)). The definitions of `\acronymsort` and `\acronymentry` are as for the “short (long)” styles described in §6.2.1.2.

The footnote styles automatically set `hyperfirst=false` to prevent nested hyperlinks.

`footnote`

This defines `\acronymentry`, `\acronymsort` and `\acronymfont` in the same way as the [short–long](#) style

`footnote–sc`

This defines `\acronymentry`, `\acronymsort`, `\acronymfont` and `\acrplural-suffix` in the same way as the [sc–short–long](#) style

`footnote–sm`

This defines `\acronymentry`, `\acronymsort` and `\acronymfont` in the same way as the [sm–short–long](#) style

`footnote–desc`

This defines `\acronymentry`, `\acronymsort` and `\acronymfont` in the same way as the [short–long–desc](#) style

```
footnote–sc–desc
```

This defines `\acronymentry`, `\acronymstort` and `\acronymfont` in the same way as the `sc–short–long–desc` style

```
footnote–sm–desc
```

This defines `\acronymentry`, `\acronymstort` and `\acronymfont` in the same way as the `sm–short–long–desc` style

## 6.2.2. Defining A Custom Acronym Style

You may find that the predefined acronym styles that come with the glossaries package don't suit your requirements. In this case you can define your own style using:

```
\newacronymstyle{<name>}{<format def>}{<style defs>}
```

where *<style name>* is the name of the new style (avoid active characters). The second argument, *<format def>*, is equivalent to the *<definition>* argument of `\defglsentryfmt`. You can simply use `\glsngenacfmt` or you can customize the display using commands like `\ifglsused`, `\glsifplural` and `\glsifscapscase`. (See §5.1.4 for further details.)

If the style is likely to be used with a mixed glossary (that is, entries in that glossary are defined both with `\newacronym` and `\newglossaryentry`) then you can test if the entry is an acronym and use `\glsngenacfmt` if it is or `\glsngenentryfmt` if it isn't. For example, the `long–short` style sets *<format def>* as

```
\ifglsishaslong{\glslabel}{\glsngenacfmt}{\glsngenentry-  
fmt}
```

(You can use `\ifglsishasshort` instead of `\ifglsishaslong` to test if the entry is an acronym if you prefer.)

The third argument, *<style defs>*, can be used to redefine the commands that affect the display style, such as `\acronymfont` and `\genacrfullformat`.

Bear in mind that you will need to use `##` rather than `#` to reference parameters in command definitions within *<style defs>*.

Note that `\setacronymstyle` redefines `\glsentryfull` and `\acrfullfmt` to use `\genacrfullformat` (and similarly for the plural and case-changing variants). If this isn't appropriate for the style (as in the case of styles like `footnote` and `dua`) `\newacronymstyle` should redefine these commands within *<style defs>*.

## 6. Acronyms and Other Abbreviations

Within `\newacronymstyle`'s `\langle style defs \rangle` argument you can also redefine:

```
\GenericAcronymFields
```

This should expand to the list of additional fields to be set in `\newglossaryentry`, when it's internally called by `\newacronym`. You can use the following token registers to access information passed to the arguments of `\newacronym`.

```
\glskeylisttok
```

Contains the `\langle key=value list \rangle` options.

```
\glslabeltok
```

Contains the `\langle entry-label \rangle`.

```
\glsshorttok
```

Contains the `\langle short \rangle` form argument.

```
\gslongtok
```

Contains the `\langle long \rangle` form argument.

As with all token registers, you can obtain the value of the register with `\the\langle register \rangle`. For example, the `long-short` style does:

```
\renewcommand*{\GenericAcronymFields}{%  
  description={\the\gslongtok}}
```

which sets the `description` field to the long form of the acronym whereas the `long-short-desc` style does:

```
\renewcommand*{\GenericAcronymFields}{}
```

since the description needs to be specified by the user.

It may be that you want to define a new acronym style that's based on an existing style. Within `\langle format def \rangle` of the new style, you can use

```
\GlsUseAcrEntryDispStyle{\langle style-name \rangle}
```

## 6. Acronyms and Other Abbreviations

to use the *format def* definition from the style given by *style name*.

Within *display defs* of the new style, you can use

```
\GlsUseAcrStyleDefs{<style-name>}
```

to use the *display defs* from the style given by *style name*.

For example, the `long-sc-short` acronym style is based on the `long-short` style with minor modifications:

```
\newacronymstyle{long-sc-short}%  
{% use the same display as long-short  
  \GlsUseAcrEntryDispStyle{long-short}%  
}%  
{% use the same definitions as long-short  
  \GlsUseAcrStyleDefs{long-short}%  
  % Minor modifications:  
  \renewcommand{\acronymfont}[1]{\textsc{##1}}%  
  \renewcommand*{\acrpluralsuffix}{\glstextup{\gls-  
pluralsuffix}}%  
}
```

### Example 29: Defining a Custom Acronym Style

Suppose I want my acronym on first use to have the short form in the text and the long form with the description in a footnote. Suppose also that I want the short form to be put in small caps in the main body of the document, but I want it in normal capitals in the list of acronyms. In my list of acronyms, I want the long form as the name with the short form in brackets followed by the description. That is, in the text I want `\gls` on first use to display:

```
\textsc{<short>}\footnote{<long>: <description>}
```

on subsequent use:

```
\textsc{<short>}
```

and in the list of acronyms, each entry will be displayed in the form:

```
<long> (<short>) <description>
```

Let's suppose it's possible that I may have a mixed glossary. I can check this in the second argument (*format def*) of `\newacronymstyle` using:



```
\ifglshaslong{\glslabel}{\glsgenacfmt}{\glsgenentry-
fmt}
```

This will use `\glsgenentryfmt` if the entry isn't an acronym, otherwise it will use `\glsgenacfmt`. The third argument (*display defs*) of `\newacronymstyle` needs to redefine `\genacrfullformat` etc so that the first use displays the short form in the text with the long form in a footnote followed by the description. This is done as follows:

```
% No case change, singular first use:
\renewcommand*{\genacrfullformat}[2]{%
  \firstacronymfont{\glsenentryshort{##1}}##2%
  \footnote{\glsenentrylong{##1}: \glsenentrydesc{##1}}%
}%
% Sentence case, singular first use:
\renewcommand*{\Genacrfullformat}[2]{%
  \firstacronymfont{\Glsenentryshort{##1}}##2%
  \footnote{\glsenentrylong{##1}: \glsenentrydesc{##1}}%
}%
% No case change, plural first use:
\renewcommand*{\genplacrfullformat}[2]{%
  \firstacronymfont{\glsenentryshortpl{##1}}##2%
  \footnote{\glsenentrylongpl{##1}: \glsenentrydesc{##1}}
%
}%
% Sentence case, plural first use:
\renewcommand*{\Genplacrfullformat}[2]{%
  \firstacronymfont{\Glsenentryshortpl{##1}}##2%
  \footnote{\glsenentrylongpl{##1}: \glsenentrydesc{##1}}
%
}
```

If you think it inappropriate for the short form to be capitalised at the start of a sentence you can change the above to:

```
% No case change, singular first use:
\renewcommand*{\genacrfullformat}[2]{%
  \firstacronymfont{\glsenentryshort{##1}}##2%
  \footnote{\glsenentrylong{##1}: \glsenentrydesc{##1}}%
}%
% No case change, plural first use:
```

## 6. Acronyms and Other Abbreviations

```
\renewcommand*{\genplacrfullformat}[2]{%
  \firstacronymfont{\glstryshortpl{##1}}##2%
  \footnote{\glstrylongpl{##1}: \glstrydesc{##1}}
%
}%
\let\Genacrfullformat\genacrfullformat
\let\Genplacrfullformat\genplacrfullformat
```

Another variation is to use `\Glsentrylong` and `\Glsentrylongpl` in the footnote instead of `\glstrylong` and `\glstrylongpl`.

Now let's suppose that commands such as `\glstryfull` and `\acrfull` shouldn't use a footnote, but instead use the format: *<long>* (*<short>*). This means that the style needs to redefine `\glstryfull`, `\acrfullfmt` and their plural and case-changing variants.

First, the non-linking commands:

```
\renewcommand*{\glstryfull}[1]{%
  \glstrylong{##1}\space
  (\acronymfont{\glstryshort{##1}})%
}%
\renewcommand*{\Glsentryfull}[1]{%
  \Glsentrylong{##1}\space
  (\acronymfont{\glstryshort{##1}})%
}%
\renewcommand*{\glstryfullpl}[1]{%
  \glstrylongpl{##1}\space
  (\acronymfont{\glstryshortpl{##1}})%
}%
\renewcommand*{\Glsentryfullpl}[1]{%
  \Glsentrylongpl{##1}\space
  (\acronymfont{\glstryshortpl{##1}})%
}
```

Now for the linking commands:

```
\renewcommand*{\acrfullfmt}[3]{%
  \glslink[##1]{##2}%
  \glstrylong{##2}##3\space
  (\acronymfont{\glstryshort{##2}})%
%
}%
```

## 6. Acronyms and Other Abbreviations

```
\renewcommand*{\Acrfullfmt}[3]{%
  \glslink[##1]{##2}%
  \Glsentrylong{##2}##3\space
  (\acronymfont{\glsentryshort{##2}})%
}%
\renewcommand*{\ACRfullfmt}[3]{%
  \glslink[##1]{##2}%
  \glsuppercase{%
    \glsentrylong{##2}##3\space
    (\acronymfont{\glsentryshort{##2}})%
  }%
}%
\renewcommand*{\acrfullplfmt}[3]{%
  \glslink[##1]{##2}%
  \glsentrylongpl{##2}##3\space
  (\acronymfont{\glsentryshortpl{##2}})%
}%
\renewcommand*{\Acrfullplfmt}[3]{%
  \glslink[##1]{##2}%
  \Glsentrylongpl{##2}##3\space
  (\acronymfont{\glsentryshortpl{##2}})%
}%
\renewcommand*{\ACRfullplfmt}[3]{%
  \glslink[##1]##2%
  \glsuppercase{%
    \glsentrylongpl{##2}##3
    (\acronymfont{\glsentryshortpl{##2}})%
  }%
}%
}
```

(This may cause problems with long hyperlinks, in which case adjust the definitions so that, for example, only the short form is inside the argument of `\glslink`.)

The style also needs to redefine `\acronymsort` so that the acronyms are sorted according to the long form:

```
\renewcommand*{\acronymsort}[2]{##2}
```

## 6. Acronyms and Other Abbreviations

If you prefer them to be sorted according to the short form you can change the above to:

```
\renewcommand*{\acronymsort}[2]{##1}
```

The acronym font needs to be set to `\textsc` and the plural suffix adjusted so that the “s” suffix in the plural short form doesn’t get converted to small caps:

```
\renewcommand*{\acronymfont}[1]{\textsc{##1}}%  
\renewcommand*{\acrpluralsuffix}{\glsupacrplural-  
suffix}%
```

There are a number of ways of dealing with the format in the list of acronyms. The simplest way is to redefine `\acronymentry` to the long form followed by the upper case short form in parentheses:

```
\renewcommand*{\acronymentry}[1]{%  
  \Glsentrylong{##1}\space  
  (\glsuppercase\glsentryshort{##1})}
```

(I’ve used `\Glsentrylong` instead of `\glsentrylong` to capitalise the name in the glossary.)

An alternative approach is to set `\acronymentry` to just the long form and redefine `\GenericAcronymFields` to set the `symbol` key to the short form and use a glossary style that displays the symbol in parentheses after the `name` (such as the `tree` style) like this:

```
\renewcommand*{\acronymentry}[1]{\Glsentrylong{##1}}  
%  
\renewcommand*{\GenericAcronymFields}{%  
  symbol={\protect\glsuppercase{\the\glsshorttok}}}  
%
```

I’m going to use the first approach and set `\GenericAcronymFields` to do nothing:

```
\renewcommand*{\GenericAcronymFields}{}%
```

Finally, this style needs to switch off hyperlinks on first use to avoid nested links:

```
\glshyperfirstfalse
```

Putting this all together:

```
\newacronymstyle{custom-fn}% new style name
{% entry format
  \ifglshaslong{\glslabel}{\glsgenacfmt}{\glsgen-
entryfmt}%
}%
{%
  \renewcommand*{\GenericAcronymFields}{}%
  \glshyperfirstfalse
  % No case change, singular first use:
  \renewcommand*{\genacrfullformat}[2]{%
    \firstacronymfont{\glsentryshort{##1}}##2%
    \footnote{\glsentrylong{##1}: \glsentrydesc{##1}}
  }%
  % Sentence case, singular first use:
  \renewcommand*{\Genacrfullformat}[2]{%
    \firstacronymfont{\Glsentryshort{##1}}##2%
    \footnote{\glsentrylong{##1}: \glsentrydesc{##1}}
  }%
  % No case change, plural first use:
  \renewcommand*{\genplacrfullformat}[2]{%
    \firstacronymfont{\glsentryshortpl{##1}}##2%
    \footnote{\glsentrylongpl{##1}: \glsentrydesc{##1}}
  }%
  % Sentence case, plural first use:
  \renewcommand*{\Genplacrfullformat}[2]{%
    \firstacronymfont{\Glsentryshortpl{##1}}##2%
    \footnote{\glsentrylongpl{##1}: \glsentrydesc{##1}}
  }%
  % non-linking commands
  \renewcommand*{\glsentryfull}[1]{%
    \glsentrylong{##1}\space
    (\acronymfont{\glsentryshort{##1}})%
  }%
}
```

## 6. Acronyms and Other Abbreviations

```
}%
\renewcommand*{\Glsentryfull}[1]{%
  \Glsentrylong{##1}\space
  (\acronymfont{\glsentryshort{##1}})%
}%
\renewcommand*{\glsentryfullpl}[1]{%
  \glsentrylongpl{##1}\space
  (\acronymfont{\glsentryshortpl{##1}})%
}%
\renewcommand*{\Glsentryfullpl}[1]{%
  \Glsentrylongpl{##1}\space
  (\acronymfont{\glsentryshortpl{##1}})%
}%
% linking commands
\renewcommand*{\acrfullfmt}[3]{%
  \glslink[##1]{##2}%
  \glsentrylong{##2}##3\space
  (\acronymfont{\glsentryshort{##2}})%
%
}%
\renewcommand*{\Acrfullfmt}[3]{%
  \glslink[##1]{##2}%
  \Glsentrylong{##2}##3\space
  (\acronymfont{\glsentryshort{##2}})%
%
}%
\renewcommand*{\ACRfullfmt}[3]{%
  \glslink[##1]{##2}%
  \glsupercase{%
    \glsentrylong{##2}##3\space
    (\acronymfont{\glsentryshort{##2}})%
  }%
%
}%
\renewcommand*{\acrfullplfmt}[3]{%
  \glslink[##1]{##2}%
  \glsentrylongpl{##2}##3\space
  (\acronymfont{\glsentryshortpl{##2}})%
%
}%
\renewcommand*{\Acrfullplfmt}[3]{%
  \glslink[##1]{##2}%
```

## 6. Acronyms and Other Abbreviations

```
\Glsentrylongpl{##2}##3\space
(\acronymfont{\glsentryshortpl{##2}})%
%
}%
\renewcommand*{\ACRfullplfmt}[3]{%
\glslink[##1]##2%
\glsuppercase{%
\glsentrylongpl{##2}##3
(\acronymfont{\glsentryshortpl{##2}})%
}%
%
}%
% font
\renewcommand*{\acronymfont}[1]{\textsc{##1}}%
\renewcommand*{\acrpluralsuffix}{\glsupacrplural-
suffix}%
% sort
\renewcommand*{\acronymsort}[2]{##2}%
% name
\renewcommand*{\acronymentry}[1]{%
\Glsentrylong{##1}\space
(\glsuppercase\glsentryshort{##1})}%
}
```

Now I need to specify that I want to use this new style:

```
\setacronymstyle{custom-fn}
```

I also need to use a glossary style that suits this acronym style, for example altlist:

```
\setglossarystyle{altlist}
```

Once the acronym style has been set, I can define my acronyms:

```
\newacronym[description={set of tags for use in
developing hypertext documents}]{html}{html}{Hyper
Text Markup Language}

\newacronym[description=
```

```
{language used to describe the
layout of a document written in a markup language}]
{css}
{css}{Cascading Style Sheet}
```

The sample file `sample-custom-acronym.tex` illustrates this example.

### Example 30: Italic and Upright Abbreviations

Suppose I want to have some acronyms in italic and some that just use the surrounding font. Hard-coding this into the `<short>` argument of `\newacronym` can cause complications.

This example uses `\glsaddstoragekey` to add an extra field that can be used to store the formatting declaration (such as `\em`).

```
\glsaddstoragekey{font}{}{\entryfont}
```

This defines a new field/key called `font`, which defaults to nothing if it's not explicitly set. This also defines a command called `\entryfont` that's analogous to `\glsentrytext`. A new style is then created to format acronyms that access this field.

There are two ways to do this. The first is to create a style that doesn't use `\glsacronymfont` but instead provides a modified version that doesn't use `\acronymfont` but instead uses

```
{\entryfont{\glslabel}<short>}
```

The full format given by commands such as `\genacrformat` need to be similarly adjusted. For example:

```
\renewcommand*{\genacrformat}[2]{%
\glsentrylong{##1}##2\space
({\entryfont{##1}\glsentryshort{##1}})%
}%
```

This will deal with commands like `\gls` but not commands like `\acrshort` which still use `\acronymfont`. Another approach is to redefine `\acronymfont` to look up the required font declaration. Since `\acronymfont` doesn't take the entry label as an argument, the following will only work if `\acronymfont` is used in a context where the label is provided by `\glslabel`. This is true in `\gls`, `\acrshort` and `\acrfull`. The redefinition is now:



```
\renewcommand*{\acronymfont}[1]{\entryfont{\gls-label}##1}}%
```

So the new style can be defined as:

```
\newacronymstyle{long-font-short}
{%
  \GlsUseAcrEntryDispStyle{long-short}%
}%
{%
  \GlsUseAcrStyleDefs{long-short}%
  \renewcommand*{\genacrfullformat}[2]{%
    \glsentrylong{##1}##2\space
    ({\entryfont{##1}\glsentryshort{##1}})%
  }%
  \renewcommand*{\Genacrfullformat}[2]{%
    \Glsentrylong{##1}##2\space
    ({\entryfont{##1}\glsentryshort{##1}})%
  }%
  \renewcommand*{\genplacrfullformat}[2]{%
    \glsentrylongpl{##1}##2\space
    ({\entryfont{##1}\glsentryshort{##1}})%
  }%
  \renewcommand*{\Genplacrfullformat}[2]{%
    \Glsentrylongpl{##1}##2\space
    ({\entryfont{##1}\glsentryshort{##1}})%
  }%
  \renewcommand*{\acronymfont}[1]{\entryfont{\gls-label}##1}}%
  \renewcommand*{\acronymentry}[1]{\entryfont{##1}\glsentryshort{##1}}%
}
```

Remember the style needs to be set before defining the entries:

```
\setacronymstyle{long-font-short}
```

The complete document is contained in the sample file `sample-font-abbr.tex`.

## 6. Acronyms and Other Abbreviations

Some writers and publishing houses have started to drop full stops (periods) from uppercase initials but may still retain them for lowercase abbreviations, while others may still use them for both upper and lowercase. This can cause complications. Chapter 12 of *The T<sub>E</sub>Xbook* discusses the spacing between words but, briefly, the default behaviour of T<sub>E</sub>X is to assume that an uppercase character followed by a full stop and space is an abbreviation, so the space is the default inter-word space whereas a lowercase character followed by a full stop and space is a word occurring at the end of a sentence, which requires an inter-sentence space (which may or may not be the same as an inter-word space). In the event that this isn't true, you need to make a manual adjustment using `\_` (backslash space) in place of just a space character for an inter-word mid-sentence space and use `\@` before the full stop to indicate the end of the sentence.

For example:

```
I was awarded a B.Sc. and a Ph.D. (From the same place.)
```

is typeset as

```
I was awarded a B.Sc. and a Ph.D. (From the same place.)
```

The spacing is more noticeable with the typewriter font:

```
\ttfamily  
I was awarded a B.Sc. and a Ph.D. (From the same place.)
```

is typeset as

```
I was awarded a B.Sc. and a Ph.D. (From the same  
place.)
```

The lowercase letter at the end of “B.Sc.” is confusing T<sub>E</sub>X into thinking that the full stop after it marks the end of the sentence. Whereas the uppercase letter at the end of “Ph.D.” has confused T<sub>E</sub>X into thinking that the following full stop is just part of the abbreviation. These can be corrected:

```
I was awarded a B.Sc.\_and a Ph.D\@. (From the same place.)
```

This situation is a bit problematic for glossaries. The full stops can form part of the *⟨short⟩* argument of `\newacronym` and the `B.Sc.\_` part can be dealt with by remembering to add `\_` (for example, `\gls{bsc}\_` but the end of sentence case is more troublesome as you need to omit the sentence terminating full stop (to avoid two dots) which can make the source

code look a little strange but you also need to adjust the space factor, which is usually done by inserting `\@` before the full stop.

The next example shows one way of achieving this.

glossaries–extra

The `glossaries–extra` package provides a much simpler way of doing this, which you may prefer to use. See [sample-initialisms.shtml](http://sample-initialisms.shtml)<sup>4</sup>Gallery: Initialisms.

<sup>4</sup>[dickimaw-books.com/gallery](http://dickimaw-books.com/gallery)

### Example 31: Abbreviations with Full Stops (Periods)

The post-link hook (`\glspostlinkhook`) is called at the very end of the `\gls`-like and `\glstext`-like commands. This can be redefined to check if the following character is a full stop. The `amsgen` package (which is automatically loaded by `glossaries`) provides an internal command called `\new@ifnextchar` that can be used to determine if the given character appears next. (For more information see the `amsgen` documentation. Alternatively,  $\LaTeX$ 3 may provide a better way of doing this.)

It's possible that I may also want acronyms or contractions (without full stops) in my document, so I need some way to differentiate between them. Here I'm going to use the same method as in Example 14 where a new field is defined to indicate the type of abbreviation:

```
\glsaddstoragekey{abbrtype}{word}{\abbrtype}

\newcommand*{\newabbr}[1][\newacronym
[abbrtype=initials,#1]]
```

Now I just use `\newacronym` for the acronyms, for example,

```
\newacronym{laser}{laser}
{light amplification by stimulated
emission of radiation}
```

and my new command `\newabbr` for initials, for example,

```
\newabbr{eg}{e.g.}{exempli gratia}
\newabbr{ie}{i.e.}{id est}
\newabbr{bsc}{B.Sc.}{Bachelor of Science}
\newabbr{ba}{B.A.}{Bachelor of Arts}
\newabbr{agm}{A.G.M.}{annual general meeting}
```

## 6. Acronyms and Other Abbreviations

Within `\glspostlinkhook` the entry's label can be accessed using `\glslabel` and `\ifglsfieldeq` can be used to determine if the current entry has the new `abbrtype` field set to "initials". If it doesn't, then nothing needs to happen, but if it does, a check is performed to see if the next character is a full stop. If it is, this signals the end of a sentence otherwise it's mid-sentence.

Remember that internal commands within the document file (rather than in a class or package) need to be placed between `\makeatletter` and `\makeatother`:

```
\makeatletter
\renewcommand{\glspostlinkhook}{%
  \ifglsfieldeq{\glslabel}{abbrtype}{initials}%
  {\new@ifnextchar.\doendsentence\doendword}
  }%
}
\makeatother
```

In the event that a full stop is found then `\doendsentence` is performed, but it will be followed by the full stop, which needs to be discarded. Otherwise `\doendword` will be done, but it won't be followed by a full stop so there's nothing to discard. The definitions for these commands are:

```
\newcommand{\doendsentence}[1]{\spacefactor=10000 }
\newcommand{\doendword}{\spacefactor=1000 }
```

Now, I can just do `\gls{bsc}` mid-sentence and `\gls{phd}` . at the end of the sentence. The terminating full stop will be discarded in the latter case, but it won't be discarded in, say, `\gls{laser}` . as that doesn't have the `abbrtype` field set to "initials".

This also works on first use when the style is set to one of the `\langle long \rangle` (`\langle short \rangle`) styles but it will fail with the `\langle short \rangle` (`\langle long \rangle`) styles as in this case the terminating full stop shouldn't be discarded. Since `\glspostlinkhook` is used after the first use flag has been unset for the entry, this can't be fixed by simply checking with `\ifglsused`. One possible solution to this is to redefine `\glslinkpostsetkeys` to check for the first use flag and define a macro that can then be used in `\glspostlinkhook`.

The other thing to consider is what to do with plurals. One possibility is to check for plural use within `\doendsentence` (using `\glsifplural`) and put the full stop back if the plural has been used.

The complete document is contained in the sample file `sample-dot-abbr.tex`.

### 6.3. Displaying the List of Acronyms

The list of acronyms is just like any other type of glossary and can be displayed on its own using the appropriate `\print<...>glossary` command, according to the indexing method.

For example, Option 1:

```
\printnoidxglossary[type=\acronymtype]
```

Options 2 or 3:

```
\printglossary[type=\acronymtype]
```

Or if you have used the `acronym` or `acronyms` package option:

```
\printacronyms
```

See §2.7.)

Alternatively, the list of acronyms can be displayed with all the other glossaries using `\printnoidxglossaries` (Option 1) or `\printglossaries` (Options 2 or 3).

The remaining indexing methods require `glossaries-extra`, which has its own `abbreviation` commands that are incompatible with the base acronym commands.

Care must be taken to choose a glossary style that's appropriate to your acronym style. Alternatively, you can define your own custom style (see §13.2 for further details).

### 6.4. Upgrading From the glossary Package

The old `glossary` package was made obsolete in 2007, when the first version of `glossaries` was released, so this section is largely redundant but is retained in the event that someone may happen to have an old document that needs to be converted to work with a modern  $\text{\TeX}$  distribution. See also the accompanying document “Upgrading from the `glossary` package to the `glossaries` package” (`glossary2glossaries.pdf`).

Users of the obsolete `glossary` package may recall that the syntax used to define new acronyms has changed with the replacement `glossaries` package. In addition, the old `glossary` package created the command `\langle acr-name \rangle` when defining the acronym `\langle acr-name \rangle`.

## 6. Acronyms and Other Abbreviations

In order to facilitate migrating from the old glossary package to the new one, the glossaries package provides the command:

```
\oldacronym[⟨label⟩]{⟨short⟩}{⟨long⟩}{⟨key=value list⟩}
```

This uses the same syntax as the glossary package’s method of defining acronyms. It is equivalent to:

```
\newacronym[⟨key=value list⟩]{⟨label⟩}{⟨short⟩}{⟨long⟩}
```

In addition, `\oldacronym` also defines the commands `\⟨label⟩`, which is equivalent to `\gls{⟨label⟩}`, and `\⟨label⟩*`, which is equivalent to the sentence case `\Gls{⟨label⟩}`. If `⟨label⟩` is omitted, `⟨short⟩` is used. Since commands names must consist only of alphabetical characters, `⟨label⟩` must also only consist of alphabetical characters. Note that `\⟨label⟩` doesn’t allow you to use the first optional argument of `\gls` or `\Gls` — you will need to explicitly use `\gls` or `\Gls` to change the settings.

Recall that, in general, L<sup>A</sup>T<sub>E</sub>X ignores spaces following command names consisting of alphabetical characters. This is also true for `\⟨label⟩` unless you additionally load the `xspace` package, but be aware that there are some issues with using `xspace`. (See David Carlisle’s explanation in Drawbacks of `xspace`.)

The `glossaries` package doesn’t load the `xspace` package since there are both advantages and disadvantages to using `\xspace` in `\⟨label⟩`. If you don’t use the `xspace` package, then you need to explicitly force a space using `\_` (backslash space). On the other hand, you can follow the `\⟨label⟩` command with the optional `⟨insert⟩` text in square brackets (the final optional argument to `\gls`). If you use the `xspace` package you don’t need to escape the spaces but you can’t use the optional argument to insert text (you will have to explicitly use `\gls` to achieve that).

To illustrate this, suppose I define the acronym “abc” as follows:

```
\oldacronym{abc}{example acronym}{} 
```

This will create the command `\abc` and its starred version `\abc*`. Table 6.2 illustrates the effect of `\abc` (on subsequent use) according to whether or not the `xspace` package has been loaded. As can be seen from the final row in the table, the `xspace` package prevents the optional argument from being recognised.

Table 6.2.: The effect of using `xspace` with `\oldacronym`

<b>Code</b>	<b>With <code>xspace</code></b>	<b>Without <code>xspace</code></b>
<code>\abc .</code>	abc.	abc.
<code>\abc xyz</code>	abc xyz	abcxyz
<code>\abc\xyz</code>	abc xyz	abc xyz
<code>\abc* xyz</code>	Abc xyz	Abc xyz
<code>\abc ['s] xyz</code>	abc ['s] xyz	abc's xyz

## 7. Unsetting and Resetting Entry Flags

When using the `\gls`-like commands it is possible that you may want to use the value given by the `first` key, even though you have already used the glossary entry. Conversely, you may want to use the value given by the `text` key, even though you haven't used the glossary entry.

The former can be achieved by one of the following commands:

```
\glsreset{<entry-label>}
```

which globally resets the first use flag and

```
\glslocalreset{<entry-label>}
```

which locally resets the first use flag.

The latter can be achieved by one of the following commands:

```
\glsunset{<entry-label>}
```

which globally unsets the first use flag and

```
\glslocalunset{<entry-label>}
```

which locally unsets the first use flag.

The above commands are for the specific entry identified by the argument `<entry-label>`. You can also reset or unset all entries for a given glossary or multiple glossaries using:

```
\glsresetall[<glossary labels list>]
```

which globally resets the first use flags and

```
\glslocalresetall[<glossary labels list>]
```

which locally resets the first use flags or

```
\glsunsetall[<glossary labels list>]
```



## 7. Unsetting and Resetting Entry Flags

which globally unsets the first use flags and

```
\glslocalunsetall[<glossary labels list>]
```

which locally unsets the first use flags.

The optional argument *<glossary labels list>* should be a comma-separated list of glossary labels. If omitted, the list of all non-ignored glossaries is assumed.

For example, to reset all entries in the `main` glossary and the `acronym` list:

```
\glsresetall[main,acronym]
```

### glossaries-extra

The `glossaries-extra` package additionally provides the options `preunset` and `pre-reset` for the `\gls`-like commands, that will unset or reset the first use flag before the link text, which will make the `\gls`-like command behave as though it was the subsequent use or first use, irrespective of whether or not the entry has actually been used.

You can determine whether an entry's first use flag is set with `\ifglsused`. With `bib2gls`, you may need to use `\GlsXtrIfUnusedOrUndefined` instead.

Be careful when using `\gls`-like commands within an environment or command argument that gets processed multiple times as it can cause unwanted side-effects when the first use displayed text is different from subsequent use.

For example, the `frame` environment in `beamer` processes its argument for each overlay. This means that the first use flag will be unset on the first overlay and subsequent overlays will use the subsequent use form.

Consider the following example:

```
\documentclass{beamer}
\usepackage{glossaries}
\newacronym{svm}{SVM}{support vector machine}
\begin{document}
\begin{frame}
```

## 7. Unsetting and Resetting Entry Flags

```
\frametitle{Frame 1}

\begin{itemize}
  \item<+> \gls{svm}
  \item<+> Stuff.
\end{itemize}
\end{frame}

\end{document}
```

On the first overlay, `\gls{svm}` produces “support vector machine (SVM)” and then unsets the first use flag. When the second overlay is processed, `\gls{svm}` now produces “SVM”, which is unlikely to be the desired effect. I don’t know anyway around this and I can only offer the following suggestions.

1. Unset all acronyms at the start of the document and explicitly use `\acrfull` when you want the full version to be displayed:

```
\documentclass{beamer}

\usepackage{glossaries}

\newacronym{svm}{SVM}{support vector machine}

\glsunsetall

\begin{document}

\begin{frame}
  \frametitle{Frame 1}

  \begin{itemize}
    \item<+> \acrfull{svm}
    \item<+> Stuff.
  \end{itemize}
\end{frame}

\end{document}
```

2. Explicitly reset each acronym on first use:

## 7. Unsetting and Resetting Entry Flags

```
\begin{frame}
  \frametitle{Frame 1}

  \begin{itemize}
    \item<+> \glsreset{svm}\gls{svm}
    \item<+> Stuff.
  \end{itemize}
\end{frame}
```

Alternatively, with `glossaries-extra`:

```
\documentclass{beamer}

\usepackage{glossaries-extra}

\newabbreviation{svm}{SVM}
{support vector machine}

\begin{document}

\begin{frame}
  \frametitle{Frame 1}

  \begin{itemize}
    \item<+> \gls[prereset]{svm}
    \item<+> Stuff.
  \end{itemize}
\end{frame}

\end{document}
```

3. Use the `glossaries-extra` package's unset buffering mechanism:

```
\documentclass{beamer}

\usepackage{glossaries-extra}

\newabbreviation{svm}{SVM}
```

```

{support vector machine}

\begin{document}

\GlsXtrStartUnsetBuffering
\GlsXtrUnsetBufferEnableRepeatLocal
\begin{frame}
\GlsXtrResetLocalBuffer
\frametitle{Frame 1}

\begin{itemize}
\item<+> \gls{svm}
\item<+> Stuff.
\end{itemize}
\end{frame}
\GlsXtrStopUnsetBuffering

\end{document}

```

See the `glossaries-extra` manual for further details.

These are non-optimal, but the `beamer` class is too complex for me to provide a programmatic solution. Other potentially problematic environments are some tabular-like environments (but not `tabular` itself) that process the contents in order to work out the column widths and then reprocess the contents to do the actual typesetting.

The `amsmath` environments, such as `align`, also process their contents multiple times, but the `glossaries` package now checks for this. For `tabularx`, you need to explicitly patch it by placing `\glspatchtabularx` in the preamble (or anywhere before the problematic use of `tabularx`).

## 7.1. Counting the Number of Times an Entry has been Used (First Use Flag Unset)

It's possible to keep track of how many times an entry is used. That is, how many times the first use flag is unset. Note that the supplemental `glossaries-extra` package improves this function and also provides per-unit counting, which isn't available with the `glossaries` package.



This function is disabled by default as it adds extra overhead to the document build time and also switches `\newglossaryentry` (and therefore `\newacronym`) into a preamble-only command.

## 7. Unsetting and Resetting Entry Flags

To enable this function, use:

```
\glsenableentrycount
```

before defining your entries. This adds two extra (internal) fields to entries: `currcount` and `prevcount`.

The `currcount` field keeps track of how many times `\glsunset` is used within the document. A local unset (using `\glslocalunset`) performs a local rather than global increment to `currcount`. Remember that not all commands use `\glsunset`. Only the `\gls`-like commands do this.

The behaviour of the reset commands depend on the conditional:

```
\ifglsresetcurrcount <true>\else <>false>\fi    initial: \iffalse
```

If true, the reset commands `\glsreset` and `\glslocalreset` will reset the value of the `currcount` field back to 0. This conditional can be set to true with:

```
\glsresetcurrcounttrue
```

and to false with:

```
\glsresetcurrcountfalse
```

The default is false, as from version 4.50.

The `prevcount` field stores the final value of the `currcount` field *from the previous run*. This value is read from the aux file at the beginning of the document environment.

You can access these fields using

```
\glsentrycurrcount{<entry-label>}
```

for the `currcount` field, and

```
\glsentryprevcount{<entry-label>}
```

for the `prevcount` field.

These commands are only defined if you have used `\glsenableentrycount`.

For example:

```

\documentclass{article}
\usepackage{glossaries}
\makeglossaries

\glsenableentrycount

\newglossaryentry{apple}{name={apple},description=
{a fruit}}

\begin{document}
Total usage on previous run: \glentryprevcount
{apple}.

\gls{apple}. \gls{apple}. \glsadd{apple}\glentry-
text{apple}.
\glslink{apple}{apple}. \glsdisp{apple}{apple}
. \Gls{apple}.

Number of times apple has been used: \glentrycurr-
count{apple}.
\end{document}

```

On the first  $\text{\LaTeX}$  run, `\glentryprevcount{apple}` produces 0. At the end of the document, `\glentryprevcount{apple}` produces 4. This is because the only commands that have incremented the entry count are those that use `\glsunset`. That is: `\gls`, `\glsdisp` and `\Gls`. The other commands used in the above example, `\glsadd`, `\glentrytext` and `\glslink`, don't use `\glsunset` so they don't increment the entry count. On the *next*  $\text{\LaTeX}$  run, `\glentryprevcount{apple}` now produces 4 as that was the value of the `currcount` field for the “apple” entry at the end of the document on the previous run.

When you enable the entry count using `\glsenableentrycount`, you also enable the following commands:

```
\cgl[s][options]{entry-label}[insert]
```

*modifiers:* \* +

(no case-change, singular, analogous to `\gls`)

```
\cgl脾[options]{entry-label}[insert]
```

*modifiers:* \* +

(no case-change, plural, analogous to `\glspl`)

## 7. Unsetting and Resetting Entry Flags

```
\cGls [options] {entry-label} [insert]
```

modifiers: \* +

(first letter uppercase, singular, analogous to \Gls), and

```
\cGlspl [options] {entry-label} [insert]
```

modifiers: \* +

(first letter uppercase, plural, analogous to \Glspl).

glossaries-extra

All caps versions are only available with glossaries-extra.

If you don't use `\glsenableentrycount`, these commands behave like their counterparts `\gls`, `\glspl`, `\Gls` and `\Glspl`, respectively, but there will be a warning that you haven't enabled entry counting.

If you have enabled entry counting with `\glsenableentrycount` then these commands test if `\glsentryprevcount {entry-label}` equals 1. If it doesn't then the analogous `\gls` etc will be used. If it is 1, then the first optional argument will be ignored and

```
cs format {entry-label} {insert} \glsunset {entry-label}
```

will be performed, where `cs format` is a command that takes two arguments. The command used depends whether you have used `\cgl`, `\cglpl`, `\cGls` or `\cGlspl`.

The formatting command `cs format` will be one of the following:

```
\cglformat {entry-label} {insert}
```

This command is used by `\cgl` and defaults to

```
\glsentrylong {entry-label} insert
```

if the entry given by `entry-label` has a long form or

```
\glsentryfirst {entry-label} insert
```

otherwise.

```
\cglplformat {entry-label} {insert}
```

## 7. Unsetting and Resetting Entry Flags

This command is used by `\cglsp1` and defaults to

```
\glsentrylongpl{⟨entry-label⟩}⟨insert⟩
```

if the entry given by `⟨entry-label⟩` has a long form or

```
\glsentryfirstplural{⟨label⟩}⟨insert⟩
```

otherwise.

```
\cGlsformat{⟨entry-label⟩}{⟨insert⟩}
```

This command is used by `\cGls` and defaults to

```
\Glsentrylong{⟨entry-label⟩}⟨insert⟩
```

if the entry given by `⟨entry-label⟩` has a long form or

```
\Glsentryfirst{⟨entry-label⟩}⟨insert⟩
```

otherwise.

```
\cGlsplformat{⟨entry-label⟩}{⟨insert⟩}
```

This command is used by `\cGlspl` and defaults to

```
\Glsentrylongpl{⟨entry-label⟩}⟨insert⟩
```

if the entry given by `⟨entry-label⟩` has a long form or

```
\Glsentryfirstplural{⟨entry-label⟩}⟨insert⟩
```

otherwise.

This means that if the previous count for the given entry was 1, the entry won't be hyperlinked with the `\cgl`-like commands and those commands won't index (that is, they won't add a line to the external glossary file). If you haven't used any of the other commands that index (such as `\glsadd` or the `\glstext`-like commands) then the entry won't appear in the glossary.

Remember that since these commands use `\glsentryprevcount` you need to run `LATEX` twice to ensure they work correctly. The document build requires a second `LATEX` call before running the indexing application. For example, if the document is in a file called `myDoc.tex`, then the document build needs to be:



## 7. Unsetting and Resetting Entry Flags

```
pdflatex myDoc
pdflatex myDoc
makeglossaries myDoc
pdflatex myDoc
```

In Example 32, the acronyms that have only been used once (on the previous run) only have their long form shown with `\cgl{s}`:

32

```
\documentclass{article}

\usepackage[colorlinks]{hyperref}
\usepackage[acronym]{glossaries}
\makeglossaries

\glsenableentrycount

\setacronymstyle{long-short}

\newacronym{html}{HTML}{hypertext markup language}
\newacronym{css}{CSS}{cascading style sheets}
\newacronym{xml}{XML}{extensible markup language}
\newacronym{sql}{SQL}{structured query language}
\newacronym{rdbms}{RDBMS}
{relational database management system}
\newacronym{rdsms}{RDSMS}
{relational data stream management system}

\begin{document}
These entries are only used once: \cgl{s}{sql}, \cgl{s}
{rdbms},
\cgl{s}{xml}. These entries are used multiple times:
\cgl{s}{html}, \cgl{s}{html}, \cgl{s}{css}, \cgl{s}{css}
, \cgl{s}{css},
\cgl{s}{rdsms}, \cgl{s}{rdsms}.

\printglossaries
\end{document}
```

After a complete document build the list of acronyms only includes the entries HTML, CSS and RDSMS. The entries SQL, RDBMS and XML only have their long forms displayed and don't have a hyperlink.



↑ Example 32: Don't index entries that are only used once



These entries are only used once: structured query language, relational database management system, extensible markup language. These entries are used multiple times: [hypertext markup language \(HTML\)](#), [HTML](#), [cascading style sheets \(CSS\)](#), [CSS](#), [CSS](#), [relational data stream management system \(RDSMS\)](#), [RDSMS](#).

## Acronyms

**CSS** cascading style sheets. [1](#)

**HTML** hypertext markup language. [1](#)

**RDSMS** relational data stream management system. [1](#)

`bib2gls`

With `bib2gls` there's an analogous record counting set of commands. See [glossaries-extra](#) and [bib2gls](#) manuals for further details.

## 8. Displaying a Glossary

All defined glossaries may be displayed using the appropriate command, such as `\printglossary`, that matches the indexing method. These commands are collectively referred to as the `\print<...>glossary` set of commands.

With Options 2, 3 or 4, if the glossary does not appear after you re- $\LaTeX$  your document, check the `makeindex`, `xindy` or `bib2gls` log files (`glg` or the `<log-ext>` argument of `\newglossary`), as applicable, to see if there is a problem. With Option 1, you just need two  $\LaTeX$  runs to make the glossaries appear, but you may need further runs to make the number lists up-to-date. If you have used the `automake` option, check the log file for “runsystem” lines (see the information about the `automake` option in §2.5 for further details).

Option 1 (must be used with `\makenoidxglossaries` in the document preamble):

```
\printnoidxglossary[<options>]
```

This displays the glossary identified by the `type` option in `<options>` or, if omitted, the glossary identified by `\glsdefaulttype`.

The following is an iterative command:

```
\printnoidxglossaries
```

which internally uses `\printnoidxglossary` for each non-ignored glossary.

The `\printnoidxglossary` command works by constructing a list of all entries in the identified glossary that have been indexed or are a parent of an indexed entry. (This information is obtained from the `aux` file created during the previous  $\LaTeX$  run.)

With `sort=def`, this list will be created in the order of definition, and with `sort=use`, this list will be created in the order that each entry was first listed with the special indexing reference in the `aux` file. For other `sort` values, the list will be sorted according to the designated sort method.

Ensure you have at least v3.0 of `datatool` and applicable localisation support, if available (for example, `datatool-english`).

## 8. Displaying a Glossary

Version 4.57 has change the way `\printnoidxglossary` works to allow it to work with the tabular-like glossary styles, such as `long` and `super`. It now (after sorting) iterates over the list of entries that need to be included in the glossary and constructs a token list containing the `\theglossary` environment and the commands that will be used to typeset the glossary (such as `\glossentry`). Once completed, the contents of this token list are then expanded. There are hooks available during this construction process.

```
\glsnoidxinithook
```

Used at the start of the construction process (after the list of entry labels has been sorted). This occurs within the scoping introduced by `\printnoidxglossary` so the hook may be used to make local adjustments.

```
\glsnoidxitemhook{<level>}{<entry-label>}
```

This hook is performed at each iteration of the construction loop. It does nothing by default but may be redefined. For example, to calculate the widest name for glossary styles that require this information (see Example 38). The first argument is the hierarchical level. The second argument is the entry's label.

```
\glsnoidxprecontenthook
```

Used at the end of construction, just before the token list variable is used. This means that, for debugging purposes, this command can be redefined to expand to `\show` to show the contents of the token list variable (rather than using the variable).

If there are no entries to display (which happens on the first  $\LaTeX$  run), a warning is issued and the following command is used:

```
\GlsNoIdxMissingAction{<glossary-type>}
```

This just does nothing if the glossary is empty, otherwise it does the section header to ensure it's added to the table of contents on the first run, if the `toc` option is set, which can help to reduce the number of  $\LaTeX$  calls.

The `\makenoidxglossaries` command automatically adds the following command to the end document hook:

```
\GlsNoIdxDoRerunCheck
```

This iterates over a list of all entries to determine if any entry that was indexed in the previous run was not indexed in this run or if any entry not indexed in the previous run has been indexed in this run (which indicates that a rerun warning should be issued).



Due to T<sub>E</sub>X's asynchronous output routine, it's not possible to check if any location has changed for any entry that was indexed in both the current run and the previous run. The rerun warning essentially means that either an entry is showing in the glossary that should no longer be there or an entry isn't showing in the glossary when it should be there.

If you have a large number of entries, you can slightly reduce the document build time by redefining `\GlsNoIdxDoRerunCheck` to do nothing (but obviously there will no longer be a warning). This command may only be used once, so if you explicitly use it in the document, it won't do anything when it's subsequently called at the end of the document. Issuing this command too soon may result in a rerun warning when it's not applicable.

For more advanced users: the processing function used before sorting a list (for any sort option other than `sort=use` and `sort=def`) checks each entry for a parent. If one is found, the parent will automatically be added to the list (if not already included) and the parent entry will be checked for the existence of the `childcount` internal field.

If the parent entry's `childcount` field is set, the value will be incremented, otherwise the field will be set to 1 and the sort value for the parent entry will be locally adjusted with:



```
\glossaries_adjust_parent_sort:Nn <tl-var> {<parent-label>}
```

The first argument is the token list variable containing the parent's original sort value and the second argument is the parent's label. The default definition appends the following to `<tl-var>`:

```
\datatoolctrlboundary \datatoolasciistart
<parent-label> \datatoolasciistart
```

The parent entry's sort value is then locally updated to the content of `<tl-var>`.

Using the `childcount` internal field helps to keep track of whether or not this adjustment has already been done. A convenient by-product of this is that the glossary hooks (either style hooks, such as `\glossaries_tree_post_item:nnn`, or the extra hooks provided by `glossaries-extra`) can check if an entry has children that have been included in the list.

The child entry's sort value is locally prefixed with the parent's sort value. This is done to ensure that the child entries always come immediately after their parent. The incorporation of the parent's label into the sort value helps to separate hierarchical families where parents happen to have identical sort values.

Options 2 and 3 (must be used with `\makeglossaries` in the document preamble):



```
\printglossary[<options>]
```

This displays the glossary identified by the `type` option in `<options>` or, if omitted, the glossary identified by `\glsdefaulttype`. This command internally inputs the associated glossary file (created by the relevant indexing application) if it exists. The glossary file contains the markup

## 8. Displaying a Glossary

to typeset the glossary (which is essentially the same content as the token list constructed with `\printnoidxglossary`, except for the location list). See §1.6 for information on how to create the glossary file.

Note that because this method simply inputs a file containing all the typesetting commands, there is no list of labels for only those entries that will appear in the glossary. The only list available is the list of all entry labels for a given glossary (which can be iterated over using `\forglseentries`). This makes it much harder to do things like reference the location list elsewhere in the document or determine the widest name for glossary styles such as `tree*` or `almtree`. If this is required, you may want to consider Options 1 or 4 instead.

The following is an iterative command:

```
\printglossaries
```

which internally uses `\printglossary` for each non-ignored glossary.

While the external glossary files are missing, `\printglossary` will just do `\null` for each missing glossary to assist dictionary style documents that just use `\glsaddall` without inserting any text. This use of `\null` ensures that all indexing information is written before the final page is shipped out. Once the external glossary files are present `\null` will no longer be used. This can cause a spurious blank page on the first  $\LaTeX$  run before the glossary files have been created. Once these files are present, `\null` will no longer be used and so shouldn't cause interference for the final document. With `glossaries-extra`, placeholder text is used instead.

Options 4 and 5 (`glossaries-extra` only):

```
\printunsrtglossary[<options>]
```

This displays the glossary identified by the `type` option in `<options>` or, if omitted, the glossary identified by `\glsdefaulttype`. This command is similar to `\printnoidxglossary`, in that it iterates over a list of entry labels and constructs a token list containing the glossary markup, but in this case all defined entries within the given glossary are included and the list is in the order in which they were defined (that is, the order in which they were added to the glossary's internal label list).

The reason this command works with `bib2gls` is because `bib2gls` writes the entry definitions in the `gls.tex` file in the order obtained by the `sort` resource option, and `bib2gls` will only include the entries that match the required selection criteria.

With Option 5 (that is, without `bib2gls`) the result will be in the order the entries were defined in the `tex` file. There's no attempt to gather child entries (see §4.5). This means that if you don't define child entries immediately after their parent, you will have a strange result (depending on the glossary style).

As with `\printnoidxglossary`, there are hooks during the construction of the token list which can be used to filter out entries or determine the widest name for glossary styles that required that information. See the `glossaries-extra` manual for further details.

The following is an iterative command:

```
\printunsrtglossaries
```

which internally uses `\printunsrtglossary` for each non-ignored glossary.

The `glossaries-extra` package also provides

```
\printunsrtinnerglossary[⟨options⟩]{⟨pre-code⟩}{⟨post-code⟩}
```

which is designed for inner or nested glossaries. It allows many, but not all, of the options listed below. There's an example available in the gallery: Inner or Nested Glossaries.<sup>1</sup> See the `glossaries-extra` package for further details.

All the individual glossary commands `\print⟨...⟩glossary` have an optional argument. Available options are listed in §8.1.

After the options have been set, the following command will be defined:

```
\currentglossary
```

This expands to the label of the current glossary (identified by the `type` option). It may be used within glossary style hooks or the `\printnoidxglossary` or `\printunsrtglossary` hooks, if required.

## 8.1. `\print⟨...⟩glossary` Options

These options may be used in the optional argument of the `\print⟨...⟩glossary` set of commands. Some options are available for all those commands, but those that aren't are noted. Before the options are set, the following commands are defined to their defaults for the given glossary. They may then be redefined by applicable options.

```
type=⟨glossary-label⟩ default: \glsdefaulttype
```

Identifies the glossary to display. The value should be the glossary label. Note that you can only display an ignored glossary with `\printunsrtglossary` or `\printunsrtinnerglossary`, otherwise `⟨glossary-label⟩` should correspond to a glossary that was defined with `\newglossary` or `\altnewglossary`.

<sup>1</sup>[dickimaw-books.com/gallery/index.php?label=bib2gls-inner](http://dickimaw-books.com/gallery/index.php?label=bib2gls-inner)

**title**=*<text>*

Sets the glossary's title (`\glossarytitle`). This option isn't available with `\printunsrtinnerglossary`.

**toctitle**=*<text>*

Sets the glossary's table of contents title (`\glossarytoctitle`). This option isn't available with `\printunsrtinnerglossary`.

**style**=*<style-name>*

The glossary style to use with this glossary (overriding the current style that was either set with the `style` package option or with `\setglossarystyle`). This option isn't available with `\printunsrtinnerglossary`.

**numberedsection**=*<value>*      *default: nolabel; initial: false*

This may be used to override the `numberedsection` package option, and has the same syntax as that option (see §2.2). This option isn't available with `\printunsrtinnerglossary`.

**nonumberlist**=*<boolean>*      *default: true; initial: false*

This may be used to override the `nonumberlist` package option. Note that, unlike the valueless package option, this option is boolean.

**nogroupskip**=*<boolean>*      *default: true; initial: false*

This may be used to override the `nogroupskip` package option. Only relevant if the glossary style uses the conditional `\ifglsgroupskip` to test for this option.

**nopostdot**=*<boolean>*      *default: true; initial: false*

This may be used to override the `nopostdot` package option. This option is only applicable if the glossary style uses `\glspostdescription`.

**entrycounter**=*<boolean>*      *default: true; initial: false*

This may be used to override the `entrycounter` package option. Note that one of the package options `entrycounter=true` or `subentrycounter=true` must be used



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to make `\glsrefentry` work correctly. The setting can then be switched off with this option for individual glossaries where the setting shouldn't apply.

**`subentrycounter`**=*<boolean>*

default: **true**; initial: **false**

This may be used to override the `subentrycounter` package option. Note that one of the package options `entrycounter=true` or `subentrycounter=true` must be used to make `\glsrefentry` work correctly. The setting can then be switched off with this option for individual glossaries where the setting shouldn't apply.

If you want to set both the `entrycounter` and `subentrycounter` settings, and you haven't already enabled them with the `entrycounter` and `subentrycounter` package options, make sure you specify `entrycounter` first (but bear in mind `\glsrefentry` won't work). In general, it's best to enable these settings via the package options and switch them off for the glossaries where they don't apply.

**`sort`**=*<method>*

This key is only available with `\printnoidxglossary`.

If you use the `sort=use` or `sort=def` values make sure that you select a glossary style that doesn't have a visual indicator between groups, as the grouping no longer makes sense. Consider using the `nogroupskip` option.

If you don't get an error with `sort=use` and `sort=def` but you do get an error with one of the other sort options, then you probably need to use the `sanitizesort=true` package option or make sure none of the entries have fragile commands in their `sort` field.

**`sort=use`**

Order of use. There's no actual sorting in this case. The order is obtained from the indexing information in the `aux` file.

**`sort=def`**

Order of definition. There's no actual sorting in this case. The order is obtained from the glossary's internal list of labels.



The above two settings don't perform any actual sorting. The following settings work best with `datatool v3.0+` and, if available, the applicable language support, such as `datatool -english`.

For a locale-sensitive sort, it's best to use either `xindy` (Option 3) or `bib2gls` (Option 4). (Note that `bib2gls` provides many other sort options.)

**`sort=nocase`**

Case-insensitive order.

**`sort=case`**

Case-sensitive order.

**`sort=word`**

Word order (case-insensitive).

**`sort=wordcase`**

Word order (case-sensitive). Requires `datatool v3.0+`.

**`sort=letter`**

Letter order (case-insensitive).

**`sort=lettercase`**

Letter order (case-sensitive). Requires `datatool v3.0+`.

**`sort=standard`**

Word or letter order according to the `order` package option.

If `datatool v3.0+` is detected, these sort methods will use `\datatool_sortwordseq:NN` function with an appropriate handler. See the `datatool` documentation for further details. If an older version of `datatool` is present, an older, slower method will be used. The letter group information obtained from the `datatool` sorting function is saved in the special internal field `dtl-sortgroup`.



The word and letter sort methods will use the current datatool localisation support for alphabetical ordering, if available. Note that support for language files was only added to datatool version 3.0 (2025-03-03). The localisation files must be installed in addition to datatool. At the time of writing, the only language support is datatool-english (<https://github.com/nlct/datatool-english>). Advice on developing language files is available in the datatool user manual.



**label**=*<label>*

This key is only available with `glossaries-extra` and labels the glossary with `\label{<label>}`. This is an alternative to the package option `numberedsection=autolabel`. This option isn't available with `\printunsrtinnerglossary`.



**target**=*<boolean>*

*default: true; initial: true*

This key is only available with `glossaries-extra` and can be used to switch off the automatic hypertarget for each entry. (This refers to the target used by commands like `\gls` and `\glslink`.)

This option is useful with `\printunsrtglossary` as it allows the same list (or sub-list) of entries to be displayed multiple times without causing duplicate hypertarget names.



**prefix**=*<prefix>*

This key is only available with `glossaries-extra` and provides another way of avoiding duplicate hypertarget names. In this case it uses a different prefix for those names. This locally redefines `\glslinkprefix` but note this will also affect the target for any entry referenced within the glossary with commands like `\gls`, `\glslink` or `\gls hyperlink`.



**targetnameprefix**=*<prefix>*

This key is only available with `glossaries-extra`. This is similar to the `prefix` option, but it alters the prefix of the hypertarget anchors without changing `\glslinkprefix` (so it won't change the hyperlinks for any entries referenced in the glossary).



**groups**=*<boolean>*

*default: true; initial: true*

This key is only available with `\printunsrtglossary` and `\printunsrtinnerglossary`. If true, the “unsrt” function that creates the code for typesetting the glossary will insert letter group headers whenever a change is detected in the letter group label between entries of the same hierarchical level. See the `glossaries-extra` manual for further details.

`leveloffset`=*<offset>*

initial: 0

This key is only available with `\printunsrtglossary` and `\printunsrtinnerglossary`. It can be used to locally adjust the hierarchical level used by the glossary style. See the `glossaries-extra` manual for further details and also [Gallery: Inner or Nested Glossaries](#).<sup>2</sup>

`flatten`=*<boolean>*

default: **true**; initial: **false**

This key is only available with `\printunsrtglossary` and `\printunsrtinnerglossary`. It can be used to locally remove the hierarchical level used by the glossary style. See the `glossaries-extra` manual for further details.

## 8.2. Glossary Markup

This section describes the commands that are used to display the glossary. If you want to suppress the number lists you can use the `nonumberlist` option. If you want to save the number lists for some other purpose outside of the glossary, you can use the `savenumberlist` option. If you want information about an entry's parent then you can use `\ifglshasparent` (to determine if the entry has a parent) or `\glsentryparent` (to expand to the parent's label). The hierarchical level is provided in `\subglossentry` (and is 0 with `\glossentry`) but it's also stored in the `level` internal field.

If you're trying to work out how to parse the glossary in order to gather indexing information, consider using `bib2gls` instead, which stores all the indexing information, such as location lists and letter group labels, in internal fields. It can also store lists of sibling entries or child entries. If you really want to input the glossary file in order to gather information obtained by `makeindex` or `xindy` without actually displaying anything (by redefining the markup commands to not produce any text), use `\input` rather than `\printglossary`.

The glossary is always started with:

```
\glossarysection[\glossarytoctitle]{\glossarytitle}
```

This creates the heading. This command sets the page header with:

```
\glsglossarymark{\glossarytoctitle}
```

If this is unsuitable for your chosen class file or page style package, you will need to redefine `\glsglossarymark`. If `\phantomsection` is defined (`hyperref`) then `\glossarysection` will start with:

<sup>2</sup>[dickimaw-books.com/gallery/index.php?label=bib2gls-inner](http://dickimaw-books.com/gallery/index.php?label=bib2gls-inner)

```
\glsclearpage
\phantomsection
```

```
\glossarysection[<toc title>]{<title>}
```

By default, this command uses either `\chapter*` or `\section*`, depending on whether or not `\chapter` is defined. This can be overridden by the `section` package option or the `\setglossarysection` command. Numbered sectional units can be obtained using the `numberedsection` package option. If the default unnumbered section setting is on, then the `<toc-title>` will only be added to the table of contents if the `toc` option is set. If `numberedsection` is on, the addition to the table of contents is left to the sectional command.

Further information about these options and commands is given in §2.2.

```
\glsglossarymark<glossary title>
```

This sets the page header, if supported by the current page style. Originally the command `\glossarymark` was provided for this purpose, but this command is also provided by other packages and classes, notably `memoir` which has a different syntax. Therefore the command `\glossarymark` will only be defined if it doesn't already exist. In which case, `\glsglossarymark` will simply use `\glossarymark`.

If `memoir` has been loaded, `\glsglossarymark` will be defined to use `\markboth` otherwise, if some other class or package has defined `\glossarymark`, `\glsglossarymark` will be defined to use `\@mkboth` (using the same definition as the `glossaries` package's version of `\glossarymark`).

If `ucmark=true`, the case change will be applied using `\memUchead` if `memoir` has been loaded, otherwise it will use `\glsuppercase`.

So if you want to redefine the way the header mark is set for the glossaries, you need to redefine `\glsglossarymark` not `\glossarymark`. For example, to only change the right header:

```
\renewcommand{\glsglossarymark}[1]{\markright{#1}}
```

or to prevent it from changing the headers:

```
\renewcommand{\glsglossarymark}[1]{} 
```

## 8. Displaying a Glossary

If you want `\gls glossarymark` to use all caps in the header, use the `ucmark` option described below.

With `hyperref` and unnumbered section headings, `\phantomsection` is needed to create an appropriate anchor (see the `hyperref` manual). This will need the page cleared for `\chapter*`, which is done with:

```
\glsclearpage
```

If the `section=chapter` setting is on then `\glsclearpage` will use `\cleardoublepage`, if it's defined and if the `\if@openright` conditional (provided by classes with an `openright` option such as `book` and `report`) isn't defined or is defined and is true, otherwise `\clearpage` is used.

Occasionally you may find that another package defines `\cleardoublepage` when it is not required. This may cause an unwanted blank page to appear before each glossary. If you only want a single page cleared, you can redefine `\glsclearpage`. For example:

```
\renewcommand*{\glsclearpage}{\clearpage}
```

Note that this will no longer take the `section` package option into account.

```
\glossarytitle
```

This expands to the title that should be used by the glossary section header. It's initialised to the title provided in `\newglossary` when the glossary was defined. The `title` option will redefine this command.

```
\glossarytoctitle
```

This expands to the table of contents title that's supplied in the optional argument of the glossary section command. It will only be added to the table of contents if the `toc` package option is on, but it may also be used in the page header (depending on the definition of `\gls glossarymark` and the current page style).

The `\glossarytoctitle` command is initialised to `\glossarytitle`. The `toctitle` option will redefine this command. If neither the `title` nor `toctitle` are used, `\glossarytoctitle` will be defined via:

```
\glssettoctitle{<glossary-type>}
```

By default, this will redefine `\glossarytoctitle` to the title provided in `\newglossary` when the glossary was defined.

This means that if neither `title` nor `toctitle` are set, the glossary's associated title will be used for both. If only `title` is used, then it will also apply to the table of contents title, and

## 8. Displaying a Glossary

if only `toctitle` is used, then `\glossarytoctitle` will be defined to that value but `\glossarytitle` will be the glossary's associated title.

After the heading, but before the main body of the glossary, is the glossary preamble which is given by:

```
\glossarypreamble
```

You can redefine this before the glossary is shown. For example:

```
\renewcommand{\glossarypreamble}{Numbers in italic  
indicate primary definitions.}
```

A glossary may have its own specific preamble. If it has one defined, then the `\print<...>glossary` set of commands will locally redefine `\glossarypreamble` to that preamble instead. Since this change is scoped, the previous definition will be restored after the `\print<...>glossary` command.

You can globally assign a preamble to a specific glossary with:

```
\setglossarypreamble[<type>]{<text>}
```

If `<type>` is omitted, `\glsdefaulttype` is used. For example:

```
\setglossarypreamble{Numbers in italic  
indicate primary definitions.}
```

This will set the given preamble text for just the `main` glossary, not for any other glossary. The `glossaries-extra` package additionally provides:

```
\apptoglossarypreamble[<type>]{<text>}
```

which locally appends `<text>` to the preamble for the specific glossary and

```
\pretoglossarypreamble[<type>]{<text>}
```

which locally prepends `<text>` to the preamble for the specific glossary.

There is also a postamble at the end of each glossary which is given by:

```
\glossarypostamble
```

This is less useful than a preamble and so there's no analogous command to `\setglossary-preamble`.



The preamble and postamble occur outside of theglossary and so shouldn't be influenced by the glossary style.

### Example 33: Switch to Two Column Mode for Glossary

Suppose you are using the `superheaderborder` style, and you want the glossary to be in two columns (you can't use the `longheaderborder` style for this example as you can't use the `longtable` environment in two column mode), but after the glossary you want to switch back to one column mode, you could do:



```
\renewcommand*{\glossarysection}[2][ ]{%
  \twocolumn[{\chapter*{#2}}]%
  \setlength\glsdescwidth{0.6\linewidth}%
  \glsglossarymark{\glossarytoctitle}%
}

\renewcommand*{\glossarypostamble}{\onecolumn}
```

(You may prefer to use the `mcolalltree` style if you're not interested in the column headers or borders.)

The actual glossary content is contained within the `theglossary` environment, which will typically be in the form:

```
\begin{theglossary}\glossaryheader
\glsgroupheading{<group-label>}\relax\glsresetentrylist
\glossentry{<entry-label>}{<number-list>}
\subglossentry{<level>}{<entry-label>}{<number-list>}
% ...
\glsgroupskip
\glsgroupheading{<group-label>}\relax\glsresetentrylist
\glossentry{<entry-label>}{<number-list>}
\subglossentry{<level>}{<entry-label>}{<number-list>}
% ...
\end{theglossary}
```

The entire number list for each entry is encapsulated with:



```
\glossaryentrynumbers{<locations>}
```

This command allows `\glsnonextpages`, `\glsnextpages`, and the `nonumberlist` and `savenumberlist` options to work. The `\glossaryentrynumbers` command is reset by:

```
\glsresetentrylist
```

With Option 1, this command is preceded by:

```
\glsnoidxprenumberlist{<entry-label>}
```

The default behaviour is to use the value of the `prenumberlist` internal field. This command is not used with Options 2 and 3.

If you want to suppress the number list for a particular entry, you can add the following to the entry's description:

```
\glsnonextpages
```

Within the glossary, this will redefine `\glossaryentrynumbers` to ignore its argument and then reset itself. This means that the next number list will be suppressed. Note that if the entry doesn't have a number list (for example, it's a parent entry that only appears in the glossary because it has an indexed descendent entry) then the next number list will be for the first child entry that's been indexed. This command does nothing outside of the glossary.

Similarly, if you want to override the `nonumberlist` option to ensure that the next number list is shown, then use:

```
\glsnextpages
```

This command does nothing outside of the glossary.

The `nonumberlist` key that may be used when defining an entry, works by automatically adding `\glsnonextpages` or `\glsnextpages` to the indexing information before `\glossentry` or `\subglossentry` with Options 2 and 3. With Option 1, the relevant command is put in the `prenumberlist` internal field, but since `\printnoidxglossary` only uses `\glsnoidxprenumberlist` and `\glossaryentrynumbers` when the `loclist` field is set, it won't affect sub-entries.

## 8. *Displaying a Glossary*

The `theglossary` environment, and the other commands (`\glossaryheader`, `\gls-groupskip`, `\glsgroupheading`, `\glossentry` and `\subglossentry`) are all redefined by glossary styles and are described in §13.2.

## 9. Defining New Glossaries

A new glossary can be defined using:

```
\newglossary [⟨log-ext⟩] {⟨glossary-label⟩} {⟨in-ext⟩} {⟨out-ext⟩} {⟨title⟩}
 [⟨counter⟩]
```

where *⟨glossary-label⟩* is the label to assign to this glossary. This label is used to reference the glossary in the value of the `type` key when defining entries or, the similarly named, `type` option in the `\print⟨...⟩glossary` commands.

As with labels in general, *⟨glossary-label⟩* must not contain any active characters.

The arguments *⟨in-ext⟩* and *⟨out-ext⟩* specify the extensions of the input and output (from T<sub>E</sub>X's point of view) files for that glossary, *⟨title⟩* is the default title for this new glossary, and the final optional argument *⟨counter⟩* specifies which location counter to use for the associated number lists (see also §12). If not specified, the default location counter will be the one identified in the `counter` option, if that option is used, otherwise it will be the page counter.

The first optional argument *⟨log-ext⟩* specifies the extension for the indexing application's transcript file (this information is used by `makeglossaries` which picks up the information from the `aux` file and also by the `automake` option). If omitted, `glg` is used.

The file extensions only apply to Options 2 and 3. With Options 1 and 4, the indexing information is written to the `aux` file. No input file is required for Option 1 and Option 4 always has the `glstex` file extension. Since the file extensions are only relevant for Options 2 and 3, there is a starred version that omits those arguments:

```
\newglossary* {⟨glossary-label⟩} {⟨title⟩} [⟨counter⟩]
```

This is equivalent to

```
\newglossary [⟨glossary-label⟩-glg] {⟨glossary-label⟩} {⟨glossary-label⟩-
gls} {⟨glossary-label⟩-glo} {⟨title⟩} [⟨counter⟩]
```

or you can use:



```
\altnewglossary{<glossary-label>}{<tag>}{<title>}[<counter>]
```

which is equivalent to

```
\newglossary[<tag>-glg]{<glossary-label>}{<tag>-gls}{<tag>-glo}
{<title>}[<counter>]
```

Note that in both cases distinct file extensions are defined so these commands are still useful with Options 2 and 3.

It may be that you have some terms that are so common that they don't need to be listed. In this case, you can define a special type of glossary that doesn't create any associated files. This is referred to as an "ignored glossary" and it's ignored by commands that iterate over all the glossaries, such as `\printglossaries`. To define an ignored glossary, use `\newignoredglossary` where `<glossary-label>` is the glossary label (as above). This glossary type will automatically be added to the `nohypertypes` list, since there are no hypertargets for the entries in an ignored glossary. (The sample file `sample-entryfmt.tex` defines an ignored glossary.)

An ignored glossary can't be displayed with `\printnoidxglossary` or `\printglossary` but can be displayed with `\printunsrtglossary` and `\printunsrtinnerglossary`.

#### glossaries-extra

The `glossaries-extra` package provides a starred version `\newignoredglossary*` that doesn't suppress hyperlinks (since ignored glossaries can be useful with `bib2gls`). There is also an analogous `\provideignoredglossary` command.

You can test if a glossary is an ignored one using:



```
\ifignoredglossary{<glossary-label>}{<true>}{<false>} modifier: *
```

This does `<true>` if `<glossary-label>` was defined as an ignored glossary, otherwise it does `<false>`.

Note that the `main` (default) glossary is automatically created as:

```
\newglossary{main}{gls}{glo}{\glossaryname}
```

so it can be identified by the label `main` (unless the `nomain` package option is used). If the `doc` package has been loaded (which uses the `gls` and `glo` extensions for the change log) then the `main` glossary will instead be defined as:

```
\newglossary[glg2]{main}{gls2}{glo2}{\glossaryname}
```

## 9. Defining New Glossaries

If you are using a class or package that similarly requires `gls` and `glo` as file extensions, you will need to use the `nomain` option and define your own custom glossary, but be aware of other possible conflicts, such as different definitions of commands and environments like `\printglossary` or `theglossary`.

The `acronym` (or `acronyms`) package option is equivalent to:

```
\newglossary[alg]{acronym}{acr}{acn}{\acronymname}
```

so it can be identified by the label `acronym`. If you are not sure whether the `acronym` option has been used, you can identify the list of acronyms by the command:

```
\acronymtype initial: \glsdefaulttype
```

The default definition is simply `\glsdefaulttype`. The `acronym` or `acronyms` option will redefine `\acronymtype` to `acronym`. If you want additional glossaries for use with acronyms, remember to declare them with `acronymlists`.

The `symbols` package option creates a new glossary with the label `symbols` using:

```
\newglossary[slg]{symbols}{sls}{slo}{\glssymbols-  
groupname}
```

The `numbers` package option creates a new glossary with the label `numbers` using:

```
\newglossary[nlg]{numbers}{nls}{nlo}{\glsnumbers-  
groupname}
```

The `index` package option creates a new glossary with the label `index` using:

```
\newglossary[ilg]{index}{ind}{idx}{\indexname}
```

With Options 2 and 3 all glossaries must be defined before `\makeglossaries` to ensure that the relevant output files are opened.

See §1.5.1 if you want to redefine `\glossaryname`, especially if you are using a language package. (Similarly for `\glssymbolsgroupname` and `\glsnumbersgroupname`.) If you want to redefine `\indexname`, just follow the advice in How to change LaTeX's “fixed names”.

## 10. Adding an Entry to the Glossary Without Generating Text

It is possible to `\indexindexing` an entry without

```
\glsadd[<options>]{<entry-label>}
```

This is similar to the `\glstext`-like commands, only it doesn't produce any text. Therefore, there is no `hyper` key available in `<options>` but all the other base options that can be used with the `\glstext`-like commands can be passed to `\glsadd`. The `glossaries-extra` package provides additional options, such as `textformat`, that aren't applicable when there's no link text, so they are also not available. This ensures that the given entry is listed in the glossary and that the current location is included in the entry's number list.

This command is particularly useful to create an explicit range that covers an entire section or block of text that might otherwise end up with a long, ragged number list. For example, suppose I have defined an entry with the label "set":

```
\newglossaryentry{set}{name={set},  
description={a collection}}
```

Suppose I have a section about sets spanning from page 3 to page 8 with repeated use of `\gls{set}` on pages 3, 5, 7 and 8. This will result in the number list "3, 5, 7, 8" which is a bit untidy. It would look far more compact, and better emphasize that the section of the document from page 3 to 8 covers sets, if the number list was simply "3–8".

This can be done with an explicit range:

```
\glsadd[format=(]{set}  
Lots of text about sets spanning page 3 to page 8.  
\glsadd[format=)]{set}
```

See §12.1 for more information about the location `encap`.

glossaries-extra

Explicit ranges can also be created using `\glsstarange` and `\glsendrange` with `glossaries-extra`. You can also add a subset of entries with `\glsaddeach`.

To add all entries that have been defined, use:



```
\glsaddall[<options>]
```

The optional argument is the same as for `\glsadd`, except there is also a key `types` which can be used to specify which glossaries to use. This should be a comma-separated list. For example, if you only want to add all the entries belonging to the list of acronyms (specified by the glossary type `\acronymtype`) and a list of notation (specified by the glossary type `notation`) then you can do:



```
\glsaddall[types={\acronymtype,notation}]
```

bib2gls

If you are using `bib2gls` with `glossaries-extra`, you can't use `\glsaddall`. Instead use the `selection=all` resource option to select all entries in the given bib files. (You can use `\glsaddeach` with `bib2gls`.)



Note that `\glsadd` and `\glsaddall` add the current location to the number list. In the case of `\glsaddall`, all entries in the listed glossaries will have the same location in the number list (the location at the point in the document where `\glsaddall` was used, which will be page 1 if it occurs in the preamble). If you want to use `\glsaddall`, it's best to suppress the number list with the `nonumberlist` package option. (See sections 2.3 and 12.)

If you want to ensure that all entry are added to the glossary, but only want the locations of entries that have actually been used in the document, then you can use:



```
\glsaddallunused[<glossary types>]
```

Note that in this case, the optional argument is simply a list of glossary labels. The options available to `\glsadd` and `\glsaddall` aren't available here. If the optional argument is omitted, the list of all non-ignored glossaries is assumed.

This command implements:

```
\glsadd[format=glsignore]{<entry-label>}
```

for each entry in each glossary listed in the optional argument if the entry has been marked as used. Since `\glsignore` discards its argument, this effectively creates an invisible location. This is necessary because `makeindex` and `xindy` require an associated location for each line in the indexing file. (They are *indexing* applications not glossary applications, so they expect page numbers.)

This means that `\glsaddallunused` adds `\glsignore{<location>}` to the number list of all the *unused* entries. If any of those number lists have other locations (for example, the first use flags was reset before `\glsaddallunused` or only the `\gls`-like commands were used or if any indexing occurs after `\glsaddallunused`) then this will cause spurious commas or en-dashes in the number list that have been placed before or after the invisible location.



If you want to use `\glsaddallunused`, it's best to place the command at the end of the document to ensure that all the commands you intend to use have already been used and make sure to use the `\gls`-like commands and don't issue any resets (`\glsreset` etc).

`bib2gls`

You can't use `\glsaddallunused` with `bib2gls`. However, since `bib2gls` was designed specifically for `glossaries-extra`, it recognises `glsignore` as a special format that indicates the location shouldn't be added to the location list but the entry should be selected. So you can index an entry with `format=glsignore` to ensure that the entry is selected without adding a location to the number list.

Alternatively, the `selection=all` resource option can be used, which will ensure all entries are selected but only those indexed with one or more non-ignored locations will have a location list.

Base glossaries package only:



```
\documentclass{article}
\usepackage{glossaries}
\makeglossaries
\newglossaryentry{cat}{name={cat},description=
{feline}}
\newglossaryentry{dog}{name={dog},description=
{canine}}
\begin{document}
\gls{cat}.
```



```
\printglossaries
\glsaddallunused % <- make sure dog is also listed
\end{document}
```

Corresponding `glossaries-extra` and `bib2gls` document code:

```
\documentclass{article}
\usepackage[record]{glossaries-extra}
\GlsXtrLoadResources[src=entries,selection=all]
\begin{document}
\gls{cat}.
\printunsrtglossaries
\end{document}
```

With the file `entries.bib`:

```
@entry{cat,name={cat},description={feline}}
@entry{dog,name={dog},description={canine}}
```

### Example 34: Dual Entries

The example file `sample-dual.tex` makes use of `\glsadd` to allow for an entry that should appear both in the `main` glossary and in the list of acronyms. This example sets up the list of acronyms using the `acronym` package option:

```
\usepackage[acronym]{glossaries}
```

A new command (`\newdualentry`) is then defined to make it easier to define dual entries:

```
\newcommand*{\newdualentry}[5][[]]{%
  \newglossaryentry{main-#2}{name={#4},%
  text={#3\glsadd{#2}},%
  description={#5},%
  #1
  }%
  \newacronym{#2}{#3\glsadd{main-#2}}{#4}%
}
```

This has the following syntax:

```
\newdualentry[⟨options⟩]{⟨label⟩}{⟨abbrv⟩}{⟨long⟩}{⟨description⟩}
```

You can then define a new dual entry:

```
\newdualentry{svm}% label
  {SVM}% abbreviation
  {support vector machine}% long form
  {Statistical pattern recognition technique}
  % description
```

Now you can reference the acronym with `\gls{svm}` or you can reference the entry in the `main` glossary with `\gls{main-svm}`.

This is just an example. In general, think twice before you add this kind of duplication. If all information (short, long and description) can be provided in a single list, it's redundant to provide a second list unless any of the short forms start with a different letter to the associated long form, which may make it harder to look up.

`bib2gls`

Note that with `bib2gls`, there are special dual entry types that implement this behaviour. That is, if an entry is referenced then its corresponding dual entry will automatically be selected as well. So there is less need for `\glsadd` with `bib2gls`. (Although it can still be useful, for example with Option 6.)

# 11. Cross-Referencing Entries



You must use `\makeglossaries` (Options 2 or 3) or `\makenoidx-glossaries` (Option 1) *before* defining any entries that cross-reference other entries. If any of the entries that you have cross-referenced don't appear in the glossary, check that you have put `\makeglossaries/\makenoidxglossaries` before all entry definitions. The `glossaries-extra` package provides better cross-reference handling.

There are several ways of cross-referencing entry in the glossaries:

1. You can use commands such as `\gls` in the entries description. For example:



```
\newglossaryentry{apple}{name={apple},  
description={firm, round fruit. See also \gls  
{pear}}}
```

Note that with this method, if you don't use the cross-referenced term in the main part of the document, you will need two runs of `makeglossaries`:



```
pdflatex filename  
makeglossaries filename  
pdflatex filename  
makeglossaries filename  
pdflatex filename
```

This is because the `\gls` in the description won't be detected until the glossary has been created (unless the description is used elsewhere in the document with `\glsentrydesc`). Take care not to use `\glsdesc` (or `\Glsdesc`) in this case as it will cause a nested link.

2. After you have defined the entry, use



```
\glssee [⟨tag⟩] {⟨entry-label⟩} {⟨xr-list⟩}
```

## 11. Cross-Referencing Entries

where  $\langle xr\text{-list} \rangle$  is a comma-separated list of entry labels to be cross-referenced,  $\langle entry\text{-label} \rangle$  is the label of the entry doing the cross-referencing and  $\langle tag \rangle$  is the “see” tag. (The default value of  $\langle tag \rangle$  is `\seename`.)

This command is essentially performing:

```
\glsadd[format= $\langle cross\text{-ref}\text{-encap} \rangle$ ] { $\langle entry\text{-label} \rangle$ }
```

where  $\langle cross\text{-ref}\text{-encap} \rangle$  is a special form of location encap that includes  $\langle tag \rangle$  and  $\langle xr\text{-list} \rangle$ . Remember from §10 that `makeindex` always requires a location. This special location encap discards the provided location (which `\glssee` sets to “Z” to push the cross-reference to the end of the number list) and replaces it with the cross-reference in the form “see  $\langle name(s) \rangle$ ”.

This means that `\glssee` indexes  $\langle entry\text{-label} \rangle$  so that  $\langle entry\text{-label} \rangle$  appears in the glossary but it doesn’t index any of the entries listed in  $\langle xr\text{-list} \rangle$ .

For example:

```
\glssee[see also]{series}  
{FourierSeries,TaylorTheorem}
```

This indexes the entry identified by the label “series” and adds a location to the “series” number list that looks something like:

```
see also \glsentryname{FourierSeries} \&  
\glsentryname{TaylorTheorem}
```

(The actual format is performed with `\glsseeformat`.)

3. As described in §4, you can use the `see` key when you define the entry. For example:

```
\newglossaryentry{MaclaurinSeries}{name=  
{Maclaurin series},  
description={Series expansion},  
see={TaylorTheorem}}
```

This key was provided as a simple shortcut that does:

```
\newglossaryentry{MaclaurinSeries}{name=  
{Maclaurin series},
```

## 11. Cross-Referencing Entries

```
description={Series expansion}}
\glssee{MaclaurinSeries}{TaylorsTheorem}
```

This means that “MaclaurinSeries” will automatically be added to the glossary with something like

```
\emph{see} \glsentryname{TaylorsTheorem}
```

in its number list, but “TaylorsTheorem” will need to be indexed elsewhere to ensure that it also appears in the glossary otherwise, it would end up with the preamble location (page 1) in its number list, assuming that the entry was defined in the preamble.

You therefore need to ensure that you use the cross-referenced term with the commands described in §5.1 or §10.

The “see” tag is produce using `\seename`, but can be overridden in specific instances using square brackets at the start of the `see` value. For example:

```
\newglossaryentry{MaclaurinSeries}{name=
{Maclaurin series},
description={Series expansion},
see=[see also]{TaylorsTheorem}}
```

Take care if you want to use the optional argument of commands such as `\newacronym` or `\newterm` as the value will need to be grouped. For example:

```
\newterm{seal}
\newterm[see={ [see also]seal}]{sea lion}
```

Similarly if the value contains a list. For example:

```
\glossaryentry{lemon}
{
  name={lemon},
  description={Yellow citrus fruit}
}
\glossaryentry{lime}
{
  name={lime},
  description={Green citrus fruit}
```

```

}
\glossaryentry{citrus}
{
  name={citrus},
  description={Plant in the Rutaceae family},
  see={lemon, lime}
}

```

In both cases 2 and 3 above, the cross-referenced information appears in the number list, whereas in case 1, the cross-referenced information appears in the description. (See the `sample-crossref.tex` example file that comes with this package.) This means that in cases 2 and 3, the cross-referencing information won't appear if you have suppressed the number list. In this case, you will need to activate the number list for the given entries using `nonumberlistfalse`. Alternatively, if you just use the `see` key instead of `\glssee`, you can automatically activate the number list using the `seeautonumberlist` package option.

#### bib2gls

`bib2gls` provides much better support for cross-references, including the ability to only show the cross-reference in the location list (`save-locations={see}`) without the actual locations. See, for example, [index.php?label=bib2gls-xr](http://index.php?label=bib2gls-xr)<sup>a</sup>Gallery: Cross-References (bib2gls).

<sup>a</sup>[dickimaw-books.com/gallery](http://dickimaw-books.com/gallery)

## 11.1. Customising Cross-Reference Text

When you use either the `see` key or the `\glssee` command, the cross-referencing information will be typeset in the glossary (within the number list) according to:

```
\glsseeformat [<tag>] {<xr-list>} {<location>}
```

The default definition:

```
\emph{<tag>} \glsseelist {<xr-list>}
```

Note that the `<location>` argument is always ignored. (`makeindex` will always assign a location number, even if it's not needed, so it needs to be discarded.) For example, if you want the tag to appear in bold, you can do:

## 11. Cross-Referencing Entries

```
\renewcommand*{\glsseeformat}[3][\seename]{\textbf  
{#1}  
  \glsseelist{#2}}
```

The list of labels is formatted by:

```
\glsseelist{<label-list>}
```

This iterates through the comma-separated list of entry labels *<label-list>* and formats each entry in the list. The entries are separated by:

```
\glsseesep initial: , ↵
```

between all but the last pair, and

```
\glsseelastsep initial: , ↵
```

between the last pair.

Each entry item in the list is formatted with:

```
\glsseeitem{<entry-label>}
```

This does:

```
\gls hyperlink[\glsseeitemformat{#1}]{#1}
```

which creates a hyperlink, if enabled, to the cross-referenced entry. The hyperlink text is given by:

```
\glsseeitemformat{<entry-label>}
```

This does:

```
\ifglshasshort{<entry-label>  
  {\glsentrytext{<entry-label>}}% acronym  
  {\glsentryname{<entry-label>}}% non-acronym
```

which uses the `text` field for acronyms and the `name` field otherwise.



When `\glssee` was first introduced in v1.17, the cross-referenced entry was displayed with just `\glsentryname`, but this caused problems because back then the `name` field had to be sanitized because it was written to the glossary file, which caused strange results if the `name` contained any commands. So in v3.0, the default definition was switched to using `\glsentrytext` to avoid the issue. In v3.08a, the information written to the glossary file was changed and the `name` was no longer sanitized, but the new definition was retained for backward-compatibility.

However, the original definition is more appropriate in some ways, as it makes more sense for the cross-reference to show the name as it appears in the glossary, except for acronyms which could have wide names if the long form is included. So in v4.50, which had major compatibility-breaking changes to remove the unconditional dependency on the now deprecated `textcase` package, the original use of `name` was restored for non-acronyms, which brings it into line with `glossaries-extra`.

For example, to make the cross-referenced list use small caps with the `text` (not `name`) field:



```
\renewcommand{\glsseeitemformat}[1]{%
  \textsc{\glsentrytext{#1}}}
```

#### glossaries-extra

The `glossaries-extra` package redefines `\glsseeitemformat` to use `\glsfmt-text` for abbreviations and `\glsfmtname` otherwise. Additionally, it provides `\glsxtrhiername` which can be used as an alternative for hierarchical entries. See the `glossaries-extra` manual for further details.



You can use `\glsseeformat` and `\glsseelist` in the main body of the text, but they won't automatically add the cross-referenced entries to the glossary. If you want them added with that location, you can do:



```
Some information (see also
  \glsseelist{FourierSeries,TaylorTheorem}%
  \glsadd{FourierSeries}\glsadd{TaylorTheorem}).
```



## 12. Number Lists

Each entry in the glossary has an associated number list (or location list). By default, these numbers (the entry locations) refer to the pages on which that entry has been indexed (using any of the commands described in §5.1 and §10) and will also include any cross-references obtained with `\glssee` (or the `see` key).

The locations in the number list are separated with:

```
\delimN
```



The number list can be suppressed using the `nonumberlist` package option, or an alternative counter can be set as the default using the `counter` package option. The glossaries-extra package additionally provides the `equations` and `floats` options that can be used to automatically switch the location counter in certain environments.

`bib2gls`

With `bib2gls` you can prevent the number list from being created with the `save-locations=false` resource option, or only include the cross-references with the `save-locations=see` option.

Number lists are more common with indexes rather than glossaries (although you can use the `glossaries` package for indexes as well). However, Options 2 and 3 makes use of `makeindex` or `xindy` to hierarchically sort and collate the entries. These applications are readily available with most modern  $\text{T}\text{E}\text{X}$  distributions, but because they are both designed as indexing applications they both require that terms either have a valid location or a cross-reference.

**i**

Even if you use `nonumberlist`, the locations must still be provided and acceptable to the indexing application or they will cause an error during the indexing stage, which will interrupt the document build. Empty locations are not permitted with Options 2 and 3. See §12.5.

If you're not interested in the locations, each entry only needs to be indexed once, so consider using `indexonlyfirst`, which can improve the document build time by only indexing the first use of each term.

The `\glsaddall` command (see §10), which is used to automatically index all entries, iterates over all defined entries (in non-ignored glossaries) and does `\glsadd{<entry-label>}`

for each entry (where  $\langle entry-label \rangle$  is that entry's label). This means that `\glsaddall` automatically adds the same location to every entry's number list, which looks weird if the number list hasn't been suppressed.

With Option 4, the indexing is performed by `bib2gls`, which was specifically designed for the `glossaries-extra` package. So it will allow empty or unusual locations. (As from `bib2gls` v3.0, empty locations will be converted to ignored locations.) Additionally, the `selection=all` resource option will select all entries without adding an unwanted location to the number list. If `bib2gls` can deduce a numerical value for a location, it will attempt to form a range over consecutive locations, otherwise it won't try to form a range and the location will just form an individual item in the list.

Option 1 also allows any location but it doesn't form ranges. Any empty locations or location with the `glsignore` format will result in an invisible location in the number list.

## 12.1. Encap Values (Location Formats)

The location `encap` or format is the encapsulating command used to format an entry location. That is, it's a command that takes an argument that will be the location.

If you aren't using `hyperref` then you can use the control sequence *name* of any text-block command that takes a single argument. For example, `format=emph`. If you require hyperlinks then it's more complicated.

The “encap” usually refers to the control sequence *name* without the leading backslash (such as `textbf`) and is essentially the same as the `makeindex` `encap` value that can be provided within the standard `\index` command.

Be careful not to use a declaration (such as `\bfseries`) instead of a text-block command (such as `\textbf`) as the effect is not guaranteed to be localised, either within the number list or throughout the glossary.

There is a special format:

```
\glsignore{text}
```

which simply ignores its argument. With Options 1, 2 and 3 this creates an empty (invisible) location which can lead to spurious commas or en-dashes if the number list contains other locations. However, with `bib2gls`, this format identifies the location as a special ignored location which won't be added to the location list but will influence selection.

If you want to apply more than one style to a given location (for example, **bold** and *italic*) you will need to create a command that applies both formats. For example:

```
\newcommand*{\textbfem}[1]{\textbf{\emph{#1}}}
```

and use that command.

In this document, standard location format refer to the standard text block commands such as `\textbf` or `\emph` or any of the commands listed in Table 12.1.

If you use `xindy` instead of `makeindex`, you must use `\GlsAddXdyAttribute` to identify any non-standard formats that you want to use with the `format` key. So if you use `xindy` with the above example `\textbfem`, you would need to add:

```
\GlsAddXdyAttribute{textbfem}
```

See §14 for further details.

If you are using hyperlinks and you want to change the font of the hyperlinked location don't use `\hyperpage` (provided by the `hyperref` package) as the locations may not refer to a page number and the location argument may contain the range delimiter `\delimR`. Instead, the `glossaries` package provides hyperlink-supported encaps listed in Table 12.1. These commands all use `\glshypernumber` (described below) and so shouldn't be used in other contexts.

The `\hyper<xx>` can also be used without `hyperref`, since `\glshypernumber` will simply do its argument if `\hyperlink` hasn't been defined. In which case, only the font change will be applied.

Table 12.1.: Predefined Hyperlinked Location Formats

<code>hyper<math>\text{rm}</math></code>	<code>serif (\text{rm}) hyperlink</code>
<code>hyper<math>\text{sf}</math></code>	<code>sans-serif (\text{sf}) hyperlink</code>
<code>hyper<math>\text{tt}</math></code>	<code>monospaced (\text{tt}) hyperlink</code>
<code>hyper<math>\text{bf}</math></code>	<code>bold (\text{bf}) hyperlink</code>
<code>hyper<math>\text{md}</math></code>	<code>medium weight (\text{md}) hyperlink</code>
<code>hyper<math>\text{it}</math></code>	<code>italic (\text{it}) hyperlink</code>
<code>hyper<math>\text{sl}</math></code>	<code>slanted (\text{sl}) hyperlink</code>
<code>hyper<math>\text{up}</math></code>	<code>upright (\text{up}) hyperlink</code>
<code>hyper<math>\text{sc}</math></code>	<code>small caps (\text{sc}) hyperlink</code>
<code>hyper<math>\text{emph}</math></code>	<code>emphasized (\emph) hyperlink</code>

If you want to make a new location format that supports hyperlinks, you will need to define a command which takes one argument and use that with the location encapsulated with `\glshypernumber` or the appropriate `\hyper<xx>` command. For example, if you want

the location number to be in a bold sans-serif font, you can define a command called, say, `\hyperbsf`:

```
\newcommand{\hyperbsf}[1]{\textbf{\hypersf{#1}}}
```

and then use `hyperbsf` as the value for the `format` key.

When defining a custom location format command that uses one of the `\hyper<xx>` commands, make sure that the argument of `\hyper<xx>` is just the location. Any formatting must be outside of `\hyper<xx>` (as in the above `\hyperbsf` example).

Remember that if you use `xindy`, you will need to add this to the list of location `xindy` attributes:

```
\GlsAddXdyAttribute{hyperbsf}
```

Complications can arise if you use different encap values for the same location. For example, suppose on page 10 you have both the default `glsnumberformat` and `hyperbf` encaps. While it may seem apparent that `hyperbf` should override `glsnumberformat` in this situation, the indexing application may not know it. This is therefore something you need to be careful about if you use the `format` key or if you use a command that implicitly sets it.

In the case of `xindy`, it only accepts one encap (according to the order of precedence given in the `xindy` module) and discards the others for identical locations (for the same entry). This can cause a problem if a discarded location forms the start or end of a range.

In the case of `makeindex`, it accepts different encaps for the same location, but warns about it (“multiple encaps”). This leads to a number list with the same location repeated in different formats. If you use the `makeglossaries` Perl script with Option 2 it will detect `makeindex`’s warning and attempt to fix the problem, ensuring that the `glsnumberformat` encap always has the least precedence unless it includes a range identifier. Other conflicting encaps will have the last one override earlier ones for the same location with range identifiers taking priority. If you actually want the repeat, you can disable this feature with the `-e` switch.

No discard occurs with Option 1 so again you get the same location repeated in different formats. With Option 4, `bib2gls` will discard according to order of precedence, giving priority to start and end ranges. (See the `bib2gls` manual for further details.)

The default location format is:

```
\glsnumberformat{\location(s)}
```

This will simply do its argument `\location(s)` if `hyperref` hasn’t been loaded, otherwise it will use:

```
\glsnumber{⟨location(s)⟩}
```

This will create a hyperlink to the location or will simply do its argument if `hyperref` hasn't been loaded. The `⟨location(s)⟩` argument may contain multiple locations. If so, they must be separated with `\delimR` or `\delimN`. (Usually `\delimN` won't occur. The `\delimR` separator may occur with ranges and `makeindex`.) Any other markup is likely to cause a problem (see §12.5).

Each location within `\glsnumber` will have a hyperlink created with:

```
\hyperlink{⟨anchor⟩}{⟨text⟩}
```

where the `⟨text⟩` is the location encapsulated with:

```
\glswrglosslocationtextfmt{⟨location⟩}
```

This just does its argument by default.

The `⟨anchor⟩` is constructed from the location but requires the prefix and location counter, which first have to be set with:

```
\setentrycounter[⟨prefix⟩]{⟨counter⟩}
```

This command will be automatically inserted before the location in the number list by the appropriate indexing method. In the case of `makeindex`, this will be inserted at the start of the encap information, but with `xindy` the counter will form part of the attribute and a helper command has to be provided that uses `\setentrycounter`. With Option 1 the command occurs inside the definition of `\glsnoidxdisplayloc`.

The `⟨counter⟩` will be stored in:

```
\glsentrycounter initial: \glscounter
```

and may be used in the hooks described below. Note that the prefix can't be referenced as `\glswrglossdisableanchorcmds` is also used when obtaining the prefix during indexing.

The `⟨anchor⟩` is then constructed as follows:

1. Use the `\glswrglossdisableanchorcmds` hook to disable problematic commands (scoped).
2. Expand (protected)

```
⟨counter⟩⟨prefix⟩\glswrglosslocationtarget{⟨location⟩}
```

## 3. Sanitize the result.

For example:

```
\setentrycounter[] {page}
% page counter and empty prefix
\glshypernumber{1}
```

will essentially do:

```
\hyperlink{page.1}1
```

whereas

```
\setentrycounter[1] {equation}%
\glshypernumber{2}
```

will essentially do:

```
\hyperlink{equation.1.2}2
```

The initial hook to disable the problematic commands is:

```
\glswrglossdisableanchorcmds
```

By default, this is defined to:

```
\let\glstexorpdfstring\@secondoftwo
```

If hyperref is loaded the definition will also include:

```
\let\texorpdfstring\@secondoftwo
\pdfstringdefPreHook
```

The location is encapsulated with:

```
\glswrglosslocationtarget{\location}
```

This must expand but may be used to make adjustments. The default definition is to simply expand to its argument. The `\glswrglossdisableanchorcmds` hook may be used to alter the definition if some condition is required, but bear in mind that `\glswrglosslocationtarget` won't be used when the prefix is obtained during indexing.

Any leftover robust or protected commands will end up sanitized to prevent an obscure error from occurring, but an invalid target name is likely to result. See §12.5 for an example.

The use of `\setentrycounter` to set the prefix and counter is necessary because the `hypertarget` can't be included in the indexing information supplied to `makeindex` or `xindy`, because neither the `makeindex` nor `xindy` syntax supports it. Unfortunately, not all definitions of `\theH<counter>` can be split into a prefix and location that can be recombined in this way. This problem can occur, for example, with `counter=equation` when it depends on the chapter counter. This can result in warnings in the form:

```
name{<target-name>} has been referenced but does not
exist, replaced by a fixed one
```

The `sampleEq.tex` sample file deals with this issue by redefining `\theHequation` as follows:

```
\renewcommand*\theHequation{\theHchapter.\arabic
{equation}}
```

`bib2gls`

This issue is avoided with `bib2gls` and `record=nameref` as that syntax allows the hyperlink target to be supplied with the indexing information.

## 12.2. Range Formations

There are two types of ranges: explicit and implicit. Neither are supported with Option 1. Both are supported by Options 2, 3 and 4. Implicit ranges can be switched off using the appropriate option for the required indexing application. The start and end of a range is separated with:

```
\delimR
```

Options 2 and 3 can merge implicit and explicit ranges that overlap. With Option 4, individual locations can be merged into an explicit range, but an individual location on either side of the explicit range won't be merged into the explicit range.

As with `\index`, the characters `(` and `)` can be used at the start of the `format` value to specify the beginning and ending of a number range. They must be in matching pairs with the same `encap`. For example,

```
\gls[format=(emph)]{sample}
```

on one page to start the range and later:

```
\gls[format=)emph]{sample}
```

to close the range. This will create an explicit range in the number list that's encapsulated with `\emph`. If the default `glsnumberformat` should be used, you can omit it and just have the ( and ) characters.

glossaries-extra

Explicit ranges can also be created using `\glsstarange` and `\glsendrange` with `glossaries-extra`.

Implicit ranges are formed by concatenating a sequence of three or more consecutive locations. For example, if an entry is indexed on pages 3, 4, 5, and 6, this will be compacted into “3–6”.

With Option 3, you can vary the minimum sequence length using `\GlsSetXdyMinRangeLength` where the argument is either the minimum number or the keyword `none`, which indicates that no implicit ranges should be formed. See §14.3 for further details.

glossaries-extra

With Option 4, the minimum number for form implicit ranges is given by the `min-loc-range` resource option. Again, the value is either the minimum number or the keyword `none`, which indicates that no implicit ranges should be formed. It's also possible to compact a ragged sequence into a range with `max-loc-diff`. For example, with `max-loc-diff=2`, the sequence “2, 4, 5, 6, 8” can be compressed into the range “2–8”. Another range-related option is `compact-ranges` which allows ranges to be more compact by omitting matching initial digits at the end of the range. For example, “184–189” can be compacted into “184–9”.

With both `makeindex` and `xindy` (Options 2 and 3), you can replace the separator and the closing number at the end of the range using:

```
\glsSetSuffixF{<suffix>}
```

to set the suffix for two consecutive locations and

```
\glsSetSuffixFF{<suffix>}
```

to set the suffix for three or more consecutive locations. Option 4 provides a similar feature with the `suffixF` and `suffixFF` resource options.

For example:



```
\glsSetSuffixF{f.}
\glsSetSuffixFF{ff.}
```

Note that if you use `xindy` (Option 3), you will also need to set the minimum range length to 1 if you want to change these suffixes:

```
\GlsSetXdyMinRangeLength{1}
```

If you use the `hyperref` package, you will need to use `\nohyperpage` in the suffix to ensure that the hyperlinks work correctly. For example:

```
\glsSetSuffixF{\nohyperpage{f.}}
\glsSetSuffixFF{\nohyperpage{ff.}}
```

Note that `\glsSetSuffixF` and `\glsSetSuffixFF` must be used before `\makeglossaries` and have no effect if `\noist` is used.

## 12.3. Locations

Each location in an entry's number list is the result of indexing the entry at the point in the document that corresponds to the location (typically where a command such as `\gls` occurred). By default, this is the page number, but can be changed with the `counter` package option, the `<counter>` optional argument in `\newglossary`, the `counter` key in `\newglossary-entry` or the `counter` option in the `\gls`-like and `\glstext`-like commands (or in `\glsadd`).

The syntax of the location must be valid for the given indexing application if you use Options 2 or 3. In the case of `makeindex`, the syntax is quite restricted. The location may be a digit (`\arabic`), upper or lowercase Roman numerals (`\Roman` or `\roman`) or upper or lowercase ASCII letters (`\Alph` or `\alph`). The syntax also allows composite locations formed by combining the allowed digits, numerals and letters with a compositor (which can be identified with `\glsSetCompositor`).

The following locations are valid, assuming the default full stop compositor:

- “325”: a numeric location (`\arabic`);
- “IV”: a Roman numeral location (`\Roman`);
- “B”: an alphabetic location (`\Alph`);

- “12.3.4”: a composite location.

The following are invalid:

- “I-3.2”: mixed compositors not permitted;
- “X7”: a separator must be used in composite locations;
- “Ø”: letters must be ASCII;
- “`\textsc{iv}`”: commands not permitted in locations;
- “”: locations can’t be empty.



Invalid locations will be rejected by `makeindex`, which will result in the entry being dropped from the glossary if it has no valid locations.

In the case of `xindy`, the location syntax must be declared in the `xdy` style file. This covers both the way that the location appears in the indexing file as a result of protected expansion but also the counter used to obtain the location, and is described in more detail in §14.3. The standard digit (`\arabic`), upper or lowercase Roman numerals (`\Roman` or `\roman`) or upper or lowercase ASCII letters (`\Alph` or `\alph`) are automatically added for the page counter.

If a location doesn’t match any declared syntax, a warning will be written to `xindy`’s transcript file (`glg`):

```
WARNING: location-reference "{\prefix}{\location}" did not
match any location-class! (ignored)
```

As with `makeindex` when it encounters an invalid location, `xindy` will drop that location, which will result in the entry being dropped from the glossary if it has no valid locations.

Additional problems can occur with `xindy` if any of `xindy`’s special characters occur in the location. This includes the backslash `\` character, which is particularly problematic if any robust or protected commands are written in the location as `\langle csname \rangle` will have to be written to the file as `\\langle csname \rangle`. This is quite difficult to do without prematurely expanding `\thepage`.

If `esclocations` true, an attempt will be made to hack commands like `\@arabic` and `\@roman` to enable this, but, like all hacks, this is problematic and liable to break in awkward situations or with future releases of the L<sup>A</sup>T<sub>E</sub>X kernel or other packages. This setting is now off by default and it’s better to use the hooks below to ensure that the content written to the file is valid.



Any commands that end up in the location can interfere with `\glsdohypertarget` when it tries to create hyperlinks.

The following hook is used during the protected write:

```
\glswrglossdisablelocationcmds
```

This does nothing by default but may be used to disable problematic commands that could lead to an invalid location. Note that this can lead to unexpected results in the number list, but you may be able to correct this with a custom `encap` or (if `\glshypernumber` creates a hyperlink) a custom definition of `\glswrglosslocationtextfmt`. See §12.5 for an example.

The `\glswrglossdisablelocationcmds` hook occurs after `\protected@write` sets `\thepage` to `\relax`. By the time `\thepage` actually gets expanded when it's written to the indexing file, any changes made within the hook will be lost.

Both Options 1 and 4 write the indexing information in the `aux` file and will accept any location syntax (that's valid in a  $\LaTeX$  document). In the case of Option 4, `bib2gls` will try parsing the location and if it fits a common pattern that allows it to obtain a numeric value, then it will be able to form an implicit range (if required), otherwise it will accept the location but not form any implicit ranges.

With Options 1–4 (except with `record=nameref`) the location anchor isn't included in the indexing information. If a hyperlink is required for the location, the target (anchor name) has to be constructed from the location. The `hyperref` package provides `\hyperpage` for normal indexes (with `\index`), but this forms the anchor from `page.<location>` which isn't suitable with glossaries as the location counter may not be the default `page`. Therefore the counter is saved within the `encap`. A prefix is also necessary if `\theH<counter>` is defined and isn't equivalent to `\the<counter>`.

The assumption here is that `\theH<counter>` expands to the equivalent of `<prefix>\the<counter>`. If `\theH<counter>` and `\the<counter>` are equivalent then `<prefix>` will be empty.

The prefix is found as follows:

1. Use the `\glswrglossdisableanchorcmds` hook to disable problematic commands (scoped).
2. Perform a protected expansion on `\theH<counter>` (`<Hloc>`) and `\the<counter>` (`<loc>`). If `<Hloc>` ends with `<loc>`, so that `<Hloc>` is `<prefix><loc>`, then the prefix is the `<prefix>` substring.

In this step, `\thepage` may be incorrect, due to  $\TeX$ 's asynchronous output routine, but it will be incorrect in both `<Hloc>` and `<loc>` and shouldn't occur in the prefix (unless you have an unusual numbering system that's reset on every page, in which case you may have other problems), so it shouldn't affect the prefix formation. When the actual write operation occurs, `\thepage` should then expand correctly.

Unfortunately, not all definitions of `\theH<counter>` will expand in the form `<prefix>\the<counter>`. In which case a warning will occur:

```
Hyper target `Hloc' can't be formed by prefixing
location `loc'. You need to modify the definition of
\theH $\langle counter \rangle$ 
otherwise you will get the warning:
" `name{ $\langle counter \rangle$ . $\langle loc \rangle$  }' has been
referenced but does not exist"
```

If you need the location hyperlink, you will either have to redefine `\theH $\langle counter \rangle$`  or switch to Option 4 and `record=nameref`.

## 12.4. Page Precedence

The page precedence indicates the location ordering within the number list based on the location syntax. For example, if an entry has been indexed on pages 5, 7, i and ii, then the number list will be “i, ii, 5, 7” with the default order of precedence.

With `makeindex`, the default precedence is `rnaRA`, which indicates: lowercase Roman (`\roman`), numeric (`\arabic`), lowercase alphabetic (`\alph`), uppercase Roman (`\Roman`), and uppercase alphabetic (`\Alph`). This order can be changed by adding the `page_precedence` parameter to the `ist` file. There’s no specific command provided for this, so you will need to use the `\GlsSetWriteIstHook` to add this. For example:

```
\GlsSetWriteIstHook{%
  \write\glswrite{page_precedence "arnAR"}%
}
```

With `xindy`, the precedence is given by the order the location classes are listed in `define-location-class-order` within the `xdy` style file. This order can either be changed in a custom `xdy` file or can be set with `\GlsSetXdyLocationClassOrder`.

Since neither Options 1 or 4 recognise specific location classes, they have no concept of page precedence. They will both create location lists that are in the same order as the locations were indexed, which means they will match the order those locations occur in the document. However, with `bib2gls`, it’s possible to gather the locations into sub-groups according to the associated counter or split off locations with identified primary formats. See the `bib2gls` manual for further details.

## 12.5. Problematic Locations

The default location counter is the page counter, the value of which is obtained with `\thepage`. Due to  $\text{T}_{\text{E}}\text{X}$ ’s asynchronous output routine, `\thepage` may be incorrect at the start of a new page. To ensure that the page number is correct, a delayed write is needed, which is what is usually done when writing information to the `aux` and `toc` files (and to indexing files).

This works fine with Options 1 and 4 since neither of those options have any restrictions on the location syntax (provided that it's valid  $\LaTeX$  code). With `bib2gls`, if it can't work out a numeric value for the location then it simply won't be able to form a range. Additionally, `bib2gls v3.0+`, converts an empty location into an ignored location, which means the entry will still be selected so that it can be included in the glossary, but it won't cause a spurious comma or en-dash as there won't be an invisible location in the number list.

The only problematic locations with Options 1 and 4 are where hyperlinks are required but the target name can't be formed from the prefix, counter and location information (see §12.3). The best solution with `bib2gls` in this case is to use `record=nameref`, which saves the actual target name in the indexing record. With Option 1 you will have to redefine `\theH-counter` as appropriate.

With Options 2 and 3, the location must expand to content that is compatible with the indexing application's syntax. The syntax for `makeindex` is quite restrictive and is described in §12.3.

For example, `\thepart` is normally formatted as an uppercase Roman numeral. There's no Roman numeral for 0 so if the part counter is 0 (that is, before the first `\part`) then `\thepart` will expand to nothing. This can be demonstrated in the following document:

```
\documentclass{article}
\usepackage[counter=part]{glossaries}
\makeglossaries
\newglossaryentry{sample}{name={sample},description=
{}}
\begin{document}
\gls{sample}% part = 0
\part{Sample Part}
\section{Sample Section}
\gls{sample}.
\printglossaries
\end{document}
```

In the above, the first instance of `\gls{sample}` will have an empty location. This will cause `makeindex` to reject the location with the following message in the transcript (assuming the document file is called `myDoc.tex`):

```
!! Input index error (file = myDoc.glo, line = 1):
-- Illegal page number or page_precedence rnaRA.
```

If `makeglossaries` encounters this warning, it will replace the empty location with “0” and change the location encap to `glsignore`. In the above example, this will lead to an invisible location in the number list, but that's exactly what an empty location would do if `makeindex` allowed it.

Similarly, if the page compositor hasn't been correctly identified, then it can also result in an

invalid location. For example:

```
\documentclass{article}
\usepackage[counter=section]{glossaries}
\makeglossaries
\newglossaryentry{sample}{name={sample},description=
{}}
% default compositor is '.' not '-'
\renewcommand{\thesection}{\thepart-\arabic{section}}
}
\begin{document}
\part{Sample Part}
\section{Sample Section}
\gls{sample}.
\printglossaries
\end{document}
```

This will cause `makeindex` to reject the location with the following message in the transcript:

```
!! Input index error (file = myDoc.glo, line = 1):
-- Illegal Roman number: position 2 in I-1.
```

If `makeglossaries` encounters this warning, it will replace any invalid content (the hyphen, in this case) with the page compositor specified in the `ist` file.

In both of the above examples, using `makeglossaries` will help the document build to complete without the entries disappearing from the glossary, however the resulting number list may look strange. If you are using `nonumberlist` then this isn't a problem.

If you don't use `makeglossaries` but explicitly call `makeindex` then you won't have those corrections, and some or all of your entries may be omitted from the glossary. In which case, you will have to adjust the location so that it fits `makeindex`'s syntax *even if you have `nonumberlist`*. In the case of the invalid page compositor problem, you can simply use `\glsSetCompositor` to set the correct compositor. In the case of empty locations you will need to choose a different location counter.

Other problems occur with commands that don't fully expand, which results in  $\LaTeX$  markup in the location in the indexing file. For example, if `babel` is used with `spanish`, lowercase Roman numerals (which may occur in the front matter) will expand to the internal command `\es@scroman`, as in the following:

```
\documentclass{book}
\usepackage[T1]{fontenc}
```

```

\usepackage[spanish]{babel}
\usepackage{glossaries}
\makeglossaries
\newglossaryentry{sample}{name={sample},description=
{un ejemplo}}
\begin{document}
\frontmatter
\chapter{Foreword}
\gls{sample}% problem location
\mainmatter
\chapter{Sample}
\gls{sample}
\printglossaries
\end{document}

```

The first instance of `\gls` occurs in the front matter on page *i*, which in this case is formatted in faked small caps with `\es@scroman`. This can be found in the `glo` file, which contains:

```

\glossaryentry{sample?\glossentry{sample}
|setentrycounter[] {page}"\glsnumberformat}
{\es@scroman {i}}
\glossaryentry{sample?\glossentry{sample}
|setentrycounter[] {page}"\glsnumberformat}{1}

```

Each line in the `glo` file corresponds to a single indexing instance (created with `\gls` in this case).

The double-quote (") is `makeindex`'s escape character (which can be changed with `\Gls-SetQuote`). It's not necessary in the above but was added as a by-product of the internal escaping of special characters (the backslash isn't a special character for `makeindex`, except in the `ist` file, but is for `xindy`).

The indexing data is contained in the arguments of:

```

\glossaryentry{<data>}{<location>}

```

This isn't a defined command but is simply used as a keyword in the indexing file. By default, `makeindex` expects `\indexentry`. The custom `ist` style file created by `\makeglossaries` identifies `\glossaryentry` as the keyword:

```

keyword "\glossaryentry"

```

The syntax for the second argument `<location>` is as described in §12.3. The syntax for the first argument `<data>` is in the form:

```
⟨sort⟩?⟨text⟩|⟨encap⟩
```

or for sub-entries:

```
⟨parent sort⟩?⟨parent text⟩!⟨sort⟩?⟨text⟩|⟨encap⟩
```

The question mark (?) is the “actual character” and separates the sort value from the actual text that’s written to the `gls` file (which is input by `\printglossary`).

By default, `makeindex` uses @ as the actual character but this caused a problem for early versions of glossaries where there was a greater chance of internal commands occurring in the `glo` file. The custom `ist` file identifies ? as the actual character:

```
actual '?'
```

You may remember from §12.1 that the `format` option specifies the `encap`, which I claimed was essentially the same as the `encap` with `\index`, but as can be seen from the above example, that’s not strictly speaking true. The real `encap` has to include `\setentrycounter` so that (if hyperlinks are supported) the appropriate target name can be constructed.

The way that `makeindex` works is that it will write

```
\⟨encap⟩{⟨location⟩}
```

in the `gls` (or equivalent) file. What glossaries actually needs for the hyperlinks to work is:

```
\setentrycounter[⟨prefix⟩]{⟨counter⟩}\⟨cs⟩{⟨location⟩}
```

where `⟨cs⟩` is the real formatting command name (identified in the `format` option).

So from `makeindex`’s point of view, the real `encap` in the above example is the literal string:

```
setentrycounter[] {page}\glsnumberformat
```

In the above example, the location has ended up as `\es@scroman {i}` which is invalid, as `makeindex` requires the location to consist solely of digits, Roman numerals or alphabetic, optionally separated by a compositors.

That means that this example will trigger a message from `makeindex` which will be written to the `gls` transcript file:



```
Scanning input file myDoc.glo...
!! Input index error (file = myDoc.glo, line = 1):
-- Illegal space within numerals in second argument.
.done (1 entries accepted, 1 rejected).
Sorting entries...done (0 comparisons).
Generating output file myDoc.gls...done (6 lines
written, 0 warnings).
```

Note that 1 entry has been rejected, but it also shows 0 warnings and it has a 0 exit code, which means that it won't interrupt the overall document build.

If you run `makeglossaries` instead of running `makeindex` explicitly, then `makeglossaries` will search the `glg` transcript for the “(*n*) entries accepted, (*m*) rejected” line, and if *m* is greater than 0 it will attempt to diagnose and fix the problem.

Messages about the “second argument” (as in “Illegal space within numerals in second argument”) indicate that the problem is with the location, so `makeglossaries` will search the locations for content that matches `\<cname> {<num>}` (with any or no spaces after the command name and optionally preceded by `\protect`). If it finds a match, it will shift `<cname>` into the `encap` with the following message:

```
Encap/location issue: potential LaTeX commands in
location detected. Attempting to remedy.
Reading myDoc.glo...
Invalid location '\es@scroman {i}' detected for
entry 'sample'. Replaced with 'i'
Writing myDoc.glo...
Retrying
```

The altered `glo` file now contains:

```
\glossaryentry{sample?\glossentry{sample}
|setentrycounter[] {page} "\glslocationcstoencap
{glsnumberformat}{es@scroman}}{i}
\glossaryentry{sample?\glossentry{sample}
|setentrycounter[] {page} "\glsnumberformat}{1}
```

and `makeglossaries` will re-run `makeindex`.

Following this correction, the number list for the “sample” entry now contains:

```
\setentrycounter[] {page} \glslocationcstoencap{gls-
numberformat}{es@scroman}{i} \delimN
\setentrycounter[] {page} \glsnumberformat{1}
```

The corrected location needs to be encapsulated with both the designated encap (`glsnumberformat` in this case) and the formatting command that needs to be applied to the location. This is done via:

```
\glslocationcstoencap{⟨encap-csname⟩}{⟨location-csname⟩}
```

This is simply defined to do:

```
\csuse{⟨location-csname⟩}{\csuse{⟨encap-csname⟩}{⟨location⟩}}
```

This puts the intended encap (`glsnumberformat` in this case) closer to the location to enable it to work better with hyperlinks, although this may not always work, particularly if the command with the name `⟨location-csname⟩` expects a numerical argument.

In the above example, the location command is `\es@scroman` which is provided by `babel-spanish` and performs fake small caps. Internal commands provided by other packages for their own private use can't be relied upon. So the `glossaries` package can't assume they will stay the same, and the above example document may produce a different result with different versions of `babel`. However, in this case (provided you use `makeglossaries`), the document will correctly end up with the number list “i, 1” for the “sample” entry in the glossary, which matches the document page numbering. If you use `makeindex` explicitly, the number list will simply be “1”.

This become more complicated if `hyperref` is added to the document (before `glossaries`). Now `glsnumberformat` uses `glsnumber`, which needs to take into account that its argument may contain a range with the start and end location separated by `\delimR` (the range delimiter), and it needs to create a separate hyperlink for each location component.

Here's a modified example that has an implicit range in the front matter and an explicit range in the main matter.

```
\documentclass{book}
\usepackage[T1]{fontenc}
\usepackage[spanish]{babel}
\usepackage[colorlinks]{hyperref}
\usepackage{glossaries}
\makeglossaries
\newglossaryentry{sample}{name={sample},description=
{un ejemplo}}
\begin{document}
\frontmatter
\chapter{Foreword}
\gls{sample}
\newpage
```

```

\gls{sample}
\newpage
\gls{sample}
\mainmatter
\chapter{Sample}
\gls[format=(hyperbf)]{sample}
\newpage
Some text
\newpage
\gls[format=)hyperbf]{sample}
\printglossaries
\end{document}

```

This again has problematic locations, but `makeglossaries` can shift the `\es@scroman` into the `encap` as before. The resulting `gls` file has the following number list for the “sample” entry:

```

\setentrycounter[]{}{page}% prefix and counter
\glslocationcstoencap{glsnumberformat}{es@scroman}
{i\delimR iii}\delimN
\setentrycounter[]{}{page}% prefix and counter
\hyperbf{1\delimR 3}

```

Both ranges have been compacted so that the range, including the `\delimR` separator, is in the argument of the `encap` command.

The default definition of `\glslocationcstoencap` means that the first range is formatted according to:

```

\es@scroman{\glsnumber{i\delimR iii}}

```

This allows `\glsnumber` to detect the delimiter and split up the range so that it can apply a separate hyperlink to the start and end locations, so that it effectively becomes:

```

\es@scroman{\hyperlink{<target1>}{i}\delimR
\hyperlink{<target2>}{iii}}

```

In this type of situation, the most problematic document is one where the `<location-csname>` can’t handle `\hyperlink` in its argument and needs to be shifted into the hyperlink text. In the above example document, no actual error occurs, but there are warnings from pdfTeX:

```
pdfTeX warning (dest): name{page.iii} has been
referenced but does not exist, replaced by a fixed
one
[...]
pdfTeX warning (dest): name{page.i} has been
referenced but does not exist, replaced by a fixed
one
```

This is due to the way that `\glsnumber` forms the target name. Since the actual target name isn't saved in the indexing data, it has to be reconstituted from available information: the prefix, the counter and the location. So the targets become `page.i` for location “i” and `page.iii` for location “iii”. This usually works for common page formats, but it doesn't in this case. Adding `debug` to `hyperref`'s package options reveals the following information in the transcript:

```
Package hyperref Info: Anchor `page.I'
[...]
Package hyperref Info: Anchor `page.II'
```

So the correct anchors are “page.I” and “page.II”.

The case change occurs as a result of the fake small caps, but since `\es@scroman` is outside of `\glsnumber`, the case change isn't part of the location and so doesn't affect the anchor name.

I can redefine `\glslocationcstoencap` to swap them around:

```
\renewcommand{\glslocationcstoencap}[3]{\csuse{#1}
{\csuse{#2}{#3}}}
```

However, now the transcript shows:

```
pdfTeX warning (dest):
name{page.\protect\040\es@scroman\040\040{i--iii}}
has been referenced but does not exist, replaced by
a fixed one
```

This is because `\es@scroman` doesn't fully expand.

The `\gls wrglossdisableanchorcmds` hook provides a workaround for the problematic command:

```
\appto\glswrglossdisableanchorcmds{\csletcs
{es@scroman}{text_uppercase:n}}
```

This will cause `\es@scroman` to be locally redefined to just convert its argument to uppercase while the anchor is being constructed. Unfortunately this patch is only partially successful as the transcript now has:

```
pdfTeX warning (dest): name{page.I--III} has been
referenced but does not exist, replaced by a fixed
one
```

The problem now is that `\glshypernumber` can't split on the range delimiter, so the location is now "I--III".

If the number list doesn't contain any ranges, then the above redefinition of `\glslocationcstoencap` and the addition to `\glswrglossdisableanchorcmds` will fix the hyperlink.

Instead of redefining `\glslocationcstoencap` and altering `\glswrglossdisableanchorcmds`, a solution that works with ranges can be achieved by redefining `\glswrglosslocationtarget` to convert its argument to uppercase. You can do this with:

```
\renewcommand{\glswrglosslocationtarget}[1]{\gls-
uppercase{#1}}
```

This will successfully construct the anchor names `page . I` and `page . III`. It won't affect the anchors for the main matter as digits aren't affected by the case-changing command.

If you're not using `makeglossaries` and are either calling `makeindex` explicitly or via `makeglossaries-lite` or with the `automake` option, then you will need to find another way of converting problematic location into a form that won't be discarded by `makeindex`. This is quite difficult if the problematic content is inside `\thepage` since its delayed expansion means that any attempt at locally changing the problematic within `\glswrglossdisablelocationcmds` will be lost.

The earlier example can be rewritten to (sort of!) work without `makeglossaries`:

```
\documentclass{book}
\usepackage[T1]{fontenc}
\usepackage[spanish]{babel}
\usepackage[colorlinks]{hyperref}
\usepackage{glossaries}
\makeglossaries
```

```

\newglossaryentry{sample}{name={sample},description=
{un ejemplo}}

\newcommand{\locthepage}{\Roman{page}}
\newcommand{\delayedlocthepage}{\expandonce
{\locthepage}}
\appto\glswrglossdisablelocationcmds{\let\the-
page\delayedlocthepage}

\begin{document}
\frontmatter
\chapter{Foreword}
\gls{sample}
\newpage
\gls{sample}
\newpage
\gls{sample}
\mainmatter
\renewcommand{\locthepage}{\arabic{page}}
\chapter{Sample}
\gls[format=(hyperbf)]{sample}
\newpage
Some text
\newpage
\gls[format=)hyperbf]{sample}
\printglossaries
\end{document}

```

Note that the custom `\locthepage` command needs to be redefined after the page numbering changes at the start of the main matter.

This ensures that the locations are valid in the `glo` file, so `makeindex` will process it without losing any rejecting any entry lines. The hyperlink targets will also be correct. The only problem now is that the front matter locations will be in uppercase in the glossary.

The above problems are all due to `makeindex` having a restrictive location syntax. With `xindy`, you can define location classes for custom locations. Unfortunately, the backslash `\` is a special character for `xindy` that indicates an escape sequence that indicates the next character should be interpreted literally, which means that any `LATEX` commands that end up in the `xindy` indexing file must have their initial backslash escaped. This is quite tricky to do given the delayed expansion of `\the`. If it's expanded early in order to pre-process it then the page number could end up being incorrect.

The sample file `samplexdy.tex` provides a custom page format that uses a robust command called `\tallynum`, which ends up in the `glo` file. With the default `esclocations=false` setting, the location for the first page is written to the file as:

```
:locref "{{{\tallynum {1}}}"
```

This results in the following message from xindy:

```
WARNING: location-reference "{{{\tallynum {1}}}" did
not match any location-class! (ignored)
```

Note that the backslash has gone from the start of `tallynum`. As with `makeindex`, invalid locations are dropped.

If you use `makeglossaries` rather than running `xindy` directly, `makeglossaries` will detect the warning and provide some diagnostic information:

```
You may have forgotten to add a location
class with \GlsAddXdyLocation or you may have
the format incorrect or you may need
the package option esclocations=true.
```

In this case, you need to use the package option `esclocations=true`. This will use a hack to provide a way to escape the backslash without prematurely expanding the actual value of the page counter. As this is a hack, it may not work and can result in obscure error messages.

Returning to the earlier `babel-spanish` example, if it's converted to use `xindy` instead of `makeindex`, a similar problem arises. For example, simply adding the `xindy` package option:

```
\documentclass{book}
\usepackage[T1]{fontenc}
\usepackage[spanish]{babel}
\usepackage[colorlinks]{hyperref}
\usepackage[xindy]{glossaries}
\makeglossaries
\newglossaryentry{sample}{name={sample},description=
{un ejemplo}}
\begin{document}
\frontmatter
\chapter{Foreword}
\gls{sample}
\newpage
\gls{sample}
\newpage
\gls{sample}
```

```

\mainmatter
\chapter{Sample}
\gls[format=(hyperbf)]{sample}
\newpage
Some text
\newpage
\gls[format=)hyperbf]{sample}
\printglossaries
\end{document}

```

The `glo` file now contains locations with `\es@scroman`, but as with the `\tallynum` example, the leading backslash hasn't been escaped:

```
:locref "{}{\es@scroman {i}}"
```

This needs `esclocations=true` to escape the backslash.

```
\usepackage[xindy,esclocations]{glossaries}
```

Note that this produces a different result in the `glo` file:

```
:locref "{}{\protect \es@scroman {i}}"
```

This results from the partial protected expansion used on `\thepage` before the special characters are escaped. If you inspect the `xdy` file created by `\makeglossaries`, you should find the following:

```

(define-location-class "roman-page-numbers"
  ( :sep "{}{" :sep "\protect \es@scroman
{" "roman-numbers-lowercase" :sep "" :sep "" )
  :min-range-length 2
)

```

This is because the non-default behaviour of `\roman` has been detected and a custom location class has automatically been supplied. (Whereas with the `samplexdy.tex` sample file, it was necessary to provide the custom class to support `\tallynum` with `\GlsAddXdyLocation`.)



## 12.6. Iterating Over Locations



Not available with Options 2 and 3. The commands described here rely on the locations being stored in the `loclist` internal field in an `etoolbox` internal list format, which is what happens with Option 1.

The `\printnoidxglossary` command displays the location list using:



```
\glsnoidxloclist{<list cs>}
```

where `<list cs>` is a temporary command that contains the value of the `loclist` field. This uses `\forlistloop` to iterate over all the locations in the list with the handler macro:



```
\glsnoidxloclisthandler{<location>}
```

This keeps track of the previous element in the list to determine whether or not to insert the `\delimN` separator. Note that it doesn't attempt to determine whether or not any of the locations are ranges.

glossaries-extra

The `\printunsrtglossary` command will also use `\glsnoidxloclist` if the `loclist` field has been set but the `location` field hasn't, but in general it's better to instruct `bib2gls` to save the formatted location list (which is the default).

You can iterate over an entry's `loclist` field using:



```
\glsnumberlistloop{<entry-label>}{<handler>}{<xr handler cs>}
```

where `<entry-label>` is the entry's label and `<handler cs>` is a handler control sequence with the syntax:

```
<handler cs>{<prefix>}{<counter>}{<format>}{<location>}
```

where `<prefix>` is the hypertarget prefix, `<counter>` is the name of the location counter, `<format>` is the location encap (for example, `textbf`) and `<location>` is the location.

The third argument `<xr handler cs>` is the control sequence that will be applied to any cross-references in the list. This handler should have the syntax:

```
<xr handler cs>[<tag>]{<xr list>}{<empty>}
```

## 12. Number Lists

where  $\langle tag \rangle$  is the cross-referenced textual tag (for example, “see”) and  $\langle xr list \rangle$  is a comma-separated list of entry labels. The final argument  $\langle empty \rangle$  will always be empty, but it allows for `\glsseeformat` to be used as the handler.

bib2gls

This method is designed for Option 1, but `bib2gls` also saves individual locations in the `loclist` field (in addition to the formatted location list which is stored in the `location` field). However, the format for each item in the internal list varies depending on whether `record=only` or `record=nameref` was used. See the glossaries–extra manual for further details.

For example, if on page 12 I have:

```
\gls[format=textbf]{apple}
```

and on page 18 I have:

```
\gls[format=emph]{apple}
```

then

```
\glsnumberlistloop{apple}{\myhandler}
```

will be equivalent to:

```
\myhandler{}{page}{textbf}{12}%  
\myhandler{}{page}{emph}{18}%
```

There is a predefined handler that’s used to display the number list in `\printnoidxglossary`:

```
\glsnoidxdisplayloc{\langle prefix \rangle}{\langle counter \rangle}{\langle format \rangle}{\langle location \rangle}
```

This simply does:

```
\setentrycounter[\langle prefix \rangle]{\langle counter \rangle}%  
\csuse{\langle format \rangle}{\langle location \rangle}
```

which sets up the hyperlink information needed for `\glshypernumber` (in case it’s required by the `encap`) and encapsulates the location, with the provided formatting command.

## 12. Number Lists

Internally, `\glsnumberlistloop` uses `etoolbox`'s `\forlistloop` with the handler:

```
\glsnoidxnumberlistloophandler{<location item>}
```

The default behaviour is simply to do its argument, which (for Option 1) will be in the form:

```
\glsnoidxdisplayloc{<prefix>}{<counter>}{<format>}{<location>}
```

The `\glsnumberlistloop` works by temporarily redefining `\glsnoidxdisplayloc` to `<handler>` and `\glsseeformat` to `<xr handler cs>`.

**glossaries-extra**

With `glossaries-extra`, you can use the more general purpose `\glsxtrfieldforlistloop` and provide your own handler that can be customized to suit `record=only` or `record=nameref`.

## 13. Glossary Styles

The markup used in the glossary is described in §8.2. §13.2 describes how to define a new glossary style. Commands that may be used in styles, but should not be redefined by styles, are described in §§13.2.1 & 13.2.2. The commands that should be redefined by the glossary style are described in §13.2.3.

Glossary styles typically use `\glossentryname` to display the entry's name, but some may use the sentence case version `\Glossentryname` instead. Both encapsulate the name with:

```
\glsnamefont{<text>}
```

which takes one argument: the entry name (obtained with `\glsentryname` or `\Glsentryname`).

By default, `\glsnamefont` simply displays its argument in whatever the surrounding font happens to be, but bear in mind that the glossary style may switch the font.

glossaries-extra

With `glossaries-extra` the `glossnamefont` and `glossname` category attributes can be used to adjust font and, for `\glossentryname` only, case-changing.

For example, the `tree` style displays the name as follows:

```
\glstreenamefmt{\glstarget{<entry-label>}{\glossentryname  
{<entry-label>}}}
```

which is essentially (ignoring the hyperlink target):

```
\glstreenamefmt{\glsnamefont{\glsentryname{<entry-label>}}  
}
```

Since `\glstreenamefmt` is defined to display its argument in bold, the name will end up in bold unless `\glsnamefont` is redefined to change it.

The `list` style displays the name in the option argument of `\item`:

```
\item[\glsentryitem{<entry-label>}\glstarget{<entry-label>  
{\glossentryname{<entry-label>}}]
```

which is essentially (ignoring the entry counter and hyperlink target):

```
\item[\glsnamefont{\glsentryname{<entry-label>}}]
```

This occurs within the description environment, which by default uses bold for the item text. However, this may be changed by various classes or packages. So the name may end up in bold or may be in some other font, such as sans-serif.

The long style displays the name in the first column of a longtable:

```
\glsentryitem{<entry-label>}%
\glstarget{<entry-label>}{\glossentryname{<entry-label>}} &
```

So the only font change will come from `\glsnamefont`, which doesn't apply any change by default.

Glossary styles will typically display the description with `\glossentrydesc` but may not show the symbol. If the symbol is shown, it should be displayed with `\glossentrysymbol`.

There's no analogous font command for the description or symbol, but the `glossaries-extra` package provides the `glossdescfont` and `glosssymbolfont` attributes to change the font according to the entry's category.

Some styles may supply their own helper commands (such as `\glstreenamefmt`) to make it easier to adjust the formatting without having to define a new glossary style.

### Example 35: Changing the Font Used to Display Entry Names in the Glossary

Suppose you want all the entry names to appear in medium weight small caps in your glossaries, disregarding the glossary style, then you can do:

```
\renewcommand{\glsnamefont}[1]{\textsc{\mdseries #1}}
```

**glossaries-extra**

The `glossaries-extra-stylemods` package provides additional hooks that can be used to make other minor adjustments.

Some styles support groups. These may simply insert a vertical gap between groups, but some may also include a heading with the group title. The base `glossaries` package only has a simple mechanism for obtaining the title from the group label via `\glsgetgrouptitle`, which will test if `\<group-label>groupname` exists where the `<group-label>` is `glsymbols`, `glsnumbers` or a single character.

The `glossaries-extra` package has commands `\glsxtrsetgrouptitle` and `\glsxtrlocalsetgrouptitle` to set the group title, which take precedence over `\langle group-label \rangle groupname`.

## 13.1. Predefined Styles

The predefined styles can accommodate numbered top level (level 0) and level 1 entries. See the package options `entrycounter`, `counterwithin` and `subentrycounter` described in §2.3. There is a summary of available styles in Table 13.1. The most flexible style is the `tree*` style or (for a multi-column glossary) the `mcoltree*` style (which mostly just encapsulates the `tree*` style in a `multicols` environment.) You can view samples of all the predefined styles at [dickimaw-books.com/gallery/glossaries-styles/](http://dickimaw-books.com/gallery/glossaries-styles/).

Note that `glossaries-extra` provides additional styles in the supplementary packages `glossary-bookindex`, `glossary-topic` and `glossary-longextra`. See the `glossaries-extra` manual for further details.



Note that the group styles (such as `listgroup`) will have unexpected results if used with the `sort=def` or `sort=use` options. If you don't sort your entries alphabetically, it's best to set the `nogroupskip` package option to prevent odd vertical gaps appearing.

The group title is obtained using `\glsgetgrouptitle{\label}`, which is described in §13.2.

The tabular-like styles that allow multi-line descriptions and number lists use the length:

```
\glsdescwidth
```



to set the width of the description column and the length

```
\glspagelistwidth
```



to set the width of the number list column.



These lengths will not be available if you use both the `nolong` and `nosuper` package options or if you use the `nostyles` package option unless you explicitly load the relevant package.

These will need to be changed using `\setlength` if the glossary is too wide. Note that the `long4col` and `super4col` styles (and their header and border variations) don't use these lengths

### 13. Glossary Styles

Table 13.1.: Glossary Styles. A question mark in the style name indicates anything that matches that doesn't match any previously listed style (for example, `long3col?` matches `long3col`, `long3colheader`, `long3colborder` and `long3colheaderborder`). A maximum level of 0 indicates a flat glossary (sub-entries are displayed in the same way as main entries). Where the maximum level is given as  $\infty$  there is no limit, but note that `makeindex` (Option 2) imposes a limit of 2 sub-levels. If the homograph column is checked, then the name is not displayed for sub-entries. If the symbol column is checked, then the symbol will be displayed.

Style	Maximum Level	Homograph	Symbol
<code>listdotted</code>	0		
<code>sublistdotted</code>	1		
<code>list?</code>	1	✓	
<code>altlist?</code>	1	✓	
<code>long?3col?</code>	1	✓	
<code>long4col?</code>	1	✓	✓
<code>altlong?4col?</code>	1	✓	✓
<code>long?</code>	1	✓	
<code>super?3col?</code>	1	✓	
<code>super4col?</code>	1	✓	✓
<code>altsuper?4col?</code>	1	✓	✓
<code>super?</code>	1	✓	
<code>?index?</code>	2		✓
<code>tree*</code>	$\infty$	configurable	configurable
<code>mcoltree*</code>	$\infty$	configurable	configurable
<code>treenoname?</code>	$\infty$	✓	✓
<code>?almtree?</code>	$\infty$		✓
<code>?tree?</code>	$\infty$		✓
<code>inline</code>	1	✓	

### 13. Glossary Styles

as they are designed for single line entries. Instead you should use the analogous `atlong4col` and `altsuper4col` styles. If you need to explicitly create a line-break within a multi-line description in a tabular-like style it's better to use `\newline` instead of `\\` (but consider using a ragged style with narrow columns).



Remember that a cell within a tabular-like environment can't be broken across a page, so even if a tabular-like style, such as `long`, allows multilined descriptions, you'll probably encounter page-breaking problems if you have entries with long descriptions. You may want to consider using the `almtree` style instead.

Note that if you use the `style` key in the optional argument to `\print<...>glossary`, it will override any previous style settings for the given glossary, so if, for example, you do



```
\renewcommand*{\glsgroupskip}{}% no effect
\printglossary[style=long]
```

then the new definition of `\glsgroupskip` will not have an affect for this glossary, as `\glsgroupskip` is redefined by `style=long`. Likewise, `\setglossarystyle` will also override any previous style definitions, so, again



```
\renewcommand*{\glsgroupskip}% no effect
\setglossarystyle{long}
```

will reset `\glsgroupskip` back to its default definition for the named glossary style (`long` in this case). If you want to modify the styles, either use `\newglossarystyle` (described in the next section) or make the modifications after `\setglossarystyle`. For example:



```
\setglossarystyle{long}
\renewcommand*{\glsgroupskip}{}
```

In this case, it's better to use `nogroupskip` to suppress the gap between groups for the default styles instead of redefining `\glsgroupskip`.

All the styles except for the three- and four-column styles and the `listdotted` style use the post-description hook:



```
\glspostdescription
```

after the description. This simply displays a full stop by default. To eliminate this full stop (or replace it with something else, say, a comma) you will need to redefine `\glspostdescrip-`



tion before the glossary is displayed. Alternatively, you can suppress it for a given entry by placing `\nopostdesc` in the entry's description. Note that `\longnewglossary-entry` puts `\nopostdesc` at the end of the description. The `glossaries-extra` package provides a starred version that doesn't.

Alternatively, you can use the package option `nopostdot` to suppress this full stop. This is implemented by default with `glossaries-extra`. You can switch it back on with `nopostdot=false` or `postdot=` or you can use `postpunc` for a different punctuation character.

#### glossaries-extra

The `glossaries-extra-stylemods` package provides some adjustments to some of the predefined styles listed here, allowing for greater flexibility. See the `glossaries-extra` documentation for further details.

### 13.1.1. List Styles

```
\usepackage{glossary-list}
           automatically loaded with \usepackage{glossaries}
```

The glossary styles described in this section are all defined in the package `glossary-list`. Since they all use the `description` environment, they are governed by the same parameters as that environment. These styles all ignore the entry's `symbol`. Note that these styles will automatically be available unless you use the `nolist` or `nostyles` package options.

Note that, except for the `listdotted` style, these list styles are incompatible with `classicthesis`. They may also be incompatible with other classes or packages that modify the `description` environment.

There is an initialisation hook that provides a patch if the `getttitlestring` package is loaded, since this is used by `hyperref`.

```
\glslistinit
```

Note that this automatically implements:

```
\GetTitleStringSetup{expand}
```

This patch should ensure that the combination of `hyperref` and `entrycounter` will correctly expand the entry name to the `aux` file. The name is expanded using:

```
\glslistexpandedname{<entry-label>}
```

This uses `\glsunexpandedfieldvalue`. If you need the name to fully expand, you can redefine this. For example:

```
\renewcommand{\glslistexpandedname}[1]{\glsentryname{#1}}
```

If `nogroupskip=false`, the `\glsgroupskip` command creates a vertical space using:

```
\indexspace
```

This command is defined by some other packages, so it's only defined by `glossary-list` if it hasn't already been defined.

For the styles that should group headings, the group title is encapsulated with:

```
\glslistgroupheaderfmt{<title>}
```

This simply does its argument by default, but it occurs inside the optional argument of `\item` so may appear bold from the item font change.

For the styles that have a navigation line, the line is formatted according to:

```
\glslistnavigationitem{<navigation items>}
```

This puts its argument inside the optional argument of `\item`, which can cause a problem if the navigation line is too long, in which case you will need to redefine `\glslistnavigationitem`. For example:

```
\renewcommand*{\glslistnavigationitem}[1]
{\item \textbf{#1}}
```

You may prefer to use the tree-like styles, such as `treehypergroup` instead.

```
list
```

The `list` style uses the `description` environment. The entry name is placed in the optional argument of the `\item` command (so it will usually appear in bold by default). The description follows, and then the associated number list for that entry. The symbol is ignored. If the entry has child

### 13. Glossary Styles

entries, the description and number list follows (but not the name) for each child entry. Groups are separated using `\indexspace` with the default `nogroupskip=true`.

The closest matching non-list style is the index style.

listgroup

The `listgroup` style is like `list` but the groups have headings obtained using `\glsgetgroup-title`, which is described in §13.2.

listhypergroup

The `listhypergroup` style is like `listgroup` but has a navigation line at the start of the glossary with links to each group that is present in the glossary, which is displayed in the glossary header with `\glslistnavigationitem`. This requires an additional run through  $\text{\LaTeX}$  to ensure the group information is up to date. Within the navigation line, each group item is separated by `\glshypernavsep`.

allist

The `allist` style is like `list` but the description starts on the line following the name. (As with the `list` style, the symbol is ignored.) Each child entry starts a new line, but as with the `list` style, the name associated with each child entry is ignored.

The closest matching non-list style is the index style with the following adjustment:

```
\renewcommand{\glstreepredesc}{%  
  \glstreeitem\parindent\hangindent}
```

allistgroup

The `allistgroup` style is like `allist` but the glossary groups have headings.

allisthypergroup

The `allisthypergroup` style is like `allistgroup` but has a set of links to the glossary groups. The navigation line is the same as that for `listhypergroup`, described above.

listdotted

This style uses the `description` environment.<sup>1</sup> Each entry starts with `\item[]`, followed by the name followed by a dotted line, followed by the description. Note that this style ignores both the

---

<sup>1</sup>This style was supplied by Axel Menzel.

number list and the symbol. The length

```
\glslistdottedwidth
```

governs where the description should start. This is a flat style, so child entries are formatted in the same way as the parent entries.

A non-list alternative is to use the index style with

```
\renewcommand{\glstreepredesc}{\dotfill}
\renewcommand{\glstreechildpredesc}{\dotfill}
```

Note that this doesn't use `\glslistdottedwidth` and causes the description to be flush-right and will display the symbol, if provided. (It also doesn't suppress the number list, but that can be achieved with the `nonumberlist` option.)

```
sublistdotted
```

This is a variation on the `listdotted` style designed for hierarchical glossaries. The main entries have just the name displayed. The sub entries are displayed in the same manner as `listdotted`. Unlike the `listdotted` style, this style is incompatible with `classicthesis`.

### 13.1.2. Longtable Styles

```
\usepackage{glossary-long}
           automatically loaded with \usepackage{glossaries}
```

The glossary styles described in this section are all defined in the package `glossary-long`. Since they all use the `longtable` environment, they are governed by the same parameters as that environment. Note that these styles will automatically be available unless you use the `nolong` or `nostyles` package options. These styles fully justify the description and number list columns. If you want ragged right formatting instead, use the analogous styles described in §13.1.3. If you want to incorporate rules from the `booktabs` package, try the styles described in §13.1.4.

Groups are separated with a blank row unless `nogroupskip` is used *before* the style is set. For example:

```
\usepackage[nogroupskip]{glossaries}
\setglossarystyle{long}
```

Both may be combined in the same option list. For example:

```
\usepackage[nogroupskip, style=long]{glossaries}
```

Or

```
\printglossary[nogroupskip, style=longragged]
```

The following doesn't work:

```
\setglossarystyle{long}
\printglossary[nogroupskip]% too late
```

This is because the `\ifglsnogroupskip` conditional needs to be outside of `\glsnogroupskip` with tabular-like styles, so the conditional is in the style definition to determine the appropriate definition of `\glsnogroupskip`.

## glossaries-extra

There are additional styles that use the `longtable` environment provided with the `glossary-longextra` package, but that requires `glossaries-extra`.

long

The `long` style uses the `longtable` environment (defined by the `longtable` package). It has two columns: the first column contains the entry's name and the second column contains the description followed by the number list. The entry's symbol is ignored. The width of the first column is governed by the widest entry in that column. The width of the second column is governed by the length `\glsdescwidth`. Child entries have a similar format to the parent entries except that their name is suppressed.

longborder

The `longborder` style is like `long` but has horizontal and vertical lines around it.

longheader

The `longheader` style is like `long` but has a header row. You may prefer the `long-booktabs` style instead.

longheaderborder

The `longheaderborder` style is like `longheader` but has horizontal and vertical lines around it.

The long–booktabs style is generally better.

long3col

The long3col style is like long but has three columns. The first column contains the entry's name, the second column contains the description and the third column contains the number list. The entry's symbol is ignored. The width of the first column is governed by the widest entry in that column, the width of the second column is governed by the length `\glsdescwidth`, and the width of the third column is governed by the length `\glspagelistwidth`.

long3colborder

The long3colborder style is like the long3col style but has horizontal and vertical lines around it.

long3colheader

The long3colheader style is like long3col but has a header row. You may prefer the long3col–booktabs style instead.

long3colheaderborder

The long3colheaderborder style is like long3colheader but has horizontal and vertical lines around it. The long3col–booktabs style is generally better.

long4col


The long4col style is like long3col but has an additional column in which the entry's associated symbol appears. This style is used for brief single line descriptions. The column widths are governed by the widest entry in the given column. Use `atlong4col` for multi-line descriptions.

long4colborder


The long4colborder style is like the long4col style but has horizontal and vertical lines around it.

long4colheader


The long4colheader style is like long4col but has a header row. You may prefer the long4col–booktabs style instead.

long4colheaderborder 


The long4colheaderborder style is like long4colheader but has horizontal and vertical lines around it.

alllong4col 


The alllong4col style is like long4col but allows multi-line descriptions and number lists. The width of the description column is governed by the length `\glsdescwidth` and the width of the number list column is governed by the length `\glspagelistwidth`. The widths of the name and symbol columns are governed by the widest entry in the given column.

alllong4colborder 

The alllong4colborder style is like the long4colborder but allows multi-line descriptions and number lists.


alllong4colheader 

The alllong4colheader style is like long4colheader but allows multi-line descriptions and number lists. You may prefer the alllong4col–booktabs style instead.

alllong4colheaderborder 

The alllong4colheaderborder style is like long4colheaderborder but allows multi-line descriptions and number lists.

### 13.1.3. Longtable Styles (Ragged Right)

`\usepackage{glossary-longragged}`   
load explicitly or with  
`\usepackage[stylemods=longragged]{glossaries-extra}`

The glossary styles described in this section are all defined in the package `glossary-longragged`. These styles are analogous to those defined in `glossary-long` but the multiline columns are left justified instead of fully justified. Since these styles all use the `longtable` environment, they are governed by the same parameters as that environment. The `glossary-longragged` package additionally requires the `array` package. Note that these styles will only be available if you explicitly load `glossary-longragged`:

```
\usepackage{glossaries}
\usepackage{glossary-longragged}
\setglossarystyle{longragged3col}
```

Note that you can't set these styles using the `style` package option since the styles aren't defined until after the `glossaries` package has been loaded. If you want to incorporate rules from the `booktabs` package, try the styles described in §13.1.4.

With `glossaries-extra`, you can load both the package and style with the `style` and `stylemods` options. For example:

```
\usepackage[style=longragged3col,stylemods=
longragged]{glossaries-extra}
```

As with the `glossary-long` styles, groups are separated with a blank row unless `nogroupskip` is used *before* the style is set. For example:

```
\usepackage[nogroupskip]{glossaries}
\usepackage{glossary-longragged}
\setglossarystyle{longragged}
```

Or

```
\printglossary[nogroupskip,style=longragged]
```


longragged

The `longragged` style has two columns: the first column contains the entry's name and the second column contains the (left-justified) description followed by the number list. The entry's symbol is ignored. The width of the first column is governed by the widest entry in that column. The width of the second column is governed by the length `\glsdescwidth`. Child entries have a similar format to the parent entries except that their name is suppressed.


longraggedborder

The `longraggedborder` style is like `longragged` but has horizontal and vertical lines around it.



longraggedheader 


The longraggedheader style is like longragged but has a header row. You may prefer the longragged–booktabs style instead.

longraggedheaderborder 


The longraggedheaderborder style is like longraggedheader but has horizontal and vertical lines around it.

longragged3col 


The longragged3col style is like longragged but has three columns. The first column contains the entry’s name, the second column contains the (left justified) description and the third column contains the (left justified) number list. The entry’s symbol is ignored. The width of the first column is governed by the widest entry in that column, the width of the second column is governed by the length `\glsdescwidth`, and the width of the third column is governed by the length `\glspagelistwidth`.

longragged3colborder 

The longragged3colborder style is like the longragged3col style but has horizontal and vertical lines around it.

longragged3colheader 

The longragged3colheader style is like longragged3col but has a header row. You may prefer the longragged3col–booktabs style instead.

longragged3colheaderborder 

The longragged3colheaderborder style is like longragged3colheader but has horizontal and vertical lines around it.

alllongragged4col 

The alllongragged4col style is like longragged3col but has an additional column in which the entry’s associated symbol appears. The width of the description column is governed by the length `\glsdescwidth` and the width of the number list column is governed by the length `\gls-pagelistwidth`. The widths of the name and symbol columns are governed by the widest entry in the given column.

```
alllongragged4colborder
```

The `alllongragged4colborder` style is like the `alllongragged4col` but has horizontal and vertical lines around it.

```
alllongragged4colheader
```

The `alllongragged4colheader` style is like `alllongragged4col` but has a header row. You may prefer the `alllongragged4col-booktabs` style instead.

```
alllongragged4colheaderborder
```

The `alllongragged4colheaderborder` style is like `alllongragged4colheader` but has horizontal and vertical lines around it.

### 13.1.4. Longtable Styles (booktabs)

```
\usepackage{glossary-longbooktabs}
  load explicitly or with \usepackage[stylemods=longbooktabs]
{glossaries-extra}
```

The glossary styles described in this section are all defined in the package `glossary-longbooktabs`.

Since these styles all use the `longtable` environment, they are governed by the same parameters as that environment. The `glossary-longbooktabs` package automatically loads the `glossary-long` (§13.1.2) and `glossary-longragged` (§13.1.3) packages. Note that these styles will only be available if you explicitly load `glossary-longbooktabs`:

```
\usepackage{glossaries}
\usepackage{glossary-longbooktabs}
```

Note that you can't set these styles using the `style` package option since the styles aren't defined until after the `glossaries` package has been loaded.

With `glossaries-extra`, you can load both the package and style with the `style` and `stylemods` options. For example:

```
\usepackage[style=long3col-booktabs, stylemods=
longbooktabs]{glossaries-extra}
```

### 13. Glossary Styles

As with the `glossary-long` styles, groups are separated with a blank row unless `nogroupskip` is used *before* the style is set. For example:

```
\usepackage[nogroupskip]{glossaries}
\usepackage{glossary-longbooktabs}
\setglossarystyle{long-booktabs}
```

Or

```
\printglossary[nogroupskip, style=long-booktabs]
```

These styles are similar to the “header” styles in the `glossary-long` and `glossary-longragged` packages, but they add the rules provided by the `booktabs` package, `\toprule`, `\midrule` and `\bottomrule`. Additionally these styles patch the `longtable` environment to check for instances of the group skip occurring at a page break. If you don’t want this patch to affect any other use of `longtable` in your document, you can scope the effect by only setting the style through the `style` key in the optional argument of `\print(...)`glossary.

Alternatively, you can restore the original `longtable` behaviour with:

```
\glsrestoreLToutput
```

The penalty check is tested with:

```
\glsLTpenaltycheck
```

The default definition is:

```
\ifnum\outputpenalty=-
50\vskip-\normalbaselineskip\relax\fi
```

With the default `nogroupskip=false`, `\glsgroupskip` will be defined to use:

```
\glspenaltygroupskip
```

to insert the vertical gap. This is defined as:

```
\noalign{\penalty-50\vskip\normalbaselineskip}
```

`long-booktabs`

This style is similar to the `longheader` style but adds rules above and below the header (`\toprule` and `\midrule`) and inserts a rule at the bottom of the table (`\bottomrule`).

`long3col-booktabs`

This style is similar to the `long3colheader` style but adds rules as per `long-booktabs`.

`long4col-booktabs`

This style is similar to the `long4colheader` style but adds rules as above.

`alllong4col-booktabs`

This style is similar to the `alllong4colheader` style but adds rules as above.

`longragged-booktabs`

This style is similar to the `longraggedheader` style but adds rules as above.

`longragged3col-booktabs`

This style is similar to the `longragged3colheader` style but adds rules as above.

`alllongragged4col-booktabs`

This style is similar to the `alllongragged4colheader` style but adds rules as above.

### 13.1.5. Supertabular Styles

`\usepackage{glossary-super}`  
 automatically loaded with `\usepackage{glossaries}`

The glossary styles described in this section are all defined in the package `glossary-super`. Since they all use the `supertabular` environment, they are governed by the same parameters as that environment. Note that these styles will automatically be available unless you use the `nosuper` or `nostyles` package options. In general, the `longtable` environment is better, but there are some circumstances where it is better to use `supertabular`. (For example, with the `flowfram` package.) These styles fully justify the description and number list columns. If you want ragged right formatting instead, use the analogous styles described in §13.1.6.

### 13. Glossary Styles

As with the `glossary-long` styles, groups are separated with a blank row unless `nogroupskip` is used *before* the style is set. For example:

```
\usepackage[nogroupskip]{glossaries}
\setglossarystyle{super}
```

Or

```
\usepackage[nogroupskip,style=super]{glossaries}
```

Or

```
\printglossary[nogroupskip,style=super]
```

Sometimes the `supertabular` style doesn't put page breaks in the right place. If you have unexpected output, try the `glossary-long` styles instead. Alternatively, try the `tree*` with fixed width elements or the `alltree` style.

super

The `super` style uses the `supertabular` environment (defined by the `supertabular` package). It has two columns: the first column contains the entry's name and the second column contains the description followed by the number list. The entry's symbol is ignored. The width of the first column is governed by the widest entry in that column. The width of the second column is governed by the length `\glsdescwidth`. Child entries have a similar format to the parent entries except that their name is suppressed.

superborder

The `superborder` style is like `super` but has horizontal and vertical lines around it.

superheader

The `superheader` style is like `super` but has a header row.

superheaderborder

The superheaderborder style is like superheader but has horizontal and vertical lines around it.

super3col

The super3col style is like super but has three columns. The first column contains the entry's name, the second column contains the description and the third column contains the number list. The entry's symbol is ignored. The width of the first column is governed by the widest entry in that column. The width of the second column is governed by the length `\glsdescwidth`. The width of the third column is governed by the length `\glspagelistwidth`.

super3colborder

The super3colborder style is like the super3col style but has horizontal and vertical lines around it.

super3colheader

The super3colheader style is like super3col but has a header row.

super3colheaderborder

The super3colheaderborder style is like the super3colheader style but has horizontal and vertical lines around it.

super4col

The super4col style is like super3col but has an additional column in which the entry's associated symbol appears. This style is designed for entries with brief single line descriptions. The column widths are governed by the widest entry in the given column. Use `altsuper4col` for multi-line descriptions.

super4colborder


The super4colborder style is like the super4col style but has horizontal and vertical lines around it.

super4colheader


The super4colheader style is like super4col but has a header row.

super4colheaderborder 


The super4colheaderborder style is like the super4colheader style but has horizontal and vertical lines around it.

altsuper4col 

The altsuper4col style is like super4col but allows multi-line descriptions and number lists. The width of the description column is governed by the length `\glsdescwidth` and the width of the number list column is governed by the length `\glspagelistwidth`. The width of the name and symbol columns is governed by the widest entry in the given column.

altsuper4colborder 

The altsuper4colborder style is like the super4colborder style but allows multi-line descriptions and number lists.


altsuper4colheader 

The altsuper4colheader style is like super4colheader but allows multi-line descriptions and number lists.

altsuper4colheaderborder 

The altsuper4colheaderborder style is like super4colheaderborder but allows multi-line descriptions and number lists.

### 13.1.6. Supertabular Styles (Ragged Right)

`\usepackage{glossary-superragged}`  load explicitly or with  
`\usepackage[stylemods=superragged]{glossaries-extra}`

The glossary styles described in this section are all defined in the package `glossary-superragged`. These styles are analogous to those defined in `glossary-super` but the multiline columns are left justified instead of fully justified. Since these styles all use the `supertabular` environment, they are governed by the same parameters as that environment. The `glossary-superragged` package additionally requires the `array` package. Note that these styles will only be available if you explicitly load `glossary-superragged`:

```
\usepackage{glossaries}
\usepackage{glossary-superragged}
```

Note that you can't set these styles using the `style` package option since the styles aren't defined until after the `glossaries` package has been loaded.

With `glossaries-extra`, you can load both the package and style with the `style` and `stylemods` options. For example:

```
\usepackage[style=superragged3col,stylemods=
superragged]{glossaries-extra}
```

As with the `glossary-long` styles, groups are separated with a blank row unless `nogroupskip` is used *before* the style is set. For example:

```
\usepackage[nogroupskip]{glossaries}
\usepackage{glossary-superragged}
\setglossarystyle{superragged}
```

Or

```
\printglossary[nogroupskip,style=superragged]
```

superragged

The `superragged` style uses the `supertabular` environment (defined by the `supertabular` package). It has two columns: the first column contains the entry's name and the second column contains the (left justified) description followed by the number list. The entry's symbol is ignored. The width of the first column is governed by the widest entry in that column. The width of the second column is governed by the length `\glsdescwidth`. Child entries have a similar format to the parent entries except that their name is suppressed.

superraggedborder

The `superraggedborder` style is like `superragged` but has horizontal and vertical lines around it.

superraggedheader

The `superraggedheader` style is like `superragged` but has a header row.



superraggedheaderborder

The `superraggedheaderborder` style is like `superraggedheader` but has horizontal and vertical lines around it.

superragged3col

The `superragged3col` style is like `superragged` but has three columns. The first column contains the entry's name, the second column contains the (left justified) description and the third column contains the (left justified) number list. The entry's symbol is ignored. The width of the first column is governed by the widest entry in that column. The width of the second column is governed by the length `\glsdescwidth`. The width of the third column is governed by the length `\glspagelistwidth`.

superragged3colborder

The `superragged3colborder` style is like the `superragged3col` style but has horizontal and vertical lines around it.

superragged3colheader

The `superragged3colheader` style is like `superragged3col` but has a header row.

superragged3colheaderborder

The `superragged3colheaderborder` style is like the above but has horizontal and vertical lines around it.

altsuperragged4col

The `altsuperragged4col` style is like `superragged3col` but has an additional column in which the entry's associated symbol appears. The column widths for the name and symbol column are governed by the widest entry in the given column.

altsuperragged4colborder

The `altsuperragged4colborder` style is like the `altsuperragged4col` style but has horizontal and vertical lines around it.

altsuperragged4colheader

The `altsuperragged4colheader` style is like `altsuperragged4col` but has a header row.

altsuperragged4colheaderborder

The `altsuperragged4colheaderborder` style is like the above but has horizontal and vertical lines around it.

### 13.1.7. Tree-Like Styles

```
\usepackage{glossary-tree}
      automatically loaded with \usepackage{glossaries}
```

The glossary styles described in this section are all defined in the package `glossary-tree`. These styles are designed for hierarchical glossaries but can also be used with glossaries that don't have sub-entries. These styles will display the entry's symbol if it has been set. Note that these styles will automatically be available unless you use the `notree` or `nostyles` package options.

#### 13.1.7.1. New Flexible Single Column Tree Style (`tree*`)

`tree*`

The `tree*` style is new to version 4.59 and may be configured using the `tree*` option within the `style-options` setting. The `tree*` option value is a comma-separated list of  $\langle key \rangle = \langle value \rangle$  settings, where the keys are described in §§13.1.7.1.3, 13.1.7.1.4, 13.1.7.1.5 & 13.1.7.1.6. These options also affect the `mcoltree*` style, which builds on the `tree*` style. For example:

```
\setupglossaries{
  style-options={
    tree*={
      group-headings,
      pre-location=\dotfill
    }
  }
}
```

Alternatively:

```
\GlsTreeSetup $\langle key=value list \rangle$ 
```

This is a shorter way of just setting the `tree*` options. For example:

```
\GlsTreeSetup{
  group-headings,
  pre-location=\dotfill
}
```

The `tree*` style normally obeys global options, such as `nogroupskip`, but some of the `tree*` settings may be used to bypass those global settings just for glossaries that use the `tree*` style, without affecting any glossaries that use a different style.

#### 13.1.7.1.1. Examples

Example 36 demonstrates the default settings for the `tree*` style. The `nopostdot` option is used here because some of the test entries have terminating punctuation. 36

```
\usepackage[nopostdot,style=tree*]{glossaries}
```

For simplicity, this document uses Option 1:

```
\makenoidxglossaries
```

The entries are input from some of the provided test files described in §1.4:

```
\loadglsentries{example-glossaries-user.tex}
\loadglsentries{example-glossaries-symbols.tex}
\loadglsentries{example-glossaries-constants.tex}
```

A selection of the test entries are indexed:

```
\glsadd{sample-i}
\glsadd{sample-i-0}
\glsadd{sample-i-1}
\glsadd{sample-i-2}
\glsadd{sample-p}
\glsadd{sample-w}
\glsadd{sample-w-0}
\glsadd{sample-w-1}
\glsadd{sample-w-2}
\glsadd{i-constant}
\glsadd{pi-constant}
```

```
\glsadd{psi}
\glsadd{Gauss-constant}
\glsadd{Gieseking-constant}
```

The document simply sorts and displays the glossary:

```
\printnoidxglossary
```

Note that the `see` key in the `tau-constant` entry has caused it to be automatically indexed.

Some of the entries have textual content in the `name` but others have mathematical content. Some entries also have the `symbol` set. There are also some child entries, some of which have the same name as the parent entry ( $G$ ).

The widths of the names vary, with the shortest being  $i$  for the top-level and  $G$  for level 1, and the widest being “w name” for the top-level and “w/2 name” for level 1.

The widths of the symbols (where set) also vary, with the shortest being  $\iota$  for the top-level and  $\gamma$  for level 1, and the widest being  $\sqrt{-1}$  for the top-level and  $\chi_0$  for level 1.

One entry (“psi”), has a long description that spans two lines (formatted with the usual paragraph justification), the next longest description is for the “tau” entry, and the other descriptions are quite short.

The default setting shows both the name and (if set) the symbol in parentheses for all hierarchical levels. This is followed by the description and the location list (if set) separated by spaces. There are no letter group headings but there is a small vertical gap between the letter groups. For example, between “psi” (in the “P” letter group) and  $\tau$  (in the “T” letter group).

Example 37 modifies Example 36 so that the child entries are numbered. This means using the `subentrycounter` option:

```
\usepackage[nopostdot, style=tree*,
subentrycounter]{glossaries}
```

The child entries have their name and symbol omitted:

```
\setupglossaries{
  style-options={
    tree*={
      child-name-style=omit
    }
  }
}
```

Example 38 modifies Example 36 so that the name and symbols are aligned for each level.

↑ Example 36: The tree\* style: default layout



## Glossary

**G**

$G$  ( $\frac{\varpi}{\pi}$ ) Gauss's constant 1

$G$  Gieseking constant 1

$i$  ( $\sqrt{-1}$ ) imaginary unit 1

**i name** ( $\iota$ ) i description 1

**i/0 name** ( $\gamma$ ) child 0 of i 1

**i/1 name** ( $\kappa_1$ ) child 1 of i 1

**i/2 name** child 2 of i 1

**p name** ( $o$ ) p description 1

$\pi$  ratio of a circle's circumference to its diameter 1

**psi** ( $\psi$ ) Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. 1

$\tau$  ( $2\pi$ ) ratio of a circle's circumference to its radius *see*  $\pi$

**w name** ( $\phi$ ) w description 1

**w/0 name** ( $\rho_2$ ) child 0 of w 1

**w/1 name** ( $\phi$ ) child 1 of w 1

**w/2 name** ( $\chi_0$ ) child 2 of w 1

↑ Example 37: The tree\* style: omit the child name and symbol



## Glossary

*G*

- 1) Gauss's constant 1
- 2) Gieseeking constant 1

*i* ( $\sqrt{-1}$ ) imaginary unit 1

**i name** (*i*) i description 1

- 1) child 0 of i 1
- 2) child 1 of i 1
- 3) child 2 of i 1

**p name** (*o*) p description 1

$\pi$  ratio of a circle's circumference to its diameter 1

**psi** ( $\psi$ ) Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. 1

$\tau$  ( $2\pi$ ) ratio of a circle's circumference to its radius *see*  $\pi$

**w name** ( $\phi$ ) w description 1

- 1) child 0 of w 1
- 2) child 1 of w 1
- 3) child 2 of w 1

### 13. Glossary Styles

This is done by setting the applicable name and symbol width options to `widest`:

```
\setupglossaries{
  style-options={
    tree*={
      name-width=widest,
      symbol-width=widest,
      sub-name-width=widest,
      sub-symbol-width=widest,
    }
  }
}
```

Additionally, the widest name and symbol need to be identified. This can be done by visually inspecting the glossary content, but it's also possible to calculate this automatically while the glossary content is being constructed:

```
\renewcommand{\glsnoidxitemhook}[2]{%
  \GlsTreeUpdateWidestNameOrSymbol[#1]{#2}%
}
```

If you prefer to use `\printunsrtglossary`, you will instead need:

```
\renewcommand\printunsrtglossaryentryprocesshook[1]{%
  \GlsTreeUpdateWidestNameOrSymbol{#1}%
}
```

Since `\printglossary` just inputs a file containing the commands to typeset the glossary there is no easy way to convert this example to use `\printglossary`. You could first iterate over all entries with `\forglseries` but entries that have been defined but not indexed may cause interference.

Example 39 modifies Example 36 to align the descriptions. In this case the options are:

```
\setupglossaries{
  style-options={
    tree*={
```

39

↑ Example 38: The tree\* style: aligning names and symbols for each level



## Glossary

*G*

*G* ( $\frac{\varpi}{\pi}$ ) Gauss's constant 1  
*G* Gieseking constant 1

*i* ( $\sqrt{-1}$ ) imaginary unit 1

**i name** (*l*) i description 1

**i/0 name** ( $\gamma$ ) child 0 of i 1

**i/1 name** ( $\kappa_1$ ) child 1 of i 1

**i/2 name** child 2 of i 1

**p name** (*o*) p description 1

$\pi$  ratio of a circle's circumference to its diameter 1

**psi** ( $\psi$ ) Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. 1

$\tau$  ( $2\pi$ ) ratio of a circle's circumference to its radius *see*  $\pi$

**w name** ( $\phi$ ) w description 1

**w/0 name** ( $\rho_2$ ) child 0 of w 1

**w/1 name** ( $\phi$ ) child 1 of w 1

**w/2 name** ( $\chi_0$ ) child 2 of w 1



```

name-symbol-width=widest,
sub-name-symbol-width=widest,
hang-indent=calculated,
}
}
}

```

As with Example 38, this requires the widest name and symbol to be known, but now it needs to be the widest combination of name and symbol:

```

\renewcommand{\glsnoidxitemhook}[2]{%
  \GlsTreeUpdateWidestNameAndSymbol[#1]{#2}%
}

```

Note that in this case, unlike Example 38, the symbols are not aligned.

↑ Example 39: The tree\* style: aligning descriptions

## Glossary

*G*

*G* ( $\frac{\varpi}{\pi}$ ) Gauss's constant 1  
*G* Gieseeking constant 1

*i* ( $\sqrt{-1}$ ) imaginary unit 1

**i name** (*ι*) i description 1

**i/0 name** ( $\gamma$ ) child 0 of i 1

**i/1 name** ( $\kappa_1$ ) child 1 of i 1

**i/2 name** child 2 of i 1

**p name** (*o*) p description 1

$\pi$  ratio of a circle's circumference to its diameter 1

**psi** ( $\psi$ ) Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis  
 dui, et vehicula libero dui cursus dui. 1

$\tau$  ( $2\pi$ ) ratio of a circle's circumference to its radius *see*  $\pi$

**w name** ( $\phi$ ) w description 1

**w/0 name** ( $\rho_2$ ) child 0 of w 1

**w/1 name** ( $\phi$ ) child 1 of w 1

**w/2 name** ( $\chi_0$ ) child 2 of w 1

Example 40 demonstrates the default settings for hierarchical entries where some descriptions

### 13. Glossary Styles

span multiple paragraphs. The `nopostdot` option is used here because some of the test entries have terminating punctuation.

```
\usepackage[nopostdot,style=tree*]{glossaries}
```

As with Example 36, this document uses Option 1:

```
\makenoidxglossaries
```

A different set of test files are used:

```
\loadglsentries{example-glossaries-parent.tex}  
\loadglsentries  
{example-glossaries-childmultipar.tex}
```

A selection of the test entries are indexed:

```
\glsadd{hierloremvii-viii}  
\glsadd{duisnisl}  
\glsadd{duisnibh}
```

The document just sorts and displays the glossary:

```
\printnoidxglossary
```

With the default settings, the description simply follows on from the name (none of the test entries have a symbol for this example) using the normal paragraph settings for the top-level. The child entries are indented. This is done by setting the hanging indentation for each child level to  $\langle level \rangle$  times  $\langle offset \rangle$  plus the hanging indentation for the top-level, where  $\langle level \rangle$  is the child entry's hierarchical level and  $\langle offset \rangle$  can be altered with the `child-offset` option.

↑ Example 40: The tree\* style: default layout (multi-paragraph and hierarchical entries)

## Glossary

**aliquam et** augue

**at nunc** pellentesque ullamcorper

**duisnibh** convallis ut 1

**duisnisl** laoreet suscipit 1

**gravida** Malesuada libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo.

Morbi ultrices rutrum lorem. Nam elementum ullamcorper leo. Morbi dui. Aliquam sagittis. Nunc placerat. Pellentesque tristique sodales est. Maecenas imperdiet lacinia velit. Cras non urna. Morbi eros pede, suscipit ac, varius vel, egestas non, eros.

**lorem 7–8** Sed commodo posuere pede. Mauris ut est. Ut quis purus. Sed ac odio. Sed vehicula hendrerit sem. Duis non odio. Morbi ut dui. Sed accumsan risus eget odio. In hac habitasse platea dictumst. Pellentesque non elit. Fusce sed justo eu urna porta tincidunt. Mauris felis odio, sollicitudin sed, volutpat a, ornare ac, erat. Morbi quis dolor. Donec pellentesque, erat ac sagittis semper, nunc dui lobortis purus, quis congue purus metus ultricies tellus. Proin et quam. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos hymenaeos. Praesent sapien turpis, fermentum vel, eleifend faucibus, vehicula eu, lacus.

Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Donec odio elit, dictum in, hendrerit sit amet, egestas sed, leo. Praesent feugiat sapien aliquet odio. Integer vitae justo. Aliquam vestibulum fringilla lorem. Sed neque lectus, consectetur at, consectetur sed, eleifend ac, lectus. Nulla facilisi. Pellentesque eget lectus. Proin eu metus. Sed porttitor. In hac habitasse platea dictumst. Suspendisse eu lectus. Ut mi mi, lacinia sit amet, placerat et, mollis vitae, dui. Sed ante tellus, tristique ut, iaculis eu, malesuada ac, dui. Mauris nibh leo, facilisis non, adipiscing quis, ultrices a, dui. 1

Example 41 adapts Example 40 to make the description start a new paragraph (instead of following on from the name). Note that `\par` can't be used inside `\setupglossaries` but `\glspar` can be used instead. The hanging indentation for the top-level is set to 2em. Bear in mind that the hanging indentation isn't applied to the first line of a paragraph. The first line is dealt with by the paragraph indentation, so this will need to be at least as wide as the hanging indentation (for example, 3em).

41

The paragraph break can be achieved with `pre-description=\glspar` but you may prefer the first paragraph of the description not to have a noticeable indentation. The paragraph indentation can be suppressed with `\noindent`, but that would cause it to be flush with the left margin. The desired effect can be created by adding a horizontal space that's the same width as the hanging indent:

```
\setupglossaries{
  style-options={
    tree*={
      pre-description=\glspar\noindent\hspace
{\the\hangindent},
      par-indent=3em,
      hang-indent=2em,
    }
  }
}
```



↑ Example 41: The tree\* style: default layout (multi-paragraph and hierarchical entries with hanging indentation)



## Glossary

### aliquam et

augue

### at nunc

pellentesque ullamcorper

### duisnibh

convallis ut 1

### duisnisl

laoreet suscipit 1

### gravida

Malesuada libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo.

Morbi ultrices rutrum lorem. Nam elementum ullamcorper leo. Morbi dui. Aliquam sagittis. Nunc placerat. Pellentesque tristique sodales est. Maecenas imperdiet lacinia velit. Cras non urna. Morbi eros pede, suscipit ac, varius vel, egestas non, eros.

### lorem 7–8

Sed commodo posuere pede. Mauris ut est. Ut quis purus. Sed ac odio. Sed vehicula hendrerit sem. Duis non odio. Morbi ut dui. Sed accumsan risus eget odio. In hac habitasse platea dictumst. Pellentesque non elit. Fusce sed justo eu urna porta tincidunt. Mauris felis odio, sollicitudin sed, volutpat a, ornare ac, erat. Morbi quis dolor. Donec pellentesque, erat ac sagittis semper, nunc dui lobortis purus, quis congue purus metus ultricies tellus. Proin et quam. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos hymenaeos. Praesent sapien turpis, fermentum vel, eleifend faucibus, vehicula eu, lacus.

Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Donec odio elit, dictum in, hendrerit sit amet, egestas sed, leo. Praesent feugiat sapien aliquet odio. Integer vitae justo. Aliquam vestibulum fringilla lorem. Sed neque lectus, consectetur at, consectetur sed, eleifend ac, lectus. Nulla facilisi. Pellentesque eget lectus. Proin eu metus. Sed porttitor. In hac habitasse platea dictumst. Suspendisse eu lectus. Ut mi mi, lacinia sit amet, placerat et, mollis vitae, dui. Sed ante tellus, tristique ut, iaculis eu, malesuada ac, dui. Mauris nibh leo, facilisis non, adipiscing quis, ultrices a, dui. 1

**13.1.7.1.2. Layout**

A glossary with the `tree*` style consists of the following:

- The navigation strip (for documents that support hyperlinks), which may be shown with `hyper-nav`. The options governing the navigation strip are described in §13.1.7.1.6. (Alternatively, you may prefer the `bookmark-groups` setting.)
- Letter group headers and separators. By default, this is just the vertical group skip separator, but may also include the group header. The options governing these are described in §13.1.7.1.4.
- Entry items. Each item consists of:
  - An initial hook (`\glossaries_tree_pre_item:nnn`) that does nothing;
  - The pre name/symbol, which contains `\glsentryitem{<label>}` for top-level items or `\glsesubentryitem{<label>}` for level 1 items (not present for deeper levels);
  - The name box, which contains the entry’s name (if applicable);
  - The name/symbol separator (if applicable);
  - The symbol box, which contains the entry’s symbol (if applicable);
  - If the entry has a non-empty and non-suppressed description (and the applicable `omit-description` or `omit-child-description` is not true):
    - \* the post name/symbol content;
    - \* the pre description content;
    - \* the description;
  - If the entry has a location list (and the applicable `omit-location` or `omit-child-location` is not true):
    - \* the pre location content;
    - \* the location list;
    - \* the post location content.
  - An end hook (`\glossaries_tree_post_item:nnn`) that does nothing.

Note that the order of the name and symbol may be switched or one or other may be omitted. The name or symbol may be placed in parentheses. See §13.1.7.1.3.

Each entry item may be a single line if the description is short, but may also span multiple paragraphs. Child items are indented. The paragraph spacing and alignment options are described in §13.1.7.1.5.

Note that the name box and symbol box may not actually be boxes. If the default `name-width=natural` or `symbol-width=natural` settings are in effect, the content will simply be scoped to localise the effect of the font declarations. Otherwise the content will be placed inside a fixed-width box created with `\makebox` (see Example 38).

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The name+symbol box refers to the area that encapsulates the pre name/symbol, name box, name/symbol separator, symbol box, and post name/symbol. If the default `name-symbol-width=natural` option is in effect, this content won't actually be in a box, although the name and symbol may be in fixed width boxes, as mentioned above.

Example 42 modifies Example 36 to highlight each element. The `entrycounter` and `subentrycounter` options are set to show where the counter values are positioned:

42

```
\usepackage[nopostdot,style=tree*,  
entrycounter,subentrycounter]{glossaries}
```

An extra example file is added to demonstrate a level 2 entry:

```
\loadglsentries{example-glossaries-parent.tex}
```

This is in addition to the files used in Example 36. A level 2 entry is added with:

```
\glsadd{duisnisl}
```

The letter group headings are switched on with the `group-headings` boolean option. Note that the spacing above and below the group headings is different to the older `treegroup` style.

A frame can be added around the name box, symbol box and name+symbol box to show their boundaries:

```
\renewcommand\GlsTreeStarBox[1]{\fbox{#1}}
```

Similarly, a frame can be added around the entry item counter and sub-entry item counter areas:

```
\renewcommand\GlsTreeStarItemCounterBox[1]{\fbox{#1}}
```

Note that the sub-entry item counter is only present for level 1 child entries. With the default `entrycounter=false` and `subentrycounter=false` settings, those areas will be empty but they would still be framed with the above redefinition.

Bear in mind that `\fbox` will add extra space. This is adjusted to make it a bit smaller:

```
\setlength{\fboxsep}{2pt}
```

### 13. Glossary Styles

The locations of the separators are marked up as follows: an asterisk (\*) showing the name/symbol separator, an en-dash (–) showing the post name/symbol, a bullet (•) showing the pre description content, a dotted leader showing the pre location content, and the paragraph symbol (§) showing the post location content. The `symbol-font` setting is used to change the text colour to teal for the top-level symbol and orange for child symbols (which will require the xcolor package). Note that this also changes the colour of the parentheses around the symbol.

Similarly, the `item-counter-font` setting is used to change the text colour to cyan and the `sub-item-counter-font` setting is used to change the text colour to magenta for the entry counter and sub entry counter values (and the font is made smaller).

```
\setupglossaries{
  style-options={
    tree*={
      group-headings,
      name-symbol-sep=\textasteriskcentered,
      post-name-symbol=\textendash,
      pre-description=\textbullet,
      pre-location=\dotfill,
      post-location=\P,
      symbol-font=\color{teal},
      child-symbol-font=\color{orange},
      item-counter-font=\small\color{cyan},
      sub-item-counter-font=\small\color{magenta}
    }
  }
}
```

Note that for entries that don't have the `symbol` field set, the name/symbol separator and symbol box are not shown. In the case of entries that have the `description` suppressed or empty, the post name/symbol, pre description content and description are omitted. If the location list is empty, the pre location content is omitted.

The `nonumberlist` option doesn't make the location list empty, but simply hides it.

The space after the counter number is in the definition of `\glsentrycounterlabel` and `\glsesubentrycounterlabel`. There is no separator between the number box and the name/symbol box. Note that there is no entry counter, or area allocated for one, for the level 2 entry.





↑ Example 42: The tree\* style elements



## Glossary

### A

- 1. aliquam et •augue
- 1) at nunc •pellentesque ullamcorper
- duisnisl •laoreet suscipit ..... 1 ¶

### G

- 2. G
- 1)  $G * (\frac{\sigma}{\pi})$  •Gauss's constant ..... 1 ¶
- 2) G •Gieseking constant ..... 1 ¶

### I

- 3.  $i * (\sqrt{-1})$  •imaginary unit ..... 1 ¶
- 4. i name \* ( $\iota$ ) •i description..... 1 ¶
- 1) i/0 name \* ( $\gamma$ ) •child 0 of i ..... 1 ¶
- 2) i/1 name \* ( $\kappa_1$ ) •child 1 of i ..... 1 ¶
- 3) i/2 name •child 2 of i ..... 1 ¶

### P

- 5. p name \* ( $\rho$ ) •p description ..... 1 ¶
- 6.  $\pi$  •ratio of a circle's circumference to its diameter ..... 1 ¶
- 7. psi \* ( $\psi$ ) •Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. .... 1 ¶

### T

- 8.  $\tau * (2\pi)$  •ratio of a circle's circumference to its radius ..... see  $\pi$  ¶

### W

- 9. w name \* ( $\phi$ ) •w description ..... 1 ¶
- 1) w/0 name \* ( $\rho_2$ ) •child 0 of w ..... 1 ¶
- 2) w/1 name \* ( $\phi$ ) •child 1 of w ..... 1 ¶
- 3) w/2 name \* ( $\chi_0$ ) •child 2 of w ..... 1 ¶

Example 43 is a slightly modified version of Example 42. The `entrycounter` and `sub-entrycounter` are no longer used:

43

```
\usepackage[nopostdot,style=tree*]{glossaries}
```

Note that even though there is no number, the frame still shows around the empty (now zero-width and zero-height) area.

In addition to the `tree*` options that were set in Example 42, Example 43 sets the width of the name box and symbol box to `fixed`. This means that the widest content for those values needs to be specified. (See Example 38 to automatically calculate the values.) Note that the addition of the level 2 test entry has resulted in a wider name than that for Example 43 (“aliquam et”).

```
widest-name={aliquam et},
widest-symbol={\sqrt{-1}},
widest-sub-name={w/2 name},
widest-sub-sub-name={duisnibh},
widest-sub-symbol={\chi_0},
name-width=widest,
sub-name-width=widest,
sub-sub-name-width=widest,
symbol-width=widest,
sub-symbol-width=widest,
```

This aligns the names and symbols for each level, but note that the outer name+symbol box is still at its natural width setting, so it’s narrower for entries that don’t have the symbol set.

The entry counter boxes can have their width set with `item-counter-width` and `sub-item-counter-width`. Even if the counter isn’t incremented or visible, a box with that dimension will be shown. Note that there is no `widest` option available in this case. In this example, they are left at their default natural width setting.



↑ Example 43: The tree\* style: fixed width name and symbol



## Glossary

### A

- aliquam et •augue
- at nunc •pellentesque ullamcorper
- duisnisl •laoreet suscipit ..... 1 ¶

### G

- $G$
- $G$  \*  $(\frac{\infty}{\pi})$  •Gauss's constant ..... 1 ¶
- $G$  •Gieseking constant ..... 1 ¶

### I

- $i$  \*  $(\sqrt{-1})$  •imaginary unit ..... 1 ¶
- i name \*  $(i)$  •i description ..... 1 ¶
- i/0 name \*  $(\gamma)$  •child 0 of i ..... 1 ¶
- i/1 name \*  $(\kappa_1)$  •child 1 of i ..... 1 ¶
- i/2 name •child 2 of i ..... 1 ¶

### P

- p name \*  $(o)$  •p description ..... 1 ¶
- $\pi$  •ratio of a circle's circumference to its diameter ..... 1 ¶
- psi \*  $(\psi)$  •Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. .... 1 ¶

### T

- $\tau$  \*  $(2\pi)$  •ratio of a circle's circumference to its radius . see  $\pi$  ¶

### W

- w name \*  $(\phi)$  •w description ..... 1 ¶
- w/0 name \*  $(\rho_2)$  •child 0 of w ..... 1 ¶
- w/1 name \*  $(\phi)$  •child 1 of w ..... 1 ¶
- w/2 name \*  $(\chi_0)$  •child 2 of w ..... 1 ¶

Example 44 is a slightly modified version of Example 43. Now the name and symbol widths are left at their default settings:

 44

```
name-width=natural,
sub-name-width=natural,
symbol-width=natural,
sub-symbol-width=natural,
```

Instead the name+symbol box box is given a fixed width:

```
name-symbol-width=widest,
sub-name-symbol-width=widest
```

This calculates the width from the sum of the width of the entry item counter box (which is `Opt` for this example), name box, symbol box, name/symbol separator and the post name/symbol content. Since the name box and symbol box have a natural length, the width of the widest name and widest symbol are used instead.

Note that there's no point setting `sub-sub-name-symbol-width=as` there's no level 2 entry with a symbol.

The calculation doesn't include any extra content that's created by redefining commands such as `\GlsTreeStarBox`. This means that the extra horizontal space caused by the use of `\fbox` will need to be taken into account. This extra space is `2\fboxsep+2\fboxrule` for each `\fbox` inside the name+symbol box. This can be added into the calculation by setting the corresponding padding:

```
item-counter-padding=2\fboxsep+2\fboxrule,
sub-item-counter-padding=2\fboxsep+2\fboxrule,
name-padding=2\fboxsep+2\fboxrule,
symbol-padding=2\fboxsep+2\fboxrule,
```

The resulting name+symbol box is actually much wider than it needs to be. This is because the widest name and widest symbol don't occur for the same entry. The entry with the widest name has a much narrower symbol than the identified widest symbol. (In fact, with the level 2 test entry included, the widest name doesn't have a symbol.) In this case, the widest pair of name and symbol should be used. See Example 39 for how to automate this.

If, on the other hand, you want the names, symbols and descriptions to all line up for their given hierarchical level, you can specify `widest` for the name width, symbol width and name-symbol width, which is demonstrated in Example 45.



↑ Example 44: The tree\* style: combined name and symbol fixed width



## Glossary

### A

- aliquam et — •augue
- at nunc — •pellentesque ullamcorper
- duisnisl — •laoreet suscipit ..... 1 ¶

### G

- G
- $G * (\frac{\varpi}{\pi})$  — •Gauss’s constant ..... 1 ¶
- G — •Gieseking constant ..... 1 ¶

### I

- $i * (\sqrt{-1})$  — •imaginary unit ..... 1 ¶
- i name \* ( $\iota$ ) — •i description ..... 1 ¶
- i/0 name \* ( $\gamma$ ) — •child 0 of i ..... 1 ¶
- i/1 name \* ( $\kappa_1$ ) — •child 1 of i ..... 1 ¶
- i/2 name — •child 2 of i ..... 1 ¶

### P

- p name \* ( $\rho$ ) — •p description ..... 1 ¶
- $\pi$  — •ratio of a circle’s circumference to its diameter ... 1 ¶
- psi \* ( $\psi$ ) — •Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. .... 1 ¶

### T

- $\tau * (2\pi)$  — •ratio of a circle’s circumference to its radius .. see  $\pi$  ¶

### W

- w name \* ( $\phi$ ) — •w description ..... 1 ¶
- w/0 name \* ( $\rho_2$ ) — •child 0 of w ..... 1 ¶
- w/1 name \* ( $\phi$ ) — •child 1 of w ..... 1 ¶
- w/2 name \* ( $\chi_0$ ) — •child 2 of w ..... 1 ¶

Example 45 is also a slightly modified version of Example 43. Unlike Example 44, the name and symbol widths are still set to `widest`, as for Example 43:

45

```
name-width=widest,
sub-name-width=widest,
sub-sub-name-width=widest,
symbol-width=widest,
sub-symbol-width=widest,
```

However, as with Example 44 the name+symbol box is also given a fixed width:

```
name-symbol-width=widest,
sub-name-symbol-width=widest
```

Again the padding needs to be set to include the extra horizontal space caused by each `\fbox`:

```
item-counter-padding=2\fboxsep+2\fboxrule,
sub-item-counter-padding=2\fboxsep+2\fboxrule,
name-padding=2\fboxsep+2\fboxrule,
symbol-padding=2\fboxsep+2\fboxrule,
```

Unlike the previous examples 43 & 44, the hanging indentation and paragraph indentation are also adjusted. Note that the `hang-indent=calculated` option will also need the padding set to the extra horizontal space taken up by the frame around the name+symbol box:

```
hang-indent=calculated,
name-symbol-padding=2\fboxsep+2\fboxrule,
par-indent=\hangindent + 1em,
```

Note that because the overall child name and symbol widths are narrower than for higher hierarchical levels, the child descriptions start to the left of their parent descriptions, even though the name+symbol box is indented further to the right. If you want the name+symbol box for child entries to have the same width as the next hierarchical level up, you can instead use:

```
sub-name-symbol-width=match higher,
sub-sub-name-symbol-width=match higher,
```



↑ Example 45: The tree\* style: inner and outer name and symbol fixed width



## Glossary

### A

- aliquam et - •augue
- at nunc - •pellentesque ullamcorper
- duisnisl - •laoreet suscipit ..... 1 ¶

### G

- G
- G \*  $(\frac{\varpi}{\pi})$  •Gauss's constant ..... 1 ¶
- G - •Gieseeking constant ..... 1 ¶

### I

- i \*  $(\sqrt{-1})$  •imaginary unit ..... 1 ¶
- i name \*  $(\iota)$  •i description ..... 1 ¶
- i/0 name \*  $(\gamma)$  •child 0 of i ..... 1 ¶
- i/1 name \*  $(\kappa_1)$  •child 1 of i ..... 1 ¶
- i/2 name - •child 2 of i ..... 1 ¶

### P

- p name \*  $(\rho)$  •p description ..... 1 ¶
- $\pi$  - •ratio of a circle's circumference to its diameter . 1 ¶
- psi \*  $(\psi)$  •Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. 1 ¶

### T

- $\tau$  \*  $(2\pi)$  •ratio of a circle's circumference to its radius *see*  $\pi$  ¶

### W

- w name \*  $(\phi)$  •w description ..... 1 ¶
- w/0 name \*  $(\rho_2)$  •child 0 of w ..... 1 ¶
- w/1 name \*  $(\phi)$  •child 1 of w ..... 1 ¶
- w/2 name \*  $(\chi_0)$  •child 2 of w ..... 1 ¶

**13.1.7.1.3. Item Element Options**

These options relate to the way the name, symbol, description and location list are shown (where applicable). Note that the font changing options for the name and symbol will also be applied to the style parentheses, if they are present.

`name-font=<value>`

*initial:* `\textbf`

Sets the font declarations to use when typesetting the name for top-level entries. The final command in the list may be a text-block command. The value may be empty if no font change is required.

`child-name-font=<value>`

*initial:* `inherit`

Sets the font declarations to use when typesetting the name for child entries. The final command in the list may be a text-block command. The value may be empty if no font change is required or may also simply be the keyword `inherit`, which indicates to use the same as `name-font`.

`symbol-font=<value>`

*initial:* `empty`

Sets the font declarations to use when typesetting the symbol for top-level entries. The final command in the list may be a text-block command.

`child-symbol-font=<value>`

*initial:* `inherit`

Sets the font declarations to use when typesetting the symbol for child entries. The final command in the list may be a text-block command. The value may also simply be the keyword `inherit`, which indicates to use the same as `symbol-font`.

`description-font=<value>`

*initial:* `empty`

Sets the font declarations to use when typesetting the description for top-level entries. The final command in the list may be a text-block command.

`child-description-font=<value>`

*initial:* `inherit`

Sets the font declarations to use when typesetting the description for child entries. The final command in the list may be a text-block command. The value may also simply be the keyword `inherit`, which indicates to use the same as `description-font`.



```
location-font=<value>
```

*initial: empty*

Sets the font declarations to use when typesetting the location list for top-level entries. The final command in the list may be a text-block command.

```
child-location-font=<value>
```

*initial: inherit*

Sets the font declarations to use when typesetting the location list for child entries. The final command in the list may be a text-block command. The value may also simply be the keyword `inherit`, which indicates to use the same as `location-font`.

```
name-style=<value>
```

*initial: name (symbol)*

Sets the way that the name and/or symbol should be displayed for top-level entries.

```
name-style=name (symbol)
```

The name is displayed first, followed by the symbol in parentheses (if set).

```
name-style=name symbol
```

The name is displayed first, followed by the symbol (if set).

```
name-style=symbol name
```

The symbol is displayed first (if set), followed by the name.

```
name-style=symbol (name)
```

The symbol is displayed first (if set), followed by the name in parentheses.

```
name-style=symbol
```

Only the symbol is displayed.

```
name-style=name
```

Only the name is displayed.

```
child-name-style=<value> initial: inherit
```

Sets the way that the name and/or symbol should be displayed for child entries.

```
child-name-style=inherit
```

Match the `name-style` setting.

```
child-name-style=omit
```

Don't show either the name or symbol. Note that the post name/symbol content will still be displayed if the entry has a description and the sub entry counter will also be displayed for level 1 entries if the `subentrycounter` option is on.

```
child-name-style=name (symbol)
```

The name is displayed first, followed by the symbol in parentheses (if set).

```
child-name-style=name symbol
```

The name is displayed first, followed by the symbol (if set).

```
child-name-style=symbol name
```

The symbol is displayed first (if set), followed by the name.

```
child-name-style=symbol (name)
```

The symbol is displayed first (if set), followed by the name in parentheses.

```
child-name-style=symbol
```

Only the symbol is displayed.

```
child-name-style=name
```

Only the name is displayed.

`omit-description=<boolean>`

*default: true; initial: false*

If true, the description and the pre description content will be omitted. If false, the description and pre description content will only be omitted if the description is empty or has been suppressed. (Suppressed means that the description is simply `\nopostdesc`.)

If the description is omitted, the post-description hook will also be omitted.

`omit-child-description=<value>`

*default: true; initial: inherit*

If true, the description and the pre description content will be omitted for child entries. If false, the description and pre description content for child entries will only be omitted if the description is empty or has been suppressed. The value may also be `inherit`, to match `omit-description`.

`omit-location=<boolean>`

*default: true; initial: false*

If true, the location list and the pre- and post-location content will be omitted. If false, they will only be omitted if the location list is empty.

The `nonumberlist` doesn't make the location list empty; it redefines the command used to encapsulate the location list to expand to nothing. The `save-locations=false` resource option, on the other hand, can result in an empty location list.

`omit-child-location=<value>`

*default: true; initial: inherit*

If true, the location list and the pre- and post-location content will be omitted for child entries. If false, they will only be omitted if the location list is empty. The value may also be `inherit`, which will match `omit-location`.

`name-case=<value>`

*initial: normal*

Apply a case change when displaying the name for top-level entries. The value may be one of: `normal` (no case change), `firstuc` (sentence case), `uc` (uppercase), or `title` (title case).

glossaries-extra

With the default `normal` setting, a case change may still be applied via the `gloss-name` attribute.

```
child-name-case=<value>
```

```
initial: normal
```

Apply a case change when displaying the name for child entries. The value may be one of: `inherit` (match `name-case`), `normal` (no case change), `firstuc` (sentence case), `uc` (uppercase), or `title` (title case).

It's not usual to change the case of symbols, however analogous settings are still provided for completeness:

```
symbol-case=<value>
```

```
initial: normal
```

Apply a case change when displaying the symbol for top-level entries. The value may be one of: `normal` (no case change), `firstuc` (sentence case), `uc` (uppercase), or `title` (title case).

```
child-symbol-case=<value>
```

```
initial: normal
```

Apply a case change when displaying the symbol for child entries. The value may be one of: `inherit` (match `symbol-case`), `normal` (no case change), `firstuc` (sentence case), `uc` (uppercase), or `title` (title case).

```
description-case=<value>
```

```
initial: normal
```

Apply a case change when displaying the description for top-level entries. The value may be one of: `normal` (no case change), `firstuc` (sentence case), `uc` (uppercase), or `title` (title case).

If any description contains a paragraph break and you want to apply sentence case, make sure that you have an up-to-date version of `mfirstuc` installed.

```
child-description-case=<value>
```

```
initial: normal
```

Apply a case change when displaying the description for child entries. The value may be one of: `inherit` (match `description-case`), `normal` (no case change), `firstuc` (sentence case), `uc` (uppercase), or `title` (title case).

`name-symbol-sep=<value>`

*initial:* `□`

Sets the name/symbol separator for top-level entries (only used if both the name and symbol are shown).

`child-name-symbol-sep=<value>`

*initial:* **inherit**

Sets the name/symbol separator for child entries (only used if both the name and symbol are shown). The value may be the keyword `inherit` to match `name-symbol-sep`, otherwise it should be the required content.

`post-name-symbol=<value>`

*initial:* `□`

The post name/symbol content for top-level entries (only used if the entry has a description).

`post-child-name-symbol=<value>`

*initial:* **inherit**

The post name/symbol content for child entries (only used if the entry has a description). The value may be the keyword `inherit` to match `post-name-symbol`, otherwise it should be the required content.

`pre-description=<value>`

*initial:* **empty**

The pre description content for top-level entries (only used if the entry has a description). Note that the `\setupglossaries` command doesn't permit paragraph breaks, but you can use `\glspar` if you want the description to start a new paragraph (see Example 41).

`pre-child-description=<value>`

*initial:* **inherit**

The pre description content for child entries (only used if the entry has a description). The value may be the keyword `inherit` to match `pre-description`, otherwise it should be the required content.

`pre-location=<value>`

*initial:* `□`

The pre location content for top-level entries (only used if the entry has a location list).

`pre-child-location=<value>`

*initial:* **inherit**

The pre location content for child entries (only used if the entry has a location list). The value may be the keyword `inherit` to match `pre-location`, otherwise it should be the required

content.

`post-location=<value>`

*initial: empty*

The post location content for top-level entries (only used if the entry has a location list).

`post-child-location=<value>`

*initial: inherit*

The post location content for child entries (only used if the entry has a location list).

`name-width=<value>`

*initial: natural*

Sets the width of the name box for top-level entries. The value may be: `natural` (no fixed width), `widest` (the width of the widest name), or a valid dimension. The widest name may be set with `widest-name` or with one of the commands described in §13.1.7.1.7.

If the dimension evaluates to a value less than or equal to zero, natural width will be used instead, but it will affect the calculation of the name+symbol box width if `name-symbol-width=widest` is set.

`sub-name-width=<value>`

*initial: natural*

Sets the width of the name box for level 1 entries. The value may be: `natural` (no fixed width), `widest` (the width of the widest name), or a valid dimension. The widest name may be set with `widest-sub-name` or with one of the commands described in §13.1.7.1.7.

As with `symbol-width`, if the dimension evaluates to less than or equal to zero, natural width will be used instead, but it will affect any calculation dependent on this dimension.

`sub-sub-name-width=<value>`

*initial: natural*

Sets the width of the name box for level 2 entries. The value may be: `natural` (no fixed width), `widest` (the width of the widest name), or a valid dimension. The widest name may be set with `widest-sub-sub-name` or with one of the commands described in §13.1.7.1.7.

As with `symbol-width`, if the dimension evaluates to less than or equal to zero, natural width will be used instead, but it will affect any calculation dependent on this dimension.

If a deeper level is required, you will need to use `\glossaries_tree_set_name_width:nn` (which is what the above options use).

`name-align=<h-align>`

initial: **l**

Sets the horizontal alignment of the name box, if it has a fixed width. The value may be one of: **l** (left), **c** (centred), or **r** (right). This setting covers any level that has a fixed-width name box.

`widest-name=<text>`

initial: **empty**

Sets the widest name for top-level entries, which is used to calculate the width if `name-width=widest`.

`widest-sub-name=<text>`

initial: **empty**

Sets the widest name for level 1 entries, which is used to calculate the width if `sub-name-width=widest`.

`widest-sub-sub-name=<text>`

initial: **empty**

Sets the widest name for level 2 entries, which is used to calculate the width if `sub-sub-name-width=widest`.

If a deeper level is required, you will need to use `\glossaries_tree_set_widest_name:nn` (which is what the above options use) or `\glsssetwidest`.

`update-widest-name=<text>`

Updates the widest name for top-level entries, if `<text>` is wider than the current setting. For example, if `name-width` was set to 2cm and later `update-widest-name` is set to `aardvark` then if the width of `aardvark` (using the current `name-font` and `name-case` setting) is greater than 2cm, then the name width and current widest name will be updated.

`update-widest-sub-name=<text>`

Updates the widest name for level 1 entries, if `<text>` is wider than the current setting.

`update-widest-sub-sub-name=<text>`

Updates the widest name for level 2 entries, if `<text>` is wider than the current setting.

If a deeper level is required, you will need to use `\glossaries_tree_update_widest_name:nn` (which is what the above options use).

`symbol-width=<value>`

*initial: natural*

Sets the width of the symbol box for top-level entries. The value may be: `natural` (no fixed width), `widest` (the width of the widest symbol), or a valid dimension. The widest symbol may be set with `widest-symbol` or with one of the commands described in §13.1.7.1.7.

If the dimension evaluates to a value less than or equal to zero, natural width will be used instead, but it will affect the calculation of the name+symbol box width if `name-symbol-width=widest` is set.

`sub-symbol-width=<value>`

*initial: natural*

Sets the width of the symbol box for level 1 entries. The value may be: `natural` (no fixed width), `widest` (the width of the widest symbol), or a valid dimension. The widest symbol may be set with `widest-sub-symbol` or with one of the commands described in §13.1.7.1.7.

As with `symbol-width`, if the dimension evaluates to less than or equal to zero, natural width will be used instead, but it will affect any calculation dependent on this dimension.

`sub-sub-symbol-width=<value>`

*initial: natural*

Sets the width of the symbol box for level 2 entries. The value may be: `natural` (no fixed width), `widest` (the width of the widest symbol), or a valid dimension. The widest symbol may be set with `widest-sub-sub-symbol` or with one of the commands described in §13.1.7.1.7.

As with `symbol-width`, if the dimension evaluates to less than or equal to zero, natural width will be used instead, but it will affect any calculation dependent on this dimension.

If a deeper level is required, you will need to use `\glossaries_tree_set_symbol_width:nn` (which is what the above options use).

`symbol-align=<h-align>`

*initial: l*

Sets the horizontal alignment of the symbol box, if it has a fixed width. The value may be one of: `l` (left), `c` (centred), or `r` (right). This setting covers any level that has a fixed-width symbol box.

`widest-symbol=<text>`

*initial: empty*

Sets the widest symbol for top-level entries, which is used to calculate the width if `symbol-width=widest`.



```
widest-sub-symbol=<text>
```

```
initial: empty
```

Sets the widest symbol for level 1 entries, which is used to calculate the width if `sub-symbol-width=widest`.

```
widest-sub-sub-symbol=<text>
```

```
initial: empty
```

Sets the widest symbol for level 2 entries, which is used to calculate the width if `sub-sub-symbol-width=widest`.

If a deeper level is required, you will need to use `\glossaries_tree_set_widest_symbol:nn` (which is what the above options use).

```
update-widest-symbol=<text>
```

Updates the widest symbol for top-level entries, if `<text>` is wider than the current setting. For example, if `symbol-width=was` set to 2cm and later `update-widest-symbol` is set to `aardvark` then if the width of `aardvark` (using the current `symbol-font` and `symbol-case` setting) is greater than 2cm, then the symbol width and current widest symbol will be updated.

```
update-widest-sub-symbol=<text>
```

Updates the widest symbol for level 1 entries, if `<text>` is wider than the current setting.

```
update-widest-sub-sub-symbol=<text>
```

Updates the widest symbol for level 2 entries, if `<text>` is wider than the current setting.

If a deeper level is required, you will need to use `\glossaries_tree_update_widest_symbol:nn` (which is what the above options use).

Alternatively (or additionally), if you want a fixed-width name+symbol box you can use the following:

```
name-symbol-width=<value>
```

```
initial: natural
```

Sets the width for the name+symbol box for top-level entries, which should include room for the entry item counter (if applicable), the name/symbol separator and post name/symbol content. The value may be the keyword `natural` (natural width), or the keyword `widest` (calculate the width) or a valid dimension.



If the dimension evaluates to a value less than or equal to zero, natural width will be used instead, but it will affect the calculation of the hanging indentation.

If you use the `widest` setting, you will need to ensure that the name width and symbol width have either been set or can be calculated from the widest name and widest symbol. Additionally, if you are also using `entrycounter`, you will need to supply a width for the entry counter with `item-counter-width`.



`sub-name-symbol-width=<value>` *initial: natural*

As `name-symbol-width` but for level 1 entries. You may also set this option to match higher to use the same width as `name-symbol-width`.



`sub-sub-name-symbol-width=<value>` *initial: natural*

As `name-symbol-width` but for level 2 entries. You may also set this option to match higher to use the same width as `sub-name-symbol-width` (which must be set first).

If a deeper level is required, you will need to use `\glossaries_tree_set_name_symbol_width:nn` (which is what the above options use). See §13.1.7.1.7 for details on how the width is calculated.



`name-symbol-align=<h-align>` *initial: l*

Sets the horizontal alignment of the name+symbol box, if it has a fixed width. The value may be one of: `l` (left), `c` (centred), or `r` (right). This setting covers any level that has a fixed-width name+symbol box.



`item-counter-width=<value>` *initial: natural*

Sets the width of the top-level entry counter box. The value may be the keyword `natural` if a fixed width box shouldn't be used, or a valid dimension otherwise. Remember that the box will be present even if `entrycounter=false`. Note that there is no `widest` option available in this case. A zero dimension will result in a zero-width box.



`sub-item-counter-width=<value>` *initial: natural*

Sets the width of the level 1 entry counter box. The value may be the keyword `natural` if a fixed width box shouldn't be used, or a valid dimension otherwise. Remember that the box will be present even if `subentrycounter=false`. Note that there is no `widest` option available in this case. A zero dimension will result in a zero-width box.

`item-counter-align=<h-align>`

*initial: 1*

Sets the horizontal alignment of the top-level entry counter box, if it has a fixed width. The value may be one of: `l` (left), `c` (centred), or `r` (right). This setting is ignored if `item-counter-width=natural`.

`sub-item-counter-align=<h-align>`

*initial: 1*

Sets the horizontal alignment of the level 1 entry counter box, if it has a fixed width. The value may be one of: `l` (left), `c` (centred), or `r` (right). This setting is ignored if `sub-item-counter-width=natural`.

`item-counter-font=<value>`

*initial: empty*

Sets the font declarations to use when typesetting the top-level entry counter. The last command in the list may be a text-block command.

`sub-item-counter-font=<value>`

*initial: empty*

Sets the font declarations to use when typesetting the level 1 entry counter. The last command in the list may be a text-block command.

#### 13.1.7.1.4. Letter Group Options

These options relate to letter groups. Note that if `bib2gls` is run with the default `--no-group` then there won't be any letter groups. This isn't the same as having letter groups that are then suppressed with options such as `hide-groups`. If there aren't any letter groups then changing these options won't have any effect.

`hide-groups=<boolean>`

*default: true; initial: false*

If true, omit group skip and group heading, regardless of the current `group-headings` or `nogroupskip` settings. If false, the group skip and group headings will behave as normal. When set, this just locally sets `nogroupskip` and `group-headings=false` within the scope of the glossary for the `tree*` style.

`group-headings=<boolean>`

*default: true; initial: false*

If true, the letter group headings will be shown (unless `hide-groups=true` is set). Note that the group skip (which can be suppressed with `nogroupskip` and adjusted with `group-skip`) comes before the heading (except for the first one). The vertical gap after the heading is governed by `post-group-heading-skip`.

`bookmark-groups=<boolean>`

*default: true; initial: false*

If `true` and `group-headings=true` and `\pdfbookmark` has been defined, then each letter group will be added to the PDF bookmarks. If you prefer to use a different bookmark command then you can redefined `\glossaries_tree_bookmark_group:nnn` as appropriate.

`group-skip=<dimension>`

*initial: 1ex plus 2pt minus 1pt*

The value should be a dimension which specifies the height of the gap between letter groups (before the group heading, if applicable). This setting is ignored if the group skip is suppressed via `nogroupskip` or `hide-groups`. Note that the value isn't evaluated until the start of the glossary.

`post-group-heading-skip=<dimension>`

*initial: 1pt plus 2pt*

The value should be a dimension which specifies the height of the gap following the letter group heading. This setting is ignored if the group heading isn't shown. Note that the value isn't evaluated until the start of the glossary.

`header-font=<value>`

*initial: \textbf*

The font to apply to the letter group header (if shown). The value may be a list of font declarations. The last in the list may be a text-block command. For example:

```
\setupglossaries{
  style-options={
    tree*={
      group-headings,
      header-font=\large\textbf
    }
  }
}
```

`header-align=<value>`

*initial: left*

The horizontal alignment of the group header (if shown). The value may be one of: `left` (flush left), `right` (flush right), `center` (centred) or `indent` (use the same paragraph indentation as the items).

`sub-header-font=<value>`

*initial: inherit*

The font declarations to use for the sub-group headers (if supported). The final command in the list may be a text-block command. The `<value>` may also be the keyword `inherit` which indicates to use the same setting as `header-font`.

`bib2gls`

Sub-groups are only available with `\printunsrtglossary` and can be created with `bib2gls`'s `group-level` resource option.

`sub-header-align=<value>`

*initial: inherit*

The horizontal alignment of the sub-group header (if supported). The value may be one of: `inherit` (match `header-align`), `left` (flush left), `right` (flush right), `center` (centred) or `indent` (use the same paragraph indentation as the items).

#### 13.1.7.1.5. Paragraph, Spacing and Alignment Options

`par-skip=<value>`

*initial: 0pt plus 0.3pt*

The value may be empty (use the current paragraph skip) or a dimension to use as the paragraph skip within the glossary. Note that the value isn't tested or evaluated until the start of the glossary.

`par-indent=<value>`

*initial: empty*

The value may be empty (use the current paragraph indentation) or a dimension to use as the paragraph indentation within the glossary. Note that the value isn't tested or evaluated until the start of the glossary.

`child-offset=<dimension>`

*initial: 1em*

The offset for each sub-level. Note that the value isn't evaluated until the start of the glossary. Each sub-level has the paragraph indentation set to the `par-indent` value plus the offset times the hierarchical level (1 for the first sub-level, 2 for the second sub-level, etc). Similarly for the hanging indentation.

`hang-indent=<value>`

*default: calculated; initial: empty*

The value may be empty (use the current hanging indentation) or the keyword `calculated` to calculate the indentation or a dimension to use as the hanging indentation within the glossary.

Note that the value isn't tested or evaluated until the start of the glossary.

The `hang-indent=calculated` value will set the hanging indentation to the combined width of the name+symbol box plus the name+symbol box padding. This means that the width of the name+symbol box must be set with `name-symbol-width=or` or be possible to calculate.

`name-symbol-padding=<value>`

initial: *empty*

The extra padding that should be taken into account by `hang-indent=calculated`. An empty value indicates that the padding dimension (which is initially zero) shouldn't be changed. Note that the value isn't tested or evaluated until the start of the glossary.

`name-padding=<value>`

initial: *empty*

The extra padding taken up by the name box that should be taken into account when calculating the width of the name+symbol box. An empty value indicates that the padding dimension (which is initially zero) shouldn't be changed. Note that the value isn't tested or evaluated until the start of the glossary.

`symbol-padding=<value>`

initial: *empty*

The extra padding taken up by the symbol box that should be taken into account when calculating the width of the name+symbol box. An empty value indicates that the padding dimension (which is initially zero) shouldn't be changed. Note that the value isn't tested or evaluated until the start of the glossary.

For example, if `\GlsTreeStarBox` is redefined to use a frame then the padding needs to include the space taken up by the frame:

```
\renewcommand\GlsTreeStarBox[1]{\fbox{#1}}
\setupglossaries{
  style-options={
    tree*={
      hang-indent,
      name-symbol-padding=2\fboxsep+2\fboxrule,
      name-padding=2\fboxsep+2\fboxrule,
      symbol-padding=2\fboxsep+2\fboxrule,
      name-width=2.5cm,
      symbol-width=1.5cm
    }
  }
}
```

`item-counter-padding=<value>`

*initial: empty*

The extra padding taken up by the top-level entry counter (`entrycounter`) that should be taken into account when calculating the width of the name+symbol box. An empty value is equivalent to 0pt and indicates no padding. Note that the value isn't tested or evaluated until the start of the glossary.

`sub-item-counter-padding=<value>`

*initial: empty*

As `item-counter-padding` but for the level 1 entry counter (`subentrycounter`).

#### 13.1.7.1.6. Hyper-Navigation Options

If the document supports hyperlinks, a navigation strip can be added to the start of the glossary. This will require an extra  $\LaTeX$  run (unless `bib2gls` can determine the relevant information). The strip will contain a hyperlink to each letter group shown in the glossary. The following settings have no effect if there are no letter groups or if the group headings aren't shown.

`hyper-nav=<boolean>`

*default: true; initial: false*

If true, show the hyper-navigation strip.

`hyper-nav-skip=<value>`

The height of the space after the navigation strip (if shown). The default setting is to use the same value as `group-skip`.

`hyper-nav-font=<value>`

*initial: \textbf*

The font declarations to use for the navigation strip (if shown). The final command in the list may be a text-block command. For example

```
\setupglossaries{
  style-options={
    tree*={
      hyper-nav,
      hyper-nav-font=\large\textbf
    }
  }
}
```

`hyper-nav-align=<value>`

initial: **left**

The horizontal alignment of the navigation strip (if shown). The value may be one of: `left` (flush left), `right` (flush right), `center` (centred) or `indent` (use the same paragraph indentation as the items).

#### 13.1.7.1.7. Commands

Most settings can be implemented via the `tree*` option but there are a few helper commands and hooks that may be redefined.

`\GlsTreeStarNameBox<text>`

This command is used to encapsulate the name box (if shown). The default definition expands to `\GlsTreeStarBox{<text>}`.

`\GlsTreeStarSymbolBox<text>`

This command is used to encapsulate the symbol box (if shown). The default definition expands to `\GlsTreeStarBox{<text>}`.

`\GlsTreeStarOuterBox<text>`

This command is used to encapsulate the name+symbol box (if shown). The default definition expands to `\GlsTreeStarBox{<text>}`.

`\GlsTreeStarBox<text>`

Used by the above commands to provide a quick way of framing the boxes to check the bounds.

`\GlsTreeStarItemCounterBox<text>`

This command is used to encapsulate the top-level entry counter representation. Note that with the default `entrycounter=false` setting, the area will be empty (not omitted). The default definition simply expands to `<text>`.

`\GlsTreeStarSubItemCounterBox<text>`

This command is used to encapsulate the level 1 entry counter representation. Note that with the default `subentrycounter=false` setting, the area will be empty (not omitted). The default definition expands to:



```
\GlsTreeStarItemCounterBox{text}
```



```
\GlsTreeUpdateWidestNameOrSymbol [level] {entry-label}
```

Updates the widest name or symbol settings if the entry identified by *entry-label* has a name or symbol wider than the current setting. If the optional argument is omitted, the level is obtained from the entry's internal field whose value was calculated when the entry was defined.

This internally uses `\glossaries_tree_update_widest_name:nn` and `\glossaries_tree_update_widest_symbol:nn` (described below). You may find this useful in `\glsnoidxitemhook` or `\printunsrtglossaryentryprocesshook` to automatically calculate the widest name and symbol, if you want the names and symbols aligned.



```
\GlsTreeUpdateWidestNameAndSymbol [level] {entry-label}
```

Updates the widest name and symbol if the combined width of the given entry's name and symbol is wider than the current setting. If the optional argument is omitted, the level is obtained from the entry's internal field whose value was calculated when the entry was defined.

This internally uses `\glossaries_tree_update_widest_name_symbol:nnn`. You may find this useful in `\glsnoidxitemhook` or `\printunsrtglossaryentryprocesshook` to automatically calculate the widest name and symbol, if you want the hanging indent calculated to align the descriptions.



Don't mix using a command that updates both the name and symbol based on their combined width with commands or options that set the widest name and symbol individually.

If  $\LaTeX$ 3 syntax is enabled, the following commands may also be used:



```
\glossaries_tree_pre_item:nnn {level} {entry-label}  
{location-list}
```

Hook used at the start of each entry item (before the name+symbol box). This does nothing by default but may be redefined. For example, if the `glossary-bookindex` package has also been loaded, then to mark top-level items:



```
\cs_set:Nn \glossaries_tree_pre_item:nnn  
{  
}
```

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```
\int_if_zero:nTF { #1 }  
{  
  \glstrbookindexmarkentry { #2 }  
}
```

See the `glossaries-extra` manual for further details of the `glossary-bookindex` commands.

```
\glossaries_tree_post_item:nnn {<level>} {<entry-label>}  
{<location-list>}
```

Hook used at the end of each entry item (before the name+symbol box). This does nothing by default but may be redefined. For example, if the `childcount` field is available, this hook can be used to add content if the entry has one or more children. For example with Option 1:

```
\cs_set:Nn \glossaries_tree_post_item:nnn  
{  
  \ifglfieldvoid { childcount } { #2 }  
  { } % no child count  
  { : }  
}
```

or with Option 4:

```
\cs_set:Nn \glossaries_tree_post_item:nnn  
{  
  \GlsXtrIfHasNonZeroChildCount { #2 }  
  { : }  
  { } % no child count  
}
```

(This assumes `\printnoidxglossary` or `bib2gls` has been used with the appropriate options. The `childcount` field is not available with `\printglossary`.)

```
\glossaries_tree_bookmark_group:nnn {<bookmark-level>}  
{<group-label>} {<group-title>}
```

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If `\pdfbookmark` has been defined, this expands to:

```
\pdfbookmark [⟨bookmark-level⟩] {⟨group-title⟩}
  { \currentglossary . ⟨group-label⟩ }
```

otherwise it expands to nothing. This command is used if both `bookmark-groups=true` and `group-headings=true`. The `⟨level⟩` argument will be the value of one plus the group's hierarchical level plus (if defined) the expansion of `\toclevel@⟨section⟩` where `⟨section⟩` is the current `section` value. Note the `\currentglossary .` prefix for the bookmark name, which helps provide a unique label.

If you have repeated glossaries (for example, a compact summary at the start of a section and a full list at the end of the document) then you may need to redefine this command to ensure uniqueness if all glossaries need to add bookmarks.

```
\glossaries_tree_subgroup_title:nn {⟨parent-label⟩} {⟨group
title⟩}
```

Used to format the sub-group header title (if shown). By default this will show the parent's hierarchical name followed by the title separated by a slash (/). Note that sub-groups are only supported by `\printunsrtglossary`.

```
\glossaries_tree_namenobox:n {⟨text⟩}
```

Used to format the name box for the natural width setting. The default definition is:

```
\GlsTreeStarBox{{⟨text⟩}}
```

This applies grouping to localise the font change.

```
\glossaries_tree_namebox:nnn {⟨width⟩} {⟨h-align⟩} {⟨text⟩}
  variants: vVn vvn
```

Used to format the name box for the fixed width setting. The default definition is:

```
\GlsTreeStarBox{\makebox[⟨width⟩][⟨h-align⟩]{⟨text⟩}}
```

```
\glossaries_tree_symbolnobox:n {⟨text⟩}
```

Used to format the symbol box for the natural width setting. The default definition is:

```
\GlsTreeStarBox{ {<text> } }
```

This applies grouping to localise the font change.

```
\glossaries_tree_symbolbox:nnn {<width> } {<h-align> } {<text> }
variant: vVn vVn
```

Used to format the symbol box for the fixed width setting. The default definition is:

```
\GlsTreeStarBox{\makebox[<width>] [ <h-align> ] {<text> } }
```

```
\glossaries_tree_paren:n {<text> }
```

Applies parentheses to  $\langle text \rangle$ . This is used by the style settings that encapsulate the name or symbol in parentheses. This command should be redefined if a different type of parentheses or brackets are required.

```
\glossaries_tree_entryitem_nobox:n {<text> }
```

Used to format the top-level entry item counter (corresponding to the `entrycounter` option) for the natural width setting. The default definition is:

```
\GlsTreeStarItemCounterBox{ {<text> } }
```

This applies grouping to localise any font change. Note that with `entrycounter=false`,  $\langle text \rangle$  will be empty. This means that you can redefine this command (or the next) if you want some other initial marker for level 0 items.

```
\glossaries_tree_entryitembox:nnn {<width> } {<h-align> }
{<text> } variant: VVn
```

Used to format the top-level entry item counter for the fixed width setting. The default definition is:

```
\GlsTreeStarItemCounterBox{\makebox[<width>] [ <h-align> ]
{<text> } }
```

```
\glossaries_tree_subentryitem_nobox:n {<text>}
```

Used to format the level 1 entry item counter (corresponding to the `subentrycounter` option) for the natural width setting. The default definition is:

```
\GlsTreeStarSubItemCounterBox{{<text>}}
```

This applies grouping to localise any font change. Note that with `subentrycounter=false`, `<text>` will be empty. This means that you can redefine this command (or the next) if you want some other initial marker for level 1 items.

```
\glossaries_tree_subentryitembox:nnn {<width>} {<h-align>}
{<text>}
variant: VVn
```

Used to format the level 1 entry item counter for the fixed width setting. The default definition is:

```
\GlsTreeStarSubItemCounterBox{\makebox[<width>][<h-align>]
{<text>}}
```

```
\glossaries_tree_set_name_width:nn {<level>} {<value>}
```

Sets the name width for the given level. This command is used by the `name-width`, `sub-name-width` and `sub-sub-name-width` options. Any deeper levels will need to use this command.

The `<value>` may be the keyword `natural` (natural width), or the keyword `widest` (calculate the width from the widest name setting for the given level) or a valid dimension.

If the width has to be calculated from the widest name, the font formatting and, if applicable, parentheses will be included. Remember that you will need to specify the widest name.

```
\glossaries_tree_set_symbol_width:nn {<level>} {<value>}
```

Sets the symbol width for the given level. This command is used by the `symbol-width`, `sub-symbol-width` and `sub-sub-symbol-width` options. Any deeper levels will need to use this command.

The `<value>` may be the keyword `natural` (natural width), or the keyword `widest` (calculate the width from the widest symbol setting for the given level) or a valid dimension.

If the width has to be calculated from the widest symbol, the font formatting and, if applicable, parentheses will be included. Remember that you will need to specify the widest symbol.

```
\glossaries_tree_set_widest_name:nn {<level>} {<text>}
```

Locally sets the widest name for the given level. This command is used by the `widest-name`, `widest-sub-name`, and `widest-sub-sub-name` options. Any deeper levels will need to use this command. As from v4.59, `\glssetwidest` now simply uses the above command.

glossaries-extra

If you are also using `glossaries-extra-stylemods` (either explicitly or via `stylemods`) make sure you have at least version 1.6 of `glossaries-extra`.

```
\glossaries_tree_gset_widest_name:nn {<level>} {<text>}
```

Globally sets the widest name for the given level.

```
\glossaries_tree_update_widest_name:nn {<level>} {<text>}
variants: ne nV nv no
```

Updates the widest name for the given level. Note that, unlike `\glsupdatewidest`, this command doesn't re-measure the current widest name but instead only measures `<text>` and compares it with the currently set or calculated name width. If it's wider, the current widest name will be locally updated.

For example, if the widest name hasn't been set but the name width has been set to a dimension then the width of `<text>` will be compared against that dimension.

```
\glossaries_tree_set_widest_symbol:nn {<level>} {<text>}
```

Locally sets the widest symbol for the given level. This command is used by the `widest-symbol`, `widest-sub-symbol`, and `widest-sub-sub-symbol` options. Any deeper levels will need to use this command.

```
\glossaries_tree_gset_widest_symbol:nn {<level>} {<text>}
```

Globally sets the widest symbol for the given level.

```
\glossaries_tree_update_widest_symbol:nn {<level>}
{<text>}
variants: ne nV nv no
```

Updates the widest symbol for the given level (analogous to `\glossaries_tree_update_widest_name:nn`).

```
\glossaries_tree_reset_all_widest:
```

Resets the widest name and symbol for all levels and reverts the settings back to natural.

```
\glossaries_tree_set_name_symbol_width:nn {<level>}
{<value>}
```

Sets the width for the name+symbol box, which should include room for the name/symbol separator and post name/symbol content. The value may be the keyword `natural` (natural width), or the keyword `match higher` (only if there is a higher level) or the keyword `widest` (calculate the width) or a valid dimension.

If `widest` is specified, the width is calculated by summing the applicable the name width, symbol width, and measured widths of the name/symbol separator and post name/symbol content. If the style setting omits the name or symbol then the omitted parts aren't included in the calculation.

The `match higher` setting sets the dimension after the dimension for the higher level has been assigned or calculated. The setting for the next level up must be set first.

If the name width or symbol width has been set to `natural` then the applicable width will need to be calculated according to the widest name or symbol.

```
\glossaries_tree_update_widest_name_symbol:nnn
{<level>} {<name>} {<symbol>}          variants: nee nVV nvv noo
```

Updates the widest name and symbol if the combined width of the given `<name>` and `<symbol>` is wider than the current setting.

Don't mix using a command that updates both the name and symbol based on their combined width with commands or options that set the widest name and symbol individually.

### 13.1.7.2. Old Styles

These older styles can't be configured with the `style-options` setting, but instead need to have associated commands redefined to adjust the format. These styles can mostly be replicated with the newer `tree*` style. However, they are still available if you prefer them.

These styles all format the entry name using:

```
\glstreenamefmt {text}
```

This defaults to `\textbf{<text>}`, but note that `<text>` will include `\glsnamefont` so the bold setting in `\glstreenamefmt` may be counteracted by another font change in `\glsnamefont` (or in `\acronymfont`). The tree-like styles that also display the header use

```
\glstreegroupheaderfmt {text}
```

to format the heading. This defaults to `\glstreenamefmt {<text>}`. The tree-like styles that display navigation links to the groups (such as `indexhypergroup`), format the navigation line using

```
\glstreenavigationfmt {text}
```

which defaults to `\glstreenamefmt {<text>}`.

Note that this is different from `\glslistnavigationitem`, provided with the styles such as `listhypergroup`, as that also includes `\item`.

With the exception of the `alltree` style (and those derived from it), the space before the description for top-level entries is produced with

```
\glstreepredesc
```

This defaults to `\space`.

With the exception of the `treenoname` and `alltree` styles (and those derived from them), the space before the description for child entries is produced with

```
\glstreechildpredesc
```

This defaults to `\space`.

Most of these styles are not designed for multi-paragraph descriptions. (The tree style isn't too bad for multi-paragraph top-level entry descriptions, or you can use the index style with the adjustment shown below.)

```
index
```

The `index` style is similar to the way standard indices are usually formatted in that it has a hierarchical structure up to three levels (the main level plus two sub-levels). If the symbol is present it is set in parentheses after the name and before the description. Sub-entries are indented



### 13. Glossary Styles

and also include the name, the symbol in brackets (if present) and the description. Groups are separated using `\indexspace`.

Each main level item is started with

```
\glstreeitem
```

The level 1 entries are started with

```
\glstreesubitem
```

The level 2 entries are started with

```
\glstreesubsubitem
```

Note that the index style automatically sets

```
\let\item\glstreeitem  
\let\subitem\glstreesubitem  
\let\subsubitem\glstreesubsubitem
```

at the start of the `theglossary` environment for backward compatibility.

The index style isn't suitable for multi-paragraph descriptions, but this limitation can be overcome by redefining the above commands. For example:

```
\renewcommand{\glstreeitem}{%  
  \parindent0pt\par\hangindent40pt  
  \everypar{\parindent50pt\hangindent40pt}}
```

```
indexgroup
```

The `indexgroup` style is similar to the `index` style except that each group has a heading obtained using `\glsgetgrouptitle`.

```
indexhypergroup
```

The `indexhypergroup` style is like `indexgroup` but has a set of links to the glossary groups. The navigation line is the same as that for `listhypergroup`, described above, but is formatted using `\glstreenavigationfmt`.

tree

The tree style is similar to the index style except that it can have arbitrary hierarchical levels. (Note that `makeindex` is limited to three levels, so you will need to use another indexing method if you want more than three levels.) Each sub-level is indented according to the length

`\glstreeindent`

*initial: 10pt*

This value can be changed with `\setlength`.

Note that the name, symbol (if present) and description are placed in the same paragraph block. If you want the name to be apart from the description, use the `alltree` style instead. (See below.)

treegroup

The treegroup style is similar to the tree style except that each group has a heading.

treehypergroup

The treehypergroup style is like treegroup but has a set of links to the glossary groups. The navigation line is the same as that for `listhypergroup`, described above, but is formatted using `\glstreenavigationfmt`.

treenoname

The treenoname style is like the tree style except that the name for each sub-entry is ignored.

treenonamegroup

The treenonamegroup style is similar to the treenoname style except that each group has a heading.

treenonamehypergroup

The treenonamehypergroup style is like treenonamegroup but has a set of links to the glossary groups. The navigation line is the same as that for `listhypergroup`, described above, but is formatted using `\glstreenavigationfmt`.

alltree

The alltree style is similar to the tree style except that the indentation for each level is determined by the width of the text specified by

```
\glssetwidest [⟨level⟩] {⟨name⟩}
```

The optional argument *⟨level⟩* indicates the hierarchical level, where 0 indicates the top-most level, 1 indicates the first level sub-entries, etc. If `\glssetwidest` hasn't been used for a given sub-level, the level 0 widest text is used instead. If *⟨level⟩* is omitted, 0 is assumed.

Note that `\glssetwidest` uses the same underlying function as *tree\** options such as `widest-name`.

If you use the `almtree` style without setting the widest top level (level 0) name, there will be no room available for the name. If a name overlaps the description, then this is an indication that there is a name wider than the one specified.

This requires keeping track of which entry has the widest name, which may not be practical for large glossaries. Instead you can use:

```
\glsfindwidesttoplevelname [⟨glossary labels⟩]
```

This iterates over all entries in the glossaries identified by the comma-separated list *⟨glossary labels⟩* and determines the widest top level (level 0) entry. If the optional argument is omitted, all non-ignored glossaries are assumed.

For example, to have the same name width for all glossaries:

```
\glsfindwidesttoplevelname
\setglossarystyle{almtree}
\printglossaries
```

Alternatively, to compute the widest entry for each glossary before it's displayed:

```
\renewcommand{\glossary preamble}{%
  \glsfindwidesttoplevelname [\currentglossary] }
\setglossarystyle{almtree}
\printglossaries
```

These commands only affects the `almtree` styles, including those listed below and the ones in the `glossary-mcols` package.

glossaries-extra

The `\glssetwidest` command also affects the styles provided by `glossary-topic`. The `glossaries-extra-stylemods` package provides additional commands. With `bib2gls`, you may prefer the `set-widest` resource option.

For each level, the name is placed to the left of the paragraph block containing the symbol (optional) and the description. If the symbol is present, it is placed in parentheses before the description.

The name is placed inside a left-aligned `\makebox`, created with:

```
\glstreenamebox{<width>}{<text>}
```

where `<width>` is the width of the box (calculated from the widest name) and `<text>` is the contents of the box. For example, to make the name right-aligned:

```
\renewcommand*{\glstreenamebox}[2]{%
  \makebox[#1][r]{#2}%
}
```

`almtreegroup`

The `almtreegroup` is like the `almtree` style except that each group has a heading.

`almtreehypergroup`

The `almtreehypergroup` style is like `almtreegroup` but has a set of links to the glossary groups.

### 13.1.8. Multicols Style

```
\usepackage{glossary-mcols}
load explicitly or with
\usepackage[stylemods=mcols]{glossaries-extra}
```

The `glossary-mcols` package provides tree-like glossary styles that are in the multicols environment (defined by the `multicol` package). The style names are as their analogous tree styles (as defined in §13.1.7) but are prefixed with “mcol”. For example, the `mcolindex` style is essentially the `index` style but put in a multicols environment. For the complete list, see Table 13.2. The `glossary-tree` package is automatically loaded by `glossary-mcols` (even if the `notree` package option is used when loading `glossaries`).

Note that these styles will only be available if you explicitly load `glossary-mcols`:

```
\usepackage{glossaries}
\usepackage{glossary-mcols}
```

Note that you can't set these styles using the `style` package option since the styles aren't defined until after the `glossaries` package has been loaded.

With `glossaries-extra`, you can load both the package and style with the `style` and `stylemods` options. For example:

```
\usepackage[style=mcolindex,stylemods=mcols]
{glossaries-extra}
```

```
mcoltree*
```

The `mcoltree*` style is new to version 4.59 and may be configured using the `mcoltree*` key within the `style-options` setting. This style is based on the `tree*` style and will therefore be influenced by any `tree*` options and commands (see §13.1.7.1). For example:

```
\setupglossaries{
  style-options={
    tree*={
      group-headings,
      pre-location=\dotfill
    },
    mcoltree*={
      balance,
      columns=3
    }
  }
}
```

Alternatively:

```
\GlsMcolTreeSetup<key=value list>
```

This is a shorter way of just setting the `mcoltree*` options. For example:

```
\GlsMcolTreeSetup{
  balance,
  columns=3
}
```

The following `mcoltree*` options are available:

`balance=<boolean>`

*default: true; initial: false*

If true, balance the columns. That is, the unstarred multicols environment is used. If false, multicols\* is used instead.

`columns=<n>`

*initial: 2*

The number of columns. This is unconnected to the `\glsmcols` command that's used by the other glossary-mcols styles.

`span-nav=<boolean>`

*default: true; initial: false*

If the `tree*` option `hyper-nav` is true and `span-nav` is also true, then the hyper navigation panel will span all columns, otherwise if `span-nav=false` then the hyper navigation panel will be at the start of the first column. This option has no effect if `hyper-nav=false`.

The older styles can't be configured with the `style-options` setting, but instead need to have associated commands redefined to adjust the format. These styles can mostly be replicated with the newer `mcoltree*` style.

The formatting commands `\glstreenamfmt`, `\glstreegroupheaderfmt` and `\glstreenavigationfmt` are all used by the corresponding glossary-mcols styles.

The default number of columns is 2, but can be changed by redefining:

`\glsmcols`

*initial: 2*

For example, for a three column glossary:

```
\usepackage{glossary-mcols}
\renewcommand*{\glsmcols}{3}
\setglossarystyle{mcolindex}
```

The styles with a navigation line, such as `mcoltreehypergroup`, now have a variant (as from v4.22) with “hypergroup” replaced with “spannav” in the style name. The original “hypergroup” styles place the navigation line at the start of the first column. The newer “spannav” styles put

Table 13.2.: Multicolumn Styles

<b>glossary–mcols Style</b>	<b>Analogous Tree Style</b>
mcoltree*	tree*
mcolindex	index
mcolindexgroup	indexgroup
mcolindexhypergroup or mcolindexspannav	indexhypergroup
mcoltree	tree
mcoltreegroup	treegroup
mcoltreehypergroup or mcoltreespannav	treehypergroup
mcoltreenoname	treenoname
mcoltreenonamegroup	treenonamegroup
mcoltreenonamehypergroup or mcoltreenonamespannav	treenonamehypergroup
mcolalltree	alltree
mcolalltreegroup	alltreegroup
mcolalltreehypergroup or mcolalltreespannav	alltreehypergroup

the navigation line in the optional argument of the multicols environment so that it spans across all the columns.

### 13.1.9. In-Line Style

```
\usepackage{glossary-inline}
```

load explicitly or with

```
\usepackage[stylemods=inline]{glossaries-extra}
```

This section covers the `glossary-inline` package that supplies the inline style. This is a glossary style that is designed for in-line use (as opposed to block styles, such as lists or tables). This style doesn't display the number list.

Note that this style will only be available if you explicitly load `glossary-inline`:

```
\usepackage{glossaries}
\usepackage{glossary-inline}
```

With `glossaries-extra`, you can load both the package and style with the `style` and `stylemods` options. For example:

```
\usepackage[style=inline, stylemods=inline]
{glossaries-extra}
```

### 13. Glossary Styles

You will most likely need to redefine `\glossarysection` with this style. For example, suppose you are required to have your glossaries and list of acronyms in a footnote, you can do:

```
\usepackage{glossary-inline}
\renewcommand*{\glossarysection}[2][\textbf{#1}: ]
\setglossarystyle{inline}
```

Then where you need to include your glossaries as a footnote you can do:

```
\footnote{\printglossaries}
```

inline

This is the only style provided by `glossary-inline`.

The group skip command `\glsgroupskip` is defined to do nothing, regardless of the `nogroupskip` option. Likewise, `\glsgroupheading` is defined to do nothing. If you want to create a custom style base on the `inline` style that shows a heading, then add `\glsinlinedopostchild` to the definition of `\glsgroupheading` in case a group heading follows a child entry.

Don't redefine `\glsinlinedopostchild`. It's provided as a user command to make it easier to add it to the start of a custom definition of `\glossaryheader` to enable group headings. If you need to adjust the content between a sub-entry and the next entry, redefine `\glsinlinespostchild` instead.

The `inline` style is governed by the following commands.

```
\glsinlineseparator initial: ; \space
```

This is used between top level (level 0) entries.

```
\glsinlinesubseparator initial: , \space
```

This is used between sub-entries.

```
\glsinlineparentchildseparator initial: : \space
```

This is used between a top level (level 0) parent entry and its first sub-entry.



```
\glspostinline
```

This is used at the end of the glossary. The default definition is:

```
\glspostdescription\space
```

This is the only place that the post-description hook is used in this style.

```
\glsinlinenameformat{<entry-label>}{<name>}
```

This is used to create the target, where *<name>* is provided in the form `\glossentryname{<entry-label>}` and *<entry-label>* is the entry's label. The default definition is:

```
\glstarget{<entry-label>}{<name>}
```

For example, if you want the name to appear in small caps:

```
\renewcommand*{\glsinlinenameformat}[2]{\glstarget{#1}{\textsc{#2}}}
```

This style needs to know if an entry has any children. This test is performed with:

```
\glsinlineifhaschildren{<entry-label>}{<true>}{<false>}
```

The default definition simply uses `\ifglshaschildren`, which is inefficient as it has to iterate through all entries (in the same glossary as *<entry-label>*) to determine which ones have the given entry as a parent. This can be time-consuming for large glossaries, but the assumption here is that an inline glossary is unlikely to be used with a large set of entries. However, if you are using `bib2gls` with the `save-child-count` resource option, it's more efficient to use `\GlsXtrIfHasNonZeroChildCount` instead (particularly if you are using `\printunsrtglossary` with a filtered subset). For example:

```
\renewcommand{\glsinlineifhaschildren}[3]{%
  \GlsXtrIfHasNonZeroChildCount{<#1>}{#2}{#3}%
}
```

Sub-entry names are formatted according to:

```
\glsinlinesubnameformat {<entry-label>} {<name>}
```

which has the same syntax as `\glsinlinenameformat` but a different definition:

```
\glstarget {<entry-label>} {}
```

which means that the sub-entry name is ignored.

If the description is empty or has been suppressed (according to `\ifglshasdesc` and `\ifglsdescsuppressed`, respectively) then:

```
\glsinlineemptydescformat {<symbol>} {<location list>}
```

(which does nothing by default) is used, otherwise the description is formatted according to:

```
\glsinlinedescformat {<description>} {<symbol>} {<location list>}
```

This defaults to just `\space<description>` so the symbol and location list are ignored.

For example, if you want a colon between the name and the description:

```
\renewcommand*{\glsinlinedescformat}[3]{: #1}
```

The sub-entry description is formatted according to:

```
\glsinlinesubdescformat {<description>} {<symbol>} {<location list>}
```

This defaults to just `<description>`.

```
\glsinlinepostchild
```

This hook is used at the start of a top level (level 0) entry that immediate follows a sub-entry. It does nothing by default.

## 13.2. Defining your own glossary style

The markup used in the glossary is described in §8.2. Commands that may be used by styles, but should not be redefined by styles, are described in §§13.2.1 & 13.2.2. The commands that should be redefined by the glossary style are described in §13.2.3.



Commands like `\printglossary` are designed to produce content in the PDF. If your intention is to design a style that doesn't print any content (for example, to simply capture information) then you are likely to experience unwanted side-effects. If you just want to capture indexing information (such as locations) then a much better approach is to use `bib2gls`, which automatically stores this information in dedicated fields when the entry is defined. If you still really want to use a style to capture information obtained from `makeindex` or `xindy` then simply `\input` the indexing file instead of using `\printglossary`.

If the predefined glossary styles don't fit your requirements, you can define your own style using:



```
\newglossarystyle{<style-name>}{<definitions>}
```

where `<style-name>` is the name of the new glossary style (to be used in the `style` option or `\setglossarystyle`). An existing style can be redefined with:



```
\renewglossarystyle{<style-name>}{<definitions>}
```

In both cases, the second argument `<definitions>` needs to redefine all of the commands listed in §13.2.3.



Bear in mind that parameters will need to be referenced with `##` rather than `.`

A style may inherit from an existing style by starting `<definitions>` with `\setglossarystyle` and then just redefine the commands that are different from the inherited style.

For example, the `indexgroup` style is basically the same as the `index` style, except for the definition of `\glsgroupheading`, so the style is simply defined as:

```
\newglossarystyle{indexgroup}{%
  \setglossarystyle{index}% inherit index
  % alter the command that's different:
  \renewcommand*{\glsgroupheading}[1]{%
    \item\glstreegroupheaderfmt{\glsgetgrouptitle
  {##1}}}%
  \indexspace
  }%
}
```

### 13.2.1. Commands For Use in Glossary Styles

These commands are typically used in style definitions but should not be modified by the style. See §13.2.2 for hyperlinks to group headings.

In order to support the `entrycounter` option, a style needs to use:

```
\glsentryitem{<label>}
```

at the place where the associated number should appear if the option is set. If `entrycounter=true`, `\glsentryitem` will do:

```
\glsstepentry{<label>\glsentrycounterlabel}
```

otherwise it will do `\glsresetsubentrycounter` (which ensures the sub-entry counter is reset if it has been enabled with `subentrycounter`).

For example, the list style defines `\glossentry` as follows:

```
\renewcommand*{\glossentry}[2]{%
  \item[\glsentryitem{##1}]%
  \glstarget{##1}{\glossentryname{##1}}]
  \glossentrydesc{##1}\glspostdescrip-
tion\space ##2}
```

In order to support the `subentrycounter=option`, a style needs to use:

```
\glsesubentryitem{<label>}
```

at the place where the associated number should appear if the option is set. If `subentrycounter=true`, this will do:

```
\glsstepsubentry{<label>\glsesubentrycounterlabel}
```

otherwise it does nothing. This will typically only be used with level 1 and omitted for deeper hierarchical levels.

For example, the index style has:

```

\renewcommand{\subglossentry}[3]{%
  \ifcase##1
    % level 0
    \item
  \or
    % level 1
    \subitem
    \glssubentryitem{##2}%
  \else
    % all other levels
    \subsubitem
  \fi
  \glstreenamefmt{\glstarget{##2}{\glossentryname
{##2}}}%
  \ifglshassymbol{##2}{\space(\glossentrysymbol{##2}
)}%
  \glstreechildpredesc\glossentrydesc{##2}\glspost-
description\space ##3%
}

```

The test for level 0 is redundant in this case as `\glossentry` will be used for top level (level 0) entries, but is provided for completeness. Note that `\glssubentryitem` is only used for level 1.

The style will typically also create the target to enable hyperlinks from an entry reference within the document (created with commands like `\gls`) to the entry line in the glossary.

The target is created with:

```
\glstarget{<entry-label>}{<text>}
```

If hyperlinks aren't enabled, this simply does the second argument `<text>`, otherwise it will create a target with the name `<prefix><entry-label>`, where the prefix is obtained by expanding:

```
\glolinkprefix initial: glo:
```

The `glossaries-extra` package has options, such as `prefix`, that can be used to override this.

```
\glossentryname{<entry-label>}
```

This is used in glossary styles to display the name encapsulated with `\glsnamefont`. Unlike `\glsentryname`, this command will trigger a warning if the entry hasn't been defined. The sentence case version is:

```
\Glossentryname{<entry-label>}
```

Both commands internally use `\glsnamefont` so there's no need to explicitly use that command in a style.

glossaries-extra

With `glossaries-extra`, the `glossnamefont` and `glossname` category attributes can be used to adjust font and, for `\glossentryname`, case-changing. If you just use `\glsentryname`, the style won't be influenced by those attributes.

```
\glossentrydesc{<entry-label>}
```

This is used in glossary styles to display the description. Unlike `\glsentrydesc`, this command will trigger a warning if the entry hasn't been defined. The sentence case version is:

```
\Glossentrydesc{<entry-label>}
```

glossaries-extra

With `glossaries-extra` the `glossdescfont` and `glossdesc` category attributes can be used to adjust font and, for `\glossentrydesc`, case-changing. If you just use `\glsentrydesc`, the style won't be influenced by those attributes.

```
\glossentrysymbol{<entry-label>}
```

This is used in glossary styles to display the `symbol`. Unlike `\glsentrysymbol`, this command will trigger a warning if the entry hasn't been defined. The sentence case version is:

```
\Glossentrysymbol{<entry-label>}
```

glossaries-extra

With `glossaries-extra` you can use the `glosssymbolfont` category attribute to adjust font. If you just use `\glsentrysymbol`, the style won't be influenced by that attribute.

glossary styles that support groups can obtain the group title with:

```
\glsgetgrouptitle{⟨group-label⟩}
```

This gets the title associated with the group identified by *⟨group-label⟩* and displays it. The title is determined as follows:

- if *⟨group-label⟩* is a single character or either `glsnumbers` or `glsymbols` and the command `\⟨group-label⟩groupname` exists, then that command is used as the title.
- otherwise the title is the same as the group label.

`glossaries-extra`

The `glossaries-extra` package provides improved support for group titles, but redefines `\glsgetgrouptitle` to accommodate the enhanced features.

### 13.2.2. Hyper Group Navigation

```
\usepackage{glossary-hypernav}
           automatically loaded with \usepackage{glossaries}
```

There is no need to load this package. It will automatically be loaded by `glossaries`. If `hyperref` hasn't been loaded, these commands will still be available but simply won't form hyperlinks or targets, so they can be used in glossary styles without any need to check for hyperlink support. (However, the result might look a bit strange if the reader expects the navigation text to be hyperlinks.)

```
\glsnavhypertarget [⟨glossary-label⟩] {⟨group-label⟩} {⟨group-title⟩}
```

Creates a hyper target for a group. The *⟨glossary-label⟩* argument is the label that identifies the glossary. If omitted, `\currentglossary` is assumed. The *⟨group-label⟩* argument is the label that identifies the group. This additionally writes information to the `aux` file so that on the next  $\LaTeX$  run, `\glsnavigation` will have a list of groups for the glossary.

For example, the `indexhypergroup` includes a group target in the header:

```
\renewcommand*{\glsgroupheading}[1]{%
  \item\glstreegroupheaderfmt
    {\glsnavhypertarget{#1}{\glsgetgrouptitle{#1}}}
%
  \indexspace
}
```

```
\glsnavhypergroupdotarget {<glossary-label>} {<group-label>} {<group-
title>}
```

This is used by `\glsnavhypertarget` to create the actual hyperlink target. So if you need to change the way that the target is created, redefine this command rather than `\glsnavhypertarget`.

```
\glsnavhyperlink [<glossary-label>] {<group-label>} {<group-title>}
```

Creates a hyperlink to the given group, where the target name is obtained from:

```
\glsnavhyperlinkname [<glossary-label>] {<group-label>}
```

The `<glossary-label>` argument is the label that identifies the glossary. If omitted, `\currentglossary` is assumed. Typically, styles don't need to explicitly use this command as they can use the following command instead.

Version 4.53 has switched from using an internal comma-separated list to a sequence command. If you have hacked the internal commands you will need to either rollback to v4.52 or switch to the newer commands.

```
\glsnavigation
```

Displays a simple navigation list, where each item in the list has a hyperlink created with `\glsnavhyperlink` to a group, where the group title is obtained with `\glsgetgrouptitle`. Each item in the list has the title and hyperlink set with:

```
\glsnavigationitem{<group-label>}
```

This fetches the corresponding group title and creates a hyperlink with `\glsnavhyperlink`. The items are separated with:

```
\glshypernavsep
```

The default definition is `\space\textbar\space` which creates a vertical bar with a space on either side.



```
\glsymbolnav
```

Just produces a simple set of navigation links for the symbol and number groups and ends with the `\glshypernavsep` separator. Unlike `\glsnavigation`, there's no check to determine if the glossary has those groups. This command is a historical artefact leftover from early versions. There should be little need for it now as `\glsnavigation` should include all the groups that are in the glossary.

### 13.2.3. Glossary Style Commands

The commands listed in this section should all be redefined by every glossary style. However, a style may be based on another style, in which case the style definitions should start with `\setglossarystyle` and then only redefine the commands that should differ from the inherited style.

Note that `\print<...>glossary` sets `\currentglossary` to the current glossary label, so it's possible to create a glossary style that varies according to the glossary type, but this will generally limit its usefulness.

```
\begin{theglossary}<content>\end{theglossary}
```

The actual content of the glossary is placed inside the `theglossary` environment. For example, the list style redefines this to start and end the description environment:

```
\renewenvironment{theglossary}%
  {\glslistinit\begin{description}}{\end
  {description}}
```

Immediately after `\begin{theglossary}` comes the header:

```
\glossaryheader
```

For example, the `longheader` style has:

```
\renewcommand*{\glossaryheader}{%
  \bfseries \entryname & \bfseries \description-
  name\tabularnewline\endhead}
```

(Note that this is not the same as the preamble which occurs before the start of the `theglossary` environment and is not part of the style.)

The rest of the contents of the `theglossary` environment is divided into letter group blocks. Each block starts with the group heading:

```
\glsgroupheading{⟨group-label⟩}
```

Note that the argument is a label that identifies the group. Some glossary styles redefine this command to do nothing, which means there's no group title displayed. Others, such as glossary styles, will obtain the group title from the  $\langle group-label \rangle$  and format the title to fit the style.

The  $\langle group-label \rangle$  is typically obtained by the indexing application, based on the sort value.

With Options 1, 2 and 3, groups only related to top level (level 0) entries.

glossaries-extra

The `glossaries-extra` package additionally provides `\gls subgroupheading` to support sub-groups, which are only available with Options 4 and 5. Glossary styles should only include a redefinition of `\gls subgroupheading` if the style is specifically designed for use with `glossaries-extra` as the command won't be available with just the base `glossaries` package. (A default definition will be provided if this command isn't set with `glossaries-extra`.)

After the group heading, each top level (level 0) entry line within the group is formatted with:

```
\glossentry{⟨entry-label⟩}{⟨number-list⟩}
```

The first argument is the entry's label. The second is the number list that was collated by the indexing application.

The  $\langle number-list \rangle$  argument may be empty or `\relax`, or may contain the number list encapsulated with `\glossaryentrynumbers`, possibly prefixed with a pre-number list hook. If  $\langle number-list \rangle$  is an unbraced `\relax`, that typically indicates that Options 2 or 3 were used and the entry was a parent that wasn't indexed but has been included because it has an indexed child entry. An empty  $\langle number-list \rangle$  argument is more likely to be a result of Options 1, 4 or 5, in which case nothing can be inferred about whether or not the entry was actually indexed.

Each sub-entry line is formatted with:

```
\subglossentry{⟨level⟩}{⟨entry-label⟩}{⟨number-list⟩}
```

where  $\langle level \rangle$  is the hierarchical level. The other arguments are the same as for `\glossentry`. Some glossary styles redefine this command to simply use `\glossentry`, in which case the glossary will have a flat (no-hierarchy) appearance, but the indexing application will still take the hierarchy into account when ordering the entries.



The glossary styles should redefine `\glossentry` and `\subglossentry` to fit the style, but they should not redefine the markup in `\number-list`. If the style doesn't support number lists, then the `\number-list` argument should simply be ignored.

The glossary styles will typically redefine `\glossentry` to use `\glsentryitem` to support the `entrycounter` option, `\glstarget` to create the hyperlink target, and will use `\glossentryname` to format the name.

Similarly, `\subglossentry` will typically start with `\glssubentryitem` to support the `subentrycounter` option. Again `\glstarget` is needed to create the hyperlink target. The entry name may be displayed with `\glossentryname` or may be omitted to support homographs.

Between each letter group block (that is, before all instances of `\glsgroupheading` except for the first one) is the group skip:



```
\glsgroupskip
```

Some glossary styles redefine this to do nothing, but some may define it to create a vertical gap in order to visually separate the letter groups. Most of the predefined styles use the `\ifglsnogroupskip` conditional within this command to determine whether or not to add the gap.

For example, the list style defines `\glsgroupskip` as follows:

```
\renewcommand*{\glsgroupskip}{\ifglsnogroup-
skip\else\indexspace\fi}
```

This has the conditional inside the definition of `\glsgroupskip` which allows it to be changed after the style has been set. This causes a problem for tabular-like styles, so those need to have the conditional outside of the definition. For example, the long-booktabs style has:

```
\ifglsnogroupskip
\renewcommand*{\glsgroupskip}{}%
\else
\renewcommand*{\glsgroupskip}{\glspenaltygroup-
skip}%
\fi
```

This requires the conditional to be set before the style definitions are performed.

### Example 46: Creating a completely new style

If you want a completely new style, you will need to redefine all of the commands and the environment listed above in this section.

For example, suppose you want each entry to start with a bullet point. This means that the glossary should be placed in the `itemize` environment, so `theglossary` should start and end that environment. Let's also suppose that you don't want anything between the glossary groups (so `\glsgroupheading` and `\glsgroupskip` should do nothing) and suppose you don't want anything to appear immediately after `\begin{theglossary}` (so `\glossaryheader` should do nothing). In addition, let's suppose the symbol should appear in brackets after the name, followed by the description and last of all the number list should appear within square brackets at the end. Then you can create this new glossary style, called, say, `mylist`, as follows:

```
\newglossarystyle{mylist}{%
% put the glossary in the itemize environment:
\renewenvironment{theglossary}%
  {\begin{itemize}}{\end{itemize}}%
% no header after \begin{theglossary}
\renewcommand*{\glossaryheader}{}%
% no visual distinction between glossary groups:
\renewcommand*{\glsgroupheading}[1]{}%
\renewcommand*{\glsgroupskip}{}%
% set how each entry should appear:
\renewcommand*{\glossentry}[2]{%
\item % bullet point
\glstarget{##1}{\glossentryname{##1}}
% the entry name
\space (\glossentrysymbol{##1})
)% the symbol in brackets
\space \glossentrydesc{##1}% the description
\space [##2]% the number list in square brackets
}%
% set how sub-entries appear:
\renewcommand*{\subglossentry}[3]{%
\glossentry{##2}{##3}}%
}
```

Note that this style creates a flat glossary, where sub-entries are displayed in exactly the same way as the top level entries. It also hasn't used `\glsentryitem` or `\glsesubentryitem` so it won't be affected by the `entrycounter`, `counterwithin` or `subentrycounter` package options.

Variations:

- You might want the entry name to start with a capital, in which case use `\Glossentryname` instead of `\glossentryname`.
- You might want to check if the symbol hasn't been set and omit the parentheses if the symbol is absent. In this case you can use `\ifgls hassymbol` (see §15):

```

\renewcommand*{\glossentry}[2]{%
  \item % bullet point
  \glstarget{##1}{\glossentryname{##1}}
% the entry name
  \ifglshassymbol{##1}% check if symbol exists
  {%
    \space (\glossentrysymbol{##1}
)% the symbol in brackets
  }%
  {}% no symbol so do nothing
  \space \glossentrydesc{##1}% the description
  \space
[##2]% the number list in square brackets
}%

```

---

### Example 47: Creating a new glossary style based on an existing style

If you want to define a new style that is a slightly modified version of an existing style, you can use `\setglossarystyle` within the second argument of `\newglossarystyle` followed by whatever alterations you require. For example, suppose you want a style like the list style but you don't want the extra vertical space created by `\indexspace` between groups, then you can create a new glossary style called, say, `mylist` as follows:

```

\newglossarystyle{mylist}{%
  \setglossarystyle{list}
% base this style on the list style
% make nothing happen between groups:
  \renewcommand{\glsgroupskip}{}%
}

```

(In this case, you can actually achieve the same effect using the list style in combination with the package option `nogroupskip`.)

---

### Example 48: Example: creating a glossary style that uses the `user1`, ..., `user6` keys

Suppose each entry not only has an associated symbol, but also units (stored in `user1`) and

### 13. Glossary Styles

dimension (stored in `user2`). Then you can define a glossary style that displays each entry in a `longtable` as follows:

```
\newglossarystyle{long6col}{%
% put the glossary in a longtable environment:
\renewenvironment{theglossary}%
  {\begin{longtable}{lp{\glsdescwidth}ccc{\glspage-
listwidth}}}%
  {\end{longtable}}%
% Set the table's header:
\renewcommand*{\glossaryheader}{%
  \bfseries Term & \bfseries Description & \bfseries Symbol &
  \bfseries Units & \bfseries Dimensions & \bfseries Page List
  \\ \endhead}%
% No heading between groups:
\renewcommand*{\glsgroupheading}[1]{%
% top level (level 0) entries displayed in a row optionally num
\renewcommand*{\glossentry}[2]{%
  \glsentryitem{##1}% Entry number if required
  \glstarget{##1}{\glossentryname{##1}}% Name
  & \glossentrydesc{##1}% Description
  & \glossentrysymbol{##1}% Symbol
  & \glsentryuseri{##1}% Units
  & \glsentryuserii{##1}% Dimensions
  & ##2% Page list
  \tabularnewline % end of row
}%
% Similarly for sub-entries (no sub-entry numbers)
\renewcommand*{\subglossentry}[3]{%
  % ignoring first argument (sub-level)
  \glstarget{##2}{\glossentryname{##2}}% Name
  & \glossentrydesc{##2}% Description
  & \glossentrysymbol{##2}% Symbol
  & \glsentryuseri{##2}% Units
  & \glsentryuserii{##2}% Dimensions
  & ##3% Page list
  \tabularnewline % end of row
}%
% Nothing between groups:
\renewcommand*{\glsgroupskip}{}%
}
```



## 14. Xindy (Option 3)

If you want to use `xindy` to sort the glossary, you must use the package option `xindy`:

```
\usepackage[xindy]{glossaries}
```

This ensures that the information is written to the indexing files using `xindy`'s raw syntax.

§1.6 covers how to use the external indexing application, and §12.3 covers the issues involved in the location syntax. This section covers the commands provided by the `glossaries` package that allow you to adjust the `xindy` style file (`xdy`) and parameters.

To assist writing information to the `xindy` style file, the `glossaries` package provides the following commands:

```
\glsopenbrace
```

which expands to (a literal open brace) and

```
\glsclosebrace
```

which expands to (a literal closing brace). This is needed because `\{` and `\}` don't expand to a simple brace character when written to a file.

```
\glspercentchar
```

Expands to (a literal percent).

```
\glstildechar
```

Expands to `~` (a literal tilde).

For example, a newline character is specified in a `xindy` style file using `~n` so you can use `\glstildechar n` to write this correctly (or you can do `\string~ (literal)n`).

```
\glsbackslash
```

Expands to `\` (a literal backslash).

In addition, if you are using a package that makes `"` (double-quote) active you can use:



```
\glsquote{<text>}
```

which will produce "*text*", where " is a literal character. Alternatively, you can use `\string` to write the double-quote character. This document assumes that the double quote character has not been made active, so the examples just use " for clarity.

If you want greater control over the `xindy` style file than is available through the `LATEX` commands provided by the `glossaries` package, you will need to edit the `xindy` style file. In which case, you must use `\noist` to prevent the style file from being overwritten by `\makeglossaries` package. For additional information about `xindy`, read the `xindy` documentation. I'm sorry I can't provide any assistance with writing `xindy` style files. If you need help, I recommend you ask on the `xindy` mailing list.<sup>1</sup>

## 14.1. Required Styles

The `xdy` file created by `\makeglossaries` starts with identifying the required styles. By default, the `tex` style is automatically added, so the `xdy` file should contain:

```
; required styles
(require "tex.xdy")
```

Any additional styles can be identified in the preamble (before `\makeglossaries`) with:

```
\GlsAddXdyStyle{<style-name>}
```

The styles are all stored as a comma-separated list, so you can list multiple styles within the argument, but avoid spurious spaces. You can reset the style list (for example, if a style needs to be identified before `tex.xdy`) with:

```
\GlsSetXdyStyles{<style name list>}
```

The argument should be a comma-separated list where, again, you need to make sure there are no spurious spaces.

<sup>1</sup><http://xindy.sourceforge.net/mailling-list.html>

## 14.2. Language and Encodings

The commands in this section are only relevant if you use `makeglossaries` or `automake`. If you are calling `xindy` explicitly you need to set the `-L` and `-C` switches appropriately.

When you use `xindy`, you need to specify the language and encoding used (unless you have written your own custom `xindy` style file that defines the relevant alphabet and sort rules). If you use `makeglossaries`, this information is obtained from the document's auxiliary (`aux`) file. The `makeglossaries` script attempts to find the `xindy` language name given your document settings, which may not match the `babel` or `polyglossia` name, using set of known mappings.

Language mappings aren't supported with `makeglossaries-lite` or `automake`.

The default is to use `\language`. The information is written to the `aux` file at the start of `\printglossary`, which means that it should match the language in the document at that point.

In the event that `makeglossaries` gets the language name wrong or if `xindy` doesn't support that language, then you can specify the required language using:

```
\GlsSetXdyLanguage[⟨glossary-type⟩]{⟨language⟩}
```

where `⟨language⟩` is the name of the language. The optional argument can be used if you have multiple glossaries in different languages. If `⟨glossary type⟩` is omitted, `\glsdefaulttype` is assumed. If a language hasn't been set for a particular glossary then the language will be as for the default glossary.

The `xindy` codepage may not simply be the file encoding but may also include sorting rules.

The default codepage will be obtained from the value of `\inputencodingname`. If that command isn't defined or is empty, `utf8` is assumed. As with `\language`, the input encoding name obtained with `\inputencodingname` may not match the `xindy` codepage name, which may include additional information, such as `ij-as-ij` (with Dutch) or `din5007` (with German).

Again, `makeglossaries` will try to adjust the codepage for known cases, but it may get it wrong. Neither `makeglossaries-lite` nor the `automake` option will make those adjustments.

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If the default is incorrect, you can specify the correct codepage using:

```
\GlsSetXdyCodePage{<codepage>}
```

where *<code-page>* is the name of the codepage. Note there's only one codepage for all glossaries as it's rare to switch encoding mid-document. For example:

```
\GlsSetXdyLanguage{dutch}  
\GlsSetXdyCodePage{ij-as-y-utf8}
```

This can also be implemented as a package option:

```
\usepackage[xindy=language=dutch,codepage=ij-as-y-  
utf8]{glossaries}
```

In the event that you want one glossary sorted with *ij-as-y* and another with *ij-as-ij* you will need to call *xindy* explicitly for each glossary.

Some *xindy* modules only support one encoding for a particular language. For example, the Latin language module only supports UTF-8

If you write your own custom *xindy* style file that includes the language settings, you need to set the language to nothing:

```
\GlsSetXdyLanguage{ }
```

(and remember to use `\noist` to prevent the style file from being overwritten).

### 14.3. Locations and Number lists

If you use *xindy*, the *glossaries* package needs to know which counters you will be using in the number list in order to correctly format the *xindy* style file. Counters specified using the `counter` package option or the *<counter>* option of `\newglossary` are automatically taken care of, but if you plan to use a different counter in the `counter` key for the `\gls-` like or `\glstext-` like commands, then you need to identify these counters *before* `\makeglossaries` using:

```
\GlsAddXdyCounters{<counter list>}
```

where *<counter list>* is a comma-separated list of counter names.

Xindy attributes normally correspond to the `encap` when using the standard `\index` command where the locations are all page numbers, but the `glossaries` package needs to incorporate the location counter as well. For example, if the `hyperbf` `encap` is used with the section counter, then the xindy attribute will be `sectionhyperbf`. This is in contrast to using `makeindex`, where the counter is incorporated in the `encap` with `\setentrycounter`.

The most likely xindy attributes (such as `pagehyperbf`) are automatically added to the `xdy` style file, but if you want to use another `encap`, you need to add it with:

```
\GlsAddXdyAttribute{<name>}
```

where *<name>* is the name of the `encap`, as used in the `format` key.

Note that `\GlsAddXdyAttribute` will define commands in the form:

```
\glsX<counter>X<format>{<H-prefix>}{<location>}
```

where *<counter>* is the location counter and *<format>* is the `encap` (identified by the *<name>* argument of `\GlsAddXdyAttribute`).

This command is provided for each counter that has been identified either by the `counter` package option, the *<counter>* option for `\newglossary` or in the argument of `\GlsAddXdyCounters`. Each command has a definition in the form:

```
\setentrycounter[<H-prefix>]{<counter>}\<format>{<location>}
```

This ensures that, if required, location hyperlinks can be supported.

The `\glsX<counter>X<format>` commands may need redefining for unusual locations where the default definition won't work with hyperlinks (see Example 51).

Take care if you have multiple instances of the same location with different formats. The duplicate locations will be discarded according to the order in which the attributes are listed. Consider defining semantic commands to use for primary references. For example:

```
\newcommand*{\primary}[1]{\hyperbf{1}}
\GlsAddXdyAttribute{primary}
```

Then in the document:

```
A \gls[format=primary]{duck} is an aquatic bird.
There are lots of different types of \gls{duck}.
```

This will give the `format=primary` instance preference over the next use that doesn't use the `format` key.

### Example 49: Custom Font for Displaying a Location

Suppose I want a bold, italic, hyperlinked location. I first need to define a command that will do this:

```
\newcommand*{\hyperbfit}[1]{\textit{\hyperbf{1}}}
```

but with `xindy`, I also need to add this as an allowed attribute:

```
\GlsAddXdyAttribute{hyperbfit}
```

Now I can use it in the optional argument of commands like `\gls`:

```
Here is a \gls[formathyperbfit]{sample} entry.
```

(where “sample” is the label of the required entry).

Note that `\GlsAddXdyAttribute` has no effect if `\noist` is used or if `\makeglossaries` is omitted. `\GlsAddXdyAttribute` must be used before `\makeglossaries`. Additionally, `\GlsAddXdyCounters` must come before `\GlsAddXdyAttribute`.

If the locations include robust or protected formatting commands, then you need to add a location style using the appropriate `xindy` syntax using:

```
\GlsAddXdyLocation[⟨H-prefix⟩]{⟨name⟩}{⟨definition⟩}
```

where `⟨name⟩` is the name of the location style and `⟨definition⟩` is the `xindy` definition. The optional argument `⟨H-prefix⟩` is needed if `\theH⟨counter⟩` either isn't defined or is different from `\the⟨counter⟩`. Be sure to also read §12.3 for some issues that you may encounter.



Note that `\GlsAddXdyLocation` has no effect if `\noist` is used or if `\makeglossaries` is omitted. `\GlsAddXdyLocation` must be used before `\makeglossaries`.

### Example 50: Custom Numbering System for Locations

Suppose I decide to use a somewhat eccentric numbering system for sections where I redefine `\thesection` as follows:



```
\renewcommand*{\thesection}{[\thechapter]\arabic
{section}}
```

If I haven't used the package option `counter=section`, then I need to specify that the section counter will be used as a location counter:



```
\GlsAddXdyCounters{section}
```

Next I need to add the location syntax:



```
\GlsAddXdyLocation{section}{:sep "[" "arabic-
numbers" :sep "]"
"arabic-numbers"
}
```

This assumes that `\thechapter` is defined as `\arabic{chapter}`.

Note that if I have further decided to use the `hyperref` package and want to redefine `\theHsection` as:



```
\renewcommand*{\theHsection}{\thepart.\thesection}
\renewcommand*{\thepart}{\Roman{part}}
```

then I need to modify the `\GlsAddXdyLocation` code above to:



```
\GlsAddXdyLocation["roman-numbers-uppercase"]
{section}{:sep "["
"arabic-numbers" :sep "]" "arabic-numbers"
```

```
}
```

Since `\Roman` will result in an empty string if the counter is zero, it's a good idea to add an extra location to catch this:

```
\GlsAddXdyLocation{zero.section}{:sep "["
  "arabic-numbers" :sep "]" "arabic-numbers"
}
```

This example is illustrated in the sample file `samplexdy2.tex`.

### Example 51: Locations as Dice

This example will cause `xindy` special characters to appear in the location, which means that location escaping will need to be enabled:

```
\usepackage[xindy,esclocations]{glossaries}
\glswrallowprimitivemodstrue
```

Suppose I want a rather eccentric page numbering system that's represented by the number of dots on dice. The `stix` package provides `\dicei`, ..., `\dicevi` that represent the six sides of a die. I can define a command that takes a number as its argument. If the number is less than seven, the appropriate `\dice⟨n⟩` command is used otherwise it does `\dicevi` the required number of times with the leftover in a final `\dice⟨n⟩`. For example, the number 16 is represented by `\dicevi\dicevi\diceiv` ( $6 + 6 + 4 = 16$ ). I've called this command `\tallynum` to match the example given earlier in §12.3:

```
\newrobustcmd{\tallynum}[1]{%
  \ifnum\number1<7
    $\csname dice\romannumeral1\endcsname$%
  \else
    $\dicevi$%
    \expandafter\tallynum\expandafter{\numexpr1-6}%
  \fi
}
```

Here's the counter command:

## 14. Xindy (Option 3)

```
\newcommand{\tally}[1]{\tallynum{\arabic{1}}}
```

The page counter representation (`\thepage`) needs to be changed to use this command:

```
\renewcommand*{\thepage}{\tally{page}}
```

The `\tally` command expands to `\tallynum {number}` so this needs a location class that *exactly* matches this format:

```
\GlsAddXdyLocation{tally}{%  
:sep "\string\tallynum\space\glspopenbrace"  
"arabic-numbers"  
:sep "\glsclosebrace"  
}
```

The space between `\tallynum` and `{number}` is significant to xindy so `\space` is required.

The sample file `samplexdy.tex`, which comes with the `glossaries` package, uses the default page counter for locations, and it uses the default `\glsnumberformat` and a custom `\hyperbfit` format. A new xindy location called “tallynum”, as illustrated above, is defined to make the page numbers appear as dice. In order for the location numbers to hyperlink to the relevant pages, I need to redefine the necessary `\glsX{counter}X{format}` commands:

```
\renewcommand{\glsXpageXglsnumberformat}[2]{%  
\linkpagenumber2%  
}  
  
\renewcommand{\glsXpageXhyperbfit}[2]{%  
\textbf{\em\linkpagenumber2}%  
}  
  
\newcommand{\linkpagenumber}[2]{\hyperlink{page.2}{1  
{2}}}
```

Note that the second argument of `\glsXpageXglsnumberformat` is in the form `\tallynum {number}` so the line

```
\linkpagenumber2%
```



does

```
\linkpagenumber\tallynum{⟨number⟩}
```

so `\tallynum` is the first argument of `\linkpagenumber` and `⟨number⟩` is the second argument.

This method is very sensitive to the internal definition of the location command. If you are defining your own command, you control how it expands, but if you are using a command provided by another package, be aware that it may stop working in a future version of that package.

### Example 52: Locations as Words not Digits

This example will cause `xindy` special characters to appear in the location, which means that location escaping will need to be enabled:

```
\usepackage[xindy,esclocations]{glossaries}
\glswrallowprimitivemodstrue
```

Suppose I want the page numbers written as words rather than digits and I use the `fmtcount` package to do this. I can redefine `\thepage` as follows:

```
\renewcommand*{\thepage}{\Numberstring{page}}
```

This *used* to get expanded to

```
\protect \Numberstringnum {⟨n⟩}
```

where `⟨n⟩` is the Arabic page number. This means that I needed to define a new location with the form:

```
\GlsAddXdyLocation{Numberstring}
{:sep "\string\protect\space
\string\Numberstringnum\space\glsclosebrace"
"arabic-numbers" :sep "\glsclosebrace"}
```

#### 14. Xindy (Option 3)

and if I'd used the `\linkpagenumber` command from the previous example, it would need *three* arguments (the first being `\protect`):

```
\newcommand{\linkpagenumber}[3]{\hyperlink{page.3}{12{3}}}
```

The internal definition of `\Numberstring` has since changed so that it now expands to

```
\Numberstringnum {<n>}
```

(no `\protect`). This means that the location class definition must be changed to:

```
\GlsAddXdyLocation{Numberstring}{% no \protect now!  
:sep "\string\Numberstringnum\space\glsopenbrace"  
"arabic-numbers" :sep "\glsclosebrace"}
```

and `\linkpagenumber` goes back to only two arguments:

```
\newcommand{\linkpagenumber}[2]{\hyperlink{page.2}{1  
{2}}}
```

The other change is that `\Numberstring` uses

```
\the\value{<counter>}
```

instead of

```
\expandafter\the\csname c@<counter>\endcsname
```

so it hides `\c@page` from the location escaping mechanism (see §12.3). This means that the page number may be incorrect if the indexing occurs during the output routine.

A more recent change to `fmtcount` (v3.03) now puts three instances of `\expandafter` before `\the\value` which no longer hides `\c@page` from the location escaping mechanism, so the page numbers should once more be correct. Further changes to the `fmtcount` package may cause a problem again.

When dealing with custom formats where the internal definitions are outside of your control and liable to change, it's best to provide a wrapper command.

#### 14. Xindy (Option 3)

Instead of directly using `\Numberstring` in the definition of `\thepage`, I can provide a custom command in the same form as the earlier `\tally` command:

```
\newcommand{\customfmt}[1]{\customfmtnum{\arabic{1}}}  
}  
\newrobustcmd{\customfmtnum}[1]{\Numberstringnum{1}}
```

This ensures that the location will always be written to the indexing file in the form:

```
:locref "\glsopenbrace\glsclosebrace\glsopen-  
brace\string\customfmtnum {<n>\glsclosebrace"
```

So the location class can be defined as:

```
\GlsAddXdyLocation{customfmt}{  
:sep "\string\customfmtnum\space\glsopenbrace"  
"arabic-numbers"  
:sep "\glsclosebrace"}
```

The sample file `samplexdy3.tex` illustrates this.

---

In the number list, the locations are sorted according to the list of provided location classes. The default ordering is:

1. roman-page-numbers (i, ii, ...);
2. arabic-page-numbers (1, 2, ...);
3. arabic-section-numbers (for example, 1.1 if the compositor is a full stop or 1-1 if the compositor is a hyphen);
4. alpha-page-numbers (a, b, ...);
5. Roman-page-numbers (I, II, ...);
6. Alpha-page-numbers (A, B, ...);
7. Appendix-page-numbers (for example, A.1 if the Alpha compositor, see `\gls-SetAlphaCompositor`, is a full stop or A-1 if the Alpha compositor is a hyphen);
8. user defined location names (as specified by `\GlsAddXdyLocation` in the order in which they were defined);
9. see (cross-referenced entries).

glossaries-extra

With `glossaries-extra` `seealso` is appended to the end of the list.

This ordering can be changed using:

```
\GlsSetXdyLocationClassOrder{<location names>}
```

where each location name is delimited by double quote marks and separated by white space. For example:

```
\GlsSetXdyLocationClassOrder{
  "arabic-page-numbers"
  "arabic-section-numbers"
  "roman-page-numbers"
  "Roman-page-numbers"
  "alpha-page-numbers"
  "Alpha-page-numbers"
  "Appendix-page-numbers"
  "see"
}
```

(Remember to add "seealso" if you're using `glossaries-extra`.)

Note that `\GlsSetXdyLocationClassOrder` has no effect if `\noist` is used or if `\makeglossaries` is omitted. `\GlsSetXdyLocationClassOrder` must be used before `\makeglossaries`.

If a number list consists of a sequence of consecutive numbers, the range will be concatenated. The number of consecutive locations that causes a range formation defaults to 2, but can be changed using:

```
\GlsSetXdyMinRangeLength{<value>}
```

The `<value>` may be the keyword `none`, to indicate no range formation, or a number. For example:

```
\GlsSetXdyMinRangeLength{3}
```

See the `xindy` manual for further details on range formations.



Note that `\GlsSetXdyMinRangeLength` has no effect if `\noist` is used or if `\makeglossaries` is omitted. `\GlsSetXdyMinRangeLength` must be used before `\makeglossaries`.

See also §12.2.

## 14.4. Glossary Groups

The glossary is divided into groups according to the first letter of the sort key. The glossaries package also adds a number group by default, unless you suppress it in the `xindy` package option. For example:



```
\usepackage[xindy=glsnumbers=false]{glossaries}
```

Any entry that doesn't go in one of the letter groups or the number group is placed in the default group. If you want `xindy` to sort the number group numerically (rather than by a string sort) then you need to use `xindy`'s `numeric-sort` module:



```
\GlsAddXdyStyle{numeric-sort}
```

With the default `glsnumbers=true`, the number group will be placed before the "A" letter group. This is done in the `define-letter-group` block in the `xdy` file:

```
(define-letter-group "glsnumbers"
  :prefixes ("0" "1" "2" "3" "4" "5" "6" "7" "8" "9")
  :before "A")
```

If you are not using a Roman alphabet, you need to change this with:



```
\GlsSetXdyFirstLetterAfterDigits{<letter>} modifier: *
```

{letter} where `<letter>` is the first letter of your alphabet. This will change `:before "A"` to `:before "<letter>"`.

A starred version of this command was added to v4.33 which sanitized `<letter>` before writing it to the `xdy` file to protect it from expansion with `inputenc`. This shouldn't be necessary with recent  $\text{\LaTeX}$  kernels.

Alternatively you can use:

```
\GlsSetXdyNumberGroupOrder{<relative location>}
```

*modifier: \**

This will change `:before "A"` to `<relative location>`. Again, a starred version was provided to sanitize the argument, which should no longer be necessary unless `"` (double-quote) is active.

For example:

```
\GlsSetXdyNumberGroupOrder{:after "Z"}
```

will put the number group after the “Z” letter group.

Note that these commands have no effect if `\noist` is used or if `\makeglossaries` is omitted. `\GlsSetXdyFirstLetterAfterDigits` must be used before `\makeglossaries`.

## 15. Utilities

This section describes the utility commands provided with the base glossaries package.

glossaries-extra

The `glossaries-extra` package provides extra utility commands, such as `\glsxtrusefield` and `\glsxtrfieldformatlist`. See the `glossaries-extra` manual for further details.

### 15.1. hyperref

The `hyperref` package needs to be loaded before `glossaries` to ensure that the commands provided by `hyperref` are only used if they have been defined.

```
\glsdisablehyper
```

This disables the creation of hyperlinks and targets by commands such as `\gls hyperlink`, the `\gls`-like and `\glstext`-like commands and `\glstarget`. This setting is the default if `hyperref` hasn't been loaded.

The commands that normally create a hyperlink will use:

```
\glsdonohyperlink{<target>}{<text>}
```

The internal command used by `\glstarget` to create a target is just set to `\@secondoftwo`.

```
\glsenablehyper
```

This enables the creation of hyperlinks and targets, and is the default if `hyperref` has been loaded.

The internal command used by `\glstarget` to create a target is set to:

```
\glsdohypertarget{<target>}{<text>}
```

This will include the debugging information if `debug=showtargets` has been used, but also measures the height of `<text>` so that it can place the actual target at the top of `<text>` rather

than along the baseline. This helps to prevent  $\langle text \rangle$  from scrolling off the top of the page out of sight.

The corresponding command that's used to link to this target is:

```
\glsdohyperlink{ $\langle target \rangle$ }{ $\langle text \rangle$ }
```

This includes the debugging information, if applicable, and creates a link with `\hyperlink`.

Both the above target and link commands have a corresponding hook that does nothing by default. These commands are not used if hyperlinks have been disabled (or if `hyperref` has not been loaded).

```
\glsdohypertargethook{ $\langle target \rangle$ }{ $\langle text \rangle$ }
```

This hook occurs after the height of the  $\langle text \rangle$  has been measured and before the target is inserted.

```
\glsdohyperlinkhook{ $\langle target \rangle$ }{ $\langle text \rangle$ }
```

This hook occurs immediately before the link is created with `\hyperlink`.

```
\glslabelhypertarget{ $\langle target \rangle$ }{ $\langle text \rangle$ }
```

This command is provided for use in `\glsdohypertargethook` and will simulate a label corresponding to the target. It's primarily intended for use with `\pageref` rather than `\ref` as there is no corresponding counter to provide a numeric value. It is an alternative to using the `entrycounter` option. The label is given by  $\langle prefix \rangle \langle target \rangle$ , where the  $\langle prefix \rangle$  is obtained by expanding:

```
\glslabelhypertargetprefix initial: empty
```

The target  $\langle text \rangle$  will be the title corresponding to the label (which can be referenced with `\nameref`). Since there is no numeric value, the text obtained with `\ref` will either be empty or the name of the most recent entry in the glossary list where the `hypertarget` occurs. For example:

```
\renewcommand{\glsdohypertargethook}[2]{\glslabel-  
hypertarget{#1}{#2}}
```

Certain commands that may occur in the  $\langle text \rangle$  argument, such as `\glossentryname`, are locally redefined during the protected write to the `aux` file. These redefinitions are performed by:



```
\glslabelhypertargetdefs
```

You can append any additional redefinitions of problematic commands to this hook.

The “value” part of the label (that is, the text produced with `\ref`) is obtained by expanding:

```
\glslabelhypertargetvalue
```

The default definition expands

```
\glsentryname\glscurrententrylabel
```

if `\glscurrententrylabel` is defined and not empty. Otherwise it expands to nothing.

```
\glstexorpdfstring{<TEX>}{<PDF>}
```

If you’re not sure whether or not the `hyperref` package will be loaded, this command will use `\texorpdfstring` if that command has been defined, otherwise it will simply expand to `<TEX>`.

## 15.2. Case-Changing

These commands may be used to perform a case change.

Ensure you have at least `mfirstuc v2.08` installed to take advantage of improved case-changing. If you also use `glossaries-extra`, make sure you have at least `v1.49`. See the `mfirstuc` manual for further details.

```
\glsuppercase{<text>}
```

An expandable command that converts `<text>` to uppercase (all caps). This is used by commands such as `\GLS` and `\GLStext` and is affected by `\glsmfuexcl`.

```
\glslowercase{<text>}
```

An expandable command that converts  $\langle text \rangle$  to lowercase. This isn't used by the glossaries package, but you may find it useful with acronym or `abbreviation` font commands for small caps styles. This command is affected by `\glsmfuexcl`.

```
\MFUsentencecase{\langle text \rangle}
```

This command is used by sentence case commands, such as `\Glsentrytext`, when expanding in a PDF bookmark.

This command is actually defined by `mfirstuc v2.08+`, but if an old version of `mfirstuc` is installed, the glossaries package will provide the same command. This command is affected by `\glsmfuexcl`.

```
\glssentencecase{\langle text \rangle}
```

Converts  $\langle text \rangle$  to sentence case. This is used by commands such as `\Gls` and `\Glstext`, and also by commands like `\Glsentrytext` in the document text.

The default definition is to use the robust `\makefirstuc` provided by the `mfirstuc` package. If you need an expandable command, use `\MFUsentencecase` instead.

Note that `\makefirstuc` internally uses `\glsmakefirstuc`, which is provided by `mfirstuc`. The default definition is:

```
\newcommand*{\glsmakefirstuc}[1]{\MFUsentencecase
{\unexpanded{1}}}
```

The `mfirstuc=expanded` package option will redefine this command without `\unexpanded`.

The reason for the use of `\unexpanded` is mostly a backward-compatibility feature, as without it there is now the possibility for fragile commands to expand prematurely and cause an error.

This is because the  $\text{\LaTeX}3$  kernel command used by `\MFUsentencecase` expands its argument before applying the case change. With previous versions of `mfirstuc`, `\glsmakefirstuc` would simply apply the case change to the first token.

Suppose a document created with `mfirstuc v2.07` had something like:

```
\newglossaryentry{sample}{
  name={sample},
  description={an example with a \fragilecommand}
}
```

and a glossary style is used that performs automated sentence-casing for the description (for example, with the `topic` style, provided by `glossaries-extra`), then this would essentially do:

```
\makefirstuc{an example with a \fragilecommand}
```

With old versions of `mfirstuc`, this would simply end up as:

```
\MakeTextUppercasean example with a \fragilecommand
```

so the fragile command is unaffected.

However, with `mfirstuc v2.08` and `mfirstuc=expanded` this would end up as:

```
\MFUsentencecasean example with a \fragilecommand
```

and the underlying `\text_titlecase_first:n` will expand the entire argument, which will break the fragile command.

The use of `\unexpanded` prevents this from happening, but if you don't have fragile commands and you want the content to be expanded, then use `mfirstuc=expanded`.



Note that the original definition of `\glsmakefirstuc` is a short command, which means no paragraph breaks are permitted. The glossaries's `mfirstuc` option (as from v4.58) will redefine `\glsmakefirstuc` as a long command instead.



```
\glscapitalisewords{<content>}
```

Converts *<text>* to title case. The default definition is to use the robust `\capitalisewords` provided by `mfirstuc`. You may need to redefine this command to use `\capitalisefmtwords` instead.



```
\glsmfuexcl{<cs>}
```

This uses `\MFUexcl` with `mfirstuc v2.08+`, otherwise its defined in the same way (so it won't affect `\makefirstuc` but will affect commands like `\glsuppercase`).



```
\glsmfublocker{<cs>}
```

This uses `\MFUblocker` with `mfirstuc v2.08+`, otherwise it simply uses `\glsmfuexcl`.



```
\glsmfuaddmap{<cs1>}{<cs2>}
```

This uses `\MFUaddmap` with `mfirstuc v2.08+`, otherwise it simply does

```
\glsmfuexcl{⟨cs⟩}
\glsmfublocker{⟨Cs⟩}
```

This uses `\MFUblocker` if defined, otherwise it simply uses `\glsmfuexcl`.

## 15.3. Loops

Some of the commands described here take a comma-separated list as an argument. As with L<sup>A</sup>T<sub>E</sub>X's `\@for` command, make sure your list doesn't have any unwanted spaces in it as they don't get stripped. (Discussed in more detail in §2.7.2 of “L<sup>A</sup>T<sub>E</sub>X for Administrative Work”.<sup>a</sup>)

<sup>a</sup>[dickimaw-books.com/latex/admin/html/docsvlist.shtml#spacesinlists](http://dickimaw-books.com/latex/admin/html/docsvlist.shtml#spacesinlists)

```
\foralllglossaries[⟨types⟩]{⟨cs⟩}{⟨body⟩}
```

This iterates through `⟨types⟩`, a comma-separated list of glossary labels (as supplied when the glossary was defined). At each iteration the command `⟨cs⟩` is defined to the glossary label for the current iteration and `⟨body⟩` is performed. If `⟨types⟩` is omitted, the default is to iterate over all non-ignored glossaries.

```
\foralllacronyms{⟨cs⟩}{⟨body⟩}
```

This is like `\foralllglossaries` but only iterates over the lists of acronyms (that have previously been declared using `\DeclareAcronymList` or the `acronymlists` package option). This command doesn't have an optional argument. If you want to explicitly say which lists to iterate over, just use the optional argument of `\foralllglossaries`.

The `glossaries-extra` package provides an analogous command `\foralllabbreviationlists`.

```
\forallsentries[⟨type⟩]{⟨cs⟩}{⟨body⟩}
```

This iterates through all entries in the glossary given by  $\langle type \rangle$ . At each iteration the command  $\langle cs \rangle$  is defined to the entry label for the current iteration and  $\langle body \rangle$  is performed. If  $\langle type \rangle$  is omitted, `\glsdefaulttype` is used.

```
\foralllglsentries[\langle types \rangle]{\langle cs \rangle}{\langle body \rangle}
```

This is just a nested loop that essentially does:

```
\foralllglossaries[\langle types \rangle]{\langle type-cs \rangle}{\langle % outer loop
\forallglsentries[\langle type-cs \rangle]{\langle cs \rangle}{\langle body \rangle}% inner loop
}}
```

If  $\langle types \rangle$  is omitted, the default is the list of all non-ignored glossaries. (The current glossary label can be obtained using `\glsentrytype{\langle cs \rangle}` within  $\langle body \rangle$ .)

glossaries-extra

The `glossaries-extra` package provides commands like `\glsxtrforcsvfield` to iterate over any fields that contain comma-separated lists.

## 15.4. Conditionals

glossaries-extra

The `glossaries-extra` package provides many more conditional commands.

```
\ifglossaryexists{\langle glossary-type \rangle}{\langle true \rangle}{\langle false \rangle}
```

modifier: \*

This checks if the glossary given by  $\langle glossary-type \rangle$  exists (that is, if it has been defined). If it does exist  $\langle true part \rangle$  is performed, otherwise  $\langle false part \rangle$ .

The unstarred form will treat ignored glossaries as non-existent. The starred form will consider them as existing. So both forms will do  $\langle true \rangle$  if  $\langle glossary-type \rangle$  was defined by `\newglossary`, but only the starred form will do  $\langle true \rangle$  if  $\langle glossary-type \rangle$  was defined with `\newignoredglossary`.

For example, given:

```
\newignoredglossary{common}
```

then

```
\ifglossaryexists{common}{true}{false}
\ifglossaryexists*{common}{true}{false}
```

will produce “false true”.

```
\ifglsentryexists{<entry-label>}{<true>}{<false>}
```

This checks if the glossary entry given by  $\langle entry-label \rangle$  exists. If it does exist then  $\langle true \rangle$  is performed, otherwise this does  $\langle false \rangle$ . Simply uses etoolbox’s `\ifcsundef` so can expand.

```
\glsdoifexists{<entry-label>}{<code>}
```

Does  $\langle code \rangle$  if the entry given by  $\langle entry-label \rangle$  exists. If it doesn’t exist, an undefined error is generated.

```
\glsdoifnoexists{<entry-label>}{<code>}
```

Does  $\langle code \rangle$  if the entry given by  $\langle entry-label \rangle$  doesn’t exist. If it does exist, an already defined error is generated.

```
\glsdoifexistsorwarn{<entry-label>}{<code>}
```

As `\glsdoifexists` but issues a warning rather than an error if the entry doesn’t exist.

```
\glsdoifexistsordo{<entry-label>}{<true>}{<false>}
```

Does  $\langle code \rangle$  if the entry given by  $\langle entry-label \rangle$  exists otherwise it generates an undefined error and does  $\langle else code \rangle$ .

#### glossaries-extra

The undefined/already defined errors can be converted to warnings with `undefaction=warn`.

```
\ifglsused{<entry-label>}{<true>}{<false>}
```

Tests the entry's first use flag. If the entry has been used,  $\langle true \rangle$  will be done, otherwise (if the entry has been defined)  $\langle false \rangle$  will be done. If the entry isn't defined, then an undefined error will occur and neither  $\langle true \rangle$  nor  $\langle false \rangle$  will be done (see §7).

This means that `\ifglused` is unreliable with `bib2gls` as no entries are defined on the first  $\LaTeX$  run, which means there's no way of determining if it has been used, so `glossaries-extra` provides a similar command:

```
\GlsXtrIfUnusedOrUndefined{\langle entry-label \rangle}{\langle true \rangle}{\langle false \rangle}
```

In this case,  $\langle true \rangle$  will be done if the entry hasn't been used or hasn't been defined, which is essentially the logical negation of `\ifglused` for defined entries.

Some of the following `\ifglshas<xxx>` commands use `\glsdoifexists`. In those cases, the  $\langle true \rangle$  or  $\langle false \rangle$  parts are only performed if the entry exists. Neither are done if the entry doesn't exist.

```
\ifglshaschildren{\langle entry-label \rangle}{\langle true \rangle}{\langle false \rangle}
```

This does  $\langle true \rangle$  if any entries in the same glossary as  $\langle entry-label \rangle$  had `parent={\langle entry-label \rangle}`. This is inefficient and time-consuming if there are a large number of entries defined. Uses `\glsdoifexists`.

`bib2gls`

If you use `bib2gls`, a more efficient method is to use the `save-child-count` resource option and test the value of the `childcount` field with `\GlsXtrIfHasNonZeroChildCount`.

If you have at least `glossaries v4.59` and `datatool v3.0`, the sort function used by `\printnoidxglossary` may now also locally set the `childcount` field during the pre-sort processing. This means that the field can be accessed in glossary hooks. If the field is not set, then the entry doesn't have children included in the glossary. (Not available with `sort=def` or `sort=use`.) Therefore, a more efficient test in this case is to use `\ifgl$fieldvoid`. For example:

```
\ifgl$fieldvoid{childcount}{\glscurrententrylabel}
{no children}{has one or more children}
```

Bear in mind that `\printnoidxglossary` only sets this field for an entry once a child of the entry is encountered in the list. This means that with `\printnoidxglossary`, the `childcount` field will never be set to 0.

```
\ifglshasparent{⟨entry-label⟩}{⟨true⟩}{⟨false⟩}
```

This does `⟨true⟩` if the `parent` field is non-empty for the entry identified by `⟨entry-label⟩`. Uses `\glsdoifexists`.

```
\ifglshassymbol{⟨entry-label⟩}{⟨true⟩}{⟨false⟩}
```

A robust command that does `⟨true⟩` if the `symbol` field is non-empty and not `\relax` for the entry identified by `⟨entry-label⟩`.

```
\ifglshaslong{⟨entry-label⟩}{⟨true⟩}{⟨false⟩}
```

A robust command that does `⟨true⟩` if the `long` field is non-empty and not `\relax` for the entry identified by `⟨entry-label⟩`.

```
\ifglshasshort{⟨entry-label⟩}{⟨true⟩}{⟨false⟩}
```

A robust command that does `⟨true⟩` if the `short` field is non-empty and not `\relax` for the entry identified by `⟨entry-label⟩`.

```
\ifglshasdesc{⟨entry-label⟩}{⟨true⟩}{⟨false⟩}
```

Expands to `⟨true⟩` if the `description` is empty for the entry identified by `⟨entry-label⟩`, otherwise expands to `⟨false⟩`. Compare with:

```
\ifglsdescsuppressed{⟨entry-label⟩}{⟨true⟩}{⟨false⟩}
```

This expands to `⟨true⟩` if `description={\nopostdesc}` for the entry identified by `⟨entry-label⟩` otherwise expands to `⟨false⟩`.

If `ℒTEX3` syntax is enabled, the following conditional function may also be used:



```
\glossaries_if_has_nonsuppressed_desc:nTF <entry-label>
{\<true>} {\<false>}
\glossaries_if_has_nonsuppressed_desc_p:n <entry-label>
```

This returns true if the entry identified by *<entry-label>* exists and has the `description` field set to a non-empty value that isn't simply `\nopostdesc`.

There are also commands available for arbitrary fields. Some may allow the field to be identified by its corresponding key (such as `description`) but some require the internal field label (such as `desc`). See Table 4.1 for the internal field labels that correspond to each key. If you provide your own keys, for example with `\glsaddkey`, then the internal label will be the same as the key.

## glossaries-extra

The `glossaries-extra` package provides some low-level L<sup>A</sup>T<sub>E</sub>X3 conditionals that may be preferred. See the `glossaries-extra` manual for further details.

```
\ifglsgfieldvoid{<field-label>}{<entry-label>}{<true>}{<false>}
```

Expands to *<true>* if the field identified by its internal field label *<field-label>* is void for the entry identified by *<entry-label>*, otherwise it expands to *<false>*. The void test is performed with `etoolbox`'s `\ifcvoid`. This means that an undefined field or an undefined entry will be considered void. An empty field value or a field set to `\relax` are also considered void.

```
\ifglshasfield{<field>}{<entry-label>}{<true>}{<false>}
```

This robust command tests the value of the field given by *<field>* for the entry identified by *<entry-label>*. The *<field>* argument may either be the key associated with the field or the internal field label.

If the field value is empty or `\relax`, then *<false>* is performed, otherwise *<true>* is performed. If the field supplied is unrecognised *<false part>* is performed and a warning is issued. If the entry is undefined, an undefined error occurs.

Within *<true>*, you can access the field's value with:

```
\glscurrentfieldvalue
```

This command is initially defined to empty but has no relevance outside of the *<true>* argument. This saves re-accessing the field if the test is true. For example:

```
\ifglshasfield{user1}{sample}{, \glscurrentfield-
value}{}
```

will insert a comma, space and the field value if the `user1` key has been set for the entry whose label is “sample”.

```
\ifglshasfieldeq{<entry-label>}{<field-label>}{<string>}{<true>}{<false>}
```

This robust command does *<true>* if the entry identified by *<entry-label>* has the field identified by its internal field label (not the key) *<field-label>* defined and set to the given *<string>*. The test is performed by `etoolbox`’s `\ifcsstring`. An error will occur if the field value is undefined or if the entry hasn’t been defined.

The result may vary depending on whether or not expansion was on for the given field when the entry was defined (see §4.4). For example:

```
\documentclass{article}

\usepackage{glossaries}

\newcommand*{\foo}{FOO}

\newglossaryentry{sample1}{name={sample1},
description={an example},
user1={FOO}}
\newglossaryentry{sample2}{name={sample2},
description={an example},
user1={\foo}}
\begin{document}
\ifglshasfieldeq{sample1}{user1}{FOO}{TRUE}{FALSE}.

\ifglshasfieldeq{sample2}{user1}{FOO}{TRUE}{FALSE}.
\end{document}
```

This will produce “TRUE” in both cases since expansion is on for the `user1` key, so `\foo` was expanded to “FOO” when “sample2” was defined. If the tests are changed to:

```
\ifglshasfieldeq{sample1}{user1}{\foo}{TRUE}{FALSE}.

\ifglshasfieldeq{sample2}{user1}{\foo}{TRUE}{FALSE}.
```

then this will produce “FALSE” in both cases. Now suppose expansion is switched off for the `user1` key:

```

\documentclass{article}

\usepackage{glossaries}

\newcommand*{\foo}{FOO}

\glsssetnoexpandfield{user1}

\newglossaryentry{sample1}{name={sample1},
description={an example},
user1={FOO}}
\newglossaryentry{sample2}{name={sample2},
description={an example},
user1={\foo}}
\begin{document}
\ifglssfieldeq{sample1}{user1}{FOO}{TRUE}{FALSE}.

\ifglssfieldeq{sample2}{user1}{FOO}{TRUE}{FALSE}.
\end{document}

```

This now produces “TRUE” for the first case (comparing “FOO” with “FOO”) and “FALSE” for the second case (comparing “\foo” with “FOO”).

The reverse happens in the following:

```

\documentclass{article}

\usepackage{glossaries}

\newcommand*{\foo}{FOO}

\glsssetnoexpandfield{user1}

\newglossaryentry{sample1}{name={sample1},
description={an example},
user1={FOO}}
\newglossaryentry{sample2}{name={sample2},
description={an example},
user1={\foo}}

```

```

\begin{document}
\ifglsfieldeq{sample1}{useri}{\foo}{TRUE}{FALSE}.

\ifglsfieldeq{sample2}{useri}{\foo}{TRUE}{FALSE}.
\end{document}

```

This now produces “FALSE” for the first case (comparing “FOO” with “\foo”) and “TRUE” for the second case (comparing “\foo” with “\foo”).

You can test if the value of a field is equal to the replacement text of a command using:

```

\ifglsfielddefeq{<entry-label>}{<field-label>}{<cs>}{<true>}{<false>}

```

This robust command is essentially like `\ifglsfieldeq` but internally uses etoolbox’s `\ifdefstrequal` command to perform the comparison. The argument `<cs>` argument must be a macro.

For example:

```

\documentclass{article}

\usepackage{glossaries}

\newcommand*{\foo}{FOO}

\glssetnoexpandfield{useri}

\newglossaryentry{sample1}{name={sample1},
description={an example},
user1={FOO}}
\newglossaryentry{sample2}{name={sample2},
description={an example},
user1={\foo}}

\begin{document}
\ifglsfielddefeq{sample1}{useri}{\foo}{TRUE}{FALSE}.

\ifglsfielddefeq{sample2}{useri}{\foo}{TRUE}{FALSE}.
\end{document}

```

Here, the first case produces “TRUE” since the value of the `useri` field (“FOO”) is the same as the replacement text (definition) of `\foo` (“FOO”). We have the result “FOO” is equal to “FOO”.

The second case produces “FALSE” since the value of the `useri` field (“\foo”) is not the same as the replacement text (definition) of `\foo` (“FOO”). No expansion has been performed on the value of the `useri` field. We have the result “\foo” is not equal to “FOO”.

If we add:

```
\newcommand{\FOO}{\foo}
\ifglsfielddefeq{sample2}{useri}{\FOO}{TRUE}{FALSE}.
```

we now get “TRUE” since the value of the `useri` field (“\foo”) is the same as the replacement text (definition) of `\FOO` (“\foo”). We have the result “\foo” is equal to “\foo”.

There is a similar command that requires the control sequence name (without the leading backslash) instead of the actual control sequence:

```
\ifglsfieldcseq{<entry-label>}{<field-label>}{<cs-name>}{<true>}
{<false>}
```

This robust command is like `ifglsfielddefeq` but internally uses `etoolbox`’s `\ifcsstrequal` command instead of `\ifdefstrequal`.

## 15.5. Measuring

Sometimes it’s necessary to measure the width or height of some text. For example, `\glsdohypertarget` measures the height of the supplied text to position the target at the top of the line instead of at the baseline (where it can cause the line to scroll up out of view). Some styles measure the width of text to assist with alignment.

Measuring can be performed using `\settowidth`, `\settoheight` and `\settoheight`, but if the content being measured contains any `\gls`-like or `\gls`text-like commands, or if it contains commands like `\glsentryitem`, it can cause duplication. (See also §7 for the problems this can cause with unsetting and resetting the first use flag.)

The following measuring commands locally disable indexing, the `unset/reset` commands, and `\label`, and adjust `\refstepcounter` to only locally update the counter value.

```
\glsmeasureheight{<length>}{<text>}
```

Measures the height of `<text>` and stores the result in the supplied `<length>` register.

```
\glsmeasuredepth{<length>}{<text>}
```

Measures the depth of `<text>` and stores the result in the supplied `<length>` register.

```
\glsmeasurewidth{<length>}{<text>}
```

Measures the width of *<text>* and stores the result in the supplied *<length>* register.  
You can test if content is inside an area that's being measured with:

```
\glsifmeasuring{<true>}{<>false>}
```

This will do *<true>* if it occurs inside either of the above commands and does *<>false>* otherwise. This will also take `amsmath's \ifmeasuring@` into account.

If `tabularx` is loaded, its `\TX@trial` command can be patched with:

```
\glspatchtabularx
```

If you use `tabularx` and have any of the `\gls`-like commands inside a `tabularx` environment, you will need to use `\glspatchtabularx` in the preamble to disable `unset/reset` while the environment measures its content.

Patches made on other package's internal commands may break if the other package removes those commands or changes their definitions.

## 15.6. Fetching and Updating the Value of a Field

In addition to the commands described in §5.2, the commands described in this section may also be used to fetch field information.

glossaries-extra

The `glossaries-extra` package has additional commands, such as `\glsxtruse-field`.

```
\glsentrytype{<entry-label>}
```

Expands to the value of the entry's `type` field, which is the label of the glossary the entry has been assigned to. No existence check is performed.

```
\glsentryparent{<entry-label>}
```

Expands to the value of the entry's `parent` field, which is the label identifying the entry's parent. No existence check is performed.

```
\glsentrysort{⟨entry-label⟩}
```

Expands to the entry's `sort` value. No existence check is performed. This is not intended for general use, but can be useful to display the value for debugging purposes. Note that there is also an internal field `sortvalue` which contains the escaped sort value, which may not necessarily be the same as the `sort` value.

```
\glsfieldfetch{⟨entry-label⟩}{⟨field-label⟩}{⟨cs⟩}
```

This robust command fetches the value of the field identified by its internal field label `⟨field-label⟩` for the entry identified by `⟨entry-label⟩` and stores it in the given command `⟨cs⟩`. An error will occur if the entry doesn't exist or if the field hasn't been defined.

```
\glsletentryfield{⟨cs⟩}{⟨entry-label⟩}{⟨field-label⟩}
```

This command simply assigns the supplied command `⟨cs⟩` to the value of the field identified by its internal field label `⟨field-label⟩` for the entry identified by `⟨entry-label⟩`. This differs from `\glsfieldfetch` in that it doesn't test for existence. If either the field or the entry haven't been defined, no error or warning will be triggered but `⟨cs⟩` will be undefined. You can then use `etoolbox`'s `\ifdef` or `\ifundef` on `⟨cs⟩`.

For example, to store the description for the entry whose label is "apple" in the control sequence `\tmp`:

```
\glsletentryfield{\tmp}{apple}{desc}
\ifdef{\tmp}description: \tmp{no description}
```

An alternative is to use `\ifglshasfield` or, with `glossaries-extra`, `\glstrifhasfield`.

```
\glsunexpandedfieldvalue{⟨entry-label⟩}{⟨field-label⟩}
```

This command is provided for use in expandable contexts where the field value is required but the contents should not be expanded. The `⟨field-label⟩` argument must be the internal field label. Does nothing if the field or entry isn't defined.

You can change the value of a given field using one of the following commands. Note that these commands only change the value of the given field. They have no effect on any related field. For example, if you change the value of the `text` field, it won't modify the value given by the `name`, `plural`, `first` or any other related key.



There are some fields that should only be set when the entry is defined and will cause unexpected results if changed later. For example, `type` (which additionally needs to add the entry's label to the corresponding glossary's internal list), `parent` (which needs to calculate the hierarchical level and setup the indexing syntax appropriately), and `sort` (which may need pre-processing and is required to setup the indexing syntax).

In all the four related commands below,  $\langle entry-label \rangle$  identifies the entry and  $\langle field-label \rangle$  is the internal field label. The  $\langle definition \rangle$  argument is the new value of the field. Both the entry and field must already be defined. If you want internal fields that don't require a corresponding key to be defined, you will need the supplementary commands provided by `glossaries-extra`.



```
\glsfielddef{\langle entry-label \rangle}{\langle field \rangle}{\langle value \rangle}
```

This robust command uses `\def` to change the value of the field (so it will be localised by any grouping).



```
\glsfielddedef{\langle entry-label \rangle}{\langle field \rangle}{\langle value \rangle}
```

This robust command uses `\protected@csedef` to change the value of the field (so it will be localised by any grouping).

`\glsfieldgdef` This uses `\gdef` to change the value of the field (so it will have a global effect).



```
\glsfieldxdef{\langle entry-label \rangle}{\langle field \rangle}{\langle value \rangle}
```

This robust command uses `\protected@csxdef` to change the value of the field (so it will be localised by any grouping).



## 16. Prefixes or Determiners

`\usepackage[<options>]{glossaries-prefix}`  
automatically loaded with `\usepackage[prefix]{glossaries-extra}`

The `glossaries-prefix` package that comes with the `glossaries` package provides additional keys that can be used as prefixes. For example, if you want to specify determiners (such as “a”, “an” or “the”). The `glossaries-prefix` package automatically loads the `glossaries` package and has the same package options.

`glossaries-extra`

The `glossaries-prefix` package can automatically be loaded with `glossaries-extra` via the `prefix` package option.

The extra keys for `\newglossaryentry` are as follows:

`prefix={<text>}`

The prefix associated with the `text` key. This defaults to nothing.

`prefixplural={<text>}`

The prefix associated with the `plural` key. This defaults to nothing.

`prefixfirst={<text>}`

The prefix associated with the `first` key. If omitted, this defaults to the value of the `prefix` key.

`prefixfirstplural={<text>}`

The prefix associated with the `firstplural` key. If omitted, this defaults to the value of the `prefixplural` key.

### Example 53: Defining Determiners

Here’s the start of my example document:

```
\documentclass{article}

\usepackage[colorlinks]{hyperref}
\usepackage[toc,acronym]{glossaries-prefix}
```

Note that I've simply replaced `glossaries` from previous sample documents with `glossaries-prefix`. Now for a sample definition:

```
\newglossaryentry{sample}{namesample,
  description={an example},
  prefix={a~},
  prefixplural={the\space}
}
```

(Single letter words, such as “a” and “I” should typically not appear at the end of a line, hence the non-breakable space ~ after “a” in the `prefix` field.)

Note that I've had to explicitly insert a space after the prefix since there's no designated separator between the prefix and the term being referenced. This not only means that you can vary between a breaking space and non-breaking space, but also allows for the possibility of prefixes that shouldn't have a space, such as:

```
\newglossaryentry{oeil}{name={oeil},
  plural={yeux},
  description={eye},
  prefix={l'},
  prefixplural={les\space}}
```

Where a space is required at the end of the prefix, you must use a spacing command, such as `\space`, `\` (backslash space) or `~` due to the automatic spacing trimming performed in `\langle key \rangle = \langle value \rangle` options.

In the event that you always require a space between the prefix and the term, then you can instead redefine `\glsprefixsep` to do a space. For example:

```
\renewcommand{\glsprefixsep}{\space}
```

The prefixes can also be used with acronyms. For example:

```
\newacronym
[
  prefix={an\space},prefixfirst={a~}
]{svm}{SVM}{support vector machine}
```

The glossaries–prefix package provides convenient commands to use these prefixes with commands such as `\gls`. Note that the prefix is not considered part of the link text, so it’s not included in the hyperlink (where hyperlinks are enabled). The options and any star or plus modifier are passed on to the appropriate `\gls`-like command. (See §5.1 for further details.)

```
\glsprefixsep
```

*initial: empty*

The separator used between the appropriate prefix and the corresponding `\gls`-like command.

Each of the following commands `\p<gls>` essentially does `<prefix>\glsprefixsep<gls>` if the appropriate prefix field has been set, otherwise it simply does `<gls>`, where `<gls>` is the corresponding `\gls`-like command.

The all caps commands `\P<GLS>` will convert the prefix to all caps (using `\glsupper`–`case`) and use the all caps `\gls`-like counterpart.

The sentence case commands `\P<Gls>` are slightly more complicated. If the appropriate prefix field has been set, then the prefix will have the case change applied and the non-case `\gls`-like command will be used (`\gls` or `\glspl`). If the appropriate prefix field hasn’t been set, then the sentence case `\gls`-like command is used (`\Gls` or `\Glspl`).

The usual `\gls`-like optional argument and star (\*) and plus (+) modifiers can be used with these commands, in which case they will be applied to the applicable `\gls`-like command.

```
\p<gls> [<options>] {<entry-label>} [<insert>]
```

*modifiers: \* +*

Does `<prefix>\glsprefixsep<gls>` if `<prefix>` is non-empty otherwise just uses `\gls`.

The `<prefix>` will be the value of the `prefixfirst` key on first use or the `prefix` key on subsequent use.

```
\p<glspl> [<options>] {<entry-label>} [<insert>]
```

*modifiers: \* +*

Does `<prefix>\glsprefixsep<glspl>` if `<prefix>` is non-empty otherwise just uses `\glspl`.

The `<prefix>` will be the value of the `prefixfirstplural` key on first use or the `prefixplural` key on subsequent use.

```
\Pgls [<options>] {<entry-label>} [<insert>]
```

modifiers: \* +

Does  $\langle prefix \rangle \backslash glsprefixsep \backslash gls$  if  $\langle prefix \rangle$  is non-empty otherwise just uses  $\backslash Gls$ .

As  $\backslash pgls$ , the prefix fields are `prefixfirst` on first use or the `prefix` on subsequent use, but the  $\langle prefix \rangle$  will now be obtained from the sentence case commands  $\backslash Glsentryprefix$  and  $\backslash Glsentryprefixfirst$ .

```
\Pglspl [<options>] {<entry-label>} [<insert>]
```

modifiers: \* +

Does  $\langle prefix \rangle \backslash glsprefixsep \backslash glspl$  if  $\langle prefix \rangle$  is non-empty otherwise just uses  $\backslash Glspl$ .

As  $\backslash pglspl$ , the prefix fields are `prefixfirstplural` on first use or the `prefixplural` on subsequent use, but the  $\langle prefix \rangle$  will now be obtained from the sentence case commands  $\backslash Glsentryprefixplural$  and  $\backslash Glsentryprefixfirstplural$ .

```
\PGLS [<options>] {<entry-label>} [<insert>]
```

modifiers: \* +

Does:

```
\glsuppercase{<prefix>\glsprefixsep}\GLS
```

if  $\langle prefix \rangle$  is non-empty otherwise just uses  $\backslash GLS$ .

The  $\langle prefix \rangle$  will be the value of the `prefixfirst` key on first use or the `prefix` key on subsequent use.

```
\PGLSpl [<options>] {<entry-label>} [<insert>]
```

modifiers: \* +

Does:

```
\glsuppercase{<prefix>\glsprefixsep}\GLSpl
```

if  $\langle prefix \rangle$  is non-empty otherwise just uses  $\backslash GLSpl$ .

The  $\langle prefix \rangle$  will be the value of the `prefixfirstplural` key on first use or the `prefixplural` key on subsequent use.

glossaries-extra

The `glossaries-extra` package provides additional commands, such as  $\backslash pglsxtr-short$ , for use in section headings.

**Example 54: Using Prefixes**

Continuing from Example 53, now that I've defined my entries, I can use them in the text via the above commands:

```
First use: \pgls{svm}. Next use: \pgls{svm}.
Singular: \pgls{sample}, \pgls{oeil}.
Plural: \pglsp{sample}, \pglsp{oeil}.
```

which produces:

```
First use: a support vector machine (SVM). Next use: an SVM. Singular: a sample, l'oeil.
Plural: the samples, les yeux.
```

For a complete document, see `sample-prefix.tex`.

This package also provides the commands described below, none of which perform any check to determine the entry's existence.

```
\ifglshasprefix{<entry-label>}{<true>}{<false>}
```

Expands to *<true>* if the `prefix` field is non-empty, otherwise expands to *<false>*.

```
\ifglshasprefixplural{<entry-label>}{<true>}{<false>}
```

Expands to *<true>* if the `prefixplural` field is non-empty, otherwise expands to *<false>*.

```
\ifglshasprefixfirst{<entry-label>}{<true>}{<false>}
```

Expands to *<true>* if the `prefixfirst` field is non-empty, otherwise expands to *<false>*.

```
\ifglshasprefixfirstplural{<entry-label>}{<true>}{<false>}
```

Expands to *<true>* if the `prefixfirstplural` field is non-empty, otherwise expands to *<false>*.

```
\glsentryprefix{<entry-label>}
```

Expands to the value if the `prefix` field.

```
\glsentryprefixplural{\langle entry-label \rangle}
```

Expands to the value if the `prefixplural` field.

```
\glsentryprefixfirst{\langle entry-label \rangle}
```

Expands to the value if the `prefixfirst` field.

```
\glsentryprefixfirstplural{\langle entry-label \rangle}
```

Expands to the value if the `prefixfirstplural` field.

There are also variants that convert to sentence case. As with command like `\Glsentrytext`, these will use `\MFUsentencecase` to expand in PDF bookmarks, but will use `\glsentencecase` in the document.

```
\Glsentryprefix{\langle entry-label \rangle}
```

As `\glsentryprefix` with sentence case applied.

```
\Glsentryprefixplural{\langle entry-label \rangle}
```

As `\glsentryprefixplural` with sentence case applied.

```
\Glsentryprefixfirst{\langle entry-label \rangle}
```

As `\glsentryprefixfirst` with sentence case applied.

```
\Glsentryprefixfirstplural{\langle entry-label \rangle}
```

As `\glsentryprefixfirstplural` with sentence case applied.

### Example 55: Adding Determiner to Glossary Style

You can use the above commands to define a new glossary style that uses the determiner. For example, the following style is a slight modification of the list style that inserts the prefix before the name:

```

\newglossarystyle{plist}{%
\setglossarystyle{list}%
\renewcommand*{\glossentry}[2]{%
\item[\glentryitem{1}%
\glentryprefix{1}%
\glstarget{1}{\glossentryname{1}}]
\glossentrydesc{1}\glspostdescription\space 2}%
}

```

If you want to change the prefix separator (`\glsprefixsep`) then the following is better:

```

\newglossarystyle{plist}{%
%
\renewcommand*{\glossentry}[2]{%
\item[\glentryitem{1}%
\ifglshasprefix{1}{\glentryprefix{1}\glsprefixsep}{}%
\glstarget{1}{\glossentryname{1}}]
\glossentrydesc{1}\glspostdescription\space 2}
%
}

```

The conditional is also useful if you want the style to use an uppercase letter at the start of the entry item:

```

\newglossarystyle{plist}{%
\setglossarystyle{list}%
\renewcommand*{\glossentry}[2]{%
\item[\glstarget{1}%
{%
\ifglshasprefix{1}%
{\Glsentryprefix{1}\glsprefixsep\gloss-
entryname{1}}%
{\Glossentryname{1}}%
}]
\glossentrydesc{1}\glspostdescription\space 2}
%
}

```





# 17. Accessibility Support

```
\usepackage[options]{glossaries-accsupp}  
                                     automatically loaded with  
\usepackage[accsupp]{glossaries-extra}
```

Limited accessibility support is provided by the accompanying `glossaries-accsupp` package, but note that this package is experimental. This package automatically loads the `glossaries` package. Any options are passed to `glossaries` (if it hasn't already been loaded). For example:

```
\usepackage[acronym]{glossaries-accsupp}
```

This will load `glossaries` with the `acronym` package option as well as loading `glossaries-accsupp`.

`glossaries-extra`

If you are using the `glossaries-extra` extension package, you need to load `glossaries-extra` with the `accsupp` package option. For example:

```
\usepackage[abbreviations,accsupp]{glossaries-extra}
```

This will load `glossaries-extra` (with the `abbreviations` option), `glossaries` and `glossaries-accsupp` and make appropriate patches to integrate the accessibility support with the extension commands.

## 17.1. Accessibility Keys

The `glossaries-accsupp` package defines additional keys that may be used when defining glossary entries. If a key isn't set, then there will be not accessibility support for the corresponding field.

```
access= { text }
```

The value of this key is the replacement text corresponding to the `name` key.

**textaccess**={ *text* }

The value of this key is the replacement text corresponding to the `text` key.

**firstaccess**={ *text* }

The value of this key is the replacement text corresponding to the `first` key.

**pluralaccess**={ *text* }

The value of this key is the replacement text corresponding to the `plural` key.

**firstpluralaccess**={ *text* }

The value of this key is the replacement text corresponding to the `firstplural` key.

**symbolaccess**={ *text* }

The value of this key is the replacement text corresponding to the `symbol` key.

**symbolpluralaccess**={ *text* }

The value of this key is the replacement text corresponding to the `symbolplural` key.

**descriptionaccess**={ *text* }

The value of this key is the replacement text corresponding to the `description` key. The corresponding internal field label is `descaccess`.

**descriptionpluralaccess**={ *text* }

The value of this key is the replacement text corresponding to the `descriptionplural` key. The corresponding internal field label is `descpluralaccess`.

**longaccess**={ *text* }

The value of this key is the replacement text corresponding to the `long` key.

```
longpluralaccess={ text }
```

The value of this key is the replacement text corresponding to the `longplural` key.

```
shortaccess={ text }
```

The value of this key is the replacement text corresponding to the `short` key.

If you define acronyms with `\newacronym`, the `shortaccess` field will automatically be set to:

```
\glsdefaultshortaccess{long}{short}
```

This just expands to `<long>`. If redefined, this command must be fully expandable. It expands when the acronym is defined.

```
shortpluralaccess={ text }
```

The value of this key is the replacement text corresponding to the `shortplural` key.

```
user1access={ text }
```

The value of this key is the replacement text corresponding to the `user1` key. The corresponding internal field label is `useriaccess`.

```
user2access={ text }
```

The value of this key is the replacement text corresponding to the `user2` key. The corresponding internal field label is `useriiaccess`.

```
user3access={ text }
```

The value of this key is the replacement text corresponding to the `user3` key. The corresponding internal field label is `useriiiaccess`.

```
user4access={ text }
```

The value of this key is the replacement text corresponding to the `user4` key. The corresponding internal field label is `userivaccess`.

```
user5access={⟨text⟩}
```

The value of this key is the replacement text corresponding to the `user5` key. The corresponding internal field label is `uservaccess`.

```
user6access={⟨text⟩}
```

The value of this key is the replacement text corresponding to the `user6` key. The corresponding internal field label is `userviaccess`.

For example:

```
\newglossaryentry{tex}{name={\TeX},description=
{Document
preparation language},access={TeX}}
```

Now the link text produced by `\gls{tex}` will be:

```
\BeginAccSupp{ActualText={TeX}}\TeX\EndAccSupp
```

which is produced via `\glsaccessibility`. If you want to use another accessibility package, see §17.5.

The sample file `sampleaccsupp.tex` illustrates the `glossaries-accsupp` package.

## 17.2. Incorporating Accessibility Support

The `\gls`-like and `\glsstext`-like commands have their link text adjusted to incorporate the accessibility support, if provided. A helper command is used to identify the replacement text that depends on the field name:

```
\glsfieldaccsupp{⟨replacement⟩}{⟨content⟩}{⟨field-label⟩}{⟨entry-label⟩}
```

This will use

```
\gls⟨field-label⟩accsupp{⟨replacement⟩}{⟨content⟩}
```

if it's defined otherwise it will just use:

```
\glsaccsupp{⟨replacement⟩}{⟨content⟩}
```

Note that  $\langle field-label \rangle$  is the internal field label which may not match the corresponding key. For example, the `shortpl` field label corresponds to the `shortplural` key.

glossaries-extra

With `glossaries-extra`, there's a prior test for the existence of the command `\gls-xtr<category><field>accsupp`.

There are two commands pre-defined:

```
\glsshortaccsupp{<replacement>}{<content>}
```

which is defined as:

```
\glsaccessibility{E}{<replacement>}{<content>}
```

and

```
\glsshortplaccsupp{<replacement>}{<content>}
```

which is simply defined to use `\glsshortaccsupp`.

These helper commands all internally use:

```
\glsaccessibility[<options>]{<PDF element>}{<value>}{<content>}
```

The default definition uses commands provided by the `accsupp` package. If you want to experiment with another accessibility package, see §17.5. The  $\langle options \rangle$  are passed to the underlying accessibility support command.

The  $\langle PDF element \rangle$  argument is the appropriate PDF element tag. The PDF specification identifies three different types of replacement text:

Alt

Description of some content that's non-textual (for example, an image). A word break is assumed after the content.

ActualText

A character or sequence of characters that replaces textual content (for example, a dropped capital, a ligature or a symbol). No word break is assumed after the content.

E

Expansion of an abbreviation to avoid ambiguity (for example, “St” could be short for “saint” or “street”).



Many PDF viewers don't actually support any type of replacement text. Some may support "ActualText" but not "Alt" or "E". PDFBox's "PDFDebugger" tool can be used to inspect the PDF content to make sure that the replacement text has been correctly set.

You can define your own custom helper commands for specific fields that require them. For example:

```
\newcommand{\glsymbolaccsupp}[2]{%
  \glsaccessibility[method=hex,unicode]{ActualText}
  {1}{2}%
}
```

This definition requires the replacement text to be specified with the hexadecimal character code. For example:

```
\newglossaryentry{int}{name={int},description=
{integral},
  symbol={\ensuremath{\int}},symbolaccess={222B}
}
```

glossaries-extra

The glossaries-extra package provides additional support.

### 17.3. Incorporating the Access Field Values

These robust commands are all in the form

```
\gls<field>accessdisplay{<text>}{<entry-label>}
```

They may be used to apply the supplied accessibility information to *<text>*. If the relevant access field hasn't been set, these simply do *<text>*.

The glossaries-extra package provides convenient wrapper commands such as:

```
\newcommand*{\glsaccessname}[1]{%
  \glsnameaccessdisplay{\glsentryname{1}}1%
}
```

glossaries  
-extra

See the glossaries-extra manual for further details.

```
\glsnameaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `access` field to `⟨text⟩`.

```
\glstextaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `textaccess` field to `⟨text⟩`.

```
\glspluralaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `pluralaccess` field to `⟨text⟩`.

```
\glsfirstpluralaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `firstpluralaccess` field to `⟨text⟩`.

```
\glsymbolaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `symbolaccess` field to `⟨text⟩`.

```
\glsymbolpluralaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `symbolpluralaccess` field to `⟨text⟩`.

```
\glsdescriptionaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `descaccess` field (which corresponds to the `descriptionaccess` key) to `⟨text⟩`.

```
\glsdescriptionpluralaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `descpluralaccess` field (which corresponds to the `descriptionpluralaccess` key) to `⟨text⟩`.

```
\glsshortaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `shortaccess` field to `⟨text⟩`.

```
\glsshortpluralaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `shortpluralaccess` field to  $\langle text \rangle$ .

```
\glslongaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `longaccess` field to  $\langle text \rangle$ .

```
\glslongpluralaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `longpluralaccess` field to  $\langle text \rangle$ .

```
\glsuseriaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `useriaccess` field (which corresponds to the `user1access` key) to  $\langle text \rangle$ .

```
\glsuseriiaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `useriiaccess` field (which corresponds to the `user2access` key) to  $\langle text \rangle$ .

```
\glsuseriiiaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `useriiiaccess` field (which corresponds to the `user3access` key) to  $\langle text \rangle$ .

```
\glsuserivaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `userivaccess` field (which corresponds to the `user4access` key) to  $\langle text \rangle$ .

```
\glsuservaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```

Applies the accessibility information from the `uservaccess` field (which corresponds to the `user5access` key) to  $\langle text \rangle$ .

```
\glsuserviaccessdisplay{⟨text⟩}{⟨entry-label⟩}
```



Applies the accessibility information from the `userviaccess` field (which corresponds to the `user6access` key) to  $\langle text \rangle$ .

## 17.4. Obtaining the Access Field Values

There are commands analogous to `\glsentrytext` if you need to obtain the value of any of the accessibility fields. Since the accessibility information isn't intended to be typeset but should be written as a PDF string, use the expandable `\MFUsentencecase` or `\glsuppercase` if any case change is required.

```
\glsentryaccess{ $\langle entry-label \rangle$ }
```

Expands to the value of the `access` field.

```
\glsentrytextaccess{ $\langle entry-label \rangle$ }
```

Expands to the value of the `textaccess` field.

```
\glsentryfirstaccess{ $\langle entry-label \rangle$ }
```

Expands to the value of the `firstaccess` field.

```
\glsentrypluralaccess{ $\langle entry-label \rangle$ }
```

Expands to the value of the `pluralaccess` field.

```
\glsentryfirstpluralaccess{ $\langle entry-label \rangle$ }
```

Expands to the value of the `firstpluralaccess` field.

```
\glsentrysymbolaccess{ $\langle entry-label \rangle$ }
```

Expands to the value of the `symbolaccess` field.

```
\glsentrysymbolpluralaccess{ $\langle entry-label \rangle$ }
```

Expands to the value of the `symbolpluralaccess` field.

```
\glsentrydescaccess{ $\langle entry-label \rangle$ }
```

Expands to the value of the `descaccess` field, which corresponds to the `description-access` key.

```
\glsentrydescpluralaccess{⟨entry-label⟩}
```

Expands to the value of the `descpluralaccess` field, which corresponds to the `description-pluralaccess` key.

```
\glsentryshortaccess{⟨entry-label⟩}
```

Expands to the value of the `shortaccess` field.

```
\glsentryshortpluralaccess{⟨entry-label⟩}
```

Expands to the value of the `shortpluralaccess` field.

```
\glsentrylongaccess{⟨entry-label⟩}
```

Expands to the value of the `longaccess` field.

```
\glsentrylongpluralaccess{⟨entry-label⟩}
```

Expands to the value of the `longpluralaccess` field.

```
\glsentryuseriaccess{⟨entry-label⟩}
```

Expands to the value of the `useriaccess` field, which corresponds to the `user1access` key.

```
\glsentryuseriiaaccess{⟨entry-label⟩}
```

Expands to the value of the `useriiaaccess` field, which corresponds to the `user2access` key.

```
\glsentryuseriiiaaccess{⟨entry-label⟩}
```

Expands to the value of the `useriiiaaccess` field, which corresponds to the `user3-access` key.

```
\glsentryuserivaccess{⟨entry-label⟩}
```

Expands to the value of the `userivaccess` field, which corresponds to the `user4access` key.

```
\glsentryservaccess{⟨entry-label⟩}
```

Expands to the value of the `servaccess` field, which corresponds to the `user5access` key.

```
\glsentryserviaccess{⟨entry-label⟩}
```

Expands to the value of the `serviaccess` field, which corresponds to the `user6access` key.

## 17.5. Developer's Note

Currently there's only support for `accsupp`. If you want to experiment with another package that provides accessibility support, define the following command before `glossaries-accsupp` is loaded:

```
\gls@accsupp@engine initial: accsupp
```

If this command has its default definition of `accsupp` when `glossaries-accsupp` loads then the `accsupp` package will automatically be loaded, otherwise it won't and you'll need to redefine `\gls@accessibility` to use the appropriate accessibility commands.

```
\gls@accessibility{⟨options⟩}{⟨PDF element⟩}{⟨value⟩}{⟨content⟩}
```

This command is used internally by `\glsaccessibility`. The default definition if `\gls@accsupp@engine` is defined to `accsupp` does:

```
\BeginAccSupp{⟨options⟩,⟨PDF element⟩={⟨value⟩}}⟨content⟩\EndAccSupp{ }
```

Otherwise it simply does `⟨content⟩`.

## 18. Sample Documents

In addition to the examples within this manual, the `glossaries` package is provided with some sample documents that illustrate the various functions. These should be located in the `samples` subdirectory (folder) of the `glossaries` documentation directory. This location varies according to your operating system and  $\text{\TeX}$  distribution. You can use `texdoc` to locate the main `glossaries` documentation. For example:

```
texdoc -l glossaries
```

This should display a list of all the files in the `glossaries` documentation directory with their full pathnames. (The GUI version of `texdoc` may also provide you with the information.)

If you can't find the sample files on your computer, they are also available from your nearest CTAN mirror at <http://mirror.ctan.org/macros/latex/contrib/glossaries/samples/>. Each sample file listed below has a hyperlink to the file's location on the CTAN mirror.

The `glossaries-extra` package and `bib2gls` provide some additional sample files. There are also examples in the Dickimaw Books Gallery.<sup>1</sup>


If you prefer to use UTF-8 aware engines (`xelatex` or `lualatex`) remember that you'll need to switch from `fontenc & inputenc` to `fontspec` where appropriate.

If you get any errors or unexpected results, check that you have up-to-date versions of all the required packages. (Search the log file for lines starting with “`Package:` ”.) Where `hyperref` is loaded you will get warnings about non-existent references that look something like:

```
pdfTeX warning (dest): name{glo:aca} has been  
referenced but does not exist, replaced by a fixed  
one
```

These warnings may be ignored on the first  $\text{\LaTeX}$  run. (The destinations won't be defined until the glossary has been created.)

### 18.1. Basic

 `minimalgls.tex`

---

<sup>1</sup>[dickimaw-books.com/gallery](http://dickimaw-books.com/gallery)

This document is a minimal working example. You can test your installation using this file. To create the complete document you will need to do the following steps:

1. Run `minimalgls.tex` through  $\LaTeX$  either by typing

```
pdflatex minimalgls
```

in a terminal or by using the relevant button or menu item in your text editor or front-end. This will create the required associated files but you will not see the glossary in the document.

2. If you have Perl installed, run `makeglossaries` on the document (§1.6). This can be done on a terminal by typing:

```
makeglossaries minimalgls
```

otherwise use `makeglossaries-lite`:

```
makeglossaries-lite minimalgls
```

If for some reason you want to call `makeindex` explicitly, you can do this in a terminal by typing (all on one line):

```
makeindex -s minimalgls.ist -t minimalgls.glg -o  
minimalgls.gls minimalgls.glo
```

See §1.6.4 for further details on using `makeindex` explicitly.

Note that if the file name contains spaces, you will need to use the double-quote character to delimit the name.

3. Run `minimalgls.tex` through  $\LaTeX$  again (as step 1)

You should now have a complete document. The number following each entry in the glossary is the location number. By default, this is the page number where the entry was referenced.

The `acronym` package option creates a second glossary with the label `acronym` (which can be referenced with `\acronymtype`). If you decide to enable this option then there will be a second set of indexing files that need to be processed by `makeindex`. If you use `makeglossaries` or `makeglossaries-lite` you don't need to worry about it, as those scripts automatically detect which files need to be processed and will run `makeindex` (or `xindy`) the appropriate number of times.

## 18. Sample Documents

If for some reason you don't want to use `makeglossaries` or `makeglossaries-lite` and you want the `acronym` package option then the complete build process is:

```
pdflatex minimalgls
makeindex -s minimalgls.ist -t minimalgls.glg -o
minimalgls.gls minimalgls.glo
makeindex -s minimalgls.ist -t minimalgls.alg -o
minimalgls.acr minimalgls.acn
pdflatex minimalgls
```

There are three other files that can be used as minimal working examples: `mwe-gls.tex`, `mwe-acr.tex` and `mwe-acr-desc.tex`.

If you want to try out the `glossaries-extra` extension package, you need to replace the package loading line:

glossaries  
-extra

```
\usepackage[acronym]{glossaries}
```

with:

```
\usepackage[acronym,postdot,stylemods]{glossaries-  
extra}
```

Note the different default package options. (You may omit the `acronym` package option in both cases if you only want a single glossary.) The `glossaries-extra` package internally loads the base `glossaries` package so you don't need to explicitly load both (in fact, it's better to let `glossaries-extra` load `glossaries`).

Next, replace:

```
\setacronymstyle{long-short}
```

with:

```
\setabbreviationstyle[acronym]{long-short}
```

The optional argument `acronym` identifies the category that this style should be applied to. The `\newacronym` command provided by the base `glossaries` package is redefined by `glossaries-extra` to use `\newabbreviation` with the category set to `acronym`.

If you prefer to replace `\newacronym` with `\newabbreviation` then the default category is `abbreviation` so the style should instead be:

```
\setabbreviationstyle[abbreviation]{long-short}
```

This is actually the default category if the optional argument is omitted, so you can simply do:

```
\setabbreviationstyle{long-short}
```

The `long-short` style is the default for the `abbreviation` category so you can omit this line completely if you replace `\newacronym`. (The default style for the `acronym` category is `short-nolong`, which only shows the short form on first use.)

As mentioned earlier, the `acronym` package option creates a new glossary with the label `acronym`. This is independent of the `acronym` category. You can use the `acronym` package option with either `\newacronym` or `\newabbreviation`.

You may instead prefer to use the `abbreviations` package option, which creates a new glossary with the label `abbreviations`:

```
\usepackage[abbreviations, postdot, stylemods]
{glossaries-extra}
```

This can again be used with either `\newacronym` or `\newabbreviation`, but the file extensions are different. This isn't a problem if you are using `makeglossaries` or `makeglossaries-lite`. If you are explicitly calling `makeindex` (or `xindy`) then you need to modify the file extensions. See the `glossaries-extra` user manual for further details.

If you use both the `acronym` and `abbreviations` package options then `\newacronym` will default to the `acronym` glossary and `\newabbreviation` will default to the `abbreviations` glossary.

If you want to try `bib2gls`, you first need to convert the document to use `glossaries-extra` `bib2gls` as described above. Then add the `record` package option. For example:

```
\usepackage[record, postdot, stylemods]{glossaries-
extra}
```

Next you need to convert the entry definitions into the `bib` format required by `bib2gls`. This can easily be done with `convertgls2bib`. For example:

```
convertgls2bib --preamble-only minimalgls.tex
entries.bib
```

This will create a file called `entries.bib`. Next, replace:

```
\makeglossaries
```

with:

```
\GlsXtrLoadResources[src={entries}]
```

Now remove all the entry definitions in the document preamble (`\longnewglossaryentry`, `\newglossaryentry` and `\newacronym` or `\newabbreviation`).

The `abbreviation` style command must go before `\GlsXtrLoadResources`. For example (if you are using `\newacronym`):

```
\setabbreviationstyle[acronym]{long-short}
\GlsXtrLoadResources[src={entries}]
```

Finally, replace:

```
\printglossaries
```

with:

```
\printunsrtglossaries
```

The document build is now:

```
pdflatex minimalgls
bib2gls minimalgls
pdflatex minimalgls
```

`sampleDB.tex` This document illustrates how to load external files containing the glossary entry definitions. It also illustrates how to define a new glossary type. This document has the number list suppressed and uses `\glsaddall` to add all the entries to the glossaries without referencing each one explicitly. (Note that it's more efficient to use `glossaries-extra` and `bib2gls` if you have a large number of entries.) To create the document do:



```
pdflatex sampleDB
makeglossaries sampleDB
pdflatex sampleDB
```

or

```
pdflatex sampleDB
makeglossaries-lite sampleDB
pdflatex sampleDB
```

The glossary definitions are stored in the accompanying files `database1.tex` and `database2.tex`. If for some reason you want to call `makeindex` explicitly you must have a separate call for each glossary:

1. Create the `main` glossary (all on one line):

```
makeindex -s sampleDB.ist -t sampleDB.glg -o
sampleDB.gls sampleDB.glo
```

2. Create the secondary glossary (all on one line):

```
makeindex -s sampleDB.ist -t sampleDB.nlg -o
sampleDB.not sampleDB.ntn
```

Note that both `makeglossaries` and `makeglossaries-lite` do this all in one call, so they not only make it easier because you don't need to supply all the switches and remember all the extensions but they also call `makeindex` the appropriate number of times.

If you want to switch to using `bib2gls` with `glossaries-extra`, you can convert `database1.bib2gls.tex` and `database2.tex` to `bib` files using `convertgls2bib`:

```
convertgls2bib database1.tex database1.bib
convertgls2bib database2.tex database2.bib
```

The document code then needs to be:

```

\documentclass{article}

\usepackage[colorlinks,plainpages=false]{hyperref}
\usepackage[record,postdot]{glossaries-extra}

\newglossary*{punc}{Punctuation Characters}

\GlsXtrLoadResources[src={database1},
selection=all,sort=en]
\GlsXtrLoadResources[src={database2},type=punc,
selection=all,sort=letter-case]

\begin{document}
\printunsrtglossaries
\end{document}

```

Note that the `nonumberlist` package option has been omitted. It's not needed because there are no locations in this amended document (whereas in the original `sampleDB.tex` locations are created with `\glsaddall`). The starred `\newglossary*` is used since the `makeindex/xindy` extensions are now irrelevant.

Instead of using `makeglossaries` you need to use `bib2gls` when you build the document:

```

pdflatex sampleDB
bib2gls sampleDB
pdflatex sampleDB

```

Note that one `bib2gls` call processes all the indexing (rather than one call per glossary). Unlike `makeindex` and `xindy`, `bib2gls` processes each resource set in turn, but the resource sets aren't linked to a specific glossary. Multiple glossaries may be processed in a single resource set or sub-blocks of a single glossary may be processed by multiple resource sets. In this example, there happens to be one resource set per glossary because each glossary requires a different sort method. (A locale-sensitive alphabetical sort for the first and a character code sort for the second.)

If you want letter groups, you need to use the `--group` switch:

```

bib2gls --group sampleDB

```

and use an appropriate glossary style.

See also `bib2gls gallery: sorting`,<sup>2</sup> `glossaries-extra` and `bib2gls: An Introductory`

<sup>2</sup>[dickimaw-books.com/gallery/index.php?label=bib2gls-sorting](http://dickimaw-books.com/gallery/index.php?label=bib2gls-sorting)

Guide<sup>3</sup> and the `bib2gls` user manual.

## 18.2. Acronyms and First Use

`sampleAcr.tex` This document has some sample acronyms. It also adds the glossary to the table of contents, so an extra run through  $\LaTeX$  is required to ensure the document is up to date:

```
pdflatex sampleAcr
makeglossaries sampleAcr
pdflatex sampleAcr
pdflatex sampleAcr
```

(or use `makeglossaries-lite`).

Note that if the glossary is at the start of the document and spans across multiple pages, then this can cause the locations to be shifted. In that case, an extra `makeglossaries` and  $\LaTeX$  call are required. In this particular example, the glossary is at the end of the document so it's not a problem. It's also not a problem for a glossary at the start of the document if the page numbering is reset at the end of the glossary. For example, if the glossary is at the end of the front matter in a book-style document.

This document uses `\ifglsused` to determine whether to use “a” or “an” in:

```
... is \ifglsused{svm}{an}{a} \gls{svm} ...
```

This clumsy bit of code can be tidied up with the `glossaries-prefix` package. Since that package automatically loads `glossaries` and passes all its options to the base package it's possible to do a simple replacement of:

```
\usepackage[style=long,toc]{glossaries}
```

with:

```
\usepackage[style=long,toc]{glossaries-prefix}
```

The definition of “svm” now needs an adjustment:

<sup>3</sup>[mirrors.ctan.org/support/bib2gls/bib2gls-begin.pdf](http://mirrors.ctan.org/support/bib2gls/bib2gls-begin.pdf)

```
\newacronym[description=
{statistical pattern recognition
technique~\protect\cite{svm}},
prefixfirst={a~}, prefix={an\space}
]{svm}{svm}{support vector machine}
```

The clumsy text can now simply be changed to:

```
... is \pgls{svm} ...
```

If you want to convert this sample document to use `glossaries-extra`, you may want the patched version of the styles provided in `glossary-long`, in which case you can also add `stylemods`:

`glossaries-extra`

```
\usepackage [stylemods, style=long] {glossaries-extra}
```

If you want to suppress all the other glossary style packages with `nostyles`, then you need to specify exactly which package (or packages) that you do want:

```
\usepackage [nostyles, stylemods=long, style=long]
{glossaries-extra}
```

(Now that `glossaries-extra` is being used, there are more available “long” styles in the `glossary-longextra` package, which you may prefer.)

If you want to use `glossaries-prefix`, you can simply add the `prefix` package option.

Note that the `toc` package option has been dropped. This is the default with `glossaries-extra`, so it doesn’t need to be specified now. The document build is now shorter:

```
pdflatex sampleAcr
makeglossaries sampleAcr
pdflatex sampleAcr
```

The third `LaTeX` call is no longer required to make the table of contents up-to-date. This is because `glossaries-extra` provides boilerplate text on the first `LaTeX` call when the indexing files are missing. This means that the glossary header is added to the `toc` file on the first `LaTeX` call, whereas with just the base `glossaries` package, the header isn’t present until the second `LaTeX` call. (As with just the base `glossaries` package, if the glossary occurs at the start of the document without a page reset after it then part of the build process needs repeating to ensure all referenced page numbers are up-to-date. This problem isn’t specific to the `glossaries` package.)

The other different default setting is the post-description punctuation. The base package has

`nopostdot=false` as the default. This means that a full stop (period) is automatically inserted after the description in the glossary. The extension package has `nopostdottrue` as the default. If you want the original behaviour then you can use `nopostdot=false` or the shorter synonym `postdot`.

The `glossaries-extra` package has different `abbreviation` handling that's far more flexible than that provided by the base `glossaries` package. The style now needs to be set with `\setabbreviationstyle` instead of `\setacronymstyle`:

```
\setabbreviationstyle[acronym]{long-short-sc}
\newacronym{svm}{svm}{support vector machine}
```

(Note the different style name `long-short-sc` instead of `long-sc-short` and the optional argument `acronym`.) If you prefer to replace `\newacronym` with `\newabbreviation` then omit the optional argument:

```
\setabbreviationstyle{long-short-sc}
\newabbreviation{svm}{svm}{support vector machine}
```

(The optional argument of `\setabbreviationstyle` is the category to which the style should be applied. If it's omitted, `abbreviation` is assumed. You can therefore have different styles for different categories.)

Finally, you need to replace `\acrshort`, `\acrlong` and `\acrfull` and their variants with `\glxtrshort`, `\glxtrlong` and `\glxtrfull` etc.

 `sampleAcrDesc.tex`

This is similar to the previous example, except that the acronyms have an associated description. As with the previous example, the glossary is added to the table of contents, so an extra run through `LATEX` is required:

```
pdflatex sampleAcrDesc
makeglossaries sampleAcrDesc
pdflatex sampleAcrDesc
pdflatex sampleAcrDesc
```

This document uses the `acronym` package option, which creates a new glossary used by `\newacronym`. This leaves the default `main` glossary available for general terms. However, in this case there are no general terms so the `main` glossary is redundant. The `nomain` package option will prevent its creation. Obviously, if you decide to add some terms with `\newglossaryentry` you will need to remove the `nomain` option as the `main` glossary will now be required.

As with the previous example, if you want to convert this document to use `glossaries-extra`

`glossaries`  
`-extra`

you need to make a few modifications. The most obvious one is to replace glossaries with `glossaries-extra` in the `\usepackage` argument. Again you can omit `toc` as this is the default for `glossaries-extra`. As in the previous example, you may want to use the patched styles. This document uses `altlist` which is provided by `glossary-list`, so the style can be patched with `stylemods`.

```
\usepackage[acronym,nomain,style=altlist,stylemods]
{glossaries-extra}
```

You may prefer to replace the `acronym` option with `abbreviations`, but this will change the file extensions. If you use `makeglossaries` or `makeglossaries-lite` you don't need to worry about it.

Again the style command needs to be changed:

```
\setabbreviationstyle[acronym]{long-short-sc-desc}
```

(Note the change in style name `long-short-sc-desc` instead of `long-sc-short-desc` and the optional argument `acronym`.)

As with the previous example, if you prefer to use `\newabbreviation` instead of `\newacronym` then you need to omit the optional argument:

```
\setabbreviationstyle{long-short-sc-desc}
```

The original document uses:

```
\renewcommand*{\glsseeitemformat}[1]{%
\acronymfont{\glsentrytext{#1}}}
```

to ensure that the cross-references (from the `see` key) use the acronym font. The new `abbreviation` styles don't use `\acronymfont` so this isn't appropriate with `glossaries-extra`. If you're using at least version 1.42 of `glossaries-extra`, you don't need to do anything as it automatically redefines `\glsseeitemformat` to take the style formatting into account. If you have an earlier version you can redefine this command as follows:

```
\renewcommand*{\glsseeitemformat}[1]{%
\ifglshasshort{#1}{\glsfmttext{#1}}{\glsfmtname{#1}}
}%
}
```

This will just show the short form in the cross-reference. If you prefer the name instead (which includes the short and long form) you can use:

```
\renewcommand*{\glsseeitemformat}[1]{\glsfmtname{#1}}
}
```

The `glossaries-extra` package provides two additional cross-referencing keys `seealso` and `alias`, so `see={ [see also] {svm} }` can be replaced with a more appropriate key:

```
\newacronym[description=
{Statistical pattern recognition
technique using the ``kernel trick''},
seealso={svm},
]{ksvm}{ksvm}{kernel support vector machine}
```

Finally, as with the previous example, you need to replace `\acrshort`, `\acrlong` and `\acrfull` etc with `\glsxtrshort`, `\glsxtrlong` and `\glsxtrfull` etc.

If you want to convert this document so that it uses `bib2gls`, you first need to convert it to use `glossaries-extra`, as above, but remember that you now need the `record` option: bib2gls

```
\usepackage[acronym,nomain,style=
altlist,record,postdot,stylemods]
{glossaries-extra}
```

Now you need to convert the acronym definitions to the `bib` format required by `bib2gls`. This can be done with:

```
convertgls2bib --preamble-only sampleAcrDesc.tex
entries.bib
```

If you retained `\newacronym` from the original example file, then the new `entries.bib` file will contain entries defined with `@acronym`. For example:

```
@acronym{ksvm,
  description=
  {Statistical pattern recognition technique
  using the ``kernel trick''},
  seealso={svm},
```

```

short={ksvm},
long={kernel support vector machine}
}

```

If you switched to `\newabbreviation` then the entries will instead be defined with `@abbreviation`.

Next replace `\makeglossaries` with the resource command, but note that the `abbreviation` style must be set first:

```

\setabbreviationstyle[acronym]{long-short-sc-desc}
\GlsXtrLoadResources[src={entries}
,% terms defined in entries.bib
abbreviation-sort-fallback=long]

```

Another possibility is to make `@acronym` behave as though it was actually `@abbreviation`:

```

\setabbreviationstyle{long-short-sc-desc}
\GlsXtrLoadResources[src={entries},abbreviation-sort
-fallback=long,
entry-type-aliases={acronym=abbreviation}]

```

Note that the category is now `abbreviation` not `acronym` so the optional argument of `\setabbreviationstyle` needs to be removed.

If the `sort` field is missing (which should usually be the case), then both `@acronym` and `@abbreviation` will fallback on the `short` field (not the `name` field, which is usually set by the style and therefore not visible to `bib2gls`). For some styles, as in this example, it's more appropriate to sort by the long form so the fallback is changed. (Remember that you will break this fallback mechanism if you explicitly set the sort value.) See the `bib2gls` manual for further details and other examples.

Remember to delete any `\newacronym` or `\newabbreviation` in the `tex` file. Finally replace `\printglossary` with `\printunsrtglossary`. The document build is now:

```

pdflatex sampleAcrDesc
bib2gls sampleAcrDesc
pdflatex sampleAcrDesc

```

Note that it's now much easier to revert back to the descriptionless style used in `sampleAcr.tex`:



```
\setabbreviationstyle[acronym]{long-short-sc}
\GlsXtrLoadResources[src={entries},ignore-fields=
{description}]
```

With the other options it would be necessary to delete all the `description` fields from the `abbreviation` definitions in order to omit them, but with `bib2gls` you can simply instruct `bib2gls` to ignore the description. This makes it much easier to have a large database of `abbreviations` for use across multiple documents that may or may not require the description.

 `sampleDesc.tex`

This is similar to the previous example, except that it defines the acronyms as normal entries using `\newglossaryentry` instead of `\newacronym`. As with the previous example, the glossary is added to the table of contents, so an extra run through `LATEX` is required:

```
pdflatex sampleDesc
makeglossaries sampleDesc
pdflatex sampleDesc
pdflatex sampleDesc
```

This sample file demonstrates the use of the `first` and `text` keys but in general it's better to use `\newacronym` instead as it's more flexible. For even greater flexibility use `\newabbreviation` provided by `glossaries-extra`. For other variations, such as showing the symbol on first use, you may prefer to make use of the post-link category hook. For examples, see the section “Changing the Formatting” in `glossaries-extra` and `bib2gls: An Introductory Guide`.<sup>4</sup>

 `sampleFnAcrDesc.tex`

This document has some sample acronyms that use the `footnote-sc-desc` acronym style. As with the previous example, the glossary is added to the table of contents, so an extra run through `LATEX` is required:

```
pdflatex sampleFnAcrDesc
makeglossaries sampleFnAcrDesc
pdflatex sampleFnAcrDesc
pdflatex sampleFnAcrDesc
```

If you want to convert this sample document to use `glossaries-extra`, then you just need to follow the same steps as for `sampleAcr.tex` with a slight modification. This time the `short-sc-footnote-desc` abbreviation style is needed:

`glossaries-extra`

<sup>4</sup>[mirrors.ctan.org/support/bib2gls/bib2gls-begin.pdf](http://mirrors.ctan.org/support/bib2gls/bib2gls-begin.pdf)

```
\setabbreviationstyle[acronym]{short-sc-footnote
-desc}
```


The command redefinitions (performed with `\renewcommand`) should now all be deleted as they are no longer applicable.

You may prefer to use the `short-sc-postfootnote-desc` style instead. There are subtle differences between the `postfootnote` and `footnote` set of styles. Try changing the `abbreviation` style to `short-sc-footnote` and compare the position of the footnote marker with the two styles.

This modified sample file now has a shorter build:

```
pdflatex sampleFnAcrDesc
makeglossaries sampleFnAcrDesc
pdflatex sampleFnAcrDesc
```

This is because the `glossaries-extra` package produces boilerplate text when the indexing file is missing (on the first  $\LaTeX$  run) which adds the glossary title to the table of contents (`toc`) file.

 `sampleCustomAcr.tex`

This document has some sample acronyms with a custom acronym style. It also adds the glossary to the table of contents, so an extra run through  $\LaTeX$  is required:

```
pdflatex sampleCustomAcr
makeglossaries sampleCustomAcr
pdflatex sampleCustomAcr
pdflatex sampleCustomAcr
```

This is a slight variation on the previous example where the name is in the form  $\langle long \rangle$  ( $\langle short \rangle$ ) instead of  $\langle short \rangle$  ( $\langle long \rangle$ ), and the `sort` key is set to the long form instead of the short form. On first use, the footnote text is in the form  $\langle long \rangle$ :  $\langle description \rangle$  (instead of just the long form). This requires defining a `\newacronym` style that inherits from the `footnote-sc-desc` style.

The conversion to `glossaries-extra` starts in much the same way as the previous examples:

```
\usepackage[acronym,nomain,postdot,stylemods,style=
altlist]
{glossaries-extra}
```

The `abbreviation` styles have associated helper commands that may be redefined to make minor modifications. These redefinitions should be done before the `abbreviations` are defined.

The `short-sc-footnote-desc` `abbreviation` style is the closest match to the requirement, so replace the `\setacronymstyle` command with:

glossaries  
-extra

```
\setabbreviationstyle[acronym]{short-sc-footnote
-desc}
```

Again, you may prefer `short-sc-postfootnote-desc`. Both styles use the same helper commands.

Next some adjustments need to be made to fit the new requirements. The name needs to be `<long>` (`<short>`):

```
\renewcommand*{\glsxtrfootnotedesname}{%
\protect\glslongfont{\the\glslongtok}%
\protect\glsxtrfullsep{\the\glslabeltok}%
\protect\glsxtrparen{\protect\glsabbrvfont
{\the\glsshorttok}}%
}
```

This command expands when the `abbreviations` are defined so take care to `\protect` commands that shouldn't be expanded at that point, and make sure that the token registers that store the label, long and short values are able to expand. Similarly the sort value needs adjusting:

```
\renewcommand*{\glsxtrfootnotedescsort}{\the\gls-
longtok}
```

The footnote for all the footnote `abbreviation` styles is produced with:

```
\glsxtrabbrvfootnote{<label>}{<text>}
```

where `<text>` is the singular or plural long form, depending on what command was used to reference the `abbreviation` (`\gls`, `\glspl` etc). This can simply be redefined as:

```
\renewcommand*{\glsxtrabbrvfootnote}[2]{\footnote{%
#2: \glsentrydesc{#1}}}
```

This will mimic the result from the original sample document. Note that newer versions of `glossaries-extra` may have additional helper commands associated with certain `abbreviation` styles.

You may prefer to replace `#2` with a reference to a specific field (or fields). For example:

```
\renewcommand*{\glstrabbrvfootnote}[2]{\footnote{%
\Glsfmtlong{#1} (\glshort{#1}): \glentrydesc
{#1}.}}
```

As with the earlier `sampleAcrDesc.tex`, you need to remove or change the redefinition of `\glseeitemformat` since `\acronymfont` is no longer appropriate.

In the original `sampleCustomAcr.tex` source code, I started the description with a capital:

```
\newacronym[description=
{Statistical pattern recognition
technique using the ``kernel trick'},
see={ [see also]{svm}},
]{ksvm}{ksvm}{kernel support vector machine}
```

This leads to a capital letter after the colon in the footnote, which is undesirable, but I would like to have the description start with a capital in the glossary. The solution to this problem is easy with `glossaries-extra`. I start the description with a lowercase letter and set the `glossdesc` category attribute to `firstuc` to convert the description to sentence case in the glossary:

```
\glsetcategoryattribute{acronym}{glossdesc}
{firstuc}
```

The `abbreviation` definitions are modified slightly:

```
\newacronym[description=
{statistical pattern recognition
technique using the ``kernel trick'},
seealso={svm},
]{ksvm}{ksvm}{kernel support vector machine}
```


Note the use of the `seealso` key, which is only available with `glossaries-extra`.

If you prefer to use `\newabbreviation` instead of `\newacronym`, then the category needs to be `abbreviation` rather than `acronym`:

```
\glsetcategoryattribute{abbreviation}{glossdesc}
{firstuc}
```

and the style command needs to be adjusted so that it omits the optional argument. For example:

```
\setabbreviationstyle{short-sc-postfootnote-desc}
```

 sample-FnDesc.tex

This example defines a custom entry formatdisplay format that puts the description in a footnote on first use.

```
pdflatex sample-FnDesc
makeglossaries sample-FnDesc
pdflatex sample-FnDesc
```

In order to prevent nested hyperlinks, this document uses the `hyperfirst=false` package option (otherwise the footnote marker hyperlink would be inside the hyperlink around the link text which would result in a nested hyperlink).

The `glossaries-extra` package has category post-link hooks that make it easier to adjust the formatting. The post-link hook is placed after the hyperlink around the link text, so a hyperlink created by `\footnote` in the post-link hook won't cause a nested link. This means that the `hyperfirst=false` option isn't required:

glossaries  
-extra

```
\usepackage[postdot,stylemods]{glossaries-extra}
```

**i** Never use commands like `\gls` or `\glsdesc` in the post-link hook as you can end up with infinite recursion. Use commands that don't themselves have a post-link hook, such as `\glsentrydesc` or `\glossentrydesc`, instead.

In the original `sample-FnDesc.tex` file, the entry format was adjusted with:

```
\renewcommand*{\glsentryfmt}{%
  \glsentryfmt
  \ifglsused{\glslabel}}{\footnote{\glsentrydesc
{\glslabel}}}}
```

This can be changed to:

```
\glsdefpostlink
{general}% category label
```

```
{\glstrifwasfirstuse{\footnote{\glstrydesc{\glsl-
label}}}}{}}
```

This sets the post-link hook for the **general** category (which is the default category for entries defined with `\newglossaryentry`). If I added some **abbreviations** (which have a different category) then this change wouldn't apply to them.

The first paragraph in the document is:

```
First use: \glsl{sample}.
```

So the PDF will have the word “sample” (the link text created by `\glsl{sample}`) as a hyperlink to the entry in the glossary followed by the footnote marker, which is a hyperlink to the footnote. This is then followed by the sentence terminator. “First use: sample<sup>1</sup>.”

It would look tidier if the footnote marker could be shifted after the full stop. “First use: sample.<sup>1</sup>” This can easily be achieved with a minor modification:

```
\glstdefpostlink
{general}% category label
{\glstrifwasfirstuse
{\glstrdopostpunc{\footnote{\glstrydesc{\glsl-
label}}}}}%
{}%
}
```

You may prefer to use `\glossentrydesc` instead of `\glstrydesc`. This will obey the `glossdesc` category attribute. If you append `\glspostdescription`, you can also pick up the `postdot` package option. For example:

```
\glstsetcategoryattribute{general}{glossdesc}
{firstuc}

\glstdefpostlink
{general}% category label
{\glstrifwasfirstuse
{\glstrdopostpunc{\footnote{%
\glossentrydesc{\glslabel}\glspostdescription}}}}
%
{}%
}
```

Alternatively, you could just use `\Glsentrydesc` and explicitly append the full stop.

 sample-custom-acronym.tex

This document illustrates how to define your own acronym style if the predefined styles don't suit your requirements.

```
pdflatex sample-custom-acronym
makeglossaries sample-custom-acronym
pdflatex sample-custom-acronym
```

In this case, a style is defined to show the short form in the text with the long form and description in a footnote on first use. The long form is used for the `sort` value. The short form is displayed in small caps in the main part of the document but in uppercase in the list of acronyms. (So it's a slight variation of some of the examples above.) The `name` is set to the long form (starting with an initial capital) followed by the all caps short form in parentheses. The final requirement is that the inline form should show the long form followed by the short form in parentheses.

As with `sampleFnAcrrDesc.tex`, the `short-sc-footnote-desc` and `short-sc-postfootnote-desc` `glossaries-extra` abbreviation styles produce almost the required effect so one of those can be used as a starting point. However the final requirement doesn't fit. It's now necessary to actually define a custom `abbreviation` style, but it can mostly inherit from the `short-sc-footnote-desc` or `short-sc-postfootnote-desc` style:

```
\newabbreviationstyle{custom-fn}%
{%
  \GlsXtrUseAbbrStyleSetup{short-sc-footnote-desc}%
}%
{%
  \GlsXtrUseAbbrStyleFmts{short-sc-footnote-desc}%
  \renewcommand*{\glsxtrinlinefullformat}[2]{%
    \glsfirstlongfootnotefont{\glsaccesslong{##1}}%
    \ifglsxtrinsertinside##2\fi}%
    \ifglsxtrinsertinside\else##2\fi\glsxtrfullsep
{##1}%
    \glsxtrparen{\glsfirstabbrvscfont{\glsaccess-
short{##1}}}%
  }%
  \renewcommand*{\glsxtrinlinefullplformat}[2]{%
    \glsfirstlongfootnotefont{\glsaccesslongpl{##1}}
%
    \ifglsxtrinsertinside##2\fi      \ifglsxtr-
insertinside\else##2\fi\glsxtrfullsep{##1}%
    \glsxtrparen{\glsfirstabbrvscfont{\glsaccess-
shortpl{##1}}}%
  }
```

```

} \renewcommand*{\Glsxtrinlinefullformat}[2]{%
  \glsfirstlongfootnotefont{\Glsaccesslong{##1}}%
  \ifglsxtrinsertinside##2\fi}%
  \ifglsxtrinsertinside\else##2\fi\glsxtrfullsep
{##1}%
  \glsxtrparen{\glsfirstabbrvscfont{\glsaccess-
short{##1}}}%
}%
\renewcommand*{\Glsxtrinlinefullplformat}[2]{%
  \glsfirstlongfootnotefont{\Glsaccesslongpl{##1}}
%
  \ifglsxtrinsertinside##2\fi}%
  \ifglsxtrinsertinside\else##2\fi\glsxtrfullsep
{##1}%
  \glsxtrparen{\glsfirstabbrvscfont{\glsaccess-
shortpl{##1}}}%
}%
}

```

(See the glossaries–extra user manual for further details.)

This new custom style now needs to be set:

```
\setabbreviationstyle[acronym]{custom-fn}
```

Remember that if you decide to use `\newabbreviation` instead of `\newacronym` then the category will be `abbreviation` not `acronym`:

```
\setabbreviationstyle{custom-fn}
```

This custom style simply adjusts the inline full form. There are other adjustments to be made that apply to the inherited style. (The alternative is to design a new style from scratch.) The footnote contains the long form followed by the description. This is the same as the modification to an earlier example:

```

\renewcommand*{\glsxtrabbrvfootnote}[2]{\footnote
{#2:
\glsentrydesc{#1}.}}

```

As with `sampleCustomAcr.tex`, if you specifically want the singular long form then you can ignore the second argument. For example:



```
\renewcommand*{\glstrabbrvfootnote}[2]{\footnote
{\Glsfmtlong{#1}: \glstentrydesc{#1}.}}
```

The `name` now needs to be the long form followed by the short form in parentheses, but note the new requirement that the short form should now be in all caps not small caps and the long form should start with a capital letter.

```
\renewcommand*{\glstrfootnotedesname}{%
\protect\glsfirstlongfootnotefont
{\makefirstuc{\the\glslongtok}}
(\protect\glsuppercase{\the\glsshorttok})%
}
```

The inherited `abbreviation` style uses the short form as the `sort` value by default. This needs to be changed to the long form:

```
\renewcommand*{\glstrfootnotedescsort}{\the\gls-
longtok}
```

`bib2gls`

If you want to switch to using `bib2gls`, remember to set the `abbreviation` style before the resource command and change the default sort fallback field to `long`, as with `sampleAcrDesc.tex`.

 `sample-dot-abbr.tex`

This document illustrates how to use the base post-link hook to adjust the space factor after acronyms.

```
pdflatex sample-dot-abbr
makeglossaries sampledot-abbrf
pdflatex sample-dot-abbr
```

This example creates a custom storage key that provides a similar function to `glossaries-extra`'s `category` key.

This example is much simpler with `glossaries-extra`. The custom storage key, which is defined using:

`glossaries`  
`-extra`

```
\glsaddstoragekey{abbrtype}{word}{\abbrtype}
```

can now be removed.

The `category` key is set to “initials” for the initialisms (which are defined with the custom `\newacr` command). The `abbreviation` styles can be set with:

```
\setabbreviationstyle[acronym]{long-short}
\setabbreviationstyle[initials]{long-short}
```

The `discardperiod` category attribute will discard any full stop (period) following commands like `\gls`:

```
\glssetcategoryattribute{initials}{discardperiod}
{true}
```

(If you want to use the `noshortplural` attribute then you will also need to set the `plural-discardperiod` attribute.)

The first use is governed by the `retainfirstuseperiod` category attribute. If set, the period won’t be discarded if it follows the first use of commands like `\gls`. This is useful for styles where the first use doesn’t end with the short form. In this case, the first use of the `long-short` style ends with a closing parenthesis, so the end of sentence might be clearer if the period is retained:

```
\glssetcategoryattribute{initials}{retainfirstuse-
period}{true}
```

The `insertdots` category attribute can automatically insert dots into the short form with a final space factor adjustment:

```
\glssetcategoryattribute{initials}{insertdots}{true}
```

The custom helper command defined in the example needs to be slightly modified:

```
\newcommand*{\newabbr}[1][\%
\newabbreviation[category=initials,#1]}
```

The definitions need to be slightly modified to work with the `insertdots` attribute:

```

\newabbr{eg}{eg}{eg}
\newabbr{ie}{ie}{ie}
\newabbr{bsc}{B{Sc}}{Bachelor of Science}
\newabbr{ba}{BA}{BA}
\newabbr{agm}{AGM}{AGM}

```

(This makes it much easier to change your mind if you decide at a later date to omit the dots, especially if you are storing all your definitions in a file that’s shared across multiple documents, but note the need to group “Sc”.)

The “laser” definition remains unchanged:

```

\newacronym{laser}{laser}
{light amplification by stimulated
emission of radiation}

```

The remaining code in the document preamble must now be removed. (It will interfere with `glossaries-extra`’s category post-link hooks.) No change is required in the document body.

See the `glossaries-extra` user manual for further details about category attributes and post-link hooks.

 `sample-font-abbr.tex`

This document illustrates how to have different fonts for acronyms within the style. The document build is:

```

pdflatex sample-font-abbr
makeglossaries sample-font-abbr
pdflatex sample-font-abbr

```

The acronym mechanism provided by the base `glossaries` package isn’t well suited to having a mixture of styles. This example provides a workaround that involves defining a new storage key with `\glsaddstoragekey` that’s used to hold the font declaration (such as `\em`).

```

\glsaddstoragekey{font}{}{\entryfont}

```

A new custom acronym style is defined that fetches the font information from this new key so that it can be applied to the acronym. Some helper commands are also provided to define the different types of acronyms:

```

\newcommand*{\newitabbr}[1][\newacronym
[font=\em, #1]}
\newcommand*{\newupabbr}{\newacronym}

\newitabbr{eg}{e.g.}{exempli gratia}
\newupabbr{bsc}{BSc}{Bachelor of Science}

```

This makes the first use of `\gls{eg}` appear as “exempli gratia (*e.g.*)” whereas the first use of `\gls{bsc}` is “Bachelor of Science (BSc)”.

This example document is much simpler with `glossaries-extra`. First the `\usepackage` command needs adjusting:

`glossaries  
-extra`

```

\usepackage[postdot, stylemods]{glossaries-extra}

```

The custom storage key can now be removed and also the custom acronym style. Now replace the `\setacronymstyle` line with:

```

\setabbreviationstyle[acronym]{long-short-em}

```

and change the definition of the helper commands:

```

\newcommand*{\newitabbr}{\newacronym}
\newcommand*{\newupabbr}{\newabbreviation}

```

Note that the `font=\em,` part has been removed from the definition of the first command and the second command uses `\newabbreviation` instead of `\newacronym`. This means that `\newitabbr` will default to `category={acronym}` and `\newupabbr` will default to `category={abbreviation}`. The default style for the `abbreviation` category is `long-short`, which is the required style for this example. This just means that only the `acronym` category needs to have the style set (with the above `\setabbreviationstyle` command).

Finally, the `\acrshort`, `\acrlong` and `\acrfull` commands need to be replaced with `\glstrshort`, `\glstrlong` and `\glstrfull`.

You may notice that the spacing after “e.g.” and “i.e.” isn’t correct. This is similar to the `sample-dot-abbr.tex` example where the space factor needs adjusting. In this case I’ve inserted the dots manually (rather than relying on the `insertdots` attribute). You can either remove the dots and use `insertdots` with `discardperiod`:

```

\glssetcategoryattribute{acronym}{insertdots}{true}
\glssetcategoryattribute{acronym}{discardperiod}
{true}

\newitabbr{eg}{eg}{exempli gratia}
\newitabbr{ie}{ie}{id est}

```

Or you can manually insert the space factor adjustment with `\@` and only use the `discardperiod` attribute:

```

\glssetcategoryattribute{acronym}{discardperiod}
{true}

\newitabbr{eg}{e.g.\@}{exempli gratia}
\newitabbr{ie}{i.e.\@}{id est}

```

You don't have to use the `acronym` category. You may prefer a different label that fits better semantically. For example:

```

\setabbreviationstyle[latinabbr]{long-short-em}
\newcommand*{\newlatinabbr}[1][\]{\newabbreviation
[category={latinabbr},#1]}
\glssetcategoryattribute{latinabbr}{insertdots}
{true}
\glssetcategoryattribute{latinabbr}{discardperiod}
{true}

\newlatinabbr{eg}{e.g.\@}{exempli gratia}
\newlatinabbr{ie}{i.e.\@}{id est}

```

### 18.3. Non-Page Locations

 `sampleEq.tex`

This document illustrates how to change the entry location to something other than the page number. In this case, the equation counter is used since all glossary entries appear inside an equation environment. To create the document do:

```
pdflatex sampleEq
makeglossaries sampleEq
pdflatex sampleEq
```

The `glossaries` package provides some location formats, such as `hyperarm` and `hyperbf`, that allow the locations in the number list to hyperlink to the appropriate place in the document (if `hyperref` has been used). Since it's not possible to include the hyperlink name in the indexing information with `makeindex` and `xindy`, the `glossaries` package has to reform the name from a prefix and the location value.

Unfortunately it's not always possible to split the link name into a prefix and location. That happens with the equation counter in certain classes, such as the `report` class (which is used in this example). This means that it's necessary to redefine `\theHequation` so that it has a format that fits the requirement:

```
\renewcommand*\theHequation{\theHchapter.\arabic
{equation}}
```

If you don't do this, the equation locations in the glossary won't form valid hyperlinks.

Each glossary entry represents a mathematical symbol. This means that with Options 1, 2 and 3 it's necessary to use the `sort` key. For example:

```
\newglossaryentry{Gamma}{name={\ensuremath
{\Gamma(z)}},
description={Gamma function}, sort={Gamma}}
```

If you want to switch to using `bib2gls`, the first change you need to make is to switch from explicitly loading `glossaries` to loading `glossaries-extra` with the `record` package option. If `record=only` (or `record` without a value) is used, then the above redefinition of `\theHequation` is still required. If `record=nameref` is used instead then the redefinition of `\theHequation` isn't required. You may also want to use the `stylemods` and `postdot` options:

```
\usepackage[record=nameref, stylemods, postdot,
ucmark, style=long3colheader, counter=equation]
{glossaries-extra}
```

The entries now need to be converted into the `bib` format required by `bib2gls`, which can be done with `convertgls2bib`:

```
convertgls2bib --preamble-only sampleEq.tex
entries.bib
```

This will create a file called `entries.bib` that starts:

```
% Encoding: UTF-8
@entry{Gamma,
  name={\ensuremath{\Gamma(z)}},
  description={Gamma function}
}
```

You may prefer to change `@entry` to `@symbol`. (This should be easy to do with your text editor's search and replace function.)

Note that the `sort` key has been omitted. This is because it typically shouldn't be used. The difference between using `@entry` and `@symbol` is that with `@entry` the sort value will be obtained from the `name` but with `@symbol` the sort value will be obtained from the label. If you explicitly use the `sort` key then you will break this behaviour. (If you try this example out, notice the difference in the ordering if you switch between `@entry` and `@symbol`. See also [bib2gls gallery: sorting](#).<sup>5</sup>)

Next replace `\makeglossaries` with:

```
\GlsXtrLoadResources[src={entries}]
```

If you have used `record=nameref` then you can remove the redefinition of `\theH-equation`. Next remove all the lines defining the glossary entries (since they're now defined in the bib file).

Finally, replace `\printglossary` with `\printunsrtglossary`:

```
\printunsrtglossary[title=
{Index of Special Functions and Notations}]
```

The rest of the document remains unchanged (unless you want to use `\glsxtrfmt` as described in the following example).

 `sampleEqPg.tex`

This is similar to the previous example, but the number lists are a mixture of page numbers and equation numbers. This example adds the glossary to the table of contents, so an extra  $\LaTeX$  run is required:

<sup>5</sup>[dickimaw-books.com/gallery/index.php?label=bib2gls-sorting](http://dickimaw-books.com/gallery/index.php?label=bib2gls-sorting)

```
pdflatex sampleEqPg
makeglossaries sampleEqPg
pdflatex sampleEqPg
pdflatex sampleEqPg
```

As with the previous example, entries are defined like this:

```
\newglossaryentry{Gamma}{name={\ensuremath{\Gamma(z)}}
},
description={Gamma function},sort={Gamma}
```

The `counter=equation` package option is used to set the default indexing counter to equation. This means that it has to be changed for indexing outside of any numbered equation. For example:

```
\glslink[format=hyperbf,counter=page]{Gamma}
{gamma function}
```

I've set the `format` to `hyperbf` to indicate that this is a primary reference. (Note that I'm using `hyperbf` not `textbf` in order to include a hyperlink in the location.)

The link text here is almost identical to the description. The only difference is that the description starts with a capital (sentence case). If it started with a lowercase character instead, I could simply use `\glsdesc` instead of `\glslink`. If I change the entry descriptions so that they all start with a lowercase letter then I would need to create a custom glossary style that used `\Glossentrydesc` instead of `\glossentrydesc`.

If I switch to using `glossaries-extra` I wouldn't need a new glossary style. Instead I could just use the `glossdesc` category attribute to perform the case change. Remember that the first change to make is to replace `glossaries` with `glossaries-extra`:

```
\usepackage[style=long3colheader,postdot,stylemods,
counter=equation]{glossaries-extra}
```

The entries are now all defined so that the description starts with a lowercase letter (except for the descriptions that start with a proper noun). For example:

```
\newglossaryentry{Gamma}{name={\ensuremath
{\Gamma(z)}}},
description={gamma function},sort={Gamma}}
```

The `glossdesc` category attribute needs setting:

glossaries  
-extra



```
\glssetcategoryattribute{general}{glossdesc}
{firstuc}
```

This means that I can now use `\glsdesc` instead of `\glslink`.

It's a bit cumbersome typing `[format=hyperbf, counter=page]` for each primary reference, but `glossaries-extra` provides a convenient way of having a third modifier for commands like `\gls` and `\glsstext`. This needs to be a single punctuation character (but not `*` or `+` which are already in use). For example:

```
\GlsXtrSetAltModifier{!}{format=hyperbf, counter=
page}
```

Now `\glsdesc!{Gamma}` is equivalent to:

```
\glsdesc[format=hyperbf, counter=page]{Gamma}
```

So the text at the start of the “Gamma Functions” chapter is now just:

```
The \glsdesc!{Gamma} is defined as
```

which is much more compact. Similar changes can be made for the other instance of `\glslink` where the link text is just the description:

```
The \glsdesc!{erf} is defined as
```

There are three other instances of `\glslink`, such as:

```
\glslink{Gamma}{\Gamma(x+1)}
```

If I just use `\gls{Gamma}` then I would get  $\Gamma(z)$  as the link text. For entries like this that represent functions with variable parameters it would be more convenient (and help with consistency) if a command was available to easily replace the parameters.

With the base `glossaries` package, one simple solution that works for this example is to save just the function symbol in the `symbol` field, for example:

```
\newglossaryentry{Gamma}{name={\ensuremath
{\Gamma(z)}},
symbol={\ensuremath{\Gamma}},
description={gamma function},sort={Gamma}}
```

and then use:

```
\glssymbol{Gamma} [ (\Gamma(x+1)) ]
```

(which includes the function parameter inside the link text) or just:

```
\glssymbol{Gamma} (\Gamma(x+1))
```

(which has the function parameter after the link text). This is a convenient approach where the extra material can simply follow the symbol, and it can also be used with glossaries–extra.

The glossaries–extra package provides another possibility. It requires a command that takes a single argument, for example:

```
\newcommand{\Gammafunction}[1]{\Gamma(#1)}
```

The control sequence name (the command name without the leading backslash) is stored in the field identified by the command `\GlsXtrFmtField` (this should be the internal field name not the key name, see Table 4.1). The default is `user1` which corresponds to the `user1` key. This means that the “Gamma” entry would need to be defined with `user1={Gammafunction}`. With this approach, each function entry would need a separate associated command.

Another approach is to store the parameterless function in the `symbol` key (as earlier) and have a more generic command that uses this symbol. This requires the entry label, which can be obtained with `\glslabel` within the link text:

```
\newcommand{\entryfunc}[1]{\glsentrysymbol{\gls-
label}(#1)}
```

(Obviously, this command can’t be used outside of the link text or post-link hooks since it uses `\glslabel`.)

So the entry now needs the parameterless function in `symbol` and the control sequence name of this generic command in `user1`. For example:

```

\newglossaryentry{Gamma}{name={\ensuremath
{\Gamma(z)}},
symbol={\ensuremath{\Gamma}}, user1={entryfunc},
description={gamma function}, sort={Gamma}}

```

(This doesn't need to be done for the "C" and "G" entries since they're constants not functions.)

You may want to consider providing helper commands to make the functions easier to define. For example:

```

\newcommand{\func}[2]{#1(#2)}
\newcommand{\entryfunc}[1]{\func{\glssymbolsymbol
{\glslabel}}{#1}}
\newcommand{\newfunc}[5][[]]{%
  \newglossaryentry{#2}{name={\ensuremath{\func{#3}
{#4}}},
    symbol={#3},
    user1={entryfunc},
    description={#5},
    sort={#2}, #1
  }%
}

```

The entries can now be defined using this custom `\newfunc` command. For example:

```

\newfunc{Gamma}{\Gamma}{z}{gamma function}
\newfunc[sort={gamma1}]{gamma}{\gamma}{\alpha,x}
{lower
  incomplete gamma function}
\newfunc[sort={Gamma2}]{iGamma}{\Gamma}{\alpha,x}
{upper
  incomplete gamma function}

```

Note that in `\newfunc` the `symbol` key doesn't have its value encapsulated with `\ensuremath` so `\glssymbol` will need to explicitly be placed in math mode. If you switch to a glossary style that displays the symbol, you will either need to adjust the definition of `\newfunc` to use `\ensuremath` in the `symbol` field or you can add the encapsulation with the `glosssymbolfont` category attribute.

Now `\glslink{Znu}{Z_\nu}` can simply be replaced with `\glssymbol{Znu}` (no parameter is required in this case). For the other cases, where the parameter is different from that given in the `text` field (which is obtained from the `name`), you can use `\glsxtrfmt`.

For example, `\glslink{Gamma}{\Gamma (x+1)}` can now be replaced with:

```
\glsxtrfmt{Gamma}{x+1}
```

This effectively works like `\glslink` but omits the post-link hook. (See the `glossaries-extra` user manual for further details.)

Don't use `\glsxtrfmt` within the argument of another `\glsxtrfmt` command (or inside any other link text).

Similarly `\glslink{Gamma}{\Gamma (\alpha)}` can now be replaced with:

```
\glsxtrfmt{Gamma}{\alpha}
```

Note that it's still possible to use:

```
\glsymbol{Gamma}[(\alpha)]
```

You may prefer to define a helper command that makes it easier to switch between your preferred method. For example:

```
\newcommand*{\Fn}[3][\glsymbol[#1]{#2}[(#3)]}
```

or:

```
\newcommand*{\Fn}[3][\glsxtrfmt[#1]{#2}{#3}]
```

If you want to convert this example so that it works with `bib2gls`, first convert it to use `glossaries-extra` (as described above), and then follow the instructions from `sampleEq.tex`. The `convertgls2bib` application recognises `\newcommand` so it will be able to parse the custom `\newfunc` commands.

`bib2gls`

Note that `bib2gls` allows you to separate the locations in the number list into different groups according to the counter used for the location. This can be done with the `loc-counters` resource option. It's also possible to identify primary formats (such as `hyper-bf` used in this example) using the `primary-location-formats` option. The primary locations can then be given a more prominent position in the number list. See the `bib2gls` user manual for further details.

 `sampleSec.tex`

This document also illustrates how to change the location to something other than the page number. In this case, the section counter is used. This example adds the glossary to the table of contents, so an extra  $\LaTeX$  run is required:

```
pdflatex sampleSec
makeglossaries sampleSec
pdflatex sampleSec
pdflatex sampleSec
```

Note that there are conflicting location formats, which trigger a warning from `makeindex`:

```
## Warning (input = sampleSec.glo, line = 6; output
= sampleSec.gls, line = 9):
-- Conflicting entries: multiple encaps for the same
page under same key.

## Warning (input = sampleSec.glo, line = 2; output
= sampleSec.gls, line = 10):
-- Conflicting entries: multiple encaps for the same
page under same key.
```

This is the result of indexing an entry multiple times for the same location with different values of the `format` key (encaps). (`makeindex` assumes that the location is a page number)

In this case, it's caused by three references to the “`ident`” entry in section 2.1:

```
\gls[format=hyperit]{ident}
\glspl{ident} % default format=glsnumberformat
\gls*[format=hyperbf]{ident}
```

If you use the `makeglossaries` Perl script it will detect the warnings in the `makeindex` transcript file and attempt to fix the conflict by removing entries from the `glo` file:

```
Multiple encaps detected. Attempting to remedy.
Reading sampleSec.glo...
Writing sampleSec.glo...
Retrying
```

(Range formats have highest precedence. The default `glsnumberformat` has the lowest precedence.)

If you use `makeglossaries-lite` or call `makeindex` directly then the problem won't be fixed and the glossary will end up with the rather odd number list for the identity matrix

entry consisting of three references to section 2.1: the first in the default font, followed by bold (`hyperbf`) and then italic (`hyperit`), which results in 2.1, **2.1**, *2.1*. If you use `makeglossaries` then only the bold entry (**2.1**) will be present. However, if you don't want the problem corrected, call `makeglossaries` with the `-e` switch.

If you switch to `xindy`:

```
\usepackage[xindy,style=altlist,toc,counter=section]
{glossaries}
```

then the conflict will be resolved using the number format attribute list order of priority. In this case, `glsnumberformat` has the highest priority. This means that only the upright medium weight entry (2.1) will be present. The simplest way of altering this is to provide your own custom format. For example:

```
\newcommand*{\primary}[1]{\hyperit{#1}}
\GlsAddXdyAttribute{primary}
```

and change `\gls[format=hyperit]` to `\gls[format=primary]` etc. This will give `format=primary` the highest priority. (It's also better practice to provide this kind of semantic command.)

With `bib2gls`, you can supply rules to deal with location format conflicts, as illustrated below.

In order to switch to `bib2gls`, first replace `glossaries` with `glossaries-extra`, and add the `record` package option. Remember that `glossaries-extra` has a different set of defaults and you may also want to patch the predefined base styles. For example:

`bib2gls`

```
\usepackage[style=altlist,postdot,stylemods,counter=
section]
{glossaries-extra}
```

The entry definitions now need to be converted into `bib2gls` format and saved in a `bib` file (say, `entries.bib`). You can use `convertgls2bib`:

```
convertgls2bib --preamble-only sampleSec.tex
entries.bib
```

Next replace `\makeglossaries` with:

```
\GlsXtrLoadResources[src={entries}]
```

and remove all the `\newglossaryentry` commands.

Finally, replace `\printglossaries` with `\printunsrtglossaries`. The document build is now:

```
pdflatex sampleSec
bib2gls sampleSec
pdflatex sampleSec
```

As with the original example, there's still a location format conflict, which `bib2gls` warns about:

```
Warning: Entry location conflict for formats:
hyperbf and hyperit
Discarding: {ident}{}{section}{hyperbf}{2.1}
Conflicts with: {ident}{}{section}{hyperit}{2.1}
```

This means that it has discarded the bold location and kept the italic one. (As with `makeglossaries`, range formats have the highest priority and `glsnumberformat` has the lowest.)

It would be better if the conflict could be merged into a single location that was both bold and italic. To achieve this, it's first necessary to define a command that produces this effect:

```
\newcommand*{\hyperbfit}[1]{\textbf{\hyperit{#1}}}
```

Now `bib2gls` needs to be invoked with the appropriate mapping with the `--map-format` or `-m` switch:

```
bib2gls -m "hyperbf:hyperbfit,hyperit:hyperbfit"
sampleSec
```

If you are using `arara` the directive should be:

```
% arara:
bib2gls: { mapformats: [ [hyperbf, hyperbfit],
% arara: --> [hyperit, hyperbfit] ] }
```

If you try out this example, notice the difference between `record=only` and `record=nameref`. If you use the latter, the locations will now be the section titles rather than the section numbers. If you use the `record=nameref` setting you can customize the location by defining the command:

```
\glsxtr<counter>locfmt {<location>} {<title>}
```


In this case the counter is `section`, so the command should be `\glsxtrsectionlocfmt`. It takes two arguments: the first is the location and the second is the title. For example:

```
\newcommand*{\glsxtrsectionlocfmt}[2]{\S#1 #2}
```

(The only command of this type that is defined by default is the one for the equation counter, `\glsxtrequationlocfmt`.) Make sure that you have at least version 1.42 of `glossaries-extra`.

## 18.4. Multiple Glossaries

See also `sampleSort.tex` in §18.5, which has three glossaries.

 `sampleNtn.tex`

This document illustrates how to create an additional glossary type. This example adds the glossary to the table of contents, so an extra  $\LaTeX$  run is required:

```
pdflatex sampleNtn
makeglossaries sampleNtn
pdflatex sampleNtn
pdflatex sampleNtn
```

Note that if you want to call `makeindex` explicitly instead of using the `makeglossaries` or `makeglossaries-lite` scripts then you need to call `makeindex` twice:

1. Create the `main` glossary (all on one line):

```
makeindex -s sampleNtn.ist -t sampleNtn.glg -o
sampleNtn.gls sampleNtn.glo
```

2. Create the secondary glossary (all on one line):



```
makeindex -s sampleNtn.ist -t sampleNtn.nlg -o
sampleNtn.not sampleNtn.ntn
```

This document creates a new glossary using:

```
\newglossary[nlg]{notation}{not}{ntn}{Notation}
```

This defines a glossary that can be identified with the label “notation” with the default title “Notation”. The other arguments are the file extensions required with Options 2 and 3. For those two options, the glossaries package needs to know the input and output files required by `makeindex` or `xindy`.

(The optional argument is the file extension of the indexing transcript file, which glossaries doesn’t need to know about (unless `automake` is used), but it writes the information to the aux file for the benefit of `makeglossaries` and `makeglossaries-lite`.)

If you switch to a different indexing option then these file extensions aren’t required, in which case it’s simpler to use the starred form:

```
\newglossary*{notation}{Notation}
```

This example uses a label prefixing system to differentiate between the different types of entries. (If you use `babel` with a language that makes `:` (colon) active you will need to change the prefix.) For example, the term “set” is defined as:

```
\newglossaryentry{gls:set}{name={set},
description={A collection of distinct objects}}
```

and the set notation is defined as:

```
\newglossaryentry{not:set}{type={notation},
name={\ensuremath{\mathcal{S}}},
description={A \gls{gls:set}}, sort={S}}
```

Notice that the latter description contains `\gls`. This means you shouldn’t use `\glsdesc` with this entry otherwise you will end up with nested links.

The `glossaries-extra` package provides a command for use in within field values to prevent nested link text:

`glossaries`  
`-extra`

```
\glstrp{<field>}{<label>}
```

There are convenient shortcuts for common fields: `\glsp`{<label>} (for the `short` field) and `\glst`{<label>} (for the `text` field). So the set notation definition can be modified:

```
\newglossaryentry{not:set}{type={notation},
name={\ensuremath{\mathcal{S}}},
description={A \glst{gls:set}}, sort={S}}
```

This will stop the inner reference from causing interference if you use `\glsdesc`. It will also suppress indexing within the glossary but will have a hyperlink (if `hyperref` is used).

The `glossaries-extra` package provides a way of defining commands like `\gls` that automatically insert a prefix. For example:

```
\glstrnewgls{not:}{\sym}
\glstrnewglslike{gls:}{\term}{\termp}{\Term}
{\Termp}
```

(there's no point providing commands for plural or case-changing with symbols). Now `\gls{not:set}` can be replaced with `\sym{set}` and `\gls{gls:set}` can be replaced with `\term{set}`.

These two commands are primarily provided for the benefit of `bib2gls` as the information is written to the `aux` file. This allows `bib2gls` to recognise the custom commands if they have been used in the `bib` files. When combined with `label-prefix` and `ext-prefixes` (see below) this makes it much simpler to change the prefixes if necessary.

If you want to convert this document to use `bib2gls`, remember that you need the `record` or `record=nameref` option. For example:

```
\usepackage[record,postdot,stylemods]{glossaries-extra}
```

As with earlier examples, `convertgls2bib` can be used to convert the entry definitions into the required `bib` format. You may prefer to split the entries into separate files according to type. (Requires at least `bib2gls` v2.0.) This is useful if you want to reuse a large database of entries across multiple documents as it doesn't lock you into using a specific glossary. For example:

`bib2gls`

```
convertgls2bib --split-on-type --preamble-only
sampleNtn.tex entries.bib
```

This will create a file called `entries.bib` that contains the entries that didn't have a `type` assigned in the original file, such as:

```
@entry{gls:set,
  name={set},
  description={A collection of distinct objects}
}
```

It will also create a file called `notation.bib` that contains the entries that had the `type` set to “notation” in the original file, such as:

```
@entry{not:set,
  name={\ensuremath{\mathcal{S}}},
  description={A \glspt{gls:set}}
}
```

Note that the `type` field has been removed. The above entry in the `notation.bib` file references a term in the `entries.bib` file. It's possible to strip all the prefixes from the `bib` files and get `bib2gls` to automatically insert them. In which case, this cross-reference needs adjusting to indicate that it's referring to an entry in another file. This can be done with one of the special `ext<n>` prefixes:

```
@entry{set,
  name={\ensuremath{\mathcal{S}}},
  description={A \glspt{ext1.set}}
}
```

The corresponding term in the `entries.bib` file is now:

```
@entry{set,
  name={set},
  description={A collection of distinct objects}
}
```

Now you can replace `\makeglossaries` with:

```
\GlsXtrLoadResources[src={entries},label-prefix=
{gls:}]
\GlsXtrLoadResources[src={notation},type=notation,
label-prefix={not:},ext-prefixes={gls:}]
```

Remove all the `\newglossaryentry` definitions and replace `\printglossaries` with `\printunsrtglossaries`.


Regardless of how many resource sets the document contains, only one `bib2gls` call is required:

```
pdflatex sampleNtn
bib2gls sampleNtn
pdflatex sampleNtn
```

You may notice that the ordering in the notations list has changed from the original. This is because the `sort` field was automatically removed by `convertgls2bib`, so the entries are now sorted according to the `name` field (since they are defined with `@entry`). You can use your text editor’s search and replace function to replace all instances of `@entry` with `@symbol` in the `notations.bib` file so that, for example, the “set” definition becomes:

```
@symbol{set,
  name={\ensuremath{\mathcal{S}}},
  description={A \glspt{ext1.set}}
}
```

Now these `@symbol` entries will be sorted according to their label. (The original label in the `bib` file, not the prefixed label.) This will put them in the same order as the original document. (See the “Examples” chapter of the `bib2gls` user manual for examples of varying the sorting and also `bib2gls gallery: sorting`.<sup>6</sup>)

 `sample-dual.tex`

This document illustrates how to define an entry that both appears in the list of acronyms and in the `main` glossary. To create the document do:

```
pdflatex sample-dual
makeglossaries sample-dual
pdflatex sample-dual
```

<sup>6</sup>[dickimaw-books.com/gallery/index.php?label=bib2gls-sorting](http://dickimaw-books.com/gallery/index.php?label=bib2gls-sorting)

This defines a custom command `\newdualentry` that defines two entries at once (a normal entry and an acronym). It uses `\glsadd` to ensure that if one is used then the other is automatically indexed:

```
\newcommand*{\newdualentry}[5][[]]{%
  % main entry:
  \newglossaryentry{main-#2}{name={#4},%
    text={#3\glsadd{#2}},%
    description={#5},%
    #1% additional options for main entry
  }%
  % acronym:
  \newacronym{#2}{#3\glsadd{main-#2}}{#4}%
}
```

A sample dual entry is defined with this command:

```
\newdualentry{svm}% label
  {SVM}% short form
  {support vector machine}% long form
  {Statistical pattern recognition technique}
% description
```

This defines an acronym with the label “svm” that can be referenced with `\gls{svm}` but it also defines an entry with the label “main-svm”. This isn’t used in the document with `\gls` but it’s automatically added from the `\glsadd{main-svm}` code in the short form of “svm”.

For this trivial document, this kind of dual entry is redundant and unnecessarily leads the reader down a trail, first to the list of acronyms and from there the reader then has to go to the [main](#) glossary to look up the description. It’s better to simply include the description in the list of acronyms.

There are, however, uses for repeating entries across multiple lists. For example, this user manual defines all described commands (such as `\gls`) as glossary entries. They appear in the command summary (where the syntax is given with a brief description and the principle location in the document where the command is described) and they also appear in the index (where just the name and location list is shown).

If you want to switch over to `bib2gls`, first change to `glossaries-extra`:

`bib2gls`

```
\usepackage[record,postdot,stylemods,acronym]
{glossaries-extra}
```

Next, the definition needs to be converted to the `bib` format required by `bib2gls`. If you

do:

```
convertgls2bib --preamble-only sample-dual.tex
entries.bib
```

then `convertgls2bib` will report the following:

```
Overriding default definition of \newdualentry with
custom
definition. (Change \newcommand to \providecommand
if you want
\newdualentry[options]{label}{short}{long}
{description}
converted to @dualabbreviationentry.)
```

This is because `convertgls2bib` has its own internal definition of `\newdualentry`, but if it encounters a new definition that will override its default. If you want to retain `convertgls2bib`'s definition (recommended) then just replace `\newcommand` with `\providecommand` in the document source and rerun `convertgls2bib`.

With `\providecommand`, the new `entries.bib` file created by `convertgls2bib` contains:

```
@dualabbreviationentry{svm,
  short={SVM},
  description=
  {Statistical pattern recognition technique},
  long={support vector machine}
}
```

If `\newcommand` is retained, it will instead contain:

```
@entry{main-svm,
  name={support vector machine},
  description=
  {Statistical pattern recognition technique},
  text={SVM\glsadd{svm}}
}

@acronym{svm,
  short={SVM\glsadd{main-svm}},
```

```
long={support vector machine}
}
```

In the first case, `bib2gls` creates two linked entries using its primary-dual mechanism. In the second case, `bib2gls` creates two entries that simply reference each other.

Assuming that your entries `.bib` file just contains `@dualabbreviationentry`, now replace `\makeglossaries` with:

```
\GlsXtrLoadResources[src={entries},% entries.bib
type=acronym,dual-type=main,dual-prefix={main-}]
```

Then remove the definition of `\newdualentry` and the entry definition. Finally, replace `\printglossaries` with `\printunsrtglossaries`. The document build is:

```
pdflatex sample-dual
bib2gls sample-dual
pdflatex sample-dual
```

If, instead, your entries `.bib` file contains separate `@entry` and `@acronym`, then you need:

```
\setabbreviationstyle[acronym]{long-short}
\GlsXtrLoadResources[src={entries}]
```

If you need number lists, the document build is now

```
pdflatex sample-dual
bib2gls sample-dual
pdflatex sample-dual
bib2gls sample-dual
pdflatex sample-dual
```

and this time `bib2gls` complains about the use of `\glsadd` within the `short` and `text` fields as this can be problematic. (The extra `bib2gls` and `LATEX` calls are to ensure the number list is up to date for the “main-svm” entry, which can only be indexed with `\glsadd` after “svm” has been defined.)

Dual entries make much more sense when one entry is for a glossary with the description displayed but no number list (or just a primary location), and the other is for the index without the description but with a number list. This can be created by replacing `@dualabbreviationentry` with `@dualindexabbreviation`:

```
@dualindexabbreviation{svm,
  description=
  {Statistical pattern recognition technique},
  short={SVM},
  long={support vector machine}
}
```

This can be mixed with @index terms for example:

```
@index{machlearn,
  name={machine learning}
}
```

The document needs modifying:

```
\documentclass{article}

\usepackage[record,postdot,
  nostyles,stylemods=
  bookindex,list,% only want bookindex and list styles
  acronym]{glossaries-extra}


\setabbreviationstyle{long-short-desc}
\GlsXtrLoadResources[src={entries},% entries.bib
  dual-type=acronym,
  label-prefix={idx.},dual-prefix={},
  combine-dual-locations={primary}]

\glsxtrnewglslike{idx.}{\idx}{\idxpl}{\Idx}{\Idxpl}

\begin{document}
\gls{svm} and \idx{machlearn}.

\printunsrtglossary[type=\acronymtype,style=altlist]
\printunsrtglossary[style=bookindex,title={Index}]
\end{document}
```

See the `bib2gls` manual for further details.

 `sample-langdict.tex`

This document illustrates how to use the `glossaries` package to create English to French and



French to English dictionaries. To create the document do:

```
pdflatex sample-langdict
makeglossaries sample-langdict
pdflatex sample-langdict
```

This example uses the `nomain` package option to prevent the creation of the `main` glossary. This means that the document must provide its own glossaries:

```
\newglossary[glg]{english}{gls}{glo}
{English to French}
\newglossary[flg]{french}{flx}{flo}
{French to English}
```

This means that if you want to call `makeindex` explicitly you need to take these new extensions into account:

```
makeindex -s sample-langdict.ist -t
sample-langdict.glg -o sample-langdict.gls
sample-langdict.glo
makeindex -s sample-langdict.ist -t
sample-langdict.flg -o sample-langdict.flx
sample-langdict.flo
```

As with the previous example, this document provides a custom command that defines two related entries:

```
\newcommand*{\newword}[4]{%
  \newglossaryentry{en-#1}{type={english},name={#2}
,description={#3 #4}}%
  \newglossaryentry{fr-#1}{type={french},name=
{#3 #4},text={#4},sort={#4},
  description={#2}}%
}
```

This has the syntax:

```
\newword{<label>}{<english>}{<determiner>}{<french>}
```

(Note that this trivial example doesn't take plurals into account.) This custom command will define two terms with labels `en-⟨label⟩` (for the English term) and `fr-⟨label⟩` (for the French term). So

```
\newword{cat}{cat}{le}{chat}
```

is equivalent to:

```
\newglossaryentry{en-cat}{type={english}, name={cat}
,description={le chat}}
\newglossaryentry{fr-cat}{type={french}, name={le
chat}, sort={chat},
description={cat}}
```

Unlike the previous example (`sample-dual.tex`), there's no link between these two entries. If the document only uses `\gls{en-cat}`, then the “en-cat” entry will appear in the english glossary but the “fr-cat” entry won't appear in the french one.

If you want to switch to `bib2gls` then you first need to convert the document so that it uses `glossaries-extra`, but include the `prefix` option to ensure that `glossaries-prefix` is also loaded:

`bib2gls`

```
\usepackage[record, prefix, postdot, stylemods, nomain]
{glossaries-extra}
```

You don't need to worry about file extensions now, so it's simpler to use the starred `\newglossary*`:

```
\newglossary*{english}{English to French}
\newglossary*{french}{French to English}
```

Next the entries need to be converted to the `bib` format required by `bib2gls`:

```
convertgls2bib --preamble-only --ignore-type
sample-langdict.tex entries.bib
```

This creates the file `entries.bib` that contains entries defined like:

```

@entry{en-cat,
  name={cat},
  description={le chat}
}

@entry{fr-cat,
  name={le chat},
  description={cat},
  text={chat}
}

```

(Note that the `sort` and `type` fields have been omitted.)

This would be more flexible, and much briefer, if these entries were defined using `bib2gls`'s dual entry system combined with the `glossaries-prefix` package:

```

@dualentry{cat,
  name={chat},
  description={cat},
  prefix={le},
  prefixplural={les}
}

```

Similarly for the “chair” entry:

```

@dualentry{chair,
  name={chaise},
  description={chair},
  prefix={la},
  prefixplural={les}
}

```

With `@dualentry`, the English and French terms are now automatically linked from `bib2gls`'s point of view. If only one is referenced in the document, the other will also be added by default.

Now that the determiner has been moved out of the description, it won't show in the glossary. However, it's possible to include it by providing a command to encapsulate the description (which can also apply the language change as well).

```

\GlsXtrLoadResources[src={entries},% entries.bib
  append-prefix-field={space},
  category={same as type},dual-category=
{same as type},
  label-prefix={en-},dual-prefix={fr-},
  type=english,dual-type=french,
  sort=en,dual-sort=fr]

\newcommand{\FrEncap}[1]{%
  \foreignlanguage{french}{\glsentryprefix{\gls-
currententrylabel}#1}}
\newcommand{\EnEncap}[1]{\foreignlanguage{english}
{#1}}


\glssetcategoryattribute{english}{glossnamefont}
{EnEncap}
\glssetcategoryattribute{english}{glossdescfont}
{FrEncap}
\glssetcategoryattribute{french}{glossnamefont}
{FrEncap}
\glssetcategoryattribute{french}{glossdescfont}
{EnEncap}

```

Remember to remove `\makeglossaries`, the definition of `\newword` and the entry definitions from the document preamble, and replace `\printglossary` with:

```
\printunsrtglossary
```

Other refinements that you might like to make include using `\glsxtrnewglslike` so you don't have to worry about the label prefix ("en-" and "fr-"). See the `glossaries-extra` manual for further details.

 `sample-index.tex`

This document uses the `glossaries` package to create both a glossary and an index. This requires two `makeglossaries` (or `makeglossaries-lite`) calls to ensure the document is up to date:

```
pdflatex sample-index
makeglossaries sample-index
pdflatex sample-index
makeglossaries sample-index
pdflatex sample-index
```

## 18.5. Sorting

 `samplePeople.tex`

This document illustrates how you can hook into the standard sort mechanism to adjust the way the sort key is set. This requires an additional run to ensure the table of contents is up-to-date:

```
pdflatex samplePeople
makeglossaries samplePeople
pdflatex samplePeople
pdflatex samplePeople
```

This provides two commands for typesetting a name:

```
\newcommand{\sortname}[2]{#2, #1}
\newcommand{\textname}[2]{#1 #2}
```

where the first argument contains the forenames and the second is the surname. The first command is the one required for sorting the name and the second is the one required for displaying the name in the document. A synonym is then defined:

```
\let\name\textname
```

This command defaults to the display name command (`\textname`) but is temporarily redefined to the sort name command (`\sortname`) within the `sort` field assignment hook:

```
\renewcommand{\glsprestandardsort}[3]{%
\let\name\sortname
\edef#1{\expandafter\expandonce\expandafter{#1}}%
\let\name\textname
\glsdosanitizesort}
```

```
}
```

The people are defined using the custom `\name` command:

```
\newglossaryentry{joebloggs}{name={\name{Joe}
{Bloggs}},
description={\nopostdesc}}
```

Since `\name` is temporarily changed while the `sort` key is being assigned, the sort value for this entry ends up as “Bloggs, Joe”, but the name appears in the document as “Joe Bloggs”.

If you want to use `bib2gls`, you first need to convert the document to use `glossaries-extra` but make sure you include the `record` option: bib2gls

```
\usepackage[record,stylemods,style=listgroup]
{glossaries-extra}
```

Next it's necessary to convert the entry definitions to the `bib` format required by `bib2gls`. You can simply do:

```
convertgls2bib --preamble-only samplePeople
people.bib
```

which will create a file called `people.bib` that contains definitions like:

```
@entry{joebloggs,
name={\name{Joe}{Bloggs}},
description={\nopostdesc}
}
```

However, you may prefer to use the `--index-conversion (-i)` switch:

```
convertgls2bib -i --preamble-only samplePeople
people.bib
```

This will discard the `description` field and use `@index` instead of `@entry` if the `description` is either empty or simply set to `\nopostdesc` or `\glxtrnopostpunc`. The `people.bib` file now contains definitions like:

```
@index{joebloggs,
  name={\name{Joe}{Bloggs}}
}
```

Regardless of which approach you used to create the bib file, you now need to edit it to provide a definition of the custom `\name` command for `bib2gls`'s use:

```
@preamble{"\providecommand{\name}[2]{#2, #1}"}
```

Note the use of `\providecommand` instead of `\newcommand`.

In the document (`samplePeople.tex`) you now need to delete `\makeglossaries`, the definitions of `\sortname`, `\textname`, `\name`, `\glsprestandardsort`, and all the entry definitions. Then add the following to the document preamble:

```
\newcommand{\name}[2]{#1 #2}
\GlsXtrLoadResources[src={people}]
```

Next, use your text editor's search and replace function to substitute all instances of `\glsentrytext` in the chapter headings with `\glsfmttext`. For example:

```
\chapter{\glsfmttext{joebloggs}}
```

Finally, replace `\printglossaries` with:

```
\printunsrtglossaries
```

The document build is now:

```
pdflatex samplePeople
bib2gls samplePeople
pdflatex samplePeople
pdflatex samplePeople
```

The third  $\LaTeX$  call is required to ensure that the PDF bookmarks are up to date, as the entries aren't defined until after the `bib2gls` run (which is why you have to use `\glsfmttext` instead of `\glsentrytext`).

This again leads to a list sorted by surname. The reason this works is because `bib2gls` only sees the definition of `\name` provided in `@preamble`, but the document uses the definition

of `\name` provided before `\GlsXtrLoadResources`. The use of `\providecommand` in `@preamble` prevents `\name` from being redefined within the document.

See also the “Examples” chapter of the `bib2gls` user manual, which provides another “people” example and Aliases.<sup>7</sup>

 `sampleSort.tex`

This is another document that illustrates how to hook into the standard sort mechanism. An additional run is required to ensure the table of contents is up-to-date:

```
pdflatex sampleSort
makeglossaries sampleSort
pdflatex sampleSort
pdflatex sampleSort
```

This document has three glossaries (`main`, `acronym` and a custom `notation`), so if you want to use `makeindex` explicitly you will need to have three `makeindex` calls with the appropriate file extensions:

```
pdflatex sampleSort
makeindex -s sampleSort.ist -t sampleSort.alg -o
sampleSort.acr sampleSort.acn
makeindex -s sampleSort.ist -t sampleSort.glg -o
sampleSort.gls sampleSort.glo
makeindex -s sampleSort.ist -t sampleSort.nlg -o
sampleSort.not sampleSort.ntn
pdflatex sampleSort
pdflatex sampleSort
```

It’s much simpler to just use `makeglossaries` or `makeglossaries-lite`.

In this example, the sort hook is adjusted to ensure the list of notation is sorted according to the order of definition. A new counter is defined to keep track of the entry number:

```
\newcounter{sortcount}
```

The sort hook is then redefined to increment this counter and assign the sort key to that numerical value, but only for the `notation` glossary. The other two glossaries have their sort keys assigned as normal:

<sup>7</sup>[dickimaw-books.com/gallery/index.php?label=aliases](http://dickimaw-books.com/gallery/index.php?label=aliases)



```

\renewcommand{\glsprestandardsort}[3]%
  \ifdefstring{#2}{notation}%
  {%
    \stepcounter{sortcount}%
    \edef#1{\glsortnumberfmt{\arabic{sortcount}}}}
%
}%
{%
  \glsdosanitizesort
}%

```

This means that `makeindex` will sort the notation in numerical order.

If you want to convert this document to use `glossaries-extra`, a much simpler approach is available with its hybrid method. First change the package loading line to:

`glossaries`  
`-extra`

```

\usepackage[postdot,stylemods,acronym]{glossaries-  
extra}

```

Either remove `\setacronymstyle` and replace all instances of `\newacronym` with `\newabbreviation` or replace:

```

\setacronymstyle{long-short}

```

with:

```

\setabbreviationstyle[acronym]{long-short}

```

The custom counter and redefinition of `\glsprestandardsort` can now be removed. The file extensions for the custom notation glossary are no longer relevant so the glossary definition can be changed to:

```

\newglossary*{notation}{Notation}

```

The `\makeglossaries` command now needs to be adjusted to indicate which glossaries need to be processed by `makeindex`:

```

\makeglossaries[main,acronym]

```

Finally, `\printglossaries` needs to be replaced with:

```
\printglossary
\printacronyms
\printnoidxglossary[type=notation,sort=def]
```

Note that the notation glossary, which hasn't been listed in the optional argument of `\makeglossaries`, must be displayed with `\printnoidxglossary`.

This means that `makeindex` only needs to process the `main` and `acronym` glossaries. No actual sorting is performed for the `notation` glossary because, when used with `sort=def`, `\printnoidxglossary` simply iterates over the list of entries that have been indexed.

The document build doesn't need the third  $\LaTeX$  call now (since none of the glossaries extend beyond a page break):

```
pdflatex sampleSort
makeglossaries sampleSort
pdflatex sampleSort
```

This time `makeglossaries` will include the message:

```
only processing subset 'main,acronym'
```

This means that although `makeglossaries` has noticed the `notation` glossary, it will be skipped.

If you are explicitly calling `makeindex` then you need to drop the call for the `notation` glossary:

```
pdflatex sampleSort
makeindex -s sampleSort.ist -t sampleSort.alg -o
sampleSort.acr sampleSort.acn
makeindex -s sampleSort.ist -t sampleSort.glg -o
sampleSort.gls sampleSort.glo
pdflatex sampleSort
```

If you prefer to use `bib2gls`, the package loading line needs to be changed to:

`bib2gls`

```
\usepackage[record,postdot,stylemods,acronym]
{glossaries-extra}
```

Next the entry definitions need to be converted to the `bib` format required by `bib2gls`.

For this example, it's simpler to split the entries into different files according to the glossary type. This can be done with the `--split-on-type` or `-t` switch:

```
convertgls2bib -t --preamble-only sampleSort.tex
entries.bib
```

This will create three files:

`entries.bib`

This contains the entries that were defined with `\newglossaryentry`. For example:

```
@entry{gls:set,
  name={set},
  description={A collection of distinct objects}
}
```

`abbreviations.bib`

This contains the entries that were defined with `\newacronym`. For example:

```
@acronym{zfc,
  short={ZFC},
  long={Zermelo-Fraenkel set theory}
}
```

If you changed `\newacronym` to `\newabbreviation` then `@abbreviation` will be used instead:

```
@abbreviation{zfc,
  short={ZFC},
  long={Zermelo-Fraenkel set theory}
}
```

`notation.bib`

This contains the entries that were defined with `type={notation}`. For example:

```
@entry{not:set,
  name={\mathcal{S}},
  description={A set},
  text={\mathcal{S}}
}
```

You may prefer to replace `@entry` with `@symbol` in this file.

After the definition of the `notation` glossary (`\newglossary`), add:

```
% abbreviation style must be set first:
\setabbreviationstyle[acronym]{long-short}
\GlsXtrLoadResources[src={entries,abbreviations}]
\GlsXtrLoadResources[src={notation},% notation.bib
  type=notation,sort=unsrt]
```

Delete the remainder of the document preamble (`\makeglossaries` and entry definitions).

Finally, replace the lines that display the glossaries with:

```
\printunsrtglossaries
```

The build process is now:

```
pdflatex sampleSort
bib2gls sampleSort
pdflatex sampleSort
```

In this case, I have one resource command that processes two glossaries (`main` and `acronym`) at the same time. The entries in these glossaries are ordered alphabetically. The second resource command processes the `notation` glossary but the entries in this glossary aren't sorted (and so will appear in the order of definition within the `bib` file).

See also `sampleNtn.tex`, `bib2gls gallery: sorting`<sup>8</sup> and the `bib2gls` user manual for more examples.

## 18.6. Child Entries

 `sample.tex`

<sup>8</sup>[dickimaw-books.com/gallery/index.php?label=bib2gls-sorting](http://dickimaw-books.com/gallery/index.php?label=bib2gls-sorting)

This document illustrates some of the basics, including how to create child entries that use the same name as the parent entry. This example adds the glossary to the table of contents and it also uses `\glsrefentry`, so an extra  $\LaTeX$  run is required:

```
pdflatex sample
makeglossaries sample
pdflatex sample
pdflatex sample
```

You can see the difference between word and letter ordering if you add the package option `order=letter`. (Note that this will only have an effect if you use `makeglossaries` or `makeglossaries-lite`. If you use `makeindex` explicitly, you will need to use the `-l` switch to indicate letter ordering.)

One of the entries has its name encapsulated with a semantic command:

```
\newcommand{\scriptlang}[1]{\textsf{#1}}

\newglossaryentry{Perl}{name={\scriptlang{Perl}}
,sort={Perl},
description={A scripting language}}
```

This means that this entry needs to have the `sort` key set otherwise `makeindex` will assign it to the “symbol” group, since it starts with a backslash (which `makeindex` simply treats as punctuation).

The homograph entries “glossary” and “bravo” are defined as sub-entries that inherit the name from the parent entry. The parent entry doesn’t have a description, but with the default `nopostdot=false` setting this will lead to a spurious dot. This can be removed by adding `\nopostdesc` to the description, which suppresses the post-description hook for that entry.

Since the child entries have the same name as the parent, this means that the child entries will have duplicate sort values unless the default is changed with the `sort` key:

```
\newglossaryentry{glossary}{name={glossary},
description={\nopostdesc},plural={glossaries}}

\newglossaryentry{glossarycol}{
description={collection of glosses},
sort={2},
parent={glossary}% parent label
}
```

```
\newglossaryentry{glossarylist}{
  description={list of technical words},
  sort={1},
  parent={glossary}% parent label
}
```

(Remember that the entries are sorted hierarchically.) This will place “glossarylist” before “glossarycol”, but both will come immediately after their parent “glossary” entry.

If you switch to using `glossaries-extra`, remember that the default package options are different:

`glossaries-extra`

```
\usepackage[postdot, stylemods, style=treenoname-
group, order=word,
  subentrycounter]{glossaries-extra}
```

You may now want to consider replacing `\nopostdesc` in the descriptions with `\glstrnopostpunc` (using your text editor’s search and replace function). This suppresses the post-description punctuation but not the category post-description hook.

You may have noticed that some of the descriptions include the plural form, but it’s not done very consistently. For example:

```
\newglossaryentry{cow}{name={cow},
  plural={cows}
, % not required as this is the default
  user1={kine},
  description={(\emph{pl.}\cows, \emph{archaic}
kine) an adult
female of any bovine animal}
}
```

which has the parenthetical material at the start of the description with emphasis,

```
\newglossaryentry{bravocry}{
  description={cry of approval (pl.\bravos)},
  sort={1},
  parent={bravo}
}
```

which has the parenthetical material at the end of the description without emphasis even though it’s a regular plural,

```
\newglossaryentry{bravoruffian}{
  description=
  {hired ruffian or killer (pl.\bravo)},
  sort={2},
  plural={bravo},
  parent={bravo}}
```

which has the parenthetical material at the end of the description without emphasis, and

```
\newglossaryentry{glossary}{name={glossary},
  description={\nopostdesc},
  plural={glossaries}}
```

which doesn't show the plural in the description.

With `glossaries-extra`, you can remove this parenthetical material and implement it using the category post-description hook instead. For example, the above definitions become:

```
\newglossaryentry{cow}{name={cow},
  user1={kine},
  description={an adult female of any bovine animal}
}

\newglossaryentry{bravocry}{
  description={cry of approval},
  sort={1},
  parent={bravo}
}

\newglossaryentry{bravoruffian}{
  description={hired ruffian or killer},
  sort={2},
  plural={bravo},
  parent={bravo}}

\newglossaryentry{glossary}{name={glossary},
  description={\glsxtrnopostpunc},
  plural={glossaries}}
```

The post-description hook for the `general` category can now be set:



```

\glsdefpostdesc{general}{%
% Has the user1 key been set?
  \glstrifhasfield{user1}{\glscurrententrylabel}%
  {\space(\emph{pl.})\glsentryplural{\glscurrent-
entrylabel},
  \emph{archaic} \glscurrentfieldvalue)%
}%
{%
% The user1 key hasn't been set. Is the plural the same as the
% singular form with the plural suffix appended?
  \GlsXtrIfXpFieldEqXpStr{plural}{\glscurrent-
entrylabel}%
  {\glsentrytext{\glscurrententrylabel}\glsplural-
suffix}%
  {%
% Sibling check with bib2gls (see below)
  }%
  {%
% The plural isn't the default. Does this entry have a parent?
  \ifglshasparent{\glscurrententrylabel}
  {%
% This entry has a parent.
% Are the plurals for the child and parent the same?
  \GlsXtrIfXpFieldEqXpStr{plural}{\glscurrent-
entrylabel}%
  {\glsentryplural{\glsentryparent{\gls-
currententrylabel}}}%
  {}% child and parent plurals the same
  {%
  \space(\emph{pl.})\glsentryplural{\gls-
currententrylabel})%
  }%
  } \space(\emph{pl.})\glsentryplural
{\glscurrententrylabel})}%
  }%
}%
}

```

(If you try this example out, notice the difference for the “glossary” entry if you use `\nopostdesc` and then replace it with `\glstrnopostpunc`.) See the `glossaries-extra` user manual for further details and also `glossaries-extra` and `bib2gls: An Introductory Guide`.<sup>9</sup>

<sup>9</sup>[mirrors.ctan.org/support/bib2gls/bib2gls-begin.pdf](http://mirrors.ctan.org/support/bib2gls/bib2gls-begin.pdf)



The “bravo” homographs are an oddity where the singular form is identical but the plural is different (“bravos” and “bravoes”). In the original, both descriptions included the plural term. The above modifications drop the display of the regular “bravos” plural (for the “bravocry” term) and only show the “bravoes” plural (for the “bravoruffian” term). In this particular case it might be useful to show the regular plural in order to highlight the difference.

While it’s straightforward to access an entry’s parent label (with `\glentryparent`) it’s much harder to access entry’s children or siblings. The `\ifglshaschildren` command has to iterate over all entries to determine if any have a parent that matches the given label. This is obviously very time-consuming if you have a large database of entries. It also doesn’t provide a way of determining whether or not the child entries have been indexed.

With `bib2gls`, it’s possible to save this information with the `save-child-count` and `save-sibling-count`, which not only save the total but also save the child or sibling labels in an `etoolbox` internal list. This makes the information much faster to access and also only includes the labels of those entries that have actually been indexed.

In the above, the comment line:

```
% Sibling check with bib2gls (see below)
```

indicates where to put the extra code. If you switch to `bib2gls` and make sure to use `save-sibling-count` then you can insert the following code in the block above where that comment is:

```
\GlsXtrIfFieldNonZero{siblingcount}{\glscurrent-
entrylabel}%
{% siblingcount field value non-zero
\glxtrfieldforlist-
loop % iterate over internal list
{\glscurrententrylabel} % entry label
{siblinglist} % label of field containing list
{siblinghandler} % loop handler
}%
{}}% siblingcount field value 0 or empty or missing
```

This uses a custom handler that’s defined as follows:

```
\newcommand{\siblinghandler}[1]{%
\GlsXtrIfXpFieldEqXpStr*{plural}{\glscurrententry-
label}%
{\glentryplural{#1}}%
{}}
```

```
% current entry's plural same as sibling's plural
{%
  \space(\emph{pl.}\glentryplural{\glscurrent-
entrylabel})%
  \listbreak
}%
}
```

The `\listbreak` command is provided by `etoolbox` and is used for prematurely exiting a loop. The handler tests if the sibling's `plural` field is identical to the current entry's `plural` field. If they are the same, it does nothing. If they are different, it displays the current entry's plural and breaks the loop.

Note that this assumes that the parent entry hasn't had the plural form explicitly set to "bravoes" instead of the default "bravos". In that case, the parent entry would show the plural but the "bravoruffian" child entry wouldn't show the plural (since this case would lead to the empty code block identified with the comment "child and parent plurals the same"). The "bravoes" plural form would instead be shown for the parent, which wouldn't look right.

If you don't use `bib2gls` or if you use it without the `save-sibling-count` resource option then the sibling information won't be available.

In order to switch to using `bib2gls`, it's first necessary to switch to using `glossaries-extra` `bib2gls` (as above). Remember that the `record` option is required:

```
\usepackage[record,postdot,stylemods,style=treeno-
namegroup,
subentrycounter]{glossaries-extra}
```

Next the entry definitions need to be converted to the `bib` format required by `bib2gls`. This can be done with `convertgls2bib`:

```
convertgls2bib --preamble-only sample.tex entries.
```

The semantic command may be moved to the `bib` file's preamble to ensure it's defined:

```
@preamble{"\providecommand{\scriptlang}[1]{\textsf
{#1}}"}}
```

The `sort` field typically shouldn't be set when using `bib2gls`, so `convertgls2bib` strips it. If the `sort` field is missing, `bib2gls` will obtain it from the sort fallback for that entry type. In this case, `@entry` has the `name` field as the sort fallback. If this is also missing

then its value is obtained from the parent’s `name` field (see `bib2gls` gallery: `sorting`<sup>10</sup> for other examples).

Therefore the “Perl” entry is simply defined as:

```
@entry{Perl,
  name={\scriptlang{Perl}},
  description={A scripting language}
}
```

This isn’t a problem for `bib2gls`. In this case, the command has been provided in the `@preamble`, but `bib2gls` strips font information so the sort value becomes “Perl”. If the definition isn’t placed in `@preamble` then `bib2gls` will simply ignore the command (as `xindy` does) so the sort value will still end up as “Perl”.

The homograph entries have also had their `sort` fields omitted:

```
@entry{glossarycol,
  parent={glossary},
  description={collection of glosses}
}

@entry{glossarylist,
  parent={glossary},
  description={list of technical words}
}
```

This means that the sort value for both these child entries is “glossary”. When `bib2gls` encounters identical sort values it acts according to its `identical-sort-action` setting. The default action is to sort by the label using a simple string comparison. In this case, it would put “glossarycol” before “glossarylist”. In the original document, the `sort` value was manually chosen to ensure that the entries are ordered according to first use. This ordering can easily be obtained by changing `bib2gls`’s identical sort action (requires at least `bib2gls` v2.0):

```
\GlsXtrLoadResources[src={entries}, identical-sort
-action=use]
```

This command should replace `\makeglossaries`. If you want the sibling information (see earlier), then you need to remember to add `save-sibling-count` to the list of options.

Note that this is a better solution than in the original example. If I edit the document so that “glossarycol” is used first, then the ordering will be updated accordingly, but with the original example, the `sort` keys would need to be manually changed.

<sup>10</sup>[dickimaw-books.com/gallery/index.php?label=bib2gls-sorting](http://dickimaw-books.com/gallery/index.php?label=bib2gls-sorting)

## 18. Sample Documents

The remainder of the document preamble (that is, the definition of `\scriptlang` and all the entry definitions) should now be removed.


Finally, replace `\printglossaries` with `\printunsrtglossaries`. The document build is now:

```
pdflatex sample
bib2gls --group sample
pdflatex sample
pdflatex sample
```

Note use of the `--group` (or `-g`) switch, which is needed to support the `treenonamegroup` style. The third `LATEX` call is needed because the document contains `\glsrefentry`.

Note that you can't use the `order=letter` package option with `bib2gls`. Instead use the `break-at=none` resource option:

```
\GlsXtrLoadResources[src={entries}, identical-sort
-action=use,
  break-at=none
]
```

 `sample-inline.tex`

This document is like `sample.tex`, above, but uses the `inline` glossary style to put the glossary in a footnote. The document build is:

```
pdflatex sample-inline
makeglossaries sample-inline
pdflatex sample-inline
pdflatex sample-inline
```

If you want to convert this document to `glossaries-extra`, follow the same procedure as above. If you want to use `bib2gls` then you don't need the `--group` switch since no letter groups are required.

 `sampletree.tex`

This document illustrates a hierarchical glossary structure where child entries have different names to their corresponding parent entry. To create the document do:

```
pdflatex sampletree
makeglossaries sampletree
pdflatex sampletree
```

The document uses the `almtreehypergroup` glossary style, which needs to know the widest name for each hierarchical level. This has been assigned manually in the document preamble with `\glssetwidest`:

```
\glssetwidest{Roman letters} % level 0 widest name
\glssetwidest[1]{Sigma}      % level 1 widest name
```

(Level 0 is the top-most level. That is, entries that don't have a parent.) It's possible to get glossaries to compute the widest top-level entry with `\glsfindwidesttoplevelname` but this will iterate over all top-level entries, regardless of whether or not they appear in the glossary. If you have a large database of entries, this will firstly take time and secondly the width may be too large due to an unindexed entry with a big name.

This sample document doesn't require any of the tabular styles so I've prevented those packages from being loaded with `nolong` and `nosuper`. This reduces the overall package loading and reduces the potential of package conflict.

```
\usepackage[style=almtreehypergroup,nolong,nosuper]
{glossaries}
```

(This example glossary is actually better suited for one of the topic styles provided with `glossary-topic`, see below.)

This is obviously a contrived example since it's strange to have the symbol names (such as "Sigma") in the glossary. The purpose is to demonstrate the `almtreehypergroup` with an entry that's noticeably wider than the others in the same hierarchical level. A more sensible document would have the symbol in the `name` key.

If you want to switch to `glossaries-extra`, then you can instead use a combination of `nostyles` glossaries-extra and `stylemods`:

```
\usepackage[style=almtreehyper-
group,postdot,nostyles,
stylemods=tree]{glossaries-extra}
```

The `stylemods` package not only patches the original styles provided by the base `glossaries` package (such as `glossary-tree` used in this example) but also provides extra helper commands. In this case, it provides additional commands to calculate the widest name. For example, instead of manually setting the widest entry with `\glssetwidest`, you could add the following before the glossary:

```
\glsFindWidestUsedTopLevelName
\glsFindWidestUsedLevelTwo
```

This will only take into account the entries that have actually been used in the document, but it can still be time-consuming if you have a large number of entries.

Note that the glossary must be at the end of the document (after all required entries have been used) with this method. The alternative is to perform the calculation at the end of the document and save the results in the `aux` file for the next run.

This example document is using top-level entries for topics without descriptions. This means that the descriptions simply contain `\nopostdesc` to prevent the post-description punctuation from being automatically inserted. For example:

```
\newglossaryentry{greekletter}{name={Greek letters},
text={Greek letter},
description={\nopostdesc}}
```

With `glossaries-extra`, you can convert this to `\glstxtrnopostpunc` which will prevent the post-description punctuation without interfering with the category post-description hook.

In order to distinguish between the child entries, which are symbols, and the parent entries, which are topics, it's useful to give these two different types of entries different categories. The topics can use the default `general` category, but the symbol entries can be assigned to a different category. The value of the `category` key must be a label. For example:

```
\newglossaryentry{C}{name={C},
description={Euler's constant},
category={symbol},
parent={romanletter}}
```

There is some redundancy caused by a parenthetical note after the first use in some of the symbol entries. For example:

```
\newglossaryentry{pi}{name={pi},
text={\ensuremath{\pi}},
first={\ensuremath{\pi} (lowercase pi)},
description={Transcendental number},
parent={greekletter}}
```

With glossaries–extra this can be dealt with through the category post-link hook:

```
\glsdefpostlink{symbol}{%
  \glstrifwasfirstuse
  {% first use
    \glstrifhasfield{user1}{\glslabel}%
    { (\glscurrentfieldvalue) }{}%
  }%
  {}% not first use
}
```

The parenthetical material is now stored in the `user1` key. For example:

```
\newglossaryentry{sigma}{name={Sigma},
text={\ensuremath\Sigma},
user1={uppercase sigma},
description={Used to indicate summation},
parent={greekletter}}
```

The category post-description link is also set to ensure that the symbol is displayed after the description in the glossary:

```
\glsdefpostdesc{symbol}{\space
  ($\glsentrytext{\glscurrententrylabel}$) }
```

These modifications only affect entries with the `category` set to `symbol`.

With glossaries–extra, it's now possible to use the topic styles provided with the glossary–topic package:

```
\usepackage[style=topic, postdot, nostyles, stylemods=
{tree, topic}]
{glossaries-extra}
```

The `topic` style is designed for this kind of hierarchy where all the top-level entries don't have descriptions. This means that the `\nopostdesc` and `\glstrnopostpunc` commands aren't required. The top-level entries can simply be defined as:

```

\newglossaryentry{greekletter}{name={Greek letters},
text={Greek letter}, description={}}

\newglossaryentry{romanletter}{name={Roman letters},
text={Roman letter}, description={}}

```

I've now loaded both the `glossary-tree` and `glossary-topic` packages (via `stylemods={tree, topic}`). The `glossary-topic` package can be used without `glossary-tree`, in which case it will behave more like the normal tree rather than `alltree` styles (but with different indentation and no description in the top-level). However, if you use `\glsetwidest` (provided by `glossary-tree`) then the `topic` style will behave more like `alltree`.

Since there's no description for the top-level entries, the `topic` style ignores the widest name setting for the top-level, so I can just have the level 1 setting:

```
\glsetwidest[1]Sigma
```

If you want to convert this document so that it uses `bib2gls`, you first need to convert it to using `glossaries-extra`, as described above, but remember that you now need the `record` option. `bib2gls`

```

\usepackage[record, style=
topic, postdot, nostyles, stylemods={tree, topic}]
{glossaries-extra}

```

Next convert the entries to the `bib` format required by `bib2gls`:

```
convertgls2bib --preamble-only sampletree.tex
entries.bib
```

Now replace `\makeglossaries` with:

```
\GlsXtrLoadResources[src=entries, set-widest]
```

I've used the `set-widest` option here to get `bib2gls` to compute the widest name. (Obviously, it can only do this if it can correctly interpret any commands contained in the `name` field.)

This means that the `\glsetwidest` commands can now be removed completely. All the `\newglossaryentry` commands also need to be removed from the document preamble. Finally, `\printglossaries` needs to be replaced with `\printunsrtglos-`



saries. The document build is now:

```
pdflatex sampletree
bib2gls sampletree
pdflatex sampletree
```

This produces the same result as with just `glossaries-extra` and `makeglossaries`. However, there are some modifications that can be made to the `bib` file to make it neater.

The top-level entries are defined as:

```
@entry{greekletter,
  name={Greek letters},
  description={},
  text={Greek letter}
}

@entry{romanletter,
  name={Roman letters},
  description={},
  text={Roman letter}
}
```

This is a direct translation from the `\newglossaryentry` commands (after switching to the `topic` style). There's a more appropriate entry type:

```
@indexplural{greekletter,
  text={Greek letter}
}

@indexplural{romanletter,
  text={Roman letter}
}
```

The `@indexplural` entry type doesn't require the `description` and will set the `name` field to the same as the `plural` field. Since the `plural` field hasn't been set it's obtained by appending "s" to the `text` field.

Now let's assume that the symbol entries are defined in a more rational manner, with the actual symbol in the `name` field. For example:

```

@entry{sigma,
  user1={uppercase sigma},
  parent={greekletter},
  description={Used to indicate summation},
  name={\ensuremath{\Sigma}},
  category={symbol}
}

@entry{C,
  parent={romanletter},
  name={\ensuremath{C}},
  description={Euler's constant},
  category={symbol}
}

```

The category post-description hook (provided with `\glsdefpostdesc`) should now be removed from the document.

If you make these changes and rebuild the document, you'll find that the order has changed. Now the “sigma” entry is before the “pi” entry. This is because `bib2gls` is obtaining the sort values from the `name` field, which is the sort fallback for `@entry`. This means that the sort values end up as  $\Sigma$  and  $\pi$  (`bib2gls` recognises the commands `\Sigma` and `\pi` and converts them to the Unicode characters 0x1D6F4 and 0x1D70B).

If you change `@entry` to `@symbol` then you will once again get the order from the original example (“pi” before “Sigma”). This is because the sort fallback for `@symbol` is the label not the `name`. (Remember that the sort fallback is only used if the `sort` field isn't set. If you explicitly set the `sort` field then no fallback is required. See `bib2gls gallery: sorting`.<sup>11</sup>)

You can further tidy the `bib` file by removing the `category` fields. For example:

```

@symbol{sigma,
  user1={uppercase sigma},
  parent={greekletter},
  description={Used to indicate summation},
  name={\ensuremath{\Sigma}}
}

```

You can then assign the `category` in the resource set:


<sup>11</sup>[dickimaw-books.com/gallery/index.php?label=bib2gls-sorting](http://dickimaw-books.com/gallery/index.php?label=bib2gls-sorting)

```
\GlsXtrLoadResources[src=entries, set-widest, category
={same as entry}]
```

This means that all the entries defined with `@symbol` will have the `category` set to `symbol` and all the entries defined with `@indexplural` will have the `category` set to `indexplural`. (Only the `symbol` category is significant in this example.)

You can make the bib files even more flexible by introducing field and entry aliases with `field-aliases` and `entry-type-aliases`. See the `bib2gls` manual for further details.

## 18.7. Cross-Referencing

 `sample-crossref.tex`

This document illustrates how to cross-reference entries in the glossary.

```
pdflatex sample-crossref
makeglossaries sample-crossref
pdflatex sample-crossref
```

The document provides a command `\alsiname` to produce some fixed text, which can be changed as appropriate (usually within a language hook):

```
\providecommand{\alsiname}{see also}
```

I've used `\providecommand` as some packages define this command. This is used to create a “see also” cross-reference with the `see` key:

```
\newglossaryentry{apple}{name={apple},description=
{firm, round fruit},
see={[\alsiname]{pear}}}
```

```
\newglossaryentry{marrow}{name={marrow},
description=
{long vegetable with thin green skin and white flesh}
,
see={[\alsiname]courgette}}
```

Note that “marrow” is included in the glossary even though it hasn't been referenced in the text. This is because the `see` key automatically triggers `\glssee` which indexes the term.

This behaviour is intended for documents where only the terms that are actually required in the document are defined. It's not suitable for a large database of terms shared across multiple documents that may or may not be used in a particular document. In that case, you may want to consider using `glossaries-extra` (see below).

This example is quite simple to convert to `glossaries-extra`. If you want the dot after the description, you need the `nopostdot=false` or `postdot` package option. You may also want to consider using the `stylemods` option.

`glossaries-extra`

In order to prevent the “marrow” entry from being automatically being added to the glossary as a result of the cross-reference, you can use `autoseeindex=false` to prevent the automatic indexing triggered by the `see` key (or the `seealso` key provided by `glossaries-extra`).

```
\usepackage[autoseeindex=false, postdot, stylemods]
{glossaries-extra}
```

The document build is the same, but now the “marrow” and “zucchini” entries aren't present in the document.

Note that the “fruit” entry is still included even though it hasn't been used in the document. This is because it was explicitly indexed with `\glssee` not via the `see` key.

The entries that contains `see[\alsiname<xr-label>]` can be converted to use the `seealso` key:

```
\newglossaryentry{apple}{name={apple},description=
{firm, round fruit},
seealso={pear}}

\newglossaryentry{marrow}{name={marrow},
description=
{long vegetable with thin green skin and white flesh}
'
seealso={courgette}}
```

(The provided `\alsiname` definition may be removed.)

The original example redefines the cross-referencing format to use small caps:

```
\renewcommand{\glsseeitemformat}[1]{\textsc{\gls-
entryname{#1}}}
```

This will still produce the desired effect with `glossaries-extra` for this simple example but, as with `sampleAcrDesc.tex`, this redefinition isn't necessary if you have at least `glossaries-extra v1.42`.

If you want to switch to `bib2gls` then you first need to switch to `glossaries-extra`, as

`bib2gls`

described above, but you now need the `record` option but no longer need the `autosee-index=false` option:

```
\usepackage[record,postdot,stylemods]{glossaries-extra}
```

Next the entry definitions need to be converted to the bib format required by `bib2gls`.

```
convertgls2bib sample-crossref.tex entries.bib
```

If you have at least v2.0 then `convertgls2bib` will absorb the cross-referencing information supplied by:

```
\glssee{fruit}{pear,apple,banana}
```

into the “fruit” definition:

```
@entry{fruit,
  see={pear,apple,banana},
  name={fruit},
  description=
  {sweet, fleshy product of plant containing seed}
}
```

Now remove `\makeglossaries` and all the entry definition commands (including `\glssee` from the document preamble) and add:

```
\GlsXtrLoadResources[src=entries]
```

Finally, replace `\printglossaries` with `\printunsrtglossaries`. The document build is now:

```
pdflatex sample-crossref
bib2gls sample-crossref
pdflatex sample-crossref
```

The glossary now contains: apple, banana, courgette and pear. Note that it doesn’t contain fruit, zucchini or marrow.

Now change the selection criteria:

```
\GlsXtrLoadResources[src=entries,
  selection={recorded and deps and see}]
```

The glossary now includes fruit, zucchini and marrow.


The fruit and zucchini use the `see` key which is a simple redirection for the reader. There's no number list for either of these entries. Whereas marrow uses the `seealso` key, which is typically intended as a supplement to a number list but in this case there are no locations as marrow hasn't been used in the text.

With at least v2.0, there's an alternative:

```
\GlsXtrLoadResources[src=entries,
  selection={recorded and deps and see not also}]
```

In this case, the glossary includes fruit and zucchini but not marrow.

## 18.8. Custom Keys

 `sample-newkeys.tex`

This document illustrates how add custom keys (using `\glsaddkey`). There are two custom keys `ed`, where the default value is the `text` field with “ed” appended, and `ing`, where the default value is the `text` field with “ing” appended. Since the default value in both cases references the `text` field, the starred version `\glsaddkey*` is required to ensure that the default value is expanded on definition if no alternative has been provided.

The entries are then defined as follows:

```
\newglossaryentry{jump}{name={jump},description={}}

\newglossaryentry{run}{name={run},
  ed={ran},
  ing={running},
  description={}}

\newglossaryentry{waddle}{name=waddle,
  ed={waddled},
  ing={waddling},
  description={}}
```

Each custom key is provided a set of commands analogous to `\glsentrytext`, that allows the key value to be accessed, and `\glsstext` that allows the key value to be access with

indexing and hyperlinking (where applicable).

If you find yourself wanting to create a lot of custom keys that produce minor variations of existing keys (such as different tenses) you may find it simpler to just use `\glsdisp`. When editing the document source, it's usually simpler to read:

```
The dog \glsdisp{jump}{jumped} over the duck.
```

than

```
The dog \glsed{jump} over the duck.
```

If you want to convert this document to use `bib2gls`, you first need to switch to `glossaries-extra`, but remember that you need the `record` option: `bib2gls`

```
\usepackage[record]{glossaries-extra}
```

Next convert the entry definitions to the `bib` format required by `bib2gls`:

```
convertgls2bib --index-conversion --preamble-only
sample-newkeys.tex entries.bib
```

The `--index-conversion` switch requires at least v2.0 and will convert entries without a description (or where the description is simply `\nopostdesc` or `\glstrnopostpunc`) to `@index` instead of `@entry`. This means that the new `entries.bib` file will contain:

```
@index{jump,
  name={jump}
}

@index{run,
  ing = {running},
  name={run},
  ed = {ran}
}

@index{waddle,
  ing = {waddling},
```

```
name={waddle},
ed = {waddled}
}
```

Now replace `\makeglossaries` with


```
\GlsXtrLoadResources[src=entries]
```

and delete the `\newglossaryentry` commands. Finally replace `\printglossaries` with `\printunsrtglossaries`.

The document build is now:

```
pdflatex sample-newkeys
bib2gls sample-newkeys
pdflatex sample-newkeys
```

Note that there's no need for the `nonumberlist` package option when you don't use `bib2gls`'s `--group` switch.

 `sample-storage-abbr.tex`

This document illustrates how add custom storage keys (using `\glsaddstoragekey`). The document build is:

```
pdflatex sample-storage-abbr
makeglossaries sample-storage-abbr
pdflatex sample-storage-abbr
```

The custom storage key is called `abbrtype` which defaults to “word” if not explicitly set. Its value can be accessed with the provided custom command `\abbrtype`.

```
\glsaddstoragekey{abbrtype}{word}{\abbrtype}
```

A custom acronym style is then defined that checks the value of this key and makes certain adjustments depending on whether or not its value is the default “word”.

This essentially forms a very similar function to the `glossaries-extra` package's `category` key, which is also defined as a storage key:

```
\glsaddstoragekey{category}{general}{\glscategory}
```

This document is much simpler with the `glossaries-extra` package:

`glossaries`  
`-extra`



```

\documentclass{article}
\usepackage[postdot]{glossaries-extra}
\makeglossaries
\setabbreviationstyle[acronym]{short-long}
\newacronym{radar}{radar}
{radio detecting and ranging}
\newacronym{laser}{laser}
{light amplification by stimulated
emission of radiation}
\newacronym{scuba}{scuba}{self-
contained underwater breathing
apparatus}

\newabbreviation{dsp}{DSP}
{digital signal processing}
\newabbreviation{atm}{ATM}{automated teller machine}

\begin{document}
First use: \gls{radar}, \gls{laser}, \gls{scuba}
, \gls{dsp},
\gls{atm}.


Next use: \gls{radar}, \gls{laser}, \gls{scuba}
, \gls{dsp},
\gls{atm}.

\printglossaries
\end{document}

```

 sample-storage-abbr-desc.tex

An extension of the previous example where the user needs to provide a description.

 sample-chap-hyperfirst.tex

This document illustrates how to add a custom key using `\glsaddstoragekey` and hook into the `\gls-like` and `\glstext-like` mechanism used to determine whether or not to hyperlink an entry. The document build is:

```

pdflatex sample-chap-hyperfirst
makeglossaries sample-chap-hyperfirst
pdflatex sample-chap-hyperfirst

```

This example creates a storage key called “chapter” used to store the chapter number.

```
\glsaddstoragekey{chapter}{0}{\glschapnum}
```

It’s initialised to 0 and the `\glslinkpostsetkeys` hook is used to check this value against the current chapter number. If the values are the same then the hyperlink is switched off, otherwise the key value is updated unless the hyperlink has been switched off (through the optional argument of commands like `\gls` and `\gls{text}`).

```
\renewcommand*{\glslinkpostsetkeys}{%
\edef\currentchap{\arabic{chapter}}%
\ifnum\currentchap=\glschapnum{\glslabel}\relax
\setkeys{glslink}{hyper=false}%
\else
\glsifhyperon{\glsfieldxdef{\glslabel}{chapter}
{\currentchap}}{}}%
\fi
}
```

Since this key isn’t intended for use when the entry is being defined, it would be more appropriate to simply use an internal field that doesn’t have an associated key or helper command, but `\glsfieldxdef` requires the existence of the field. The `glossaries-extra` package provides utility commands designed to work on internal fields that don’t have an associated key and may not have had a value assigned.

If you want to switch to `glossaries-extra` you need to change the package loading line:

`glossaries-extra`

```
\usepackage[postdot]{glossaries-extra}
```

The custom storage key (provided with `\glsaddstoragekey`) can be removed, and the `\glslinkpostsetkeys` hook can be changed to:

```
\renewcommand*{\glslinkpostsetkeys}{%
\edef\currentchap{\arabic{chapter}}%
\GlsXtrIfFieldEqNum*{chapter}{\glslabel}
{\currentchap}
{%
\setkeys{glslink}{hyper=false}%
}%
{%
```

```


\glsifhyperon{\xGlsXtrSetField{\glslabel}
{chapter}{\currentchap}}{}%
}%
}

```

The field name is still called “chapter” but there’s no longer an associated key or command.

## 18.9. Xindy (Option 3)


Most of the earlier `makeindex` sample files can be adapted to use `xindy` instead by adding the `xindy` package option. Situations that you need to be careful about are when the sort value (obtained from the `name` if the `sort` key is omitted) contains commands (such as `name={\pi}`) or is identical to another value (or is identical after `xindy` has stripped all commands and braces). This section describes sample documents that use features which are unavailable with `makeindex`.

 `samplexdy.tex`

The document uses UTF-8 encoding (with the `inputenc` package). This is information that needs to be passed to `xindy`, so the encoding is picked up by `makeglossaries` from the `aux` file.

This document has an exotic numbering system which requires the package option `esclocations=true`. Before `glossaries v4.50`, this was the default setting, but the default is now `esclocations=false`, so this package option now needs to be set explicitly.

By default, this document will create a `xindy` style file called `samplexdy.xdy`, but if you uncomment the lines



```

\setStyleFile{samplexdy-mc}
\noist
\GlsSetXdyLanguage{}

```

it will set the style file to `samplexdy-mc.xdy` instead. This provides an additional letter group for entries starting with “Mc” or “Mac”. If you use `makeglossaries` or `makeglossaries-lite`, you don’t need to supply any additional information. If you don’t use `makeglossaries`, you will need to specify the required information. Note that if you set the style file to `samplexdy-mc.xdy` you must also specify `\noist`, otherwise the `glossaries` package will overwrite `samplexdy-mc.xdy` and you will lose the “Mc” letter group.

To create the document do:

```
pdflatex samplexdy
makeglossaries samplexdy
pdflatex samplexdy
```

If you don't have Perl installed then you can't use `makeglossaries`, but you also can't use `xindy`! However, if for some reason you want to call `xindy` explicitly instead of using `makeglossaries` (or `makeglossaries-lite`):

- if you are using the default style file `samplexdy.xdy`, then do (no line breaks):

```
xindy -L english -C utf8 -I xindy -M samplexdy
-t samplexdy.glg -o samplexdy.gls samplexdy.glo
```

- if you are using `samplexdy-mc.xdy`, then do (no line breaks):

```
xindy -I xindy -M samplexdy-mc -t samplexdy.glg
-o samplexdy.gls samplexdy.glo
```

This document creates a new command to use with the `format` key in the optional argument of commands like `\gls` to format the location in the number list. The usual type of definition when a hyperlinked location is required should use one of the `\hyper<xx>` commands listed in Table 12.1:

```
\newcommand*{\hyperbfit}[1]{\textit{\hyperbf{#1}}}
```

Unfortunately, this definition doesn't work for this particular document and some adjustments are needed (see below). As a result of the adjustments, this command doesn't actually get used by `TEX`, even though `hyperbfit` is used in the `format` key. It does, however, need to be identified as an attribute so that `xindy` can recognise it:

```
\GlsAddXdyAttribute{hyperbfit}
```

This will add information to the `xdy` file when it's created by `\makeglossaries`. If you prevent the creation of this file with `\noist` then you will need to add the attribute to your custom `xdy` file (see the provided `samplexdy-mc.xdy` file).

In order to illustrate unusual location formats, this sample document provides a command called `\tallynum{<n>}` that represents its numerical argument with a die or dice where the dots add up to `<n>`:

```

\newrobustcmd*{\tallynum}[1]{%
  \ifnum\number#1<7
    $\csname dice\romannumeral#1\endcsname$%
  \else
    $\dicevi$%
    \expandafter\tallynum\expandafter{\numexpr#1-6}%
  \fi
}

```

This command needs to be robust to prevent it from being expanded when it's written to any of the auxiliary files. The `\dicei`, ..., `\dicevi` commands are provided by the `stix` package, so that needs to be loaded.

An associated command `\tally{<counter>}` is defined that formats the value of the named `<counter>` according to `\tallynum`:

```

\newcommand*{\tally}[1]{\tallynum{\arabic{#1}}}

```

(This shouldn't be robust as it needs the counter value to expand.) The page numbers are altered to use this format (by redefining `\thepage`).

This custom location format also needs to be identified in the `xdy` file so that `xindy` can recognise it and determine how to form ranges if required.

```

\GlsAddXdyLocation{tally}{% tally location format
:sep "\string\tallynum\space\glsoopenbrace"
"arabic-numbers"
:sep "\glsclosebrace"
}

```

Again this information is written to the `xdy` file by `\makeglossaries` so if you use `\noist` then you need to manually add it to your custom `xdy` file.

When `xindy` creates the associated indexing files, the locations will be written using:

```

\glsX<counter>X<format>{<hyper-prefix>}{<location>}

```

In this case:

```

\glsXpageXglsnumberformat{}{\tallynum{<number>}}

```

or

```
\glsXpageXhyperbfit{}{\tallynum{<number>}}
```

This means that although `\hyperbf` is designed to create hyperlinked locations, the presence of `\tallynum` interferes with it. In order to make the hyperlinks work correctly, the definitions of `\glsXpageXhyperbfit` need to be redefined in order to grab the number part in order to work out the location's numeric value. If the value of `\tally` is changed so that it expands differently then these modifications won't work.

Remember that in both cases, the second argument #2 is in the form `\tally{<n>}`:

```
\renewcommand{\glsXpageXglsnumberformat}[2]{%
  \linkpagenumber#2%
}
\renewcommand{\glsXpageXhyperbfit}[2]{%
  \textbf{\em\linkpagenumber#2}%
}
```

These need a command that can grab the actual number and correctly encapsulate it:

```
\newcommand{\linkpagenumber}[2]{\hyperlink{page.#2}
{#1{#2}}}
```

If you want to try out the `samplexdy-mc.xdy` file, the entries starting with “Mac” or “Mc” will be placed in their own “Mc” letter group. Ideally it should be possible to do this simply with `\GlsAddLetterGroup` (and not require a custom `xdy` file) but unfortunately the “M” letter group will have already been defined and take precedence over “Mc”, which is why a custom file is required and the normal language module must be suppressed:

```
\setStyleFile{samplexdy-mc}
\noist
\GlsSetXdyLanguage{}
```

This “Mc” group is suitable for names like “Maclaurin” but not for “Mach”. To prevent this, the `sort` key for that value is set to lower case:

```
\newglossaryentry{mach}{name={Mach, Ernst},
first={Ernst Mach},text={Mach},
```

```
sort={mach, Ernst},
description=
{Czech/Austrian physicist and philosopher}}
```

If you want to convert this document so that it uses `bib2gls`, you first need to switch to `glossaries-extra` and use the `record` package option: bib2gls

```
\usepackage[record, postdot]{glossaries-extra}
```

The `xindy`-only commands can now all be removed (attribute `\GlsAddXdyAttribute`, location `\GlsAddXdyLocation`, language `\GlsSetXdyLanguage`, location `encaps \glsX{counter}X{format}` and the custom helper `\linkpagenumber`). Also `\noist` and `\setStyleFile` aren't relevant with `bib2gls` and so should be removed.

The definitions of `\hyperbfit` should be retained (as well as `\tallynum`, `\tally` and the redefinition of `\thepage`).

The entries all need to be converted to the `bib` format required by `bib2gls`.

```
convertgls2bib --preamble-only samplexdy.tex
entries.bib
```

Next replace `\makeglossaries` with:

```
\GlsXtrLoadResources[src=entries]
```

and remove all the entry definitions from the document preamble. Use the search and replace function on your text editor to replace all instances of `\glsentryfirst` with `\glsfmtfirst`, and all instances of `\glsentryname` with `\glsfmtname`.

Finally, replace `\printglossaries` with `\printunsrtglossaries`. The document build is now:

```
pdflatex samplexdy
bib2gls --group samplexdy
pdflatex samplexdy
```

This results in a slightly different ordering from the original document (without the “Mc” letter group). In the original example, “Mach number” was listed before “Mach, Ernest”. The modified document now has “Mach, Ernest” before “Mach number”. This difference is due to `bib2gls`'s default `break-at=word` setting, which marks word boundaries with the `|` (pipe) character, so the sort values for `bib2gls` are `Mach|Earnest|` and `Mach|number|`. See the `bib2gls` manual for further details of this option, and also see the examples chapter

of that manual for alternative approaches when creating entries that contain people’s names.

If you want the “Mc” letter group, it can be obtained by providing a custom sort rule:

```
\GlsXtrLoadResources[src=entries,
  sort=custom,
  sort-rule={}\glsxtrGeneralInitRules
  <\glsxtrGeneralLatinAtoGrules
  <h,H<i,I<j,J<k,K<l,L<Mc=Mac<m,M
  <\glsxtrGeneralLatinNtoZrules
]
```

Unfortunately, as with `xindy`, this puts “Mach” into the “Mc” letter group. (See the glossaries–extra manual for details about the sort rule commands.)

One way to get around this problem is to define a custom command to help identify genuine “Mc”/“Mac” prefixes with names that happen to start with “Mac”. For example:

```
@entry{mcadam,
  name={\Mac{Mc}Adam, John Loudon},
  description={Scottish engineer},
  text={McAdam},
  first={John Loudon McAdam}
}

@entry{maclaurin,
  name={\Mac{Mac}laurin, Colin},
  description=
{Scottish mathematician best known for the
\gls{maclaurinseries}},
  text={Maclaurin},
  first={Colin Maclaurin}
}
```

but not for “Mach”:

```
@entry{mach,
  name={Mach, Ernst},
  description=
{Czech/Austrian physicist and philosopher},
  text={Mach},
```



```
first={Ernst Mach}
}
```

With L<sup>A</sup>T<sub>E</sub>X, this command should simply do its argument:

```
\newcommand{\Mac}[1]{#1}
```

However, when bib2gls works out the `sort` value, it needs to be defined with something unique that won't happen to occur at the start of another term. For example:

```
\providecommand{\Mac}[1]{MC}
```

(Remember that `break-at=word` will strip spaces and punctuation so don't include them unless you switch to `break-at=none`.)

So add the first definition of `\Mac` to the `tex` file and modify `entries.bib` so that it includes the second definition:

```
@preamble{"\providecommand{\Mac}[1]{MC}"}
```

Then modify the “Mc”/“Mac” entries as appropriate (see the above “McAdam” and “Maclaurin” examples).

The custom sort rule needs to be modified:

```
\GlsXtrLoadResources[src=entries,
  write-preamble=false,
  sort=custom,
  sort-rule=\glsxtrGeneralInitRules
  <\glsxtrGeneralLatinAtoGrules
  <h,H<i,I<j,J<k,K<l,L<MC<m,M
  <\glsxtrGeneralLatinNtoZrules
]
```

This will create a “Mc” letter group that only includes the names that start with the custom `\Mac` command.

Other alternatives include moving `@preamble` into a separate `bib` file, so that you can choose whether or not to include it. See the “Examples” chapter of the bib2gls user manual for further examples.

 `samplexdy2.tex`

## 18. Sample Documents

This document illustrates how to use the `glossaries` package where the location numbers don't follow a standard syntax. This example won't work with `makeindex`, which only accepts a limited set of location syntax. To create the document do:

```
pdflatex samplexdy2
makeglossaries samplexdy2
pdflatex samplexdy2
```

The explicit `xindy` call is:

```
xindy -L english -C utf8 -I xindy -M samplexdy2 -t
samplexdy2.glg -o samplexdy2.gls samplexdy2.glo
```

This example uses the section counter with `xindy`:

```
\usepackage[xindy,counter=section]{glossaries}
```

The document employs an eccentric section numbering system for illustrative purposes. The section numbers are prefixed by the chapter number in square brackets:

```
\renewcommand*{\thesection}{[\thechapter]\arabic
{section}}
```

Parts use Roman numerals:

```
\renewcommand*{\thepart}{\Roman{part}}
```

The section hyperlink name includes the part:

```
\renewcommand*{\theHsection}{\thepart.\thesection}
```

This custom numbering scheme needs to be identified in the `xdy` file:

```
\GlsAddXdyLocation["roman-numbers-uppercase"]
{section}{:sep "["
  "arabic-numbers" :sep "]" "arabic-numbers"
}
```

If the part is 0 then `\thepart` will be empty (there isn't a zero Roman numeral). An extra case is needed to catch this:

```
\GlsAddXdyLocation{zero.section}{:sep "["
  "arabic-numbers" :sep "]" "arabic-numbers"
}
```

Note that this will stop `xindy` giving a warning, but the location hyperlinks will be invalid if no `\part` is used.

If you want to switch to `bib2gls`, you first need to switch to `glossaries-extra` but remember to use `record` instead of `xindy`: `bib2gls`

```
\usepackage[record,counter=section]{glossaries-
extra}
```

Next remove the `\GlsAddXdyLocation` commands and convert the entry definitions to the bib format required by `bib2gls`:

```
convertgls2bib --preamble-only samplexdy2.tex
entries.bib
```

Now replace `\makeglossaries` with:

```
\GlsXtrLoadResources[src=entries]
```

and remove the `\newglossaryentry` commands. Finally, replace `\printglossaries` with `\printunsrtglossaries`.

The document build is:

```
pdflatex samplexdy2
bib2gls samplexdy2
pdflatex samplexdy2
```

With unusual numbering systems, it's sometimes better to use `record=nameref`:

```
\usepackage[record=nameref,counter=section]
{glossaries-extra}
```

## 18. Sample Documents

In this case, the locations will be the actual section headings, rather than the section number. In order to make the number appear instead you need to define:

```
\newcommand*{\glstrsectionlocfmt}[2]{#1}
```

(Make sure you have at least v1.42 of `glossaries-extra`.) See also the earlier `sampleSec.tex`.

 `samplexdy3.tex`

This document is very similar to `samplexdy.tex` but uses the command `\Numberstring` from the `fmtcount` package to format the page numbers instead of the `\tally` command from the earlier example.

 `sampleutf8.tex`

This is another example that uses `xindy`. Unlike `makeindex`, `xindy` recognises non-Latin characters (provided the correct encoding is passed to `xindy` via the `-C` switch). This document uses UTF-8 encoding. To create the document do:

```
pdflatex sampleutf8
makeglossaries sampleutf8
pdflatex sampleutf8
```

The explicit `xindy` call is (no line breaks):

```
xindy -L english -C utf8 -I xindy -M sampleutf8 -t
sampleutf8.glg -o sampleutf8.gls sampleutf8.glo
```

If you remove the `xindy` option from `sampleutf8.tex` and do:

```
pdflatex sampleutf8
makeglossaries sampleutf8
pdflatex sampleutf8
```

or

```
pdflatex sampleutf8
makeglossaries-lite sampleutf8
pdflatex sampleutf8
```

you will see that the entries that start with an extended Latin character now appear in the symbols group, and the word “manoeuvre” is now after “manor” instead of before it. If you want to explicitly call `makeindex` (no line breaks):

```
makeindex -s sampleutf8.ist -t sampleutf8.glg -o
sampleutf8.gls sampleutf8.glo
```

If you want to switch to `bib2gls`, you first need to switch to `glossaries-extra` but replace `xindy` with `record`: `bib2gls`

```
\usepackage[record,postdot,stylemods,style=list-
group]{glossaries-extra}
```

Note that you don't need the `nonnumberlist` option with `bib2gls`. You can instruct `bib2gls` to simply not save the number lists, but in this case there won't be any locations as there's no actual indexing.

The entries need to be converted to the `bib` format required by `bib2gls`:

```
convertgls2bib --preamble-only --texenc UTF-8
--bibenc UTF-8 sampleutf8.tex entries.bib
```

Note the first line of the `entries.bib` file:

```
% Encoding: UTF-8
```

This is the encoding of the `bib` file. It doesn't have to match the encoding of the `tex` file, but it's generally better to be consistent. When `bib2gls` parses this file, it will look for this encoding line. (If the `--texenc` and `--bibenc` switches aren't used, `convertgls2bib` will assume your Java default encoding. See the `bib2gls` manual for further details.)

Next replace `\makeglossaries` with:

```
\GlsXtrLoadResources[src=entries,selection=all]
```

and remove all the `\newglossaryentry` commands.

Iterative commands like `\glsaddall` don't work with `bib2gls`. Instead, you can select all entries using the `selection=all` option. This is actually better than `\glsaddall`, which enforces the selection of all entries by indexing each entry. As a result, with `makeindex` and `xindy` (and Option 1), every entry will have the same location (which is the location of the `\glsaddall` command, in this case page 1). With `selection=all`, `bib2gls` will automatically selection all entries even if they don't have any records (indexing information) so in this case there are no number lists.

Finally, replace `\printglossaries` with `\printunsrtglossaries`. The build process is now:

```
pdflatex sampleutf8
bib2gls --group sampleutf8
pdflatex sampleutf8
```

`bib2gls` picks up the encoding of the `tex` file from the `aux` file:

```
\glsxtr@texencoding{utf8}
```

If you experience any encoding issues, check the `aux` file for this command and check the `bib` file for the encoding comment line. Also check `bib2gls`'s `gls` transcript file for encoding messages, which should look like:

```
TeX character encoding: UTF-8
```

The document language, if it has been set, is also added to the `aux` file when the `record` option is used. In this case, no language package has been used, so `bib2gls` will fallback on the system's default locale. If no sort method is set, the entries will be sorted according to the document language, if set, or the default locale. You can specify a specific locale using the `sort` key with a locale tag identifier. For example:


```
\GlsXtrLoadResources[src=entries,selection=all,sort=
de-CH-1996]
```

(Swiss German new orthography) or:

```
\GlsXtrLoadResources[src=entries,selection=all,sort=
is]
```

(Icelandic).

## 18.10. No Indexing Application (Option 1)

 `sample-noidxapp.tex`

This document illustrates how to use the `glossaries` package without an external indexing application (Option 1). To create the complete document, you need to do:

```
pdflatex sample-noidxapp
pdflatex sample-noidxapp
```

With old L<sup>A</sup>T<sub>E</sub>X kernels and old versions of mfirstuc, it was necessary to group the accent command that occurs at the start of the `name`:

```
\newglossaryentry{elite}{%
  name={{\'e}lite},% mfirstuc v2.07
  description={select group of people}
}
```

This used to be necessary to allow the term to work with `\Gls`. With a new kernel and latest versions of glossaries and mfirstuc, this should no longer be necessary.

```
\newglossaryentry{elite}{%
  name={\'elite},% mfirstuc v2.08
  description={select group of people}
}
```

Notice also how the number lists can't be compacted into ranges. For example, the list “1, 2, 3” would be converted to “1–3” with a proper indexing application (Options 2 or 3 or, with `glossaries-extra`, Option 4).

The larger the list of entries, the longer the document build time. This method is very inefficient for large glossaries. See Gallery: glossaries performance<sup>12</sup> for a comparison.

 `sample-noidxapp-utf8.tex`


As the previous example, except that it uses the `inputenc` package. In this case, the `sort` key is used for the entries with UTF-8 characters in the names. To create the complete document, you need to do:

```
pdflatex sample-noidxapp-utf8
pdflatex sample-noidxapp-utf8
```

This method is unsuitable for sorting languages with extended Latin alphabets or non-Latin alphabets. Use Options 3 or 4 instead.

<sup>12</sup>[dickimaw-books.com/gallery/glossaries-performance.shtml](http://dickimaw-books.com/gallery/glossaries-performance.shtml)

## 18.11. Other

 `sample4col.tex`

This document illustrates a four column glossary where the entries have a symbol in addition to the name and description. To create the complete document, you need to do:

```
pdflatex sample4col
makeglossaries sample4col
pdflatex sample4col
```

or

```
pdflatex sample4col
makeglossaries-lite sample4col
pdflatex sample4col
```

The vertical gap between entries is the gap created at the start of each letter group. This can be suppressed using the `nogroupskip` package option. (If you switch to `bib2gls`, simply omit the `--group` command line option.)

This example uses the `long4colheaderborder`. This style doesn't allow multi-line descriptions. You may prefer to use `alllong4colheaderborder` with long descriptions. However, in either case a style that uses `booktabs` is preferable. For example, `long4col-booktabs` or `alllongragged4col-booktabs`. Note that this requires `glossary-longbooktabs`, which needs to be explicitly loaded. The style can only be set once this package has been loaded:

```
\usepackage{glossaries}
\usepackage{glossary-longbooktabs}
\setglossarystyle{alllongragged4col-booktabs}
```

The `glossaries-extra` package provides a more compact way of doing this with the `stylemodsglossaries-extra` option:

```
\usepackage[style=alllongragged4col
-booktabs,stylemods=longbooktabs]
{glossaries-extra}
```

The `glossaries-extra` package provides additional styles, including more “long” styles with the `glossary-longextra` package. For example, the `long-name-desc-sym-loc` style:



```
\usepackage[style=long-name-desc-sym-loc,stylemods=
longextra]
{glossaries-extra}
```

If you use the `stylemods` option with an argument, you may prefer to use it with `nostyles` to prevent unwanted styles from being automatically loaded. For example:

```
\usepackage[style=long-name-desc-sym
-loc,nostyles,stylemods=longextra]
{glossaries-extra}
```

See also the gallery of predefined styles.<sup>13</sup>

 `sample-numberlist.tex`

This document illustrates how to reference the number list in the document text. This requires an additional  $\LaTeX$  run:

```
pdflatex sample-numberlist
makeglossaries sample-numberlist
pdflatex sample-numberlist
pdflatex sample-numberlist
```

This uses the `savenuberlist` package option, which enables `\glsentrynumberlist` and `\glsdisplaynumberlist` (with limitations). The location counter is set to `chapter`, so the number list refers to the chapter numbers.

```
\usepackage[savenuberlist,counter=chapter]
{glossaries}
```

The number list can't be obtained until `makeindex` (or `xindy`) has created the indexing file. The number list is picked up when this file is input by `\printglossary` and is then saved in the `aux` file so that it's available on the next  $\LaTeX$  run.

This document contains both commands:

```
This is a \gls{sample} document. \Glspl{sample}
are discussed in chapters \glsdisplaynumberlist
{sample}
```

<sup>13</sup>[dickimaw-books.com/gallery/glossaries-styles/](http://dickimaw-books.com/gallery/glossaries-styles/)

```
(or \glsentrynumberlist{sample}).
```

Without `hyperref`, the first list shows as “1–3, 5 & 6” and the second list shows as “1–3, 5, 6”.

Note that you can’t use `\glsdisplaynumberlist` with `hyperref` and Options 2 or 3. If you do, you will get the warning:

```
Package glossaries Warning: \glsdisplaynumberlist
doesn't work with hyperref.
Using \glsentrynumberlist instead
```

Now both lists show as “1–3, 5, 6”.

If you switch to Option 1 (replace `\makeglossaries` with `\makenoidxglossaries` and replace `\printglossaries` with `\printnoidxglossaries`), then the document build is simply:

```
pdflatex sample-numberlist
pdflatex sample-numberlist
```

Now `\glsdisplaynumberlist` works with `hyperref`, however there are no ranges, so the first list shows as “1, 2, 3, 5, & 6” and the second list shows as “1, 2, 3, 4, 5, 6”.

If you want to switch to `bib2gls`, you first need to switch to `glossaries-extra` (at least `bib2gls` v1.42) but remember to include the `record` option:

```
\usepackage[record, counter=chapter]{glossaries-  
extra}
```

Note that the `savenumberlist` option is no longer required. Next convert the entry to the `bib` format required by `bib2gls`:

```
convertgls2bib sample-numberlist.tex entries.bib
```

Replace `\makeglossaries` with:

```
\GlsXtrLoadResources[src=entries]
```

and remove the `\newglossaryentry` command from the document preamble. Finally, replace `\printglossaries` with `\printunsrtglossaries`. The build process is now:

```
pdflatex sample-numberlist
bib2gls sample-numberlist
pdflatex sample-numberlist
```

Now both ranges and hyperlinks work. The first list shows “1–3, 5, & 6” and the second list shows “1–3, 5, 6”. You can also use:

```
\glstrfieldformatlist{sample}{loclist}
```

which will show the complete list without ranges “1, 2, 3, 5 & 6”.

This method works much better than using the `savenumberlist` option because `bib2gls` saves the formatted number list in the `location` field (which is provided by `glossaries-extra` for the benefit of `bib2gls`) and the unformatted number list in the `loclist` internal field (which is also used by Option 1).

With Options 2 and 3, both `makeindex` and `xindy` simply create a file containing the commands to typeset the glossary, which is input by `\printglossary`. This means that it’s quite hard to gather information obtained by the indexing application.

`bib2gls`, on the other hand, doesn’t write a file containing the glossary. It writes a file containing the entry definitions and uses internal fields to save the indexing information. The glossary is then displayed with `\printunsrtglossary`, which simply iterates over all defined entries and fetches the required information from those internal fields.

The `\glsdisplaynumberlist` and `\glsentrynumberlist` commands are redefined by `glossaries-extra-bib2gls` to simply access the `location` field. However, if you want a complete list without ranges you can use:

```
\glstrfieldformatlist{sample}{loclist}
```

In this example, this produces “1, 2, 3, 5 & 6”.

Note the difference if you use the `record=nameref` package option instead of just `record`.

 `sample-nomathhyper.tex`

This document illustrates how to selectively enable and disable entry hyperlinks in `\glsentryfmt`. The document build is:

```
pdflatex sample-nomathhyper
makeglossaries sample-nomathhyper
pdflatex sample-nomathhyper
```

This disables the hyperlinks for the `main` glossary with:

```
\GlsDeclareNoHyperList{main}
```

and then redefines `\glsentryfmt` so that it adds a hyperlink if not in maths mode and the hyperlinks haven't been forced off (with the `hyper=false` key).

If you want to switch to `glossaries-extra`, then you can instead use the hook that comes before the keys are set. The preamble is much simpler:

glossaries  
-extra

```
\usepackage{glossaries-extra}

\makeglossaries

\renewcommand{\glslinkpresetkeys}{%
  \ifmmode \setkeys{glslink}{hyper=false}\fi
}

% entry definition
```

 `sample-entryfmt.tex`

This document illustrates how to change the way an entry is displayed in the text. (This is just a test document. For a real document, I recommend you use the `siunitx` package to typeset units.) The document build is:

```
pdflatex sample-entryfmt
makeglossaries sample-entryfmt
pdflatex sample-entryfmt
```

This redefines `\glsentryfmt` to add the symbol on first use:

```
\renewcommand*{\glsentryfmt}{%
  \glsgenentryfmt
  \ifglsused{\glslabel}{}{\space (\glsentrysymbol
{\glslabel})}%
}
```

Note the use of `\glsentrysymbol` *not* `\glsymbol` (which would result in nested link text).

If you want to switch to the `glossaries-extra` package, you can make use of the category post-link hook instead:

glossaries  
-extra

```

\usepackage[stylemods,style=tree]{glossaries-extra}


\makeglossaries

\glsdefpostlink{unit}{\glsxtrpostlinkAddSymbolOn-
FirstUse}

\newglossaryentry{distance}{
category={unit},
name={distance},
description={The length between two points},
symbol={km}}

```

Note that in this case the symbol is now outside of the hyperlink.

 sample-prefix.tex

This document illustrates the use of the `glossaries-prefix` package. An additional run is required to ensure the table of contents is up-to-date:

```

pdflatex sample-prefix
makeglossaries sample-prefix
pdflatex sample-prefix
pdflatex sample-prefix

```

Remember that the default separator between the prefix and `\gls` (or one of its variants) is empty, so if a space is required it must be inserted at the end of the prefix. However, the `xkeyval` package (which is used to parse the  $\langle key \rangle = \langle value \rangle$  lists) trims leading and trailing space from the values, so an ordinary space character will be lost.

```

\newglossaryentry{sample}{name={sample},
description={an example},
prefix={a~},
prefixplural={the\space}}

\newglossaryentry{oeil}{name={oeil},
plural={yeux},
description={eye},
prefix={l'},
prefixplural={les\space}}

```

If you want to convert this example to use `glossaries-extra`, then (as from v1.42) you can use `glossaries-extra`

the `prefix` option:

```
\usepackage[prefix, postdot, acronym]{glossaries-  
extra}
```

(Alternatively load `glossaries–prefix` after `glossaries–extra`.) The rest of the document is the same as for the base `glossaries` package, unless you want to switch to using `bib2gls`.

If you want to switch to `bib2gls`, first switch to `glossaries–extra` (as above) but make sure you include the `record` package option: `bib2gls`

```
\usepackage[record, prefix, postdot, acronym]  
{glossaries-extra}
```

Next convert the entries into the `bib` format required by `bib2gls`:

```
convertgls2bib --preamble-only sample-prefix.tex  
entries.bib
```

Replace `\makeglossaries` with

```
\setabbreviationstyle[acronym]{long-short}  
\GlsXtrLoadResources[src=entries]
```

remove the entry definitions from the document preamble, and replace

```
\printglossary[style=plist]  
\printacronyms
```

with

```
\printunsrtglossary[style=plist]  
\printunsrtacronyms
```

The document build is now:

```
pdflatex sample-prefix
bib2gls sample-prefix
pdflatex sample-prefix
```

With `bib2gls v2.0+`, you don't need to manually insert the spaces at the end of the prefixes. Instead you can instruct `bib2gls` to insert them. To try this out, remove the trailing `\space` and non-breaking space (`~`) from the `entries.bib` file:

```
@entry{sample,
  prefix={a},
  name={sample},
  description={an example},
  prefixplural={the}
}


@entry{oeil,
  plural={yeux},
  prefix={l'},
  name={oeil},
  description={eye},
  prefixplural={les}
}

@acronym{svm,
  prefixfirst={a},
  prefix={an},
  short={SVM},
  long={support vector machine}
}
```

Now add the `append-prefix-field={space or nbsp}` resource option:

```
\GlsXtrLoadResources[src=entries, append-prefix-field
=space or nbsp]
```

See the `bib2gls` manual for further details.

 `sampleaccsupp.tex`

This document uses the `glossaries-accsupp` package (see §17). That package automatically loads `glossaries` and passes all options to the base package. So you can load both packages at once with just:

```
\usepackage[acronym]{glossaries-accsupp}
```

This provides additional keys that aren't available with just the base package, which may be used to provide replacement text. The replacement text is inserted using `accsupp`'s `\BeginAccSupp` and `\EndAccSupp` commands. See the `accsupp` package for further details of those commands.

Note that this example document is provided to demonstrate `glossaries-accsupp` as succinctly as possible. The resulting document isn't fully accessible as it's not tagged. See the `accessibility` and `tagpdf` packages for further information about tagging documents.

It's not essential to use `glossaries-accsupp`. You can simply insert the replacement text directly into the field values. For example:

```
\newglossaryentry{Drive}{
  name={\BeginAccSupp{Actual=Drive}Dr.\EndAccSupp{}},
  description={Drive}
}
\newglossaryentry{image}{name={sample image},
  description={an example image},
  user1={\protect\BeginAccSupp{Alt=
  {a boilerplate image used in
  examples}}\protect\includegraphics
  [height=20pt]{example-image}\protect\EndAccSupp{}}
}
```

However, this can cause interference (especially with case-changing). With `glossaries-accsupp` it's possible to obtain the field values without the accessibility information if required. (If in the future `\includegraphics` is given extra options to provide replacement text then the image example here won't be necessary. However, the example can be adapted for images created with  $\text{T}_{\text{E}}\text{X}$  code.)

The acronym style is set using:

```
\setacronymstyle{long-short}
```

The first acronym is straightforward:

```
\newacronym{eg}{e.g.}{for example}
```

The `shortaccess` replacement text is automatically set to the long form. The next acronym is awkward as the long form contains formatting commands which can't be included in the re-



placement text. This means that the `shortaccess` key must be supplied:

```
\newacronym[shortaccess=
{TiKZ ist kein Zeichenprogramm}]
{tikz}{Ti\emph{k}Z}{Ti\emph{k}Z ist \emph{kein}
Zeichenprogramm}
```

In the above two cases, the short form obtained in `\gls` will use the “E” PDF element.

By way of comparison, there are some entries that are technically abbreviations but are defined using `\newglossaryentry` instead of `\newacronym`. The replacement text is provided in the `access` key:

```
\newglossaryentry{Doctor}{name={Dr},description=
{Doctor},access={Doctor}}
\newglossaryentry{Drive}{name={Dr.},plural={Drvs}
,description={Drive},
access={Drive}}
```

These will use the “ActualText” PDF element (not “E”).

The next entry is a symbol (the integration symbol  $\int$ ). This could be defined simply as:

```
\newglossaryentry{int}{name={int},description=
{integral},
symbol={\ensuremath{\int}}}
```

and then referenced in the text like this:

```
Symbol: \gls{int} (\glssymbol{int}).
```

This results in the text “Symbol: integral ( $\int$ ).” However if you copy and paste this from the PDF you will find the resulting text is “Symbol: int (R).” This is what’s actually read out by the text-to-speech system.

It would be better if the actual text was the Unicode character 0x222B. This would not only assist the text-to-speech system but also make it easier to copy and paste the text. The simplest method is to identify the character by its hexadecimal code, but in order to do this the `\BeginAccSupp` command needs to have the options adjusted.

In order to determine whether to use “E”, “ActualText” or “Alt” for a particular field, glossaries-accsupp will check if the command `\gls{field-label}accsupp` exists (where `<field-label>` is the internal field label, see Table 4.1). Only two of these commands are predefined: `\gls-shortaccsupp` and `\gls-shortplaccsupp`, which is why the `shortaccess`

field uses “E”. If the given command doesn’t exist then the generic `\glsaccsupp` command is used instead.

This means that in order to simply set `symbolaccess` to the hexadecimal character code, I need to provide a command called `\glsymbolaccsupp`:

```
\newcommand{\glssymbolaccsupp}[2]{%
  \glsaccessibility[method=hex, unicode]{ActualText}
  {#1}{#2}%
}
```

Now I can adjust the definition of the “int” entry:

```
\newglossaryentry{int}{name={int},description=
{integral},
  symbol={\ensuremath{\int}},symbolaccess={222B}
}
```

The final entry has an image stored in the `user1` key. (The image file is provided with the `mwe` package.) This should use “Alt” instead of “ActualText” so I need to define `\glsuseriaccsupp`:

```
\newcommand{\glsuseriaccsupp}[2]{%
  \glsaccessibility{Alt}{#1}{#2}%
}
```

The image description is provided in the `user1access` key:

```
\newglossaryentry{sampleimage}{name={sample image},
  description={an example image},
  user1={\protect\includegraphics[height=20pt]
{example-image}},
  user1access={a boilerplate image used in examples}
}
```

(Note the need to protect the fragile `\includegraphics`. The alternative is to use `\glsnoexpandfields` before defining the command. See §4.4.)

The PDF can be inspected either by uncompressing the file and viewing it in a text editor or you can use a tool such as the PDFDebugger provided with PDFBox. If you do this you will find content like:

```
/Span << /ActualText (Doctor) >> BDC
```

```

BT
  /F8 9.9626 Tf
  73.102 697.123 Td
  [ (Dr) ] TJ
ET
EMC

```

This shows that “ActualText” was used for `\gls{Doctor}`. The integral symbol ( $\int$ ) created with `\glssymbol{int}` is:

```

/Span << /ActualText (\376\377"+) >> BDC
BT
  /F1 9.9626 Tf
  97.732 650.382 Td
  [ (R) ] TJ
ET
EMC

```

Again, “ActualText” has been used, but the character code has been supplied. The image created with `\glsuseri{sampleimage}` is:

```

/Span << /Alt (a boilerplate image used in examples) >> BDC
  1 0 0 1 106.588 618.391 cm
  q
  0.08301 0 0 0.08301 0 0 cm
  q
  1 0 0 1 0 0 cm
  /Im1 Do
  Q
  Q
EMC

```

This shows that “Alt” has been used.

The first use of `\gls{eg}` produces the long form (not reproduced here) followed by the short form:

```

/Span << /E (for example) >> BDC
BT
  /F8 9.9626 Tf
  161.687 563.624 Td
  [ (e.g.) ] TJ
ET
EMC

```

The subsequent use also has the “E” element:

```

/Span << /E (for example) >> BDC
BT
  /F8 9.9626 Tf
  118.543 551.669 Td
  [ (e.g.) ] TJ
ET
EMC

```

Similarly for `\acrshort{eg}`. You can also use the `debug=showaccsupp` package option. This will show the replacement text in the document, but note that this is the content before it's processed by `\BeginAccSupp`.

If the `\setacronymstyle` command is removed (or commented out) then the result would be different. The first use of `\gls` uses “E” for the short form but the subsequent use has “ActualText” instead. This is because without `\setacronymstyle` the original acronym mechanism is used, which is less sophisticated than the newer acronym mechanism that's triggered with `\setacronymstyle`.

If you want to convert this example so that it uses `glossaries-extra`, make sure you have at least version 1.42 of the extension package.

If you want to convert this example so that it uses `glossaries-extra`, you need to replace the explicit loading of `glossaries-accsupp` with an implicit load through the `accsupp` package option:

`glossaries-extra`

```
\usepackage[abbreviations,accsupp]{glossaries-extra}
```

I'm switching from `\newacronym` to `\newabbreviation`, which means that the default category is `abbreviation` and also the file extensions are different. If you are using `makeglossaries` or `makeglossaries-lite` you don't need to worry about it. However, if you're not using those helper scripts then you will need to adjust the file extensions in your document build process.

The style command `\setacronymstyle{long-short}` needs to be replaced with:

```
\setabbreviationstyle{long-short}
```

This is actually the default so you can simply delete the `\setacronymstyle` line. Substitute the two instances of `\newacronym` with `\newabbreviation`. For example:

```
\newabbreviation{eg}{e.g.}{for example}
```

Note that for the “tikz” entry you can now remove the explicit assignment of `shortaccess` with `glossaries-extra` v1.42 as it will strip formatting commands like `\emph`:

```
\newabbreviation
{tikz}{Ti\emph{k}Z}{Ti\emph{k}Z ist \emph{kein}
Zeichenprogramm}
```

It’s also necessary to replace `\acrshort`, `\acrlong` and `\acrfull` with `\glstrshort`, `\glstrlong` and `\glstrfull`.

You may notice a slight difference from the original example if you use a version of `glossaries-extra` between 1.42 and 1.48. The `shortaccess` field shows `\long` (`\short`) instead of just `\long`. This is because `glossaries-extra` v1.42 redefined `\glsdefaultshortaccess` to include the short form. The original definition was restored in `glossaries` v1.49.

Now that the extension package is being used, there are some other modifications that would tidy up the code and fix a few issues.

The “Doctor” and “Drive” entries should really be defined as **abbreviations** but they shouldn’t be expanded on first use. The `short-nolong` style can achieve this and it happens to be the default style for the **acronym** category. This means that you can simply replace the “Doctor” definition with:

```
\newacronym{Doctor}{Dr}{Doctor}
```

The first use of `\gls{Doctor}` is just “Dr”. This means that the “E” PDF element will be used instead of “ActualText”. Now I don’t need to supply the accessibility text as its obtained from the long form.

The “Drive” entry can be similarly defined but it has the awkward terminating full stop. This means that I had to omit the end of sentence terminator in:

```
\gls{Doctor} Smith lives at 2, Blueberry \gls{Drive}
```

This looks odd when reading the document source and it’s easy to forget. This is very similar to the situation in the `sample-dot-abbr.tex` example. I can again use the `discard-period` category attribute, but I need to assign a different category so that it doesn’t interfere with the “Doctor” entry.

The category is simply a label that’s used in the construction of some internal command names. This means that it must be fully expandable, but I can choose whatever label I like (**general**, **abbreviation**, **acronym**, **index**, **symbol** and **number** are used by various commands provided by `glossaries-extra`).

In this case, I’ve decided to have a category called `shortdotted` to indicate an **abbreviation** that ends with a dot but only the short form is shown on first use:

```

\setabbreviationstyle[shortdotted]{short-nolong
-noreg}
\glssetcategoryattribute{shortdotted}{discardperiod}
{true}
\newabbreviation[category={shortdotted}]{Drive}
{Dr.\@}{Drive}

```

In the `sample-dot-abbr.tex` example, I also used the `insertdots` attribute to automatically insert the dots and add the space factor (which is adjusted if `discardperiod` discards a period). In this case I'm inserting the dot manually so I've also added the space factor with `\@` in case the `abbreviation` is used mid-sentence. For example:

```

\gls{Doctor} Smith lives at 2, Blueberry \gls{Drive}
. Next sentence.

\gls{Doctor} Smith lives at 2, Blueberry \gls{Drive}
end of sentence.

```

(The spacing is more noticeable if you first switch to a monospaced font with `\ttfamily`.)

The “e.g.” `abbreviation` similarly ends with a dot. It's not usual to write “for example (e.g.)” in a document, so it really ought to have the same `shortdotted` category, but it has a long-short form for illustrative purposes in this test document. In this case I need to choose another category so that I can apply a different style. For example:

```

\setabbreviationstyle[longshortdotted]{long-short}
\glssetcategoryattribute{longshortdotted}{discard-
period}{true}
\newabbreviation[category={longshortdotted}]{e.g.}
{e.g.\@}{for example}

```

To further illustrate categories, let's suppose the symbol and image should be in the `name` field instead of the `symbol` and `user1` fields. Now the `\glsymbolaccsupp` and `\gls-useriaccsupp` commands won't be used. I can't deal with both cases if I just provide `\glsnameaccsupp`.

I could provide `category+field` versions, such as `\glsxtrsymbolnameaccsupp`, but remember that this only covers accessing the `name` field, which is typically only done in the glossary. I would also need similar commands for the `first`, `firstplural`, `text` and `plural` keys. This is quite complicated, but since I don't need to worry about any of the other fields it's simpler to just provide the `\glsxtr<category>accsupp` version:

```


\newcommand{\glstrsymbolaccsupp}[2]{%
  \glsaccessibility[method=hex,unicode]{ActualText}
  {#1}{#2}%
}
\newcommand{\glstrimageaccsupp}[2]{%
  \glsaccessibility{Alt}{#1}{#2}%
}

\newglossaryentry{int}{category={symbol},
  name={\ensuremath{\int}},access={222B},
  description={integral}
}

\newglossaryentry{sampleimage}{category={image},
  description={an example image},
  name={\protect\includegraphics[height=20pt]
{example-image}},
  access={a boilerplate image used in examples}
}

```

If it's necessary to provide support for additional fields, then the category+field command `\glstr<category><field>accsupp` could be used to override the more general category command `\glstr<category>accsupp`.

 `sample-ignored.tex`

This document defines an ignored glossary for common terms that don't need a definition. The document build is:

```

pdflatex sample-ignored
makeglossaries sample-ignored
pdflatex sample-ignored

```

A new ignored glossary is defined with:

```


\newignoredglossary{common}

```

There are no associated files with an ignored glossary. An entry is defined with this as its glossary type:

```
\newglossaryentry{commonex}{type={common}, name=
{common term}}
```

Note that the `description` key isn't required. This term may be referenced with `\gls` (which is useful for consistent formatting) but it won't be indexed.

 `sample-entrycount.tex`

This document uses `\glsenableentrycount` and `\cgl`s (described in §7.1) so that acronyms only used once don't appear in the list of acronyms. The document build is:

```
pdflatex sample-entrycount
pdflatex sample-entrycount
makeglossaries sample-entrycount
pdflatex sample-entrycount
```

Note the need to call  $\LaTeX$  twice before `makeglossaries`, and then a final  $\LaTeX$  call is required at the end.

#### glossaries-extra

The `glossaries-extra` package has additions that extend this mechanism and comes with some other sample files related to entry counting.

#### bib2gls

If you switch to `bib2gls` you can use record counting instead. See the `bib2gls` manual for further details.



## 19. Troubleshooting

In addition to the sample files listed in §18, the `glossaries` package comes with some minimal example files, `minimalgls.tex`, `mwe-gls.tex`, `mwe-acr.tex` and `mwe-acr-desc.tex`, which can be used for testing. These should be located in the `samples` subdirectory (folder) of the `glossaries` documentation directory. The location varies according to your operating system and `TEX` installation. For example, on Linux it may be in `/usr/local/texlive/2022/dist/doc/latex/glossaries/`. The `makeglossariesgui` application can also be used to test for various problems. Further information on debugging `LATEX` code is available at <http://www.dickimaw-books.com/latex/minexample/>.

If you have any problems, please first consult the `glossaries` FAQ.<sup>1</sup> If that doesn't help, try posting your query to somewhere like the `comp.text.tex` newsgroup, the `LATEX` Community Forum<sup>2</sup> or `TEX` on StackExchange.<sup>3</sup> Bug reports can be submitted via my package bug report form.<sup>4</sup>

---

<sup>1</sup>[dickimaw-books.com/faq.php?category=glossaries](http://dickimaw-books.com/faq.php?category=glossaries)

<sup>2</sup><https://latex.org/forum/>
















<sup>3</sup><https://tex.stackexchange.com/>

<sup>4</sup><https://www.dickimaw-books.com/bug-report.html>

**Part II.**  
**Summaries and Index**

# Symbols

---

Symbol	Description
	A counter is being described.
	The syntax and usage of a command, environment or option etc.
	A command, environment or option that is now deprecated.
	An important message.
	Prominent information.
	L <sup>A</sup> T <sub>E</sub> X code to insert into your document.
	The definition of an option value.
	How the example code should appear in the PDF.
	An option that takes a value.
	A command-line application invocation that needs to be entered into a terminal or command prompt. See also “Incorporating makeglossaries or makeglossaries-lite or bib2gls into the document build <sup>1</sup> ”.
	A boolean option that is initially false.
	A boolean option that is initially true.
	Text in a transcript or log file or written to STDOUT or STDERR.
	An option that doesn't take a value.
	A warning.

---

<sup>1</sup>[dickimaw-books.com/latex/buildglossaries](http://dickimaw-books.com/latex/buildglossaries)

# Terms

## American Standard Code for Information Interchange (ASCII)

A single-byte character encoding. Related blog article: Binary Files, Text Files and File Encodings.<sup>1</sup>

## Case change

There are four types of case-changing commands provided by the glossaries package:

### all caps

For example, `\GLS` and `\GLStext`. All letters in the given text are converted to uppercase (capitals). The actual case-conversion is performed by `\glsuppercase`.

### sentence case

For example, `\Gls` and `\Glstext`. Only the first letter is converted to uppercase. The case-conversion for the `\gls`-like and `\glstext`-like commands is performed via `\glsentencecase`, which is simply defined to use the robust `\makefirstuc`. Commands such as `\Glsentrytext` also use `\glsentencecase` in the document but use the expandable `\MFUsentencecase` in PDF bookmarks.

### title case

For example, `\glsentrytitlecase`. The first letter of each word is converted to uppercase. The case-conversion is performed using `\glscapitalisewords` in the document text, but commands designed for use in section headings, use the expandable `\MFUsentencecase` in PDF bookmarks.

### lowercase

The command `\glslowercase` is provided to allow for the conversion of the short form of acronyms or **abbreviations** to lowercase for small caps styles. Note that `\glslowercase` isn't actually in the default definition any of the commands provided by glossaries but is provided in the event that any of those commands need redefining with an expandable definition. Alternatives are to use the robust `\MakeLowercase` or switch to  $\LaTeX$ 3 syntax.

Ensure that you have at least `mfirstuc v2.08` for improved case-changing performed by new  $\LaTeX$ 3 commands. See the `mfirstuc` manual for further details.

---

<sup>1</sup>[dickimaw-books.com/blog/binary-files-text-files-and-file-encodings/](http://dickimaw-books.com/blog/binary-files-text-files-and-file-encodings/)

## Common Locale Data Repository (CLDR)

A project of the Unicode Consortium that provides locale-specific information which an operating system will typically provide to applications.

## Command-line interface (CLI)

An application that doesn't have a graphical user interface. That is, an application that doesn't have any windows, buttons or menus and can be run in a command prompt or terminal.<sup>2</sup>

## Entry line (or item)

The line in the glossary where the entry is shown. This may be a single row in a tabular-style or the start of a paragraph for list or index styles or mid-paragraph for the inline style. The exact formatting depends on the glossary style, but usually includes the name and description. If hyperlinks are enabled, the `\gls`-like and `\glstext`-like commands will create a hyperlink to this line.

## Entry location

The location of the entry in the document (obtained from the location counter or from the `the-value` option). This defaults to the page number on which the entry has been referenced with any of the `\gls`-like, `\glstext`-like or `\glsadd` commands. An entry may have multiple locations that form a list. See also §12.3.

## Extended Latin alphabet

An alphabet consisting of Latin characters and extended Latin characters.

## Extended Latin character

A character that's created by combining Latin characters to form ligatures (e.g. æ) or by applying diacritical marks to a Latin character or characters (e.g. á).

## Field

Entry data is stored in fields. These may have a corresponding key used to set the value, such as `name` or `description`.

## First use

The first time an entry is used by a command that unsets the first use flag (or the first time since the flag was reset).

## First use flag

A conditional that keeps track of whether or not an entry has been referenced by any of the `\gls`-like commands (which can adjust their behaviour according to whether or not this flag is true). The conditional is true if the entry hasn't been used by one of these commands (or if the flag has been reset) and false if it has been used (or if the flag has been unset).

## First use text

The link text that is displayed on first use of the `\gls`-like commands.

---

<sup>2</sup>[dickimaw-books.com/latex/novices/html/terminal.html](http://dickimaw-books.com/latex/novices/html/terminal.html)

**Group (letters, numbers, symbols)**

A logical division within a glossary that is typically a by-product of the indexing application's sorting algorithm. Glossary styles may or may not start each group with a title (such as “Symbols” or “A”) or a vertical space. See also Gallery: Logical Glossary Divisions (type vs group vs parent).<sup>3</sup>

**Graphical user interface (GUI)**

An application that has windows, buttons or menus.

**Glossary**

Technically a glossary is an alphabetical list of words relating to a particular topic. For the purposes of describing the glossaries and glossaries-extra packages, a glossary is either the list produced by commands like `\printglossary` or `\printunsrtglossary` (which may or may not be ordered alphabetically) or a glossary is a set of entry labels where the set is identified by the glossary label or type.

**`\gls-like`**

Commands like `\gls` and `\glsdisp` that change the first use flag. These commands index the entry (if indexing is enabled), create a hyperlink to the entry's glossary listing (if enabled) and unset the first use flag. These commands end with the post-link hook.

**`\gls-text-like`**

Commands like `\gls-text` and `\gls-link` that don't change the first use flag. These commands index the entry (if indexing is enabled) and create a hyperlink to the entry's glossary listing (if enabled). These commands end with the post-link hook.

**Hierarchical level**

A number that indicates how many ancestors an entry has. An entry with no parent has hierarchical level 0. If an entry has a parent then the hierarchical level for the entry is one more than the hierarchical level of the parent. Most styles will format an entry according to its hierarchical level, giving prominence to level 0 entries, although some may have a maximum supported limit. The level is stored in the `level` internal field. It can be accessed using commands like `\gls-fieldfetch` or `\gls-xtrusefield`, but neither the `level` nor the `parent` values should be altered as it will cause inconsistencies in the sorting and glossary formatting. See also §4.5.

**Homograph**

Each of a set of words that have the same spelling but have different meanings and origins. They may or may not have different pronunciations.

**Ignored glossary**

A glossary that has been defined using a command like `\newignoredglossary`. These glossaries are omitted by iterative commands, such as `\printglossaries` and `\printunsrtglossaries`. An ignored glossary can only be displayed with `\printunsrtglossary`.

---

<sup>3</sup>[dickimaw-books.com/gallery/index.php?label=logicaldivisions](http://dickimaw-books.com/gallery/index.php?label=logicaldivisions)

### Ignored location (or record)

A location that uses `glsignore` as the encap. With `bib2gls`, this indicates that the entry needs to be selected but the location isn't added to the location list. With other methods, this will simply create an invisible location, which can result in unwanted commas if the location list has other items. With `bib2gls v3.0+`, empty locations will be converted to ignored locations.

### Indexing application

An application (piece of software) separate from  $\text{T}_{\text{E}}\text{X}/\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$  that collates and sorts information that has an associated page reference. Generally the information is an index entry but in this case the information is a glossary entry.

The original indexing application used with  $\text{T}_{\text{E}}\text{X}$  is `makeindex` (which can be also be used with other non- $\text{T}_{\text{E}}\text{X}$  text formatters). This was then followed by `xindy`, which provided more flexible support for different languages and encodings. The original release of `glossaries` only supported `makeindex`, since it was readily available in all  $\text{T}_{\text{E}}\text{X}$  distributions, and a later release added support for `xindy`. There is now also a newer indexing application called `xindex`, which isn't supported by `glossaries` or `glossaries-extra` (unless a way can be found of converting `makeindex`'s `ist` file to an equivalent `xindex` configuration file).

General purpose indexing applications that are developed independently are harder to fully integrate with the `glossaries` package, which has more complex requirements than a simple index. The `glossaries-extra` package additionally supports `bib2gls`, which is designed specifically for, and developed alongside, the `glossaries-extra` package. These are all CLI applications.

### Indexing file

A file that's input (read) by an indexing application, such as the style file (`ist` or `xdy`) or the files containing the indexing data (the sort value, hierarchical information, location encap and entry location). These files are output files from the point of view of the `glossaries` package as it's  $\text{T}_{\text{E}}\text{X}$  that creates and writes to those files. An indexing file may also refer to the files that are created by the indexing application. These are output files from the indexing application's point of view, but they are input files from  $\text{T}_{\text{E}}\text{X}$ 's point of view as they are input by commands used in the document.

### Indexing (or recording)

The process of saving the entry location and any associated information that is required in the glossary. In the case of `makeindex` and `xindy`, the entry location, encap, entry item and sort value are written to a supplementary file associated with the glossary that is subsequently read by `makeindex/xindy`. In the case of `bib2gls` and the "noidx" method, the entry location, encap and label is written to the `aux` file.

### Internal field

An internal field may refer to a key that shouldn't be used in the `bib` file, such as the `group` field, or an internal field may refer to the label used to internally represent the field (which may or may not match the key used to set the field or may not have an associated key), such as `useri` which corresponds to the `user1` key, or it may refer to a field that is only ever used internally that should not be explicitly modified, such as the field used to store the entry's hierarchical level

### **Internal field (`bib2gls`)**

A field that is used or assigned by `bib2gls` that should typically not be used in the `bib` file.

### **Internal field label**

The field label that forms part of the internal control sequence used to store the field value. This may or may not match the key used to assign the value when defining the entry. See Table 4.1.

### **Latin alphabet**

The alphabet consisting of Latin characters.

### **Latin character**

One of the letters “a”, ..., “z”, “A”, ..., “Z”.

### **Link text**

The text produced by `\gls`-like and `\glstext`-like commands that have the potential to be a hyperlink.

### **Location counter**

The counter used to obtain the entry location.

### **Location encap (format)**

A command used to encapsulate an entry location. The control sequence name (without the leading backslash) is identified by the `format` key. The default encap is `\glsnumber-format`. See §12.1 for further details.

### **Location list**

A list of entry locations (also called a number list). May be suppressed for all glossaries with the package option `nonnumberlist` or for individual glossaries with `nonnumberlist`. With `bib2gls`, the list may also be suppressed with `save-locations=false`.

### **Non-Latin alphabet**

An alphabet consisting of non-Latin characters.

### **Non-Latin character**

An extended Latin character or a character that isn't a Latin character.

### **Post-description hook**

A hook (`\glspostdescription`) included in some glossary styles that is used after the description is displayed. The `glossaries-extra` package modifies this command to provide additional hooks.

### **Post-link hook**

A hook (command) that is used after link text to allow code to be automatically added. The base `glossaries` package provides a general purpose hook `\glspostlinkhook`. The `glossaries-extra` package modifies this command to provide additional hooks.



## Print “unsrt” glossary commands

The set of commands used for displaying a glossary or partial glossary that have “unsrt” in the name, such as `\printunsrtglossary`. See the `glossaries-extra` manual for further details.

## Resource file

The `glstex` file created by `bib2gls` and loaded by `\GlsXtrLoadResources`.

## Resource set

All the settings (resource options) and entries associated with a particular instance of `\GlsXtrLoadResources`.

## Sanitize

Converts command names into character sequences. That is, a command called, say, `\foo`, is converted into the sequence of characters: `\, f, o, o`. Depending on the font, the backslash character may appear as a dash when used in the main document text, so `\foo` will appear as: `—foo`.

Earlier versions of `glossaries` used this technique to write information to the files used by the indexing applications to prevent problems caused by fragile commands. Now, this is only used for the `sort` key.

## Shell escape

Most  $\LaTeX$  formats have the ability to run CLI applications while it’s typesetting a document. Whilst this is a convenient way of using tools to help build the document, it’s a security risk. To help protect users from arbitrary — and potentially dangerous — code from being executed,  $\TeX$  has a restricted mode, where only trusted applications are allowed to run. This is usually the default mode, but your  $\TeX$  installation may be set up so that the shell escape is disabled by default. The unrestricted mode allows you to run any application from the shell escape. Take care about enabling this option. If you receive a document or package from an untrusted source, first run  $\LaTeX$  with the shell escape disabled or in restricted mode and search the `log` file for “runsystem” before using the unrestricted mode.

## Small capitals (small caps)

The  $\LaTeX$  kernel provides `\textsc{<text>}` to produce small capitals. This uses a font where lowercase letters have a small capital design. Uppercase letters have the standard height and there’s no noticeable difference with uppercase characters in corresponding non-small caps fonts. This means that for a small caps appearance, you need to use lowercase letters in the `<text>` argument. The `reysize` package provides `\textsmaller{<text>}` which simulates small caps by reducing the size of the font, so in this case the contents of `<text>` should be uppercase (otherwise the effect is simply smaller lowercase letters). Some fonts don’t support small caps combined with bold or slanted properties. In this case, there will be a font substitution warning and one of the properties (such as small caps or slanted) will be dropped.

## Standard $\LaTeX$ extended Latin character

An extended Latin character that can be created by a core  $\LaTeX$  command, such as `\o` ( $\text{\o}$ ) or `\'e` ( $\text{\'e}$ ). That is, the character can be produced without the need to load a particular package.

## **Subsequent use**

Using an entry that unsets the first use flag when it has already been unset.

## **Unicode Transformation Format (8-bit) (UTF-8)**

A variable-width encoding that uses 8-bit code units. This means that some characters are represented by more than one byte.  $\text{Xe}\text{L}\text{A}\text{T}\text{E}\text{X}$  and  $\text{Lua}\text{L}\text{A}\text{T}\text{E}\text{X}$  treat the multi-byte sequence as a single token, but the older  $\text{L}\text{A}\text{T}\text{E}\text{X}$  formats have single-byte tokens, which can cause complications, although these have mostly been addressed with the newer kernels introduced over the past few years. Related blog article: [Binary Files, Text Files and File Encodings](#).<sup>4</sup>

## **Whatsit**

A command whose execution is delayed or an OS-specific special command. This includes writing to external files (which is what indexing does).


---

<sup>4</sup>[dickimaw-books.com/blog/binary-files-text-files-and-file-encodings/](http://dickimaw-books.com/blog/binary-files-text-files-and-file-encodings/)

# Glossary Entry Keys Summary

These are options that can be passed to commands that define entries, such as `\newglossary-entry` or `\newacronym`.


**access**={ *text* }

 glossaries-accsupp

§17.1;  
438

Accessibility text corresponding to the `name` field.


**alias**={ *xr-label* }

 glossaries-extra v1.12

§4; 146

Behaves in a similar manner to `see={ [ \seealso] xr-label }` but also sets up aliasing which makes the link text hyperlink to *xr-label* instead.


**category**=*category-label*

*initial: general*  glossaries-extra

§4; 146

The entry's category (must be a simple label).


**counter**={ *counter-name* }

 glossaries v3.0+

§4; 146

If set, the value indicates the location counter to use by default when indexing this entry (overrides the counter associated with the glossary or the `counter` package option).

**description**={ *text* }

 glossaries

§4; 139

The entry's description, as displayed in the glossary. If required in the text, use `\glsdesc` (if indexing and hyperlinks are required) or `\glsentrydesc`. Glossary styles should use `\glossentrydesc` and `\glspostdescription` to incorporate the post-description hook.

**descriptionaccess**={ *text* }

 glossaries-accsupp

§17.1;  
439

Accessibility text corresponding to the `description` field.

**descriptionplural**={ *<text>* }

glossaries v1.12+

§4; 140

The plural form of the entry's description, if applicable. If omitted, this is set to the same value as the `description`, since descriptions tend not to be a singular entity.

**descriptionpluralaccess**={ *<text>* }

glossaries-accsupp

§17.1;  
439

Accessibility text corresponding to the `descriptionplural` field.

**first**={ *<first>* }

glossaries

§4; 140

The entry's text, as displayed on first use of `\gls`-like commands. Note that using an acronym style or post-link hooks is a more flexible approach. If omitted, this value is assumed to be the same as the `text` key.

**firstaccess**={ *<text>* }

glossaries-accsupp

§17.1;  
439

Accessibility text corresponding to the `first` field.

**firstplural**={ *<text>* }

glossaries

§4; 141

The entry's plural form, as displayed on first use of plural `\gls`-like commands, such as `\glspl`. If this key is omitted, then the value will either be the same as the `plural` field, if the `first` key wasn't used, or the value will be taken from the `first` key with `\glspluralsuffix` appended.

**firstpluralaccess**={ *<text>* }

glossaries-accsupp

§17.1;  
439

Accessibility text corresponding to the `firstplural` field.


**group**={ *<group-label>* }

glossaries-extra v1.11+

The group label that identifies which letter group the entry belongs to. This key is only available with the `record=only` and `record=nameref` options, and is set by `bib2gls`, if invoked with `--group` or `-g`. Although this has a key, this is considered an internal key


assigned by `bib2gls` as a by-product of sorting. Explicit use without reference to the order of entries can result in fragmented groups. The corresponding title can be set with `\glsxtr-setgrouptitle`, although this is more commonly done implicitly within the `gls.tex` file. See also Gallery: Logical Glossary Divisions (type vs group vs parent).<sup>1</sup>

**location** = {  $\langle$ location-list $\rangle$  }  
(requires `record`)

 glossaries-extra

The formatted location list used by the “unsrt” family of commands. This key is only available with the `record` option and is set by `bib2gls` unless `save-locationsfalse` is set. Although it has an associated key, it’s usually considered an internal field.


**long** = {  $\langle$ long-form $\rangle$  }

 glossaries v3.0+

§4; 146

A field that is set by `\newacronym` (and `\newabbreviation`) to the entry’s long (unabbreviated) form. It typically shouldn’t be used explicitly with `\newglossaryentry` as `\newacronym` (and `\newabbreviation`) makes other modifications to ensure that when the entry is referenced with the `\gls`-like commands, it will obey the appropriate acronym style (or `abbreviation` style). If you are using `bib2gls` then this field should be used in the `bib` file when defining `abbreviations`.


**longaccess** = {  $\langle$ text $\rangle$  }

 glossaries-accsupp

§17.1;  
439

Accessibility text corresponding to the `long` field.


**longplural** = {  $\langle$ long-form $\rangle$  }

 glossaries v3.0+

§4; 146

As `long` but the plural form.


**longpluralaccess** = {  $\langle$ text $\rangle$  }

 glossaries-accsupp

§17.1;  
440

Accessibility text corresponding to the `longplural` field.

**name** = {  $\langle$ text $\rangle$  }


 glossaries

§4; 139

The entry’s name, as displayed in the glossary. This typically isn’t used outside of the glossary

<sup>1</sup>[dickimaw-books.com/gallery/index.php?label=logicaldivisions](http://dickimaw-books.com/gallery/index.php?label=logicaldivisions)

(the `text` and `plural` keys are used instead). However, if there is a need to specifically display the entry name, use `\glsname` (if indexing and hyperlinks are required) or `\glsentryname`. Glossary styles should use `\glossentryname` rather than explicitly using `\glsentryname`.

**`nonumberlist`** = { *boolean* }     *default: true; initial: false*      glossaries v1.17+

§4; 143

If set, suppress the location list for this entry. This is done by adding `\glsnonextpages` or `\glsnextpages` to the indexing information for Options 2 and 3 or to the `prenumberlist` field for Option 1.

**`parent`** = *parent-label*      glossaries v1.17+

§4; 139

The label of the entry's parent (from which the entry's hierarchical level is obtained).

**`plural`** = { *text* }      glossaries

§4; 140

The entry's plural form, as displayed on subsequent use of `plural` `\gls`-like commands, such as `\glspl`. This should be the appropriate plural form of the value provided by the `text` key. If omitted, this value is assumed to be the value of the `text` key with `\glspluralsuffix` appended.

**`pluralaccess`** = { *text* }      glossaries-accsupp

§17.1;  
439

Accessibility text corresponding to the `plural` field.

**`prefix`** = { *text* }      glossaries-prefix v3.14a+

§16; 430

The subsequent use singular prefix.

**`prefixfirst`** = { *text* }      glossaries-prefix v3.14a+

§16; 430

The first use singular prefix.

**prefixfirstplural** = {  $\langle text \rangle$  }

glossaries–prefix v3.14a+

§16; 430

The first use plural prefix.

**prefixplural** = {  $\langle text \rangle$  }

glossaries–prefix v3.14a+

§16; 430

The subsequent use plural prefix.

**see** = { [  $\langle tag \rangle$  ]  $\langle xr-list \rangle$  }

glossaries v1.17+

§4; 144

With the base `glossaries` package this simply triggers an automatic cross-reference with `\gls-see`. The `glossaries-extra` package additionally saves the value. Use `autoseeindex=false` to prevent the automatic cross-reference. The  $\langle tag \rangle$  defaults to `\seename` and  $\langle xr-list \rangle$  should be a comma-separated list of entries that have already been defined.

**seealso** = {  $\langle xr-list \rangle$  }

glossaries–extra v1.16+

§4; 145

Behaves in a similar manner to `see={ [ \seealsoname ]  $\langle xr-list \rangle$  }`.

**short** = {  $\langle short-form \rangle$  }

glossaries v3.0+

§4; 146

A field that is set by `\newacronym` to the entry's short (abbreviated) form. It typically shouldn't be used explicitly with `\newglossaryentry` as `\newacronym` (and `\newabbreviation`) makes other modifications to ensure that when the entry is referenced with the `\gls`-like commands, it will obey the appropriate acronym style (or `abbreviation` style). If you are using `bib2gls` then this field should be used in the `bib` file when defining abbreviations.

**shortaccess** = {  $\langle text \rangle$  }

glossaries–accsupp

§17.1;  
440

Accessibility text corresponding to the `short` field.

**shortplural** = {  $\langle short-form \rangle$  }

glossaries v3.0+

§4; 146

As `short` but the plural form. The default is obtained by appending the acronym or `abbreviation` plural suffix.

**shortpluralaccess**={ *text* }

glossaries-accsupp

§17.1;  
440Accessibility text corresponding to the `shortplural` field.**sort**=*value**initial*: *entry name* glossaries

§4; 141

Specifies the value to use for sorting (overrides the default). This key is usually required for `xindy` if the `name` key only contains commands (for example, the entry is a symbol), but explicitly using this key in other contexts can break certain sort methods. Don't use the `sort` field with `bib2gls`.<sup>2</sup>

**symbol**={ *symbol* }*initial*: `\relax` glossaries

§4; 141

The entry's associated symbol (optional), which can be displayed with `\glsymbol` (if indexing and hyperlinks are required) or with `\glsentrysymbol`.

**symbolaccess**={ *text* }

glossaries-accsupp

§17.1;  
439Accessibility text corresponding to the `symbol` field.**symbolplural**={ *symbol plural* }

glossaries v1.12+

§4; 141

The plural form of the `symbol`, if applicable, which can be displayed with `\glsymbolplural` (if indexing and hyperlinks are required) or with `\glsentrysymbolplural`. If omitted, this value is set to the same as the `symbol` key (since symbols usually don't have a plural form).

**symbolpluralaccess**={ *text* }

glossaries-accsupp

§17.1;  
439Accessibility text corresponding to the `symbolplural` field.**text**={ *text* }

glossaries

§4; 140

The entry's text, as displayed on subsequent use of `\gls`-like commands. If omitted, this value is assumed to be the same as the `name` key.

<sup>2</sup>[dickimaw-books.com/gallery/index.php?label=bib2gls-sorting](http://dickimaw-books.com/gallery/index.php?label=bib2gls-sorting)



**textaccess**={ *text* }

glossaries-accsupp

§17.1;  
439Accessibility text corresponding to the `text` field.**type**=*glossary-label**initial:* \glsdefaulttype glossaries

§4; 143

Assigns the entry to the glossary identified by *glossary-label*.**user1**={ *text* }

glossaries v2.04+

§4; 143

A generic field, which can be displayed with `\glsuseri` (if indexing and hyperlinks are required) or with `\glsentryuseri`.**user1access**={ *text* }

glossaries-accsupp v4.45+

§17.1;  
440Accessibility text corresponding to the `user1` field.**user2**={ *text* }

glossaries v2.04+

§4; 143

A generic field, which can be displayed with `\glsuserii` (if indexing and hyperlinks are required) or with `\glsentryuserii`.**user2access**={ *text* }

glossaries-accsupp v4.45+

§17.1;  
440Accessibility text corresponding to the `user2` field.**user3**={ *text* }

glossaries v2.04+


§4; 143

A generic field, which can be displayed with `\glsuseriii` (if indexing and hyperlinks are required) or with `\glsentryuseriii`.**user3access**={ *text* }

glossaries-accsupp v4.45+

§17.1;  
440Accessibility text corresponding to the `user3` field.


**user4**= { *text* }

 glossaries v2.04+

§4; 143

A generic field, which can be displayed with `\glsuseriv` (if indexing and hyperlinks are required) or with `\glsentryuseriv`.


**user4access**= { *text* }

 glossaries-accsupp v4.45+

§17.1;  
440

Accessibility text corresponding to the `user4` field.


**user5**= { *text* }

 glossaries v2.04+

§4; 143

A generic field, which can be displayed with `\glsuserv` (if indexing and hyperlinks are required) or with `\glsentryuserv`.


**user5access**= { *text* }

 glossaries-accsupp v4.45+

§17.1;  
441

Accessibility text corresponding to the `user5` field.


**user6**= { *text* }

 glossaries v2.04+

§4; 143

A generic field, which can be displayed with `\glsuservi` (if indexing and hyperlinks are required) or with `\glsentryuservi`.

**user6access**= { *text* }

 glossaries-accsupp v4.45+


§17.1;  
441

Accessibility text corresponding to the `user6` field.

# \gls-Like and \glsstext-Like Options Summary

Most (but not all) of these options can be used in the optional argument of all the \gls-like, \glsstext-like and \glsadd commands.


**counter**=*<counter-name>*

 glossaries

§5.1.1;  
173

The location counter.


**format**=*<cs-name>*

 glossaries

§5.1.1;  
172


The encap or control sequence name (without the leading backslash) that should be used to encapsulate the entry location.

**hyper**=*<boolean>*

*default: true; initial: true*  glossaries

§5.1.1;  
172


Determines whether or not the link text should have a hyperlink (provided hyperlinks are supported).

**hyperoutside**=*<boolean>* *default: true; initial: true*  glossaries-extra v1.21+

§5.1.1;  
173


Determines whether the hyperlink should be inside or outside of \glsstextformat.

**local**=*<boolean>*

*default: true; initial: false*  glossaries v3.04+


§5.1.1;  
173

If true use \glslocalunset to unset the first use flag, otherwise use \glsunset (only applies to \gls-like commands).

**noindex**=*<boolean>*      *default: true; initial: false*  glossaries-extra

§5.1.1;  
173

If `true` this option will suppress indexing. If you are using `bib2gls`, you may want to consider using `format=glsignore` to prevent a location but ensure that the entry is selected.

**postunset**=*<value>*      *default: global; initial: global*  glossaries-extra v1.49+


§5.1.1;  
174

Determines whether or not to unset the first use flag after the link text. The value may be one of: `global`, `local` or `none` (only applies to `\gls`-like commands).

**prefix**=*<link-prefix>*       glossaries-extra v1.31+


§5.1.1;  
173

The prefix to use for the entry's hyperlink target.

**prereset**=*<value>*      *default: local; initial: none*  glossaries-extra v1.49+

§5.1.1;  
174

Determines whether or not to reset the entry before the link text. Allowed values: `none` (no reset), `local` (localise the reset) and `global`.

**preunset**=*<value>*      *default: local; initial: none*  glossaries-extra v1.49+

§5.1.1;  
174

Determines whether or not to unset the entry before the link text. Allowed values: `none` (no unset), `local` (localise the unset) and `global`.

**textformat**=*<cname>*       glossaries-extra v1.30+

§5.1.1;  
173


The name of the control sequence to use instead of `\glsformat` to encapsulate the link text.

**theHvalue**=*<the-H-value>*       glossaries-extra v1.19+

§5.1.1;  
174

Set the hyper location to this value instead of obtaining it from `\theH<counter>`.


**thevalue**= $\langle$ *location* $\rangle$

 glossaries-extra v1.19+

§5.1.1;  
174

Set the location to this value instead of obtaining it from the location counter.


**types**= $\{ \langle$ *glossary list* $\rangle \}$

 glossaries

§10; 268

Only available with `\glsaddall`, the value is the list of glossaries to iterate over.

**wrgloss**= $\langle$ *position* $\rangle$


*initial*: before  glossaries-extra v1.14+

§5.1.1;  
173

Determines whether to do the indexing before or after the link text. Allowed values: `before` and `after`.


# `\print<...>glossary` Options Summary

Most (but not all) of these options can be used in the optional argument of all the `\print-<...>glossary` commands.

**entrycounter**=*<boolean>*      *default: true; initial: false*  glossaries v4.08+


§8.1; 253

If true, enable the entry counter.

**flatten**=*<boolean>*      *default: true; initial: false*  glossaries-extra v1.49+

§8.1; 257

If true, treats all entries as though they have the same hierarchical level (the value of `leveloffset`). This option is only available for the “unsrt” commands.

**groups**=*<boolean>*      *default: true; initial: true*  glossaries-extra v1.44+

§8.1; 256

Enables letter group formation. This option is only available for the “unsrt” commands. Note that no groups will be formed when invoking `bib2gls` with the default `--no-group`, regardless of this setting.

**label**=*<label>*       glossaries-extra v1.39+


§8.1; 256

Adds `\label{<label>}` to the start of the glossary (after the title).

**leveloffset**=*<offset>*      *initial: 0*  glossaries-extra v1.44+


§8.1; 257

Set or increment the hierarchical level offset. If *<offset>* starts with `++` then the current offset is incremented by the given amount otherwise the current offset is set to *<offset>*. For example, an entry with a normal hierarchical level of 1 will be treated as though it has hierarchical level `1 + <offset>`. This option is only available for the “unsrt” commands.

**nogroupskip**=*<boolean>*      *default: true; initial: false*  glossaries v3.08a+


§8.1; 253

If true, suppress the gap implemented by some glossary styles between groups.

**nonumberlist**=*<boolean>*      *default: true; initial: false*  glossaries v1.14+

§8.1; 253

Suppress the location list. Note that `nonumberlist=true` will have no effect with the `save-locationsfalse` resource option as there won't be any location lists to display. Likewise if `\printunsrtglossary` is used without `bib2gls`.

**nopostdot**=*<boolean>*      *default: true; initial: false*  glossaries v4.08+

§8.1; 253

If true, suppress the post-description punctuation.

**numberedsection**=*<value>*      *default: nolabel; initial: false*   
glossaries v1.14+

§8.1; 253

Indicates whether or not glossary section headers will be numbered and also if they should automatically be labelled. The `numberedsection` package option will change the default setting to match.

**prefix**=*<prefix>*       glossaries-extra v1.31+

§8.1; 256

Redefines `\glolinkprefix` to *<prefix>*.

**sort**=*<method>*       glossaries v4.04+

§8.1; 254

Only available with `\printnoidxglossary`, this indicates how the glossary should be ordered.

`sort=case`

Case-sensitive sort.

255

`sort=def`

Order of definition.

254

`sort=letter`

255

Letter order.

`sort=lettercase` glossaries v4.59+  
Case-insensitive letter sort.

255

`sort=nocase`  
Case-insensitive sort.

255

`sort=standard`  
Word or letter order according to the `order` package option.

255

`sort=use`  
Order of use.

254

`sort=word`  
Word order.

255

`sort=wordcase` glossaries v4.59+  
Case-insensitive word sort.

255

`style=<style-name>`



§8.1; 253

Use the `<style-name>` glossary style.

`subentrycounter=<boolean>` *default: true; initial: false* glossaries v4.08+

§8.1; 254

If true, enable the sub-entry counter.

`target=<boolean>` *default: true; initial: true* glossaries-extra v1.12+

§8.1; 256

If true, each entry in the glossary should have a hypertext created, if supported by the glossary style and if hyperlinks are enabled.

`targetnameprefix=<prefix>` glossaries-extra v1.20+

§8.1; 256

Inserts `<prefix>` at the start of the hypertext names.

`title=<text>`




§8.1; 253

Sets the glossary title (overriding the default).




**toctitle**=*<text>*

 glossaries v3.03+

§8.1; 253

Sets the glossary toc title (overriding the default).

**type**=*<glossary-label>*

*default:* `\glsdefaulttype` 

§8.1; 252

Identifies the glossary to display.

# Acronym Style Summary

The style should be set with `\setacronymstyle` before the first instance of `\newacronym`.

**dua-desc** glossaries v4.02+

§6.2.1.5;  
218

Both the first use and subsequent use only show the long form and the description must be supplied.

**dua** glossaries v4.02+

§6.2.1.5;  
218

Both the first use and subsequent use only show the long form.

**footnote-desc** glossaries v4.02+

§6.2.1.6;  
218

First use shows *⟨short⟩* followed by the long form in a footnote and the description must be supplied.

**footnote-sc-desc** glossaries v4.02+

§6.2.1.6;  
219

First use shows *⟨short⟩* in smallcaps followed by the long form in a footnote and the description must be supplied.

**footnote-sc** glossaries v4.02+

§6.2.1.6;  
218

First use shows *⟨short⟩* in smallcaps followed by the long form in a footnote.

**footnote-sm-desc** glossaries v4.02+

§6.2.1.6;  
219

First use shows *⟨short⟩* in a smaller font followed by the long form in a footnote and the description must be supplied.

**footnote-sm**

glossaries v4.02+

§6.2.1.6;  
218

First use shows *<short>* in a smaller font followed by the long form in a footnote.

**footnote**

glossaries v4.02+

§6.2.1.6;  
218

First use shows *<short>* followed by the long form in a footnote.

**long-sc-short-desc**

glossaries v4.02+

§6.2.1.3;  
217

First use shows *<long>* (*<short>*) with the short form in smallcaps and the description must be supplied.

**long-sc-short**

glossaries v4.02+

§6.2.1.1;  
214

First use shows *<long>* (*<short>*) with the short form in smallcaps.

**long-short-desc**

glossaries v4.02+

§6.2.1.3;  
217

First use shows *<long>* (*<short>*) where the description must be supplied.

**long-short**

glossaries v4.02+

§6.2.1.1;  
214

First use shows *<long>* (*<short>*).

**long-sm-short-desc**

glossaries v4.02+

§6.2.1.3;  
217

First use shows *<long>* (*<short>*) with the short form in a smaller font and the description must be supplied.

**long-sm-short**

glossaries v4.02+

§6.2.1.1;  
215

First use shows *<long>* (*<short>*) with the short form in a smaller font.

**long-sp-short-desc**

glossaries v4.16+

§6.2.1.3;  
217

First use shows *<long>* (*<short>*) where the space may be converted to a non-breaking space and the description must be supplied.

**long-sp-short**

glossaries v4.16+

§6.2.1.1;  
215

First use shows *<long>* (*<short>*) where the space may be converted to a non-breaking space.

**sc-short-long-desc**

glossaries v4.02+

§6.2.1.4;  
217

First use shows *<short>* (*<long>*) with the short form in smallcaps and a description must be supplied.

**sc-short-long**

glossaries v4.02+

§6.2.1.2;  
216

First use shows *<short>* (*<long>*) with short form in smallcaps.

**short-long-desc**

glossaries v4.02+

§6.2.1.4;  
217

First use shows *<short>* (*<long>*) and a description must be supplied.

**short-long**

glossaries v4.02+

§6.2.1.2;  
216

First use shows *<short>* (*<long>*).

**sm-short-long-desc**

glossaries v4.02+

§6.2.1.4;  
217

First use shows *<short>* (*<long>*) with the short form in a smaller font and a description must be supplied.

**sm-short-long**

glossaries v4.02+

§6.2.1.2;  
216

First use shows *<short>* (*<long>*) with short form in a smaller font.

# Glossary Styles Summary

The default style may be set with `\setglossarystyle` or with the `style` package option. The default style can be overridden for individual glossaries with the `style` option. For a summary of all available styles, see Gallery: Predefined Styles.<sup>1</sup>

**altlist**

glossary-list

§13.1.1;  
312

A list style using the description environment with the entry's description starting on a new line.

**altlistgroup**

glossary-list

§13.1.1;  
312

A list style using the description environment with the entry's description starting on a new line with letter group headings.

**altlisthypergroup**

glossary-list

§13.1.1;  
312

A list style using the description environment with the entry's description starting on a new line with letter group headings and a navigation line.

**altlong4col-booktabs**

glossary-longbooktabs v4.21+

§13.1.4;  
321

A tabular style using `longtable` with 4 columns allowing for multi-lined descriptions, a header row and rules.

**altlong4col**

glossary-long

§13.1.2;  
316

A tabular style using `longtable` with 4 columns allowing a multiline description.

**altlong4colborder**

glossary-long

§13.1.2;  
316

A tabular style using `longtable` with 4 columns allowing a multiline description with border lines.

<sup>1</sup>[dickimaw-books.com/gallery/index.php?label=glossaries-styles](http://dickimaw-books.com/gallery/index.php?label=glossaries-styles)

**altlong4colheader**

glossary-long

§13.1.2;  
316

A tabular style using longtable with 4 columns allowing a multiline description with a header row.

**altlong4colheaderborder**

glossary-long

§13.1.2;  
316

A tabular style using longtable with 4 columns allowing a multiline description with a header row and border lines.

**altlongragged4col-booktabs**

glossary-longbooktabs v4.21+

§13.1.4;  
321

A tabular style using longtable with 4 columns, a header row and rules, and ragged right formatting for the description.

**altlongragged4col**

glossary-longragged

§13.1.3;  
318

A tabular style using longtable with 4 columns and ragged right formatting for the description.

**altlongragged4colborder**

glossary-longragged

§13.1.3;  
319

A tabular style using longtable with 4 columns and ragged right formatting for the description and border lines.

**altlongragged4colheader**

glossary-longragged

§13.1.3;  
319

A tabular style using longtable with 4 columns and ragged right formatting for the description, and a header row.

**altlongragged4colheaderborder**

glossary-longragged

§13.1.3;  
319

A tabular style using longtable with 4 columns and ragged right formatting for the description, border lines and a header row.

**altsuper4col**

glossary-super

§13.1.5;  
324

A tabular style using supertabular with 4 columns allowing multiline descriptions.

**altsuper4colborder**

glossary–super

§13.1.5;  
324

**altsuper4colheader**

glossary–super

§13.1.5;  
324

A tabular style using supertabular with 4 columns and a header row allowing multiline descriptions.

**altsuper4colheaderborder**

glossary–super

§13.1.5;  
324

A tabular style using supertabular with 4 columns, a header row and border lines allowing multiline descriptions.

**altsuperragged4col**

glossary–superragged

§13.1.6;  
326

A tabular style using supertabular with 4 columns and ragged right formatting for the description.

**altsuperragged4colborder**

glossary–superragged

§13.1.6;  
326

A tabular style using supertabular with 4 columns and border lines, and ragged right formatting for the description.

**altsuperragged4colheader**

glossary–superragged

§13.1.6;  
326

A tabular style using supertabular with 4 columns and a header row, and ragged right formatting for the description.

**altsuperragged4colheaderborder**

glossary–superragged

§13.1.6;  
327

A tabular style using supertabular with 4 columns, a header row and border lines, and ragged right formatting for the description.

**almtree**

glossary–tree

§13.1.7.2;  
375

A hierarchical style that shows the name, description and, if set, the symbol. The name is set in a box whose width is given by the widest name that has to be identified with `\glssetwidest`.

**almtreegroup**

glossary-tree

§13.1.7.2;  
377

A hierarchical style with letter group headings that shows the name, description and, if set, the symbol. The name is set in a box whose width is given by the widest name that has to be identified with `\glssetwidest`.

**almtreehypergroup**

glossary-tree

§13.1.7.2;  
377

A hierarchical style with letter group headings and navigation line that shows the name, description and, if set, the symbol. The name is set in a box whose width is given by the widest name that has to be identified with `\glssetwidest`.

**bookindex**

glossary-bookindex v1.21+

Designed for indexes, the description isn't shown.

**index**

glossary-tree

§13.1.7.2;  
373

A style similar to standard indexes but also shows the description and, if set, the symbol.

**indexgroup**

glossary-tree

§13.1.7.2;  
374

A style similar to standard indexes with letter group headings but also shows the description and, if set, the symbol.

**indexhypergroup**

glossary-tree

§13.1.7.2;  
374

A style similar to standard indexes with letter group headings and a navigation line but also shows the description and, if set, the symbol.

**inline**

glossary-inline v3.03+

§13.1.9;  
381

An inline homograph style.



**list**

glossary-list

§13.1.1;  
311

A list style using the description environment.

**listdotted**

glossary-list

§13.1.1;  
312

A list style with a dotted leader between the name and description.

**listgroup**

glossary-list

§13.1.1;  
312

A list style using the description environment with letter group headings.

**listhypergroup**

glossary-list

§13.1.1;  
312

A list style using the description environment with letter group headings and a navigation line.

**long-booktabs**

glossary-longbooktabs v4.21+

§13.1.4;  
321

A tabular style using longtable with 2 columns a header row and rules.

**long-name-desc-sym-loc**

glossary-longextra v1.21+

Tabular style with 4 columns.

**long-name-desc**

glossary-longextra v1.37+

Tabular style with 2 columns.

**long**

glossary-long

§13.1.2;  
314

A tabular style using longtable with 2 columns.

**long3col-booktabs**

glossary-longbooktabs v4.21+

§13.1.4;  
321

A tabular style using longtable with 3 columns a header row and rules.

**long3col**

glossary–long

§13.1.2;  
315

A tabular style using longtable with 3 columns.

**long3colborder**

glossary–long

§13.1.2;  
315

A tabular style using longtable with 3 columns and border lines.

**long3colheader**

glossary–long

§13.1.2;  
315

A tabular style using longtable with 3 columns and a header row.

**long3colheaderborder**

glossary–long

§13.1.2;  
315

A tabular style using longtable with 3 columns, a header row and border lines.

**long4col–booktabs**

glossary–longbooktabs v4.21+

§13.1.4;  
321

A tabular style using longtable with 4 columns a header row and rules.

**long4col**

glossary–long

§13.1.2;  
315

A tabular style using longtable with 4 columns.

**long4colborder**

glossary–long

§13.1.2;  
315

A tabular style using longtable with 4 columns and border lines.

**long4colheader**

glossary–long

§13.1.2;  
315

A tabular style using longtable with 4 columns and a header row.

**long4colheaderborder**

glossary-long

§13.1.2;  
316

A tabular style using longtable with 4 columns, a header row and border lines.

**longborder**

glossary-long

§13.1.2;  
314

A tabular style using longtable with 2 columns and border lines.

**longheader**

glossary-long

§13.1.2;  
314

A tabular style using longtable with 2 columns and a header row.

**longheaderborder**

glossary-long

§13.1.2;  
314

A tabular style using longtable with 2 columns, a header row and border lines.

**longragged-booktabs**

glossary-longbooktabs v4.21+

§13.1.4;  
321

A tabular style using longtable with 2 columns, a header row and rules, and ragged right formatting for the description.

**longragged**

glossary-longragged

§13.1.3;  
317

A tabular style using longtable with 2 columns and ragged right formatting for the description.

**longragged3col-booktabs**

glossary-longbooktabs v4.21+

§13.1.4;  
321

A tabular style using longtable with 3 columns, a header row and rules, and ragged right formatting for the description.

**longragged3col**

glossary-longragged

§13.1.3;  
318

A tabular style using longtable with 3 columns and ragged right formatting for the description.

**longragged3colborder**

glossary–longragged

§13.1.3;  
318

A tabular style using longtable with 3 columns and ragged right formatting for the description and border lines.

**longragged3colheader**

glossary–longragged

§13.1.3;  
318

A tabular style using longtable with 3 columns and ragged right formatting for the description, and a header row.

**longragged3colheaderborder**

glossary–longragged

§13.1.3;  
318

A tabular style using longtable with 3 columns and ragged right formatting for the description, border lines and a header row.

**longraggedborder**

glossary–longragged

§13.1.3;  
317

A tabular style using longtable with 2 columns and ragged right formatting for the description and border lines.

**longraggedheader**

glossary–longragged

§13.1.3;  
318

A tabular style using longtable with 2 columns and ragged right formatting for the description, and a header row.

**longraggedheaderborder**

glossary–longragged

§13.1.3;  
318

A tabular style using longtable with 2 columns and ragged right formatting for the description, border lines and a header row.

**mcolalmtree**

glossary–mcols v3.02+

§13.1.8;  
Table 13.2

A multicolumn hierarchical style that shows the name, description and, if set, the symbol. The name is set in a box whose width is given by the widest name that has to be identified with `\glsetwidest`.

**mcolalttreegroup**

glossary–mcols v3.02+

§13.1.8;  
Table 13.2

A multicolumn hierarchical style with letter group headings that shows the name, description and, if set, the symbol. The name is set in a box whose width is given by the widest name that has to be identified with `\glssetwidest`.

**mcolalttreehypergroup**

glossary–mcols v3.02+

§13.1.8;  
Table 13.2

A hierarchical style with letter group headings and navigation line at the start of the first column that shows the name, description and, if set, the symbol. The name is set in a box whose width is given by the widest name that has to be identified with `\glssetwidest`.

**mcolalttreespannav**

glossary–mcols v4.22+

§13.1.8;  
Table 13.2

A hierarchical style with letter group headings and navigation line spanning all columns that shows the name, description and, if set, the symbol. The name is set in a box whose width is given by the widest name that has to be identified with `\glssetwidest`.

**mcolindex**

glossary–mcols v3.02+

§13.1.8;  
Table 13.2

A multicolumn style similar to standard indexes but also shows the description and, if set, the symbol.

**mcolindexgroup**

glossary–mcols v3.02+

§13.1.8;  
Table 13.2

A multicolumn style similar to standard indexes with letter group headings but also shows the description and, if set, the symbol.

**mcolindexhypergroup**

glossary–mcols v3.02+

§13.1.8;  
Table 13.2

A multicolumn style similar to standard indexes with letter group headings and a navigation line at the start of the first column but also shows the description and, if set, the symbol.

**mcolindexspannav**

glossary–mcols v4.22+

§13.1.8;  
Table 13.2

A multicolumn style similar to standard indexes with letter group headings and a navigation line spanning all columns but also shows the description and, if set, the symbol.

**mcoltree**

glossary-mcols v3.02+

§13.1.8;  
Table 13.2

A multicolumn hierarchical style that shows the name, description and, if set, the symbol.

**mcoltree\***

glossary-mcols v4.59+

§13.1.8;  
378

A multicolumn style built on the `tree*` style. This style may be modified with the `mcoltree*` or `tree*` options.

**mcoltreegroup**

glossary-mcols v3.02+

§13.1.8;  
Table 13.2

A multicolumn hierarchical style with letter group headings that shows the name, description and, if set, the symbol.

**mcoltreehypergroup**

glossary-mcols v3.02+

§13.1.8;  
Table 13.2

A multicolumn hierarchical style with letter group headings and navigation line at the start of the first column that shows the name, description and, if set, the symbol.

**mcoltreenoname**

glossary-mcols v3.02+

§13.1.8;  
Table 13.2

A multicolumn homograph style that shows the top-level name, description and, if set, the symbol, but omits the name for sub-entries.

**mcoltreenonamegroup**

glossary-mcols v3.02+

§13.1.8;  
Table 13.2

A multicolumn homograph style with letter group headings that shows the top-level name, description and, if set, the symbol, but omits the name for sub-entries.

**mcoltreenonamehypergroup**

glossary-mcols v3.02+

§13.1.8;  
Table 13.2

A multicolumn homograph style with letter group headings and navigation line at the start of the first column that shows the top-level name, description and, if set, the symbol, but omits the name for sub-entries.

**mcoltreenonamespannav**

glossary–mcols v4.22+

§13.1.8;  
Table 13.2

A multicolumn homograph style with letter group headings and navigation line spanning all columns that shows the top-level name, description and, if set, the symbol, but omits the name for sub-entries.

**mcoltreESPannav**

glossary–mcols v4.22+

§13.1.8;  
Table 13.2

A multicolumn hierarchical style with letter group headings and navigation line spanning all columns that shows the name, description and, if set, the symbol.

**sublistdotted**

glossary–list

§13.1.1;  
313

A list style with just the name for top-level entries and a dotted leader between the name and description for sub-entries.

**super**

glossary–super

§13.1.5;  
322

A tabular style using supertabular with 2 columns.

**super3col**

glossary–super

§13.1.5;  
323

A tabular style using supertabular with 3 columns.

**super3colborder**

glossary–super

§13.1.5;  
323

A tabular style using supertabular with 3 columns and border lines.

**super3colheader**

glossary–super

§13.1.5;  
323

A tabular style using supertabular with 3 columns and a header row.

**super3colheaderborder**

glossary–super

§13.1.5;  
323

A tabular style using supertabular with 3 columns, a header row and border lines.

**super4col**

glossary–super

§13.1.5;  
323

A tabular style using supertabular with 4 columns.

**super4colborder**

glossary–super

§13.1.5;  
323

A tabular style using supertabular with 4 columns and border lines.

**super4colheader**

glossary–super

§13.1.5;  
323

A tabular style using supertabular with 4 columns and a header row.

**super4colheaderborder**

glossary–super

§13.1.5;  
324

A tabular style using supertabular with 4 columns, a header row and border lines.

**superborder**

glossary–super

§13.1.5;  
322

A tabular style using supertabular with 2 columns and border lines.

**superheader**

glossary–super

§13.1.5;  
322

A tabular style using supertabular with 2 columns and a header row.

**superheaderborder**

glossary–super

§13.1.5;  
323

A tabular style using supertabular with 2 columns, a header row and border lines.

**superragged**

glossary–superragged

§13.1.6;  
325

A tabular style using supertabular with 2 columns and ragged right formatting for the description.



**superragged3col**

glossary–superragged

§13.1.6;  
326

A tabular style using supertabular with 3 columns and ragged right formatting for the description.

**superragged3colborder**

glossary–superragged

§13.1.6;  
326

A tabular style using supertabular with 3 columns and border lines, and ragged right formatting for the description.

**superragged3colheader**

glossary–superragged

§13.1.6;  
326

A tabular style using supertabular with 3 columns and a header row, and ragged right formatting for the description.

**superragged3colheaderborder**

glossary–superragged

§13.1.6;  
326

A tabular style using supertabular with 3 columns, a header row and border lines, and ragged right formatting for the description.

**superraggedborder**

glossary–superragged

§13.1.6;  
325

A tabular style using supertabular with 2 columns and border lines, and ragged right formatting for the description.

**superraggedheader**

glossary–superragged

§13.1.6;  
325

A tabular style using supertabular with 2 columns and a header row, and ragged right formatting for the description.

**superraggedheaderborder**

glossary–superragged

§13.1.6;  
326

A tabular style using supertabular with 2 columns, a header row and border lines, and ragged right formatting for the description.

**topic**

glossary–topic v1.40+

Designed for paragraph length top-level descriptions.

**topicmcols**

glossary–topic v1.40+

Designed for paragraph length top-level descriptions with sub-entries in multiple columns.

**tree**

glossary–tree

§13.1.7.2;  
375

A hierarchical style that shows the name, description and, if set, the symbol.

**tree\***

glossary–tree v4.59+

§13.1.7.1;  
327

A flexible hierarchical style that shows the name, description and, if set, the symbol. The style may be modified with the `tree*` options.

**treegroup**

glossary–tree

§13.1.7.2;  
375

A hierarchical style with letter group headings that shows the name, description and, if set, the symbol.

**treehypergroup**

glossary–tree

§13.1.7.2;  
375

A hierarchical style with letter group headings and navigation line that shows the name, description and, if set, the symbol.

**treenoname**

glossary–tree

§13.1.7.2;  
375

A homograph style that shows the top-level name, description and, if set, the symbol, but omits the name for sub-entries.

**treenonamegroup**

glossary–tree

§13.1.7.2;  
375

A homograph style with letter group headings that shows the top-level name, description and, if set, the symbol, but omits the name for sub-entries.

**treenamehypergroup**

glossary-tree

§13.1.7.2;  
375

A homograph style with letter group headings and navigation line that shows the top-level name, description and, if set, the symbol, but omits the name for sub-entries.

# Command Summary

## Symbols

`\@gls@codepage` { *code-page* }

glossaries v1.17+

§1.7.1; 78

This command is written to the aux file for the benefit of `makeglossaries` and `makeglossaries-lite`. The *code-page* indicates the xindy codepage.

`\@gls@reference` { *type* } { *label* } { *location* }

glossaries v4.04+

§1.7.1; 79

This command is written to the aux file to provide the information for `\printnoidxglossary`.

`\@glsorder` { *order* }

§1.7.1; 78

This command is written to the aux file for the benefit of `makeglossaries` and `makeglossaries-lite`. The *order* should be either letter or word.

`\@glsxtr@altmodifier` { *character* }

glossaries-extra v1.37+

§1.7.3; 80

This command is written to the aux file to provide the `\GlsXtrSetAltModifier` information for `bib2gls`.

`\@glsxtr@newglslike` { *label-prefix* } { *cs* }

glossaries-extra v1.37+

§1.7.3; 80

This command is written to the aux file to provide the `\glsxtrnewglslike` information for `bib2gls`.

`\@glsxtr@prefixlabellist` { *list* }

glossaries-extra v1.37+

§1.7.3; 80

This command is written to the aux file to provide the `\dgl`s information for `bib2gls`.

**\@istfilename** { *filename* }

§1.7.1; 78

This command is written to the aux file for the benefit of `makeglossaries` and `makeglossaries-lite`. The *filename* is the name of the style file.

**\@newglossary** { *glossary-label* } { *log* } { *out-ext* } { *in-ext* }

§1.7.1; 77

This command is written to the aux file for the benefit of `makeglossaries` and `makeglossaries-lite`. The arguments indicate the file extensions associated with the given glossary.

**\@xdylanguage** { *glossary-label* } { *language* }

`glossaries v1.17+`

§1.7.1; 78

This command is written to the aux file for the benefit of `makeglossaries` and `makeglossaries-lite`. The *language* is the language to pass to `xindy` for the given glossary.

## A

**\abbreviationsname** *initial:* Abbreviations `glossaries-extra`  
(language-sensitive)

Expands to the title of the `abbreviations` glossary. The default is “Abbreviations” or `\acronymname` if `babel` has been detected.

**\Ac** { *options* } { *entry-label* } { *insert* }

*modifiers:* \* +

§6.1;  
Table 6.1

A synonym for `\Gls` defined by the `shortcuts` package option.

**\ac** { *options* } { *entry-label* } { *insert* }

*modifiers:* \* +

§6.1;  
Table 6.1

A synonym for `\gls` defined by the `shortcuts` package option.

**\Acf** { *options* } { *entry-label* } { *insert* } *modifiers:* \* +

§6.1;  
Table 6.1

A synonym for \Acrfull defined by the `shortcuts` package option.

**\acf** { *options* } { *entry-label* } { *insert* } *modifiers:* \* +

§6.1;  
Table 6.1

A synonym for \acrfull defined by the `shortcuts` package option.

**\Acfp** { *options* } { *entry-label* } { *insert* } *modifiers:* \* +

§6.1;  
Table 6.1

A synonym for \Acrfullpl defined by the `shortcuts` package option.

**\acfp** { *options* } { *entry-label* } { *insert* } *modifiers:* \* +

§6.1;  
Table 6.1

A synonym for \acrfullpl defined by the `shortcuts` package option.

**\Acl** { *options* } { *entry-label* } { *insert* } *modifiers:* \* +

§6.1;  
Table 6.1

A synonym for \Acrlong defined by the `shortcuts` package option.

**\acl** { *options* } { *entry-label* } { *insert* } *modifiers:* \* +

§6.1;  
Table 6.1

A synonym for \acrlong defined by the `shortcuts` package option.

**\Aclp** { *options* } { *entry-label* } { *insert* } *modifiers:* \* +

§6.1;  
Table 6.1

A synonym for \Acrlongpl defined by the `shortcuts` package option.

**\aclp** { *options* } { *entry-label* } { *insert* } *modifiers:* \* +

§6.1;  
Table 6.1

A synonym for \acrlongpl defined by the `shortcuts` package option.

**\Acp** { *options* } { *entry-label* } { *insert* } *modifiers:* \* +

§6.1;  
Table 6.1

A synonym for `\Glspl` defined by the `shortcuts` package option.

**\acp** { *options* } { *entry-label* } { *insert* } *modifiers:* \* +

§6.1;  
Table 6.1

A synonym for `\glspl` defined by the `shortcuts` package option.

**\ACRfull** [ *options* ] { *entry-label* } [ *insert* ] *modifiers:* \* + glossaries

§6.1; 207

As `\acrfull` but all caps.

**\Acrfull** [ *options* ] { *entry-label* } [ *insert* ] *modifiers:* \* + glossaries

§6.1; 207

As `\acrfull` but sentence case.

**\acrfull** [ *options* ] { *entry-label* } [ *insert* ] *modifiers:* \* + glossaries

§6.1; 207

References the acronym identified by *entry-label*. The text produced shows the full form, formatted according to the acronym style. With `glossaries-extra`, use `\glsxtrfull` instead. For the first optional argument, see `\glslink` options.

**\ACRfullfmt** { *options* } { *entry-label* } { *insert* } glossaries v4.02+


Used by `\ACRfull` to format the full form. This command is redefined by acronym styles.

**\Acrfullfmt** { *options* } { *entry-label* } { *insert* } glossaries v4.02+

Used by `\Acrfull` to format the full form. This command is redefined by acronym styles.

**\acrfullfmt** { *options* } { *entry-label* } { *insert* } glossaries v4.02+

Used by `\acrfull` to format the full form. This command is redefined by acronym styles.

 **\acrfullformat** {*⟨long text⟩*} {*⟨short text⟩*} glossaries

Deprecated with the introduction of `\setacronymstyle` but used in the initial definition of commands like `\glsentryfmt` before they are redefined by the acronym style. This may be removed in a future release.

**\ACRfullpl** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*] *modifiers:* \* + glossaries

§6.1; 207

As `\acrfullpl` but all caps.

**\Acrfullpl** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*] *modifiers:* \* + glossaries

§6.1; 207

As `\acrfullpl` but sentence case.

**\acrfullpl** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*] *modifiers:* \* + glossaries

§6.1; 207

As `\acrfull` but shows the full plural form of an acronym. With `glossaries-extra`, use `\glsxtrfullpl` instead. For the first optional argument, see `\glslink` options.

**\ACRfullplfmt** {*⟨options⟩*} {*⟨entry-label⟩*} {*⟨insert⟩*} glossaries v4.02+


Used by `\ACRfullpl` to format the full form. This command is redefined by acronym styles.

**\Acrfullplfmt** {*⟨options⟩*} {*⟨entry-label⟩*} {*⟨insert⟩*} glossaries v4.02+

Used by `\Acrfullpl` to format the full form. This command is redefined by acronym styles.

**\acrfullplfmt** {*⟨options⟩*} {*⟨entry-label⟩*} {*⟨insert⟩*} glossaries v4.02+

Used by `\acrfullpl` to format the full form. This command is redefined by acronym styles.

 **\acrlinkfullformat** {*⟨internal long cs⟩*} {*⟨internal short cs⟩*} {*⟨options⟩*} {*⟨entry-label⟩*} {*⟨insert⟩*} glossaries

Deprecated with the introduction of `\setacronymstyle` but used in the initial definition



of commands like `\acrfullfmt` before they are redefined by the acronym style. This may be removed in a future release.

**`\ACRlong`** [*options*] {*entry-label*} [*insert*]      *modifiers:* \* + glossaries

§6.1; 206

As `\acrlong` but converts the link text to all caps.

**`\Acrlong`** [*options*] {*entry-label*} [*insert*]      *modifiers:* \* + glossaries

§6.1; 206

As `\acrlong` but converts the link text to sentence case.

**`\acrlong`** [*options*] {*entry-label*} [*insert*]      *modifiers:* \* + glossaries

§6.1; 206

References the acronym identified by *entry-label*. The text produced is obtained from the `long` value. The *insert* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. With `glossaries-extra`, use `\glsxtrlong` instead. For the first optional argument, see `\glslink` options.

**`\ACRlongpl`** [*options*] {*entry-label*} [*insert*]      *modifiers:* \* + glossaries

§6.1; 207

As `\acrlongpl` but converts the link text to all caps.

**`\Acrlongpl`** [*options*] {*entry-label*} [*insert*]      *modifiers:* \* + glossaries

§6.1; 206

As `\acrlongpl` but converts the link text to sentence case.

**`\acrlongpl`** [*options*] {*entry-label*} [*insert*]      *modifiers:* \* + glossaries

§6.1; 206

References the acronym identified by *entry-label*. The text produced is obtained from the `longplural` value. The *insert* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. With `glossaries-extra`, use `\glsxtrlongpl` instead. For the first optional argument, see `\glslink` options.

**`\acrnameformat`** {*short text*} {*long text*}      glossaries

Used by acronym styles that require an additional description to determine what information is displayed in the name.

**\acronymentry** { *entry-label* }

glossaries v4.02+

§6.2; 211

Used by acronym styles to format the acronym name.

**\acronymfont** { *text* }

glossaries

§6.2.1;  
212

Used to encapsulate the acronym short form on subsequent use.

**\acronymname**  
(language-sensitive)

*initial:* Acronyms glossaries

§1.5.1;  
Table 1.2

Provided by glossaries if it hasn't already been defined. Used as the default title for the glossary created by the `acronyms` option.

**\acronymsort** { *short* } { *long* }

glossaries

§6.2; 212

Used by acronym styles in the acronym `sort` key.

**\acronymtype**

*initial:* \glsdefaulttype glossaries

§9; 266

Expands to the label of the default acronym glossary. The `acronym` or `acronyms` package option will redefine this to `acronym`. The `glossaries-extra` package's `abbreviations` option will redefine this to `\glsxtrabbrvtype` if `acronyms/acronym` isn't used.

**\acrpluralsuffix** *initial:* \glsacrpluralsuffix glossaries v4.12+

§6.2.1;  
213

Suffix used in the default `shortplural` value by `\newacronym`.

**\ACRshort** [ *options* ] { *entry-label* } [ *insert* ]

*modifiers:* \* + glossaries

§6.1; 206

As `\acrshort` but converts the link text to all caps.

**\Acrshort** [ *options* ] { *entry-label* } [ *insert* ]

*modifiers:* \* + glossaries

§6.1; 205

As `\acrshort` but converts the link text to sentence case.

**\acrshort** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*]      *modifiers:* \* + glossaries

§6.1; 205

References the acronym identified by *⟨entry-label⟩*. The text produced is obtained from the `short` value, formatted according to the acronym style. The *⟨insert⟩* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. With `glossaries-extra`, use `\glsxtrshort` instead. For the first optional argument, see `\glslink` options.

**\ACRshortpl** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*]      *modifiers:* \* + glossaries

§6.1; 206

As `\acrshortpl` but converts the link text to all caps.

**\Acrshortpl** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*]      *modifiers:* \* + glossaries

§6.1; 206

As `\acrshortpl` but converts the link text to sentence case.

**\acrshortpl** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*]      *modifiers:* \* + glossaries

§6.1; 206

References the acronym identified by *⟨entry-label⟩*. The text produced is obtained from the `shortplural` value, formatted according to the acronym style. The *⟨insert⟩* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. With `glossaries-extra`, use `\glsxtrshortpl` instead. For the first optional argument, see `\glslink` options.

**\Acs** {*⟨options⟩*} {*⟨entry-label⟩*} {*⟨insert⟩*}      *modifiers:* \* +

§6.1;  
Table 6.1

A synonym for `\Acrshort` defined by the `shortcuts` package option.

**\acs** {*⟨options⟩*} {*⟨entry-label⟩*} {*⟨insert⟩*}      *modifiers:* \* +

§6.1;  
Table 6.1

A synonym for `\acrshort` defined by the `shortcuts` package option.

**\Acsp** {*⟨options⟩*} {*⟨entry-label⟩*} {*⟨insert⟩*}      *modifiers:* \* +

§6.1;  
Table 6.1

A synonym for `\Acrshortpl` defined by the `shortcuts` package option.

**\acsp**{*options*}{*entry-label*}{*insert*} *modifiers:* \* +

§6.1;  
Table 6.1

A synonym for `\acrshortpl` defined by the `shortcuts` package option.

**\addglossarytocaptions**{*language*} *glossaries*

Adds the redefinition of `\glossaryname` to `\captions`{*language*} if translator has been loaded (does nothing if translator hasn't been loaded).

**\altnewglossary**{*glossary-label*}{*tag*}{*title*}[*counter*]  
*glossaries* v2.06+

§9; 265

A shortcut that supplies file extensions based on the *tag* argument:

```
\newglossary[tag-glg]{tag}{tag-gls}{tag-glo}{title}[counter]
```

**\andname** *initial:* \& *glossaries*

Provided by `glossaries` if it hasn't already been defined.

**\apptoglossary preamble**[*type*]{*text*} *glossaries-extra* v1.12+

§8.2; 260

Locally appends *text* to the preamble for the glossary identified by *type*. If *type* is omitted, `\glsdefaulttype` is assumed.

## B

**\bibglsdelimN** *initial:* \delimN *bib2gls*

Delimiter used between locations in the location list, except for the last pair.

**\bibglslastDelimN** *initial:* \delimN *bib2gls*

Delimiter used between the last pair of locations in the location list.

## C

**\capitalisefmtwords** {*text*}

mfirstuc v2.03+

Converts *text* to title case, where *text* may contain text-block commands. The starred form only permits a text-block command at the start of the argument. Limitations apply, see the mfirstuc documentation for further details, either:

```
texdoc mfirstuc
```

or visit [ctan.org/pkg/mfirstuc](http://ctan.org/pkg/mfirstuc).

**\capitalisewords** {*text*}

mfirstuc v1.06+

Converts *text* to title case. Limitations apply, see the mfirstuc documentation for further details, either:

```
texdoc mfirstuc
```

or visit [ctan.org/pkg/mfirstuc](http://ctan.org/pkg/mfirstuc).

**\cGls** [*options*] {*entry-label*} [*insert*]

*modifiers:* \* + glossaries v4.14+

§7.1; 244

Like \Gls but hooks into the entry counting mechanism.

**\cglS** [*options*] {*entry-label*} [*insert*]

*modifiers:* \* + glossaries v4.14+

§7.1; 243

Like \gls but hooks into the entry counting mechanism.

**\cGlsformat** {*entry-label*} {*insert*}

glossaries v4.14+

§7.1; 245

Format used by \cGls if the entry was only used once on the previous run.

**\cglSformat** {*entry-label*} {*insert*}

glossaries v4.14+

§7.1; 244

Format used by \cglS if the entry was only used once on the previous run.

**\cGlspl** [*options*] {*entry-label*} [*insert*]    *modifiers:* \* +    glossaries v4.14+

§7.1; 244

Like \Glspl but hooks into the entry counting mechanism.

**\cglsp1** [*options*] {*entry-label*} [*insert*]    *modifiers:* \* +    glossaries v4.14+

§7.1; 243

Like \glsp1 but hooks into the entry counting mechanism.

**\cGlsplformat** {*entry-label*} {*insert*}    glossaries v4.14+

§7.1; 245

Format used by \cGlspl if the entry was only used once on the previous run.

**\cglsp1format** {*entry-label*} {*insert*}    glossaries v4.14+

§7.1; 244

Format used by \cglsp1 if the entry was only used once on the previous run.

**\currentglossary**    glossaries v3.0+

§8; 252

Defined by the \print{...}glossary commands to the current glossary label.

 **\CustomAcronymFields**    glossaries v2.06

Deprecated with the introduction of \setacronymstyle. Removed in v4.50. Use roll-back if backward-compatibility required or use \newacronymstyle and \setacronymstyle.

 **\CustomNewAcronymDef**    glossaries v2.06

Deprecated with the introduction of \setacronymstyle. Removed in v4.50. Use roll-back if backward-compatibility required or use \newacronymstyle and \setacronymstyle.

## D

**\DeclareAcronymList** {*list*}

glossaries v2.04+


§2.7; 126

Identifies the list of glossaries as lists of acronyms.


 **\DefaultNewAcronymDef**

glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use rollback if backward-compatibility required or use `\setacronymstyle`.

 **\defglsdisplay**

This was originally used to define a format the way the link text was displayed on first use by the `\gls`-like commands. Deprecated in v3.11a and removed in v4.50. Use rollback if backward-compatibility required, but it's better to switch to `\defglsentryfmt`.

 **\defglsdisplayfirst**

This was originally used to define a format the way the link text was displayed on first use by the `\gls`-like commands. Deprecated in v3.11a and removed in v4.50. Use rollback if backward-compatibility required, but it's better to switch to `\defglsentryfmt`.

**\defglsentryfmt** [*glossary-type*] {*definition*}

glossaries v3.11a+

§5.1.4;  
184

Defines the display format used by the `\gls`-like commands for entries assigned to the glossary identified by *glossary-type* (`\glsdefaulttype` if omitted).

**\DefineAcronymSynonyms**

glossaries v2.04+

§2.7; 127

Provides the shortcut commands for acronyms.


**\delimN**

§12; 278

Used as a separator between locations.


**\delimR**§12.2;  
284

Used between the start and end of a location range.

 **\DescriptionDUANewAcronymDef**

glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.


 **\DescriptionFootnoteNewAcronymDef**

glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.

**\descriptionname**  
(language-sensitive)*initial:* Description glossaries§1.5.1;  
Table 1.2

Provided by `glossaries` if it hasn't already been defined. Used as a column header for some of the tabular-like glossary styles.

 **\DescriptionNewAcronymDef**

glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.

**\dglS** [*options*] {*entry-label*} [*insert*]  
glossaries-extra-bib2gls v1.37+*modifiers:* \* +

Does `\gls[options]{prefix}{entry-label}[insert]` for the first prefix in the prefix list that matches a defined entry.

**\DTLformatlist** {*csv-list*}

datatool-base v2.28+

Formats the comma-separated list *csv-list*. One-level expansion is performed on *csv-list*. See the `datatool` documentation for further details, either:



```
texdoc datatool
```

or visit [ctan.org/pkg/datatool](http://ctan.org/pkg/datatool).

```
\DTLifinlist {⟨element⟩} {⟨csv-list⟩} {⟨true⟩} {⟨false⟩} datatool-base
```

Does *⟨true⟩* if *⟨element⟩* is contained in the comma-separated list *⟨csv-list⟩*, otherwise does *⟨false⟩*. One-level expansion is performed on *⟨csv-list⟩*, but not on *⟨element⟩*. See the datatool documentation for further details, either:

```
texdoc datatool
```

or visit [ctan.org/pkg/datatool](http://ctan.org/pkg/datatool).

```
 \DUANewAcronymDef glossaries
```

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.

## E

```
\entryname initial: Notation glossaries  
(language-sensitive)
```

§1.5.1;  
Table 1.2

Provided by glossaries if it hasn't already been defined. Used as a column header for some of the tabular-like glossary styles.

## F

```
\firstacronymfont {⟨text⟩} glossaries v1.14+
```

§6.2.1;  
212

Used to encapsulate the acronym short form on first use.

**`\FootnoteNewAcronymDef`**

glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use `rollback` if backward-compatibility required or use `\setacronymstyle`.

**`\forallabbreviationlists`** {*cs*} {*body*}

glossaries-extra v1.42+

Iterates overall all lists of abbreviations, defines the command *cs* to the current label and does *body*.

**`\forallacronyms`** {*cs*} {*body*}(don't use with `glossaries-extra`)

glossaries v4.08+

§15.3;  
417

Iterates overall all glossaries that have been declared lists of acronyms, defines the command *cs* to the current label and does *body*.

**`\forallglossaries`** [*types*] {*cs*} {*body*}

glossaries

§15.3;  
417

Iterates overall all the glossary labels given in the *types* argument, defines the command *cs* to the current label and does *body*. If the optional argument is omitted, the list of all non-ignored glossaries is assumed.

**`\forallglsentries`** [*types*] {*cs*} {*body*}

glossaries

§15.3;  
418

Does `\forallglsentries` for each glossary. The optional argument *types* is a comma-separated list of glossary labels. If omitted, all non-ignored glossaries is assumed.

**`\forallglsentries`** [*type*] {*cs*} {*body*}

glossaries

§15.3;  
417

Iterates over all entries in the given glossary and, at each iteration, defines the command *cs* to the current entry label and does *body*. The optional argument *type* is the glossary label and defaults to `\glsdefaulttype` if omitted. This command can't be used with `bib2gls` since there are no defined entries until `bib2gls` has selected them and added them to the `gls.tex` file.

## G

**\Genacrfullformat** {*label*} {*insert*}

glossaries v4.02+

§5.1.4;  
188As `\genacrfullformat` but sentence case.**\genacrfullformat** {*label*} {*insert*}

glossaries v4.02+

§5.1.4;  
187Used by `\glsngenacfmt` to display the acronym singular full form on first use. Redefined by acronym styles.**\GenericAcronymFields**

glossaries

§6.2.2;  
220Expands to the additional keys that need to be provided to `\newglossaryentry` when called by `\newacronym`. For example, the `description` key.**\Genplacrfullformat** {*label*} {*insert*}

glossaries v4.02+

§5.1.4;  
188As `\genplacrfullformat` but sentence case.**\genplacrfullformat** {*label*} {*insert*}

glossaries v4.02+

§5.1.4;  
187Used by `\glsngenacfmt` to display the acronym plural full form on first use. Redefined by acronym styles.

## Glo

**\glolinkprefix***initial:* glo:§13.2.1;  
386

Expands to the prefix used for entry targets.

**\glossaries\_adjust\_parent\_sort:Nn** *tl-var* {*parent-label*}

glossaries v4.59+

§8; 250

Used by the pre-sort processing function to adjust the sort value of parent entries to help ensure that they are immediately followed by their child entries.

**\glossariesextrasetup**{*<options>*} glossaries-extra

Change allowed options that are defined or modified by the `glossaries-extra` package. Note that some options can only be passed as package options.

**\glossaries\_if\_has\_nonsuppressed\_desc:nTF** *<entry-label>*  
 {*<true>*} {*<false>*} §15.4;  
422  
**\glossaries\_if\_has\_nonsuppressed\_desc\_p:n** *<entry-label>*  
 glossaries v4.59+

True if the entry is defined and the `description` field is neither empty nor set to just `\nopostdesc`.

**\glossaries\_tree\_bookmark\_group:nnn** {*<bookmark-level>*} 367  
 {*<group-label>*} {*<group-title>*} glossary-tree v4.59+

Uses `\pdfbookmark`, if defined, otherwise does nothing.

**\glossaries\_tree\_entryitembox:nnn** {*<width>*} {*<h-align>*} 369  
 {*<text>*} variant: VVn glossary-tree v4.59+

Used to format the top-level entry item counter for the fixed width setting.

**\glossaries\_tree\_entryitem\_nobox:n** {*<text>*} glossary-tree v4.59+ 369

Used to format the top-level entry item counter for the natural width setting.

**\glossaries\_tree\_gset\_widest\_name:nn** {*<level>*} {*<text>*} 371  
 glossary-tree v4.59+

Globally sets the widest name for the given level.

**\glossaries\_tree\_gset\_widest\_symbol:nn** {*<level>*} {*<text>*} 371  
 glossary-tree v4.59+

Globally sets the widest symbol for the given level.

**\glossaries\_tree\_namebox:nnn** {*<width>*} {*<h-align>*} {*<text>*}  
*variants:* vVn vvn glossary-tree v4.59+

368

Used to format the name box for the fixed width setting.

**\glossaries\_tree\_namenobox:n** {*<text>*} glossary-tree v4.59+

368

Used to format the name box for the natural width setting.

**\glossaries\_tree\_paren:n** {*<text>*} glossary-tree v4.59+

369

Applies parentheses to *<text>*.

**\glossaries\_tree\_post\_item:nnn** {*<level>*} {*<entry-label>*}  
 {*<location-list>*} glossary-tree v4.59+

367

Hook used at the end of each item.

**\glossaries\_tree\_pre\_item:nnn** {*<level>*} {*<entry-label>*}  
 {*<location-list>*} glossary-tree v4.59+

366

Hook used at the start of each item.

**\glossaries\_tree\_reset\_all\_widest:** glossary-tree v4.59+

372

Resets the widest name and symbol for all levels and reverts back to natural.

**\glossaries\_tree\_set\_name\_symbol\_width:nn** {*<level>*}  
 {*<value>*} glossary-tree v4.59+

372

Sets the width for the name+symbol box, which should include room for the name/symbol separator and post name/symbol content.

**\glossaries\_tree\_set\_name\_width:nn** {<level>} {<value>}  
glossary-tree v4.59+

370

Sets the name width for the given level.

**\glossaries\_tree\_set\_symbol\_width:nn** {<level>} {<value>}  
glossary-tree v4.59+

370

Sets the symbol width for the given level.

**\glossaries\_tree\_set\_widest\_name:nn** {<level>} {<text>}  
glossary-tree v4.59+

371

Locally sets the widest name for the given level.

**\glossaries\_tree\_set\_widest\_symbol:nn** {<level>} {<text>}  
glossary-tree v4.59+

371

Locally sets the widest symbol for the given level.

**\glossaries\_tree\_subentryitembox:nnn** {<width>} {<h-align>}  
{<text>} *variant:* VVn glossary-tree v4.59+

370

Used to format the level 1 entry item counter for the fixed width setting.

**\glossaries\_tree\_subentryitem\_nobox:n** {<text>}  
glossary-tree v4.59+

370

Used to format the level 1 entry item counter for the natural width setting.

**\glossaries\_tree\_subgroup\_title:nn** {<parent-label>} {<group  
title>}  
glossary-tree v4.59+

368

Used to format the sub-group title.

**\glossaries\_tree\_symbolbox:nnn** {<width>} {<h-align>} {<text>}  
*variants:* vVn vvn glossary-tree v4.59+

369

Used to format the symbol box for the fixed width setting.

**\glossaries\_tree\_symbolnobox:n** {<text>} glossary-tree v4.59+

368

Used to format the symbol box for the natural width setting.

**\glossaries\_tree\_update\_widest\_name:nn** {<level>} {<text>}  
*variants:* ne nV nv no glossary-tree v4.59+

371

Updates the widest name for the given level.

**\glossaries\_tree\_update\_widest\_name\_symbol:nnn**  
 {<level>} {<name>} {<symbol>} *variants:* nee nVV nvv noo  
 glossary-tree v4.59+

372

Updates the widest name and symbol combination for the given level.

**\glossaries\_tree\_update\_widest\_symbol:nn** {<level>}  
 {<text>} *variants:* ne nV nv no glossary-tree v4.59+

371

Updates the widest symbol for the given level.

**\glossaryentry** {<data>} {<location>}

§12.5;  
292

This isn't actually defined as a command but is used as a keyword for `makeindex`.

**\glossaryentrynumbers** {<locations>} glossaries

§8.2; 262


Encapsulations the number list in the glossary and is also used to save the number list with the `savenumberlist` option. This command is redefined by options such as `nonumberlist` or commands like `\glsnonextpages`.

**\glossaryheader**  
(glossary style command)

glossaries

§13.2.3;  
390

Does the header code after `\begin{theglossary}`.

 **\glossarymark** $\langle$ *glossary title* $\rangle$

glossaries v1.0+

§8.2; 258

Only provided if it hasn't already been defined for backward-compatibility. Use `\gls-glossary-mark` instead.

**\glossaryname**  
(language-sensitive)

*initial:* Glossary glossaries

§1.5.1;  
Table 1.2

Provided by `glossaries` if it hasn't already been defined. Used as the default title for glossaries without a specified title. May already be defined by a language package.

**\glossarypostamble**

glossaries

§8.2; 260

Used at the end of the glossary.

**\glossarypreamble**

glossaries


§8.2; 260

Used at the start of the glossary. This will be locally redefined to the preamble associated with the current glossary, if one has been set.

**\glossarysection** [*\toc title*] {*\title*}

§8.2; 258

Used to display the glossary heading.

 **\glossarystyle**{*\style-name*}

glossaries v1.0–v4.49

Sets the default glossary style to *\style-name*. Deprecated in v3.08a and removed in v4.50. Now only available with `rollback`. Use `\setglossarystyle` instead.



**\glossarytitle**

§8.2; 259

Defined by `\print<...>glossary` to the current glossary's title.

**\glossarytoctitle**

§8.2; 259

Defined by `\print<...>glossary` to the current glossary's title for the table of contents (if `tocttrue`).

**\glossentry** { *<entry-label>* } { *<number-list>* } glossaries v3.08a+  
(glossary style command)

§13.2.3;  
391

Redefined by the glossary styles to display top level (level 0) entries.

**\Glossentrydesc** { *<entry-label>* } glossaries v3.08a+

§13.2.1;  
387

As `\glossentrydesc` but sentence case.

**\glossentrydesc** { *<entry-label>* } glossaries v3.08a+

§13.2.1;  
387

Used within glossary styles to display the description.

**\Glossentryname** { *<entry-label>* } glossaries v3.08a+

§13.2.1;  
387

As `\glossentryname` but sentence case.

**\glossentryname** { *<entry-label>* } glossaries v3.08a+

§13.2.1;  
386

Used within glossary styles to display the name encapsulated with `\glsnamefont`.

**\glossentrynameother** { *<entry-label>* } { *<field-label>* } glossaries-extra v1.22+

Behaves like `\glossentryname` but uses the given field (identified by its internal label) instead of `name`.

**\Glossentrysymbol** {*⟨entry-label⟩*} glossaries v3.08a+

§13.2.1;  
387

As `\glossentrysymbol` but sentence case.

**\glossentrysymbol** {*⟨entry-label⟩*} glossaries v3.08a+

§13.2.1;  
387

Used within glossary styles to display the symbol.

## Gls

**\GLS** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*] *modifiers:* \* + glossaries

§5.1.2;  
176

As `\gls` but converts the link text to all caps.

**\Gls** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*] *modifiers:* \* + glossaries

§5.1.2;  
175

As `\gls` but converts the link text to sentence case.

**\gls** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*] *modifiers:* \* + glossaries

§5.1.2;  
175

References the entry identified by *⟨entry-label⟩*. The text produced depends on whether or not this is the first use. The *⟨insert⟩* argument may be inserted at the end of the link text or may be inserted at a different point (for example, after the long form on first use for some acronym or *abbreviation* styles. For the first optional argument, see `\glslink` options.

**\gls@accessibility** {*⟨options⟩*} {*⟨PDF element⟩*} {*⟨value⟩*} {*⟨content⟩*}  
glossaries-accsupp v4.45+

§17.5;  
448

Used by `\glsaccessibility` to provide the accessibility support.

**\gls@accsupp@engine** *initial:* accsupp glossaries-accsupp v4.45+

§17.5;  
448

Expands to the accessibility support engine. This command may be defined before `glossaries-accsupp` is loaded.

**\glsabbrvfont** { *text* }

glossaries-extra

Font formatting command for the short form, initialised by the abbreviation style.

**\glsaccessibility** [ *options* ] { *PDF element* } { *value* } { *content* }

glossaries-accsupp v4.45+

§17.2;  
442

Applies *value* as the accessibility attribute *PDF element* for the given *content*. This internally uses the accessibility support provided by accsupp.

**\Glsaccesslong** { *entry-label* }

glossaries-extra

The sentence case version of `\glsaccesslong`.

**\glsaccesslong** { *entry-label* }

glossaries-extra

If accessibility support was enabled when `glossaries-extra` was loaded (`accsupp`) this will display the value of the `long` key with the accessibility support enabled for that key (`longaccess`). If there is no accessibility support, this just uses `\glsentrylong`.

**\Glsaccesslongpl** { *entry-label* }

glossaries-extra

The sentence case version of `\glsaccesslongpl`.

**\glsaccesslongpl** { *entry-label* }

glossaries-extra

If accessibility support was enabled when `glossaries-extra` was loaded (`accsupp`) this will display the value of the `longplural` key with the accessibility support enabled for that key (`longpluralaccess`). If there is no accessibility support, this just uses `\glsentrylongpl`.

**\glsaccessname** { *entry-label* }

glossaries-extra

If accessibility support was enabled when `glossaries-extra` was loaded (`accsupp`) this will display the value of the `name` key with the accessibility support enabled for that key (`access`). If there is no accessibility support, this just uses `\glsentryname`.

**`\glsaccessshort`** { *entry-label* }

glossaries-extra

If accessibility support was enabled when `glossaries-extra` was loaded (`accsupp`) this will display the value of the `short` key with the accessibility support enabled for that key (`shortaccess`). If there is no accessibility support, this just uses `\glsentryshort`.

**`\glsaccessshortpl`** { *entry-label* }

glossaries-extra

If accessibility support was enabled when `glossaries-extra` was loaded (`accsupp`) this will display the value of the `shortplural` key with the accessibility support enabled for that key (`shortpluralaccess`). If there is no accessibility support, this just uses `\glsentryshortpl`.

**`\glsaccsupp`** { *replacement* } { *content* }

glossaries-accsupp

§17.2;  
441

Applies *replacement* as the ActualText for *content* using `\glsaccessibility`.

**`\glsacrpluralsuffix`** *initial:* `\glspluralsuffix` glossaries v4.12+

§6; 202

Short plural suffix, this command is changed by acronym styles.

**`\glsacspace`** { *label* }

glossaries v4.16+

§6.2.1.1;  
215

Uses a non-breakable space if the short form is less than 3em. This command is redefined by `glossaries-extra` to use `\glsacspacemax` instead of the hard-coded 3em.

**`\glsacspacemax`**

glossaries-extra

Expands to the maximum width used by `\glsacspace`. This is a macro not a register. The default is 3em.

**`\glsadd`** [ *options* ] { *entry-label* }

glossaries

§10; 267

Indexes the entry identified by *entry-label*.

**\glsaddall** [*options*]

glossaries

§10; 268

Iterates over all non-ignored glossaries (or all those listed in the `types` option) and indexes each entry in the glossary. The optional argument *options* are passed to `\glsadd`. This command can't be used with `bib2gls`. Use the `selection=all` resource option instead.

**\glsaddallunused** [*glossary types*]

glossaries v3.08a+

§10; 268

Iterates over all glossaries listed in *glossary types* (all non-ignored glossaries if omitted) and indexes each entry (with `format=glsignore`) that hasn't been used. This command can't be used with `bib2gls`. Use the `selection=all` resource option instead.

**\glsaddeach** [*options*] {*entry label list*}

glossaries-extra v1.31+

Does `\glsadd[options]{entry-label}` for each label in the supplied comma-separated list.

**\glsaddkey** {*key*} {*default value*} {*no link cs*} {*no link ucfirst cs*} {*link cs*} {*link ucfirst cs*} {*link allcaps cs*}

glossaries v3.12a+

§4.3.1;  
150

Defines a new glossary entry key with the given default value and commands that are analogous to `\glsentrytext` (*no link cs*), `\Glsentrytext` (*no link ucfirst cs*), `\glsstext` (*link cs*), `\Glsstext` (*link ucfirst cs*), `\GLStext` (*link allcaps cs*). The starred version switches on field expansion for the given key.

**\GlsAddLetterGroup** {*name*} {*xindy code*}

glossaries v1.17+

(xindy only)

Adds a new xindy letter group, identified by *name* and defined by *xindy code*. This information is written to the `xdy` file that's created by `\makeglossaries`.

**\glsaddstoragekey** {*key*} {*default value*} {*no link cs*}

glossaries v4.16+

§4.3.2;  
152

Provides a new glossary entry key with a default value and a command for simply accessing the value (without indexing or hyperlinks). The starred version switches on field expansion for the given key.

**\GlsAddXdyAttribute** { *<name>* }  
(xindy only)

glossaries v1.17+

§14.3;  
401

Adds the xindy attributes associated with *<name>* to the xdy style file.

**\GlsAddXdyCounters** { *<counter list>* }  
(xindy only)

glossaries v3.0+

§14.3;  
401

Identifies all the location counters required in the document.

**\GlsAddXdyLocation** [ *<H-prefix>* ] { *<name>* } { *<definition>* }  
(xindy only)

glossaries v1.17+

§14.3;  
402

Adds the given location syntax to the xdy style file.

**\GlsAddXdyStyle** { *<style-name>* }  
(xindy only)

glossaries v1.17+

§14.1;  
398

Adds a required xindy file to the xdy style file.

**\glsautoprefix**

glossaries v1.14+

§2.2; 92

Expands to the prefix for the label used by `numberedsection=autolabel` and `numberedsection=nameref`.

**\glsbackslash**

glossaries v4.11+

§14; 397

Expands to `\` (a literal backslash).

**\glscapitalisewords** { *<content>* }

glossaries v4.48+

§15.2;  
416

Just does `\capitalisewords` but may be redefined to use `\capitalisefmtwords`, if required.

**\glscapscase** { *<no change>* } { *<sentence>* } { *<all caps>* } glossaries v3.11a+

§5.1.4;  
185

Defined by the `\gls`-like commands to expand to *<no change>* if the calling command wasn't a case-changing command (`\gls` or `\glspl`), to *<sentence>* for sentence case commands (`\Gls` or `\Glspl`) or to *<all caps>* for all caps commands (`\GLS` or `\GLSpl`).

**\glscategory** { *<entry-label>* } glossaries-extra

Expands to the entry's category.

**\glsclearpage** glossaries v1.19+

§8.2; 259

Used to clear the page at the start of a glossary.

**\glsclosebrace**

§14; 397

Expands to (a literal closing brace).

**\glscounter** *initial:* page glossaries

§2.3; 101

The default counter as specified by the `counter` option.

**\glscurrententrylabel** glossaries v3.02+

Assigned at the start of each entry item within the glossary. This command may be used by glossary hooks, such as `\glspostdescription`, to reference the current entry.

**\glscurrentfieldvalue** glossaries v4.23+

§15.4;  
422

Conditional commands such as `\ifglshasfield` set this to the field's value for use within the *<true>* code.

**\glscustomtext** glossaries v3.11a+

§5.1.4;  
185

Placeholder command that expands to the text provided in `\glsdisp`.

**\GlsDeclareNoHyperList** {*<list>*}

glossaries v3.05+

§2.6; 120

Identifies the list of glossaries that should have hyperlinks suppressed.

**\glsdefaultshortaccess** {*<long>*} {*<short>*}

glossaries-accsupp v4.45+

§17.1;  
440

The default value for the `shortaccess` key when defining acronyms with `\newacronym`.

**\glsdefaulttype**

*initial:* main glossaries

Expands to the label of the default glossary, which is normally `main` but if `nomain` is used, it will be the label of the first glossary to be defined.

**\glsdefpostdesc** {*<category>*} {*<definition>*}

glossaries-extra v1.31+

Defines post-description hook associated with the category identified by the label *<category>*.

**\glsdefpostlink** {*<category>*} {*<definition>*}

glossaries-extra v1.31+

Defines post-link hook associated with the category identified by the label *<category>*.

**\glsdefs@newdocentry** {*<entry-label>*} {*<key=value list>*}

glossaries-extra v4.47+

This command is written to the `glsdefs` file to define the given entry using the definition provided in the document environment on the previous  $\LaTeX$  run.

**\GLSdesc** [*<options>*] {*<entry-label>*} [*<insert>*]

*modifiers:* \* + glossaries

§5.1.3;  
181

As `\glsdesc` but converts the link text to all caps.

**\Glsdesc** [*<options>*] {*<entry-label>*} [*<insert>*]

*modifiers:* \* + glossaries

§5.1.3;  
181

As `\glsdesc` but converts the link text to sentence case. Use `\Glossentrydesc` within custom glossary styles instead of this command.



**\glsdesc** [*options*] {*entry-label*} [*insert*]      *modifiers:* \* + glossaries

§5.1.3;  
181

References the entry identified by *entry-label*. The text produced is obtained from the `description` value. The *insert* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. For the first optional argument, see `\glslink` options. Use `\glossentrydesc` within custom glossary styles instead of this command.

**\GLSdescplural** [*options*] {*entry-label*} [*insert*]      *modifiers:* \* +  
glossaries v1.12+

As `\glsdescplural` but converts the link text to all caps.

**\Glsdescplural** [*options*] {*entry-label*} [*insert*]      *modifiers:* \* +  
glossaries v1.12+

As `\glsdescplural` but converts the link text to sentence case.

**\glsdescplural** [*options*] {*entry-label*} [*insert*]      *modifiers:* \* +  
glossaries v1.12+

As `\glsdesc` but for the `descriptionplural` field.

**\glsdescriptionaccessdisplay** {*text*} {*entry-label*}  
glossaries-accsupp

§17.3;  
444

Does *text* with the `descriptionaccess` replacement text (if set).

**\glsdescriptionpluralaccessdisplay** {*text*} {*entry-label*}  
glossaries-accsupp

§17.3;  
444

Does *text* with the `descriptionpluralaccess` replacement text (if set).

**\glsdescwidth**      glossary-long & glossary-super

§13.1;  
307

A length register used to set the width of the description column for tabular-like styles.

**\glsdisablehyper**

glossaries

§15.1;  
412


Disables hyperlinks (may be scoped to localise the effect).

**\Glsdisp** [*options*] {*entry-label*} {*text*} *modifiers*: \* + glossaries v4.50+§5.1.2;  
177

As `\glsdisp` but converts *text* to sentence case.

**\glsdisp** [*options*] {*entry-label*} {*text*} *modifiers*: \* + glossaries v1.19+§5.1.2;  
177

References the entry identified by *entry-label* with the given *text* as the link text. This command unsets the first use flag (use `\glslink` instead, if the first use flag should not be altered). This command is considered a `\gls`-like command. For the first optional argument, see `\glslink` options.

 **\glsdisplay**

This was originally used to format the way the link text was displayed on first use by the `\gls`-like commands. Deprecated in v3.11a and removed in v4.50. Use `rollback` if backward-compatibility required, but it's better to switch to `\glsentryfmt`.

 **\glsdisplayfirst**

This was originally used to format the way the link text was displayed on first use by the `\gls`-like commands. Deprecated in v3.11a and removed in v4.50. Use `rollback` if backward-compatibility required, but it's better to switch to `\glsentryfmt`.

**\glsdisplaynumberlist** {*entry-label*}

glossaries v3.02+

§5.2; 198

Formats the location list for the given entry. Redefined by `glossaries-extra-bib2gls` to obtain the location list from the `location` field.

**\glsdohyperlink** {*target*} {*text*}

glossaries v4.08+

§15.1;  
413

Creates a hyperlink to the given target using `\hyperlink`, and includes the debugging information if `debug=showtargets`.

**\glsdohyperlinkhook** { *<target>* } { *<text>* }

glossaries v4.54+

§15.1;  
413

Hook used by `\glsdohyperlink`. Does nothing by default.

**\glsdohypertarget** { *<target>* } { *<text>* }

glossaries v4.08+

§15.1;  
412

Creates a hypertarget, and includes the debugging information if `debug=showtargets`. This uses `\hypertarget` but measures the height of *<text>* so that the target can be placed at the top of *<text>* instead of along the baseline.

**\glsdohypertargethook** { *<target>* } { *<text>* }

glossaries v4.54+

§15.1;  
413

Hook used by `\glsdohypertarget`. Does nothing by default.

**\glsdoifexists** { *<entry-label>* } { *<code>* }

glossaries

§15.4;  
419

Does *<code>* if the entry given by *<entry-label>* exists. If the entry doesn't exist, this will generate an error.

**\glsdoifexistsordo** { *<entry-label>* } { *<>true>* } { *<>false>* }

glossaries v4.19+

§15.4;  
419

Similar to `\ifglsentryexists`, this does *<>true>* if the entry given by *<entry-label>* exists. If the entry doesn't exist, this does *<>false>* and generates an error.

**\glsdoifexistsorwarn** { *<entry-label>* } { *<code>* }

glossaries v4.03+

§15.4;  
419

Like `\glsdoifexists`, but always warns (no error) if the entry doesn't exist.

**\glsdoifnoexists** { *<entry-label>* } { *<code>* }

glossaries

§15.4;  
419

Does *<code>* if the entry given by *<entry-label>* does not exist. If the entry does exist, this will generate an error.

**\glsdonohyperlink** {*<target>*} {*<text>*}

glossaries v4.20+

§15.1;  
412

Used instead of `\glsdohyperlink` when hyperlinks are disabled. This simply expands to *<text>*.

**\glsdosanitizesort**

(only available with `sort=standard`)

§2.5; 110

Sanitizes the sort value if `sanitizesort=true`.

**\glsenableentrycount**

glossaries v4.14+

§7.1; 242

Enables entry counting.

**\glsenablehyper**

(requires `hyperref`)

glossaries

§15.1;  
412

Enables hyperlinks (may be scoped to localise the effect).

**\glsendrange** [*<options>*] {*<entry label list>*}

glossaries-extra v1.50+

As `\glsstarange` but with the end range marker `)`.

**\glsentryaccess** {*<entry-label>*}

glossaries-accsupp

§17.4;  
446

Expands to the value of the `access` field.

**\glsentrycounter**

*initial:* `\glscounter` glossaries

§12.1;  
282

Defined by `\setentrycounter` to its *<counter>* argument.

**\glsentrycounterfalse**

glossaries v3.0+

§2.3; 95

Sets `\ifglsentrycounter` to `false`.

**\glsentrycounterlabel**

glossaries v3.0+

§2.3; 95

Displays the formatted value of the glossaryentry counter or does nothing if `entrycounter=false`.

**\GlsEntryCounterLabelPrefix** *initial:* `glsentry-` glossaries v4.38+

§2.3; 94

Expands to the prefix used by `\glsrefentry`.

**\glsentrycountertrue**

glossaries v3.0+

§2.3; 95

Sets `\ifglsentrycounter` to true.

**\glsentrycurrcount** { *entry-label* }

glossaries v4.14+

§7.1; 242

Expands to the current entry count running total or 0 if not available (needs to be enabled with `\glsenableentrycount`).

**\Glsentrydesc** { *entry-label* }

glossaries

§5.2; 196

Partially robust command that displays the value of the `description` field with sentence case applied. As from glossaries v4.50, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentrydesc** { *entry-label* }

glossaries

§5.2; 195

Simply expands to the value of the `description` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `description` field doesn't contain any fragile commands.

**\glsentrydescaccess** { *entry-label* }

glossaries-accsupp

§17.4;  
446

Expands to the value of the `descaccess` field.

**\Glsentrydescplural** { *entry-label* }

glossaries v1.12+

§5.2; 196

Partially robust command that displays the value of the `descriptionplural` field with sentence case applied. As from glossaries v4.50, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentrydescplural** { *entry-label* }

glossaries v1.12+

§5.2; 196

Simply expands to the value of the `descriptionplural` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `descriptionplural` field doesn't contain any fragile commands.

**\glsentrydescpluralaccess** { *entry-label* }

glossaries-accsupp

§17.4;  
447

Expands to the value of the `descpluralaccess` field.

**\Glsentryfirst** { *entry-label* }

glossaries

§5.2; 195

Partially robust command that displays the value of the `first` field with sentence case applied. As from glossaries v4.50, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentryfirst** { *entry-label* }

glossaries

§5.2; 195

Simply expands to the value of the `first` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `first` field doesn't contain any fragile commands.

**\glsentryfirstaccess** { *entry-label* }

glossaries-accsupp

§17.4;  
446

Expands to the value of the `firstaccess` field.

**\Glsentryfirstplural** { *entry-label* }

glossaries

§5.2; 195

Partially robust command that displays the value of the `firstplural` field with sentence

case applied. As from glossaries v4.50, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentryfirstplural** { *entry-label* } glossaries

§5.2; 195

Simply expands to the value of the `firstplural` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `firstplural` field doesn't contain any fragile commands.

**\glsentryfirstpluralaccess** { *entry-label* } glossaries–accsupp

§17.4;  
446

Expands to the value of the `firstpluralaccess` field.

**\glsentryfmt** glossaries v3.11a+

§5.1.4;  
184

The default display format used by the `\gls`-like commands. This command is redefined by the `glossaries–extra` package.

**\GLSentryfull** { *entry-label* } glossaries

As `\glsentryfull` but all caps.

**\Glsentryfull** { *entry-label* } glossaries

§6.1; 209

As `\glsentryfull` but sentence case.

**\glsentryfull** { *entry-label* } glossaries

§6.1; 209

Displays the singular full form of the acronym identified by `entry-label`, without hyperlinks or indexing. This command is redefined by acronym styles to match the style format.

**\GLSentryfullpl** { *entry-label* } glossaries

As `\glsentryfullpl` but all caps.

**\Glsentryfullpl**{*entry-label*}

glossaries

§6.1; 209

As `\glsentryfullpl` but sentence case.

**\glsentryfullpl**{*entry-label*}

glossaries

§6.1; 209

Displays the plural full form of the acronym identified by *entry-label*, without hyperlinks or indexing. This command is redefined by acronym styles to match the style format.

**\glsentryitem**{*label*}

glossaries v3.0+

§13.2.1;  
385

Used for top level (level 0) entries in glossary styles to increment and display the entry counter if `entrycounter=true`.

**\Glsentrylong**{*entry-label*}

glossaries v3.0+

§6.1; 208

Displays the value of the `long` field with sentence case applied. Does nothing if the entry hasn't been defined. As from glossaries v4.50, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentrylong**{*entry-label*}

glossaries v3.0+

§6.1; 207

Simply expands to the value of the `long` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `long` field doesn't contain any fragile commands.

**\glsentrylongaccess**{*entry-label*}

glossaries-accsupp

§17.4;  
447

Expands to the value of the `longaccess` field.

**\Glsentrylongpl**{*entry-label*}

glossaries v3.0+

§6.1; 208

Displays the value of the `longplural` field with sentence case applied. Does nothing if the entry hasn't been defined. As from glossaries v4.50, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.



**\glsentrylongpl** { *entry-label* }

glossaries v3.0+

§6.1; 208

Simply expands to the value of the `longplural` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `longplural` field doesn't contain any fragile commands.

**\glsentrylongpluralaccess** { *entry-label* }

glossaries–accsupp

§17.4;  
447

Expands to the value of the `longpluralaccess` field.

**\Glsentryname** { *entry-label* }

glossaries

§5.2; 194

Partially robust command that displays the value of the `name` field with sentence case applied. As from `glossaries v4.50`, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentryname** { *entry-label* }

glossaries

§5.2; 194

Simply expands to the value of the `name` key. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `name` key doesn't contain any fragile commands.

**\glsentrynumberlist** { *entry-label* }

glossaries v3.02+

§5.2; 198

Displays the location list for the given entry. Redefined by `glossaries–extra–bib2gls` to obtain the location list from the `location` field.

**\glsentryparent** { *entry-label* }

glossaries v4.45+

§15.6;  
427

Expands to the value of the `parent` field. Expands to nothing if the `parent` field hasn't been set and expands to `\relax` if the entry hasn't been defined.

**\Glsentryplural** { *entry-label* }

glossaries

§5.2; 195

Partially robust command that displays the value of the `plural` field with sentence case applied. As from `glossaries v4.50`, this command can expand in PDF bookmarks. Outside of PDF

bookmarks it will expand to a robust internal command.

**\glsentryplural** {*entry-label*} glossaries

§5.2; 195

Simply expands to the value of the `plural` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `plural` field doesn't contain any fragile commands.

**\glsentrypluralaccess** {*entry-label*} glossaries–accsupp

§17.4;  
446

Expands to the value of the `pluralaccess` field.

**\Glsentryprefix** {*entry-label*} glossaries–prefix v3.14a+

§16; 435

As `\glsentryprefix` but sentence case.

**\glsentryprefix** {*entry-label*} glossaries–prefix v3.14a+

§16; 434

Expands to the value of the `prefix` field.

**\Glsentryprefixfirst** {*entry-label*} glossaries–prefix v3.14a+

§16; 435

As `\glsentryprefixfirst` but sentence case.

**\glsentryprefixfirst** {*entry-label*} glossaries–prefix v3.14a+

§16; 435

Expands to the value of the `prefixfirst` field.

**\Glsentryprefixfirstplural** {*entry-label*} glossaries–prefix v3.14a+

§16; 435

As `\glsentryprefixfirstplural` but sentence case.

**\glsentryprefixfirstplural** {*entry-label*} glossaries–prefix v3.14a+

§16; 435

Expands to the value of the `prefixfirstplural` field.

**\Glsentryprefixplural** { *entry-label* }

glossaries–prefix v3.14a+

§16; 435

As `\glsentryprefixplural` but sentence case.

**\glsentryprefixplural** { *entry-label* }

glossaries–prefix v3.14a+

§16; 435

Expands to the value of the `prefixplural` field.

**\glsentryprevcount** { *entry-label* }

glossaries v4.14+

§7.1; 242

Expands to the final entry count total from the previous  $\LaTeX$  run or if 0 if not available (needs to be enabled with `\glsenableentrycount`).

**\Glsentryshort** { *entry-label* }

glossaries v3.0+

§6.1; 209

Displays the value of the `short` field with sentence case applied. Does nothing if the entry hasn't been defined. As from `glossaries` v4.50, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentryshort** { *entry-label* }

glossaries v3.0+

§6.1; 208

Simply expands to the value of the `short` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `short` field doesn't contain any fragile commands.

**\glsentryshortaccess** { *entry-label* }

glossaries–accsupp

§17.4;  
447

Expands to the value of the `shortaccess` field.

**\Glsentryshortpl** { *entry-label* }

glossaries v3.0+

Displays the value of the `shortplural` field with sentence case applied. Does nothing if the entry hasn't been defined. As from `glossaries` v4.50, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentryshortpl** {*entry-label*}

glossaries v3.0+

Simply expands to the value of the `shortplural` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `shortplural` field doesn't contain any fragile commands.

**\glsentryshortpluralaccess** {*entry-label*}

glossaries-accsupp

§17.4;  
447

Expands to the value of the `shortpluralaccess` field.

**\glsentrysort** {*entry-label*}

glossaries

§15.6;  
428

Simply expands to the value of the `sort` key. Does nothing if the entry hasn't been defined.

**\Glsentrysymbol** {*entry-label*}

glossaries

§5.2; 196

Partially robust command that displays the value of the `symbol` field with sentence case applied. As from glossaries v4.50, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentrysymbol** {*entry-label*}

glossaries

§5.2; 196

Simply expands to the value of the `symbol` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `symbol` field doesn't contain any fragile commands.

**\glsentrysymbolaccess** {*entry-label*}

glossaries-accsupp

§17.4;  
446

Expands to the value of the `symbolaccess` field.

**\Glsentrysymbolplural** {*entry-label*}

glossaries v1.12+

§5.2; 196

Partially robust command that displays the value of the `symbolplural` field with sentence case applied. As from glossaries v4.50, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentrysymbolplural** { *entry-label* }

glossaries v1.12+

§5.2; 196

Simply expands to the value of the `symbolplural` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `symbolplural` field doesn't contain any fragile commands.

**\glsentrysymbolpluralaccess** { *entry-label* }

glossaries–accsupp

§17.4;  
446

Expands to the value of the `symbolpluralaccess` field.

**\Glsentrytext** { *entry-label* }

glossaries

§5.2; 195

Partially robust command that displays the value of the `text` field with sentence case applied. As from `glossaries v4.50`, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentrytext** { *entry-label* }

glossaries

§5.2; 195

Simply expands to the value of the `text` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `text` field doesn't contain any fragile commands.

**\glsentrytextaccess** { *entry-label* }

glossaries–accsupp

§17.4;  
446

Expands to the value of the `textaccess` field.

**\glsentrytitlecase** { *entry-label* } { *field* }

glossaries v4.22+

§5.2; 193

Applies title case to the given field using `\glscapitalisewords` or sentence case in PDF bookmarks.

**\glsentrytype** { *entry-label* }

glossaries

§15.6;  
427

Simply expands to the value of the `type` key. Does nothing if the entry hasn't been defined.

**\Glsentryuseri** {*entry-label*}

glossaries v2.04+

§5.2; 196

Partially robust command that displays the value of the `user1` field with sentence case applied. As from glossaries v4.50, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentryuseri** {*entry-label*}

glossaries v2.04+

§5.2; 196

Simply expands to the value of the `user1` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `user1` field doesn't contain any fragile commands.

**\glsentryuseriaccess** {*entry-label*}

glossaries-accsupp v4.45+

§17.4;  
447

Expands to the value of the `user1access` field.

**\Glsentryuserii** {*entry-label*}

glossaries v2.04+

§5.2; 197

Partially robust command that displays the value of the `user2` field with sentence case applied. As from glossaries v4.50, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentryuserii** {*entry-label*}

glossaries v2.04+

§5.2; 197

Simply expands to the value of the `user2` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `user2` field doesn't contain any fragile commands.

**\glsentryuseriiaccess** {*entry-label*}

glossaries-accsupp v4.45+

§17.4;  
447

Expands to the value of the `user2access` field.

**\Glsentryuseriii** {*entry-label*}

glossaries v2.04+

§5.2; 197

Partially robust command that displays the value of the `user3` field with sentence case applied. As from glossaries v4.50, this command can expand in PDF bookmarks. Outside of PDF

bookmarks it will expand to a robust internal command.

**\glsentryuseriii** { *entry-label* } glossaries v2.04+

§5.2; 197

Simply expands to the value of the `user3` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `user3` field doesn't contain any fragile commands.

**\glsentryuseriiiaccess** { *entry-label* } glossaries–accsupp v4.45+

§17.4;  
447

Expands to the value of the `user3access` field.

**\Glsentryuseriv** { *entry-label* } glossaries v2.04+

§5.2; 197

Partially robust command that displays the value of the `user4` field with sentence case applied. As from glossaries v4.50, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentryuseriv** { *entry-label* } glossaries v2.04+

§5.2; 197

Simply expands to the value of the `user4` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `user4` field doesn't contain any fragile commands.

**\glsentryuserivaccess** { *entry-label* } glossaries–accsupp v4.45+

§17.4;  
448

Expands to the value of the `user4access` field.

**\Glsentryuserv** { *entry-label* } glossaries v2.04+

§5.2; 197

Partially robust command that displays the value of the `user5` field with sentence case applied. As from glossaries v4.50, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentryuserv** { *entry-label* }

glossaries v2.04+

§5.2; 197

Simply expands to the value of the `user5` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `user5` field doesn't contain any fragile commands.

**\glsentryuservaccess** { *entry-label* }

glossaries-accsupp v4.45+

§17.4;  
448

Expands to the value of the `user5access` field.

**\Glsentryuservi** { *entry-label* }

glossaries v2.04+

§5.2; 197

Partially robust command that displays the value of the `user6` field with sentence case applied. As from glossaries v4.50, this command can expand in PDF bookmarks. Outside of PDF bookmarks it will expand to a robust internal command.

**\glsentryuservi** { *entry-label* }

glossaries v2.04+

§5.2; 197

Simply expands to the value of the `user6` field. Does nothing if the entry hasn't been defined. May be used in expandable contexts provided that the `user6` field doesn't contain any fragile commands.

**\glsentryuserviaccess** { *entry-label* }

glossaries-accsupp v4.45+

§17.4;  
448

Expands to the value of the `user6access` field.

**\glsexpandfields**

glossaries v3.08a+

§4.4; 159

Expand values when assigning fields during entry definition (except for specific fields that are overridden by `\glsetnoexpandfield`).

**\gls** { *field-label* } **accsupp** { *replacement* } { *content* }

§17.2;  
441

If defined, used by `\glsfieldaccsupp` for the accessibility support for the internal field label given by *field-label*.



**`\glsfieldaccsupp`** { *<replacement>* } { *<content>* } { *<field-label>* } { *<entry-label>* }  
 glossaries-accsupp v4.45+

§17.2;  
441

If `glossaries-extra` has been loaded, this command will first check for the existence of the command `\glsxtr<category><field>accsupp`. If that command doesn't exist or if `glossaries-extra` hasn't been loaded, it then checks for the existence of `\gls<field>accsupp` (for example, `\glsshortaccsupp`). Failing that it will use `\glsaccsupp`. Whichever command is found first, `<cs>` { *<replacement>* } { *<content>* } is performed.

**`\glsfielddef`** { *<entry-label>* } { *<field>* } { *<value>* } glossaries v4.16+

§15.6;  
429

Locally assigns the *<value>* to the given field (identified by the internal field label *<field>*) for the entry identified by *<entry-label>*. Produces an error (or warning with `undefaction=warn`) if the entry or field doesn't exist. Note that this doesn't update any associated fields.

**`\glsfieldedef`** { *<entry-label>* } { *<field>* } { *<value>* } glossaries v4.16+

§15.6;  
429

Locally assigns the full expansion of *<value>* to the given field (identified by the internal field label *<field>*) for the entry identified by *<entry-label>*. Produces an error (or warning with `undefaction=warn`) if the entry or field doesn't exist. Note that this doesn't update any associated fields.

**`\glsfieldfetch`** { *<entry-label>* } { *<field-label>* } { *<cs>* } glossaries v4.16+

§15.6;  
428

Fetches the value of the given field for the given entry and stores it in the command *<cs>*. Triggers an error if the given field (identified by its internal field label) hasn't been defined. Uses `\glsdoifexists`.

**`\glsfieldgdef`** { *<entry-label>* } { *<field>* } { *<value>* } glossaries v4.16+

As `\glsfielddef` but does a global assignment.

**`\glsfieldxdef`** { *<entry-label>* } { *<field>* } { *<value>* } glossaries v4.16+

§15.6;  
429

As `\glsfieldedef` but does a global assignment.

**\glsfindwidestoplevelname** [*⟨glossary labels⟩*] glossary-tree v4.22+

§13.1.7.2;  
376

Finds and sets the widest name for all top-level entries in the given glossaries. If the optional argument is omitted, the list of all non-ignored glossaries is assumed.

**\glsFindWidestUsedLevelTwo** [*⟨glossary labels⟩*]  
glossaries-extra-stylemods v1.05+

Finds and sets the widest name for all entries that have been marked as used with hierarchical level less than or equal to 2 in the given glossaries.

**\glsFindWidestUsedTopLevelName** [*⟨glossary labels⟩*]  
glossaries-extra-stylemods v1.05+

Finds and sets the widest name for all top-level entries that have been marked as used in the given glossaries.

**\GLSfirst** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*] *modifiers:* \* + glossaries

§5.1.3;  
179

As `\glsfirst` but converts the link text to all caps.

**\Glsfirst** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*] *modifiers:* \* + glossaries

§5.1.3;  
179

As `\glsfirst` but converts link text to sentence case.

**\glsfirst** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*] *modifiers:* \* + glossaries

§5.1.3;  
179

References the entry identified by *⟨entry-label⟩*. The text produced is obtained from the `first` value. The *⟨insert⟩* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. If you have defined the entry with `\newacronym` consider using `\acrfull` (or `\glsxtrfull` with `glossaries-extra`) for the full form or `\acrlong` (or `\glsxtrlong` with `glossaries-extra`) for the long form instead.

**\glsfirstabbrvscfont** {*⟨text⟩*} glossaries-extra v1.17+

Short form font used by the small caps “sc” abbreviation styles on first use.

**\glsfirstaccessdisplay** {*<text>*} {*<entry-label>*} glossaries–accsupp

Does *<text>* with the `firstaccess` replacement text (if set).

**\glsfirstlongfootnotefont** {*<text>*} glossaries–extra v1.05+

Formatting command for the first use long form used by the footnote abbreviation styles.

**\GLSfirstplural** [*<options>*] {*<entry-label>*} [*<insert>*] *modifiers:* \* +  
glossaries

§5.1.3;  
180

As `\glsfirstplural` but converts the link text to all caps.

**\Glsfirstplural** [*<options>*] {*<entry-label>*} [*<insert>*] *modifiers:* \* +  
glossaries

§5.1.3;  
180

As `\glsfirstplural` but converts the link text to sentence case.

**\glsfirstplural** [*<options>*] {*<entry-label>*} [*<insert>*] *modifiers:* \* +  
glossaries

§5.1.3;  
180

References the entry identified by *<entry-label>*. The text produced is obtained from the `firstplural` value. The *<insert>* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. If you have defined the entry with `\newacronym` consider using `\acrfullpl` (or `\glsxtrfullpl` with `glossaries–extra`) for the full form or `\acrlongpl` (or `\glsxtrlongpl` with `glossaries–extra`) for the long form instead. For the first optional argument, see `\glslink` options.

**\glsfirstpluralaccessdisplay** {*<text>*} {*<entry-label>*}  
glossaries–accsupp

§17.3;  
444

Does *<text>* with the `firstpluralaccess` replacement text (if set).

**\glsfmtfirst** {*<entry-label>*}

For use within captions or section titles to display the formatted `first`.

**\Glsfmtlong** { *entry-label* }

glossaries-extra

For use within captions or section titles to display the formatted sentence case long form.

**\glsfmtname** { *entry-label* }

For use within captions or section titles to display the formatted *name*.

**\glsfmtshort** { *entry-label* }

glossaries-extra

For use within captions or section titles to display the formatted short form.

**\glsfmttext** { *entry-label* }

glossaries-extra

For use within captions or section titles to display the formatted *text*.

**\glsgenacfmt**

glossaries v4.02a+

§5.1.4;  
187

The generic acronym display format used by the `\gls`-like commands.

**\glsgenentryfmt**

glossaries v3.11a+

§5.1.4;  
187

The generic display format used by the `\gls`-like commands.

**\glsgetgrouptitle** { *group-label* }

glossaries

§13.2.1;  
388

Robust command that determines the title associated with *group-label* and displays it.

**\glsgroupheading** { *group-label* }

(glossary style command)

glossaries

§13.2.3;  
391

Redefined by glossary styles to show, if applicable, the title associated with the letter group identified by *group-label*.

**\glsgroupskip**

(glossary style command)

§13.2.3;  
392

Redefined by glossary styles to produce a vertical gap between letter groups, if applicable.

**\glsglossarymark***\langle glossary title \rangle*

glossaries v2.02+

§8.2; 258

Sets the header mark for the glossary.

**\glshyperfirstfalse**

glossaries

Sets `\ifglshyperfirst` to false.

**\glshyperfirsttrue**

glossaries

Sets `\ifglshyperfirst` to true.

**\glshyperlink** [*\langle text \rangle*] {*\langle entry-label \rangle*}

glossaries v1.17+

§5.2; 194

Creates a hyperlink to the given entry with the hyperlink text provided in the optional argument. If omitted, the default is `\glsenrytext{\langle entry-label \rangle}`.

**\glshypernavsep**

glossary-hypernav

§13.2.2;  
389


Used as a separator by `\glsnavigation`.

**\glshypernumber**{*\langle location(s) \rangle*}

glossaries

§12.1;  
282

This will encapsulate each location with a hyperlink, if supported. This may be used as a location encap. The argument may be a single location or locations delimited by `\delimR` or `\delimN`. This command should not be used outside of location lists as it requires additional information in order to correctly form the hyperlinks.

 **\glsifhyper**

This was originally used in `\gls genentryfmt` to test if the `hyper` option was set. Deprecated in v4.08 and removed in v4.50. Use `\glsifhyperon` instead.

**\glsifhyperon** {*⟨true⟩*} {*⟨false⟩*}

glossaries v4.08+

§5.1.4;  
186

Defined by the `\gls`-like commands to expand to *⟨true⟩* if the hyperlink setting is on for the current reference. Otherwise it expands to *⟨false⟩*.

**\glsIfListOfAcronyms** {*⟨glossary-label⟩*} {*⟨true⟩*} {*⟨false⟩*}

glossaries v2.04+

§2.7; 126

Does *⟨true⟩*, if the *⟨glossary-label⟩* has been identified as a list of acronyms.

**\glsifmeasuring** {*⟨true⟩*} {*⟨false⟩*}

glossaries v4.51+

§15.5;  
427

Does *⟨true⟩* if it occurs inside a measuring content otherwise does *⟨false⟩*.

**\glsifplural** {*⟨true⟩*} {*⟨false⟩*}

glossaries v3.11a+

§5.1.4;  
185

Defined by the `\gls`-like commands to expand to *⟨true⟩* if the calling command was a plural form (for example, `\glspl`) and to *⟨false⟩* for the other commands.

**\glsifusedtranslatordict** {*⟨Lang⟩*} {*⟨true⟩*} {*⟨false⟩*}

glossaries v4.12+

Does *⟨true⟩* if `translate=true` and the `glossaries-dictionary-⟨Lang⟩.dict` file has been loaded, otherwise does *⟨false⟩*.

**\glsignore** {*⟨text⟩*}

glossaries v4.12+

§12.1;  
279

Does nothing. When used as a location encap, this signifies to `bib2gls` that the entry is required but the location shouldn't be added to the location list. With other indexing methods, this simply creates an invisible location.

**`\glsindexingsetting`**

glossaries v4.50+

§1.3; 9

Indicates what indexing option has been chosen.

**`\glsindexonlyfirstfalse`**

glossaries v3.02+

§2.4; 105

Sets `\ifglsindexonlyfirst` to false.

**`\glsindexonlyfirsttrue`**

glossaries v3.02+

§2.4; 104

Sets `\ifglsindexonlyfirst` to true.

**`\glsinlinedescformat`** { *description* } { *symbol* } { *location list* }

glossary-inline v3.03+

§13.1.9;  
383

Formats the description, symbol and location list for top-level entries.

**`\glsinlinedopostchild`**

glossary-inline v3.03+

§13.1.9;  
381

Hook at the start of `\glossentry` that finishes off the previous child entry, if the current top level (level 0) entry follows a child entry. This command is redefined within `\glossentry` to use `\glsinlinepostchild` after a top level (level 0) entry if that entry has any children.

**`\glsinlineemptydescformat`** { *symbol* } { *location list* }

glossary-inline v3.03+

§13.1.9;  
383

Used to format the symbol and location list when the description is suppressed.

**`\glsinlineifhaschildren`** { *entry-label* } { *true* } { *false* }

glossary-inline v4.50+

§13.1.9;  
382

Used to test if the entry has any children.

**\glsinlinenameformat** { *⟨entry-label⟩* } { *⟨name⟩* } glossary–inline v3.03+

§13.1.9;  
382

Creates the target for top level (level 0) entries and may be used to adjust the format of the name.

**\glsinlineparentchildseparator** *initial:* : \space  
glossary–inline v3.03+

§13.1.9;  
381

Separator used between a top level (level 0) parent and its first child entry.

**\glsinlinepostchild** glossary–inline v3.03+

§13.1.9;  
383

Hook used between a top level (level 0) entry and its first sub-entry.

**\glsinlineseparator** *initial:* ; \space glossary–inline v3.03+

§13.1.9;  
381

Separator used between top level (level 0) entries.

**\glsinlinesubdescformat** { *⟨description⟩* } { *⟨symbol⟩* } { *⟨location list⟩* }  
glossary–inline v3.03+

§13.1.9;  
383

Formats the description, symbol and location list for child entries.

**\glsinlinesubnameformat** { *⟨entry-label⟩* } { *⟨name⟩* } glossary–inline v3.03+

§13.1.9;  
383

Creates the target for sub entries and may be used to adjust the format of the name.

**\glsinlinesubseparator** *initial:* , \space glossary–inline v3.03+

§13.1.9;  
381

Separator used between sub-entries.

**\glsinsert** glossaries v3.11a+

§5.1.4;  
185

Placeholder command that expands to the *⟨insert⟩* final optional argument of the *⟨gls-like⟩* commands.



**\glskeylisttok**

glossaries

§6.2.2;  
220

A token register used by `\newacronym` (and `\newabbreviation`) to store the *⟨key=value list⟩* supplied in the optional argument.

**\glslabel**

glossaries v1.15+

§5.1.4;  
185

Placeholder command that expands to the entry label.

**\glslabelhypertarget** { *⟨target⟩* } { *⟨text⟩* }

glossaries v4.54+

§15.1;  
413

May be used in the definition of `\glsdohypertargethook` to simulate a label corresponding to the target where the label is given by `\glslabelhypertargetprefix⟨target⟩`.

**\glslabelhypertargetdefs**

glossaries v4.54+

§15.1;  
414

Hook used by `\glslabelhypertarget` to locally redefine problematic commands.

**\glslabelhypertargetprefix**

*initial: empty* glossaries v4.54+

§15.1;  
413

Expands to the prefix used for the label created by `\glslabelhypertarget`.

**\glslabelhypertargetvalue**

glossaries v4.54+

§15.1;  
414

Expands to the value part of the label created by `\glslabelhypertarget`.

**\glslabeltok**

glossaries

§6.2.2;  
220

A token register used by `\newacronym` (and `\newabbreviation`) to store the entry label.

**\glsletentryfield** { *⟨cs⟩* } { *⟨entry-label⟩* } { *⟨field-label⟩* }

glossaries v4.07+

§15.6;  
428

Fetches the value of the given field (identified by its internal label *⟨field-label⟩*) for the entry given by *⟨entry-label⟩* and stores it in the command *⟨cs⟩*.

**\Glslink** [*options*] {*entry-label*} {*text*}    *modifiers:* \* +    glossaries v4.50+

§5.1.3;  
178

As `\glslink` but converts *text* to sentence case.

**\glslink** [*options*] {*entry-label*} {*text*}    *modifiers:* \* +

§5.1.3;  
178

References the entry identified by *entry-label* with the given *text* as the link text. This command does not alter or depend on the first use flag (use `\glsdisp` instead, if the first use flag needs to be unset). This command is considered a `\glstext`-like command. For the first optional argument, see `\glslink` options.

**\glslinkcheckfirsthyperhook**    glossaries v4.08+

§2.1; 87

Hook used when checking whether or not to switch off hyperlinks on first use.

**\glslinkpostsetkeys**    glossaries v4.16+

§5.1.5;  
189

Hook implemented after setting the options passed to the `\gls`-like and `\glstext`-like commands.

**\glslinkpresetkeys**    glossaries-extra v1.26+

Hook implemented before setting the options passed to the `\gls`-like and `\glstext`-like commands.

**\glslinkvar** {*unmodified*} {*star case*} {*plus case*}    glossaries v4.08+

§5.1.4;  
186

Defined by the `\gls`-like commands test if the unmodified, starred (\*) or plus (+) command was used.

**\glslistdottedwidth**    glossary-list

§13.1.1;  
313

A length register used by `listdotted`.

**\glslistexpandedname** { *⟨entry-label⟩* }

glossary–list v4.48+

§13.1.1;  
311

Used by `\glslistinit` to provide better integration with `getttitlestring`.

**\glslistgroupheaderfmt** { *⟨title⟩* }

glossary–list v4.22+

§13.1.1;  
311

Used to encapsulate the group title.

**\glslistinit**

glossary–list v4.48+

§13.1.1;  
310

Used to disable problematic commands at the start the list styles to provide better integration with `getttitlestring`.

**\glslistnavigationitem** { *⟨navigation items⟩* }

glossary–list v4.22+

§13.1.1;  
311

Used in styles like `listhypergroup` to display the navigation line.

**\glslocalreset** { *⟨entry-label⟩* }

glossaries

§7; 237

Locally resets the first use flag.

**\glslocalresetall** [ *⟨glossary labels list⟩* ]

glossaries

§7; 237

Locally resets the first use flag for all entries in whose labels are listed in the *⟨glossary labels list⟩* comma-separated list. If the optional argument is omitted, the list of all non-ignored glossaries is assumed.

**\glslocalunset** { *⟨entry-label⟩* }

glossaries

§7; 237

Locally unsets the first use flag.

**\glslocalunsetall** [ *⟨glossary labels list⟩* ]

glossaries

§7; 238

Locally unsets the first use flag for all entries in whose labels are listed in the *⟨glossary labels list⟩*

comma-separated list. If the optional argument is omitted, the list of all non-ignored glossaries is assumed.

**`\glslocationcstoencap`** { *⟨encap-csname⟩* } { *⟨location-csname⟩* }  
glossaries v4.50+

§12.5;  
295

Used by `makeglossaries` when repairing problematic locations with `makeindex`.

**`\glslongaccessdisplay`** { *⟨text⟩* } { *⟨entry-label⟩* } glossaries-accsupp

§17.3;  
445

Does *⟨text⟩* with the `longaccess` replacement text (if set).

**`\glslongfont`** { *⟨text⟩* } glossaries-extra

Font formatting command for the long form, initialised by the abbreviation style.

**`\glslongpluralaccessdisplay`** { *⟨text⟩* } { *⟨entry-label⟩* } glossaries-accsupp

§17.3;  
445

Does *⟨text⟩* with the `longpluralaccess` replacement text (if set).

**`\glslongtok`** glossaries

§6.2.2;  
220

A token register used by `\newacronym` (and `\newabbreviation`) to store the supplied long form.

**`\glslowercase`** { *⟨text⟩* } glossaries v4.50+

§15.2;  
414

Converts *⟨text⟩* to lowercase using the modern L<sup>A</sup>T<sub>E</sub>X3 case-changing command, which is expandable.

**`\glsLTpenaltycheck`** glossary-longbooktabs v4.21+

§13.1.4;  
320

Penalty check used by `\glspatchLToutput`.

**\glsmakefirstuc**{*<text>*}

mfirstuc v1.05+

Used by `\makefirstuc` to perform the actual case change. As from `mfirstuc` v2.08+ this just uses `\MFUsentencecase`. Despite the “gls” prefix in the command name, this command is provided by `mfirstuc`, but dates back to when `mfirstuc` was part of the `glossaries` package.

**\glscols**

*initial: 2* glossary–mcols v3.05+

§13.1.8;  
379

Expands to the number of columns for the “mcol” styles.

**\GlsMcolTreeSetup**(*key=value list*)

glossary–tree v4.59+

§13.1.8;  
378

Set the options for just the `mcoltree*` style.

**\glsmeasuredepth**{*<length>*}{*<text>*}

glossaries v4.51+

§15.5;  
426

Measures the depth of *<text>* using `\settodepth` but temporarily switches off indexing, `unset/reset` and labelling.

**\glsmeasureheight**{*<length>*}{*<text>*}

glossaries v4.51+

§15.5;  
426

Measures the height of *<text>* using `\settoheight` but temporarily switches off indexing, `unset/reset` and labelling.

**\glsmeasurewidth**{*<length>*}{*<text>*}

glossaries v4.51+

§15.5;  
427

Measures the width of *<text>* using `\settowidth` but temporarily switches off indexing, `unset/reset` and labelling.

**\glsmfuaddmap**{*<cs1>*}{*<cs2>*}

glossaries v4.50+ & glossaries–extra v1.49+

§15.2;  
416

If `mfirstuc` v2.08+ is installed, this will use `\MFUaddmap`, otherwise it will use `\glsmfuexcl` instead. See §15.2 for further details.

**\glsmfublocker** {*cs*}

glossaries v4.50+ & glossaries-extra v1.49+

§15.2;  
416

If mfirstuc v2.08+ is installed, this will use \MFUblocker, otherwise it will use \glsmfuexcl instead. See §15.2 for further details.

**\glsmfuexcl** {*cs*}

glossaries v4.50+ & glossaries-extra v1.49+

§15.2;  
416

If mfirstuc v2.08+ is installed, this will use \MFUexcl, otherwise it will implement something similar.

**\glsmoveentry** {*entry-label*} {*target glossary label*}

glossaries v3.02+

§4.7; 166

Moves the entry identified by *entry-label* to the glossary identified by *target glossary label*.

**\GLSname** [*options*] {*entry-label*} [*insert*]

modifiers: \* + glossaries

§5.1.3;  
180

As \glsname but converts the link text to all caps.

**\Glsname** [*options*] {*entry-label*} [*insert*]

modifiers: \* + glossaries

§5.1.3;  
180

As \glsname but converts the link text to sentence case. Use \Glossentryname within custom glossary styles instead of this command.

**\glsname** [*options*] {*entry-label*} [*insert*]

modifiers: \* + glossaries

§5.1.3;  
180

References the entry identified by *entry-label*. The text produced is obtained from the `name` value. The *insert* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. For the first optional argument, see \glslink options. Use \glossentryname within custom glossary styles instead of this command.

**\glsnameaccessdisplay** {*text*} {*entry-label*}

glossaries-accsupp

§17.3;  
444

Does *text* with the `access` replacement text (if set).

**\glsnamefont** { *<text>* }

glossaries

§13; 305

Used by `\glossentryname` to apply a font change to the `name`.

**\glsnavhypergroupdotarget** { *<glossary-label>* } { *<group-label>* } { *<group-title>* }

glossary–hypernav v4.53+

§13.2.2;  
389

Used by `\glsnavhypertarget` to create the hypertarget for the given group.

**\glsnavhyperlink** [ *<glossary-label>* ] { *<group-label>* } { *<group-title>* }

glossary–hypernav

§13.2.2;  
389

Creates a hyperlink to the given group, where the target name is obtained from `\glsnavhyperlinkname`.

**\glsnavhyperlinkname** [ *<glossary-label>* ] { *<group-label>* }

glossary–hypernav v4.29+

§13.2.2;  
389

Expands to the anchor for the given group.

**\glsnavhypertarget** [ *<glossary-label>* ] { *<group-label>* } { *<group-title>* }

glossary–hypernav

§13.2.2;  
388

Used to create a hyper target for a group in order to support styles that have navigation links to glossary groups. Note that if you only want to change the way that the target is created, redefine `\glsnavhypergroupdotarget` instead.

**\glsnavigation**

glossary–hypernav

§13.2.2;  
389

Displays a simple glossary group navigation line with the items separated by `\glsnavsep`.

**\glsnavigationitem** { *<group-label>* }

glossary–hypernav v4.53+

§13.2.2;  
389

Used by `\glsnavigation` to create the hyperlink for the given group (with the title corresponding to the group label).

**\glsnextpages**

glossaries

§8.2; 262

Does nothing outside of `\print<...>glossary`. Within the glossary, this redefines `\glossary-entrynumbers` to do its argument and then reset itself.

**\glsnoexpandfields**

glossaries v3.08a+

§4.4; 159

Don't expand values when assigning fields during entry definition (except for specific fields that are overridden by `\glssetexpandfield`).

**\glsnoidxdisplayloc** {*<prefix>*} {*<counter>*} {*<format>*} {*<location>*}

glossaries v4.04+

§12.6;  
303

Used to display an individual location within the number list when `\printnoidxglossary` formats the number list.

**\glsnoidxdisplayloclisthandler** {*<location>*}

glossaries v4.04+

§5.2; 199

Handler macro used by `\glsdisplaynumberlist` with Option 1.

**\GlsNoIdxDoRerunCheck**

glossaries v4.59+

§8; 249

Added to the end document hook by `\makenoidxglossaries`, this command iterates through the list of all entries that have been indexed using the “noidx” method and the list of all entries have been displayed with `\printnoidxglossary` to determine if a new entry has been added or if an old entry has been removed in order to give a rerun warning.

**\glsnoidxinithook**

glossaries v4.59+

§8; 249

Hook used in `\printnoidxglossary` just before the internal token list is constructed (after the list has been sorted).

**\glsnoidxitemhook** {*<level>*} {*<entry-label>*}

glossaries v4.59+

§8; 249

Hook used in `\printnoidxglossary` at the start of each iteration of the loop that adds an item to the internal token list.



**`\glsnoidxloclist`** {*`<list cs>`*}  
(Options 1 and 4)

glossaries v4.04+

§12.6;  
302

Displays the location list by iterating over the `loclist` field with the `\glsnoidxloclisthandler` handler.

**`\glsnoidxloclisthandler`** {*`<location>`*}  
(Option 1)

glossaries v4.04+

§12.6;  
302

Handler macro used by `\glsnoidxloclist`.

**`\GlsNoIdxMissingAction`** {*`<glossary-type>`*}

glossaries v4.59+

§8; 249

Used by `\printnoidxglossary` if there are no entries to list.

**`\glsnoidxnumberlistloophandler`** {*`<location item>`*}

glossaries v4.04+

§12.6;  
304

List loop handler used by `\glsnumberlistloop`.

**`\glsnoidxprecontenthook`**

glossaries v4.57+

§8; 249

Hook used in `\printnoidxglossary` just before the constructed token list is used.

**`\glsnoidxprenumberlist`** {*`<entry-label>`*}

glossaries v4.50+

§8.2; 262

Used before the number list for Option 1. By default it expands to the value of the `pre-numberlist` internal field, if set.

**`\glsnonextpages`**

glossaries

§8.2; 262

Does nothing outside of `\print<...>glossary`. Within the glossary, this redefines `\glossary-entrynumbers` to ignore its argument and then reset itself.

**`\glsnumberformat`** { *⟨location(s)⟩* }

glossaries

§12.1;  
281

The default format for entry locations. If hyperlinks are defined, this will use `\glsnumber` otherwise it will simply display its argument, which may be a single location, or locations delimited by `\delimR` or `\delimN`.

**`\glsnumberlistloop`** { *⟨entry-label⟩* } { *⟨handler⟩* } { *⟨xr handler cs⟩* }

glossaries v4.04+

§12.6;  
302

Iterates over the `loclist` internal field.

**`\glsnumbersgroupname`**

*initial:* Numbers glossaries

(language-sensitive)

§15.1;  
Table 1.2

Provided by `glossaries` if it hasn't already been defined. The title associated with the `glsnumbers` letter group. Also used as the title for the glossary created with the `numbers` package option.

**`\glsnumlistlastsep`**

*initial:* `\&` glossaries v3.02+

§5.2; 198

Separator used by `\glsdisplaynumberlist` between the last two locations.

**`\glsnumlistsep`**

*initial:* `,` glossaries v3.02+

§5.2; 198

Separator used by `\glsdisplaynumberlist` between all but the last two locations.

**`\glsopenbrace`**

§14; 397

Expands to `{` (a literal open brace).

**`\glspagelistwidth`**

`glossary-long` & `glossary-super`

§13.1;  
307

A length register used to set the width of the location list column for tabular-like styles.

**\glspar**

glossaries

§4; 139

Paragraph break (for instances where `\par` can't be used directly).

**\glspatchLToutput**

glossary-longbooktabs v4.21+

Applies a patch to longtable to check for instances of the group skip occurring at a page break.

**\glspatchtabularx**

glossaries v4.28+

§15.5;  
427

Patches tabularx (if it has been loaded) to prevent the first use flag from being unset while tabularx is calculating the column widths.

**\glspenaltygroupskip**

glossary-longbooktabs v4.21+

§13.1.4;  
320

The definition of `\glsgroupskip` with `nogroupskip=false` for the `glossary-longbooktabs` styles.

**\glspercentchar**

glossaries v4.10+

§14; 397

Expands to `%` (a literal percent character).

**\GLSp1** [*options*] {*entry-label*} [*insert*]

modifiers: \* + glossaries

§5.1.2;  
176

As `\glspl` but converts the link text to all caps.

**\Glspl** [*options*] {*entry-label*} [*insert*]

modifiers: \* + glossaries

§5.1.2;  
176

As `\glspl` but converts the link text to sentence case.

**\glspl** [*options*] {*entry-label*} [*insert*]

modifiers: \* + glossaries

§5.1.2;  
176

As `\gls` but uses the relevant plural form.

**\GLSplural** [*options*] {*entry-label*} [*insert*] *modifiers:* \* + glossaries

§5.1.3;  
179

As `\glsplural` but converts the link text to all caps.

**\Glsplural** [*options*] {*entry-label*} [*insert*] *modifiers:* \* + glossaries

§5.1.3;  
179

As `\glsplural` but converts the link text to sentence case.

**\glsplural** [*options*] {*entry-label*} [*insert*] *modifiers:* \* + glossaries

§5.1.3;  
179

References the entry identified by *entry-label*. The text produced is obtained from the `plural` value. The *insert* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. If you have defined the entry with `\newacronym` consider using `\acrshortpl` (or `\glsxtrshortpl` with `glossaries-extra`) instead.

**\glspluralaccessdisplay** {*text*} {*entry-label*} *glossaries-accsupp*

§17.3;  
444

Does *text* with the `pluralaccess` replacement text (if set).

**\glspluralsuffix** *initial:* s *glossaries*

§4.1; 148

Suffix used to obtain default plurals.

**\glspostdescription** *glossaries*

§13.1;  
309

A hook that is usually placed after the description in glossary styles. Some of the styles provided with the `glossaries` package don't use this hook. The `glossaries-extra-stylemods` redefines those styles to include the hook. The default definition of this command tests for the `nopostdot` option, but the `postpunc` option redefines the command to implement the chosen punctuation.

**\glspostinline** *glossary-inline v3.03+*

§13.1.9;  
382

Used at the end of the `theglossary` environment.

**\glspostinlinedescformat** { *<description>* } { *<symbol>* } { *<location list>* }  
 glossary–inline v3.03+

Formats the top-level entry’s description, symbol and location list.

**\glspostinlinesubdescformat** { *<description>* } { *<symbol>* } { *<location list>* }  
 glossary–inline v3.03+

Formats the child entry’s description, symbol and location list.

**\glspostlinkhook** glossaries v4.16

§5.1.5;  
190

A post-link hook used after all the `\gls`-like and `\glstext`-like commands. This is redefined by `glossaries–extra` to use `\glsxtrpostlinkhook`.

**\glsprefixsep** *initial: empty* glossaries–prefix v4.45

§16; 432

Separator between the prefix and the term.

**\glsprestandardsort** { *<sort cs>* } { *<type>* } { *<entry-label>* } glossaries v3.13a+

§2.5; 110

Hook used with `sort=standard` to adjust the default sort value (with `\makeglossaries` or `\makenoidxglossaries` only).

**\glsps** { *<entry-label>* } glossaries–extra v1.07+

Shortcut for `\glsxtrp{short}{<entry-label>}`.

**\glspt** { *<entry-label>* } glossaries–extra v1.07+

Shortcut for `\glsxtrp{text}{<entry-label>}`.

**\glsquote** { *<text>* } glossaries

§14; 398

Expands to `"<text>"`, where the `"` is a literal character.

**\glsrefentry**{*<label>*}

glossaries v3.0+

§2.3; 94

For use with `entrycounter` and `subentrycounter`, this references the value of the `glossaryentry` or `glossarysubentry` counter associated with the glossary entry identified by *<label>*. If `entrycounter=false` and `subentrycounter=false`, this simply uses `\gls` otherwise it uses `\ref`.

**\glsreset**{*<entry-label>*}

glossaries

§7; 237

Globally resets the first use flag.

**\glsresetall** [*<glossary labels list>*]

glossaries

§7; 237

Globally resets the first use flag for all entries in whose labels are listed in the *<glossary labels list>* comma-separated list. If the optional argument is omitted, the list of all non-ignored glossaries is assumed.

**\glsresetcurrcountfalse**

glossaries v4.50+

§7.1; 242

Sets the `\ifglsresetcurrcount` conditional to `\iffalse`.

**\glsresetcurrcounttrue**

glossaries v4.50+

§7.1; 242

Sets the `\ifglsresetcurrcount` conditional to `\iftrue`.

**\glsresetentrycounter**

glossaries v3.02+

§2.3; 95

Resets `glossaryentry` back to zero if `entrycounter=true`.

**\glsresetentrylist**

glossaries

§8.2; 262

Resets `\glossaryentrynumbers`.

**\glsresetsubentrycounter**

glossaries v3.0+

§2.3; 97

Resets `glossarysubentry` back to zero if `entrycounter=true`.

**\glsrestoreLToutput**

glossary-longbooktabs v4.21+

§13.1.4;  
320

Reverses the effect of `\glspatchLToutput`.

**\glssee** [*tag*] {*entry-label*} {*xr-list*}

glossaries v1.17+

§11; 272

Indexes the entry identified by *entry-label* as a general cross-reference to the entries identified in the comma-separated list *xr-list*. The optional argument is the textual tag that's inserted before the cross-reference list and defaults to `\seename`.

**\glsseeformat** [*tag*] {*xr-list*} {*location*}

glossaries v1.17+

§11.1;  
275

Used to format the `see` cross-reference in the location list. This requires a location argument for `makeindex` even though it isn't required. The default definition is `\emph{tag} \glsseelist{xr-list}`.

**\glsseeitem** {*entry-label*}

glossaries v1.17+

§11.1;  
276

Used by `\glsseelist` to format each entry item. This adds a hyperlink, if enabled, to the appropriate entry line in the glossary with the text obtained with `\glsseeitemformat`.

**\glsseeitemformat** {*entry-label*}

glossaries v3.0+

§11.1;  
276

Used by `\glsseeitem` to produce the hyperlink text.

**\glsseelastsep***initial:* , ↵ glossaries v1.17+§11.1;  
276

Used by `\glsseelist` as a separator between the final pair.

**\glsseelist** { *⟨label-list⟩* }

glossaries v1.17+

§11.1;  
276

Iterates over a comma-separated list of entry labels *⟨label-list⟩* and formats them. Each label in the list is encapsulated with `\glsseeitem`. The separators are `\glsseelastsep` (between the penultimate and last items) and `\glsseesep` (between all the other items).

**\glsseesep**

*initial:* , \_ glossaries v1.17+

§11.1;  
276

Used by `\glsseelist` as a separator between each entry except the last pair.

**\glsentencecase** { *⟨text⟩* }

glossaries v4.50+ & glossaries-extra v1.49+

§15.2;  
415

Used by sentence case commands, such as `\Gls`, to perform the case change. This is simply defined to use `\makefirstuc`.

**\glsSetAlphaCompositor** { *⟨character⟩* }  
(xindy only)

glossaries v1.17+

§3.2; 136

Sets the compositor for locations that start with an uppercase alphabetical character.

**\glssetcategoryattribute** { *⟨category⟩* } { *⟨attribute⟩* } { *⟨value⟩* }  
glossaries-extra

Locally sets the given attribute to *⟨value⟩* for the given category.

**\glsSetCompositor** { *⟨character⟩* }

glossaries v1.17+

§3.2; 135

Sets the location compositor for the indexing style file created by `\makeglossaries`.

**\glssetexpandfield** { *⟨field⟩* }

glossaries v3.13a+

§4.4; 159

Indicates that the given field should always have its value expanded when the entry is defined. This overrides `\glsnoexpandfields`.



**\glssetnoexpandfield**{*<field>*}

glossaries v3.13a+

§4.4; 159

Indicates that the given field should always have its value expanded when the entry is defined. This overrides `\glsexpandfields`.

**\GlsSetQuote**{*<character>*}  
(makeindex only)

glossaries v4.24+

§1.5; 54

Set `makeindex`'s quote character (used for escaping special characters) to *<character>*.

**\glsSetSuffixF**{*<suffix>*}

glossaries v1.17+

§12.2;  
285

The suffix for two consecutive locations.

**\glsSetSuffixFF**{*<suffix>*}

glossaries v1.17+

§12.2;  
285

The suffix for three or more consecutive locations.

**\glssettoctitle**{*<glossary-type>*}

glossaries

§8.2; 259

Used by `\print(...)``glossary` to set the table of contents title for the given glossary if a title hasn't been supplied with `toctitle` or `title`.

**\glssetwidest** [*<level>*] {*<name>*}

glossary-tree

§13.1.7.2;  
376

Indicates that *<name>* is the widest name for the given hierarchical level.

**\GlsSetWriteIstHook**{*<code>*}

glossaries v4.24+

§3.2; 134

Adds *<code>* to the indexing style file.

**\GlsSetXdyCodePage**{*<codepage>*}  
(xindy & makeglossaries only)

glossaries v1.17+

§14.2;  
400

Sets the `xindy` codepage. This information is written to the `aux` file for `makeglos-`

series to pick up. It has no effect if `xindy` is called explicitly.

**\GlsSetXdyFirstLetterAfterDigits** { *letter* } *modifier:* \*  
 glossaries v1.17+  
 (`xindy` only)

§14.4;  
410

Identifies the first letter group to occur after the number group.

**\GlsSetXdyLanguage** [ *glossary-type* ] { *language* } glossaries v1.17+  
 (`xindy` & `makeglossaries` only)

§14.2;  
399

Sets the `xindy` language for the given glossary. This information is written to the `aux` file for `makeglossaries` to pick up. It has no effect if `xindy` is called explicitly.

**\GlsSetXdyLocationClassOrder** { *location names* } glossaries v1.17+  
 (`xindy` only)

§14.3;  
409

May be used to change the ordering of location class names.

**\GlsSetXdyMinRangeLength** { *value* } glossaries v1.17+  
 (`xindy` only)

§14.3;  
409

Sets the minimum number of consecutive locations to form an implicit range. The value may be “none” to indicate no range formation.

**\GlsSetXdyNumberGroupOrder** { *relative location* } *modifier:* \*  
 glossaries v4.33+  
 (`xindy` only)

§14.4;  
411

Sets the relative location of the number group.

**\GlsSetXdyStyles** { *style name list* } glossaries v1.17+  
 (`xindy` only)

§14.1;  
398

Resets the list of required `xindy` files.

**\glsshortaccessdisplay** { *⟨text⟩* } { *⟨entry-label⟩* }

glossaries–accsupp

§17.3;  
444

Does *⟨text⟩* with the `shortaccess` replacement text (if set).

**\glsshortaccsupp** { *⟨replacement⟩* } { *⟨content⟩* }

glossaries–accsupp v4.45+

§17.2;  
442

Applies *⟨replacement⟩* as the expansion (E) attribute for *⟨content⟩* using `\glsaccessibility` for the `short` field.

**\glsshortplaccsupp** { *⟨replacement⟩* } { *⟨content⟩* }

glossaries–accsupp v4.45+

§17.2;  
442

Applies *⟨replacement⟩* as the expansion (E) attribute for *⟨content⟩* using `\glsaccessibility` for the `shortplural` field.

**\glsshortpluralaccessdisplay** { *⟨text⟩* } { *⟨entry-label⟩* }

glossaries–accsupp

§17.3;  
445

Does *⟨text⟩* with the `shortpluralaccess` replacement text (if set).

**\glsshorttok**

glossaries

§6.2.2;  
220

A token register used by `\newacronym` (and `\newabbreviation`) to store the supplied short form.

**\glsshowaccsupp** { *⟨options⟩* } { *⟨PDF element⟩* } { *⟨value⟩* }

glossaries v4.45+

§2.1; 83

Used by `\glsshowtarget` in outer mode.

**\glsshowtarget** { *⟨target name⟩* }

glossaries v4.32+

§2.1; 82

Used with `debug=showtargets` to show the target.

**\glsshowtargetfont** *initial:* `\ttfamily\footnotesize`  
glossaries v4.45+

§2.1; 83

Used by `\glsshowtargetfonttext` and `\glsshowtargetouter` to set the font.

**\glsshowtargetfonttext** { *text* } glossaries v4.50+

§2.1; 83

Used by `\glsshowtargetinner` to set the font.

**\glsshowtargetinner** { *target name* } glossaries v4.50+

§2.1; 82

Used by `\glsshowtarget` in math mode and inner mode.

**\glsshowtargetouter** { *target name* } glossaries v4.45+

§2.1; 83

Used by `\glsshowtarget` in outer mode.

**\glsshowtargetsymbol** { *target name* } glossaries v4.45+

§2.1; 83

Used by `\glsshowtargetouter` to mark the target.

**\glssortnumberfmt** { *number* } glossaries v3.0+

§2.5; 110

Expands to the given *number* zero-padded to six digits.

**\glssstartrange** [ *options* ] { *entry label list* } glossaries-extra v1.50+

Essentially does `\glsaddeach [ options , format = ( encap ) ] { entry label list }` where *encap* can either be provided by the `format` key in *options*.

**\glsstepentry** { *label* } glossaries v3.0+

§2.3; 95

Increments `glossaryentry` with `\refstepcounter` if `entrycounter=true`.

**\glsstepsubentry** { *label* }

glossaries v3.0+

§2.3; 97

Increments glossarysubentry with `\refstepcounter` if `subentrycounter=true`.

**\glsesubentrycounterfalse**

glossaries v3.0+

§2.3; 98

Sets `\ifglsesubentrycounter` to false.

**\glsesubentrycounterlabel**

glossaries v3.0+

§2.3; 97

Displays the formatted value of the glossarysubentry counter or does nothing if `subentrycounter=false`.

**\glsesubentrycountertrue**

glossaries v3.0+

§2.3; 98

Sets `\ifglsesubentrycounter` to true.

**\glsesubentryitem** { *label* }

glossaries v3.0+

§13.2.1;  
385

Used for level 1 entries in glossary styles to increment and display the sub-entry counter if `subentrycounter=true`.

**\glsesubgroupheading** { *previous level* } { *level* } { *parent-label* } { *group-label* }  
(glossary style command)

glossaries-extra v1.49+

Used to format sub-group headings.

**\GLSsymbol** [ *options* ] { *entry-label* } [ *insert* ]    *modifiers: \* +*    glossaries

§5.1.3;  
181

As `\glsymbol` but converts the link text to all caps.

**\Glsymbol** [*options*] {*entry-label*} [*insert*]      *modifiers:* \* + glossaries

§5.1.3;  
181

As `\glsymbol` but converts the link text to sentence case. Use `\Glossentrysymbol` within custom glossary styles instead of this command.

**\glsymbol** [*options*] {*entry-label*} [*insert*]      *modifiers:* \* + glossaries

§5.1.3;  
181

References the entry identified by *entry-label*. The text produced is obtained from the `symbol` value. The *insert* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. For the first optional argument, see `\glslink` options. Use `\glossentrysymbol` within custom glossary styles instead of this command.

**\glsymbolaccessdisplay** {*text*} {*entry-label*}      *glossaries-accsupp*

§17.3;  
444

Does *text* with the `symbolaccess` replacement text (if set).

**\glsymbolnav**      *glossary-hypernav*

§13.2.2;  
390

Produces a simple navigation set of links for just the symbols and number groups separated by `\glshypernavsep`.

**\GLSsymbolplural** [*options*] {*entry-label*} [*insert*]      *modifiers:* \* +  
*glossaries v1.12+*

As `\glsymbolplural` but converts the link text to all caps.

**\Glsymbolplural** [*options*] {*entry-label*} [*insert*]      *modifiers:* \* +  
*glossaries v1.12+*

As `\glsymbolplural` but converts the link text to sentence case.

**\glsymbolplural** [*options*] {*entry-label*} [*insert*]      *modifiers:* \* +  
*glossaries v1.12+*

As `\glsymbol` but for the `symbolplural` field.

**`\glsymbolpluralaccessdisplay`** { *text* } { *entry-label* }  
 glossaries–accsupp

§17.3;  
444

Does *text* with the `symbolpluralaccess` replacement text (if set).

**`\glsymbolsgroupname`** *initial: Symbols* glossaries  
 (language-sensitive)

§1.5.1;  
Table 1.2

Provided by `glossaries` if it hasn't already been defined. The title associated with the `glsymbols` letter group. Also used as the title for the glossary created with the `symbols` package option.

**`\glstarget`** { *entry-label* } { *text* } *glossaries v1.18+*

§13.2.1;  
386

Used by glossary styles to create a `hypertarget` (if enabled) for the entry (identified by *entry-label*). The *text* is usually `\glossentryname{entry-label}`, but it can be something else.

**`\glstexorpdfstring`** { *TEX* } { *PDF* } *glossaries v4.50+*

§15.1;  
414

If `hyperref` has been loaded, this uses `\texorpdfstring` otherwise it just expands to *TEX*.

**`\GLstext`** [ *options* ] { *entry-label* } [ *insert* ] *modifiers: \* +* glossaries

§5.1.3;  
178

As `\glstext` but converts the link text to all caps.

**`\Glstext`** [ *options* ] { *entry-label* } [ *insert* ] *modifiers: \* +* glossaries

§5.1.3;  
178

As `\glstext` but converts the first character of the link text to sentence case.

**`\glstext`** [ *options* ] { *entry-label* } [ *insert* ] *modifiers: \* +* glossaries

§5.1.3;  
178

References the entry identified by *entry-label*. The text produced is obtained from the `text` value. The *insert* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. If you have defined the entry with `\newacronym`

consider using `\acrshort` for the short form (or `\glsxtrshort` with `glossaries-extra`). For the first optional argument, see `\glslink` options.

**`\glsdisplaytextaccess`**`{\langle text \rangle}{\langle entry-label \rangle}` glossaries-accsupp

§17.3;  
444

Does `\langle text \rangle` with the `textaccess` replacement text (if set).

**`\glsformattext`**`{\langle text \rangle}` glossaries v1.04+

§5.1; 171

Used by the `\gls`-like and `\glsdisplaytext`-like commands to format the link text.

**`\glsdisplaytextup`**`{\langle text \rangle}` glossaries v3.09a+

§6.2.1;  
214

If `\textulc` is defined, this will use that command, otherwise it will use `\textup` to cancel the effect of the small caps font command `\textsc`.

**`\glscharwithtilde`** glossaries v4.10+

§14; 397

Expands to `~` (a literal tilde character).

**`\glssetfalse`** glossaries

§2.2; 90

Sets `\ifglsset` to false.

**`\glssettrue`** glossaries

§2.2; 89

Sets `\ifglsset` to true.

**`\glschildpredesc`** glossary-tree v4.26+

§13.1.7.2;  
373

Space inserted before child descriptions.

**`\glsgroupheaderfmt`**`{\langle text \rangle}` glossary-tree v4.22+

§13.1.7.2;  
373

Used to format the group title for the `treegroup` and `indexgroup` styles.



**`\glstreeindent`**

*initial:* 10pt glossary-tree

§13.1.7.2;  
375

Length register used by the tree style.

**`\glstreeitem`**

glossary-tree v4.26+

§13.1.7.2;  
374

Used to indent the top-level entries for the index styles.

**`\glstreenamebox`**{*<width>*}{*<text>*}

glossary-tree v4.19+

§13.1.7.2;  
377

Creates the box for the name with styles like `alltree`.

**`\glstreenamefmt`**{*<text>*}

glossary-tree v4.08+

§13.1.7.2;  
373

Used to format the name for the tree and index styles.

**`\glstreenavigationfmt`**{*<text>*}

glossary-tree v4.22+

§13.1.7.2;  
373

Used to format the navigation element for styles like `treehypergroup`.

**`\glstreepredesc`**

glossary-tree v4.26+

§13.1.7.2;  
373

Space inserted before top-level descriptions.

**`\GlsTreeSetup`***<key=value list>*

glossary-tree v4.59+

§13.1.7.1;  
327

Set the options for just the `tree*` style.

**`\GlsTreeStarBox`***<text>*

glossary-tree v4.59+

365

Used in the default definition of `\GlsTreeStarNameBox`, `\GlsTreeStarSymbolBox`, and `\GlsTreeStarOuterBox`.

**\GlsTreeStarItemCounterBox** $\langle text \rangle$

glossary-tree v4.59+

365

Encapsulates the top-level counter value.

**\GlsTreeStarNameBox** $\langle text \rangle$

glossary-tree v4.59+

365

Encapsulates the name box.

**\GlsTreeStarOuterBox** $\langle text \rangle$

glossary-tree v4.59+

365

Encapsulates the name+symbol box.

**\GlsTreeStarSubItemCounterBox** $\langle text \rangle$

glossary-tree v4.59+

365

Encapsulates the level 1 counter value.

**\GlsTreeStarSymbolBox** $\langle text \rangle$

glossary-tree v4.59+

365

Encapsulates the symbol box.

**\glstreesubitem**

glossary-tree v4.26+

§13.1.7.2;  
374

Used to indent the level 1 entries for the index styles.

**\glstreesubsubitem**

glossary-tree v4.26+

§13.1.7.2;  
374

Used to indent the level 2 entries for the index styles.

**\GlsTreeUpdateWidestNameAndSymbol** [ $\langle level \rangle$ ] { $\langle entry-label \rangle$ }

glossary-tree v4.59+

366

Updates the current widest name and widest symbol if the combined width of the given entry's name and symbol is wider than the current name+symbol setting.

**\GlsTreeUpdateWidestNameOrSymbol** [*level*] {*entry-label*}

glossary-tree v4.59+

366

Updates the current widest name or widest symbol if the entry's name is wider than the current name width or if the entry's symbol is wider than the current symbol width.

**\glstype** glossaries v4.08+

§5.1.4;  
185

Placeholder command that expands to the entry's glossary type.

**\glsucmarkfalse** glossaries v3.02+

Sets `\ifglsucmark` to false.

**\glsucmarktrue** glossaries v3.02+

Sets `\ifglsucmark` to true.

**\glsunexpandedfieldvalue**{*entry-label*}{*field-label*} glossaries v4.48+

§15.6;  
428

For use in expandable contexts where the field value is required but the contents should not be expanded. The field should be identified by its internal field label. Expands to nothing with no error or warning if the entry or field aren't defined.

**\glsunset**{*entry-label*} glossaries

§7; 237

Globally unsets the first use flag.

**\glsunsetall** [*glossary labels list*] glossaries

§7; 237

Globally unsets the first use flag for all entries in whose labels are listed in the *glossary labels list* comma-separated list. If the optional argument is omitted, the list of all non-ignored glossaries is assumed.

**\glsupacrpluralsuffix**

glossaries v4.12+

§6.2.1;  
213

Suffix used to obtain the default `shortplural` value with the base small caps acronym styles.

**\glsupdatewidest** [*level*] {*name*}

glossaries-extra-stylemods v1.23+

Similar to `\glssetwidest` but only if *name* is wider than the current widest value for the given hierarchical level.

**\glsuppercase** {*text*}

glossaries v4.50+

§15.2;  
414

Converts *text* to uppercase using the modern L<sup>A</sup>T<sub>E</sub>X3 case-changing command, which is expandable.

**\GlsUseAcrEntryDispStyle** {*style-name*}

glossaries v4.02+

§6.2.2;  
220

Implements the entry format part of the given acronym style (the code supplied in the *format def*) argument of `\newacronymstyle`).

**\GlsUseAcrStyleDefs** {*style-name*}

glossaries v4.02+

§6.2.2;  
221

Implements the style definitions part of the given acronym style (the code supplied in the *display defs*) argument of `\newacronymstyle`).

**\GLSuseri** [*options*] {*entry-label*} [*insert*]

glossaries v2.04+

*modifiers:* \* +

§5.1.3;  
182

As `\glsuseri` but converts the link text to all caps.

**\Glsuseri** [*options*] {*entry-label*} [*insert*]

glossaries v2.04+

*modifiers:* \* +

§5.1.3;  
182

As `\glsuseri` but converts the link text to sentence case.

**\glsuseri** [*options*] {*entry-label*} [*insert*] *modifiers:* \* +  
 glossaries v2.04+

§5.1.3;  
181

References the entry identified by *entry-label*. The text produced is obtained from the `user1` value. The *insert* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. For the first optional argument, see `\glslink` options.

**\glsuseriaccessdisplay** {*text*} {*entry-label*} glossaries–accsupp v4.45+

§17.3;  
445

Does *text* with the `user1access` replacement text (if set).

**\GLSuserii** [*options*] {*entry-label*} [*insert*] *modifiers:* \* +  
 glossaries v2.04+

§5.1.3;  
182

As `\glsuserii` but converts the link text to all caps.

**\Glsuserii** [*options*] {*entry-label*} [*insert*] *modifiers:* \* +  
 glossaries v2.04+

§5.1.3;  
182

As `\glsuserii` but converts the link text to sentence case.

**\glsuseriii** [*options*] {*entry-label*} [*insert*] *modifiers:* \* +  
 glossaries v2.04+

§5.1.3;  
182

References the entry identified by *entry-label*. The text produced is obtained from the `user2` value. The *insert* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. For the first optional argument, see `\glslink` options.

**\glsuseriiiaccessdisplay** {*text*} {*entry-label*} glossaries–accsupp v4.45+

§17.3;  
445

Does *text* with the `user2access` replacement text (if set).

**\GLSuseriii** [*options*] {*entry-label*} [*insert*] *modifiers:* \* +  
 glossaries v2.04+

§5.1.3;  
182

As `\glsuseriii` but converts the link text to all caps.

**\Glsuseriii** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*] *modifiers:* \* +  
glossaries v2.04+

§5.1.3;  
182

As `\glsuseriii` but converts the link text to sentence case.

**\glsuseriii** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*] *modifiers:* \* +  
glossaries v2.04+

§5.1.3;  
182

References the entry identified by *⟨entry-label⟩*. The text produced is obtained from the `user3` value. The *⟨insert⟩* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. For the first optional argument, see `\glslink` options.

**\glsuseriiiaccessdisplay** {*⟨text⟩*} {*⟨entry-label⟩*} glossaries–accsupp v4.45+

§17.3;  
445

Does *⟨text⟩* with the `user3access` replacement text (if set).

**\GLSuseriv** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*] *modifiers:* \* +  
glossaries v2.04+

§5.1.3;  
183

As `\glsuseriv` but converts the link text to all caps.

**\Glsuseriv** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*] *modifiers:* \* +  
glossaries v2.04+

§5.1.3;  
183

As `\glsuseriv` but converts the link text to sentence case.

**\glsuseriv** [*⟨options⟩*] {*⟨entry-label⟩*} [*⟨insert⟩*] *modifiers:* \* +  
glossaries v2.04+

§5.1.3;  
182

References the entry identified by *⟨entry-label⟩*. The text produced is obtained from the `user4` value. The *⟨insert⟩* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. For the first optional argument, see `\glslink` options.

**\glsuserivaccessdisplay** {*⟨text⟩*} {*⟨entry-label⟩*} glossaries–accsupp v4.45+

§17.3;  
445

Does *⟨text⟩* with the `user4access` replacement text (if set).

**\GLSuserv** [*options*] {*entry-label*} [*insert*] *modifiers:* \* +  
 glossaries v2.04+

§5.1.3;  
183

As `\glsuserv` but converts the link text to all caps.

**\Glsuserv** [*options*] {*entry-label*} [*insert*] *modifiers:* \* +  
 glossaries v2.04+

§5.1.3;  
183

As `\glsuserv` but converts the link text to sentence case.

**\glsuserv** [*options*] {*entry-label*} [*insert*] *modifiers:* \* +  
 glossaries v2.04+

§5.1.3;  
183

References the entry identified by *entry-label*. The text produced is obtained from the `user5` value. The *insert* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. For the first optional argument, see `\glslink` options.

**\glsuservaccessdisplay** {*text*} {*entry-label*} glossaries-accsupp v4.45+

§17.3;  
445

Does *text* with the `user5access` replacement text (if set).

**\GLSuservi** [*options*] {*entry-label*} [*insert*] *modifiers:* \* +  
 glossaries v2.04+

§5.1.3;  
183

As `\glsuservi` but converts the link text to all caps.

**\Glsuservi** [*options*] {*entry-label*} [*insert*] *modifiers:* \* +  
 glossaries v2.04+

§5.1.3;  
183

As `\glsuservi` but converts the link text to sentence case.

**\glsuservi** [*options*] {*entry-label*} [*insert*] *modifiers:* \* +  
 glossaries v2.04+

§5.1.3;  
183

References the entry identified by *entry-label*. The text produced is obtained from the `user6`

value. The *<insert>* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. For the first optional argument, see `\glslink` options.

**`\glsuserviaccessdisplay`** { *<text>* } { *<entry-label>* } glossaries-accsupp v4.45+

§17.3;  
445

Does *<text>* with the `user6access` replacement text (if set).

**`\glswrallowprimitivemodsfalse`**

§2.4; 104

Sets `\ifglswrallowprimitivemods` to false.

**`\glswrallowprimitivemodstrue`**

§2.4; 104

Sets `\ifglswrallowprimitivemods` to true.

**`\glswrglossdisableanchorcmds`** glossaries v4.50+

§12.1;  
283

Hook used to locally disable problematic commands whilst constructing the anchor for `\gls-hypernumber`.

**`\glswrglossdisablelocationcmds`** glossaries v4.50+

§12.3;  
288

Hook used to locally disable problematic commands whilst writing the location to the indexing file with Options 2 and 3.

**`\glswrglosslocationtarget`** { *<location>* } glossaries v4.50+

§12.1;  
283

Must be expandable. May be used to alter the location suffix whilst constructing the anchor for `\glshypernumber`.

**`\glswrglosslocationtextfmt`** { *<location>* } glossaries v4.50+

§12.1;  
282

Used to encapsulate the location in the hyperlink text for `\glshypernumber`.



**\glswrite**

§3.2; 134

The write register used to create the indexing style file.

**\glswritedefhook**

glossaries v3.10a

Hook used when writing entries to the `glsdefs` file after all the  $\langle key \rangle = \langle value \rangle$  information has been written and before the end brace that closes the final argument of `\glsdefs@newdocentry`.

**\glswriteentry**  $\{ \langle label \rangle \} \{ \langle indexing code \rangle \}$ 

glossaries v4.16+

§2.4; 105

Does  $\langle indexing code \rangle$  unless `indexonlyfirst=true` and the entry identified by  $\langle label \rangle$  has been marked as used.

**\glsX** $\langle counter \rangle \mathbf{X} \langle format \rangle \{ \langle H-prefix \rangle \} \{ \langle location \rangle \}$ 

(xindy only)

§14.3;  
401

Used with `xindy` for location formats.

## Glsxtr

**\glsxtr@makeglossaries**  $\{ \langle label-list \rangle \}$ 

glossaries-extra v1.09+

§1.7.1; 78

This command is written to the `aux` file for the benefit of `makeglossaries` and `makeglossaries-lite`.

**\glsxtr@record**  $\{ \langle label \rangle \} \{ \langle h-prefix \rangle \} \{ \langle counter \rangle \} \{ \langle format \rangle \} \{ \langle loc \rangle \}$ 

glossaries-extra v1.08+

§1.7.3; 79

This command is written to the `aux` file to provide the indexing information for `bib2gls`.

**\glsxtr@record@nameref**  $\{ \langle label \rangle \} \{ \langle href prefix \rangle \} \{ \langle counter \rangle \} \{ \langle format \rangle \} \{ \langle location \rangle \} \{ \langle title \rangle \} \{ \langle href anchor \rangle \} \{ \langle href value \rangle \}$   
glossaries-extra v1.37+

§1.7.3; 80

This command is written to the `aux` file to provide the indexing information for `bib2gls` when the `record=nameref` option is used.

**`\glsxtr@recordsee`** { *label* } { *xr list* } glossaries-extra v1.14+

§1.7.3; 80

This command is written to the `aux` file to provide the `\glssee` information for `bib2gls`.

**`\glsxtr@resource`** { *options* } { *basename* } glossaries-extra v1.08+

§1.7.3; 79

This command is written to the `aux` file to provide the resource options for `bib2gls`.

**`\glsxtr@texencoding`** { *encoding* } glossaries-extra v1.11+

This command is written to the `aux` file to provide the file encoding information for `bib2gls`.

**`\glsxtrabbrvfootnote`** { *entry-label* } { *text* } glossaries-extra v1.07+

Command that produces the footnote for the footnote abbreviation styles, such as `footnote` and `postfootnote`.

**`\glsxtrabbrvtype`** *initial:* `\glsdefaulttype` glossaries-extra

Expands to the label of the default `abbreviation` glossary. The `abbreviations` package option will redefine this to `abbreviations`.

**`\glsxtrbookindexmarkentry`** { *entry-label* } glossary-bookindex v1.21+

Used by the `bookindex` style to mark an entry in the `aux` file (for example, to add the first and last entry in the page to the page header or footer on the next `LATEX` run).

**`\glsxtrbookindexname`** { *entry-label* } glossary-bookindex v1.21+

Used by the `bookindex` style to display a top-level entry's name.

**`\glsxtr`** *category* **`accsupp`** { *replacement* } { *content* }

If defined, used by `\glsfieldaccsupp` for the accessibility support for the category identified by *category*.

**\glsxtr** $\langle category \rangle \langle field \rangle \text{accsupp} \{ \langle replacement \rangle \} \{ \langle content \rangle \}$

If defined, used by `\glsfieldaccsupp` for the accessibility support for the category identified by  $\langle category \rangle$  and the internal field label given by  $\langle field \rangle$ .

**\glsxtrcopytoglossary**  $\{ \langle entry-label \rangle \} \{ \langle glossary-type \rangle \}$  *modifier:* \*  
glossaries-extra v1.12+

Copies the entry to the internal glossary list for the given glossary. The starred version performs a global change. The unstarred version can be localised. Only for use with the “unsrt” family of commands.

**\glsxtr** $\langle counter \rangle \text{locfmt} \{ \langle location \rangle \} \{ \langle title \rangle \}$

If defined, used with `record=name` to format locations associated with  $\langle counter \rangle$ .

**\glsxtrdopostpunc**  $\{ \langle code \rangle \} \langle token \rangle$  glossaries-extra v1.49+

If  $\langle token \rangle$  is a recognised punctuation character this does the punctuation character and then  $\langle code \rangle$ , otherwise it does  $\langle code \rangle$  followed by  $\langle token \rangle$ .

**\glsxtrfieldforlistloop**  $\{ \langle entry-label \rangle \} \{ \langle field \rangle \} \{ \langle handler-cs \rangle \}$   
glossaries-extra v1.12+

Iterates over the given field’s value using etoolbox’s `\forlistcsloop`.

**\glsxtrfieldformatlist**  $\{ \langle entry-label \rangle \} \{ \langle field-label \rangle \}$   
glossaries-extra v1.42+

Formats the value of the given field, which should be an etoolbox internal list, using the same list handler macro as datatool’s `\DTLformatlist`.

**\glsxtrfmt**  $[ \langle options \rangle ] \{ \langle entry-label \rangle \} \{ \langle text \rangle \}$  glossaries-extra v1.12+

Behaves like `\glslink`  $[ \langle options \rangle ] \{ \langle entry-label \rangle \} \{ \langle csname \rangle \} \{ \langle text \rangle \} \langle insert \rangle$  where the control sequence name  $\langle csname \rangle$  is obtained from a designated field.

**\GlsXtrFmtField** *initial:* `useri` glossaries-extra v1.12+

Expands to the name of the used by `\glsxtrfmt`.

**\glsxtrfootnotedescname** glossaries-extra v1.42+

Expands to the name value for styles like `short-footnote-desc`.

**\glsxtrfootnotedescsort** glossaries-extra v1.42+

Expands to the sort value for footnote styles like `short-footnote-desc`.

**\glsxtrforcsvfield** { *<entry-label>* } { *<field-label>* } { *<handler cs>* }  
*modifier:* \* glossaries-extra v1.24+

Iterates over the comma-separated list stored in the given field (identified by its internal label) for the entry identified by *<entry-label>* and performs *<handler cs>* { *<element>* } for each element of the list.

**\GLSxtrfull** [ *<options>* ] { *<entry-label>* } [ *<insert>* ] *modifiers:* \* +  
glossaries-extra

As `\glsxtrfull` but converts the link text to all caps.

**\Glsxtrfull** [ *<options>* ] { *<entry-label>* } [ *<insert>* ] *modifiers:* \* +  
glossaries-extra

As `\glsxtrfull` but converts the link text to sentence case.

**\glsxtrfull** [ *<options>* ] { *<entry-label>* } [ *<insert>* ] *modifiers:* \* +  
glossaries-extra

References the `abbreviation` identified by *<entry-label>*. The text produced is obtained from the `short` and `long` values, formatted according to the `abbreviation` style associated with the entry's category. The *<insert>* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. The format produced by this command

may not match the format produced by the first use of `\gls{<entry-label>}`, depending on the abbreviation style.

**`\GLSxtrfullpl`** [*<options>*] {<entry-label>} [*<insert>*] *modifiers:* \* +  
glossaries-extra

As `\glsxtrfullpl` but converts the link text to all caps.

**`\Glsxtrfullpl`** [*<options>*] {<entry-label>} [*<insert>*] *modifiers:* \* +  
glossaries-extra

As `\glsxtrfullpl` but converts the link text to sentence case.

**`\glsxtrfullpl`** [*<options>*] {<entry-label>} [*<insert>*] *modifiers:* \* +  
glossaries-extra

As `\glsxtrfull` but for the plural form.

**`\glsxtrfullsep`**{<entry-label>} glossaries-extra

Separator used by the parenthetical inline full and also for some display full forms.

**`\glsxtrGeneralInitRules`** glossaries-extra-bib2gls v1.49+

A shortcut that expands to the ignorable rules, combining diacritic rules, hyphen rules, general punctuation rules, digit rules, and fraction rules.

**`\glsxtrGeneralLatinAtoGrules`** glossaries-extra-bib2gls v1.49+

Expands to the A–G subset of General Latin I sort rules.

**`\glsxtrGeneralLatinNtoZrules`** glossaries-extra-bib2gls v1.49+

Expands to the N–Z subset of General Latin I sort rules.

**\glxtrgetgrouptitle** { *group-label* } { *cs* } glossaries-extra v1.14+

Obtains the title corresponding to the group identified by *group-label* and stores the result in the control sequence *cs*.

**\Glsxtrglossentry** { *entry-label* } glossaries-extra v1.54+

As `\glxtrglossentry` but applies sentence case.

**\glxtrglossentry** { *entry-label* } glossaries-extra v1.21+

Used for standalone entries to display the name with `\glossentryname`, with appropriate hooks.

**\glxtrhiername** { *entry-label* } glossaries-extra v1.37+

Displays the entry's hierarchical name.

**\GlsXtrIfFieldEqNum** { *field-label* } { *entry-label* } { *number* } { *true* }  
 { *false* } *modifier*: \* glossaries-extra v1.31+

Compares the numeric value stored in the given field with *number*.

**\GlsXtrIfFieldEqStr** { *field-label* } { *entry-label* } { *value* } { *true* }  
 { *false* } *modifier*: \* glossaries-extra v1.21+

Tests if the entry given by *entry-label* has the field identified by its internal label *field-label* set to *value*.

**\GlsXtrIfFieldNonZero** { *field-label* } { *entry-label* } { *true* } { *false* }  
*modifier*: \* glossaries-extra v1.31+

Tests if the numeric value stored in the given field is non-zero.

**\GlsXtrIfFieldUndef** { *<field-label>* } { *<entry-label>* } { *<true>* } { *<false>* }  
 glossaries-extra v1.23+

Expandable command that tests if the given field (identified by its internal label) is undefined for the entry given by *<entry-label>*. Internally uses etoolbox's `\ifcsundef` command.

**\glxtrifhasfield** { *<field-label>* } { *<entry-label>* } { *<true>* } { *<false>* }  
*modifier:* \* glossaries-extra v1.19+

Tests if the field identified by its internal label *<field-label>* for the entry given by *<entry-label>* is defined and is not empty. This is like `\ifglshasfield` but doesn't produce a warning if the entry or field doesn't exist. This sets `\glscurrentfieldvalue` to the field value and does *<true>* if its defined and not empty, otherwise it does *<false>*. The unstarred version adds implicit grouping to make nesting easier. The starred version doesn't (to make assignments easier).

**\GlsXtrIfHasNonZeroChildCount** { *<entry-label>* } { *<true>* } { *<false>* }  
*modifier:* \* glossaries-extra-bib2gls v1.47+

Tests if the value in the `childcount` field is non-zero (using `\GlsXtrIfFieldNonZero`). This requires the `save-child-count` resource option.

**\GlsXtrIfUnusedOrUndefined** { *<entry-label>* } { *<true>* } { *<false>* }  
 glossaries-extra v1.34+

§15.4;  
420

Does *<true>* if the entry hasn't been defined or hasn't been marked as used, otherwise does *<true>*. Note that this command will generate an error or warning (according to `undefaction`) if the entry hasn't been defined, but will still do *<true>*.

**\glxtrifwasfirstuse** { *<true>* } { *<false>* }  
 glossaries-extra

Initialised by the `\gls-like` and `\glstext-like` commands, this expands to *<true>* if the calling command was considered the first use, otherwise it expands to *<false>*. This command may be used within the post-link hook (where it's too late to test the first use flag with `\ifgls-used`).

**`\GlsXtrIfXpFieldEqXpStr`** { *⟨field-label⟩* } { *⟨entry-label⟩* } { *⟨value⟩* }  
 { *⟨true⟩* } { *⟨false⟩* } modifier: \* glossaries-extra v1.31+

Like `\GlsXtrIfFieldEqStr` but first (protected) expands both the field value and the supplied *⟨value⟩*.

**`\glstrIgnorableRules`** glossaries-extra-bib2gls v1.49+

A shortcut that expands to the control rules, space rules and non-printable rules.

**`\Glsxtrinlinefullformat`** { *⟨entry-label⟩* } { *⟨insert⟩* }

Used by `\Glsxtrfull` to display the sentence case inline full form (defined by the abbreviation style).

**`\glstrinlinefullformat`** { *⟨entry-label⟩* } { *⟨insert⟩* } glossaries-extra

Used by `\glstrfull` to display the inline full form (defined by the abbreviation style).

**`\Glsxtrinlinefullplformat`** { *⟨entry-label⟩* } { *⟨insert⟩* } glossaries-extra

Used by `\Glsxtrfullpl` to display the plural sentence case inline full form (defined by the abbreviation style).

**`\glstrinlinefullplformat`** { *⟨entry-label⟩* } { *⟨insert⟩* } glossaries-extra

Used by `\glstrfullpl` to display the plural inline full form (defined by the abbreviation style).

**`\GlsXtrLoadResources`** [ *⟨options⟩* ] glossaries-extra v1.11+

For use with `bib2gls`, this both sets up the resource options (which `bib2gls` can detect from the `aux` file) and inputs the `glstex` file created by `bib2gls`.



**\glsxtrlocalsetgrouptitle** { *⟨group-label⟩* } { *⟨group-title⟩* }  
 glossaries-extra v1.24+

Locally assigns the given title *⟨group-title⟩* to the group identified by *⟨group-label⟩*.

**\GLSxtrlong** [ *⟨options⟩* ] { *⟨entry-label⟩* } [ *⟨insert⟩* ] *modifiers: \* +*  
 glossaries-extra

As `\glsxtrlong` but converts the link text to all caps.

**\Glsxtrlong** [ *⟨options⟩* ] { *⟨entry-label⟩* } [ *⟨insert⟩* ] *modifiers: \* +*  
 glossaries-extra

As `\glsxtrlong` but converts the link text to sentence case.

**\glsxtrlong** [ *⟨options⟩* ] { *⟨entry-label⟩* } [ *⟨insert⟩* ] *modifiers: \* +*  
 glossaries-extra

References the **abbreviation** identified by *⟨entry-label⟩*. The text produced is obtained from the `long` value, formatted according to the **abbreviation** style associated with the entry's category. The *⟨insert⟩* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag.

**\GLSxtrlongpl** [ *⟨options⟩* ] { *⟨entry-label⟩* } [ *⟨insert⟩* ] *modifiers: \* +*  
 glossaries-extra

As `\glsxtrlongpl` but converts the link text to all caps.

**\Glsxtrlongpl** [ *⟨options⟩* ] { *⟨entry-label⟩* } [ *⟨insert⟩* ] *modifiers: \* +*  
 glossaries-extra

As `\glsxtrlongpl` but converts the link text to sentence case.

**\glsxtrlongpl** [ *⟨options⟩* ] { *⟨entry-label⟩* } [ *⟨insert⟩* ] *modifiers: \* +*  
 glossaries-extra

As `\glsxtrlong` but the text produced is obtained from the `longplural` value.

**\glsxtrnewgls** [*<default-options>*] {*<prefix>*} {*<cs>*} glossaries-extra v1.21+

Defines the command *<cs>*[*<options>*]{*<entry-label>*} to behave like `\gls` [*<default-options>*, *<options>*] {*<prefix>*}{*<entry-label>*}.

**\glsxtrnewglslike** [*<default-options>*] {*<prefix>*} {*<\gls-like cs>*} {*<\glspl-like cs>*} {*<\Gls-like cs>*} {*<\Glspl-like cs>*} glossaries-extra v1.21+

Like `\glsxtrnewgls` but provides plural and sentence case commands as well.

**\glsxtrnewnumber** [*<key=value list>*] {*<entry-label>*} {*<num>*} glossaries-extra (requires `\usepackage[numbers]{glossaries-extra}`)

Defines a new glossary entry with the given label, `type` set to `numbers`, the `category` set to `number`, the `name` set to *<num>* and the `sort` set to *<entry-label>*. The optional argument is a comma-separated list of glossary entry keys, which can be used to override the defaults.

**\glsxtrnewsymbol** [*<key=value list>*] {*<entry-label>*} {*<sym>*} glossaries-extra (requires `\usepackage[symbols]{glossaries-extra}`)

Defines a new glossary entry with the given label, `type` set to `symbols`, the `category` set to `symbol`, the `name` set to *<sym>* and the `sort` set to *<entry-label>*. The optional argument is a comma-separated list of glossary entry keys, which can be used to override the defaults.

**\glsxtrnopostpunc** glossaries-extra v1.22+

When placed at the end of the `description`, this switches off the post-description punctuation (inserted automatically via options such as `postdot`) but doesn't suppress the post-description hook. Does nothing outside of the glossary.

**\glsxtrp** {*<field>*} {*<entry-label>*} glossaries-extra v1.07+

For use in headings and captions (instead of the `\gls`-like or `\glsstext`-like commands). This command is designed to expand to the field value if used in a PDF bookmark and can also expand to a more appropriate command if it ends up in the page header. Note that there's no option argument.

**`\glsxtrparen`** { *⟨text⟩* }

glossaries-extra v1.17+

Used to encapsulate *⟨text⟩* in parentheses.

**`\glsxtrpostlinkAddSymbolOnFirstUse`**

glossaries-extra

May be used within a post-link hook to display the symbol in parentheses on first use.

**`\glsxtrpostlinkhook`**

glossaries-extra v1.0+

An additional post-link hook that supports categories.

**`\GlsXtrResetLocalBuffer`**

glossaries-extra v1.49+

If local unset for repeat entries has been enabled with `\GlsXtrUnsetBufferEnableRepeatLocal`, this will locally reset all entries that are in the buffer that hadn't been marked as used before the function was enabled.

**`\GlsXtrSetAltModifier`** { *⟨token⟩* } { *⟨options⟩* }

Sets *⟨token⟩* as a modifier for the `\gls`-like and `\glsText`-like commands that will automatically implement the given options.

**`\GlsXtrSetField`** { *⟨entry-label⟩* } { *⟨field-label⟩* } { *⟨value⟩* } glossaries-extra v1.12+

Assigns *⟨value⟩* to the field identified by its internal label *⟨field-label⟩* for the entry identified by *⟨entry-label⟩*. An error (or warning with `undefaction=warn`) occurs if the entry hasn't been defined.

**`\glsxtrsetgrouptitle`** { *⟨group-label⟩* } { *⟨group-title⟩* } glossaries-extra v1.14+

Globally assigns the given title *⟨group-title⟩* to the group identified by *⟨group-label⟩*.

**\GlsXtrSetPlusModifier** {*options*}

glossaries-extra v1.49+

Overrides the options that should be implemented by the plus (+) modifier for `\gls`-like and `\glsText`-like commands.

**\GlsXtrSetStarModifier** {*options*}

glossaries-extra v1.49+

Overrides the options that should be implemented by the star (\*) modifier for `\gls`-like and `\glsText`-like commands.

**\GLSxtrshort** [*options*] {*entry-label*} [*insert*]

modifiers: \* +

glossaries-extra

As `\glsxtrshort` but converts the link text to all caps.

**\Glsxtrshort** [*options*] {*entry-label*} [*insert*]

modifiers: \* +

glossaries-extra

As `\glsxtrshort` but converts the link text to sentence case.

**\glsxtrshort** [*options*] {*entry-label*} [*insert*]

modifiers: \* +

glossaries-extra

References the `abbreviation` identified by *entry-label*. The text produced is obtained from the `short` value, formatted according to the `abbreviation` style associated with the entry's category. The *insert* argument will be inserted at the end of the link text. This command does not alter or depend on the first use flag. For the first optional argument, see `\glslink` options.

**\Glsxtrshortpl** [*options*] {*entry-label*} [*insert*]

modifiers: \* +

glossaries-extra

As `\glsxtrshortpl` but converts the link text to sentence case.

**`\glsxtrshortpl`** [*options*] {*entry-label*} [*insert*] modifiers: \* +  
 glossaries-extra

As `\glsxtrshort` but the text produced is obtained from the `shortplural` value.

**`\GlsXtrStartUnsetBuffering`** modifier: \* glossaries-extra v1.30+

Enables unset buffering. The starred version doesn't check for duplicates.

**`\GlsXtrStopUnsetBuffering`** modifier: \* glossaries-extra v1.30+

Stops buffering. The starred version performs a global unset.

**`\GlsXtrUnsetBufferEnableRepeatLocal`** glossaries-extra v1.49+

Allows repeat entries within the buffering code to be locally unset before the link text.

**`\GlsXtrUseAbbrStyleFmts`** {*style-name*} glossaries-extra

Implements the *display definitions* code for the given abbreviation style.

**`\GlsXtrUseAbbrStyleSetup`**{*style-name*} glossaries-extra

Implements the *setup* code for the given abbreviation style.

**`\glsxtrusefield`**{*entry-label*} {*field-label*} glossaries-extra v1.12+

Expands to the value of the given field (identified by its internal label *field-label*) for the entry given by *entry-label*. Expands to `\relax` if the entry or field are undefined.

## H

**`\hyperbf`**{*location(s)*}

glossaries

Table 12.1

If hyperlinks are supported this does `\textbf{\glshypernumber{location(s)}}` otherwise it just does `\textbf{location(s)}`.

**`\hyperemph`**{*location(s)*}

glossaries

Table 12.1

If hyperlinks are supported this does `\emph{\glshypernumber{location(s)}}` otherwise it just does `\emph{location(s)}`.

**`\hyperit`**{*location(s)*}

glossaries

Table 12.1

If hyperlinks are supported this does `\textit{\glshypernumber{location(s)}}` otherwise it just does `\textit{location(s)}`.

**`\hypermd`**{*location(s)*}

glossaries

Table 12.1

If hyperlinks are supported this does `\textmd{\glshypernumber{location(s)}}` otherwise it just does `\textmd{location(s)}`.

**`\hyperrm`**{*location(s)*}

glossaries

Table 12.1

If hyperlinks are supported this does `\textrm{\glshypernumber{location(s)}}` otherwise it just does `\textrm{location(s)}`.

**`\hypersc`**{*location(s)*}

glossaries

Table 12.1

If hyperlinks are supported this does `\textsc{\glshypernumber{location(s)}}` otherwise it just does `\textsc{location(s)}`.

**`\hypersf`**{*location(s)*}

glossaries

Table 12.1

If hyperlinks are supported this does `\textsf{\glshypernumber{location(s)}}` otherwise it just does `\textsf{location(s)}`.

**\hypersl** {*location(s)*}

glossaries

Table 12.1

If hyperlinks are supported this does `\textsl{\glsnumber}{location(s)}` otherwise it just does `\textsl{location(s)}`.

**\hypertt** {*location(s)*}

glossaries

Table 12.1

If hyperlinks are supported this does `\texttt{\glsnumber}{location(s)}` otherwise it just does `\texttt{location(s)}`.

**\hyperup** {*location(s)*}

glossaries

Table 12.1

If hyperlinks are supported this does `\textup{\glsnumber}{location(s)}` otherwise it just does `\textup{location(s)}`.

## I

**\ifglossaryexists** {*glossary-type*} {*true*} {*false*}

glossaries

modifier: \*

§15.4;  
418

If the glossary given by *glossary-type* exists, this does *true*, otherwise it does *false*. The unstarred form treats ignored glossaries as non-existent. The starred form (v4.46+) will do *true* if *glossary-type* matches an ignored glossary.

**\ifglsdescsuppressed** {*entry-label*} {*true*} {*false*}

glossaries v3.08a+

§15.4;  
421

Does *true* if the entry's `description` field is just `\nopostdesc` otherwise does *false*.

**\ifglsentrycounter** *true*\else *false*\fi

glossaries v3.0+

initial: \iffalse

§2.3; 95

Conditional corresponding to the `entrycounter` option.

```
\ifglsentryexists {<entry-label>} {<true>} {<false>}
```

§15.4;  
419

Does *<true>* if the entry given by *<entry-label>* exists, otherwise does *<false>*.

```
\ifglsfieldcseq {<entry-label>} {<field-label>} {<cs-name>} {<true>}  
{<false>} glossaries v4.16+
```

§15.4;  
426

Tests if the value of the given field is equal to the replacement text of the command given by the control sequence name *<cs-name>* using etoolbox's `\ifcsstrequal`. Triggers an error if the given field (identified by its internal field label) hasn't been defined. Uses `\glsdoifexists`.

```
\ifglsfielddefeq {<entry-label>} {<field-label>} {<cs>} {<true>} {<false>}  
glossaries v4.16+
```

§15.4;  
425

Tests if the value of the given field is equal to the replacement text of the given command *<cs>* using etoolbox's `\ifdefstrequal`. Triggers an error if the given field (identified by its internal field label) hasn't been defined. Uses `\glsdoifexists`.

```
\ifglsfieldeq {<entry-label>} {<field-label>} {<string>} {<true>} {<false>}  
glossaries v4.16+
```

§15.4;  
423

Tests if the value of the given field is equal to the given string using etoolbox's `\ifcsstring`. Triggers an error if the given field (identified by its internal field label) hasn't been defined. Uses `\glsdoifexists`.

```
\ifglsfieldvoid {<field-label>} {<entry-label>} {<true>} {<false>}  
glossaries v4.50+
```

§15.4;  
422

An expandable test to determine if the entry is undefined or the field is undefined or empty. The *<field-label>* must be the field's internal label. Internally uses etoolbox's `\ifcsvoid` command.

```
\ifglschildren {<entry-label>} {<true>} {<false>} glossaries v3.02+
```

§15.4;  
420

Does *<true>* if the given entry has child entries otherwise does *<false>*. Note that this has to iterate over the set of defined entries for the entry's glossary to find one that has the entry identified in



its `parent` field. A more efficient approach can be achieved with `bib2gls` and the `save-child-count` resource option.

**`\ifglshasdesc`** { `<entry-label>` } { `<true>` } { `<false>` } glossaries v3.08a+

§15.4;  
421

Does `<true>` if the entry's `description` field is set otherwise does `<false>`.

**`\ifglshasfield`** { `<field>` } { `<entry-label>` } { `<true>` } { `<false>` } glossaries v4.03+  
(robust)

§15.4;  
422

If the field identified by either its key or its internal field label `<field>` for the entry identified by `<entry-label>` is set and non-empty, this sets `\glscurrentfieldvalue` to the field value and does `<true>` otherwise it does `<false>`.

**`\ifglshaslong`** { `<entry-label>` } { `<true>` } { `<false>` } glossaries v3.11a+

§15.4;  
421

Does `<true>` if the entry's `long` field is set otherwise does `<false>`.

**`\ifglshasparent`** { `<entry-label>` } { `<true>` } { `<false>` } glossaries v3.02+

§15.4;  
421

Does `<true>` if the entry's `parent` field is set otherwise does `<false>`.

**`\ifglshasprefix`** { `<entry-label>` } { `<true>` } { `<false>` } glossaries-prefix v4.45+

§16; 434

Expands to `<true>` if the `prefix` field is non-empty.

**`\ifglshasprefixfirst`** { `<entry-label>` } { `<true>` } { `<false>` } glossaries-prefix v4.45+

§16; 434

Expands to `<true>` if the `prefixfirst` field is non-empty.

**`\ifglshasprefixfirstplural`** { `<entry-label>` } { `<true>` } { `<false>` } glossaries-prefix v4.45+

§16; 434

Expands to `<true>` if the `prefixfirstplural` field is non-empty.

**\ifglshasprefixplural** {<entry-label>} {<true>} {<false>}  
glossaries–prefix v4.45+

§16; 434

Expands to <true> if the `prefixplural` field is non-empty.

**\ifglshasshort** {<entry-label>} {<true>} {<false>} glossaries v3.11a+

§15.4;  
421

Does <true> if the entry's `short` field is set otherwise does <false>.

**\ifglshassymbol** {<entry-label>} {<true>} {<false>} glossaries v3.08a+

§15.4;  
421

Does <true> if the entry's `symbol` field is set otherwise does <false>.

**\ifglshyperfirst** <true>\else <false>\fi *initial:* \iftrue  
glossaries

Conditional corresponding to the `hyperfirst` option.

**\ifglindexonlyfirst** <true>\else <false>\fi *initial:* \iffalse  
glossaries v3.02+

§2.4; 104

Conditional corresponding to the `indexonlyfirst` option.

**\ifglnogroupskip** <true>\else <false>\fi *initial:* \iffalse  
glossaries v3.03+

§2.3; 102

Conditional set by the `nogroupskip` option.

**\ifglresetcurrcount** <true>\else <false>\fi *initial:* \iffalse  
glossaries v4.50+

§7.1; 242

Conditional that determines whether or not the reset commands should reset the entry count stored in `currcount` to zero.

**\ifglssubentrycounter** *<true>*\else *<false>*\fi *initial:* \iffalse  
glossaries v3.0+

§2.3; 98

Conditional corresponding to the `subentrycounter` option.

**\ifglstoc** *<true>*\else *<false>*\fi *initial:* \iffalse glossaries

§2.2; 90

Conditional corresponding to the `toc` option.

**\ifglsucmark** *<true>*\else *<false>*\fi *initial:* varies glossaries v3.02+

§2.2; 91

Conditional corresponding to the `ucmark` option.

**\ifglused**{*<entry-label>*}{*<true>*}{*<false>*} glossaries

§15.4;  
419

Does *<true>* if the entry has been marked as used, does *<false>* if the entry is marked as unused, and does neither if the entry hasn't been defined (but will generate an error).

**\ifglswrallowprimitivemods** *<true>*\else *<false>*\fi  
*initial:* \iffalse glossaries v4.22+

§2.4; 104

If `esclocations=true` and this conditional is true, then some primitives will be locally redefined while indexing occurs in order to escape special characters in the location without prematurely expanding `\thepage`.

**\ifglxindy** *<true>*\else *<false>*\fi *initial:* \iffalse glossaries v1.17+

§2.5; 114

Conditional that, if true, indicates that `xindy` should be used.

**\ifglxtrinsertinside** *<true>*\else *<false>*\fi *initial:* \iffalse  
glossaries-extra v1.02

A conditional used by the predefined abbreviation styles to determine whether the *<insert>* part should go inside or outside of the style's font formatting commands.

**`\ifignoredglossary`** { *⟨glossary-label⟩* } { *⟨true⟩* } { *⟨false⟩* }      *modifier:* \*  
glossaries v4.08+

§9; 265

Does *⟨true⟩* if the glossary identified by *⟨glossary-label⟩* has been defined as an ignored glossary, otherwise does *⟨false⟩*.

**`\indexspace`**

§13.1.1;  
311

Provided by various packages, including `glossary-list` and `glossary-tree`, this creates a vertical space.

## L

**`\loadglsentries`** [ *⟨type⟩* ] { *⟨filename⟩* }      glossaries

§4.6; 163

Locally assigns `\glsdefaulttype` to *⟨type⟩* and inputs *⟨filename⟩*. If the optional argument is omitted, the default glossary is assumed. Note that if any entries with *⟨filename⟩* have the `type` key set (including implicitly in commands like `\newabbreviation`), then this will override the type given in the optional argument.

**`\longnewglossaryentry`** { *⟨entry-label⟩* } { *⟨key=value list⟩* } { *⟨description⟩* }  
glossaries v3.11a+

§4; 138

Defines a new glossary entry with the given label. The second argument is a comma-separated list of glossary entry keys. The third argument is the description, which may include paragraph breaks.

**`\longprovideglossaryentry`** { *⟨entry-label⟩* } { *⟨key=value list⟩* } { *⟨description⟩* }  
glossaries v3.14a+

§4; 138

As `\longnewglossaryentry` but does nothing if the entry is already defined.

## M

**\makefirstuc**{*⟨text⟩*}

mfirstuc

Robust command that converts the first character of *⟨text⟩* to uppercase (sentence case) unless *⟨text⟩* starts with a command, in which case it will attempt to apply the case change to the first character of the first argument following the command, if the command is followed by a group. As from mfirstuc v2.08, this command internally uses `\MFUsentencecase` to perform the actual case change. See the mfirstuc documentation for further details, either:

```
texdoc mfirstuc
```

or visit [ctan.org/pkg/mfirstuc](http://ctan.org/pkg/mfirstuc).

**\makeglossaries**

(Options 2 and 3 only)

glossaries

§3.2; 133

Opens the associated indexing files that need to be processed by `makeindex` or `xindy`. This command has an optional argument with `glossaries-extra`.

**\makenoidxglossaries**

(Option 1 only)

glossaries v4.04+

§3.1; 133

Sets up all non-ignored glossaries so that they can be displayed with `\printnoidxglossary`.

**\mfirstucMakeUppercase**{*⟨text⟩*}

mfirstuc

This command was used by `\makefirstuc` to convert its argument to all caps and was redefined by `glossaries` to use `\MakeTextUppercase`, but with mfirstuc v2.08+ and `glossaries` v4.50+ this command is instead defined to use the L<sup>A</sup>T<sub>E</sub>X3 all caps command, which is expandable. This command is no longer used by `\makefirstuc` (which instead uses `\MFUsentencecase`). The `glossaries` (v4.50+) and `glossaries-extra` (v1.49+) packages now use `\glsuppercase` for the all caps commands, such as `\Gls`.

**\MFUaddmap**{*⟨cs1⟩*}{*⟨cs2⟩*}

mfirstuc v2.08+

Identifies a mapping from the command *⟨cs1⟩* to command *⟨cs2⟩* for `\makefirstuc` and also identifies *⟨cs2⟩* as a blocker. Mappings and blockers aren't supported by `\MFUsentencecase`, so both *⟨cs1⟩* and *⟨cs2⟩* are identified as exclusions for `\MFUsentencecase`.

**\MFUblocker** { *cs* }

mfirstuc v2.08+

Locally identifies *cs* as a blocker command for `\makefirstuc` and an exclusion for `\MFUsentencecase` (which doesn't support blockers).

**\MFUexcl** { *cs* }

mfirstuc v2.08+

Locally identifies *cs* as an exclusion command, which will be recognised by both `\makefirstuc` and `\MFUsentencecase`.

**\MFUsentencecase** { *text* }

mfirstuc v2.08+

§15.2;  
415

Fully expands *text* and converts the first letter to uppercase. Unlike `\makefirstuc`, this command is expandable, but only recognises commands identified as exclusions. See the `mfirstuc` documentation for further details. This command is provided by `glossaries-extra` v1.49+ if an old version of `mfirstuc` is detected.

## N

**\newabbreviation** [ *key=value list* ] { *label* } { *short* } { *long* }

glossaries-extra

Defines a new entry that represents an **abbreviation**. This internally uses `\newglossaryentry` and any provided options (glossary entry keys) given in *key=value list* will be appended. The `category` is set to **abbreviation** by default, but may be overridden in *options*. The appropriate style should be set before the abbreviation is defined with `\setabbreviationstyle`.

**\newabbreviationstyle** { *style-name* } { *setup* } { *display definitions* }

glossaries-extra

Defines an abbreviation style, which can be set with `\setabbreviationstyle`.

**\newacronym** [ *key=value list* ] { *entry-label* } { *short* } { *long* }

glossaries

§6; 201

This command is provided by the base `glossaries` package to define a new acronym but it's re-

defined by `glossaries-extra` to use `\newabbreviation` with the `category` key set to `acronym`. With just the base `glossaries` package, use `\setacronymstyle` to set the style. With `glossaries-extra`, use `\setabbreviationstyle[acronym]{<style>}` to set the style that governs `\newacronym`.

**`\newacronymhook`** glossaries

Hook used by `\newacronym` just before the entry is defined by `\newglossaryentry`.

**`\newacronymstyle`** `{<name>}{<format def>}{<style defs>}` glossaries v4.02+

§6.2.2;  
219

Defines an acronym style for use with the base `glossaries` package's acronym mechanism. These styles are not compatible with `glossaries-extra`. The `<format def>` part is the code used as the entry format definition within `\defglsentryfmt`. The `<style defs>` is the code that redefines the acronym formatting commands, such as `\genacrfullformat`, and the additional fields command `\GenericAcronymFields`.

**`\newglossary`** [`<log-ext>`] `{<glossary-label>}{<in-ext>}{<out-ext>}{<title>}`  
[`<counter>`] glossaries

§9; 264

Defines a glossary identified by `<glossary-label>` (which can be referenced by the `type` key when defining an entry). The `<title>` will be used when displaying the glossary (using commands like `\printglossary`), but this title can be overridden by the `title` option. The optional `<counter>` indicates which counter should be used by default for the location when indexing any entries that have been assigned to this glossary. (This can be overridden by the `counter` option.) The other arguments are file extensions for use with `makeindex` or `xindy`. These arguments aren't relevant for other indexing options (in which case, you may prefer to use `\newglossary*`).

**`\newglossary*`** `{<glossary-label>}{<title>}[<counter>]` glossaries v4.08+

§9; 264

A shortcut that supplies file extensions based on the glossary label:

`\newglossary[<glossary-label>-glg]{<glossary-label>}{<glossary-label>-gls}{<glossary-label>-glo}{<title>}[<counter>]`

**`\newglossaryentry`** { *⟨entry-label⟩* } { *⟨key=value list⟩* } glossaries

§4; 137

Defines a new glossary entry with the given label. The second argument is a comma-separated list of glossary entry keys.

**`\newglossarystyle`** { *⟨style-name⟩* } { *⟨definitions⟩* } glossaries

§13.2;  
384

Defines a new glossary style called *⟨style-name⟩*.

**`\newignoredglossary`** { *⟨glossary-label⟩* } glossaries v4.08+

Defines a glossary that should be ignored by iterative commands, such as `\printglossaries`. This glossary has no associated indexing files and has hyperlinks disabled. You can use an ignored glossary for common terms or acronyms or **abbreviations** that don't need to be included in any listing (but you may want these terms defined as entries to allow automated formatting with the `\gls`-like commands). An ignored glossary can't be displayed with `\printglossary` but may be displayed with the “unsrt” family of commands, such as `\printunsrtglossary`. The `glossaries-extra` package provides a starred form of this command.

**`\newterm`** [ *⟨key=value list⟩* ] { *⟨entry-label⟩* } glossaries v4.02+  
(requires `index` package option)

§2.6; 123

Defines a new glossary entry with the given label, `type` set to `index`, the `name` set to *⟨entry-label⟩* and the `description` set to `\nopostdesc`. The optional argument is a comma-separated list of glossary entry keys, which can be used to override the defaults.

**`\noist`** glossaries

§3.2; 135

Prevents `\makeglossaries` from creating the default indexing application style file.

**`\nopostdesc`** glossaries v1.17+

§4; 139

When placed at the end of the `description`, this switches off the post-description hook (including the post-description punctuation). Does nothing outside of the glossary.



## O

**\oldacronym** [*<label>*] {*<short>*} {*<long>*} {*<key=value list>*} glossaries v1.18+

§6.4; 235

Defines an acronym using the syntax of the old glossary package.

## P

**\pagelistname** *initial: Page List* glossaries  
(language-sensitive)

§1.5.1;  
Table 1.2

Provided by glossaries if it hasn't already been defined. Used as the page list column header for some of the tabular-like glossary styles.

**\PGLS** [*<options>*] {*<entry-label>*} [*<insert>*] *modifiers: \* +*  
glossaries-prefix v3.14a+

§16; 433

As `\pgls` but all caps.

**\PglS** [*<options>*] {*<entry-label>*} [*<insert>*] *modifiers: \* +*  
glossaries-prefix v3.14a+

§16; 433

As `\pgls` but sentence case.

**\pgls** [*<options>*] {*<entry-label>*} [*<insert>*] *modifiers: \* +*  
glossaries-prefix v3.14a+

§16; 432

Similar to `\gls` but inserts the appropriate prefix, if provided.

**\PGLSp1** [*<options>*] {*<entry-label>*} [*<insert>*] *modifiers: \* +*  
glossaries-prefix v3.14a+

§16; 433

As `\pgls` but all caps.

**\Pglspl** [*options*] {*entry-label*} [*insert*] modifiers: \* +  
 glossaries–prefix v3.14a+

§16; 433

As `\pgls` but sentence case.

**\pglspl** [*options*] {*entry-label*} [*insert*] modifiers: \* +  
 glossaries–prefix v3.14a+

§16; 432

Similar to `\glspl` but inserts the appropriate prefix, if provided.

**\pglsxtrshort** [*options*] {*entry-label*} [*insert*] modifiers: \* +  
 glossaries–extra v1.49+  
 (requires `glossaries–prefix`)

As `\glsxtrshort` but inserts the `prefix` field and separator in front if set.

**\pretoglossarypreamble** [*type*] {*text*} glossaries–extra v1.12+

§8.2; 260

Locally prepends *text* to the preamble for the glossary identified by *type*. If *type* is omitted, `\glsdefaulttype` is assumed.

**\printabbreviations** [*options*] glossaries–extra  
 (requires `\usepackage[abbreviations]{glossaries–extra}`)

Shortcut for `\printglossary[type=\glsxtrabbrvtype]`.

**\printacronyms** [*options*] glossaries v3.08a+  
 (requires the `acronyms` package option)

§2.7; 124

Shortcut for `\printglossary[type=\acronymtype]`.

**\printglossaries** glossaries

§8; 251

Iterates over all non-ignored glossaries and does `\printglossary[type=<type>]` for each glossary.

**`\printglossary`** [*options*]

glossaries

§8; 250

Displays the glossary by inputting a file created by `makeindex` or `xindy`. Must be used with `\makeglossaries` and either `makeindex` or `xindy`.

**`\printindex`** [*options*] v4.02+

(requires the `index` package option)

§2.6; 123

Shortcut provided by the `index` package option that simply does `\printglossary[type=index]`.

**`\printnoidxglossaries`**

glossaries v4.04+

§8; 248

Iterates over all non-ignored glossaries and does `\printnoidxglossary[type=(type)]` for each glossary.

**`\printnoidxglossary`** [*options*]

glossaries v4.04+

§8; 248

Displays the glossary by obtaining the indexing information from the aux file and using  $\TeX$  to sort and collate. Must be used with `\makenoidxglossaries` or with the glossaries not identified in the optional argument of `\makeglossaries` when using the hybrid method. This method can be very slow and has limitations.

**`\printnumbers`** [*options*]

glossaries v4.02+

(requires the `numbers` package option)

§2.6; 122

Shortcut for `\printglossary[type=numbers]`.

**`\printsymbols`** [*options*]

glossaries v4.02+

(requires the `symbols` package option)

§2.6; 121

Shortcut for `\printglossary[type=symbols]`.

**`\printunsrtacronyms`** [*options*]

glossaries-extra-bib2gls v1.40+

(requires `\usepackage[acronyms,record]{glossaries-extra}`)

Shortcut for `\printunsrtglossary[type=\acronymtype]`.

**`\printunsrtglossaries`**

glossaries-extra v1.08+

§8; 252

Iterates over all non-ignored glossaries and does `\printunsrtglossary[type=<type>]` for each glossary.

**`\printunsrtglossary`** [*<options>*]

glossaries-extra v1.08+

§8; 251

Displays the glossary by iterating over all entries associated with the given glossary (in the order in which they were added to the glossary). Group headers will only be inserted if the `group` key has been defined and has been set (typically with the `record` option and `bib2gls`). Location lists will only be shown if the `location` or `loclist` fields have been set (typically by `bib2gls`).

**`\printunsrtglossaryentryprocesshook`** {*<entry-label>*}

glossaries-extra v1.21+

Hook used within `\printunsrtglossary` while the glossary content is being constructed.

**`\printunsrtinnerglassary`** [*<options>*] {*<pre-code>*} {*<post-code>*}

glossaries-extra v1.44+

§8; 252

Similar to `\printunsrtglossary` but doesn't contain the code that starts and ends the glossary (such as beginning and ending the `theglossary` environment). See the `glossaries-extra` manual for further details.

**`\provideglossaryentry`** {*<entry-label>*} {*<key=value list>*}

glossaries v3.14a

§4; 138

As `\newglossaryentry` but does nothing if the entry is already defined.

**`\provideignoredglossary`** {*<glossary-label>*}

glossaries-extra v1.12+

*modifier:* \*

As `\newignoredglossary` but does nothing if the glossary has already been defined.

**\ProvidesGlossariesLang** { *⟨language⟩* } [ *⟨version⟩* ] glossaries v4.12+

Used at the start of a glossaries language definition file (`ldf`) to declare the file and version details.

## R

**\renewacronymstyle** { *⟨name⟩* } { *⟨format def⟩* } { *⟨display defs⟩* }  
glossaries v4.02+

As `\newacronymstyle` but redefines an existing acronym style.

**\renewglossarystyle** { *⟨style-name⟩* } { *⟨definitions⟩* } glossaries v3.02+

Redefines the glossary style called *⟨style-name⟩*.

**\RequireGlossariesLang** { *⟨language⟩* } glossaries v4.12+

Indicates that the language definition file (`ldf`) corresponding to the given language should be loaded, if it hasn't already been loaded.

## S

**\seealsoname** *initial:* see also glossaries-extra v1.16+  
(language-sensitive)

Used as a cross-reference tag. The default value is `\alsoname`, if that command has been defined, or “see also”.

**\seename** *initial:* see glossaries  
(language-sensitive)

Provided by `glossaries` if it hasn't already been defined. May already be defined by a language package.

§13.2;  
384

**`\setabbreviationstyle`** [*⟨category⟩*] {*⟨style-name⟩*} glossaries–extra

Sets the current **abbreviation** style to *⟨style-name⟩* for the category identified by *⟨category⟩*. If the optional argument is omitted, **abbreviation** is assumed.

**`\SetAcronymLists`** {*⟨list⟩*} glossaries v2.04+

§2.7; 126

Sets the list of acronym lists (overriding any that have previously been identified).

 **`\SetAcronymStyle`** glossaries v2.04

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.

**`\setacronymstyle`** {*⟨style-name⟩*} glossaries v4.02+

§6.2; 210


Sets the acronym style. Don't use with `glossaries–extra`.

 **`\SetCustomStyle`** glossaries v2.06


Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\newacronymstyle` and `\setacronymstyle`.

 **`\SetDefaultAcronymStyle`** glossaries v2.04


Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle{long-short}`.

 **`\SetDescriptionAcronymDisplayStyle`** glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.

 **\SetDescriptionAcronymStyle** glossaries


Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.

 **\SetDescriptionDUAAcronymDisplayStyle** glossaries


Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.

 **\SetDescriptionDUAAcronymStyle** glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.

 **\SetDescriptionFootnoteAcronymDisplayStyle** glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.

 **\SetDescriptionFootnoteAcronymStyle** glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.

 **\SetDUADisplayStyle** glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.


 **\SetDUASyle** glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\newacronymstyle` and `\setacronymstyle`.


**`\setentrycounter`** [*⟨prefix⟩*] {*⟨counter⟩*} glossaries

§12.1;  
282

Sets up the hypertarget prefix and location counter for use with `\glshypernumber`.

 **`\SetFootnoteAcronymDisplayStyle`** glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.

 **`\SetFootnoteAcronymStyle`** glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.

**`\setglossary preamble`** [*⟨type⟩*] {*⟨text⟩*} glossaries v3.07+

§8.2; 260

Globally sets the preamble for the glossary identified by *⟨type⟩* to *⟨text⟩*. If *⟨type⟩* is omitted, `\glsdefaulttype` is assumed.

**`\setglossarysection`** {*⟨name⟩*} glossaries v1.1+


§2.2; 91

Equivalent to the package option `section=⟨name⟩`.

**`\setglossarystyle`** {*⟨style-name⟩*} glossaries v3.08a+


§2.3; 98

Sets the default glossary style to *⟨style-name⟩*.

 **`\SetSmallAcronymDisplayStyle`** glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.



 **\SetSmallAcronymStyle**

glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.

**\setStyleFile** { *<name>* }

glossaries v1.17+

§3.2; 134

Sets the file name of the `makeindex` or `xindy` style file that's created by `\makeglossaries`.

**\setupglossaries** { *<options>* }

glossaries v3.11a+

§2.10;  
132

Change allowed options that are defined by the base `glossaries` package. Note that some options can only be passed as package options. To change options defined or modified by the `glossaries-extra` package, use `\glossariesextrasetup`.

 **\SmallNewAcronymDef**

glossaries

Deprecated with the introduction of `\setacronymstyle`. Removed in v4.50. Use roll-back if backward-compatibility required or use `\setacronymstyle`.

**\subglossentry** { *<level>* } { *<entry-label>* } { *<number-list>* }  
(glossary style command)

glossaries v3.08a+

§13.2.3;  
391

Redefined by the glossary styles to display child entries.

**\symbolname**  
(language-sensitive)

*initial:* Symbol glossaries

§1.5.1;  
Table 1.2

Provided by `glossaries` if it hasn't already been defined. Used as a column header for some of the tabular-like glossary styles.

## T

**\theglossaryentry**

glossaries v3.0+

(requires `entrycounter=true`)

§2.3; 95

Displays the value of the glossaryentry counter.

**\theglossarysubentry**

glossaries v3.0+

(requires `subentrycounter=true`)

§2.3; 97

Displays the value of the glossarysubentry counter.

## W

**\writeist**

glossaries

§3.2; 134

Writes the `makeindex/xindy` style file. This command is used by `\makeglossaries` and then disabled.

## X

**\xcapitalisefmtwords** { *text* }

mfirstuc v2.03+

Passes the argument to `\capitalisefmtwords` but with the first token in *text* expanded. The starred version uses the starred version of `\capitalisefmtwords`.

**\xGlsXtrSetField** { *entry-label* } { *field-label* } { *value* }

glossaries-extra v1.12+

As `\GlsXtrSetField` but expands the value and uses a global assignment.

# Environment Summary

```
\begin{theglossary}  
(glossary style environment)
```

glossaries

§13.2.3;  
390

Redefined by the glossary styles to format the glossary according to the style specifications. The entire glossary content (not including the section header, preamble and postamble) is contained within this environment.

# Package Option Summary

```
\usepackage [options] {glossaries-extra}
```

Extension package that loads glossaries, provides additional commands, and modifies some of the base glossaries commands to integrate them with the new commands or to make them more flexible.

- abbreviations**  §2.7; 125  
Provides a new glossary with the label `abbreviations` and title given by `\abbreviationsname`, redefines `\glsxtrabbrvtype` to `abbreviations`, redefines `\acronymtype` to `\glsxtrabbrvtype` (unless the `acronym` or `acronyms` option has been used), and provides `\printabbreviations`.
- accsupp**  §2.9; 130  
Loads `glossaries-accsupp`.
- autoseeindex**=*(boolean)* *default: true; initial: true*  §2.4; 106  
Indicates whether or not to enable automatic indexing of `see` and `seealso` fields.
- docdef**=*(value)* *default: true; initial: false*  §2.1; 89  
Determines whether or not `\newglossaryentry` is permitted in the document environment.
- docdef=atom**  89  
As `restricted` but creates the `glsdefs` file for `atom`'s autocomplete support.
- docdef=false**  89  
Don't allow `\newglossaryentry` in the document environment.
- docdef=restricted**  89  
Allow `\newglossaryentry` in the document environment, but only before any glossaries.
- docdef=true**  89  
Allow `\newglossaryentry` in the document environment if the base glossaries package would allow it.
- equations**=*(boolean)* *default: true; initial: false*  §2.4; 107

Automatically switch the location counter to equation when inside a numbered equation environment.

**floats**=*(boolean)* *default: true; initial: false*  §2.4; 107

Automatically switch the location counter to the corresponding counter when inside a floating environment.

**indexcounter**  §2.4; 107

Defines the index counter `wrglossary` and implements `counter=wrglossary`.

**indexcrossrefs**=*(boolean)* *default: true; initial: true*  §2.4; 106

If true, automatically indexes cross references at the end of the document.

**nomissingglstext**=*(boolean)* *default: true; initial: false*  §2.9; 130

Determines whether or not to display warning text if the external indexing file hasn't been generated due to an incomplete build.

**postdot**  glossaries-extra v1.12+

A shortcut for `nopostdot=false`.

**postpunc**=*(value)*  glossaries-extra v1.21+

An alternative to `postdot`, this can be used to insert a different punctuation character after the description.

**prefix**  glossaries-extra v1.42+ §2.9; 130

Loads `glossaries-prefix`.

**record**=*(value)* *default: only; initial: off*  §2.4; 106

Indicates whether or not `bib2gls` is being used (in which case entry indexing is performed by adding `bib2gls` records in the `aux` file).

**record=hybrid** 107

Performs a mixture of `bib2gls` records in the `aux` file (to select entries from a `bib` file) and `makeindex/xindy` indexing in their associated files. This option is best avoided.

**record=nameref** 107

Entry indexing is performed by adding `bib2gls` `nameref` records in the `aux` file. Glossaries should be displayed with the “`unsrt`” family of commands.

**record=off** 106

Entry indexing is performed as per the base `glossaries` package, using either `\makeglossaries` or `\makenoidxglossaries`.

**record=only** 106

Entry indexing is performed by adding `bib2gls` records in the `aux` file. Glossaries should be displayed with the “`unsrt`” family of commands.

**stylemods**=*<list>* *default: default* ≡ §2.3; 102  
 Loads glossaries–extra–stylemods with the given options. If **stylemods**=*default* then no options are passed to glossaries–extra–stylemods.

**undefaction**=*<value>* *initial: error* ≡ §2.1; 88  
 Indicates whether to trigger an error or warning if an unknown entry label is referenced.

**undefaction**=**error** 88  
 Trigger an error if an unknown entry label is referenced.

**undefaction**=**warn** 89  
 Trigger a warning if an unknown entry label is referenced.

`\usepackage [<options>] {glossaries}` §1; 2

Base package. This package will be implicitly loaded by glossaries–prefix, glossaries–accsupp and glossaries–extra.

**acronym**=*<boolean>* *default: true; initial: false* ○ §2.7; 124  
 If true, provides a new glossary with the label **acronym** and title given by `\acronymname`, redefines `\acronymtype` to **acronym**, and provides `\printacronyms`.

**acronymlists**=*{<label-list>}* ≡ glossaries v2.04+ §2.7; 125  
 Identifies the glossaries that contain acronyms (defined with the base glossaries packages acronym mechanism).

**acronyms** ≡ glossaries v3.14a+ §2.7; 125  
 Provides a new glossary with the label **acronym**, redefines `\acronymtype` to **acronym**, and provides `\printacronyms`.

**automake**=*<value>* *default: immediate; initial: false* ≡ glossaries v4.08+ §2.5; 116  
 Indicates whether or not to attempt to use T<sub>E</sub>X’s shell escape to run an indexing application.

**automake**=**delayed** glossaries v4.50+ 118  
 Use the shell escape to run `makeindex` or `xindy` at the end of the document.

**automake**=**false** glossaries v4.08+ 118  
 Don’t use the shell escape.

**automake**=**immediate** glossaries v4.42+ 118  
 Use the shell escape to run `makeindex` or `xindy` before `\makeglossaries` opens the associated indexing files.

**automake**=**lite** glossaries v4.50+ 118

Use the shell escape to run `makeglossaries-lite` before `\makeglossaries` opens the associated indexing files.

`automake=makegloss` glossaries v4.50+

Use the shell escape to run `makeglossaries` before `\makeglossaries` opens the associated indexing files.

118

`automake=true`

*alias:* `delayed`  glossaries v4.08+

Deprecated synonym for `automake=delayed`.

**automakegloss**

*alias:* `makegloss`  glossaries v4.50+

Synonym for `automake=makegloss`.

**automakeglosslite**

*alias:* `lite`  glossaries v4.50+

Synonym for `automake=lite`.

**compatible-2.07**

§2.9; 131

Option removed in version 4.50. Now only available with rollback.

**compatible-3.07**

§2.9; 131

Option removed in version 4.50. Now only available with rollback.

`counter=<counter-name>`

*initial:* `page` 

§2.3; 101

Sets the default location counter.


`counterwithin=<parent-counter>`

 glossaries v3.0+

§2.3; 96

Sets the parent counter for `glossaryentry`.

`debug=<value>`

*initial:* `false`  glossaries v4.24+

§2.1; 82

Adds markers to the document for debugging purposes.

`debug=false` glossaries v4.24+

Disable debugging actions.

82

`debug=showaccsupp` glossaries v4.45+

Implements `debug=true` and also shows accessibility information in the document.

83

`debug=showtargets` glossaries v4.24+

Implements `debug=true` and also shows target markers in the document.

82

`debug=true` glossaries v4.24+

Writes `wrglossary (<type>) (<indexing info>)` to the log file if there is an attempt to index an entry before the associated indexing file has been opened (`makeindex` and `xindy` only). With `glossaries-extra`, this setting will also display the label of any undefined entries that are referenced in the document.

82

**description**

§2.8; 127

Deprecated in version 4.02 (2013-12-05) and removed in version 4.50. Now only available with rollback.

### **disablemakegloss**

≡ glossaries v4.45+

§2.5; 119

Disables `\makeglossaries`.

### **dua**

≡ 🗑️

§2.8; 130

Deprecated in version 4.02 (2013-12-05) and removed in version 4.50. Now only available with rollback.

### **entrycounter**=*(boolean)*

*default: true; initial: false* ○ glossaries v3.0+

§2.3; 94

Enables the entry counter for top-level entries.

### **esclocations**=*(boolean)*

*default: true; initial: false* ○ glossaries v4.33+

§2.4; 103

If true, escapes locations before indexing.

### **footnote**

≡ 🗑️

§2.8; 129

Deprecated in version 4.02 (2013-12-05) and removed in version 4.50. Now only available with rollback.

### **hyperfirst**=*(boolean)*

*default: true; initial: true* ● glossaries v2.03+

§2.1; 87

If false, this option will suppress hyperlinks on first use for the `\gls`-like commands.

### **index**

≡ glossaries v4.02+

§2.6; 123

Provides a new glossary with the label `index` and the title `\indexname`, and provides `\printindex` and `\newterm`.

### **indexonlyfirst**=*(boolean)*

*default: true; initial: false* ○ glossaries v3.02+

§2.4; 104

Indicates whether or not to only index the first use.

### **kernelglossredefs**=*(value)*

*default: true; initial: false* ≡ glossaries v4.41+

§2.9; 131

Indicates whether or not to redefined the kernel glossary commands `\glossary` and `\makeglossary`.

#### **kernelglossredefs=false**

Don't redefine `\glossary` and `\makeglossary`.

131

#### **kernelglossredefs=nowarn**

Redefine `\glossary` and `\makeglossary` without any warnings.

132

#### **kernelglossredefs=true**

Redefine `\glossary` and `\makeglossary` but their use will trigger a warning.

132

### **languages**

≡ glossaries v4.50+

§2.1; 86

Implements `translate=babel` and adds the supplied languages to `tracklang`'s list of tracked languages.



**locales**

*alias:* `languages` ≡ glossaries v4.55+

Synonym of `languages`.

**makeindex**

≡ (Option 2)

§2.5; 114

Indicates that the indexing should be performed by `makeindex` (default).

**mfirstuc**=*<value>*

*initial:* `unexpanded` ≡ glossaries v4.50+

§2.9; 130

The value may be either `expanded` or `unexpanded` and performs the same function as `mfirstuc`'s `expanded` and `unexpanded` package options. Note that there's no value corresponding to `mfirstuc`'s other package option.

**nogroupskip**=*<boolean>*

*default:* `true`; *initial:* `false` ○ glossaries v3.03+

§2.3; 102

If true, suppress the gap between letter groups in the glossaries by default.

**noglossaryindex**

≡ glossaries v4.42+

§2.6; 124

Counteracts the `index` option.

**nohypertypes**=*{ <list> }*

≡ glossaries v3.05+

§2.6; 120

Identifies the list of glossaries that should have hyperlinks suppressed.

**nolangwarn**

≡ glossaries v4.33+

§2.1; 81

Suppresses the warning if no language support is found.

**nolist**

≡ glossaries v1.18+

§2.3; 100

Don't load `glossary-list`, which is normally loaded automatically. Note that if `glossaries` is loaded before `glossaries-extra`, then this option should be passed directly to `glossaries` not `glossaries-extra` otherwise it will be too late to implement.

**nolong**

≡ glossaries v1.18+

§2.3; 99

Don't load `glossary-long`, which is normally loaded automatically. Note that if `glossaries` is loaded before `glossaries-extra`, then this option should be passed directly to `glossaries` not `glossaries-extra` otherwise it will be too late to implement.

**nomain**

≡ glossaries v2.01+

§2.6; 121

Prevents the definition of the `main` glossary. You will need to define another glossary to use instead. For example, with the `acronyms` package option.

**nonumberlist**

≡

§2.3; 101

Set no location lists as the default for all glossaries. May be overridden for individual glossaries with `nonumberlist=true`.

**nopostdot**=*<boolean>*

*default:* `true`; *initial:* `true` ○ glossaries v3.03+

§2.3; 102

If true, suppresses the automatic insertion of a full stop after each entry's description in the glossary (for styles that support this). The default is `nopostdot=true` for `glossaries-extra` and `nopostdot=false` for just `glossaries`.

<b>noredefwarn</b>		≡	§2.1; 81
Suppresses a warning if <code>theglossary</code> or <code>\printglossary</code> have already been defined (which indicates that the document class or another package also provides a mechanism for creating a glossary that could potentially conflict with glossaries). This option is automatically implemented with <code>glossaries-extra</code> .			
<b>nostyles</b>		≡ glossaries v1.18+	§2.3; 100
Don't load the default set of predefined styles. Note that if <code>glossaries</code> is loaded before <code>glossaries-extra</code> , then this option should be passed directly to <code>glossaries</code> not <code>glossaries-extra</code> otherwise it will be too late to implement.			
<b>nosuper</b>		≡ glossaries v1.18+	§2.3; 99
Don't load <code>glossary-super</code> , which is normally loaded automatically. Note that if <code>glossaries</code> is loaded before <code>glossaries-extra</code> , then this option should be passed directly to <code>glossaries</code> not <code>glossaries-extra</code> otherwise it will be too late to implement.			
<b>notranslate</b>		≡ glossaries v3.14a+	§2.1; 86
Equivalent to <code>translate=false</code> .			
<b>notree</b>		≡ glossaries v1.18+	§2.3; 100
Don't load <code>glossary-tree</code> , which is normally loaded automatically. Note that if <code>glossaries</code> is loaded before <code>glossaries-extra</code> , then this option should be passed directly to <code>glossaries</code> not <code>glossaries-extra</code> otherwise it will be too late to implement.			
<b>nowarn</b>		≡	§2.1; 81
Suppresses warnings.			
<b>numberedsection</b> = <i>&lt;value&gt;</i>	<i>default: nolabel; initial: false</i>	≡ glossaries v1.1+	§2.2; 91
Indicates whether or not glossary section headers will be numbered and also if they should automatically be labelled.			
<b>numberedsection=autolabel</b>			92
Use numbered sectional units for glossaries and automatically add a label based on the glossary label.			
<b>numberedsection=false</b>			92
Use unnumbered sectional units for glossaries.			
<b>numberedsection=nameref</b>			93
Use unnumbered sectional units for glossaries and automatically add a label based on the glossary label.			
<b>numberedsection=nolabel</b>			92
Use numbered sectional units for glossaries but no label.			
<b>numberline</b> = <i>&lt;boolean&gt;</i>	<i>default: true; initial: false</i>	⊞ glossaries v1.1+	§2.2; 90

If true (and `toc=true`), includes `\numberline` when adding a glossary to the table of contents.

**numbers**

≡ glossaries v3.11a+

§2.6; 122

Provides a new glossary with the label `numbers` and the title `\glsnumbersgroupname`, and provides `\printnumbers`. With `glossaries-extra`, this additionally defines `\glsxtrnewnumber`.

**order**

≡ glossaries v1.17+

§2.5; 113

Indicates whether word or letter order should be used. With Options 2 and 3, this information is written to the `aux` file, where it can be picked up by `makeglossaries`. This option will have no effect if you call `makeindex` or `xindy` explicitly.

`order=letter`

Letter order (“seal” before “sea lion”).

113

`order=word`

Word order (“sea lion” before “seal”).

113

`preprocess-sort=<boolean>`

*default: true* ≡

§2.5; 108

Switches off sanitize sort option but also switches off field expansion for the sort value. If true, the sort value will be processed when the entry is defined, otherwise the sort value will be processed when the list is sorted (Option 1 only).

**restoremakegloss**

≡ glossaries v4.45+

§2.5; 119

Cancels the effect of `disablemakegloss`.

`sanitizesort=<boolean>`

*default: true; initial: varies* ≡

§2.5; 108

Indicates whether the default sort value should be sanitized (only applicable with `sort=standard`).

`savenumberlist=<boolean>`

*default: true; initial: false* ⊕ glossaries v3.02+

§2.3; 94

(Options 2 and 3 only)

If true, save number lists. Only applicable with Options 2 and 3 as Options 1 and 4 have the number list stored in the `loclist` field and Option 4 also has the formatted number list in the `location` field.

`savewrites=<boolean>`

*default: true; initial: false* ⊕ glossaries v3.0+

§2.1; 85

If true, indexing information is stored until the end of the document to reduce the number of write registers.

`section=<name>`

*default: section* ≡

§2.2; 90


Indicates which section heading command to use for the glossary. The value may be one of the standard sectioning command’s control sequence name (without the leading backslash), such as `chapter` or `section`.

**seeautonumberlist**

≡ glossaries v3.0+

§2.3; 101


Automatically adds `nonnumberlist={false}` to any entries with the `see` key set.



**seenoindex**=*<value>* *initial: error*  glossaries v4.24+ §2.4; 103  
 Indicates what to do if the `see` key is used before the associated indexing files have been opened by `\makeglossaries`.



`seenoindex=error` 103  
 Triggers an error if the `see` key is used before `\makeglossaries`.


`seenoindex=ignore` 103  
 Does nothing if the `see` key is used before `\makeglossaries`.

`seenoindex=warn` 103  
 Triggers a warning if the `see` key is used before `\makeglossaries`.

**shortcuts**=*{<boolean>}* *default: false; initial: false*  §2.7; 127  
 Defines various shortcut commands. Has additional values with `glossaries-extra`.

**smallcaps**   §2.8; 128  
 Deprecated in version 4.02 (2013-12-05) and removed in version 4.50. Now only available with `rollback`.

**smaller**   §2.8; 128  
 Deprecated in version 4.02 (2013-12-05) and removed in version 4.50. Now only available with `rollback`.

**sort**=*<value>* *initial: standard*  glossaries v3.0+ §2.5; 109  
 Indicates how the `sort` key should automatically be assigned if not explicitly provided (for `\makeglossaries` and `\makenoidxglossaries` only).

`sort=clear` glossaries v4.50+ 109  
 Sets the `sort` key to an empty value. Use this option if no indexing is required for a slightly faster build.

`sort=def` 109  
 Use the (zero-padded) order of definition as the default for the `sort` key.

`sort=none` glossaries v4.30+ 109  
 Don't process the `sort` key. Use this option if no indexing is required for a slightly faster build.

`sort=standard` 110  
 Use the value of the `name` key as the default for the `sort` key and implement the `\glsprestandardsort` hook.

`sort=use` 110

Use the (zero-padded) order of use as the default for the `sort` key.

**style-options**=`{ <options> }` ≡ glossaries v4.59+ §2.3; 98  
 Adjusts options for the newer styles that support this interface.

**style**=`<style-name>` initial: varies ≡ §2.3; 98  
 Sets the default glossary style to `<style-name>`.

**subentrycounter**=`<boolean>` default: true; initial: false ○ glossaries v3.0+ §2.3; 96  
 Enables the entry counter for level 1 entries.

**symbols** ≡ glossaries v3.11a+ §2.6; 121  
 Provides a new glossary with the label `symbols` and the title `\glssymbolsgroupname`, and provides `\printsymbols`. With `glossaries-extra`, this additionally defines `\glxtrnewsymbol`.

**toc**=`<boolean>` default: true; initial: varies ≡ §2.2; 89  
 If true, each glossary will be automatically added to the table of contents if the starred (unnumbered) sectioning command is used. The default is `toc=false` with `glossaries` and `toc=true` with `glossaries-extra`. This option has no effect if the unstarred (numbered) sectioning command is used.

**translate**=`<value>` default: true; initial: varies ≡ glossaries v1.1+ §2.1; 85  
 Indicates how multilingual support should be provided, if applicable.

**translate=babel** 86  
 Uses `babel`'s language hooks to implement multilingual support (default for `glossaries-extra` if `babel` has been detected).

**translate=false** 86  
 Don't implement multilingual support (default if no language package has been detected).

**translate=true** 86  
 Uses `translator`'s language hooks to implement multilingual support (default for `glossaries` if a language package has been detected).

**ucmark**=`<boolean>` default: true; initial: varies ≡ glossaries v3.02+ §2.2; 91  
 Indicates whether or not to use all caps in the glossary header.

**writeglslabelnames** ≡ glossaries v4.47+ §2.1; 88  
 Creates a file called `\jobname.glslabels` that contains all defined entry labels and names (for the benefit of auto-completion tools).

**writeglslabels** ≡ glossaries v4.45+ §2.1; 88  
 Creates a file called `\jobname.glslabels` that contains all defined entry labels (for the benefit of auto-completion tools).

**xindy**={ *options* }

Indicates that the indexing should be performed by xindy.

☰ glossaries v1.17+  
(Option 3)

§2.5; 114

**xindygloss**

Equivalent to xindy with no value.

☰ glossaries v3.14a+  
(Option 3)

§2.5; 115

**xindynoglsnumbers**

Equivalent to xindy={glsnumbers=false}.

☰ glossaries v4.02+  
(Option 3)



§2.5; 116

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