

Abstract

The package crefthe provides a command `\crefthe` parallel to cleveref's `\cref` for handling definite articles properly (especially for the article contractions in some European languages).

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The motivation

1 By default, with cleveref's `\cref` to reference theorem-like environments, the names do not
 2 contain definite articles. While this might be acceptable for English, it is certainly not good
 3 enough for languages such as French, Italian, Portuguese, Spanish, etc. — in these cases
 4 there shall be grammatical errors and would give you a strong feeling that it is machine-
 5 generated.

6 However, even if we manually add the definite articles to the names, there would still be
 7 other problems. As an example, if we define the French names to be:

```
\crefname{theorem}{le théorème}{les théorèmes}
\crefname{proposition}{la proposition}{les propositions}
```

8 then when one writes (which means “*We can deduce this from ...*”)

```
On peut le déduire de \cref{thm1,thm2,prop3}.
```

9 the result would be:

On peut le déduire de les théorèmes 1 et 2 et la proposition 3.

10 which is wrong, as the correct result should be:

On peut le déduire des théorèmes 1 et 2 et de la proposition 3.

11 `\cref` cannot handle such cases automatically — that is when `\crefthe` comes into play.

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The usage2.1 | How to load it?

12 Simply load the package with:

```
\usepackage{crefthe}
```

TIP

- Since `\crefthe` uses `\cleveref` internally, it should usually be placed at the last of your preamble, and notably, after `\varioref` and `\hyperref`.
- To handle article contractions correctly, `\crefthe` shall detect the current language, thus you need to use packages such as `babel` or `polyglossia` to set your languages, and use commands like `\selectlanguage` to select them appropriately.

2.2 | How to use it?

Before everything, you need to define the names, which can be done with `\crefthename`. Its syntax is similar to `\crefname`, but now you can specify the definite articles, for example:

```
\crefthename{theorem}[le]{théorème}[les]{théorèmes}
```

TIP

The `\crefthenames` should be placed in your preamble, otherwise the `\cref` formats will not be set. These names can, however, be reset within the document body.

Then you can use the command `\crefthe` as follows:

```
\crefthe[\langle prep \rangle]{\langle labels \rangle}
```

- This will pass the preposition `\langle prep \rangle` to the definite articles that follows. Its behavior depends on the current language (for example, in Spanish, `\langle prep \rangle` is passed only to the first definite article, while in French it is passed to everyone).

```
\crefthe-[\langle prep \rangle]{\langle labels \rangle} and \crefthe+[\langle prep \rangle]{\langle labels \rangle}
```

- In case the automatic version does not meet your needs, here are two manual ones. The `-` version passes the preposition `\langle prep \rangle` only to the first definite article, while the `+` version passes `\langle prep \rangle` to every definite article.

TIP

- There is also a starred version `\crefthe*` for generating the same referencing text without creating hyperlinks.
- The name-only relatives are also available: `\namecrefthe` and `\namecrefsthe`.

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Example

Let us come back to the example at the beginning, now you can do this:

```
\crefthename{theorem}[le]{théorème}[les]{théorèmes}
\crefthename{proposition}[la]{proposition}[les]{propositions}
```

And the sentence shall be written as:

```
On peut le déduire \crefthe[de]{thm1,thm2,prop3}.
```

which would result in (provided that you have done `\selectlanguage{french}`):

On peut le déduire des théorèmes 1 et 2 et de la proposition 3.

Voilà !

Regarding the upper and lower cases

As in `cleveref`, these commands have corresponding uppercased version: `\Crefthename`, `\Crefthe`, `\nameCrefthe` and `\nameCrefsthe`, similar to `\Crefname`, `\Cref`, `\nameCref` and `\nameCrefs`, reserved for using at the beginning of a sentence. `\Crefthe` (and the name-only relatives) can handle case changing automatically: for example, with `\Crefthe [Å]{thm1,thm2,prop3}`, you will get something like

Aux théorèmes 1 et 2 et à la proposition 3

Of course you will have to define the `\Crefthenames` separately, for example as:

```
\Crefthename{theorem}[Le]{théorème}[Les]{théorèmes}
\Crefthename{proposition}[La]{proposition}[Les]{propositions}
```

For writing multi-language documents

To place hyperlinks at the correct place, `\crefthename` touches the corresponding format macro `\crefformat` internally, which makes the format language-dependent. If you are writing multi-language documents, you may consider putting `\crefthename` inside your language configuration so as to reset it each time you select a new language.

Dealing with existed `cref` / `Cref` names

For those preset names defined with `\crefname` / `\Crefname`, such as the ones for chapter, section and subsection, etc., the optional argument of `\crefthe` / `\Crefthe` shall be useless: names defined with `\crefthename` / `\Crefthename` have a `\crefthemark` marking the definite articles, which also deals with the given preposition ; without `\crefthemark`, the preposition is simply ignored.

`\crefthepatchname{⟨counters⟩}` is provided for this purpose. With this, an empty mark shall be added before the existed singular and plural names. However, it is still recommended to simply redefine the names with `\crefthename` / `\Crefthename`, especially in multilingual documents.

The relationship with `cleveref`

`crefthe` loads `cleveref` automatically and passes related options to it. All its commands, used without optional arguments, degenerate to those in `cleveref`. For example, `\crefthe{...}` will produce the same result as `\cref{...}`, and `\crefthename` shall behave the same as `\crefname` if the definite articles are not specified. That said, you may safely use the command `\crefthe` everywhere in your document without causing extra trouble.

With the package option `overwrite`, user commands in `cleveref` will be replaced by those offered here, thus you can simply write `\cref` for `\crefthe` — and similarly with `\Cref`, `\crefname` and `\Crefname`.

Known issues

- crefthe currently works for French, German, Italian, Portuguese (European and Brazilian) and Spanish — certainly more languages would be added to this list in the future.
- For now, you cannot specify the masculine/masculine/... of words. This means, for instance, that you cannot make the suffix adjective automatically adopted to the word when using `\namecref` — as an example, if you wish to say “la proposition suivante” (in French), you would have to write the feminine adjective manually. The situation should be improved with the introduction of a new key-value configuration system, which is currently on the todo-list. Meanwhile, you may consider the package `zref-clever`, which has a much more powerful and sophisticated interface for configuring cross referencing.
- The names of theorem-like environments are not provided here, you need to define them by yourself. However, users are encouraged to use the [ProjLib](#) toolkit (more specifically, the internal package `create-theorem`), which already handles everything for you.

If you run into any issues or have ideas for improvement, feel free to discuss on:

<https://github.com/Jinwen-XU/crefthe/issues>

or email me via ProjLib@outlook.com.