

# Package ‘roxytypes’

July 23, 2025

**Title** Typed Parameter Tags for Integration with 'roxygen2'

**Version** 0.1.2

**Description** Provides typed parameter documentation tags for integration with 'roxygen2'. Typed parameter tags provide a consistent interface for annotating expected types for parameters and returned values. Tools for converting from existing styles are also provided to easily adapt projects which implement typed documentation by convention rather than tag. Use the default format or provide your own.

**License** MIT + file LICENSE

**Encoding** UTF-8

**URL** <https://github.com/openpharma/roxytypes>,  
<https://openpharma.github.io/roxytypes/>

**BugReports** <https://github.com/openpharma/roxytypes/issues>

**Imports** utils, cli, glue, roxygen2

**Suggests** mockery, testthat

**Enhances** roxylint

**Config/Needs/documentation** roxylint

**RoxygenNote** 7.3.2

**NeedsCompilation** no

**Author** Doug Kelkhoff [aut, cre]

**Maintainer** Doug Kelkhoff <doug.kelkhoff@gmail.com>

**Repository** CRAN

**Date/Publication** 2024-10-15 17:30:09 UTC

## Contents

build_format_regex . . . . .	2
convert . . . . .	4
default_format . . . . .	5

read_dcf_asis . . . . .	5
roxy_tag_parse.roxy_tag_typed . . . . .	6
roxy_tag_parse.roxy_tag_typedreturn . . . . .	6
roxy_tag_rd.roxy_tag_typed . . . . .	7
roxy_tag_rd.roxy_tag_typedreturn . . . . .	7
tags . . . . .	8
typedreturn . . . . .	9
with_roxy_field_subclass . . . . .	10

<b>Index</b>	<b>11</b>
--------------	-----------

---

build_format_regex	<i>Build format regular expression</i>
--------------------	--

---

## Description

Allow glue-style formatting using keyworded regular expressions. The original glue string (anything that isn't expanded by glue) is treated as a string literal, whereas the contents of populated values can be regular expressions, allowing for a more user-friendly way to construct complicated regular expressions.

## Usage

```

build_format_regex(
    format,
    format_re,
    ...,
    type = re_backticked(),
    description = re_any()
)

re_backticked()

re_any()

escape_non_glue_re(x)

```

## Arguments

format	(character[1]) A glue-style format string. Expanded whisker values are used as a shorthand for capture groups, where ellipsis arguments can be provided for additional capture group patterns.
format_re	(character[1]) Alternatively, provide a standard regular expression directly.
...	Additional arguments provide keyworded capture groups for format
type	(character[1]) A regular expression to use to match a type signature. By default, matches within backticks.

description	(character[1]) A regular expression to use to match a parameter description. By default, matches any string.
x	(character[1]) A string to escape.

### Details

To bypass glue entirely and use a standard regular expression, use `format_re`.

The provided regular expression must match all characters from the start of a string to the end. The string also matches using "dot all" syntax, meaning that the `.` expression will also match newline characters.

### Value

(character[1]:) A regular expression string, built from component sub-expressions.

### Functions

- `re_backticked()`: Match within backticks
- `re_any()`: Match any
- `escape_non_glue_re()`: Escape all regular expression special characters  
In addition, avoid escaping `{}`'s that appear to be used as glue keywords. Handles only simple cases, and does not handle recursive curly nesting.

### Examples

```
re <- roxytypes:::build_format_regex(
  "{as}{any}{bs}",
  as = "a+",
  bs = "b+",
  any = ".*?"
)

roxytypes:::regex_capture(re, "aaaa\n\nbb", perl = TRUE)

text <- "@param (``test(\")\")``"

pattern <- sprintf("``%s``", re_backticked())

m <- regexec(pattern, text, perl = TRUE)
regmatches(text, m)[[1]]
# [1] "``test(\")\")``"

# curlies escaped, as this does not appear to be a glue-style usage
roxytypes:::escape_non_glue_re("{1,3}")

# curlies not escaped, as this is a glue-style usage
roxytypes:::escape_non_glue_re("this is a {test}")
```

---

convert	<i>Convert roxygen2 tags to roxytypes tags</i>
---------	--

---

## Description

Convert a package codebase into applicable roxytypes tags. For roxygen2 tags with drop-in replacements (namely @param and @return tags), process descriptions and replace tags with roxytypes equivalents.

## Usage

```
convert(
  path = ".",
  format = config(path, refresh = TRUE, cache = FALSE)$format,
  ...,
  unmatched = FALSE,
  verbose = interactive()
)
```

## Arguments

path	(character[1]) A file path within your package. Defaults to the current working directory.
format	(character[1]) A glue-style format to use to parse types and descriptions for conversion to roxytypes tags. Available glue keywords include type and description. By default, type will match any string until a closing backtick and description will match any string. See details for more information.
...	Additional arguments passed to <a href="#">build_format_regex()</a> .
unmatched	(logical[1]) Indicates whether tags that fail to match should still be converted into roxytypes tags. Such conversions may be convenient if you aim to convert your package holistically, as it will help to flag undocumented parameter types the next time you re-build your documentation.
verbose	(logical[1]) Indicates whether command-line interface should be emitted so that changes can be reviewed interactively.

## Details

A format string is built using [build\\_format\\_regex\(\)](#), which accepts parameters type and description, which describe how to match these components of a parameter definition. They are combined with the literal content of format to produce a regular expression to split existing definitions.

For comprehensive control, pass format\_re directly, bypassing expression construction altogether.

## Value

(logical[1]) TRUE if successfully completes, FALSE if aborted. Always returns invisibly.

**Examples**

```
## Not run:
convert("(`{type}`) {description}")

## End(Not run)
```

---

default_format	<i>Default formatter for @typed</i>
----------------	-------------------------------------

---

**Description**

Adds special cases for when the type uses other roxygen2 syntax

**Usage**

```
default_format(x, name, type, description, ...)
```

**Arguments**

`x` [\(roxygen2::roxy\\_tag\(\)\)](#) The tag to format.  
`name, type, description` [\(character\(1\)\)](#) Fields parsed from the @typed tag.  
`...` Additional arguments unused.

**Value**

A formatted character value.

---

read_dcf_asis	<i>A helper to reliably read DCF files</i>
---------------	--

---

**Description**

A helper to reliably read DCF files

**Usage**

```
read_dcf_asis(path)
```

**Arguments**

`path` [\(character\[1\]\)](#) A file path to a DESCRIPTION file.

**Value**

[\(data.frame\)](#) The result of [read.dcf\(\)](#).

```
roxy_tag_parse.roxy_tag_typed
    roxygen2 @typed tag parsing
```

---

**Description**

Parse a @typed tag and return parsed components as value

**Usage**

```
## S3 method for class 'roxy_tag_typed'
roxy_tag_parse(x)
```

**Arguments**

x                    A tag

**Value**

(roxygen2 tag) A parsed roxygen2 @typed rd\_tag.

---

```
roxy_tag_parse.roxy_tag_typedreturn
    roxygen2 @typedreturn tag parsing
```

---

**Description**

Parse a @typedreturn tag and return parsed components as value

**Usage**

```
## S3 method for class 'roxy_tag_typedreturn'
roxy_tag_parse(x)
```

**Arguments**

x                    A tag

**Value**

(roxygen2 tag) A parsed roxygen2 @typedreturn rd\_tag.

---

```
roxy_tag_rd.roxy_tag_typed
roxygen2 @typed tag rd section population
```

---

**Description**

Push typed fields into @param section

**Usage**

```
## S3 method for class 'roxy_tag_typed'
roxy_tag_rd(x, base_path, env)
```

**Arguments**

x	The tag
base_path	Path to package root directory.
env	Environment in which to evaluate code (if needed)

**Value**

([roxygen2::rd\\_section](#)) A roxygen2 "param" rd\_section with formatted type information.

---

```
roxy_tag_rd.roxy_tag_typedreturn
roxygen2 @typedreturn tag rd section population
```

---

**Description**

Push typed fields into @param section

**Usage**

```
## S3 method for class 'roxy_tag_typedreturn'
roxy_tag_rd(x, base_path, env)
```

**Arguments**

x	The tag
base_path	Path to package root directory.
env	Environment in which to evaluate code (if needed)

**Value**

([roxygen2::rd\\_section](#)) A roxygen2 @value rd\_tag with formatted type information.

---

tags	roxytypes <i>tags</i>
------	-----------------------

---

## Description

The @typed tag introduces a syntax for defining parameter types as a roxygen2 tag.

## Usage

```
#' @typed <var>: <type>
#'   <description>
```

## Details

Be aware that there are a few syntactic requirements:

- : delimiter between the variable name and type.
- \n after the type to separate it from the description.

## Default type Parsing Syntax

The type portion of the @typed tag syntax will handle a bit of syntax as special cases.

- [type]: Types wrapped in brackets, for example [roxygen2::roxy\_tags()] will be left as-is, without wrapping the string in backticks to display as inline code and preserve the native roxygen2 reference link.

```
#' @typed arg: [package::function()]
#'   long form description.
```

- `type`: Types wrapped in backticks will be kept as-is. Additional backticks will not be inserted.

```
#' @typed arg: `class`
#'   long form description.
```

- "type" or 'type': Types wrapped in quotes (either single or double), will be provided as literal values, removing the surrounding quotation marks.

```
#' @typed arg: "`class_a` or `class_b`"
#'   depending on the class of the object provided, either an `A`
#'   or a `B`.
```

## Custom type Parsing Function

The above defaults are meant to cover most use cases and should be sufficient for all but the most elaborate development practices. If you need to go beyond these default behaviors, you can also provide a parsing function, accepting the parsed roxygen tag as well as the raw contents.



The function accepts the `roxygen2::roxy_tag()` produced when parsing the tag, whose `$val` contains fields `name`, `type` and `description`. For convenience, the `$val` contents is unpacked as arguments, though the structure of this tag is liable to change.

To implement a typescript-style class union syntax,

```
#' @typed arg: class_a | class_b | class_c
#'   depending on the class of the object provided, either an `A`
#'   or a `B`.
```

to produce the parameter definition

```
(`class_a`, `class_c` or `class_b`) depending on the class of the object
provided, either an `A`, `B` or a `C`.
```

we might define the following in DESCRIPTION (or in `man/roxytypes/meta.R`).

```
Config/roxytypes: list(
  format = function(tag, ..., name, type, description) {
    types <- paste0("`", trimws(strsplit(type, "|", fixed = TRUE)[[1]]), "`")
    types <- glue::glue_collapse(types, sep = ", ", last = " or ")
    paste0("(", types, ") ", description)
  }
)
```

---

typedreturn

roxygen2 @typedreturn *tag*

---

## Description

The `@typedreturn` tag introduces a syntax for defining return types as a `roxygen2` tag.

## Usage

```
#' @typedreturn <type>
#'   <description>
```

## Details

There is one important syntactic features:

- `\n` after the type to separate it from the description.

---

`with_roxy_field_subclass`*A helper to apply field names to all roxy\_tag val fields*

---

**Description**

A helper to apply field names to all roxy\_tag val fields

**Usage**

```
with_roxy_field_subclass(x)
```

**Arguments**

`x` (list) A named list of tag val contents

**Value**

(: list) A nearly identical list, where elements have additional subclasses based on their field names.

# Index

`build_format_regex`, 2  
`build_format_regex()`, 4

`convert`, 4

`default_format`, 5

`escape_non_glue_re`  
    (`build_format_regex`), 2

`re_any` (`build_format_regex`), 2  
`re_backticked` (`build_format_regex`), 2  
`read.dcf()`, 5  
`read_dcf_asis`, 5  
`roxy_tag_parse.roxy_tag_typed`, 6  
`roxy_tag_parse.roxy_tag_typedreturn`, 6  
`roxy_tag_rd.roxy_tag_typed`, 7  
`roxy_tag_rd.roxy_tag_typedreturn`, 7  
`roxygen2::rd_section`, 7  
`roxygen2::roxy_tag()`, 5, 9

`tags`, 8  
`typed` (`tags`), 8  
`typedreturn`, 9

`with_roxy_field_subclass`, 10