

Package ‘RcppSpdlog’

April 26, 2024

Type Package

Title R and C++ Interfaces to 'spdlog' C++ Header Library for Logging

Version 0.0.17

Date 2024-04-25

License GPL (>= 2)

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Description The mature and widely-used C++ logging library 'spdlog' by Gabi Melman provides many desirable features. This package bundles these header files for easy use by R packages from both their R and C or C++ code. Explicit use via 'LinkingTo:' is also supported. Also see the 'spd' package which enhanced this package with a consistent R and C++ interface.

URL <https://github.com/eddelbuettel/rcppspdlog>,
<https://dirk.eddelbuettel.com/code/rcpp.spdlog.html>

BugReports <https://github.com/eddelbuettel/rcppspdlog/issues>

LinkingTo Rcpp

Imports Rcpp

Suggests simplrmarkdown

VignetteBuilder simplrmarkdown

RoxygenNote 6.0.1

NeedsCompilation yes

Repository CRAN

Date/Publication 2024-04-26 08:10:02 UTC

R topics documented:

RcppSpdlog-package	2
exampleRSink	3
formatter	3
get_stopwatch	4
log_setup	5
setLogLevel	7

RcppSpdlog-package *R and C++ Interfaces to 'spdlog' C++ Header Library for Logging*

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The mature and widely-used C++ logging library 'spdlog' by Gabi Melman provides many desirable features. This package bundles these header files for easy use by R packages from both their R and C or C++ code. Explicit use via 'LinkingTo:' is also supported. Also see the 'spdlog' package which enhanced this package with a consistent R and C++ interface.

Details

The DESCRIPTION file:

```
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LinkingTo:  Rcpp
Imports:    Rcpp
Suggests:  simplermarkdown
VignetteBuilder: simplermarkdown
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```

Index of help topics:

RcppSpdlog-package	R and C++ Interfaces to 'spdlog' C++ Header Library for Logging
exampleRsink	spdlog Example using a sink for R
formatter	Simple Pass-Through Formatter to 'fmt::format()'
get_stopwatch	R Accessor Functions for spdlog Stopwatch
log_setup	R Accessor Functions for spdlog Logger
setLogLevel	spdlog Logging Level Setter

This section should provide a more detailed overview of how to use the package, including the most important functions.

Author(s)

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`exampleRsink`*spdlog Example using a sink for R*

Description

A simple example invoking a derived R/Rcpp logger. Also demonstrates the stopwatch feature. For more features see the 'spdlog' documnetation.

Usage`exampleRsink()`**Details**

Note that this no longer triggers R warnings thanks to excellent help by Gabi Melman.

Value

None

Examples`exampleRsink()`

`formatter`*Simple Pass-Through Formatter to `fmt::format()`*

Description

The C-level interface of R does not make it easy to pass ... arguments. This helper function assumes it has already been called with `format()` on each argument (as a wrapper can do) so it just spreads out the class to `fmt::format{}` which, being C++, uses variadic templates to receive the arguments. The main motivation for this function to able to format string as use by the 'fmtlib::fmt' library included in 'spdlog' to write similar debug strings in both R and C++. This function permits R calls with multiple arguments of different types which (by being formatted on the R side) are handled as strings (whereas C++ logging has access to the templating logic).

Usage`formatter(s, v)`

Arguments

- s A character variable with a format string for ‘fmtlib::fmt’
- v A character vector with the logging string arguments.

Value

A single (formatted) string

See Also

<https://github.com/fmtlib/fmt>

get_stopwatch	<i>R Accessor Functions for spdlog Stopwatch</i>
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Description

A set of functions provides access to the spdlog stopwatch facility. As stopwatch object is a simple container around a C++ `std::chrono` object which (essentially) reports elapsed-time since creation. The object is exported to R via an external pointer permitting use from both R and C++.

Usage

```
get_stopwatch()

elapsed_stopwatch(sw)

format_stopwatch(sw)

## S3 method for class 'stopwatch'
print(x, ...)

## S3 method for class 'stopwatch'
format(x, ...)
```

Arguments

- sw An S3 object of type stopwatch.
- x An S3 object of type stopwatch.
- ... Dotted argument required by generic, unused here.

Details

Several functions are provided:

`get_stopwatch` Returns a stopwatch object (as an S3 object).

`elapsed_stopwatch` Returns elapsed time for stopwatch in seconds.

`format_stopwatch` Returns elapsed time for stopwatch as character variable.

The stopwatch object has `print` and `format` methods.

Value

The desired object is returned: respectively, a stopwatch object as an external pointer in an S3 class, the elapsed time in seconds as a double, or formatted as a character variable.

Examples

```
w <- get_stopwatch()
Sys.sleep(0.2)
elapsed_stopwatch(w)
format_stopwatch(w)
```

log_setup

R Accessor Functions for spdlog Logger

Description

Several R-level functions can access the spdlog logging facilities. As spdlog is a C++-level logging library, these R functions permit concurrent logging from both R and C++.

Usage

```
log_setup(name = "default", level = "warn")
```

```
log_init(level = "warn")
```

```
log_filesetup(filename, name = "default", level = "warn")
```

```
log_drop(name)
```

```
log_set_pattern(s)
```

```
log_set_level(s)
```

```
log_trace(s)
```

```
log_debug(s)
```

log_info(s)

log_warn(s)

log_error(s)

log_critical(s)

Arguments

name	A character variable with the logging instance name, default value is 'default'.
level	A character variable with the default logging level, default value is 'warn'.
filename	A character variable with the logging filename if a file-based logger is instantiated.
s	A character variable with the logging pattern, level or message.

Details

Several functions are provided:

log_setup Initializes a logger (which becomes the default logger).

log_filesetup Initializes a file-based logger (which becomes the default).

log_drop Removes logger (which in general should not be needed).

log_set_pattern Changes the default logging message pattern.

log_set_level Sets the logging level threshold.

log_trace Logs a trace-level message.

log_debug Logs a debug-level message.

log_info Logs a info-level message.

log_warn Logs a warn-level message.

log_error Logs a error-level message.

log_critical Logs a critical-level message.

Supported logging levels are, in order of increasing threshold values, 'trace', 'debug', 'warn', 'info', 'warn', 'error', and 'critical'. A message issued below the current threshold is not displayed whereas a message at or above the current threshold is displayed. The default level is 'warn'.

Value

Nothing is returned from these functions as they are invoked for their side-effects.

See Also

The logging pattern format is described in at the repo in the page <https://github.com/gabime/spdlog/wiki/3.-Custom-formatting>.

Examples

```
log_setup("demo") # at default level 'warn'  
log_info("this message is NOT seen")  
log_set_level("debug")  
log_info("this message is seen")  
log_warn("as is this message")
```

setLogLevel	<i>spdlog Logging Level Setter</i>
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Description

A helper function to turn a logging level given as string into the current logging level

Usage

```
setLogLevel(name)
```

Arguments

name	A string with the logging level. Value understood are, in decreasing verbosity 'trace', 'debug', 'info', 'warning', 'error', 'critical', and 'off'. Unrecognised names are equivalent to 'off'.
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Value

Nothing is returned.

Index

* package

RcppSpdlog-package, 2

elapsed_stopwatch (get_stopwatch), 4
exampleRsink, 3

format.stopwatch (get_stopwatch), 4
format_stopwatch (get_stopwatch), 4
formatter, 3

get_stopwatch, 4

log_critical (log_setup), 5
log_debug (log_setup), 5
log_drop (log_setup), 5
log_error (log_setup), 5
log_filesetup (log_setup), 5
log_info (log_setup), 5
log_init (log_setup), 5
log_set_level (log_setup), 5
log_set_pattern (log_setup), 5
log_setup, 5
log_trace (log_setup), 5
log_warn (log_setup), 5

print.stopwatch (get_stopwatch), 4

RcppSpdlog (RcppSpdlog-package), 2
RcppSpdlog-package, 2

setLogLevel, 7