Package: RcppSpdlog (via r-universe)

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Type Package

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

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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 'spdl' package which enhanced this package with a consistent R and C++ interface.

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

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

LinkingTo Rcpp

Imports Rcpp

Suggests simplermarkdown

VignetteBuilder simplermarkdown

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Contents

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

Index **8**

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

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 'spdl' package which enhanced this package with a consistent R and C++ interface.

Details

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

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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 *R Accessor Functions for spdlog Stopwatch*

Description

A set of functions provides access to the spdlog stopwatch facilty. 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 facilties. As spdlog is a C++-level logging library, these are R function 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', '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` *spdlog Logging Lever Setter*

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'.

Value

Nothing is returned.

Index

∗ **package**
RcppSpdlog-package, 2

elapsed_stopwatch *(*get_stopwatch*)*, 4
exampleRsink, 2

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