

# Package ‘fstcore’

July 22, 2025

**Type** Package

**Title** R Bindings to the 'Fstlib' Library

**Description**

The 'fstlib' library provides multithreaded serialization of compressed data frames using the 'fst' format. The 'fst' format allows for random access of stored data and compression with the 'LZ4' and 'ZSTD' compressors.

**Version** 0.10.0

**Date** 2025-02-10

**Depends** R (>= 3.0.0)

**Imports** Rcpp

**LinkingTo** Rcpp

**SystemRequirements** little-endian platform

**RoxygenNote** 7.3.2

**Suggests** testthat, lintr

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**Encoding** UTF-8

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**URL** <https://www.fstpackage.org/fstcore/>

**BugReports** <https://github.com/fstpackage/fst/issues>

**NeedsCompilation** yes

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**Date/Publication** 2025-02-10 20:50:02 UTC

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fstcore-package	<i>R bindings to the fstlib library</i>
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Description

R package fstcore contains R bindings to the C++ fstlib library which allows interfacing with *fst* files. It also contains the LZ4 and ZSTD sources used for compression. fstcore exists as a package separate from the fst package to facilitate independent updates to the fstlib, LZ4 and ZSTD libraries and is used as a backend to fst.

Details

The fstcore package is based on six C++ libraries or components:

- **fstlib**: library containing code to write, read and compute on files stored in the *fst* format. Written and owned by Mark Klik.
- **LZ4**: library containing code to compress data with the LZ4 compressor. Written and owned by Yann Collet.
- **ZSTD**: library containing code to compress data with the ZSTD compressor. Written by Yann Collet and owned by Facebook, Inc.
- **libdivsufsort-lite**: a lightweight suffix array construction algorithm. This code is bundled with the ZSTD compression library. Written and owned by Yuta Mori.
- **sources from zstdmt**: a multithreading library for Brotli, Lizard, LZ4, LZ5 and Zstandard. This code is bundled with the ZSTD library. Written and owned by Tino Reichardt.
- **source file zstd\_opt.h**: Price functions for optimal parser. Written and owned by Yann Collet and Przemyslaw Skibinski. This code is bundled with the ZSTD library.

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fstlib - A C++ library for ultra fast storage and retrieval of datasets

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You can contact the author at:

- zstdmt source repository: <https://github.com/mcmilk/zstdmt>

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### See Also

Useful links:

- <https://www.fstpackage.org/fstcore/>
- Report bugs at <https://github.com/fstpackage/fst/issues>

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lib\_versions

*Display versioning information of fstcore library dependencies*

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### Description

Display versioning information of fstcore library dependencies

### Usage

```
lib_versions()
```

### Value

a list with library versions

threads\_fstlib

*Get or set the number of threads used in parallel operations***Description**

For parallel operations, the performance is determined to a great extent by the number of threads used. More threads will allow the CPU to perform more computational intensive tasks simultaneously, speeding up the operation. Using more threads also introduces some overhead that will scale with the number of threads used. Therefore, using the maximum number of available threads is not always the fastest solution. With threads\_fstlib the number of threads can be adjusted to the users specific requirements. As a default, fstcore uses a number of threads equal to the number of logical cores in the system.

**Usage**

```
threads_fstlib(nr_of_threads = NULL, reset_after_fork = NULL)
```

**Arguments**

nr\_of\_threads    number of threads to use or NULL to get the current number of threads used in multithreaded operations.

reset\_after\_fork

when fstcore is running in a forked process, the usage of OpenMP can create problems. To prevent these, fstcore switches back to single core usage when it detects a fork. After the fork, the number of threads is reset to it's initial setting. However, on some compilers (e.g. Intel), switching back to multi-threaded mode can lead to issues. When reset\_after\_fork is set to FALSE, fstcore is left in single-threaded mode after the fork ends. After the fork, multithreading can be activated again manually by calling threads\_fstlib with an appropriate value for nr\_of\_threads. The default (reset\_after\_fork = NULL) leaves the fork behavior unchanged.

**Details**

The number of threads can also be set with options(fst\_threads = N). NOTE: This option is only read when the package's namespace is first loaded, with commands like library, require, or ::. If you have already used one of these, you must use threads\_fstlib to set the number of threads.

**Value**

the number of threads (previously) used

**Examples**

```
# get current number of threads
threads_fstlib()

# set the number of threads
```

```
threads_fstlib(12)

# leave in single threaded mode after a fork
threads_fstlib(12, reset_after_fork = FALSE)

# reset number of threads after a fork
threads_fstlib(12, reset_after_fork = TRUE)
```

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