Package 'crc32c'

March 25, 2025

Type Package

Title Cyclic Redundancy Check with CPU-Specific Acceleration

Version 0.0.3

Date 2025-03-25

Description Hardware-based support for 'CRC32C' cyclic redundancy checksum function is made available for 'x86_64' systems with 'SSE2' support as well as for 'arm64', and detected at build-time via 'cmake' with a software-based fallback. This functionality is exported at the 'C'-language level for use by other packages. 'CRC32C' is described in 'RFC 3270' at <https://datatracker.ietf.org/doc/html/rfc3720> and is based on 'Castagnoli et al' <doi:10.1109/26.231911>.

URL https://github.com/google/crc32c, https://github.com/eddelbuettel/crc32c

BugReports https://github.com/eddelbuettel/crc32c/issues

License GPL (>= 2)

LinkingTo tidyCpp

SystemRequirements cmake

Encoding UTF-8

RoxygenNote 6.0.1

NeedsCompilation yes

Author Dirk Eddelbuettel [aut, cre] (<https://orcid.org/0000-0001-6419-907X>), The CRC32C Authors [aut] (See file src/crc32c/AUTHORS)

Maintainer Dirk Eddelbuettel <edd@debian.org>

Repository CRAN

Date/Publication 2025-03-25 18:30:05 UTC

Contents

`crc32c-package` *Cyclic Redundancy Check with CPU-Specific Acceleration*

Description

Hardware-based support for 'CRC32C' cyclic redundancy checksum function is made available for 'x86_64' systems with 'SSE2' support as well as for 'arm64', and detected at build-time via 'cmake' with a software-based fallback. This functionality is exported at the 'C'-language level for use by other packages. 'CRC32C' is described in 'RFC 3270' at <https://datatracker.ietf.org/doc/html/rfc3720> and is based on 'Castagnoli et al' <doi:10.1109/26.231911>.

Package Content

Index of help topics:

```
crc32c                  Cyclic Redundancy Check with Hardware Support
crc32c-package          Cyclic Redundancy Check with CPU-Specific
                        Acceleration
```

Maintainer

Dirk Eddelbuettel

Author(s)

The CRC32C Authors for the 'crc32c' library; Dirk Eddelbuettel for the package.

`crc32c` *Cyclic Redundancy Check with Hardware Support*

Description

The `crc32c` implementation with hardware support via SSE2 instructions on 'x86_64' platforms as well as on 'arm64' is provided by using the code from the repository at https://github.com/google/crc32c.

Usage

```
crc32c(x)
```

Arguments

`x`	A character vector

Value

A character vector of the same length as the incoming vector, with a `crc43c` checksum in hexadecimal as a character value of length eight in each element.

References

https://datatracker.ietf.org/doc/html/rfc3720, doi:10.1109/26.231911

See Also

https://github.com/google/crc32c

Examples

```
crc32c("abc")
```

Index