Package ‘beachmat.hdf5’

May 3, 2024

Version 1.2.0
Date 2023-08-07
Title beachmat bindings for HDF5-backed matrices
Description Extends beachmat to support initialization of tatami matrices from HDF5-backed arrays.
            This allows C++ code in downstream packages to directly call the HDF5 C/C++ library to ac-
            cess array data,
            without the need for block processing via DelayedArray.
            Some utilities are also provided for direct creation of an in-
            memory tatami matrix from a HDF5 file.
Encoding UTF-8
Imports methods, beachmat, HDF5Array, DelayedArray, Rcpp
Suggests testthat, BiocStyle, knitr, markdown, rhdf5, Matrix
LinkingTo Rcpp, beachmat, Rhdf5lib
biocViews DataRepresentation, DataImport, Infrastructure
License GPL-3
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VignetteBuilder knitr
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RoxygenNote 7.2.3
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initializeCpp Initialize HDF5-backed matrices.

Description

Initialize C++ representations of HDF5-backed matrices based on their HDF5Array representations.

Usage

## S4 method for signature 'H5SparseMatrixSeed'
initializeCpp(x, ..., memorize = FALSE)

## S4 method for signature 'HDF5ArraySeed'
initializeCpp(x, ..., memorize = FALSE)

Arguments

x A HDF5Array seed object.
... Further arguments, ignored.
memorize Logical scalar specifying whether to load the matrix data in x into memory, if it has not already been loaded. See checkMemoryCache for details.

Value

An external pointer that can be used in any tatami-compatible function.

Author(s)

Aaron Lun

Examples

library(HDF5Array)
y <- matrix(runif(1000), ncol=20, nrow=50)
z <- as(y, "HDF5Array")
ptr <- initializeCpp(z)
Description

Load a HDF5-backed matrix into memory as an external pointer to a tatami-compatible representation. This differs from the (default) behavior of initializeCpp, which only loads slices of the matrix on request.

Usage

loadIntoMemory(x, force.integer = FALSE)

Arguments

x  A HDF5Array-derived matrix or seed object.
force.integer  Whether to force floating-point values to be integers to reduce memory consumption.

Value

An external pointer that can be used in tatami-based functions.

Author(s)

Aaron Lun

Examples

library(HDF5Array)
y <- matrix(runif(1000), ncol=20, nrow=50)
z <- as(y, "HDF5Array")
ptr <- loadIntoMemory(z)
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