Package 'beachmat.hdf5'

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Version 1.4.0

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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 access 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, rmarkdown, rhdf5, Matrix

LinkingTo Rcpp, assorthead, beachmat, Rhdf5lib

biocViews DataRepresentation, DataImport, Infrastructure

License GPL-3

NeedsCompilation yes

VignetteBuilder knitr

SystemRequirements C++17, GNU make

RoxygenNote 7.3.1

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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)
```

loadIntoMemory *Load a HDF5 matrix into memory*

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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