Package 'rhdf5client'

April 12, 2018

Title Access HDF5 content from h5serv

Description Provides functionality for reading data from h5serv server
from within R.

Version 1.0.7

Suggests knitr, testthat, BiocStyle

Imports S4Vectors, httr, rjson, utils

Depends R (>= 3.4), methods

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LazyLoad yes

BiocViews infrastructure

RoxygenNote 6.0.1.9000

Collate h5serv.R indx.R

VignetteBuilder knitr

biocViews DataImport, Software

NeedsCompilation no

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R topics documented:

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dsmeta *list information about datasets available in an H5S_source*

Description

list information about datasets available in an H5S_source

Usage

```
dsmeta(src)
```

Arguments

src   H5S_source instance

Value

data frame with one row for each group and three columns. The second column has the list of
datasets in the group.

Examples

```
bigec2 = H5S_source("http://h5s.channingremotedata.org:5000")
dsm <- dsmeta(bigec2)
dst <- unlist(dsm[1,2])    # all dataset candidates in group 1
```

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groups *HDF5 server data groups accessor*

Description

HDF5 server data groups accessor

Usage

```
groups(object, index, ...)
```

Arguments

object   H5S_source instance
index   numeric, if present, extracts metadata about selected group (sequential ordering
                of groups as returned by server) access for group information for HDF5 server
...   not used

Value

a data frame with group name and number of links for each group

Examples

```
bigec2 = H5S_source("http://h5s.channingremotedata.org:5000")
groups(bigec2)
```

```
groups,H5S_source,numeric-method
```
                    selective group metadata accessor

Description

selective group metadata accessor

Usage

```
## S4 method for signature 'H5S_source,numeric'
groups(object, index, ...)
```

Arguments

object	instance of H5S_source
index	numeric
...	unused

Value

one-row data frame with group name and number of links for the group

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```
H5S_dataset-class
```
                    name H5S_dataset rdname H5S_dataset-class

---

Description

name H5S_dataset rdname H5S_dataset-class

extract elements from H5S_dataset

Usage

```
## S4 method for signature 'H5S_dataset,numeric,numeric'
x[i, j, ..., drop = FALSE]
```

Arguments

x	instance of H5S_dataset
i	character string usable as select option for first matrix index in HDF5 server value API
j	character string usable as select option for second matrix index in HDF5 server value API
...	unused
drop	logical defaults to FALSE

Value

matrix of data obtained

Slots

source instance of H5S_source instance

simpleName character string naming dataset

shapes list including dimension information

hrefs DataFrame of hrefs as defined in the API

allatts list of all attributes

presel string prepared for select operation in GET

transfermode default "JSON" or "binary" for binary transfer

H5S_source   *H5S_source identifies an HDF5 server and manages some metadata*
                              about contents

Description

H5S_source identifies an HDF5 server and manages some metadata about contents

construct H5S_source

Usage

```
H5S_source(serverURL, ...)

## S4 method for signature 'H5S_source,character'
x[[i, j]]

dataset(h5s, tag)
```

Arguments

serverURL   a URL for a port for HDF5Server

...   not used

x   instance of H5S_source

i   character string intended to identify dataset on server

j   not used

h5s   instance of H5S_source

tag   character string identifying a dataset

Value

an initialized object of type H5S_source

Slots

serverURL character string with a URL

dsmeta DataFrame instance with metadata about content of server

Note

The dsmeta slot holds a DataFrame with a column dsnames that is a list with ith element a character vector of all dsnames available for the ith group. There is no effort at present to search all groups for candidate datasets.

Examples

```
bigec2 = H5S_source("http://h5s.channingremotedata.org:5000")
bigec2
dsmeta(bigec2)[1:2,]       # two groups
dsmeta(bigec2)[1,2][[1]]   # all dataset candidates in group 1
```

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internalDim *acquire internal HDF5 dimension information for matrix*

Description

acquire internal HDF5 dimension information for matrix

Usage

```
internalDim(h5d)
```

Arguments

h5d   instance of H5S_dataset

Value

vector with dimensions of dataset

Examples

```
bigec2 = H5S_source("http://h5s.channingremotedata.org:5000")
tex <- bigec2[["tenx_100k_sorted"]]
internalDim(tex)
```

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isplit	*isplit converts a numeric vector into a list of sequences for compact reexpression*

Description

isplit converts a numeric vector into a list of sequences for compact reexpression

sproc makes vector of type character of triplets initial:final:stride in R-conventions

Usage

```
isplit(x)

sproc(spl)
```

Arguments

x	a numeric vector (should be integers)
spl	output of isplit

Value

list of vectors of integers which can be expressed as initial/final/stride triplets

list of colon-delimited strings each with initial/final/stride triplet

Examples

```
inds = c(1:10, seq(25,50,2), seq(200,150,-2))
sproc(isplit(inds))
```

---

links	*access for link metadata for HDF5 server groups*

Description

access for link metadata for HDF5 server groups

Usage

```
links(object, index, ...)
```

Arguments

object	H5S_source instance
index	numeric group index
...	not used

Value

an object of type H5S_linkset with the linkset of the group

Examples

```
bigec2 = H5S_source("http://h5s.channingremotedata.org:5000")
lks <- links(bigec2, 1)    # linkset for root group
urls <- targets(lks)       # URLs of datasets in linkset
```

---

targets   *provide the full URLs for link members*

Description

provide the full URLs for link members

Usage

```
targets(h5linkset, index)
```

Arguments

h5linkset	instance of H5S_linkset
index	numeric index into link vector - ignored

Value

a vector of dataset tags

Examples

```
bigec2 = H5S_source("http://h5s.channingremotedata.org:5000")
lks <- links(bigec2, 1)    # linkset for first group (Note: first group is the root group, by construction)
urls <- targets(lks)       # URLs of datasets in linkset
```

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transfermode<-   *replace transfer mode*

Description

replace transfer mode

Usage

```
transfermode(object) <- value
```

Arguments

object	instance of H5S_linkset
value	either "JSON" (default) or "binary"

Value

updated object of type H5S_dataset

[,H5S_dataset,character,character-method
extract elements from H5S_dataset

Description

extract elements from H5S_dataset

Usage

```
## S4 method for signature 'H5S_dataset,character,character'
x[i, j, ..., drop = FALSE]
```

Arguments

x	instance of H5S_dataset
i	character string usable as select option for first matrix index in HDF5 server value API
j	character string usable as select option for second matrix index in HDF5 server value API
...	unused
drop	logical defaults to FALSE

Value

matrix of data obtained

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