

Package ‘resourcer’

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Type Package

Title Resource Resolver

Version 1.0.1

Description A resource represents some data or a computation unit. It is described by a URL and credentials. This package proposes a Resource model with “resolver” and “client” classes to facilitate the access and the usage of the resources.

License LGPL (>= 2.1)

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`as.data.frame.resource`*Coerce a resource to a data.frame*

Description

Attempt to coerce a resource object to a data.frame: find a ResourceResolver and get the ResourceClient that will connect to the described dataset and make a data.frame of it.

Usage

```
## S3 method for class 'resource'  
as.data.frame(x, ...)
```

Arguments

`x` a resource object.
`...` additional parameters, that may be used (or ignored) by the resource client.

Value

a data.frame (or a tibble)

`as.data.frame.ResourceClient`*Coerce a ResourceClient object to a data.frame*

Description

Attempt to coerce a resource object to a data.frame: find a ResourceResolver and get the ResourceClient that will connect to the described dataset and make a data.frame of it.

Usage

```
## S3 method for class 'ResourceClient'  
as.data.frame(x, ...)
```

Arguments

`x` a ResourceClient object
`...` additional parameters, that may be used (or ignored) by the resource client.

Value

a data.frame (or a tibble)

as.resource.data.frame

Coerce resource client to a data.frame

Description

Coerce a ResourceClient object to a data.frame.

Usage

```
as.resource.data.frame(x, strict = FALSE)
```

Arguments

x	The ResourceClient object to coerce to a data.frame.
strict	logical whether the resulting object must be strictly of class data.frame or if it can be a tibble.

Value

a data.frame (or a tibble)

as.resource.object

Coerce resource client to the internal data object

Description

Coerce a ResourceClient object to internal data object: depending on the implementation of the ResourceClient, it can be a data connection object (like a DBI connection to a SQL database), or the actual data structure (when a resource is a R object extracted from a R data file for instance).

Usage

```
as.resource.object(x)
```

Arguments

x	The ResourceClient object to coerce to a data.frame.
---	--

Value

the internal data object.

as.resource.tbl *Coerce resource client to a tbl*

Description

Coerce a ResourceClient object to a dplyr's tbl.

Usage

```
as.resource.tbl(x)
```

Arguments

x The ResourceClient object to coerce to a data.frame

Value

a dplyr's tbl

CommandResourceClient *Command resource client*

Description

Command resource client

Command resource client

Format

A R6 object of class CommandResourceClient

Details

Base class for resource clients issuing commands and get a result with the status of the execution, the output and the error messages.

Super class

`resourcer::ResourceClient` -> CommandResourceClient

Methods**Public methods:**

- [CommandResourceClient\\$new\(\)](#)
- [CommandResourceClient\\$clone\(\)](#)

Method `new()`: Creates a new `CommandResourceClient` instance

Usage:

```
CommandResourceClient$new(resource)
```

Arguments:

`resource` A valid resource object.

Returns: A `CommandResourceClient` object.

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
CommandResourceClient$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

DBIResourceConnector *DBI resource connector*

Description

DBI resource connector

DBI resource connector

Format

A R6 object of class `DBIResourceConnector`

Details

Makes a DBI connection from a resource description, used in `SQLResourceClient` that is based on DBI.

Methods**Public methods:**

- [DBIResourceConnector\\$new\(\)](#)
- [DBIResourceConnector\\$isFor\(\)](#)
- [DBIResourceConnector\\$createDBIConnection\(\)](#)
- [DBIResourceConnector\\$closeDBIConnection\(\)](#)
- [DBIResourceConnector\\$clone\(\)](#)

Method `new()`: Creates a new DBIResourceConnector instance

Usage:

```
DBIResourceConnector$new()
```

Returns: A DBIResourceConnector object.

Method `isFor()`: Check that the provided parameter is of class "resource".

Usage:

```
DBIResourceConnector$isFor(resource)
```

Arguments:

resource The resource object to validate.

Returns: A logical.

Method `createDBIConnection()`: Stub function which subclasses will implement to create a DBI connection object from a resource.

Usage:

```
DBIResourceConnector$createDBIConnection(resource)
```

Arguments:

resource A valid resource object.

Method `closeDBIConnection()`: Disconnect the DBI connection.

Usage:

```
DBIResourceConnector$closeDBIConnection(conn)
```

Arguments:

conn A DBI connection object.

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
DBIResourceConnector$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

FileResourceClient *File resource client*

Description

File resource client

File resource client

Format

A R6 object of class FileResourceClient

Details

Base class that connects to a file using a FileResourceGetter.

Super class

```
resourcer::ResourceClient -> FileResourceClient
```

Methods

Public methods:

- `FileResourceClient$new()`
- `FileResourceClient$downloadFile()`
- `FileResourceClient$close()`
- `FileResourceClient$clone()`

Method `new()`: Creates a new FileResourceClient instance.

Usage:

```
FileResourceClient$new(resource, file.getter = NULL)
```

Arguments:

`resource` A valid resource object.

`file.getter` A FileResourceGetter object, optional. If not provided, it will be looked up in the FileResourceGetters registry. The operation will fail if none can be found.

Returns: A FileResourceClient object.

Method `downloadFile()`: Performs the file download, if it does not already exist locally.

Usage:

```
FileResourceClient$downloadFile()
```

Returns: The local path to the downloaded file.

Method `close()`: Removes the file if it was downloaded. A local file resource will remain untouched.

Usage:

```
FileResourceClient$close()
```

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
FileResourceClient$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

FileResourceGetter *File resource getter*

Description

File resource getter

File resource getter

Format

A R6 object of class FileResourceGetter

Details

Helper base class for getting the file described by the resource object. ResourceClient class implementations can use this utility to retrieve files from any locations before processing them according to the declared data format.

Methods

Public methods:

- [FileResourceGetter\\$new\(\)](#)
- [FileResourceGetter\\$isFor\(\)](#)
- [FileResourceGetter\\$downloadFile\(\)](#)
- [FileResourceGetter\\$extractFileName\(\)](#)
- [FileResourceGetter\\$makeDownloadDir\(\)](#)
- [FileResourceGetter\\$clone\(\)](#)

Method `new()`: Creates a new FileResourceGetter instance.

Usage:

```
FileResourceGetter$new()
```

Returns: A FileResourceGetter object.

Method `isFor()`: Check that the provided parameter is of class "resource" and has a format defined.

Usage:

```
FileResourceGetter$isFor(resource)
```

Arguments:

resource The resource object to validate.

Returns: A logical.

Method `downloadFile()`: Stub function which subclasses will implement to make a "resource.file" object from a resource.

Usage:

```
FileResourceGetter$downloadFile(resource, ...)
```

Arguments:

resource A valid resource object.

... Additional parameters that may be relevant for FileResourceGetter subclasses.

Returns: A "resource.file" object.

Method extractFileName(): Utility to get the base name from the file path.

Usage:

```
FileResourceGetter$extractFileName(resource)
```

Arguments:

resource A valid resource object.

Returns: The file base name.

Method makeDownloadDir(): Creates a directory where to download file in the R session's temporary directory. This directory will be flushed when the R session ends.

Usage:

```
FileResourceGetter$makeDownloadDir()
```

Returns: The path to the download directory.

Method clone(): The objects of this class are cloneable with this method.

Usage:

```
FileResourceGetter$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

findDBIResourceConnector

Find a DBI resource connector

Description

Find the DBI resource connector that will download the DBI from the provided resource object.

Usage

```
findDBIResourceConnector(x)
```

Arguments

x The resource object which corresponding DBI connector is to be found.

Value

The corresponding DBIResourceConnector object or NULL if none applies.

findFileResourceGetter
Find a file resource getter

Description

Find the file resource getter that will download the file from the provided resource object.

Usage

```
findFileResourceGetter(x)
```

Arguments

x The resource object which corresponding file getter is to be found.

Value

The corresponding FileResourceGetter object or NULL if none applies.

getDBIResourceConnectors
Get DBI resource connectors registry

Description

Get the DBIResourceConnectors registry, create it if it does not exist.

Usage

```
getDBIResourceConnectors()
```

getFileResourceGetters
Get file resource getters registry

Description

Get the FileResourceGetters registry, create it if it does not exist.

Usage

```
getFileResourceGetters()
```

getResourceResolvers *Get resource resolvers registry*

Description

Get the resource resolvers registry, create it if it does not exist.

Usage

```
getResourceResolvers()
```

Examples

```
{  
  resource::getResourceResolvers()  
}
```

GridFsFileResourceGetter
GridFS file resource getter

Description

GridFS file resource getter

GridFS file resource getter

Format

A R6 object of class GridFsFileResourceGetter

Details

Access a file that is in the MongoDB file store (GridFS). Credentials may apply.

Super class

[resource::FileResourceGetter](#) -> GridFsFileResourceGetter

Methods

Public methods:

- [GridFsFileResourceGetter\\$new\(\)](#)
- [GridFsFileResourceGetter\\$isFor\(\)](#)
- [GridFsFileResourceGetter\\$downloadFile\(\)](#)
- [GridFsFileResourceGetter\\$clone\(\)](#)

Method `new()`: Creates a new `GridFsFileResourceGetter` instance.

Usage:

```
GridFsFileResourceGetter$new()
```

Returns: A `GridFsFileResourceGetter` object.

Method `isFor()`: Check that the provided resource has a URL that locates a GridFS object: either the URL scheme is "gridfs" or it is "mongodb"/"mongodb+srv" with a query parameter "prefix=fs" (that identifies GridFS collection names).

Usage:

```
GridFsFileResourceGetter$isFor(resource)
```

Arguments:

resource The resource object to validate.

Returns: A logical.

Method `downloadFile()`: Download the file from the MongoDB file store in a temporary location.

Usage:

```
GridFsFileResourceGetter$downloadFile(resource, ...)
```

Arguments:

resource A valid resource object.

... Unused additional parameters.

Returns: The "resource.file" object.

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
GridFsFileResourceGetter$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

HttpFileResourceGetter

HTTP file resource getter

Description

HTTP file resource getter

HTTP file resource getter

Format

A R6 object of class HttpFileResourceGetter

Details

Access a file that is stored at a HTTP(S) address. Use Basic authentication header if both resource's identity and secret are defined.

Super class

[resource::FileResourceGetter](#) -> HttpFileResourceGetter

Methods

Public methods:

- [HttpFileResourceGetter\\$new\(\)](#)
- [HttpFileResourceGetter\\$isFor\(\)](#)
- [HttpFileResourceGetter\\$downloadFile\(\)](#)
- [HttpFileResourceGetter\\$clone\(\)](#)

Method `new()`: Creates a new HttpFileResourceGetter instance.

Usage:

```
HttpFileResourceGetter$new()
```

Returns: A HttpFileResourceGetter object.

Method `isFor()`: Check that the provided resource has a URL that locates a file accessible through "http" or "https".

Usage:

```
HttpFileResourceGetter$isFor(resource)
```

Arguments:

resource The resource object to validate.

Returns: A logical.

Method `downloadFile()`: Download the file from the remote address in a temporary location. Applies Basic authentication if credentials are provided in the resource.

Usage:

```
HttpFileResourceGetter$downloadFile(resource, ...)
```

Arguments:

resource A valid resource object.
 ... Unused additional parameters.

Returns: The "resource.file" object.

Method clone(): The objects of this class are cloneable with this method.

Usage:

```
HttpFileResourceGetter$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

LocalFileResourceGetter

Local file resource getter

Description

Local file resource getter

Local file resource getter

Format

A R6 object of class LocalFileResourceGetter

Details

Access a file that is stored in the local file system. No credentials apply.

Super class

[resourcer::FileResourceGetter](#) -> LocalFileResourceGetter

Methods**Public methods:**

- [LocalFileResourceGetter\\$new\(\)](#)
- [LocalFileResourceGetter\\$isFor\(\)](#)
- [LocalFileResourceGetter\\$downloadFile\(\)](#)
- [LocalFileResourceGetter\\$clone\(\)](#)

Method new(): Creates a new LocalFileResourceGetter instance.

Usage:

LocalFileResourceGetter\$new()

Returns: A LocalFileResourceGetter object.

Method isFor(): Check that the provided resource has a URL that locates a file stored in the local file system.

Usage:

LocalFileResourceGetter\$isFor(resource)

Arguments:

resource The resource object to validate.

Returns: A logical.

Method downloadFile(): Make a "resource.file" object from a local file resource.

Usage:

LocalFileResourceGetter\$downloadFile(resource, ...)

Arguments:

resource A valid resource object.

... Unused additional parameters.

Returns: The "resource.file" object.

Method clone(): The objects of this class are cloneable with this method.

Usage:

LocalFileResourceGetter\$clone(deep = FALSE)

Arguments:

deep Whether to make a deep clone.

MariaDBResourceConnector

MariaDB DBI resource connector

Description

MariaDB DBI resource connector

MariaDB DBI resource connector

Format

A R6 object of class MariaDBResourceConnector

Details

Makes a MariaDB/MySQL DBI connection from a resource description.

Super class

`resourcer::DBIResourceConnector` -> MariaDBResourceConnector

Methods**Public methods:**

- `MariaDBResourceConnector$new()`
- `MariaDBResourceConnector$isFor()`
- `MariaDBResourceConnector$createdDBIConnection()`
- `MariaDBResourceConnector$clone()`

Method `new()`: Creates a new MariaDBResourceConnector instance.

Usage:

```
MariaDBResourceConnector$new()
```

Returns: A MariaDBResourceConnector object.

Method `isFor()`: Check that the provided resource has a URL that locates a MySQL or MariaDB object: the URL scheme must be "mysql" or "mariadb".

Usage:

```
MariaDBResourceConnector$isFor(resource)
```

Arguments:

`resource` The resource object to validate.

Returns: A logical.

Method `createdDBIConnection()`: Creates a DBI connection object from a resource.

Usage:

```
MariaDBResourceConnector$createdDBIConnection(resource)
```

Arguments:

`resource` A valid resource object.

Returns: A DBI connection object.

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
MariaDBResourceConnector$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

newResource

Create a Resource

Description

Creates a new Resource structure.

Usage

```
newResource(name = "", url, identity = NULL, secret = NULL, format = NULL)
```

Arguments

name	Optional human friendly name that identifies the resource.
url	URL to access the resource whether it is data or computation capability.
identity	User name or account ID (if credentials are applicable).
secret	User password or token (if credentials are applicable).
format	Data format, to help resource resolver identification and coercing to other formats, optional.

Examples

```
{  
# make a SPSS file resource  
res <- resourcer::newResource(  
  name = "CNSIM1",  
  url = "file:///data/CNSIM1.sav",  
  format = "spss"  
)  
}
```

newResourceClient*Creates a resource client*

Description

From a resource object, find the corresponding resolver in the resolver registry and create a new resource client.

Usage

```
newResourceClient(x)
```

Arguments

x The resource object which corresponding resolver is to be found.

Value

The corresponding ResourceClient object or NULL if none applies.

Examples

```
library(resourcer)
res <- newResource(
  name = "CNSIM1",
  url = "file:///data/CNSIM1.sav",
  format = "spss"
)
client <- newResourceClient(res)
```

NoSQLResourceClient *NoSQL database resource client*

Description

NoSQL database resource client

NoSQL database resource client

Format

A R6 object of class NoSQLResourceClient

Details

Resource client that connects to a NoSQL database supported by nodbi.

Super class

`resourcer::ResourceClient` -> NoSQLResourceClient

Methods**Public methods:**

- `NoSQLResourceClient$new()`
- `NoSQLResourceClient$getConnection()`
- `NoSQLResourceClient$asDataFrame()`
- `NoSQLResourceClient$getDatabaseName()`

- [NoSQLResourceClient\\$getTableName\(\)](#)
- [NoSQLResourceClient\\$close\(\)](#)
- [NoSQLResourceClient\\$clone\(\)](#)

Method `new()`: Creates a new NoSQLResourceClient instance.

Usage:

```
NoSQLResourceClient$new(resource)
```

Arguments:

resource A valid resource object.

Returns: A NoSQLResourceClient object.

Method `getConnection()`: Creates the nodbi connection object if it does not exist.

Usage:

```
NoSQLResourceClient$getConnection()
```

Returns: The nodbi connection object.

Method `asDataFrame()`: Makes a data.frame from the remote database table.

Usage:

```
NoSQLResourceClient$asDataFrame()
```

Returns: A tibble.

Method `getDatabaseName()`: Extract the database name from the resource URL.

Usage:

```
NoSQLResourceClient$getDatabaseName()
```

Returns: The database name.

Method `getTableName()`: Extract the database table name from the resource URL.

Usage:

```
NoSQLResourceClient$getTableName()
```

Returns: The database table name.

Method `close()`: Close the nodbi connection.

Usage:

```
NoSQLResourceClient$close()
```

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
NoSQLResourceClient$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

NoSQLResourceResolver *NoSQL Database Resource resolver*

Description

NoSQL Database Resource resolver

NoSQL Database Resource resolver

Format

A R6 object of class NoSQLResourceResolver

Details

The resource is NoSQL database such as mongodb (elasticsearch, redis, couchdb, sqlite are not supported yet).

Super class

`resourcer::ResourceResolver` -> NoSQLResourceResolver

Methods

Public methods:

- `NoSQLResourceResolver$isFor()`
- `NoSQLResourceResolver$newClient()`
- `NoSQLResourceResolver$clone()`

Method `isFor()`: Check that the provided resource has a URL that locates a nodbi object: the URL scheme must be one of "mongodb", "mongodb+srv". Other NoSQL databases "elasticsearch", "redis", "couchdb", "sqlite" are not supported yet.

Usage:

```
NoSQLResourceResolver$isFor(x)
```

Arguments:

x The resource object to validate.

Returns: A logical.

Method `newClient()`: Creates a NoSQLResourceClient instance from provided resource.

Usage:

```
NoSQLResourceResolver$newClient(x)
```

Arguments:

x A valid resource object.

Returns: A NoSQLResourceClient object.

Method clone(): The objects of this class are cloneable with this method.

Usage:

```
NoSQLResourceResolver$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

OpalFileResourceGetter

Opal file resource getter

Description

Opal file resource getter

Opal file resource getter

Format

A R6 object of class OpalFileResourceGetter

Details

Access a file that is stored in a Opal server. Use Basic authentication header if both resource's identity and secret are defined, token authentication if secret only is defined.

Super class

[resourcer::FileResourceGetter](#) -> OpalFileResourceGetter

Methods

Public methods:

- [OpalFileResourceGetter\\$new\(\)](#)
- [OpalFileResourceGetter\\$isFor\(\)](#)
- [OpalFileResourceGetter\\$downloadFile\(\)](#)
- [OpalFileResourceGetter\\$clone\(\)](#)

Method new(): Creates a new OpalFileResourceGetter instance.

Usage:

```
OpalFileResourceGetter$new()
```

Returns: A OpalFileResourceGetter object.

Method isFor(): Check that the provided resource has a URL that locates a Opal file: the URL scheme must be "opal+http" or "opal+https" and the path must designate a file web service entry point (i.e. starts with "ws/files/").

Usage:

OpalFileResourceGetter\$isFor(resource)

Arguments:

resource The resource object to validate.

Returns: A logical.

Method downloadFile(): Download the file from the Opal file system in a temporary location.

Usage:

OpalFileResourceGetter\$downloadFile(resource, ...)

Arguments:

resource A valid resource object.

... Unused additional parameters.

Returns: The "resource.file" object.

Method clone(): The objects of this class are cloneable with this method.

Usage:

OpalFileResourceGetter\$clone(deep = FALSE)

Arguments:

deep Whether to make a deep clone.

PostgresResourceConnector

Postgres DBI resource connector

Description

Postgres DBI resource connector

Postgres DBI resource connector

Format

A R6 object of class PostgresResourceConnector

Details

Makes a Postgres DBI connection from a resource description.

Super class

[resourcer::DBIResourceConnector](#) -> PostgresResourceConnector

Methods

Public methods:

- [PostgresResourceConnector\\$new\(\)](#)
- [PostgresResourceConnector\\$isFor\(\)](#)
- [PostgresResourceConnector\\$createDBIConnection\(\)](#)
- [PostgresResourceConnector\\$clone\(\)](#)

Method `new()`: Creates a new `PostgresResourceConnector` instance.

Usage:

```
PostgresResourceConnector$new()
```

Returns: A `PostgresResourceConnector` object.

Method `isFor()`: Check that the provided resource has a URL that locates a MySQL or MariaDB object: the URL scheme must be "postgres" or "postgresql".

Usage:

```
PostgresResourceConnector$isFor(resource)
```

Arguments:

`resource` The resource object to validate.

Returns: A logical.

Method `createDBIConnection()`: Creates a DBI connection object from a resource.

Usage:

```
PostgresResourceConnector$createDBIConnection(resource)
```

Arguments:

`resource` A valid resource object.

Returns: A DBI connection object.

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
PostgresResourceConnector$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

PrestoResourceConnector

Presto DBI resource connector

Description

Presto DBI resource connector

Presto DBI resource connector

Format

A R6 object of class PrestoResourceConnector

Details

Makes a Presto DBI connection from a resource description.

Super class

[resource::DBIResourceConnector](#) -> PrestoResourceConnector

Methods

Public methods:

- [PrestoResourceConnector\\$new\(\)](#)
- [PrestoResourceConnector\\$isFor\(\)](#)
- [PrestoResourceConnector\\$createDBIConnection\(\)](#)
- [PrestoResourceConnector\\$clone\(\)](#)

Method `new()`: Creates a new PrestoResourceConnector instance.

Usage:

```
PrestoResourceConnector$new()
```

Returns: A PrestoResourceConnector object.

Method `isFor()`: Check that the provided resource has a URL that locates a MySQL or MariaDB object: the URL scheme must be "presto", "presto+http" or "presto+https".

Usage:

```
PrestoResourceConnector$isFor(resource)
```

Arguments:

resource The resource object to validate.

Returns: A logical.

Method `createDBIConnection()`: Creates a DBI connection object from a resource.

Usage:

```
PrestoResourceConnector$createDBIConnection(resource)
```

Arguments:

resource A valid resource object.

Returns: A DBI connection object.

Method clone(): The objects of this class are cloneable with this method.

Usage:

```
PrestoResourceConnector$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

RDataFileResourceClient

R data file resource client

Description

R data file resource client

R data file resource client

Format

A R6 object of class TidyFileResourceClient

Details

Connects to a R data file and loads it in a controlled environment.

Super classes

[resourcer::ResourceClient](#) -> [resourcer::FileResourceClient](#) -> RDataFileResourceClient

Methods

Public methods:

- [RDataFileResourceClient\\$new\(\)](#)
- [RDataFileResourceClient\\$asDataFrame\(\)](#)
- [RDataFileResourceClient\\$getValue\(\)](#)
- [RDataFileResourceClient\\$clone\(\)](#)

Method new(): Creates a new RDataFileResourceClient instance.

Usage:

```
RDataFileResourceClient$new(resource)
```

Arguments:

resource A valid resource object.

Returns: A RDataFileResourceClient object.

Method asDataFrame(): Coerce the resource value extracted from the R data file to a data.frame.

Usage:

```
RDataFileResourceClient$asDataFrame(...)
```

Arguments:

... Additional parameters to as.data.frame (not used yet).

Returns: A data.frame.

Method getValue(): Get the resource value extracted from the R data file.

Usage:

```
RDataFileResourceClient$getValue()
```

Returns: The resource value.

Method clone(): The objects of this class are cloneable with this method.

Usage:

```
RDataFileResourceClient$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

RDataFileResourceResolver

R data file Resource resolver

Description

R data file Resource resolver

R data file Resource resolver

Format

A R6 object of class RDataFileResourceResolver

Details

The resource is a R data file and data format is the class of the symbol that will be loaded.

Super class

[resourcer::ResourceResolver](#) -> RDataFileResourceResolver

Methods

Public methods:

- [RDataFileResourceResolver\\$isFor\(\)](#)
- [RDataFileResourceResolver\\$newClient\(\)](#)
- [RDataFileResourceResolver\\$clone\(\)](#)

Method `isFor()`: Check that the provided resource has a URL that locates a R data file: the resource can be accessed as a file and the resource URL path ends with ".rda" or ".rdata" (case ignored), or the resource format is prefixed with "r:" or "rda:" (a kind of namespace to qualify the R object class).

Usage:

```
RDataFileResourceResolver$isFor(x)
```

Arguments:

x The resource object to validate.

Returns: A logical.

Method `newClient()`: Creates a `RDataFileResourceClient` instance from provided resource.

Usage:

```
RDataFileResourceResolver$newClient(x)
```

Arguments:

x A valid resource object.

Returns: A `RDataFileResourceClient` object.

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
RDataFileResourceResolver$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

```
registerDBIResourceConnector
```

Register a DBI resource connector

Description

Maintain an list of `DBIResourceConnectors` that will be called when a new DBI resource connector is to be found.

Usage

```
registerDBIResourceConnector(x)
```

Arguments

x The DBI resource connector object to register.

```
registerFileResourceGetter
    Register a file resource getter
```

Description

Maintain an list of FileResourceGetters that will be called when a new file resource getter is to be found.

Usage

```
registerFileResourceGetter(x)
```

Arguments

x The file resource getter object to register.

```
registerResourceResolver
    Register a resource resolver
```

Description

Maintain an list of resource resolvers that will be called when a new resource is to be resolved.

Usage

```
registerResourceResolver(x)
```

Arguments

x The resource resolver object to register.

Examples

```
## Not run:
resourcer::registerResourceResolver(MyFileFormatResourceResolver$new())

## End(Not run)
```

resolveResource *Find a resource resolver*

Description

Find the resolver that will make a client from the provided resource object.

Usage

```
resolveResource(x)
```

Arguments

x The resource object which corresponding resolver is to be found.

Value

The corresponding ResourceResolver object or NULL if none applies.

Examples

```
library(resourcer)
res <- newResource(
  name = "CNSIM1",
  url = "file:///data/CNSIM1.sav",
  format = "spss"
)
resolver <- resolveResource(res)
```

ResourceClient *Resource client*

Description

Resource client

Resource client

Format

A R6 object of class ResourceClient

Details

Helper class for connecting to a resource data store or a computation unit.

Methods

Public methods:

- [ResourceClient\\$new\(\)](#)
- [ResourceClient\\$getResource\(\)](#)
- [ResourceClient\\$getConnection\(\)](#)
- [ResourceClient\\$downloadFile\(\)](#)
- [ResourceClient\\$asDataFrame\(\)](#)
- [ResourceClient\\$asTbl\(\)](#)
- [ResourceClient\\$exec\(\)](#)
- [ResourceClient\\$close\(\)](#)
- [ResourceClient\\$clone\(\)](#)

Method `new()`: Creates a ResourceClient instance.

Usage:

```
ResourceClient$new(resource)
```

Arguments:

resource The resource object to be interpreted.

Returns: A ResourceClient object.

Method `getResource()`: Get the resource object.

Usage:

```
ResourceClient$getResource()
```

Returns: The resource object.

Method `getConnection()`: Get the implementation-specific object that connects to the resource

Usage:

```
ResourceClient$getConnection()
```

Returns: The connection object.

Method `downloadFile()`: Stub function to be implemented by subclasses if relevant. Get the resource as a local file.

Usage:

```
ResourceClient$downloadFile(...)
```

Arguments:

... Additional parameters.

Returns: The path to the local file.

Method `asDataFrame()`: Stub function to be implemented by subclasses if relevant. Coerce the resource as a data.frame.

Usage:

```
ResourceClient$asDataFrame(...)
```

Arguments:

... Additional parameters.

Returns: A data.frame object (can also be a tibble).

Method `asTbl()`: Stub function to be implemented by subclasses if relevant. Coerce the resource as a dplyr's tbl.

Usage:

```
ResourceClient$asTbl(...)
```

Arguments:

... Additional parameters.

Returns: A dplyr's tbl object.

Method `exec()`: Stub function to be implemented by subclasses if relevant. Executes a command on a computation resource.

Usage:

```
ResourceClient$exec(...)
```

Arguments:

... Additional parameters that will represent the command to execute.

Returns: A command execution result object.

Method `close()`: Silently closes the connection to the resource

Usage:

```
ResourceClient$close()
```

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
ResourceClient$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

ResourceResolver	<i>Resource resolver</i>
------------------	--------------------------

Description

Resource resolver

Resource resolver

Format

A R6 object of class ResourceResolver

Details

Helper class for building a Client that implements the access to the data or the computation unit.

Methods

Public methods:

- [ResourceResolver\\$new\(\)](#)
- [ResourceResolver\\$isFor\(\)](#)
- [ResourceResolver\\$newClient\(\)](#)
- [ResourceResolver\\$clone\(\)](#)

Method `new()`: Creates a new `ResourceResolver` instance.

Usage:

```
ResourceResolver$new()
```

Returns: A `ResourceResolver` object.

Method `isFor()`: Check that the provided object is of class "resource".

Usage:

```
ResourceResolver$isFor(x)
```

Arguments:

x The resource object to evaluate.

Returns: A logical.

Method `newClient()`: Stub function to be implemented by subclasses. Makes an object which class inherits from `ResourceClient`.

Usage:

```
ResourceResolver$newClient(x)
```

Arguments:

x The resource object to evaluate.

Returns: The `ResourceClient` object that will access the provided resource.

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
ResourceResolver$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

ScpFileResourceGetter *SCP file resource getter*

Description

SCP file resource getter

SCP file resource getter

Format

A R6 object of class ScpFileResourceGetter

Details

Access a file that is stored on a server accessible through SSH. Credentials apply.

Super class

`resource::FileResourceGetter` -> ScpFileResourceGetter

Methods

Public methods:

- `ScpFileResourceGetter$new()`
- `ScpFileResourceGetter$isFor()`
- `ScpFileResourceGetter$downloadFile()`
- `ScpFileResourceGetter$clone()`

Method `new()`: Creates a ScpFileResourceGetter instance.

Usage:

```
ScpFileResourceGetter$new()
```

Returns: The ScpFileResourceGetter object.

Method `isFor()`: Check that the provided resource is a file accessible by SCP: the resource URL scheme must be "scp".

Usage:

```
ScpFileResourceGetter$isFor(resource)
```

Arguments:

resource The resource object to evaluate.

Returns: A logical.

Method `downloadFile()`: Download the file described by the resource over an SSH connection.

Usage:

```
ScpFileResourceGetter$downloadFile(resource, ...)
```

Arguments:

resource The resource that identifies the file.
 ... Additional parameters (not used).

Returns: The "resource.file" object.

Method clone(): The objects of this class are cloneable with this method.

Usage:

ScpFileResourceGetter\$clone(deep = FALSE)

Arguments:

deep Whether to make a deep clone.

ShellResourceClient *Shell resource client*

Description

Shell resource client

Shell resource client

Format

A R6 object of class ShellResourceClient

Details

Executes local system shell commands.

Super classes

[resourcer::ResourceClient](#) -> [resourcer::CommandResourceClient](#) -> ShellResourceClient

Methods**Public methods:**

- [ShellResourceClient\\$new\(\)](#)
- [ShellResourceClient\\$getAllowedCommands\(\)](#)
- [ShellResourceClient\\$copyFile\(\)](#)
- [ShellResourceClient\\$exec\(\)](#)
- [ShellResourceClient\\$clone\(\)](#)

Method new(): Create a ShellResourceClient instance. This client will interact with a computation resource using shell commands.

Usage:

ShellResourceClient\$new(resource)

Arguments:

resource The computation resource.

Returns: The ShellResourceClient object.

Method `getAllowedCommands()`: Get the command names that can be executed.

Usage:

```
ShellResourceClient$getAllowedCommands()
```

Returns: A character vector

Method `copyFile()`: Copy one or more files (wildcard * is supported in the file name (which can be a directory))

Usage:

```
ShellResourceClient$copyFile(file, to = ".", verbose = FALSE)
```

Arguments:

file The file to copy.

to The copy destination.

verbose If TRUE, details the file operations on the console output.

Returns: The path to the files having been copied.

Method `exec()`: Executes a shell command in the working directory specified in the resource's URL.

Usage:

```
ShellResourceClient$exec(command, params = NULL, test = FALSE)
```

Arguments:

command The command name.

params A character vector of arguments to pass.

test If TRUE, the command is printed but not executed (for debugging).

Returns: The command execution result object.

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
ShellResourceClient$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

ShellResourceResolver *Shell Resource resolver*

Description

Shell Resource resolver

Shell Resource resolver

Format

A R6 object of class ShellResourceResolver

Details

The resource is a computation unit, accessible by issuing local system commands, i.e. which URL scheme is "sh".

Super class

[resourcer::ResourceResolver](#) -> ShellResourceResolver

Methods**Public methods:**

- [ShellResourceResolver\\$isFor\(\)](#)
- [ShellResourceResolver\\$newClient\(\)](#)
- [ShellResourceResolver\\$clone\(\)](#)

Method `isFor()`: Check that the provided resource is a computation resource accessible by shell commands. The resource URL scheme must be "sh" or "shell".

Usage:

`ShellResourceResolver$isFor(x)`

Arguments:

x The resource object.

Returns: A logical.

Method `newClient()`: Create a ShellResourceClient instance from the provided resource.

Usage:

`ShellResourceResolver$newClient(x)`

Arguments:

x A valid resource object.

Returns: A ShellResourceClient object.

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
ShellResourceResolver$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

SparkResourceConnector

Apache Spark DBI resource connector

Description

Apache Spark DBI resource connector

Apache Spark DBI resource connector

Format

A R6 object of class SparkResourceConnector

Details

Makes a Apache Spark connection object, that is also a DBI connection object, from a resource description.

Super class

`resourcer::DBIResourceConnector` -> SparkResourceConnector

Methods**Public methods:**

- `SparkResourceConnector$new()`
- `SparkResourceConnector$isFor()`
- `SparkResourceConnector$createDBIConnection()`
- `SparkResourceConnector$closeDBIConnection()`
- `SparkResourceConnector$clone()`

Method `new()`: Create a SparkResourceConnector instance.

Usage:

```
SparkResourceConnector$new()
```

Returns: A SparkResourceConnector object.

Method `isFor()`: Check if the provided resource applies to a Apache Spark server. The resource URL scheme must be one of "spark", "spark+http" or "spark+https".

Usage:

```
SparkResourceConnector$isFor(resource)
```

Arguments:

resource The resource object to validate.

Returns: A logical.

Method createDBIConnection(): Creates a DBI connection object from a Apache Spark resource.

Usage:

```
SparkResourceConnector$createDBIConnection(resource)
```

Arguments:

resource A valid resource object.

Returns: A DBI connection object.

Method closeDBIConnection(): Close the DBI connection to Apache Spark.

Usage:

```
SparkResourceConnector$closeDBIConnection(conn)
```

Arguments:

conn A DBI connection object.

Method clone(): The objects of this class are cloneable with this method.

Usage:

```
SparkResourceConnector$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

SQLResourceClient *SQL database resource client*

Description

SQL database resource client

SQL database resource client

Format

A R6 object of class SQLResourceClient

Details

Resource client that connects to a SQL database supported by DBI.

Super class

[resourcer::ResourceClient](#) -> SQLResourceClient

Methods

Public methods:

- `SQLResourceClient$new()`
- `SQLResourceClient$getConnection()`
- `SQLResourceClient$asDataFrame()`
- `SQLResourceClient$asTbl()`
- `SQLResourceClient$getTableNames()`
- `SQLResourceClient$close()`
- `SQLResourceClient$clone()`

Method `new()`: Creates a `SQLResourceClient` from a resource.

Usage:

```
SQLResourceClient$new(resource, dbi.connector = NULL)
```

Arguments:

`resource` The resource object.

`dbi.connector` An optional `DBIResourceConnector` object. If not provided, it will be looked up in the `DBIResourceConnector` registry.

Returns: The `SQLResourceClient` object.

Method `getConnection()`: Get or create the DBI connection object that will access the resource.

Usage:

```
SQLResourceClient$getConnection()
```

Returns: The DBI connection object.

Method `asDataFrame()`: Coerce the SQL table to a `data.frame`.

Usage:

```
SQLResourceClient$asDataFrame(...)
```

Arguments:

`...` Additional parameters (not used).

Returns: A `data.frame` (more specifically a tibble).

Method `asTbl()`: Get the SQL table as a dplyr's `tbl`.

Usage:

```
SQLResourceClient$asTbl()
```

Returns: A dplyr's `tbl` object.

Method `getTableNames()`: Get the SQL table name from the resource URL.

Usage:

```
SQLResourceClient$getTableNames()
```

Returns: The SQL table name.

Method `close()`: Silently close the DBI connection.

Usage:

```
SQLResourceClient$close()
```

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
SQLResourceClient$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

SQLResourceResolver *SQL Database Resource resolver*

Description

SQL Database Resource resolver

SQL Database Resource resolver

Format

A R6 object of class SQLResourceResolver

Details

The resource is SQL database.

Super class

[resourcer::ResourceResolver](#) -> SQLResourceResolver

Methods

Public methods:

- [SQLResourceResolver\\$isFor\(\)](#)
- [SQLResourceResolver\\$newClient\(\)](#)
- [SQLResourceResolver\\$clone\(\)](#)

Method `isFor()`: Check that the provided resource has a registered DBIResourceConnector.

Usage:

```
SQLResourceResolver$isFor(x)
```

Arguments:

`x` The resource object to evaluate.

Returns: A logical.

Method `newClient()`: Creates a `SQLResourceClient` instance from provided resource.

Usage:

`SQLResourceResolver$newClient(x)`

Arguments:

x A valid resource object.

Returns: A `SQLResourceClient` object.

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

`SQLResourceResolver$clone(deep = FALSE)`

Arguments:

deep Whether to make a deep clone.

SshResourceClient *SSH resource client*

Description

SSH resource client

SSH resource client

Format

A R6 object of class `SshResourceClient`

Details

Connects to a SSH server.

Super classes

`resourcer::ResourceClient` -> `resourcer::CommandResourceClient` -> `SshResourceClient`

Methods

Public methods:

- `SshResourceClient$new()`
- `SshResourceClient$getAllowedCommands()`
- `SshResourceClient$getConnection()`
- `SshResourceClient$downloadFile()`
- `SshResourceClient$uploadFile()`
- `SshResourceClient$tempDir()`
- `SshResourceClient$removeTempDir()`
- `SshResourceClient$exec()`

- [SshResourceClient\\$close\(\)](#)
- [SshResourceClient\\$clone\(\)](#)

Method new(): Create a SshResourceClient instance. This client will interact with a computation resource using ssh commands.

Usage:

```
SshResourceClient$new(resource)
```

Arguments:

resource The computation resource.

Returns: The SshResourceClient object.

Method getAllowedCommands(): Get the command names that can be executed.

Usage:

```
SshResourceClient$getAllowedCommands()
```

Returns: A character vector

Method getConnection(): Get or create the SSH connection object, for raw interaction.

Usage:

```
SshResourceClient$getConnection()
```

Returns: The SSH connection object.

Method downloadFile(): Download one or more files (wildcard * is supported in the file name (which can be a directory))

Usage:

```
SshResourceClient$downloadFile(file, to = ".", verbose = FALSE)
```

Arguments:

file The file path(s) to download, either absolute or relative to the working directory.

to The download destination.

verbose If TRUE, details the file operations on the console output.

Returns: The paths of the files having been downloaded.

Method uploadFile(): Upload one or more files

Usage:

```
SshResourceClient$uploadFile(file, to = ".", verbose = FALSE)
```

Arguments:

file The file or vector of files to upload.

to The upload destination, either absolute or relative to working directory.

verbose If TRUE, details the file operations on the console output.

Returns: The paths of the files having been uploaded.

Method tempDir(): Get connection's temporary directory in the remote server, create it if it does not exist.

Usage:

SshResourceClient\$tempDir()

Returns: The path to the temporary directory.

Method removeTempDir(): Remove the connection's temporary directory from the remote server, if it was defined.

Usage:

SshResourceClient\$removeTempDir()

Method exec(): Executes a ssh command.

Usage:

SshResourceClient\$exec(command, params = NULL, test = FALSE)

Arguments:

command The command name.

params A character vector of arguments to pass.

test If TRUE, the command is printed but not executed (for debugging).

Returns: The command execution result object.

Method close(): Close the SSH connection.

Usage:

SshResourceClient\$close()

Method clone(): The objects of this class are cloneable with this method.

Usage:

SshResourceClient\$clone(deep = FALSE)

Arguments:

deep Whether to make a deep clone.

SshResourceResolver *SSH Resource resolver*

Description

SSH Resource resolver

SSH Resource resolver

Format

A R6 object of class SshResourceResolver

Details

The resource is a computation unit, accessible through SSH, i.e. which URL scheme is "ssh".

Super class

`resourcer::ResourceResolver` -> SshResourceResolver

Methods**Public methods:**

- `SshResourceResolver$isFor()`
- `SshResourceResolver$newClient()`
- `SshResourceResolver$clone()`

Method `isFor()`: Check that the provided resource is a computation resource accessible by ssh commands. The resource URL scheme is expected to be "ssh".

Usage:

`SshResourceResolver$isFor(x)`

Arguments:

x The resource object.

Returns: A logical.

Method `newClient()`: Create a SshResourceClient instance from the provided resource.

Usage:

`SshResourceResolver$newClient(x)`

Arguments:

x A valid resource object.

Returns: A SshResourceClient object.

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

`SshResourceResolver$clone(deep = FALSE)`

Arguments:

deep Whether to make a deep clone.

TidyFileResourceClient

Tidy file resource client

Description

Tidy file resource client

Tidy file resource client

Format

A R6 object of class TidyFileResourceClient

Details

Connects to a file and use one of the tidyverse reader.

Super classes

```
resource::ResourceClient -> resource::FileResourceClient -> TidyFileResourceClient
```

Methods

Public methods:

- `TidyFileResourceClient$new()`
- `TidyFileResourceClient$asDataFrame()`
- `TidyFileResourceClient$clone()`

Method `new()`: Create a `TidyFileResourceClient` instance.

Usage:

```
TidyFileResourceClient$new(resource)
```

Arguments:

`resource` A valid resource object.

Returns: A `TidyFileResourceClient` object.

Method `asDataFrame()`: Coerce the resource value extracted from the file in tidy format to a `data.frame`.

Usage:

```
TidyFileResourceClient$asDataFrame(...)
```

Arguments:

`...` Additional parameters to `as.data.frame` (not used yet).

Returns: A `data.frame` (more specifically a tibble).

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
TidyFileResourceClient$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

TidyFileResourceResolver

Tidy file Resource resolver

Description

Tidy file Resource resolver

Tidy file Resource resolver

Format

A R6 object of class TidyFileResourceResolver

Details

The resource is a file and data format is handled by a reader from tidyverse. The data format is one of: csv (comma delimiter), csv2 (semicolon delimiter), tsv (tab delimiter), ssv (space delimiter), delim (delim parameter to be specified in the URL, default is space char), spss, sav, por, stata, dta, sas, xpt, excel, xls, xlsx.

Methods

`$new()` Create new TidyFileResourceResolver instance. `$isFor(x)` Get a logical that indicates that the resolver is applicable to the provided resource object. `$newClient()` Make a client for the provided resource.

Super class

`resourcer::ResourceResolver` -> TidyFileResourceResolver

Methods

Public methods:

- `TidyFileResourceResolver$isFor()`
- `TidyFileResourceResolver$newClient()`
- `TidyFileResourceResolver$clone()`

Method `isFor()`: Check that the provided resource has a URL that locates a tidy data file: the resource can be accessed as a file and the resource format is one of "csv", "csv2", "tsv", "delim", "ssv", "spss", "sav", "por", "stata", "dta", "sas", "xpt", "excel", "xls" or "xlsx" (case is ignored).

Usage:

```
TidyFileResourceResolver$isFor(x)
```

Arguments:

x The resource object to validate.

Returns: A logical.

Method `newClient()`: Creates a `TidyFileResourceClient` instance from provided resource.

Usage:

```
TidyFileResourceResolver$newClient(x)
```

Arguments:

x A valid resource object.

Returns: A `TidyFileResourceClient` object.

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
TidyFileResourceResolver$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

`unregisterDBIResourceConnector`

Remove a DBI resource connector from the registry

Description

Remove any DBI resource connectors with the provided class name.

Usage

```
unregisterDBIResourceConnector(x)
```

Arguments

x The DBI resource connector class name to unregister.

`unregisterFileResourceGetter`

Remove a file resource getter from the registry

Description

Remove any file resource getters with the provided class name.

Usage

```
unregisterFileResourceGetter(x)
```

Arguments

x The file resource getter class name to unregister.

`unregisterResourceResolver`

Remove a resource resolver from the registry

Description

Remove any resolvers with the provided class name.

Usage

```
unregisterResourceResolver(x)
```

Arguments

x The resource resolver class name to unregister.

Examples

```
## Not run:  
resourcer::unregisterResourceResolver("MyFileFormatResourceResolver")  
  
## End(Not run)
```

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