Package 'DSMolgenisArmadillo'

March 26, 2026

Type Package

Version 4.0.1

Title 'DataSHIELD' Client for 'MOLGENIS Armadillo'

Description 'DataSHIELD' is an infrastructure and series of R packages that
enables the remote and 'non-disclosive' analysis of sensitive research data.
This package is the 'DataSHIELD' interface implementation to analyze data
shared on a 'MOLGENIS Armadillo' server. 'MOLGENIS Armadillo' is a
light-weight 'DataSHIELD' server using a file store and an 'RServe' server.

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Depends R (>= 3.6), DSI (>= 1.3.0), MolgenisAuth (>= 1.0.0),

Imports methods, httr, stringr, utils, base64enc, urltools, dplyr,
jsonlite, lifecycle, tibble

Suggests dsBaseClient (>= 6.0), knitr, mockery, testthat (>= 2.1.0),
rmarkdown, metafor

License LGPL (>= 2.1)

URL https://github.com/molgenis/molgenis-r-datashield/,
https://molgenis.github.io/molgenis-r-datashield/

BugReports https://github.com/molgenis/molgenis-r-datashield/issues/

RoxygenNote 7.3.3

VignetteBuilder knitr

Encoding UTF-8

Collate 'ArmadilloDriver.R' 'ArmadilloConnection.R' 'ArmadilloOAuth.R'
'ArmadilloResult.R' 'DSMolgenisArmadillo-defunct.R'
'DSMolgenisArmadillo-package.R' 'utils.R'

NeedsCompilation no

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Contents

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armadillo   *Create an Armadillo DataSHIELD Service driver*

Description

Convenience function for creating a [ArmadilloDriver](#) object.

Usage

```
armadillo()
```

---

armadillo.get_credentials
Get credentials information

Description

Get credentials information

Usage

```
armadillo.get_credentials(server)
```

Arguments

server   the URL of the Armadillo server

Details

This function fetched various details from the auth server, including refresh, id and access tokens.
NOTE: in order to get refresh token, refresh tokens should be turned on for this armadillo instance
on the auth server. When access tokens are fetched using this method, it enables the automatic
refreshing of tokens when they time out. This works by checking whether the current token(s) have
expired, and if so attempting to refresh them and write the refreshed token to the connection and
credentials objects in the global environment. For this to work correctly, ensure that there only
exists one DataSHIELD connections object in the global environment, and that for each datasource
there is only object containing their credentials.

Value

The credentials

Examples

```
## Not run:
example_url <- "https://armadillo.example.org"
credentials <- armadillo.get_credentials(example_url)

builder <- newDSLoginBuilder()
builder$append(
  url = example_url,
  server = "example_server",
  token = credentials@access_token,
  driver = "ArmadilloDriver")
logindata <- builder$build()

conns <- datashield.login(logins = logindata, assign = FALSE)

## End(Not run)
```

---

dsAggregate,ArmadilloConnection-method
Aggregate data

Description

Aggregate some data from the DataSHIELD R session using a valid R expression. The aggregation expression must satisfy the data repository's DataSHIELD configuration.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsAggregate(conn, expr, async = TRUE)
```

Arguments

conn	ArmadilloConnection-class object.
expr	Expression to evaluate.
async	Whether the result of the call should be retrieved asynchronously. When TRUE (default) the calls are parallelized over the connections, when the connection supports that feature, with an extra overhead of requests.

---

dsAssignExpr,ArmadilloConnection-method
Assign the result of an expression

Description

Assign a result of the execution of an expression in the DataSHIELD R session.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsAssignExpr(conn, symbol, expr, async = TRUE)
```

Arguments

conn	ArmadilloConnection-class object.
symbol	Name of the R symbol.
expr	A R expression with allowed assign functions calls.
async	Whether the result of the call should be retrieved asynchronously. When TRUE (default) the calls are parallelized over the connections, when the connection supports that feature, with an extra overhead of requests.

Value

A [ArmadilloResult-class](#) object.

---

dsAssignResource,ArmadilloConnection-method
Assign a resource

Description

Assign a resource in the DataSHIELD R session.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsAssignResource(conn, symbol, resource, async = TRUE)
```

Arguments

conn	An object that inherits from [DSConnection-class](#).
symbol	Name of the R symbol.
resource	Fully qualified name of a resource reference in the data repository.
async	Whether the result of the call should be retrieved asynchronously.

Value

A [ArmadilloResult-class](#) object.

---

dsAssignTable,ArmadilloConnection-method
Assign a table

Description

Assign a R-data.frame in the DataSHIELD R session.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsAssignTable(
  conn,
  symbol,
  table,
  variables = NULL,
  missings = FALSE,
  identifiers = NULL,
  id.name = NULL,
  async = TRUE
)
```

Arguments

conn	[ArmadilloConnection-class](#) object.
symbol	Name of the R symbol.
table	Fully qualified name of the table.
variables	The variables to load.
missings	Not supported
identifiers	Not supported
id.name	Not supported
async	When set, do not wait for the result.

Value

A [ArmadilloResult-class](#) object.

---

dsConnect,ArmadilloDriver-method
                    Connect to an Armadillo DataSHIELD service

---

Description

Connect to an Armadillo DataSHIELD service, with provided credentials.

Usage

```
## S4 method for signature 'ArmadilloDriver'
dsConnect(
  drv,
  name,
  restore = NULL,
  username = "",
  password = "",
```

```
  token = "",
  url,
  profile = "default",
  opts = list(),
  ...
)
```

Arguments

drv	[ArmadilloDriver-class](#) class object.
name	Name of the connection, which must be unique among all the DataSHIELD connections.
restore	Workspace name to be restored in the newly created DataSHIELD R session.
username	The username to authenticate with.
password	The password to authenticate with.
token	The ID token to authenticate with.
url	URL of the server.
profile	the profile to select, default "default"
opts	Curl options as described by httr (call httr::httr_options() for details). Can be provided by "Armadillo.opts" option.
...	Unused, needed for compatibility with generic.

Value

A [ArmadilloConnection-class](#) object.

---

dsDisconnect,ArmadilloConnection-method
Disconnect from an Armadillo DataSHIELD Service

Description

Disconnect from an Armadillo DataSHIELD Service and release all R resources. If a workspace ID is provided, the DataSHIELD R session will be saved before being destroyed.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsDisconnect(conn, save = NULL)
```

Arguments

conn	[ArmadilloConnection-class](#) class object
save	Save the DataSHIELD R session with provided ID (must be a character string).

See Also

dsDisconnect

---

dsFetch,ArmadilloResult-method
Fetch the result

Description

Fetch the DataSHIELD operation result.

Usage

```
## S4 method for signature 'ArmadilloResult'
dsFetch(res)
```

Arguments

res   ArmadilloResult-class object.

Value

TRUE if table exists.

---

dsGetInfo,ArmadilloConnection-method
Get connection info

Description

Get information about a connection.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsGetInfo(dsObj, ...)
```

Arguments

dsObj   ArmadilloConnection-class class object
...   Unused, needed for compatibility with generic.

Value

The connection information. This should report the version of the data repository application
(repo.version) and its name (repo.name), the database name (dbname), username, (username),
host (host), port (port), etc. It MAY also include any other arguments related to the connection
(e.g., thread id, socket or TCP connection type). It MUST NOT include the password.

dsGetInfo,ArmadilloDriver-method

Get driver info

Description

Get information about a driver.

Usage

```
## S4 method for signature 'ArmadilloDriver'
dsGetInfo(dsObj, ...)
```

Arguments

dsObj   [ArmadilloDriver-class](#) class object

...   Unused, needed for compatibility with generic.

Value

The connection information. This returns the version of the package (driver.version). There is no underlying client library.

dsGetInfo,ArmadilloResult-method

Get result info

Description

Await completion and get the information about a command (if still available).

Usage

```
## S4 method for signature 'ArmadilloResult'
dsGetInfo(dsObj, ...)
```

Arguments

dsObj   [ArmadilloResult-class](#) class object

...   Unused, needed for compatibility with generic.

Value

The result information. This should include the R expression being executed (expression) and if the query is complete (\{ "status" = "COMPLETED" \}).

dsHasResource,ArmadilloConnection-method
                        Verify resource exists.

Description

Verify resource exists.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsHasResource(conn, resource)
```

Arguments

conn	[ArmadilloConnection-class](#) class object.
resource	The identifier of the resource

Value

TRUE if resource exists.

dsHasTable,ArmadilloConnection-method
                        Verify table exist and can be accessible for performing DataSHIELD
                        operations.

Description

Verify table exist and can be accessible for performing DataSHIELD operations.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsHasTable(conn, table)
```

Arguments

conn	[ArmadilloConnection-class](#) class object.
table	The identifier of the table

Value

TRUE if table exists.

---

dsIsAsync,ArmadilloConnection-method
Armadillo DataShield Service asynchronous support

Description

List of DataSHIELD operations on which Armadillo DataSHIELD Service supports asynchronicity.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsIsAsync(conn)
```

Arguments

conn   [ArmadilloConnection-class](#) class object

Details

When a [DSResult-class](#) object is returned on aggregation or assignment operation, the raw result can be accessed asynchronously, allowing parallelization of DataSHIELD calls over multpile servers. The returned named list of logicals will specify if asynchronicity is supported for: aggregation operation ('aggregate'), table assignment operation ('assignTable'), resource assignment operation ('assignResource') and expression assignment operation ('assignExpr').

Value

The named list of logicals detailing the asynchronicity support.

---

dsIsCompleted,ArmadilloResult-method
Get whether the operation is completed

Description

Get whether the result from a previous assignment or aggregation operation was completed, either with a successful status or a failed one. This call must not wait for the completion, immediate response is expected. Once the result is identified as being completed, the raw result the operation can be got directly.

Usage

```
## S4 method for signature 'ArmadilloResult'
dsIsCompleted(res)
```

Arguments

res   [ArmadilloResult-class](#) object.

Value

TRUE if operation is completed.

---

dsKeepAlive,ArmadilloConnection-method
                        Keep a connection alive

Description

As the DataSHIELD sessions are working in parallel, this function helps at keeping idle connections alive while others are working. Any communication failure must be silently processed.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsKeepAlive(conn)
```

Arguments

conn   [ArmadilloConnection-class](#) class object

Value

NULL, invisibly

---

dsListMethods,ArmadilloConnection-method
                        List methods

Description

List methods defined in the DataSHIELD configuration.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsListMethods(conn, type = "aggregate")
```

Arguments

conn   [ArmadilloConnection-class](#) class object
type   Type of the method: "aggregate" (default) or "assign".

Value

A data.frame with columns: name, type ('aggregate' or 'assign'), class ('function' or 'script'), value, package, version.

---

dsListPackages,ArmadilloConnection-method
List packages

Description

List packages with their versions defined in the DataSHIELD configuration.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsListPackages(conn)
```

Arguments

conn   ArmadilloConnection-class class object

Value

A data.frame with columns: name, version.

---

dsListResources,ArmadilloConnection-method
List Armadillo DataSHIELD Service resources

Description

List Armadillo DataSHIELD Service resources that may be accessible for performing DataSHIELD operations.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsListResources(conn)
```

Arguments

conn   ArmadilloConnection-class class object

Value

The fully qualified names of the resources.

See Also

[dsListResources](#)

---

dsListSymbols,ArmadilloConnection-method
List R symbols

Description

List symbols living in the DataSHIELD R session.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsListSymbols(conn)
```

Arguments

conn   [ArmadilloConnection-class](#) class object

Value

A character vector.

---

dsListTables,ArmadilloConnection-method
List Armadillo DataSHIELD Service tables

Description

List Armadillo DataSHIELD Service tables that may be accessible for performing DataSHIELD
operations.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsListTables(conn)
```

Arguments

conn   [ArmadilloConnection-class](#) class object

Value

The fully qualified names of the tables.

See Also

[dsListTables](#)

dsListWorkspaces,ArmadilloConnection-method
List workspaces

Description

List workspaces saved in the data repository.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsListWorkspaces(conn)
```

Arguments

conn   ArmadilloConnection-class class object

Value

A data.frame with columns: name, lastAccessDate, size, user.

dsRestoreWorkspace,ArmadilloConnection-method
Restore workspace

Description

This method implementation for the ArmadilloConnection class sends an authenticated POST request to the Armadillo /load-workspace endpoint. It reloads a previously saved R session state (workspace) using the provided name as the identifier.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsRestoreWorkspace(conn, name)
```

Arguments

conn   ArmadilloConnection-class class object

name   Name of the workspace.

```
dsRmSymbol,ArmadilloConnection-method
```
Remove an R symbol

Description

Remove a symbol living in the DataSHIELD R session. After removal, the data identified by the symbol will not be accessible in the DataSHIELD R session on the server side.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsRmSymbol(conn, symbol)
```

Arguments

conn   [ArmadilloConnection-class](#) class object

symbol   Name of the R symbol.

```
dsRmWorkspace,ArmadilloConnection-method
```
Remove a workspace

Description

Remove a workspace on the data repository.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsRmWorkspace(conn, name)
```

Arguments

conn   [ArmadilloConnection-class](#) class object

name   Name of the workspace.

dsSaveWorkspace,ArmadilloConnection-method
Save workspace

Description

Save workspace on the data repository.

Usage

```
## S4 method for signature 'ArmadilloConnection'
dsSaveWorkspace(conn, name)
```

Arguments

conn	[ArmadilloConnection-class](#) class object
name	Name of the workspace.

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