Package 'rsurveycto'

September 13, 2023

Type Package

Title Interact with Data on 'SurveyCTO'

Version 0.1.6

Description 'SurveyCTO' is a platform for mobile data collection in offline settings.
The 'rsurveycto' R package uses the 'SurveyCTO' REST API
<https://docs.surveycto.com/05-exporting-and-publishing-data/05-api-access/
01.api-access.html>
to read datasets and forms from a 'SurveyCTO' server into R as 'data.table's
and to download file attachments. The package also has limited support to
write datasets to a server.

URL https://agency-fund.github.io/rsurveycto/,

https://github.com/agency-fund/rsurveycto

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Encoding UTF-8

RoxygenNote 7.2.3

Depends R (>= 4.1)

Imports checkmate (>= 2.1.0), cli (>= 3.4.0), curl (>= 4.3.2),
data.table (>= 1.14.8), glue (>= 1.6.2), httr (>= 1.4.3),
jsonlite (>= 1.8.0), rlang (>= 1.0.5), withr (>= 2.5.0)

Suggests knitr, rmarkdown, testthat (>= 3.1.4)

Config/testthat/edition 3

NeedsCompilation no

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Repository CRAN

Date/Publication 2023-09-13 09:50:03 UTC

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drop_empties	*Drop empty columns from a data.table*

Description

An empty column is one whose only values are NA or "".

Usage

```
drop_empties(d)
```

Arguments

d   data.table.

Value

d modified by reference, invisibly.

See Also

[scto_write()](scto_write)

Examples

```
library('data.table')
d = data.table(w = 3:4, x = c('', 'foo'), y = c(NA, NA), z = c(NA, ''))
drop_empties(d)
```

---

scto_auth *Authenticate with a SurveyCTO server*

Description

SurveyCTO's API supports basic authentication using a username and password. Make sure the user is assigned a role with permission to download data ("data manager" or greater) and "Allow server API access" is enabled.

Usage

```
scto_auth(
  auth_file = NULL,
  servername = NULL,
  username = NULL,
  password = NULL,
  validate = TRUE
)
```

Arguments

auth_file	String indicating path to a text file containing the server name on the first line, username on the second, and password on the third. Other arguments are only used if auth_file is NULL.
servername	String indicating name of the SurveyCTO server.
username	String indicating username for the SurveyCTO account.
password	String indicating password for the SurveyCTO account.
validate	Logical indicating whether to validate credentials by calling scto_meta(). Should only be set to FALSE for debugging.

Value

scto_auth object for an authenticated SurveyCTO session.

See Also

scto_read(), scto_meta(), scto_get_form_definitions(), scto_get_attachments(), scto_write()

Examples

```
## Not run:
# preferred approach
auth = scto_auth('scto_auth.txt')

# alternate approach
auth = scto_auth('my_server', 'my_user', 'my_pw', auth_file = NULL)
```

```
## End(Not run)
```

---

scto_get_attachments   *Fetch file attachments from a SurveyCTO server*

Description

This function can download encrypted and unencrypted files attached to forms.

Usage

```
scto_get_attachments(
  auth,
  urls,
  output_dir,
  private_key = NULL,
  overwrite = TRUE
)
```

Arguments

auth	[scto_auth()](#) object.
urls	Character vector of API URLs for file attachments. Will typically be derived from a column of a data.table returned by [scto_read()](#). Can contain missing values.
output_dir	String indicating path to directory in which to save files.
private_key	String indicating path to private key file. Only needs to be non-NULL to decrypt encrypted file attachments.
overwrite	Logical indicating whether to overwrite existing files.

Value

A character vector of file names of the same length as urls, with NA for missing or invalid URLs.

See Also

[scto_auth()](#), [scto_read()](#), [scto_get_form_definitions()](#), [scto_write()](#)

Examples

```
## Not run:
auth = scto_auth('scto_auth.txt')
scto_data = scto_read(auth, 'my_form', 'form')
filenames = scto_get_attachments(auth, scto_data[['my_attachment']])

## End(Not run)
```

scto_get_form_definitions

Fetch form definitions from a SurveyCTO server

Description

This function fetches spreadsheet form definitions corresponding to the xlsx files downloadable in the Design tab of the SurveyCTO console.

Usage

```
scto_get_form_definitions(auth, form_ids = NULL, simplify = TRUE)
```

Arguments

auth	[scto_auth()](#) object.
form_ids	Character vector indicating IDs of the forms. NULL indicates all forms.
simplify	Logical indicating whether to return the definition for one form as a simple list instead of a named, nested list.

Value

If simplify is TRUE and getting one form definition, a list. Otherwise a named list of lists containing the definition for each form.

See Also

[scto_auth()](#), [scto_meta()](#), [scto_read()](#), [scto_get_attachments()](#), [scto_write()](#)

Examples

```
## Not run:
auth = scto_auth('scto_auth.txt')
scto_def = scto_get_form_definitions(auth, 'my_form')
scto_defs = scto_get_form_definitions(auth)

## End(Not run)
```

---

scto_meta   *Read metadata from a SurveyCTO server*

Description

These functions read metadata from a SurveyCTO server.

Usage

```
scto_meta(auth)

scto_catalog(auth)
```

Arguments

auth   [scto_auth()](#) object.

Value

scto_meta() returns a nested list of metadata related to forms, datasets, groups, and publishing information. scto_catalog() returns a data.table with columns type ("form" or "dataset"), id, title, version, group_id, and group_title.

See Also

[scto_auth()](#), [scto_read()](#), [scto_get_form_definitions()](#), [scto_write()](#)

Examples

```
## Not run:
auth = scto_auth('scto_auth.txt')
metadata = scto_meta(auth)
catalog = scto_catalog(auth)

## End(Not run)
```

---

scto_quiet   *Suppress or permit messages from rsurveycto*

Description

By default, rsurveycto prints messages to the console. To suppress them, set the rsurveycto_quiet option to TRUE or use this function.

Usage

```
scto_quiet(quiet = NULL)
```

Arguments

quiet   A logical indicating whether to suppress messages, or NULL.

Value

If quiet is NULL, the current value of the rsurveycto_quiet option. Otherwise, the previous value of the rsurveycto_quiet option invisibly.

Examples

```
options(rsurveycto_quiet = TRUE)
scto_quiet()
scto_quiet(FALSE)
```

---

scto_read   *Read data from a SurveyCTO server*

Description

This function can read datasets and forms.

Usage

```
scto_read(
  auth,
  ids = NULL,
  start_date = "1900-01-01",
  review_status = "approved",
  private_key = NULL,
  drop_empty_cols = TRUE,
 convert_datetime = c("CompletionDate", "SubmissionDate", "starttime", "endtime"),
  datetime_format = "%b %e, %Y %I:%M:%S %p",
  simplify = TRUE
)
```

Arguments

auth   scto_auth() object.

ids   Character vector indicating IDs of the datasets and/or forms. NULL indicates all datasets and forms.

start_date   Date-time or something coercible to a date-time indicating the earliest date-time for which to fetch data. Only used for forms.

review_status   String or character vector indicating which submissions to fetch. Possible values
                  are "approved", "pending", "rejected", or any combination of the three. Only
                  used for forms.

private_key   String indicating path to private key file. Only needs to be non-NULL to read
                  encrypted form data.

drop_empty_cols

                  Logical indicating whether to drop columns that contain only NA or only an
                  empty string.

convert_datetime

                  Character vector of column names in the data for which to convert strings to
                  datetimes (POSIXct). Use NULL to not convert any columns to datetimes.

datetime_format

                  String indicating format of datetimes from SurveyCTO. See strptime().

simplify   Logical indicating whether to return only a data.table instead of a list of
                  data.tables if reading one form or dataset.

Value

If simplify is TRUE and reading one form or dataset, a data.table. Otherwise a named list of
data.tables, one for each form and dataset, along with a data.table named ".catalog" from
scto_catalog().

See Also

scto_auth(), scto_meta(), scto_get_form_definitions(), scto_get_attachments(), scto_write()

Examples

```
## Not run:
auth = scto_auth('scto_auth.txt')
scto_data = scto_read(auth, 'my_form')
scto_db = scto_read(auth)

## End(Not run)
```

---

scto_write   *Write data to a SurveyCTO server*

Description

This function updates an existing dataset using a web POST request, as uploading data is not offi-
cially supported by the SurveyCTO API.

Usage

```
scto_write(
  auth,
  data,
  dataset_id,
  dataset_title = dataset_id,
  append = FALSE,
  fill = FALSE
)
```

Arguments

auth	[scto_auth()](#) object.
data	data.frame to upload.
dataset_id	String indicating ID of existing dataset.
dataset_title	String indicating title of dataset. Will replace the existing title, regardless of append.
append	Logical indicating whether to append or replace the dataset.
fill	Logical indicating whether to implicitly fill missing columns with NAs, i.e., whether to allow a mismatch between columns of the existing dataset and columns of data. Only used if append is TRUE.

Value

A list with elements:

- data_old: A data.table of the previous version of the dataset.
- response: An object of class [httr::response()](#) from the POST request.

See Also

[scto_auth()](#), [scto_meta()](#), [scto_read()](#), [scto_get_form_definitions()](#), [scto_get_attachments()](#)

Examples

```
## Not run:
auth = scto_auth('scto_auth.txt')
r = scto_write(auth, data, 'my_dataset', 'My Dataset')

## End(Not run)
```

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