Package: hRvstAPI (via r-universe)

September 9, 2024

Title This is a wrapper for the Harvest REST API v2.

Version 0.0.0.9000

Description The foremost function of this package is to act as a
convenient wrapper around the Harvest REST API v2. To that
end, the package handles credentials either through the system
keyring using the `keyring` package (preferred), or through
environment variables written to a local `.Renviron` file.
Credential handling can be initiated explicitly, but otherwise
happens automatically upon making an API request. This package
tries to make accessing the Harvest API as easy as possible.
While it does allow some tweaking of the actual HTTP request
via function arguments, the primary method for accessing API
data is to simply select which resource to query (e.g. ``users''
will download all users data). *Note, that the default is to
only download ``active'' records.* The reason for this mode of
access is that a request usually isn't very big and the typical
user will probably want to manipulate the data in a more
sophisticated manner for some downstream visualization or other
analysis. Building on this premise, the secondary function of
this package is to manage the long term storage of API data to
minimize remote requests. This is achieved by storing API data
in a local SQLite database, for which this package also
provides a straightforward way of accessing and updating with
new data. There is a companion Shiny application (hRvst) which
utilizes this wrapper for Harvest API data access, and perhaps
slightly enhances this package.

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Encoding UTF-8

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Depends R (>= 4.1)

Imports assertthat, bit64, DBI, dplyr, fs, getPass, glue, httr2,
lubridate, purrr, readr, rlang, RSQLite, stringr, tibble, withr

Collate 'access.R' 'params.R' 'creds.R' 'req.R' 'store.R' 'zzz.R'

Suggests keyring

Repository https://eric-hunt.r-universe.dev

RemoteUrl https://github.com/eric-hunt/hRvstAPI

RemoteRef HEAD

RemoteSha f8e29ed3e7e25b5fecc9c7b9a2ad09aeb1b5788a

Contents

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add_creds   *Add user credentials to the keyring.*

Description

This is intended to be a helper function for setting credentials.

Usage

```
add_creds(.report = NULL)
```

Arguments

.report   A list – report returned from hRvstAPI::check_creds()

---

check_creds *See if and where user credentials exist.*

Description

Useful for informing subsequent user action within an application.

Usage

```
check_creds()
```

Value

A list – variables related to credential existence.

---

clear_environment_creds

Delete all hRvstAPI Harvest credentials from the environment.

Description

This is intended to be a helper function for setting credentials.

Usage

```
clear_environment_creds()
```

---

clear_keyring_creds *Delete all hRvstAPI Harvest credentials from the keyring.*

Description

This is intended to be a helper function for setting credentials.

Usage

```
clear_keyring_creds()
```

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create_db   *Create a SQLite database to hold Harvest API v2 request data.*

Description

Create a SQLite database to hold Harvest API v2 request data.

Usage

```
create_db(db_path = NULL, rds_path = NULL)
```

Arguments

db_path   A string – file path where a local .sqlite file containing Harvest API data should
                 be created.

rds_path   A string – file path where a local .rds file containing Harvest API data should
                 exist.

---

create_rds   *Download Harvest API v2 requests into a local file.*

Description

Download Harvest API v2 requests into a local file.

Usage

```
create_rds(
  ...,
  is_active = NULL,
  updated_since = NULL,
  weeks_ago = NULL,
  from = NULL,
  to = NULL,
  rds_path = NULL,
  sql_colnames = TRUE,
  .extra_params = NULL
)
```

Arguments

`...`	Resources as "named" key/value pairs to be requested. (hrvst_req())
`is_active`	A string – 'true' or 'false' passed to hrvst_GET().
`updated_since`	A string – passed to hrvst_GET().
`weeks_ago`	An integer – overrides *updated_since* argument; the number of weeks prior to the current week to convert to a date and pass to the 'updated_since' query parameter.
`from`	TODO
`to`	TODO
`rds_path`	A string – file path where a local .rds file containing Harvest API data should be created.
`sql_colnames`	A Boolean – automatically convert '.' to '_' in column names for easier SQL query construction.
`.extra_params`	Key-value pairs – optional additional query parameters passed to . . . of hrvst_GET().

See Also

hrvst_req()

`get_keys`	*Get the unique set of key values that already exist in a table.*

Description

Get the unique set of key values that already exist in a table.

Usage

```
get_keys(db_connection, tbl, key = NULL)
```

Arguments

`db_connection`	A DBI compatible connection object – the database containing Harvest API v2 request data.
`tbl`	A string – name of the table from which to gather primary keys.
`key`	A string – name of the primary key column in *tbl*.

Value

A numeric vector – a vector of integer primary keys which currently exist in *tbl*.

---

hrvst_acct_id	*Return the user's Harvest API v2 account ID.*

Description

Return the user's Harvest API v2 account ID.

Usage

```
hrvst_acct_id()
```

Value

A string – the user account ID.

See Also

[Harvest API V2 Documentation | Authentication](#)

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hrvst_GET	*Create an authenticated GET request with headers and queries.*

Description

The basic headers that are automatically set in this function are `Harvest-Account-Id`, `Authorization`, and `User-Agent`. Other headers can be added by the user and will be concatenated, but currently these important headers are set by the `hRvstAPI::hrvst_acct_id()`, `hRvstAPI::hrvst_token()`, and `hRvstAPI::.agent` objects.

Usage

```
hrvst_GET(
  url = NULL,
  headers = NULL,
  is_active = NULL,
  updated_since = NULL,
  from = NULL,
  to = NULL,
  ...
)
```

Arguments

url	A string – the URL component for Harvest API v2 requests (NULL will default to .url).
headers	A list – the headers required for authentication of each Harvest API v2 request: 'Harvest-Account-Id', 'Authorization' (PAT), and 'User-Agent' (this package GitHub repo, .agent).
is_active	A string – 'true' or 'false' (Boolean per Harvest API requirement) should only active ('true') or inactive ('false') records be requested; default NULL downloads all records.
updated_since	A string – a date or date/time value (in ISO8601 character format) indicated how far back in time to retrieve records. Not supported by all of the Harvest v2 APIs.
from	TODO
to	TODO
...	Key-value pairs – optional additional query parameters.

Value

An HTTP response: an S3 list with class `httr2_request`.

See Also

[httr2::request()]

---

hrvst_req   *Perform a request for a Harvest API resource.*

Description

This is the primary function used to gather resources from the Harvest API v2. It uses hrvst_GET() to construct an httr2::request() and then performs that request after modifying the URL.

Requests are automatically throttled to comply with Harvest API v2 constraints.

Usage

```
hrvst_req(
  resource = NULL,
  all_pages = TRUE,
  base_url = NULL,
  headers = NULL,
  is_active = "true",
  updated_since = NULL,
  weeks_ago = NULL,
  from = NULL,
  to = NULL,
  ...
)
```

Arguments

resource
: A string – modifies the URL path to point to a specific Harvest API v2 resource. Currently available options:

  - **users** (Users API)
  - **clients** (Clients API)
  - **projects** (Projects API)
  - **tasks** (Tasks API)
  - **project assignments** (via Users API) *i.e Which projects belong to which clients.*
  - **user assignments** (via Projects API) *i.e. How users are assigned to each projects.*
  - **task assignments** (via Projects API) *i.e. What tasks are assigned to each project.*
  - **time entries** (via Timesheets API)
  - **budget reports** (via Reports API)
  - **time reports** (via Reports API)

all_pages
: A Boolean – should all pages be gathered for a requested resource? (default value TRUE)

base_url
: – A string – the common URL component for Harvest API v2 requests, passed to `hrvst_GET()`.

headers
: A list – passed to `hrvst_GET()`.

is_active
: A string – 'true' or 'false' passed to `hrvst_GET()`.

updated_since
: A string – passed to `hrvst_GET()`.

weeks_ago
: An integer – overrides *updated_since* argument; the number of weeks prior to the current week to convert to a date and pass to the 'updated_since' query parameter.

from
: TODO

to
: TODO

...
: Key-value pairs – passed to `hrvst_GET()`.

Details

If only a specific page is required, the `page = [n]` parameter can be passed to `...` to be added to the query parameters. Adding this query parameter will automatically set *all_pages* to FALSE.

Value

A `tibble::tibble()` of all response content.

See Also

Harvest API V2 Documentation | Rate Limiting

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hrvst_token   *Return the user's Harvest API v2 personal access token.*

Description

Return the user's Harvest API v2 personal access token.

Usage

```
hrvst_token()
```

Value

A string – the user personal access token.

See Also

[Harvest API V2 Documentation | Authentication](#)

---

key_col   *Get the name of the primary key column for a table.*

Description

Get the name of the primary key column for a table.

Usage

```
key_col(db_connection, tbl)
```

Arguments

db_connection   A DBI compatible connection object – the database containing Harvest API v2
                 request data.

tbl   A string – name of the table for which to determine the primary key column.

Value

A string – the primary key column of *tbl*.

---

params	*hRvstAPI parameters*

Description

These are common values used by hRvstAPI functions like the base URL for the Harvest API v2, and the name of the hRvstAPI GitHub repo for a user agent to be logged with each GET request made to the Harvest API. In the future these may be set as options to give the user even more control over this wrapper.

Usage

```
.service

.url

.agent

.rds_path

.db_path
```

Format

An object of class `character` of length 1.

An object of class `character` of length 1.

An object of class `character` of length 1.

An object of class `fs_path` (inherits from `character`) of length 1.

An object of class `fs_path` (inherits from `character`) of length 1.

---

query_db	*Query the local database and collect/return the result.*

Description

Query the local database and collect/return the result.

Usage

```
query_db(query_string, ..., .is_active = TRUE, .db_loc = hRvstAPI::.db_path)
```

Arguments

`query_string`	A string – the query to be executed.
`...`	Key-value pairs – additional arguments for interpolation passed to `glue::glue_sql()`.
`.is_active`	A Boolean – restrict results to active entries; defaults to TRUE
`.db_loc`	A string – file path where a local .sqlite file containing Harvest API data should exist.

Value

A `tibble::tibble()` of data collected from the query.

---

retrieve_creds	*Retrieve user credentials from the keyring to environment.*

Description

This is intended to be a helper function for setting credentials.

Usage

```
retrieve_creds(.report = NULL)
```

Arguments

`.report`	A list – report returned from hRvstAPI::check_creds()

---

set_creds	*Set user credentials as environment variables.*

Description

Set user credentials as environment variables.

Usage

```
set_creds()
```

---

update_db	*Update the local SQLite database with new Harvest API v2 request data.*

Description

Update the local SQLite database with new Harvest API v2 request data.

Usage

```
update_db(db_path = NULL, rds_path = NULL)
```

Arguments

db_path	A string – file path where a local .sqlite file containing Harvest API data should be updated.
rds_path	A string – file path where a local .rds file containing Harvest API data should exist.

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