

Package ‘BFS’

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Type Package

Title Get Data from the Swiss Federal Statistical Office

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Description Search and download data from the Swiss Federal Statistical Office (BFS) APIs <<https://www.bfs.admin.ch/>>.

License GPL (>= 3)

Depends R (>= 3.4)

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URL <https://felixluginbuhl.com/BFS/>, <https://github.com/lgnbhl/BFS/>

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Contents

bfs_download_asset	2
bfs_download_geodata	3
bfs_get_asset_metadata	4
bfs_get_base_maps	5
bfs_get_catalog	6
bfs_get_catalog_data	6
bfs_get_catalog_geodata	8
bfs_get_catalog_tables	9
bfs_get_data	10
bfs_get_data_comments	11
bfs_get_metadata	12
bfs_get_sse_data	12
bfs_get_sse_metadata	13
bfs_get_sse_url	14
get_xml_name	14
register_bzn	15
register_dic	15
register_gde	16
register_gde_other	17
register_kt	18
register_kt_seeanteile	18

Index	20
--------------	-----------

bfs_download_asset	<i>Download a BFS asset file</i>
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Description

This function uses the DAM API <https://dam-api.bfs.admin.ch/hub/swagger-ui/index.html> to download a BFS file by asset number or BFS number. The file is downloaded using ‘curl::curl_download()’ under the hood.

Usage

```
bfs_download_asset(  
  number_asset = NULL,  
  number_bfs = NULL,  
  destfile,  
  quiet = TRUE,  
  mode = "wb",  
  handle = curl::new_handle()  
)
```

Arguments

number_asset	The asset number of a dataset
number_bfs	The BFS number of a dataset.
destfile	A character string with the name where the downloaded file is saved. Tilde-expansion is performed.
quiet	If TRUE, suppress status messages (if any), and the progress bar.
mode	A character string specifying the mode with which to write the file. Useful values are "w", "wb" (binary), "a" (append) and "ab".
handle	a curl handle object

Value

Returns the file path where the file has been downloaded. Returns NULL if no connection.

bfs_download_geodata *Download a geographic file from the Swiss geo-portal*

Description

Download assets from the STAC API on the geodata catalog of the Swiss Confederation (<https://data.geo.admin.ch/api/stac/v0.9/>).

Usage

```
bfs_download_geodata(
  collection_id = collection_id,
  output_dir = tempdir(),
  overwrite = FALSE,
  create_json = FALSE,
  bbox = NULL,
  asset_names = NULL,
  datetime = NULL,
  feature_id = NULL
)
```

Arguments

collection_id	collection_id
output_dir	output_dir
overwrite	overwrite
create_json	create_json
bbox	bbox
asset_names	asset_names
datetime	datetime
feature_id	feature_id

Details

The use of the data and services is free but subject to the provisions on fair use (see <https://www.geo.admin.ch/terms-of-use>).

Value

Returns the file path where the file has been downloaded. Returns NULL if no connection.

bfs_get_asset_metadata

Get asset metadata in a given language

Description

This function uses the DAM API <https://dam-api.bfs.admin.ch/hub/swagger-ui/index.html> to get the metadata of a BFS file by asset number or BFS number in a given language.

Usage

```
bfs_get_asset_metadata(  
  number_asset = NULL,  
  number_bfs = NULL,  
  language = c("de", "fr", "it", "en")  
)
```

Arguments

number_asset	The asset number of a dataset
number_bfs	The BFS number of a dataset.
language	character The language of a BFS catalog, i.e. "de", "fr", "it" or "en".

Value

list Returns a list containing asset metadata information. Returns NULL if no connection.

See Also

[bfs_download_asset()]

bfs_get_base_maps	<i>Get Switzerland base maps data</i>
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Description

This functions helps to get base maps data from the ThemaKart project as an sf object. The geom names and the general structure of the files can be found in the official BFS documentation, see <https://www.bfs.admin.ch/bfs/en/home/statistics/regional-statistics/base-maps/cartographic-bases.html>. When using this data, please read the condition of use and copyright mentions.

Usage

```
bfs_get_base_maps(
  geom = NULL,
  category = "gf",
  type = "Poly",
  date = NULL,
  most_recent = TRUE,
  format = "shp",
  asset_number = "30566934",
  return_sf = TRUE
)
```

Arguments

geom	Geometry such as "suis", "kant", "bez", "polg", "voge", etc.
category	Category such as 'total_area' ("gf" for "Gesamtf-laech") or 'vegetation_area' ("vf" for "Vegetationsflaech").
type	The type of data, i.e. "Poly" or "Pnts".
date	Date (yyyymmdd) of reference / validity. If not specified, the 'most_recent' argument is used.
most_recent	Get the most recent by sorting the files in decreasing order, if FALSE then read the first file available.
format	Format of the file, by default SHP format.
asset_number	Asset number of the base maps zip file.
return_sf	if TRUE, read file path and return sf object. If FALSE, return file path

Details

If you want to get ThemaKart data from previous years, you can change the 'asset_number' for the related zip file. For example, for the map set of year 2020, the asset number is "11927607".

This function is caching the base map data using 'tools::R_user_dir(package = "BFS")'.

Value

sf object with geometries. Returns NULL if no connection.

bfs_get_catalog	<i>Get the BFS data or table catalog</i>
-----------------	--

Description

This function scraps a given RSS Feed of the Swiss Federal Statistical Office.

Usage

```
bfs_get_catalog(language = "de", type = "data")
```

Arguments

language	character The language of a BFS catalog.
type	character A BFS catalog

Value

A data frame. Returns NULL if no connection.

See Also

[bfs_get_data](#)

bfs_get_catalog_data	<i>Get the BFS data catalog</i>
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Description

Get the list of the data available in the official DAM-API of the Swiss Federal Statistical Office asset catalog.

Usage

```
bfs_get_catalog_data(
  language = "de",
  title = NULL,
  extended_search = NULL,
  spatial_division = NULL,
  prodima = NULL,
  inquiry = NULL,
  institution = NULL,
  publishing_year_start = NULL,
  publishing_year_end = NULL,
  order_nr = NULL,
```

```

    limit = 1000,
    article_model = 900033,
    article_model_group = 900029,
    return_raw = FALSE
  )

```

Arguments

language	character	The language of a BFS catalog, i.e. "de", "fr", "it" or "en".
title	character	String to search in (sub/super)title
extended_search	character	String for an extended search in (sub/super)title, orderNr, summary, shortSummary, shortTextGNP
spatial_division		BFS datasets by spatial division, choose between "Switzerland", "Cantons", "Districts", "Communes", "Other spatial divisions" or "International"
prodima	numeric	Get only specific BFS themes using one or multiple prodima numbers
inquiry	character	BFS datasets for an inquiry
institution	character	BFS datasets for an institution
publishing_year_start	character	BFS datasets for a publishing year start
publishing_year_end	character	BFS datasets for a publishing year end
order_nr	character	Filter by BFS Number (FSO number)
limit	integer	limit of query results (1000 by default)
article_model	integer	articleModel parameter query
article_model_group	integer	articleModel parameter query
return_raw	boolean	Return raw data from json structure as a tibble data.frame

Value

A data frame. Returns NULL if no connection.

A tbl_df (a type of data frame; see tibble or dplyr packages). Returns NULL if no connection.

See Also

[bfs_get_data](#)

title A character column with the title of the BFS dataset

language A character column with the language of the BFS dataset

number_asset The BFS asset number

number_bfs The BFS number (FSO number), named orderNr in the API

publication_date The published date of the BFS dataset, named embargo in the API

language_available A list The list of all languages available for the BFS dataset

url_px A character column with the URL of the PX file

url_structure_json A character column with the URL of the json structure of the BFS dataset

damId DAM API unique ID

Examples

```
bfs_get_catalog_data(language = "en", title = "students", prodima = c(900212))
```

```
bfs_get_catalog_geodata
```

Get the geodata catalog of the Swiss Confederation

Description

Display geo-information catalog of the Swiss Confederation (<https://data.geo.admin.ch/>), including some geographic datasets provided by the Swiss Federal Statistical Office. Note that this geodata catalog is not hosted by the Swiss Federal Statistical Office.

Usage

```
bfs_get_catalog_geodata(include_metadata = TRUE)
```

Arguments

`include_metadata`
boolean TRUE to loop on each geodata to add metadata.

Details

For now only Stac API datasets are accessible.

Value

A `tbl_df` (a type of data frame; see `tibble` or `dplyr` packages). Returns `NULL` if no connection.

bfs_get_catalog_tables

Get the BFS tables catalog

Description

Get the list of the tables available in the official DAM-API of the Swiss Federal Statistical Office asset catalog.

Usage

```
bfs_get_catalog_tables(
  language = "de",
  title = NULL,
  extended_search = NULL,
  spatial_division = NULL,
  prodima = NULL,
  inquiry = NULL,
  institution = NULL,
  publishing_year_start = NULL,
  publishing_year_end = NULL,
  order_nr = NULL,
  limit = 1000,
  article_model = 900030,
  article_model_group = 900029,
  return_raw = FALSE
)
```

Arguments

language	character The language of a BFS catalog, i.e. "de", "fr", "it" or "en".
title	character String to search in (sub/super)title
extended_search	character String for an extended search in (sub/super)title, orderNr, summary, shortSummary, shortTextGNP
spatial_division	BFS datasets by spatial division, choose between "Switzerland", "Cantons", "Districts", "Communes", "Other spatial divisions" or "International"
prodima	numeric Get only specific BFS themes using one or multiple prodima numbers
inquiry	character BFS datasets for an inquiry
institution	character BFS datasets for an institution
publishing_year_start	character BFS datasets for a publishing year start
publishing_year_end	character BFS datasets for a publishing year end

order_nr character Filter by BFS Number (FSO number)
limit integer limit of query results (1000 by default)
article_model integer articleModel parameter query
article_model_group integer articleModel parameter query
return_raw boolean Return raw data from json structure as a tibble data.frame

Value

A data frame. Returns NULL if no connection.

A tbl_df (a type of data frame; see tibble or dplyr packages). Returns NULL if no connection.

See Also

[bfs_get_data](#)

title A character column with the title of the BFS dataset

language A character column with the language of the BFS dataset

publication_date The published date of the BFS dataset in the data catalog

number_asset The BFS asset number

Examples

```
bfs_get_catalog_data(language = "en", title = "students", prodima = c(900212))
```

bfs_get_data	<i>Get BFS data in a given language</i>
--------------	---

Description

Get a dataset using the PXWEB API v1. You should choose either the BFS number (FSO number) of the BFS official url of a given dataset. You can query particular variables using the ‘query’ argument.

Usage

```

bfs_get_data(
  number_bfs,
  language = "de",
  query = NULL,
  column_name_type = "text",
  variable_value_type = "text",
  clean_names = FALSE,
  delay = NULL
)

```

Arguments

number_bfs	The BFS number (FSO number) of a dataset.
language	Language of the dataset to be translated if exists, i.e. "de", "fr", "it" or "en".
query	A list with named values, a json query file or json query string using <code>pxweb::pxweb_query()</code> .
column_name_type	Column name type as "text" or as "code".
variable_value_type	Variable value type as "text" or as "code".
clean_names	Clean column names using <code>janitor::clean_names()</code> .
delay	Integer Number of seconds to wait before query using <code>Sys.sleep()</code> .

Value

A `tbl_df` (a type of data frame; see `tibble` or `dplyr` packages). Returns `NULL` if no connection.

See Also

[bfs_get_data_comments](#)

`bfs_get_data_comments` *Get the comments/footnotes of a BFS dataset in a given language*

Description

Get the comments/footnotes of a BFS dataset using PXWEB BFS API v1.

Usage

```
bfs_get_data_comments(
  number_bfs,
  language = "de",
  query = NULL,
  clean_names = FALSE,
  delay = NULL
)
```

Arguments

number_bfs	The BFS number of a dataset.
language	Language of the dataset to be translated if exists, i.e. "de", "fr", "it" or "en".
query	a list with named values, a json query file or json query string using <code>pxweb::pxweb_query()</code> .
clean_names	Clean column names using <code>janitor::clean_names()</code>
delay	Integer Number of seconds to wait before query using <code>Sys.sleep()</code> .

Value

A `tbl_df` (a type of data frame; see `tibble` or `dplyr` packages). Returns `NULL` if no connection.

See Also

[bfs_get_data](#)

<code>bfs_get_metadata</code>	<i>Get metadata of a BFS data in a given language</i>
-------------------------------	---

Description

Get the metadata of a BFS dataset using the PXWEB API v1. You should choose either the `bfs` number of the bfs official url of a given dataset.

Usage

```
bfs_get_metadata(number_bfs, language = "de")
```

Arguments

<code>number_bfs</code>	The BFS number of a dataset.
<code>language</code>	Language of the dataset to be translated if exists.

Value

A `tbl_df` (a type of data frame; see `tibble` or `dplyr` packages). Returns `NULL` if no connection.

<code>bfs_get_sse_data</code>	<i>Get Data from Swiss Stats Explorer (SSE) API</i>
-------------------------------	---

Description

Get Data from Swiss Stats Explorer (SSE) API

Usage

```
bfs_get_sse_data(
  number_bfs,
  language = "de",
  start_period = NULL,
  end_period = NULL,
  query = NULL,
  column_name_type = "code",
  variable_value_type = "text",
  clean_names = FALSE
)
```

Arguments

number_bfs	The BFS number (FSO number) of a dataset.
language	Language of the dataset to be translated if exists, i.e. "de", "fr", "it" or "en".
start_period	Start year of the requested data
end_period	End year of the requested data
query	A named list with dimension codes as names and desired values as values.
column_name_type	Column name type as "text" or as "code".
variable_value_type	Variable value type as "text" or as "code".
clean_names	Logical, if TRUE, the column names are cleaned using janitor::clean_names().

Value

A tibble with the requested data.

Examples

```
bfs_get_sse_data(
  number_bfs = "DF_PASTA_552_MONTHLY",
  language = "en",
  query = list("FREQ" = "M", "ACCOMMODATION_TYPE" = c("552001"),
               "COUNTRY_ORIGIN" = c("CH", "AUSL")),
  start_period = "2020",
  end_period = "2023"
)
```

bfs_get_sse_metadata *Get Metadata (Codelists) from Swiss Stats Explorer (SSE) API*

Description

Retrieve metadata codelists for a specified BFS dataset from the Swiss Stats Explorer (SSE) API. This function is required to built queries for [bfs_get_sse_data](#).

Usage

```
bfs_get_sse_metadata(number_bfs, language = "de")
```

Arguments

number_bfs	The BFS number (FSO number) of a dataset.
language	Language of the codelists ("de", "fr", "it", "en").

Value

A tibble containing the codelists of the specified BFS dataset.

Examples

```
bfs_get_sse_metadata("DF_SSV_POL_LEG", language = "de")
```

bfs_get_sse_url	<i>Get the URL for the Swiss Stats Explorer (SSE) API based on the BFS number</i>
-----------------	---

Description

Get the URL for the Swiss Stats Explorer (SSE) API based on the BFS number

Usage

```
bfs_get_sse_url(number_bfs, metadata = FALSE)
```

Arguments

number_bfs	The BFS number (FSO number) of a dataset.
metadata	Logical; if TRUE, returns the URL for metadata instead of data.

Value

A character string containing the URL for the API of the specified BFS number.

get_xml_name	<i>Get the name from an XML node for a specified language, with fall-back</i>
--------------	---

Description

If the specified language is not found, it falls back to the first available name.

Usage

```
get_xml_name(node, language)
```

Arguments

node	An XML node from which to extract the name.
language	The desired language code ("de", "fr", "it", "en").

Value

A character string containing the name in the specified language or the first available name.

register_bzn	<i>Swiss official commune register BZN</i>
--------------	--

Description

The official commune register is structured according to cantons and districts or comparable administrative entities. Various federal, cantonal and communal governments and private businesses use this register when identifying and referring to communes.

Usage

register_bzn

Format

'register_bzn' A data frame with 143 rows and 3 columns:

GDEKT Kantonskuerzel

GDEBZNR Bezirksnummer

GDEBZNA Bezirksname

Details

The Federal Statistical Office assigns a number to each commune and creates, administers and publishes the Swiss official commune register.

Source

<<https://www.bfs.admin.ch/bfs/fr/home/bases-statistiques/repertoire-officiel-communes-suisse.html>>

register_dic	<i>Swiss official commune register Dictionary</i>
--------------	---

Description

The official commune register is structured according to cantons and districts or comparable administrative entities. Various federal, cantonal and communal governments and private businesses use this register when identifying and referring to communes.

Usage

register_dic

Format

'register_dic' A data frame with 27 rows and 5 columns:

language Language
abbreviation Abbreviation
title Title
spec Specifications
notes General notes

Details

The Federal Statistical Office assigns a number to each commune and creates, administers and publishes the Swiss official commune register.

Source

<<https://www.bfs.admin.ch/bfs/fr/home/bases-statistiques/repertoire-officiel-communes-suisse.html>>

register_gde

Swiss official commune register GDE

Description

The official commune register is structured according to cantons and districts or comparable administrative entities. Various federal, cantonal and communal governments and private businesses use this register when identifying and referring to communes.

Usage

register_gde

Format

'register_gde' A data frame with 2,136 rows and 8 columns:

GDEKT Kantonskuerzel
GDEBZNR Bezirksnummer
GDENR BFS-Gemeindennummer
GDENAME Amtlicher Gemeindename
GDENAMK Gemeindename, kurz
GDEBZNA Bezirksname
GDEKTNA Kantonsname
GDEMUTDAT Datum der letzten Anderung

Details

The Federal Statistical Office assigns a number to each commune and creates, administers and publishes the Swiss official commune register.

Source

<<https://www.bfs.admin.ch/bfs/fr/home/bases-statistiques/repertoire-officiel-communes-suisse.html>>

register_gde_other	<i>Swiss official commune register GDE Other</i>
--------------------	--

Description

The official commune register is structured according to cantons and districts or comparable administrative entities. Various federal, cantonal and communal governments and private businesses use this register when identifying and referring to communes.

Usage

register_gde_other

Format

'register_gde_other' A data frame with 3 rows and 4 columns:

GDENR BFS-Gemeindenummer

GDENAME Amtlicher Gemeindename

KTNR Kantonsnummer

GDEBZNR Bezirksnummer

Details

The Federal Statistical Office assigns a number to each commune and creates, administers and publishes the Swiss official commune register.

Source

<<https://www.bfs.admin.ch/bfs/fr/home/bases-statistiques/repertoire-officiel-communes-suisse.html>>

register_kt

Swiss official commune register KT

Description

The official commune register is structured according to cantons and districts or comparable administrative entities. Various federal, cantonal and communal governments and private businesses use this register when identifying and referring to communes.

Usage

```
register_kt
```

Format

```
## 'register_kt' A data frame with 26 rows and 3 columns:
```

KTNR Kantonsnummer

GDEKT Kantonskuerzel

GDEKTNA Kantonsname

Details

The Federal Statistical Office assigns a number to each commune and creates, administers and publishes the Swiss official commune register.

Source

```
<https://www.bfs.admin.ch/bfs/fr/home/bases-statistiques/repertoire-officiel-communes-suisse.html>
```

register_kt_seeanteile

Swiss official commune register KT Seeanteile

Description

The official commune register is structured according to cantons and districts or comparable administrative entities. Various federal, cantonal and communal governments and private businesses use this register when identifying and referring to communes.

Usage

```
register_kt_seeanteile
```

Format

'register_kt_seeanteile' A data frame with 9 rows and 5 columns:

GDENR BFS-Gemeindennummer

GDENAME Amtlicher Gemeindename

KTNR Kantonsnummer

Details

The Federal Statistical Office assigns a number to each commune and creates, administers and publishes the Swiss official commune register.

Source

<<https://www.bfs.admin.ch/bfs/fr/home/bases-statistiques/repertoire-officiel-communes-suisse.html>>

Index

* datasets

- register_bzn, [15](#)
- register_dic, [15](#)
- register_gde, [16](#)
- register_gde_other, [17](#)
- register_kt, [18](#)
- register_kt_seeanteile, [18](#)

- bfs_download_asset, [2](#)
- bfs_download_geodata, [3](#)
- bfs_get_asset_metadata, [4](#)
- bfs_get_base_maps, [5](#)
- bfs_get_catalog, [6](#)
- bfs_get_catalog_data, [6](#)
- bfs_get_catalog_geodata, [8](#)
- bfs_get_catalog_tables, [9](#)
- bfs_get_data, [6](#), [7](#), [10](#), [10](#), [12](#)
- bfs_get_data_comments, [11](#), [11](#)
- bfs_get_metadata, [12](#)
- bfs_get_sse_data, [12](#), [13](#)
- bfs_get_sse_metadata, [13](#)
- bfs_get_sse_url, [14](#)

- get_xml_name, [14](#)

- register_bzn, [15](#)
- register_dic, [15](#)
- register_gde, [16](#)
- register_gde_other, [17](#)
- register_kt, [18](#)
- register_kt_seeanteile, [18](#)