

Package ‘IButils’

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Type Package

Title Utility Functions for the Interactive Brokers API

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Description Utility functions for the Interactive Brokers API, based on packages 'IBrokers' and 'rib'.
The package provides tools, for instance, for downloading historical data and reports from IB.

License GPL-3

Imports IBrokers, textutils, zoo

Suggests rib, uuid

Additional_repositories <http://enricoschumann.net/R/>

URL <http://enricoschumann.net/R/packages/IButils/>,
<https://github.com/enricoschumann/IButils>

NeedsCompilation no

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Contents

IButils-package	2
combine_files	2
flex_web_service	3
ib_hist_data	5
latest_timestamp	7
message_codes	8
positions	8
read_flex_report	9

Index	11
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 IButils-package

Utility Functions for the Interactive Brokers API

Description

Utility functions for the Interactive Brokers API, based on packages 'IBrokers' and 'rib'. The package provides tools, for instance, for downloading historical data and reports from IB.

Details

The package contains functions to download historical data from IB.

Author(s)

Enrico Schumann [aut, cre] (<<https://orcid.org/0000-0001-7601-6576>>)

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 combine_files

Combine Data Files

Description

Combine files of downloaded price data

Usage

```
combine_files(directory, max.rows = -1, pattern = NULL,
              verbose = TRUE, prefix = "processed___",
              delete.processed = FALSE, actual.timestamp = FALSE,
              sep = ",")
```

Arguments

directory	character
max.rows	numeric
pattern	character
verbose	logical
prefix	character
delete.processed	logical
actual.timestamp	logical
sep	character: the column separator

Details

Read CSV files and combine them into one large file per symbol.

Value

a data.frame

Author(s)

Enrico Schumann

See Also

[ib_hist_data](#)

Examples

```
## TODO add examples
```

flex_web_service *Flex Web Service*

Description

Retrieve queries via the Flex Web Service.

Usage

```
flex_web_service(file, token, query, version = 3, delay = 2,  
                 no.write.msg = TRUE, no.write.warn = TRUE,  
                 verbose = TRUE)
```

Arguments

file	character: filename for the downloaded report
token	character (not numeric!)
query	integer
version	integer; currently only 3 is supported
delay	integer: number of seconds to wait between sending the token and retrieving the flex-data report
no.write.msg	logical: do not write file if it contains a message
no.write.warn	logical: do not write file if it contains a warning
verbose	logical: sets the 'quiet' argument of download.file

Details

Retrieve flex queries via [download.file](#).

The function also checks whether the downloaded file contains messages from IB (lines that start with “MSG”).

Value

The function is called for its side effect: downloading and storing the flex query.

The function will first send token and query to IB. If the response does not contain a

```
<Status>Success</Status>
```

, the complete response will be printed and a value of 1 is invisibly returned.

Otherwise, an attempt to download the report is made, and the return value of [download.file](#) will be invisibly returned.

However, even if the download succeeds, the file may contain error messages or warnings. Even mere ‘messages’ often indicate that something did not work (e.g. particular accounts could not be included). `flex_web_service` will print messages or warnings that it finds in the files, and the return value will be invisible 1. The downloaded file will not be written in such a case, unless `no.write.msg` and `no.write.warn` are set to FALSE; both arguments default to TRUE.

Author(s)

Enrico Schumann

References

<https://ibkrampus.com/ibkr-api-page/flex-web-service/>

See Also

[ib_hist_data](#), [download.file](#)

Examples

```
## Not run:
flex_web_service(file = "~/my_files/my_report.csv",
                 token = "12345678901234567890", ## character!
                 query = 123)

file <- "~/Downloads/Net_Asset_Value_NAV_in_Base"
ans <- read_flex_report(file)

## End(Not run)
```

ib_hist_data	<i>Download Historical Data</i>
--------------	---------------------------------

Description

Download historical data from IB API and store them as text files.

Usage

```
ib_hist_data(Symbol, Security_Type, Exchange, Currency, id = NULL,
             directory, barSize, durationStr = NULL, whatToShow,
             start = as.POSIXct(Sys.Date() - 30), end = Sys.time(),
             useRTH = FALSE,
             skip.from, skip.until, skip.tz = "",
             verbose = TRUE, trim = TRUE, accumulate = FALSE,
             port = 7496, sep = ",",
             filename = "%id%_%start%_%end%",
             backend = NULL,
             clientId = NULL)
```

Arguments

Symbol	character
Security_Type	character
Exchange	character
Currency	character
id	character; optional: the prefix for text files. If NULL, Symbol etc. are pasted together
directory	character: the directory in which the files are stored
barSize	character
durationStr	character. If NULL, the function attempts to set a long duration. (This argument may be removed in the future since it rarely makes sense to set it explicitly.)
whatToShow	character: TRADES, MIDPOINT, BID or ASK
start	POSIXct
end	POSIXct
useRTH	logical
skip.from	character
skip.until	character
skip.tz	character
verbose	logical
accumulate	logical
trim	logical

sep	character: the column separator
port	the TWS port
clientId	either NULL or an integer. Specifying an integer is supported only for backend rib. If NULL, a random id is chosen.
filename	character: pattern for the filenames of the stored files. May include special patterns such as '%id%'.
backend	a lowercase string or NULL. Supported are ibrokers or rib. Default is NULL, which translates into ibrokers.

Details

See IB API documentation <https://interactivebrokers.github.io/>

The package uses functionality of either package **IBrokers** or **rib**, depending on the setting of backend.

Value

A character vector: the names of the file (including the directory) that have been saved.

Author(s)

Enrico Schumann

See Also

[reqHistoricalData](#)

Examples

```
## Not run:
require("IButils")

Symbol <- "ZQ SEP 16"
Security_Type <- "FUT"
Exchange <- "ECBOT"
Currency <- "USD"

id <- "zq201609"

download_dir <- "~/Trading/Data/IB_downloads/"

barSize <- "5 mins"
whatToShow <- "MIDPOINT"

start <- structure(1423526400, class = c("POSIXct", "POSIXt"))
end <- start + 86400*20

ib_hist_data(Symbol = Symbol,
             Security_Type = Security_Type,
             Exchange = Exchange,
```

```
Currency = Currency,  
id = id,  
directory = download_dir,  
barSize = barSize,  
whatToShow = whatToShow,  
start = start,  
end = start+86400*40)  
  
## End(Not run)
```

latest_timestamp	<i>Latest Timestamp</i>
------------------	-------------------------

Description

Get the latest timestamp from the files in a directory.

Usage

```
latest_timestamp(directory, id)
```

Arguments

directory	character
id	character

Details

Get the latest (i.e. largest) timestamp for particular id.

Value

numeric

Author(s)

Enrico Schumann

See Also

[ib_hist_data](#)

Examples

```
## TODO
```

message_codes	<i>Error Messages</i>
---------------	-----------------------

Description

A table of message and error codes and their descriptions

Usage

```
data("message_codes")
```

Format

A data frame with 306 observations on the following 3 variables.

Code a character vector

'TWS message' a character vector

'Additional notes' a character vector

Details

Scraped from the official API documentation.

Source

["https://interactivebrokers.github.io/tws-api/message_codes.html"](https://interactivebrokers.github.io/tws-api/message_codes.html)

Examples

```
data(message_codes)
```

positions	<i>Helper Functions for TWS</i>
-----------	---------------------------------

Description

Several convenience functions for connecting synchronously to the TWS.

Usage

```
executions(port = 7496, clientId = 1)  
order_status(port = 7496, clientId = 1)  
positions(port = 7496, clientId = 1)
```


Arguments

port	integer
clientId	integer

Details

The functions follow the same pattern: connect to the TWS, send requests, receive and process results, and disconnect. Results are typically arranged as data frames.

Warning: these functions are very experimental, and returned results may change.

Value

A `data.frame`. If there are no executions, orders or positions, the functions return NULL invisibly.

Author(s)

Enrico Schumann

Examples

```
positions()
```

read_flex_report	<i>Read Flex Report</i>
------------------	-------------------------

Description

Read reports returned by the Flex Web Service.

Usage

```
read_flex_report(file,
                 date.format = "yyyy-MM-dd",
                 time.format = "HH:mm:ss",
                 date.time.separator = ",",
                 ...)
```

Arguments

file	character: filename for the downloaded report
date.format	string
time.format	string
date.time.separator	string
...	additional settings

Details

Reads CSV reports from Flex Queries.

Value

a list of data.frames

Author(s)

Enrico Schumann

References

https://www.interactivebrokers.com/en/software/am/am/reports/flex_web_service_version_3.htm

See Also

[flex_web_service](#)

Examples

```
## Not run:  
file <- "~/Downloads/Net_Asset_Value_NAV_in_Base"  
ans <- read_flex_report(file)  
  
## End(Not run)
```

Index

- * **datasets**
 - message_codes, 8
- * **package**
 - IButils-package, 2
- combine_files, 2
- contract_details (positions), 8
- data.frame, 9
- download.file, 3, 4
- executions (positions), 8
- flex_web_service, 3, 10
- ib_hist_data, 3, 4, 5, 7
- IButils (IButils-package), 2
- IButils-package, 2
- latest_timestamp, 7
- message_codes, 8
- order_status (positions), 8
- positions, 8
- read_flex_report, 9
- reqHistoricalData, 6