Package ‘rexcelbridge’

September 17, 2025

Type Package

Title Bridge Excel Add-in Formulas and RTD Feeds into R (Windows)

Version 0.0.0.9000

Author Francis Tsiboe [aut, cre] (<https://orcid.org/0000-0001-5984-1072>)

Maintainer Francis Tsiboe <ftsiboe@hotmail.com>

Creator Francis Tsiboe

Description Vendor-neutral helpers to evaluate Excel formulas (including RTD-based add-ins like DTN ProphetX and Bloomberg) from R via COM automation. Supports single-cell results with
a pluggable readiness predicate to handle transient ``Wait''
tokens from providers.

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URL https://github.com/you/rexcelbridge

BugReports https://github.com/you/rexcelbridge/issues

Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.3.2

VignetteBuilder knitr

Depends R (>= 4.1.0)

Imports RDCOMClient, data.table, usmap

Remotes github::omegahat/RDCOMClient

Suggests tidyr, mockery, knitr, rmarkdown, testthat (>= 3.0.0)

LazyData true

OS_type windows

Contents

`bloomberg_bds_formula` *Build a Bloomberg BDS Excel formula (bulk/descriptor data)*

Description

Constructs a Bloomberg `BDS` formula string for bulk fields (returns a spilled table). Use with `rb_eval_single` to read the result.

Usage

```
bloomberg_bds_formula(security, field, overrides = NULL)
```

Arguments

`security`	Character scalar, e.g., `"IBM US Equity"` or an index/ticker.
`field`	Character scalar bulk field (e.g., `"INDX_MEMBERS"`).
`overrides`	Optional named vector/list of overrides.

Value

A character string like:

```
=BDS("SPX Index","INDX_MEMBERS")
```

`clear_rexcelbridge_cache` *Clear the package cache of downloaded data files*

Description

Deletes the entire cache directory used by the **rexcelbridge** package to store downloaded data files. Useful if you need to force re-download of data, or free up disk space.

Usage

```
clear_rexcelbridge_cache()
```

Value

Invisibly returns `NULL`. A message is printed indicating which directory was cleared.

Examples

```
## Not run:
# Remove all cached data files so they will be re-downloaded on next use
clear_rexcelbridge_cache()

## End(Not run)
```

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dtn_prophetX_formula *Build a DTN ProphetX AIHIST RTD formula*

Description

Constructs a single-cell Excel formula string for the DTN ProphetX AIHIST RTD function. This can be passed to rb_eval_single() to evaluate historical data directly from Excel via COM automation.

Usage

```
dtn_prophetX_formula(symbol, time_scale, date, field)
```

Arguments

symbol	Character. ProphetX instrument symbol (e.g., "BEANS.20254.B").
time_scale	Character. Time scale such as "Daily", "Weekly", or "Monthly".
date	Date or string convertible to Date. The Excel serial number is computed relative to 1899-12-30.
field	Character. Field(s) to request, such as "Open", "High", "Low", "Close", or "Description".

Details

- The returned string is not evaluated in R; it must be written into an Excel cell using rb_eval_single().
- The date argument is converted to an Excel serial (days since 1899-12-30).
- Wrapping with IFERROR(...,0) ensures Excel returns 0 if the RTD call fails.

Value

A character string containing a valid Excel formula of the form:

```
=IFERROR(RTD("prophetx.rtdserver","","AIHIST",symbol,time_scale,"1",date,"",field,"XD"),0)
```

get_dtn_county_average

Pull DTN county average cash prices and basis for a commodity

Description

Builds and executes DTN ProphetX queries for one or more counties and returns a tidy table over a weekday-only date range.

Usage

```
get_dtn_county_average(
  commodity,
  start_date = Sys.Date() - 7,
  end_date = Sys.Date(),
  time_scale = "Daily",
  county_price_type = "County Average Spot Cash Price",
  fields = c("Open", "High", "Low", "Close", "Volume", "OpenInt"),
  county_fip = NULL,
  state_abbreviation = NULL,
  control = rexcelbridge_controls()
)
```

Arguments

`commodity` Character (length 1 or vector). Substring matched (case-insensitive) against `symbols_county_price$commodity`.

`start_date, end_date` Date. Inclusive range. Defaults to the last 7 days. Weekends are dropped.

`time_scale` One of "Daily","Weekly","Monthly". Default "Daily".

`county_price_type` Character. One or more of: "County Average Spot Cash Price","County Average Cash Price", "County Average Spot Basis Price","County Average Basis".

`fields` Character vector of ProphetX fields to retrieve.

`county_fip` Character/numeric vector of 5-digit county FIPS.

`state_abbreviation` Character vector of state abbreviations (e.g., "IA","NE").

`control` a list of control parameters -> dtn_prophetX_query_limit Max rows per chunk.

Value

A data.table with one row per (symbol, date). Columns include symbol metadata, `date`, `time_scale`, and wide OHLCV columns (`open`, `high`, `low`, `close`, `volume`, `openint`).

`rb_ensure_addin` *Ensure an Excel add-in is loaded (best effort)*

Description

Tries to locate and enable an add-in by name pattern (case-insensitive). Useful before evaluating formulas that depend on a vendor add-in.

Usage

```
rb_ensure_addin(xl, pattern)
```

Arguments

`xl` Excel Application COM handle from rb_start_excel().

`pattern` Character regex used to match the add-in name (e.g., "ProphetX", "Bloomberg").

Value

Invisibly TRUE (no error if not found).

`rb_eval_single` *Evaluate one or more single-cell Excel formulas*

Description

Writes each formula into successive rows of column A in a new workbook, polls until values are "ready" per a predicate, and returns the results.

Usage

```
rb_eval_single(
  formulas,
  timeout_sec = 120,
  visible = FALSE,
  ready_fn = rb_ready_predicate()
)
```

Arguments

`formulas` Character vector of Excel formulas (e.g., "=SUM(1,2)", '=RTD("prophetx.rtdserver","","AIHIST",...) '=BDP("IBM US Equity","PX_LAST")').

`timeout_sec` Max seconds to wait. Default 120.

`visible` Show the Excel window. Default FALSE.

`ready_fn` A readiness predicate built by rb_ready_predicate(). Default uses c("Wait","Loading...","N/A") as transient tokens.

Value

Data frame with columns: row, formula, result, ready.

`rb_excel_quote` *Quote a value for use in an Excel formula*

Description

Escapes embedded quotes and wraps non-numeric values in double quotes.

Usage

```
rb_excel_quote(x)
```

Arguments

`x`	Scalar to embed in an Excel formula.

Value

Character scalar safe to paste into a formula.

`rb_kill_excel` *Force close all Excel processes (Windows only)*

Description

Utility to terminate every running Excel instance on the system. This is useful if RTD sessions or hidden COM objects are left running after errors or crashes. Use with caution: unsaved work in Excel will be lost.

Usage

```
rb_kill_excel(force = TRUE, verbose = FALSE)
```

Arguments

`force`	Logical; if TRUE, forcibly terminates without prompts (default).
`verbose`	Logical; print output from taskkill. Default FALSE.

Value

Invisibly returns the exit status code from `taskkill` (0 = success).

rb_ready_predicate *Build a readiness predicate*

Description

Returns a function(value) that decides whether a cell is "ready". By default, treats blanks, Excel errors, and vendor "wait" tokens as NOT ready.

Usage

```
rb_ready_predicate(
  wait_tokens = c("Wait", "Loading...", "N/A"),
  treat_errors_as_ready = FALSE
)
```

Arguments

`wait_tokens`	Character vector of tokens to be treated as "not ready" (e.g., c("Wait","Loading...")). Case-insensitive.
`treat_errors_as_ready`	Logical; if TRUE, Excel errors stop the wait.

Value

A function f(x) -> TRUE if ready, FALSE otherwise.

rb_start_excel *Start an Excel COM session (Windows)*

Description

Launch a hidden (by default) Excel Application via COM and configure display alerts and calculation mode (Automatic).

Usage

```
rb_start_excel(visible = FALSE)
```

Arguments

`visible`	Logical; show the Excel window. Default FALSE.

Value

A COM handle to the Excel Application object.

`symbols_county_price` *Simulator Helper Datasets*

Description

A combined dataset for symbols_county_price

Usage

```
data(symbols_county_price)
```

Format

A data frame with 212 rows and 7 columns covering Inf–Inf.

Source

ARPC using data from prophetX

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