Install R package ctrdata

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Install package `ctrdata` on a R system

The R Project website (https://www.r-project.org/) provides installers for the R system. It can be used with software products and graphical user interfaces such as R Studio, or Microsoft R Open, or from Visual Studio Code.

General information on the `ctrdata` package is available here: https://github.com/rfhb/ctrdata.

In R, execute:

```
install.packages("ctrdata")
```

For using the development version of package `ctrdata`, install from GitHub:

```
# install preparatory package
install.packages(c("devtools", "httr"))
devtools::install_github("rfhb/ctrdata")
```

Either of the above should install package `ctrdata` into the user's library.

Internet access via proxy

Functions in package `ctrdata` that start with `ctr...` require access to trial registers over the internet via the `https` protocol. Package `ctrdata` checks and *automatically uses* the proxy that is set under MS Windows in system settings. However, proxy settings need to be set by the user for other operating systems and for more complicated environments such as using authenticating proxies, as follows:

```
Sys.setenv(https_proxy = "your_proxy.server.domain:8080")
Sys.setenv(https_proxy_user = "userid:password") # if needed
```

Additional installation aspects

The ommand line tools `perl`, `sed`, `cat` and `php` (5.2 or higher) are required for `ctrLoadQueryIntoDb()`, the main function of package `ctrdata`. No other function in this package has this requirement.

MS Windows

Package `ctrdata` requires on MS Windows that the `Cygwin` environment be installed, into the local directory `c:\cygwin` (or any folder corresponding to `c:\cygw*`). The installation of a minimal Cygwin environment on MS Windows can be done with the help of package `ctrdata` in R as follows:

```
ctrdata::installCygwinWindowsDoInstall()
```

If internet access has to be via a proxy and this was not correctly detected automatically, it can be specified for the installation of Cygwin as follows:

```
ctrdata::installCygwinWindowsDoInstall(proxy = "proxy.server.domain:8080")
```

Users who want or need to install Cygwin manually can download the setup executable from here. In a MS Windows command window or Powershell window, use the following command line. The parameters are explained here.

```
setup-x86_64.exe --no-admin --quiet-mode --verbose --upgrade-also --root c:/cygwin
--site http://www.mirrorservice.org/sites/sourceware.org/pub/cygwin/
--packages perl,php-jsonc,php-simplexml
```

macOS, Linux and other operating systems

The command line tools `perl`, `sed`, `cat` and `php` (5.2 or higher) are typically installed and available by default in Linux and macOS systems. In case of issues,

- In macOS, `homebrew` can be used to install these binaries

- In Linux, tools for installation vary by distribution (e.g., `sudo apt install php php-xml php-json`)

Databases to use

At this time, a PostgreSQL, an SQLite or a remote or a local MongoDB database can be used with the package `ctrdata`. SQLite is provided in the R package `RSQLite`. Suggested installation instructions for a local MongoDB server are here; a remote MongoDB database server is accessible here.

Purpose	Function call	Reference
Create SQLite database connection	`dbc <- nodbi::src_sqlite(dbname = "name_of_my_database", collection = "name_of_my_collection")`	`nodbi::src_sqlite()`
Create PostgreSQL database connection	`dbc <- nodbi::src_postgres(dbname = "name_of_my_database"); dbc[["collection"]] <- "name_of_my_collection"`	`nodbi::src_postgres()`

Purpose	Function call	Reference
Create MongoDB database connection	`dbc <- nodbi::src_mongo(db = "name_of_my_database", collection = "name_of_my_collection")`	`nodbi::src_mongo()`
Subsequently, use connection `dbc` with `ctrdata` functions	`ctrdata::{ctr,db}*(con = dbc, ...)`	

Attach package `ctrdata`

After completing the installation, attach the package from the user's library. This will also check the availability of the additional installation requirements as mentioned above:

```
library(ctrdata)
```

Remember to respect the registers' terms and conditions (see `ctrOpenSearchPagesInBrowser(copyright = TRUE)`). Please cite this package in any publication as follows: Ralf Herold (2021). ctrdata: Retrieve and Analyze Clinical Trials in Public Registers. R package version 1.8.0. https://cran.r-project.org/package=ctrdata