# 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. Many organisations use transparent proxies that may *not* require users to do any configurations. However, if necessary, package `ctrdata` can use proxy settings set by users in their R session such as follows:

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

### Additional installation aspects

The command line tools `perl`, `sed` and `cat` are required for `ctrLoadQueryIntoDb()`, the main function of package `ctrdata`, but *only* for register "EUCTR". No other function in this package and no other register has this requirement.

#### MS Windows

For this requirement on MS Windows, the `Cygwin` environment has to 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()
```

To update or correct the Cygwin installation:

```
ctrdata::installCygwinWindowsDoInstall(force = TRUE)
```

If internet access requires to specify a proxy (see above):

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

To install Cygwin manually, 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
```

#### macOS, Linux and other operating systems

- For convenience, install a script to automatically copy user's query from web browser, see here

Command line tools `perl`, `cat` and `sed` are required for `ctrLoadQueryIntoDb()`, the main function of package `ctrdata`, to work with the register "EUCTR" (but are *not* required for any other function or for `ctrdata` to work with the registers CTIS, CTGOV, CTGOV2 or ISRCTN, since 2023-11-21).

- For MS Windows, install `Cygwin`: In `R`, run `ctrdata::installCygwinWindowsDoInstall()` for an automated minimal installation. Alternatively, manually install Cygwin with packages `perl`, `cat` and `sed` into `c:\cygwin`. The installation needs about 160 MB disk space.

In Linux and macOS 12 Monterey and later, these tools are typically already available as part of the OS, thus *no* action required.

### Databases to use

At this time, a PostgreSQL, DuckDB, an SQLite or a MongoDB (local or remote) database can be used with the package `ctrdata`. A full SQLite database is provided in the R package `RSQLite`. Suggested installation instructions for PostgreSQL are here and for a local MongoDB server are here; a remote MongoDB database server is accessible here. See here for a speed comparison of the databases; recommended: DuckDB, PostgreSQL or MongoDB local server.

| Purpose | Function call |
|---|---|
| Create **SQLite** database connection | `dbc <- nodbi::src_sqlite(dbname = "name_of_my_database", collection = "name_of_my_collection")` |
| Create **MongoDB** database connection | `dbc <- nodbi::src_mongo(db = "name_of_my_database", collection = "name_of_my_collection")` |
| Create **PostgreSQL** database connection | `dbc <- nodbi::src_postgres(dbname = "name_of_my_database"); dbc[["collection"]] <- "name_of_my_collection"` |
| Create **DuckDB** database connection | `dbc <- nodbi::src_duckdb(dbname = "name_of_my_database", collection = "name_of_my_collection")` |
| Use connection with `ctrdata` functions | `ctrdata::{ctrLoadQueryIntoDb, dbQueryHistory, dbFindIdsUniqueTrials, dbFindFields, dbGetFieldsIntoDf}(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 (2023). ctrdata: Retrieve and Analyze Clinical Trials in Public Registers. R package version 1.13.0. https://cran.r-project.org/package=ctrdata