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:

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

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

```r
# install preparatory package
install.packages(c("devtools", "httr"))
develtools::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:

```r
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 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

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:\cygwin*). The installation of a minimal Cygwin environment on MS Windows can be done with the help of package ctrdata in R as follows:

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

To update or correct the Cygwin installation:

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

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

```r
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:

```bash
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 and php (5.2 or higher) may already be available by default in some Linux and macOS systems. They are checked when running ctrLoadQueryIntoDb(); alternatively, check with (ctrdata:::checkBinary()).

- In macOS, homebrew can be used to install php which may be needed starting from macOS 12 Monterey: first install homebrew and then run in Terminal the command: brew install php.
- 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 local MongoDB 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.

If available, a PostgreSQL or MongoDB local server is recommended for notably faster performance than SQLite.

<table>
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<tr>
<th>Purpose</th>
<th>Function call</th>
<th>Reference</th>
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</thead>
<tbody>
<tr>
<td>Create SQLite database connection</td>
<td><code>dbc &lt;- nodbi::src_sqlite(dbname = &quot;name_of_my_database&quot;, collection = &quot;name_of_my_collection&quot;)</code></td>
<td></td>
</tr>
<tr>
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<td>-----------------------------------------------------</td>
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<tr>
<td>Create <strong>PostgreSQL</strong> database connection</td>
<td><code>dbc &lt;- nodbi::src_postgres(dbname = &quot;name_of_my_database&quot;);</code></td>
<td><code>nodbi::src_postgres()</code></td>
</tr>
<tr>
<td></td>
<td><code>dbc[[&quot;collection&quot;]]&lt;-&quot;name_of_my_collection&quot;</code></td>
<td></td>
</tr>
<tr>
<td>Create <strong>MongoDB</strong> database connection</td>
<td><code>dbc &lt;- nodbi::src_mongo(db = &quot;name_of_my_database&quot;, collection = &quot;name_of_my_collection&quot;)</code></td>
<td><code>nodbi::src_mongo()</code></td>
</tr>
<tr>
<td>Subsequently, use connection <strong>dbc</strong> with <strong>ctrdata</strong> functions</td>
<td><code>ctrdata::{ctr,db}*(con = dbc, ...)</code></td>
<td></td>
</tr>
</tbody>
</table>

**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:

```r
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 (2022). ctrdata: Retrieve and Analyze Clinical Trials in Public Registers. R package version 1.9.0. https://cran.r-project.org/package=ctrdata