Installing nlmixr for Windows

Rtools is required to supply the compiler for packages like nlmixr in which R code is converted to C. `Rtools34.exe` (version 3.3.x and later) can be downloaded from http://cran.r-project.org/bin/windows/Rtools/. Install by double-clicking the file and following the prompts. Select the default items , and make sure the toolset is installed in **C:\Rtools: do not rename the directory to something else**, and **remove the 32 bit toolchain option** (so keep "R toolset", "Cygwin DLLs", and "R 3.3.x+ 64 bit toolchain").

During the installation process, in the “Select additional tasks” window, check the box for “Edit the system path: Current value:”, and ensure the path contains the following items:

```
C:\Rtools\bin;
C:\Rtools\mingw_64\bin;
```

Then install your preferred R package in the 64 bit version if not yet installed (e.g. download `microsoft-r-open-3.3.1.msi`, from http://mran.revolutionanalytics.com/download/, and install R by double-clicking `microsoft-r-open-3.3.1.msi`. **Do not install the 32 bit version of R so make sure you uncheck the 32-bit option!** Ensure that your path points to the R-installation directory, e.g.:

```
C:\Program Files\Microsoft\MRO-3.3.1\bin\x64\
```
or
```
C:\Program Files\R\R-3.3.1\bin\x64\
```

If you want to make use of SAEM functionality as well -at this stage- you will need to change the default permissions of the R installation directory. In the windows explorer, right click the directory (e.g. `C:\Program Files\Microsoft\MRO-3.3.1\` or `C:\Program Files\R\R-3.3.1\`) and Select “Properties/Security”, then click the “Edit” button with the shield next to it, then click “Users (ComputerName\Users)”, click the check box under “Full control”, click “Apply”, and “OK” twice.

Then start R and run the following commands:

```
install.packages("devtools")
library(devtools)
```

You can can then either install the source code packages for RxODE as provided on the GitHub page using the following command:

```
install_github('nlmixrdevelopment/RxODE')
```

or install RxODE directly off of CRAN. If you use the MRO package, you will need to specify a snapshot version after the upload of the latest RxODE version, like in the syntax below:

```
oldOpt <- getOption("repos")
options(repos = c(CRAN =
"https://mran.revolutionanalytics.com/snapshot/2016-12-01"))
install.packages("RxODE"), dependencies=TRUE)
options(repos = oldOpt)
```

Then install the source code package for nlmixr as provided on the GitHub page using the following command:

```
install_github('nlmixrdevelopment/nlmixr')
```

There will be numerous warning messages but these can be ignored. This concludes the installation of nlmixr on Windows.

Installing nlmixr for OS X

Rtools is not available on OS X, and is replaced By Xcode and the command line tools, so first install Xcode 8.1 and the command line tools, then install devtools:

```
install.packages("devtools")
library(devtools)
```

and then run:

```
devtools::install_github("nlmixrdevelopment/nlmixr", repos = NULL, type =
"source")
```

Then install RxODE using either the RxODE package off of CRAN (making sure you use the post 1 December 2016 snapshot, or use the following command:

```
devtools::install_github("nlmixrdevelopment/RxODE", repos = NULL, type =
"source")
```

If you run into an issue that the compiler cannot be found, this post may help solve the issue: http://stackoverflow.com/questions/37753941/os-x-package-installation-issue-cant-find-gfortran-4-8-to-build-package

If these steps fail, you can try the following instead:

```
devtools::install_github("hadley/devtools")
devtools::has_devel()

install.packages("Rcpp", dependencies = TRUE)
install.packages("RcppEigen")
install.packages("RcppArmadillo")
install.packages("BH")
install.packages("coda")
install.packages("brew")
install.packages("inline")
install.packages("lbfgs")

devtools::install_github("nlmixrdevelopment/nlmixr", repos = NULL, type =
"source")
devtools::install_github("nlmixrdevelopment/RxODE", repos = NULL, type =
"source")
```

Depending on your compiler version, if all of these fail, the following commands have been reported to work:

```
devtools::install_github("nlmixrdevelopment/nlmixr")
```

Demo files

The demo files from the vignette can be run using VignetteDemo.R found at
https://github.com/nlmixrdevelopment/nlmixr/tree/master/vignettes

A short demo illustrating use of nlme and SAEM is available at:
https://github.com/nlmixrdevelopment/nlmixr/tree/master/inst/examples/LiveDemo

and all the nlmixr commands and files used for the nlmixr poster at AcoP7
(http://www.occams.eu/assets/pdf/PosterACoP2016.pdf) are available at:
https://github.com/nlmixrdevelopment/nlmixr/tree/master/inst/examples/ACoP7poster