

# Package ‘OhdsiRTools’

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**Type** Package

**Title** Tools Used by 'Observational Health Data Science and Informatics' ('OHDSI')

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**Description**

Includes functions to format and check syntax of R code and packages following the 'OHDSI' R style guidelines. Support for parallel computation, logging, and function automation. Functionality for interacting with instances of the open source 'OHDSI' 'WebApi'.

**License** Apache License 2.0

**VignetteBuilder** knitr

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**R topics documented:**

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---

addDefaultConsoleLogger      *Add the default console logger*

---

## Description

Add the default console logger

## Usage

addDefaultConsoleLogger()

## Details

Creates a logger that writes to the console using the "INFO" threshold and the [layoutSimple](#) layout.

---

addDefaultFileLogger      *Add the default file logger*

---

## Description

Add the default file logger

## Usage

addDefaultFileLogger(fileName)

## Arguments

fileName      The name of the file to write to.

## Details

Creates a logger that writes to a file using the "TRACE" threshold and the [layoutParallel](#) layout. The output can be viewed with the built-in log viewer that can be started using [launchLogViewer](#).

---

checkUsagePackage	<i>Check all code in a package</i>
-------------------	------------------------------------

---

**Description**

Check all code in a package

**Usage**

```
checkUsagePackage(package, ignoreHiddenFunctions = TRUE,  
  suppressBindingKeywords = c("ggplot2", "ffwhich", "subset.ffdf", "glm"))
```

**Arguments**

package	The name of the package to check.
ignoreHiddenFunctions	Ignore functions for which the definition cannot be retrieved?
suppressBindingKeywords	A set of keywords that are indicative of non-standard evaluation.

**Details**

This function uses the codetools package to check the code from problems. Heuristics are used to eliminate false positives due to non-standard evaluation.

---

clearLoggers	<i>Remove all registered loggers</i>
--------------	--------------------------------------

---

**Description**

Remove all registered loggers

**Usage**

```
clearLoggers()
```

---

clusterApply	<i>Apply a function to a list using the cluster</i>
--------------	---

---

## Description

Apply a function to a list using the cluster

## Usage

```
clusterApply(cluster, x, fun, ..., stopOnError = FALSE, progressBar = TRUE)
```

## Arguments

cluster	The cluster of threads to run the function.
x	The list on which the function will be applied.
fun	The function to apply. Note that the context in which the function is specified matters (see details).
...	Additional parameters for the function.
stopOnError	Stop when one of the threads reports an error? If FALSE, all errors will be reported at the end.
progressBar	Show a progress bar?

## Details

The function will be executed on each element of `x` in the threads of the cluster. If there are more elements than threads, the elements will be queued. The progress bar will show the number of elements that have been completed. It can sometimes be important to realize that the context in which a function is created is also transmitted to the worker node. If a function is defined inside another function, and that outer function is called with a large argument, that argument will be transmitted to the worker node each time the function is executed. It can therefore make sense to define the function to be called at the package level rather than inside a function, to save overhead.

## Value

A list with the result of the function on each item in `x`.

## Examples

```
fun <- function(x) {  
  return (x^2)  
}  
  
cluster <- makeCluster(numberOfThreads = 3)  
clusterApply(cluster, 1:10, fun)  
stopCluster(cluster)
```

---

clusterRequire	<i>Require a package in the cluster</i>
----------------	---

---

### Description

Calls the require function in each node of the cluster.

### Usage

```
clusterRequire(cluster, package)
```

### Arguments

cluster	The cluster object.
package	The name of the package to load in all nodes.

---

createArgFunction	<i>Create an argument function</i>
-------------------	------------------------------------

---

### Description

Create an argument function

### Usage

```
createArgFunction(functionName, excludeArgs = c(), includeArgs = NULL,
  addArgs = list(), rCode = c(), newName)
```

### Arguments

functionName	The name of the function for which we want to create an args function.
excludeArgs	Exclude these arguments from appearing in the args function.
includeArgs	Include these arguments in the args function.
addArgs	Add these arguments to the args functions. Defined as a list with format name = default.
rCode	A character vector representing the R code where the new function should be appended to.
newName	The name of the new function. If not specified, the new name will be automatically derived from the old name.

### Details

This function can be used to create a function that has (almost) the same interface as the specified function, and the output of this function will be a list of argument values.

### Value

A character vector with the R code including the new function.

**Examples**

```
createArgFunction("read.csv", addArgs = list(exposureId = "exposureId"))
```

---

createConsoleAppender	<i>Create console appender</i>
-----------------------	--------------------------------

---

**Description**

Create console appender

**Usage**

```
createConsoleAppender(layout = layoutSimple)
```

**Arguments**

layout	The layout to be used by the appender.
--------	--

**Details**

Creates an appender that will write to the console.

---

createFileAppender	<i>Create file appender</i>
--------------------	-----------------------------

---

**Description**

Create file appender

**Usage**

```
createFileAppender(layout = layoutParallel, fileName)
```

**Arguments**

layout	The layout to be used by the appender.
fileName	The name of the file to write to.

**Details**

Creates an appender that will write to a file.

---

createLogger	Create a logger
--------------	-----------------

---

### Description

Create a logger

### Usage

```
createLogger(name = "SIMPLE", threshold = "INFO",  
  appenders = list(createConsoleAppender()))
```

### Arguments

name	A name for the logger.
threshold	The threshold to be used for reporting.
appenders	A list of one or more appenders as created for example using the <a href="#">createConsoleAppender</a> or <a href="#">createFileAppender</a> function.

### Details

Creates a logger that will log messages to its appenders. The logger will only log messages at a level equal to or higher than its threshold. For example, if the threshold is "INFO" then messages marked "INFO" will be logged, but messages marked "TRACE" will not. The order of levels is "TRACE", "DEBUG", "INFO", "WARN", "ERROR", "and FATAL".

### Value

An object of type `Logger`, to be used with the [registerLogger](#) function.

---

excludeFromList	Exclude variables from a list of objects of the same type
-----------------	---

---

### Description

Exclude variables from a list of objects of the same type

### Usage

```
excludeFromList(x, exclude)
```

### Arguments

x	A list of objects of the same type.
exclude	A character vector of names of variables to exclude.



---

formatRFile	<i>Format an R file</i>
-------------	-------------------------

---

**Description**

Format an R file

**Usage**

```
formatRFile(file, width.cutoff = 100)
```

**Arguments**

file	The path to the file.
width.cutoff	Number of characters that each line should be limited to.

---

formatRFolder	<i>Format all R files in a folder</i>
---------------	---------------------------------------

---

**Description**

Format all R files in a folder

**Usage**

```
formatRFolder(path = ".", recursive = TRUE, skipAutogenerated = TRUE, ...)
```

**Arguments**

path	Path to the folder containing the files to format. Only files with the .R extension will be formatted.
recursive	Include all subfolders?
skipAutogenerated	Skip auto-generated files such as RcppExports.R?
...	Parameters to be passed on the the formatRFile function

**Examples**

```
## Not run:  
formatRFolder()  
  
## End(Not run)
```

---

formatRText	<i>Format R code</i>
-------------	----------------------

---

**Description**

Format R code

**Usage**

```
formatRText(text, width.cutoff = 100)
```

**Arguments**

text	A character vector with the R code to be formatted.
width.cutoff	Number of characters that each line should be limited to.

**Value**

A character vector with formatted R code.

---

getCohortDefinitionName	<i>Get a cohort definition's name from WebAPI</i>
-------------------------	---

---

**Description**

Get a cohort definition's name from WebAPI

**Usage**

```
getCohortDefinitionName(baseUrl, definitionId, formatName = FALSE)
```

**Arguments**

baseUrl	The base URL for the WebApi instance, for example: "http://api.ohdsi.org:80/WebAPI".
definitionId	The cohort definition id in Atlas.
formatName	Should the name be formatted to remove prefixes and underscores?

**Details**

Obtains the name of a cohort.

**Value**

The name of the cohort.

---

`getCohortGenerationStatuses`*Get Cohort Generation Statuses*

---

**Description**

Get Cohort Generation Statuses

**Usage**

```
getCohortGenerationStatuses(baseUrl, definitionIds, sourceKeys)
```

**Arguments**

<code>baseUrl</code>	The base URL for the WebApi instance, for example: "http://api.ohdsi.org:80/WebAPI".
<code>definitionIds</code>	A list of cohort definition Ids
<code>sourceKeys</code>	A list of CDM source keys. These can be found in Atlas -> Configure.

**Details**

Obtains cohort generation statuses for a collection of cohort definition Ids and CDM sources. Useful if running multiple cohort generation jobs that are long-running.

**Value**

A data frame of cohort generation statuses, start times, and execution durations per definition id and source key.

---

`getConceptSetConceptIds`*Get Concept Set Concept Ids*

---

**Description**

Get Concept Set Concept Ids

**Usage**

```
getConceptSetConceptIds(baseUrl, setId, vocabSourceKey = NULL)
```

**Arguments**

<code>baseUrl</code>	The base URL for the WebApi instance, for example: "http://api.ohdsi.org:80/WebAPI".
<code>setId</code>	The concept set id in Atlas.
<code>vocabSourceKey</code>	The source key of the Vocabulary. By default, the priority Vocabulary is used.

**Details**

Obtains the full list of concept Ids in a concept set.

**Value**

A list of concept Ids.

---

getConceptSetName	<i>Get a concept set's name from WebAPI</i>
-------------------	---

---

**Description**

Get a concept set's name from WebAPI

**Usage**

```
getConceptSetName(baseUrl, setId, formatName = FALSE)
```

**Arguments**

baseUrl	The base URL for the WebApi instance, for example: "http://api.ohdsi.org:80/WebAPI".
setId	The concept set id in Atlas.
formatName	Should the name be formatted to remove prefixes and underscores?

**Details**

Obtains the name of a concept set.

**Value**

The name of the concept set.

---

getLoggers	<i>Get all registered loggers</i>
------------	-----------------------------------

---

**Description**

Get all registered loggers

**Usage**

```
getLoggers()
```

**Value**

Returns all registered loggers.

---

getPriorityVocabKey	<i>Get Priority Vocab Source Key</i>
---------------------	--------------------------------------

---

**Description**

Get Priority Vocab Source Key

**Usage**

```
getPriorityVocabKey(baseUrl)
```

**Arguments**

baseUrl	The base URL for the WebApi instance, for example: "http://api.ohdsi.org:80/WebAPI".
---------	--

**Details**

Obtains the source key of the default OMOP Vocab in Atlas.

**Value**

A string with the source key of the default OMOP Vocab in Atlas.

---

insertCohortDefinitionInPackage	<i>Load a cohort definition and insert it into this package</i>
---------------------------------	---

---

**Description**

Load a cohort definition and insert it into this package

**Usage**

```
insertCohortDefinitionInPackage(definitionId, name = NULL, baseUrl,  
generateStats = FALSE)
```

**Arguments**

definitionId	The number indicating which cohort definition to fetch.
name	The name that will be used for the json and SQL files. If not provided, the name in cohort will be used, but this may not lead to valid file names.
baseUrl	The base URL for the WebApi instance, for example: "http://api.ohdsi.org:80/WebAPI".
generateStats	Should the SQL include the code for generating inclusion rule statistics? Note that if TRUE, several additional tables are expected to exist as described in the details.

## Details

Load a cohort definition from a WebApi instance and insert it into this package. This will fetch the json object and store it in the 'inst/cohorts' folder, and fetch the template SQL and store it in the 'inst/sql/sql\_server' folder. Both folders will be created if they don't exist. When using generateStats = TRUE, the following tables are required to exist when executing the SQL: cohort\_inclusion, cohort\_inclusion\_result, cohort\_inclusion\_stats, and cohort\_summary\_stats. Also note that the cohort\_inclusion table should be populated with the names of the rules prior to executing the cohort definition SQL.

## Examples

```
## Not run:
# This will create 'inst/cohorts/Angioedema.json' and 'inst/sql/sql_server/Angioedema.sql':

insertCohortDefinitionInPackage(282, "Angioedema")

## End(Not run)
```

---

```
insertCohortDefinitionSetInPackage
```

*Insert a set of cohort definitions into package*

---

## Description

Insert a set of cohort definitions into package

## Usage

```
insertCohortDefinitionSetInPackage(fileName, baseUrl, insertTableSql = TRUE,
  insertCohortCreationR = TRUE, generateStats = FALSE, packageName)
```

## Arguments

fileName	Name of a CSV file in the inst/settings folder of the package specifying the cohorts to insert. See details for the expected file format.
baseUrl	The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI".
insertTableSql	Should the SQL for creating the cohort table be inserted into the package as well? This file will be called CreateCohortTable.sql.
insertCohortCreationR	Insert R code that will create the cohort table and instantiate the cohorts? This will create a file called R/CreateCohorts.R containing a function called .createCohorts.
generateStats	Should cohort inclusion rule statistics be created?
packageName	The name of the package (only needed when inserting the R code as well).

**Details**

The CSV file should have at least the following fields:

**atlasId** The cohort ID in ATLAS.

**cohortId** The cohort ID that will be used when instantiating the cohort (can be different from atlasId).

**name** The name to be used for the cohort. This name will be used to generate file names, so please use letters and numbers only (no spaces).

---

insertConceptSetConceptIdsInPackage

*Insert a set of concept sets' concept ids into package*

---

**Description**

Insert a set of concept sets' concept ids into package

**Usage**

```
insertConceptSetConceptIdsInPackage(fileName, baseUrl)
```

**Arguments**

**fileName** Name of a CSV file in the inst/settings folder of the package specifying the concept sets to insert. See details for the expected file format.

**baseUrl** The base URL for the WebApi instance, for example: "http://api.ohdsi.org:80/WebAPI".

**Details**

The CSV file should have:

**atlasId** The concept set Id in ATLAS.

---

insertEnvironmentSnapshotInPackage

*Store snapshot of the R environment in the package*

---

**Description**

Store snapshot of the R environment in the package

**Usage**

```
insertEnvironmentSnapshotInPackage(rootPackage)
```

**Arguments**

**rootPackage** The name of the root package

**Details**

This function records all versions used in the R environment that are used by one root package, and stores them in the R package that is currently being developed in a file called `inst/settings/rEnvironmentSnapshot.json`. It can be used for example to restore the environment to the state it was when a particular study package was run using the `restoreEnvironment` function.

**Examples**

```
## Not run:
insertEnvironmentSnapshotInPackage("OhdsiRTools")

## End(Not run)
```

---

```
invokeCohortSetGeneration
```

*Invoke the generation of a set of cohort definitions*

---

**Description**

Invoke the generation of a set of cohort definitions

**Usage**

```
invokeCohortSetGeneration(baseUrl, sourceKeys, definitionIds)
```

**Arguments**

<code>baseUrl</code>	The base URL for the WebApi instance, for example: "http://api.ohdsi.org:80/WebAPI".
<code>sourceKeys</code>	A list of CDM source keys. These can be found in Atlas -> Configure.
<code>definitionIds</code>	A list of cohort definition Ids

**Details**

Invokes the generation of a set of cohort definitions across a set of CDMs set up in WebAPI. Use `getCohortGenerationStatuses` to check the progress of the set.

---

```
launchLogViewer
```

*Launch the log viewer Shiny app*

---

**Description**

Launch the log viewer Shiny app

**Usage**

```
launchLogViewer(logFileName)
```



### Arguments

logFileName      Name of the log file to view.

### Details

Launches a Shiny app that allows the user to view a log file created using the default file logger. Use [addDefaultFileLogger](#) to start the default file logger.

---

layoutParallel	<i>Logging layout for parallel computing</i>
----------------	--

---

### Description

A layout function to be used with an appender. This layout adds the time, thread, level, package name, and function name to the message.

### Usage

```
layoutParallel(level, message)
```

### Arguments

level              The level of the message (e.g. "INFO")  
message            The message to layout.

---

layoutSimple	<i>Simple logging layout</i>
--------------	------------------------------

---

### Description

A layout function to be used with an appender. This layout simply includes the message itself.

### Usage

```
layoutSimple(level, message)
```

### Arguments

level              The level of the message (e.g. "INFO")  
message            The message to layout.

---

layoutStackTrace	<i>Logging layout with timestamp</i>
------------------	--------------------------------------

---

**Description**

A layout function to be used with an appender. This layout adds the time to the message.

**Usage**

```
layoutStackTrace(level, message)
```

**Arguments**

level	The level of the message (e.g. "INFO")
message	The message to layout.

---

layoutTimestamp	<i>Logging layout with timestamp</i>
-----------------	--------------------------------------

---

**Description**

A layout function to be used with an appender. This layout adds the time to the message.

**Usage**

```
layoutTimestamp(level, message)
```

**Arguments**

level	The level of the message (e.g. "INFO")
message	The message to layout.

---

loadSettingsFromJson	<i>Load a settings object from a JSON file</i>
----------------------	--

---

**Description**

Load a settings object from a JSON file

**Usage**

```
loadSettingsFromJson(fileName)
```

**Arguments**

fileName	Name of the JSON file to load.
----------	--------------------------------

**Details**

Load a settings object from a JSON file, restoring object classes and attributes.

**Value**

An R object as specified by the JSON.

---

logDebug	<i>Log a message at the DEBUG level</i>
----------	---

---

**Description**

Log a message at the DEBUG level

**Usage**

```
logDebug(...)
```

**Arguments**

...                      Zero or more objects which can be coerced to character (and which are pasted together with no separator).

**Details**

Log a message at the specified level. The message will be sent to all the registered loggers.

---

logError	<i>Log a message at the ERROR level</i>
----------	---

---

**Description**

Log a message at the ERROR level

**Usage**

```
logError(...)
```

**Arguments**

...                      Zero or more objects which can be coerced to character (and which are pasted together with no separator).

**Details**

Log a message at the specified level. The message will be sent to all the registered loggers.

---

logFatal	<i>Log a message at the FATAL level</i>
----------	---

---

**Description**

Log a message at the FATAL level

**Usage**

```
logFatal(...)
```

**Arguments**

...                      Zero or more objects which can be coerced to character (and which are pasted together with no separator).

**Details**

Log a message at the specified level. The message will be sent to all the registered loggers. This function is be automatically called when an error occurs, and should not be called directly. Use `stop()` instead.

---

logInfo	<i>Log a message at the INFO level</i>
---------	--

---

**Description**

Log a message at the INFO level

**Usage**

```
logInfo(...)
```

**Arguments**

...                      Zero or more objects which can be coerced to character (and which are pasted together with no separator).

**Details**

Log a message at the specified level. The message will be sent to all the registered loggers.

---

logTrace	<i>Log a message at the TRACE level</i>
----------	---

---

**Description**

Log a message at the TRACE level

**Usage**

```
logTrace(...)
```

**Arguments**

...                      Zero or more objects which can be coerced to character (and which are pasted together with no separator).

**Details**

Log a message at the specified level. The message will be sent to all the registered loggers.

---

logWarn	<i>Log a message at the WARN level</i>
---------	--

---

**Description**

Log a message at the WARN level

**Usage**

```
logWarn(...)
```

**Arguments**

...                      Zero or more objects which can be coerced to character (and which are pasted together with no separator).

**Details**

Log a message at the specified level. The message will be sent to all the registered loggers. This function is automatically called when a warning is thrown, and should not be called directly. Use `warning()` instead.

---

makeCluster	<i>Create a cluster of nodes for parallel computation</i>
-------------	---

---

### Description

Create a cluster of nodes for parallel computation

### Usage

```
makeCluster(numberOfThreads, singleThreadToMain = TRUE,
            divideFfMemory = TRUE, setFfTempDir = TRUE)
```

### Arguments

numberOfThreads	Number of parallel threads.
singleThreadToMain	If numberOfThreads is 1, should we fall back to running the process in the main thread?
divideFfMemory	When TRUE, the memory available for processing ff and ffdF objects will be equally divided over the threads.
setFfTempDir	When TRUE, the ffTempDir option will be copied to each thread.

### Value

An object representing the cluster.

### Examples

```
fun <- function(x) {
  return (x^2)
}

cluster <- makeCluster(numberOfThreads = 3)
clusterApply(cluster, 1:10, fun)
stopCluster(cluster)
```

---

matchInList	<i>In a list of object of the same type, find those that match the input</i>
-------------	--

---

### Description

In a list of object of the same type, find those that match the input

### Usage

```
matchInList(x, toMatch)
```

Arguments

- x

A list of objects of the same type.
- toMatch

The object to match.

Details

Typically, toMatch will contain a subset of the variables that are in the objects in the list. Any object matching all variables in toMatch will be included in the result.

Value

A list of objects that match the toMatch object.

Examples

```
x <- list(a = list(name = "John", age = 25, gender = "M"),
          b = list(name = "Mary", age = 24, gender = "F"))

matchInList(x, list(name = "Mary"))

# [[1]]
# [[1]]$name
# [1] "Mary"
#
# [[1]]$age
# [1] 24
```

---

OhdsiRTools	<i>OhdsiRTools</i>
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---

Description

OhdsiRTools

---

registerLogger	<i>Register a logger</i>
----------------	--------------------------

---

Description

Register a logger

Usage

```
registerLogger(logger)
```

Arguments

- logger

An object of type Logger as created using the [createLogger](#) function.

Details

Registers a logger as created using the [createLogger](#) function to the logging system.

---

restoreEnvironment	<i>Restore the R environment to a snapshot</i>
--------------------	--

---

### Description

Restore the R environment to a snapshot

### Usage

```
restoreEnvironment(snapshot, stopOnWrongRVersion = FALSE)
```

### Arguments

snapshot	The snapshot data frame as generated using the <a href="#">takeEnvironmentSnapshot</a> function.
stopOnWrongRVersion	Should the function stop when the wrong version of R is installed? Else just a warning will be thrown when the version doesn't match.

### Details

This function restores the R environment to a previous snapshot, meaning all the packages will be restored to the versions they were at at the time of the snapshot. Note: on Windows you will very likely need to have RTools installed to build the various packages.

### Examples

```
## Not run:
snapshot <- takeEnvironmentSnapshot("OhdsiRTools")
write.csv(snapshot, "snapshot.csv")

# 5 years later

snapshot <- read.csv("snapshot.csv")
restoreEnvironment(snapshot)

## End(Not run)
```

---

runAndNotify	<i>Run code and send e-mail notification on error, warning, or completion</i>
--------------	---

---

### Description

Run code and send e-mail notification on error, warning, or completion

### Usage

```
runAndNotify(expression, mailSettings, label = "R", stopOnWarning = FALSE)
```



**Arguments**

expression	The expression to run.
mailSettings	Arguments to be passed to the send.mail function in the mailR package (except subject and body).
label	A label to be used in the subject to identify a run.
stopOnWarning	Stop expression on warning and send notification?

**Value**

The output of expression.

**Examples**

```
## Not run:
mailSettings <- list(from = "someone@gmail.com",
                    to = c("someone_else@gmail.com"),
                    smtp = list(host.name = "smtp.gmail.com",
                               port = 465,
                               user.name = "someone@gmail.com",
                               passwd = "super_secret!",
                               ssl = TRUE),
                    authenticate = TRUE,
                    send = TRUE)

runAndNotify({
  a <- 1 + 2 + 3
}, mailSettings = mailSettings, label = "My fancy R code")

## End(Not run)
```

---

saveSettingsToJson	<i>Save a settings object as JSON file</i>
--------------------	--

---

**Description**

Save a settings object as JSON file

**Usage**

```
saveSettingsToJson(object, fileName)
```

**Arguments**

object	R object to be saved.
fileName	File name where the object should be saved.

**Details**

Save a setting object as a JSON file, using pretty formatting and preserving object classes and attributes.

---

selectFromList	<i>Select variables from a list of objects of the same type</i>
----------------	---

---

**Description**

Select variables from a list of objects of the same type

**Usage**

```
selectFromList(x, select)
```

**Arguments**

x	A list of objects of the same type.
select	A character vector of names of variables to select.

**Examples**

```
x <- list(a = list(name = "John", age = 25, gender = "M"),
          b = list(name = "Mary", age = 24, gender = "F"))
selectFromList(x, c("name", "age"))

# $a
# $a$name
# [1] "John"
#
# $a$age
# [1] 25
#
#
# $b
# $b$name
# [1] "Mary"
#
# $b$age
# [1] 24
```

---

stopCluster	<i>Stop the cluster</i>
-------------	-------------------------

---

**Description**

Stop the cluster

**Usage**

```
stopCluster(cluster)
```

**Arguments**

cluster            The cluster to stop

**Examples**

```
fun <- function(x) {  
  return (x^2)  
}  
  
cluster <- makeCluster(numberOfThreads = 3)  
clusterApply(cluster, 1:10, fun)  
stopCluster(cluster)
```

---

takeEnvironmentSnapshot

*Take a snapshot of the R environment*

---

**Description**

Take a snapshot of the R environment

**Usage**

```
takeEnvironmentSnapshot(rootPackage)
```

**Arguments**

rootPackage       The name of the root package

**Details**

This function records all versions used in the R environment that are used by one root package. This can be used for example to restore the environment to the state it was when a particular study package was run using the [restoreEnvironment](#) function.

**Value**

A data frame listing all the dependencies of the root package and their version numbers, in the order in which they should be installed.

**Examples**

```
snapshot <- takeEnvironmentSnapshot("OhdsiRTools")  
snapshot
```

---

unregisterLogger	<i>Unregister a logger</i>
------------------	----------------------------

---

**Description**

Unregister a logger

**Usage**

```
unregisterLogger(x)
```

**Arguments**

x	Can either be an integer (e.g. 2 to remove the second logger), the name of the logger, or the logger object itself.
---	---

**Details**

Unregisters a logger from the logging system.

**Value**

Returns TRUE if the logger was removed.

---

updateCopyrightYearFile	<i>Update the copyright year in a R or SQL file</i>
-------------------------	---

---

**Description**

Update the copyright year in a R or SQL file

**Usage**

```
updateCopyrightYearFile(file)
```

**Arguments**

file	The path to the file.
------	-----------------------

---

`updateCopyrightYearFolder`*Update the copyright year in all R and SQL files in a folder*

---

**Description**

Update the copyright year in all R and SQL files in a folder

**Usage**

```
updateCopyrightYearFolder(path = ".", recursive = TRUE)
```

**Arguments**

<code>path</code>	Path to the folder containing the files to update. Only files with the .R and .SQL extension will be updated.
<code>recursive</code>	Include all subfolders?

**Examples**

```
## Not run:  
updateCopyrightYearFolder()  
  
## End(Not run)
```

---

`updatePackageName`*Update the package name in a R or SQL file*

---

**Description**

Update the package name in a R or SQL file

**Usage**

```
updatePackageName(file, packageName)
```

**Arguments**

<code>file</code>	The path to the file.
<code>packageName</code>	The replacement package name

---

`updatePackageNameFolder`*Update the package name in all R and SQL files in a folder*

---

**Description**

Update the package name in all R and SQL files in a folder

**Usage**

```
updatePackageNameFolder(path = ".", packageName, recursive = TRUE)
```

**Arguments**

<code>path</code>	Path to the folder containing the files to update. Only files with the .R and .SQL extension will be updated.
<code>packageName</code>	The replacement package name
<code>recursive</code>	Include all subfolders?

**Examples**

```
## Not run:  
updateCopyrightYearFolder()  
  
## End(Not run)
```

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