

# Package ‘antaresEditObject’

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**Type** Package

**Title** Edit an 'Antares' Simulation

**Version** 0.9.3

**Description** Edit an 'Antares' simulation before running it : create new areas, links, thermal clusters or binding constraints or edit existing ones. Update 'Antares' general & optimization settings.

'Antares' is an open source power system generator, more information available here : [<https://antares-simulator.org/>](https://antares-simulator.org/).

**License** GPL (>= 2)

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<https://rte-antares-rpackage.github.io/antaresEditObject/>

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---

*.api\_command\_execute\_edit\_area*

*Edit area's parameters in API mode.*

---

## Description

Edit area's parameters in API mode.

## Usage

`.api_command_execute_edit_area(name, new_values, type, opts)`

## Arguments

name	Name of the area to edit.
new_values	Values of the parameters to edit.
type	Type of edition.
opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code>

## Value

An updated list containing various information about the simulation.

---

.api\_command\_execute\_edit\_area\_ui

*Edit area's ui in API mode.*

---

### **Description**

Edit area's ui in API mode.

### **Usage**

.api\_command\_execute\_edit\_area\_ui(name, color, localization, opts)

### **Arguments**

name	Name of the area as a character, without punctuation except - and _.
color	Color of the node
localization	Localization on the map
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

---

.format\_ini\_rhs

*Format a value to a suitable format to rhs in an .ini file.*

---

### **Description**

Format a value to a suitable format to rhs in an .ini file.

### **Usage**

.format\_ini\_rhs(value)

### **Arguments**

value	The value to format.
-------	----------------------

### **Value**

the formatted value

---

```
.format_playlist_weights
```

*Generate playlist\_year\_weight section in the appropriate format.*

---

**Description**

Generate playlist\_year\_weight section in the appropriate format.

**Usage**

```
.format_playlist_weights(weights, api_mode)
```

**Arguments**

weights	data.table, 2 columns : mcYears and weights. Only with after antares V8
api_mode	Boolean to identify an api study

**Value**

The playlist\_year\_weight section formatted.

---

```
.format_ui_data_by_mode
```

*Generate the data for the ui part by study mode.*

---

**Description**

Generate the data for the ui part by study mode.

**Usage**

```
.format_ui_data_by_mode(name, localization, color, api_mode)
```

**Arguments**

name	Name of the area as a character, without punctuation except - and _.
localization	Localization on the map
color	Color of the node
api_mode	Is study in API mode?

---

.initializeLinksArea *Initialize links data for a new area. For disk mode only.*

---

### Description

Initialize links data for a new area. For disk mode only.

### Usage

```
.initializeLinksArea(name, overwrite, opts)
```

### Arguments

name	Name of the area as a character, without punctuation except - and _.
overwrite	Overwrite the area if already exists.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

### Value

An updated list containing various information about the simulation.

---

.initializeRenewablesArea  
*Initialize renewables data for a new area. For disk mode only.*

---

### Description

Initialize renewables data for a new area. For disk mode only.

### Usage

```
.initializeRenewablesArea(name, overwrite, opts)
```

### Arguments

name	Name of the area as a character, without punctuation except - and _.
overwrite	Overwrite the area if already exists.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

### Value

An updated list containing various information about the simulation.

---

`.initializeThermalArea`

*Initialize thermal data for a new area. For disk mode only.*

---

### Description

Initialize thermal data for a new area. For disk mode only.

### Usage

```
.initializeThermalArea(name, overwrite, economic_options, opts)
```

### Arguments

<code>name</code>	Name of the area as a character, without punctuation except - and _.
<code>overwrite</code>	Overwrite the area if already exists.
<code>economic_options</code>	Economic options.
<code>opts</code>	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code>

### Value

An updated list containing various information about the simulation.

---

`.split_nodalOptimization_by_target`

*Split list nodalOptimization by target file.*

---

### Description

Split list nodalOptimization by target file.

### Usage

```
.split_nodalOptimization_by_target(nodalOptimization)
```

### Arguments

<code>nodalOptimization</code>	Nodal optimization parameters, see <code>nodalOptimizationOptions()</code>
--------------------------------	----------------------------------------------------------------------------



---

activateRES	<i>Activate RES in an Antares study</i>
-------------	-----------------------------------------

---

**Description**

Helper to activate Renewables Energy Sources. This will update `renewable.generation.modelling` parameter and create appropriate structure for RES clusters.

**Usage**

```
activateRES(opts = antaresRead::simOptions(), quietly = !interactive())
```

**Arguments**

opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code>
quietly	Display or not a message to the user if success.

**Value**

An updated list containing various information about the simulation.

**Examples**

```
## Not run:  
  
library(antaresEditObject)  
tmp <- tempfile()  
createStudy(path = tmp)  
opts <- antaresRead::setSimulationPath(tmp)  
activateRES()  
  
# then you can use createClusterRES()...  
  
## End(Not run)
```

---

activateST	<i>Activate st-storage in an Antares study</i>
------------	------------------------------------------------

---

**Description**

Activate st-storage in an Antares study

**Usage**

```
activateST(opts = antaresRead::simOptions(), quietly = !interactive())
```

**Arguments**

opts            List of simulation parameters returned by the function `antaresRead::setSimulationPath`  
quietly         Display or not a message to the user if success.

**Value**

An updated list containing various information about the simulation.

**Examples**

```
## Not run:  
  
library(antaresEditObject)  
tmp <- tempfile()  
createStudy(path = tmp)  
opts <- antaresRead::setSimulationPath(tmp)  
activateST()  
  
# then you can use createClusterST()...  
  
## End(Not run)
```

---

`add_week_number_column_to_ts`

*Add week number column to a data.time of time series type*

---

**Description**

If `timeId` column exists, add a week number column. A week is 168 consecutive hours (= 24 \* 7).

**Usage**

```
add_week_number_column_to_ts(xts)
```

**Arguments**

xts            a data.table of time series type.

**Value**

the data.table xts with a new column week.

---

adequacyOptions	<i>Adequacy patch parameters for creating an area</i>
-----------------	-------------------------------------------------------

---

**Description**

Adequacy patch parameters for creating an area

**Usage**

```
adequacyOptions(adequacy_patch_mode = "outside")
```

**Arguments**

```
adequacy_patch_mode
    character, default to "outside"
```

**Value**

a named list

**Examples**

```
adequacyOptions()
```

---

api_patch	<i>API methods</i>
-----------	--------------------

---

**Description**

API methods

**Usage**

```
api_patch(opts, endpoint, ..., default_endpoint = "v1/studies")
```

**Arguments**

```
opts          Antares simulation options or a list with an host = slot.
endpoint      API endpoint to interrogate, it will be added after default_endpoint. Can be
              a full URL (by wrapping in I()), in that case default_endpoint is ignored.
...          Additional arguments passed to API method (http::PATCH\(\)).
default_endpoint
              Default endpoint to use.
```

**Value**

Response from the API.

**Examples**

```
## Not run:
# Simple example to update st-storages properties

# read existing study
opts <- setSimulationPath("path_to_the_study", "input")

# make list of properties
prop <- list(efficiency = 0.5,
  reservoircapacity = 350,
  initialleveloptim = TRUE)

# convert to JSON
body <- jsonlite::toJSON(prop,
  auto_unbox = TRUE)

# send to server (see /apidoc)
api_patch(opts = opts,
  endpoint = file.path(opts$study_id,
    "areas",
    area,
    "storages",
    cluster_name),
  body = body,
  encode = "raw")

## End(Not run)
```

---

backupStudy

*Create a backup with an Antares Study*

---

**Description**

Antares API: **NO**

Save an Antares Study or only inputs in a .tar.gz or .zip file

**Usage**

```
backupStudy(
  backupfile,
  what = "study",
  opts = antaresRead::simOptions(),
  extension = ".zip"
)
```

**Arguments**

backupfile	Name of the backup, without extension. If missing, either the name of the study or 'input' according argument what.
what	Which folder to save, input for the input folder or study for the whole study.
opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath</code>
extension	Default is .zip.

**Value**

The path of the backup

**Examples**

```
## Not run:
backupStudy()

## End(Not run)
```

---

check-version	<i>Is study an Antares v7 study ?</i>
---------------	---------------------------------------

---

**Description**

Is study an Antares v7 study ?

**Usage**

```
is_antares_v7(opts = antaresRead::simOptions())

is_antares_v820(opts = antaresRead::simOptions())
```

**Arguments**

opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code>
------	------------------------------------------------------------------------------------------------------

**Value**

a logical, TRUE if study is v7 or above, FALSE otherwise.

**Examples**

```
## Not run:
# setSimulationPath

is_antares_v7()

## End(Not run)
```

---

checkRemovedArea      *Seek for a removed area*

---

### Description

Check if it remains trace of a deleted area in the input folder

### Usage

```
checkRemovedArea(area, all_files = TRUE, opts = antaresRead::simOptions())
```

### Arguments

area	An area
all_files	Check files in study directory.
opts	List of simulation parameters returned by the function antaresRead::setSimulationPath

### Value

a named list with two elements

### Examples

```
## Not run:
checkRemovedArea("myarea")

## End(Not run)
```

---

check\_consistency\_reservoir\_values  
*For a given area, check consistency between reservoir and reservoir capacity values*

---

### Description

For a given area, check consistency between reservoir and reservoir capacity values

### Usage

```
check_consistency_reservoir_values(area, new_data, prev_data)
```

### Arguments

area	The area where to run the check.
new_data	The new list of parameters.
prev_data	The previous data found in hydro.ini.

---

`check_mingen_vs_hydro_storage`*Check if mingen data and hydro storage data are consistent*

---

**Description**

At each weekly/monthly/annual time step, mingen must be less or equal than hydro storage.

**Usage**

```
check_mingen_vs_hydro_storage(area, opts = antaresRead::simOptions())
```

**Arguments**

area	The area where to check the data.
opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code> .

**Value**

a list containing the boolean if the check is ok and the message to display.

**Note**

Function called only for an **Antares version >= 860**.

---

`check_mingen_vs_maxpower`*Check if mingen data and maxpower data are consistent*

---

**Description**

At each hourly time step, mingen must be less or equal than generatingMaxPower.

**Usage**

```
check_mingen_vs_maxpower(area, opts = antaresRead::simOptions())
```

**Arguments**

area	The area where to check the data.
opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code> .

**Value**

a list containing the boolean if the check is ok and the message to display.

**Note**

Function called only for an **Antares version >= 860**.

---

cleanUpOutput	<i>Clean up output based on geographic trimming</i>
---------------	-----------------------------------------------------

---

**Description**

Clean up output based on geographic trimming

**Usage**

```
cleanUpOutput(areas = NULL, opts = simOptions())
```

**Arguments**

areas	Character. vector of areas (folders). Links will also be cleaned based on getLinks() results
opts	List. simulation options

---

computeOtherFromHourlyMulti	<i>Compute daily, weekly, monthly and annual mc-ind from hourly data multiyear. (new)</i>
-----------------------------	-------------------------------------------------------------------------------------------

---

**Description**

Compute daily, weekly, monthly and annual mc-ind from hourly data multiyear. (new)

**Usage**

```
computeOtherFromHourlyMulti(
  opts = simOptions(),
  areas = "all",
  type = c("areas", "links", "clusters"),
  timeStep = c("daily", "monthly", "annual", "weekly"),
  mcYears = simOptions()$mcYears,
  writeOutput = FALSE,
  nbcl = 8,
  verbose = FALSE
)
```



**Arguments**

opts	study opts
areas	vector of areas
type	type of aggregation
timeStep	timestep of aggregation (daily, monthly and annual, NO weekly)
mcYears	vector of years to compute
writeOutput	boolean to write data in mc-ind folder
nbcl	number of cpu cores for parallelization
verbose	logical for printing output

**Note**

Recommended only with studies spanning on two years.

**See Also**

[computeOtherFromHourlyYear](#)

---

computeOtherFromHourlyYear

*Compute daily, weekly, monthly and annual mc-ind from hourly data for one year. (new)*

---

**Description**

Compute daily, weekly, monthly and annual mc-ind from hourly data for one year. (new)

**Usage**

```
computeOtherFromHourlyYear(
  mcYear,
  type,
  areas = "all",
  opts = simOptions(),
  timeStep = c("daily", "monthly", "annual", "weekly"),
  writeOutput = FALSE
)
```

**Arguments**

mcYear	vector of years to compute
type	type of data (areas, links, clusters, clustersRes)
areas	vector of areas. links type will use getLinks() to get data.
opts	study opts
timeStep	timestep of aggregation (daily, monthly and annual, NO weekly)
writeOutput	boolean to write data in mc-ind folder

**Note**

Recommended only with studies spanning on two years.

**See Also**

[computeOtherFromHourlyMulti](#)

---

computeTimeStampFromHourly

*Compute daily, weekly, monthly and annual mc-ind from hourly data.*

---

**Description**

Antares API: **NO**

Compute daily, weekly, monthly and annual mc-ind from hourly data.

**Usage**

```
computeTimeStampFromHourly(
  opts,
  mcYears = "all",
  nbcl = 8,
  verbose = 1,
  type = c("areas", "links", "clusters")
)
```

**Arguments**

opts	opts simulation path.
mcYears	mcYears to compute.
nbcl	number of thread for parallel computing.
verbose	verbose for execution.
type	type of file to compute.

**Note**

Deprecated on studies v8 or higher.

**Examples**

```
## Not run:

library(antaresEditObject)
opts <- setSimulationPath("my_study")
computeTimeStampFromHourly(opts)
```

```
## End(Not run)
```

---

```
convertConfigToAdq      Read adequacy patch config.yml into Antares (v8.5+)
```

---

### Description

Use this function to load config.yml used in older Antares versions for adequacy patch. Areas in config will be updated to be included in adequacy patch perimeter.

### Usage

```
convertConfigToAdq(opts = simOptions(), path = "default")
```

### Arguments

opts	List. study options.
path	Character. path to config.yml. Default points to "/user/adequacypatch/" in study

### See Also

[updateAdequacySettings](#)

---

```
copyOutput      Copy of the output files of an Antares study
```

---

### Description

Antares API: **NO**

Copy of the output files of an Antares study.

### Usage

```
copyOutput(opts, extname, mcYears = "all")
```

### Arguments

opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath</code>
extname	Extension to be added to the name of the study, to be used as a name for the newly created folder.
mcYears	mcYears to copy. Can be "all".

**Examples**

```

## Not run:

library(antaresRead)

# Set simulation path
opts = setSimulationPath(path = "PATH/TO/SIMULATION", simulation = "input")

# Create a new area
copyOutput(opts, "_adq")

## End(Not run)

```

---

copyStudyWeb

---

*Import physical study to Antares Web (managed study)*


---

**Description**

Copy study from an existing workspace into a managed study. NOTE : The study must be present in a workspace (DRD, PPSE..) not just locally.

**Usage**

```

copyStudyWeb(
  opts = antaresRead::simOptions(),
  host,
  token,
  outputs = T,
  groups = NULL,
  suffix = "managedCopy"
)

```

**Arguments**

opts	List of simulation parameters returned by the function antaresRead::setSimulationPath. If id is not available, antaresRead::searchStudy will be used to find study.
host	Host of AntaREST server API.
token	API personal access token.
outputs	Logical. Determine if outputs are copied too.
groups	Character. Add study to groups of Antares Web.
suffix	Character. default is "managedCopy" By default the new study will be : study-name_managedCopy

**Value**

New managed study ID

---

create-study	<i>Create an empty Antares study</i>
--------------	--------------------------------------

---

## Description

Create study on disk or with AntaREST server through the API.

## Usage

```
createStudy(path, study_name = "my_study", antares_version = "8.2.0")

createStudyAPI(
  host,
  token = NULL,
  study_name = "my_study",
  antares_version = "8.2.0",
  ...
)
```

## Arguments

path	Path where to create study, it should be an empty directory, if it doesn't exist, it'll be created.
study_name	Name of the study.
antares_version	Antares number version.
host	Host of AntaREST server API.
token	API personal access token.
...	Other query parameters passed to POST request.

## Value

Result of `antaresRead::setSimulationPath()` or `antaresRead::setSimulationPathAPI()` accordingly.

## Warning

From **Antares version 9.2** onwards, versioning is only done with one number for the major version number and a two-digit number for the minor version number (e.g. 9.2, 9.35, 10.58, ...).

## Examples

```
## Not run:

# with default values
createStudy("path/to/simulation",
```

```

study_name = "my_study",
antares_version = "8.2.0")

# with Antares study version >= 9.2 (max 2 digits, ex : "9.25")
createStudy("path/to/simulation",
  study_name = "my_study",
  antares_version = "9.25")

## End(Not run)

```

---

createArea

*Create an area in an Antares study*


---

### Description

Antares API: **OK**

Create a new area in an Antares study.

### Usage

```

createArea(
  name,
  color = grDevices::rgb(230, 108, 44, max = 255),
  localization = c(0, 0),
  nodalOptimization = nodalOptimizationOptions(),
  filtering = filteringOptions(),
  adequacy = adequacyOptions(),
  overwrite = FALSE,
  opts = antaresRead::simOptions()
)

```

### Arguments

name	Name of the area as a character, without punctuation except - and _.
color	Color of the node
localization	Localization on the map
nodalOptimization	Nodal optimization parameters, see <a href="#">nodalOptimizationOptions()</a> .
filtering	Filtering parameters, see <a href="#">filteringOptions()</a> .
adequacy	Adequacy parameters, see <a href="#">adequacyOptions()</a> .
overwrite	Overwrite the area if already exist.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

### Value

An updated list containing various information about the simulation.

**See Also**

[editArea\(\)](#), [removeArea\(\)](#)

**Examples**

```
## Not run:

library(antaresRead)

# Set simulation path
setSimulationPath(path = "PATH/TO/SIMULATION", simulation = "input")

# Create a new area
createArea("fictive_area")

## End(Not run)
```

---

```
createBindingConstraint
                        Create a binding constraint
```

---

**Description**

Antares API: **OK [Experimental]**

Create a new binding constraint in an Antares study.

**Usage**

```
createBindingConstraint(
  name,
  id = tolower(name),
  values = NULL,
  enabled = TRUE,
  timeStep = c("hourly", "daily", "weekly"),
  operator = c("both", "equal", "greater", "less"),
  filter_year_by_year = "hourly, daily, weekly, monthly, annual",
  filter_synthesis = "hourly, daily, weekly, monthly, annual",
  coefficients = NULL,
  group = NULL,
  overwrite = FALSE,
  opts = simOptions()
)
```

**Arguments**

name	The name for the binding constraint.
id	An id, default is to use the name.
values	Values used by the constraint. It contains one line per time step and three columns "less", "greater" and "equal" (see documentation below if you're using version study >= v8.7.0)
enabled	Logical, is the constraint enabled ?
timeStep	Time step the constraint applies to : hourly, daily or weekly.
operator	Type of constraint: equality, inequality on one side or both sides.
filter_year_by_year	Marginal price granularity for year by year
filter_synthesis	Marginal price granularity for synthesis
coefficients	A named list containing the coefficients used by the constraint, the coefficients have to be alphabetically ordered see examples below for entering weight or weight with offset.
group	"character" group of the constraint, default value : "default group"
overwrite	If the constraint already exist, overwrite the previous value.
opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code>

**Details**

According to Antares version, usage may vary :

< **v8.7.0** : For each constraint name, a .txt file containing 3 time series "less", "greater", "equal"

>= **v8.7.0** : For each constraint name, one file .txt containing <id>\_lt.txt, <id>\_gt.txt, <id>\_eq.txt

Parameter values must be named list ("lt", "gt", "eq") containing data.frame scenarized. see example section below.

**Value**

An updated list containing various information about the simulation.

**See Also**

Other binding constraints functions: `createBindingConstraintBulk()`, `editBindingConstraint()`, `removeBindingConstraint()`

**Examples**

```
## Not run:
# < v8.7.0 :

# Create constraints with multi coeffs (only weight)

createBindingConstraint(
```



```
    name = "myconstraint",
    values = matrix(data = rep(0, 8760 * 3), ncol = 3),
    enabled = FALSE,
    timeStep = "hourly",
    operator = "both",
    coefficients = list("area1%area2" = 1,
                       "area1%area3" = 2)
  )

# Create constraints with multi coeffs + offset

createBindingConstraint(
  name = "myconstraint",
  values = matrix(data = rep(0, 8760 * 3), ncol = 3),
  enabled = FALSE,
  timeStep = "hourly",
  operator = "both",
  coefficients = list("area1%area2" = "1%1",
                     "area1%area3" = "2%3")
)

# >= v8.7.0 :

# values are now named list containing `data.frame` according to
# `operator` parameter (for "less", build a list with at least "lt" floor in list)

# data values (hourly)
df <- matrix(data = rep(0, 8760 * 3), ncol = 3)
values_data <- list(lt=df)

# create bc with minimum value
createBindingConstraint(name = "bc_example",
                       operator = "less",
                       values = values_data,
                       overwrite = TRUE)

# or you can provide list data with all value
values_data <- list(lt=df,
                   gt= df,
                   eq= df)

createBindingConstraint(name = "bc_example",
                       operator = "less",
                       values = values_data,
                       overwrite = TRUE)

## End(Not run)
```

---

```
createBindingConstraintBulk
```

*Create multiple binding constraint at once.*

---

## Description

**[Experimental]** Antares API: **NO**

## Usage

```
createBindingConstraintBulk(constraints, opts = antaresRead::simOptions())
```

## Arguments

constraints	A list of several named list containing data to create binding constraints. <b>Warning</b> all arguments for creating a binding constraints must be provided, see examples.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

## Details

According to Antares version, usage may vary :

**>= v8.7.0 :**

- For each constraint name, one file .txt containing <id>\_lt.txt, <id>\_gt.txt, <id>\_eq.txt.
- Parameter values must be named list ("lt", "gt", "eq") containing data.frame scenarized.
- Add parameter group in input list constraints

see example section below.

## Value

An updated list containing various information about the simulation.

## See Also

Other binding constraints functions: [createBindingConstraint\(\)](#), [editBindingConstraint\(\)](#), [removeBindingConstraint\(\)](#)

## Examples

```
## Not run:
# For Study version < v8.7.0
# Create multiple constraints

# Prepare data for constraints
bindings_constraints <- lapply(
  X = seq_len(100),
  FUN = function(i) {
```

```

# use arguments of createBindingConstraint()
# all arguments must be provided !
list(
  name = paste0("constraints", i),
  id = paste0("constraints", i),
  values = matrix(data = rep(0, 8760 * 3), ncol = 3),
  enabled = FALSE,
  timeStep = "hourly",
  operator = "both",
  coefficients = list("area1%area2" = 1),
  overwrite = TRUE
)
}
)
# create all constraints
createBindingConstraintBulk(bindings_constraints)

# For Study version >= v8.7.0 (add parameter `group`)

# data values (hourly)
df <- matrix(data = rep(0, 8760 * 3), ncol = 3)
values_data <- list(lt=df,
                   gt= df)

# create multiple constraints
bindings_constraints <- lapply(
  X = seq_len(10),
  FUN = function(i) {
    # use arguments of createBindingConstraint()
    # all arguments must be provided !
    list(
      name = paste0("constraints_bulk", i),
      id = paste0("constraints_bulk", i),
      values = values_data,
      enabled = FALSE,
      timeStep = "hourly",
      operator = "both",
      coefficients = list("at%fr" = 1),
      group= "group_bulk",
      overwrite = TRUE
    )
  }
)

createBindingConstraintBulk(bindings_constraints)

## End(Not run)

```

**Description**

Antares API: **OK** (thermal clusters only)

Create a new thermal or RES (renewable energy source) cluster.

**Usage**

```
createCluster(
  area,
  cluster_name,
  group = "Other",
  ...,
  list_pollutants = NULL,
  time_series = NULL,
  prepro_data = NULL,
  prepro_modulation = NULL,
  add_prefix = TRUE,
  overwrite = FALSE,
  opts = antaresRead::simOptions()
)
```

```
createClusterRES(
  area,
  cluster_name,
  group = default_group(opts),
  ...,
  time_series = NULL,
  add_prefix = TRUE,
  overwrite = FALSE,
  opts = antaresRead::simOptions()
)
```

**Arguments**

area	The area where to create the cluster.
cluster_name	Name for the cluster, it will be prefixed by area name, unless you set add_prefix = FALSE.
group	Group of the cluster, depends on cluster type: <ul style="list-style-type: none"> <li>• thermal cluster, one of: Gas, Hard coal, Lignite, Mixed fuel, Nuclear, Oil, Other, Other 2, Other 3, Other 4(<b>dynamic name for Antares version &gt;= 9.3</b>).</li> <li>• renewable cluster, one of: Wind Onshore, Wind Offshore, Solar Thermal, Solar PV, Solar Rooftop, Other RES 1, Other RES 2, Other RES 3, Other RES 4(<b>dynamic name for Antares version &gt;= 9.3. Default group by version: Other RES 1 if &lt;930, Other if &gt;=930</b>).</li> </ul>
...	Parameters to write in the Ini file. Careful! Some parameters must be set as integers to avoid warnings in Antares, for example, to set unitcount, you'll have to use unitcount = 1L.

list_pollutants	list named with specific pollutants (only for Antares version >= 860)
time_series	the "ready-made" 8760-hour time-series available for simulation purposes.
prepro_data	Pre-process data, a data.frame or matrix, default is a matrix with 365 rows and 6 columns.
prepro_modulation	Pre-process modulation, a data.frame or matrix, if specified, must have 8760 rows and 1 or 4 columns.
add_prefix	If TRUE (the default), cluster_name will be prefixed by area name.
overwrite	Logical, overwrite the cluster or not.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

**Value**

An updated list containing various information about the simulation.

**Note**

Parameter list\_pollutants is only available for Antares studies >= v8.6.0.

You must provide named list (numerical values or NULL) :

```
list( "nh3"= 0.25, "nox"= 0.45, "pm2_5"= 0.25, "pm5"= 0.25, "pm10"= 0.25, "nmvoc"= 0.25,
      "so2"= 0.25, "op1"= 0.25, "op2"= 0.25, "op3"= 0.25, "op4"= 0.25, "op5"= NULL, "co2"= NULL)
```

**See Also**

[editCluster\(\)](#) or [editClusterRES\(\)](#) to edit existing clusters, [removeCluster\(\)](#) or [removeClusterRES\(\)](#) to remove clusters.

**Examples**

```
## Not run:

library(antaresRead)
library(antaresEditObject)

# Create a cluster :
createCluster(
  area = "fr",
  cluster_name = "my_cluster",
  group = "other",
  unitcount = 1L, # or as.integer(1)
  marginal_cost = 50
)
# by default, cluster name is prefixed
# by the area name
levels(readClusterDesc())$cluster
# > "fr_my_cluster"

# To prevent this, use `add_prefix`
```

```

createCluster(
  area = "fr",
  cluster_name = "my_cluster",
  add_prefix = FALSE,
  group = "other",
  marginal_cost = 50
)
levels(readClusterDesc())$cluster
# > "my_cluster"

# Create a RES cluster :
createClusterRES(
  area = "fr",
  cluster_name = "my_cluster_res",
  group = "other",
  unitcount = 1L, # or as.integer(1)
  nominalcapacity = 50,
  ts_interpretation = "power-generation"
)

# You can also specify that the Time-Series of the RES cluster are
# production factors :
createClusterRES(
  area = "fr",
  cluster_name = "my_cluster_res",
  group = "other",
  unitcount = 1L, # or as.integer(1)
  nominalcapacity = 50,
  ts_interpretation = "production-factor"
)

# Pre-process data :

# this is the default data :
createCluster(
  area = "fr",
  cluster_name = "my_cluster",
  prepro_data = matrix(
    data = c(rep(1, times = 365 * 2),
             rep(0, times = 365 * 4)),
    ncol = 6
  )
)

# with a data.frame
createCluster(
  area = "fr",
  cluster_name = "my_cluster",
  prepro_data = data.frame(
    v1 = rep(7, 365), # column name does not matter
    v2 = rep(27, 365),

```

```
v3 = rep(0.05, 365),
v4 = rep(0.12, 365),
v5 = rep(0, 365),
v6 = rep(1, 365)
)
)

# Pre-process modulation :
# this is the default data
createCluster(
  area = "fr",
  cluster_name = "my_cluster",
  prepro_modulation = matrix(
    data = c(rep(1, times = 365 * 24 * 3),
             rep(0, times = 365 * 24 * 1)),
    ncol = 4
  )
)

# with a data.frame
createCluster(
  area = "fr",
  cluster_name = "my_cluster",
  prepro_modulation = data.frame(
    var1 = rep(0, 8760), # column name does not matter
    var2 = rep(1, 8760),
    var3 = rep(0, 8760),
    var4 = rep(1, 8760)
  )
)

## End(Not run)
```

---

createClusterBulk      *Create serial thermal cluster*

---

## Description

For each area, the thermal cluster data are generated :

- Writing .ini files
- Writing time\_series files
- Writing prepro\_data files
- Writing prepro\_modulation files

**Usage**

```
createClusterBulk(
  cluster_object,
  area_zone,
  add_prefix = TRUE,
  opts = antaresRead::simOptions()
)
```

**Arguments**

`cluster_object` list mutiple list containing the parameters for writing each cluster

`area_zone` character name of area to create cluster

`add_prefix` logical prefix cluster name with area name

`opts` List of simulation parameters returned by the function `antaresRead::setSimulationPath()`

**Details**

see the example to write a cluster object, see the original function `createCluster()`

Structure of `cluster_object` :

The list must be structured with named items

- `parameter` : list of paramaters to write in .ini file
- `overwrite` : logical to choose to overwrite an existing cluster (if not present, set to FALSE)
- `time_series` : matrix or data.frame the "ready-made" 8760-hour time-series
- `prepro_data` : matrix or data.frame Pre-process data
- `prepro_modulation` : matrix or data.frame Pre-process modulation

Details for sublist `cluster_object[["parameter"]]` :

- `name` : Name for the cluster, it will prefixed by area name, unless you set `add_prefix = FALSE`
- `group` : Group of the cluster, depends on cluster type
- `...` : Parameters to write in the Ini file

**Value**

An updated list containing various information about the simulation.

list containing meta information about the simulation

**Examples**

```
## Not run:

# /!\!\!\ use or create a study /!\!\!\

# data preparation for sutructures
ts <- matrix(rep(c(0, 8000), each = 24*364),
             ncol = 2)
```



```

df_pd <- matrix(rep(c(1, 1, 1, 0), each = 24*365),
                ncol = 4)

df_pm <- matrix(data = c(rep(1, times = 365 * 24 * 3), rep(0, times = 365 * 24 * 1)),
                ncol = 4)

# Example cluster object
zone_test_1 <- list(
  `CCGT old 1` = list(
    parameter = list(
      name = "CCGT old 1",
      group = "Other",
      unitcount = 10L,
      nominalcapacity = 100,
      enabled = "true",
      `min-stable-power` = 80L,
      `min-up-time` = 20L,
      `min-down-time` = 30L),
    overwrite = TRUE,
    time_series = ts_8760,
    prepro_data = df_pd,
    prepro_modulation = df_pm))

# overwrite existing cluster
zone_test_2 <- list(
  `PEAK` = list(parameter = list(
    name = "PEAK",
    group = "Other"),
    overwrite = TRUE,
    time_series = ts,
    prepro_data = df_pd,
    prepro_modulation = df_pm))

# Create multiple areas with multiple clusters
list_areas <- antaresRead::getAreas()[1:5]

lapply(list_areas, createClusterBulk,
       cluster_object = c(zone_test_1, zone_test_2),
       add_prefix = TRUE)

## End(Not run)

```

**Description**

Antares API: **OK**

Create a new ST-storage cluster for  $\geq$  v8.6.0 Antares studies.

**Usage**

```
createClusterST(
  area,
  cluster_name,
  group = "Other1",
  storage_parameters = storage_values_default(),
  PMAX_injection = NULL,
  PMAX_withdrawal = NULL,
  inflows = NULL,
  lower_rule_curve = NULL,
  upper_rule_curve = NULL,
  cost_injection = NULL,
  cost_withdrawal = NULL,
  cost_level = NULL,
  cost_variation_injection = NULL,
  cost_variation_withdrawal = NULL,
  constraints_properties = NULL,
  constraints_ts = NULL,
  add_prefix = TRUE,
  overwrite = FALSE,
  opts = antaresRead::simOptions()
)
```

**Arguments**

area	The area where to create the cluster.
cluster_name	Name for the cluster, it will be prefixed by area name, unless you set add_prefix = FALSE.
group	Group of the cluster, one of : <i>PSP_open</i> , <i>PSP_closed</i> , <i>Pondage</i> , <i>Battery</i> , <i>Other</i> . It corresponds to the type of stockage ( <b>dynamic name for Antares version <math>\geq</math> 9.2</b> ).
storage_parameters	list Parameters to write in the Ini file (see Note).
PMAX_injection	Modulation of charging capacity on an 8760-hour basis. numeric {0;1} (8760I) (**numeric {0;1} (8760N) noting that N $\geq$ 1 for Antares version $\geq$ 9.3**).
PMAX_withdrawal	Modulation of discharging capacity on an 8760-hour basis. numeric {0;1} (8760I) (**numeric {0;1} (8760N) noting that N $\geq$ 1 for Antares version $\geq$ 9.3**).
inflows	Algebraic deviation of the state of charge of the storage, which does not induce any power generation or consumption on the system numeric {<0;>0}

	(87601) (**"numeric" {<0;>0} (87601) noting that N >= 1 for Antares version >= 9.3**).
lower_rule_curve	This is the lower limit for filling the stock imposed each hour. numeric {0;1} (87601) (**numeric {0;1} (8760N) noting that N >= 1 for Antares version >= 9.3**).
upper_rule_curve	This is the upper limit for filling the stock imposed each hour. numeric {0;1} (87601) (**numeric {0;1} (8760N) noting that N >= 1 for Antares version >= 9.3**).
cost_injection	Penalizes the injection flowrate at each hour (€/MWh) numeric {>0} (87601) (**numeric {>0} (8760N) noting that N >= 1 for Antares version >= 9.3**).
cost_withdrawal	Penalizes the withdrawal flowrate at each hour (€/MWh) numeric {>0} (87601) (**numeric {>0} (8760N) noting that N >= 1 for Antares version >= 9.3**).
cost_level	Penalizes the volume of stored energy at each hour (€/MWh) numeric {<0;>0} (87601) (**numeric {<0;>0} (8760N) noting that N >= 1 for Antares version >= 9.3**).
cost_variation_injection	Penalizes injection flowrate variation every hour (€/MWh) numeric {>0} (87601) (**numeric {>0} (8760N) noting that N >= 1 for Antares version >= 9.3**).
cost_variation_withdrawal	Penalizes the withdrawal variation every hour (€/MWh) numeric {>0} (87601) (**numeric {>0} (8760N) noting that N >= 1 for Antares version >= 9.3**).
constraints_properties	list Parameters (see example)
constraints_ts	list of time series (see example)
add_prefix	If TRUE (the default), cluster_name will be prefixed by area name.
overwrite	logical, overwrite the cluster or not.
opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code>

**Value**

An updated list containing various information about the simulation.

**note**

To write parameters to the `list.ini` file. You have function `storage_values_default()` who is called by default. This function return list containing properties according study version for cluster `st-storage`.

Study version >= "8.6.0" :

- efficiency = 1 (numeric {0;1})
- reservoircapacity = 0 (integer >= 0)
- initiallevel = 0 (numeric {0;1})

- withdrawalnominalcapacity = 0 (integer >= 0)
- injectionnominalcapacity = 0 (integer >= 0)
- initialleveloptim = FALSE (logical TRUE/FALSE)

Study version >= "8.8.0" (update + new parameter) :

- initiallevel = 0.5 (numeric {0;1})
- enabled = TRUE (logical TRUE/FALSE)

Study version >= "9.2" (new parameters) :

- efficiencywithdrawal = 1 (numeric {0;1})
- penalize-variation-injection = FALSE (logical TRUE/FALSE)
- penalize-variation-withdrawal = FALSE logical TRUE/FALSE)

Study version >= "9.3" (new parameters) :

- allow-overflow = FALSE (logical TRUE/FALSE)

By default, these values don't allow you to have an active cluster (See example section.)

### See Also

All the functions needed to manage a storage cluster, [antaresRead::readClusterSTDesc\(\)](#), [editClusterST\(\)](#), [removeClusterST\(\)](#).

### Examples

```
## Not run:

# list for cluster parameters :
storage_values_default()

# create a cluster by default (with default parameters values + default data values):
createClusterST(area = "my_area",
                "my_cluster")

# Read cluster in study
# by default, cluster name is prefixed
# by the area name
levels(readClusterSTDesc())$cluster
# > "my_area_my_cluster"

# create cluster with custom parameter and data
# use the function to create your own list of parameters (no Antares optim)
# if you want optim (my_parameters$initialleveloptim <- TRUE)
my_parameters <- storage_values_default()
my_parameters$efficiency <- 0.5
my_parameters$initiallevel <- 10
my_parameters$withdrawalnominalcapacity <- 100
my_parameters$injectionnominalcapacity <- 1000
my_parameters$reservoircapacity <- 10000
```

```

# time series
inflow_data <- matrix(3, 8760)
ratio_data <- matrix(0.7, 8760)

createClusterST(area = "my_area",
                "my_cluster",
                storage_parameters = my_parameters,
                PMAX_withdrawal = ratio_data,
                inflows = inflow_data,
                PMAX_injection = ratio_data,
                lower_rule_curve = ratio_data,
                upper_rule_curve = ratio_data)

# for a study version >= 9.2 (new parameters)
my_parameters <- storage_values_default()
my_parameters$efficiencywithdrawal <- 0.5
my_parameters$`penalize-variation-injection` <- TRUE
my_parameters$`penalize-variation-withdrawal` <- TRUE

createClusterST(area = "my_area",
                "my_cluster",
                storage_parameters = my_parameters)

# time series
ratio_value <- matrix(0.7, 8760)

# default properties with new optional TS
createClusterST(area = "fr",
                cluster_name = "good_ts_value",
                cost_injection = ratio_value,
                cost_withdrawal = ratio_value,
                cost_level = ratio_value,
                cost_variation_injection = ratio_value,
                cost_variation_withdrawal = ratio_value)

# Add optional constraints properties

name_no_prefix <- "add_constraints"

constraints_properties <- list(
  "withdrawal-1"=list(
    variable = "withdrawal",
    operator = "equal",
    hours = c("[1,3,5]",
              "[120,121,122,123,124,125,126,127,128]"),
  ),
  "netting-1"=list(
    variable = "netting",
    operator = "less",
    hours = c("[1, 168]"))
))

```

```

# create a cluster with constraint properties (no need to provide TS)
createClusterST(area = area_test_clust,
                cluster_name = name_no_prefix,
                constraints_properties = constraints_properties)

# Add optional constraints properties + TS

constraints_properties <- list(
  "withdrawal-2"=list(
    variable = "withdrawal",
    operator = "equal",
    hours = c("[1,3,5]",
              "[120,121,122,123,124,125,126,127,128]"),
  ),
  "netting-2"=list(
    variable = "netting",
    operator = "less",
    hours = c("[1, 168]"),
  ))

good_ts <- matrix(0.7, 8760)
constraints_ts <- list(
  "withdrawal-2"=good_ts,
  "netting-2"=good_ts)

# create a cluster with constraint properties + TS
createClusterST(area = area_test_clust,
                cluster_name = name_no_prefix,
                constraints_properties = constraints_properties,
                constraints_ts = constraints_ts)

# for a study version >= 9.3 (new parameters)
my_parameters <- storage_values_default()
my_parameters$`allow-overflow` <- TRUE

# time series
ratio_value <- matrix(0.7, 8760, N)

# default properties with new optional TS
createClusterST(area = "fr",
                cluster_name = "good_ts_value",
                cost_injection = ratio_value)

## End(Not run)

```

**Description**

Allows selecting a set of areas so as to bundle them together in a "district".

**Usage**

```
createDistrict(
  name,
  caption = NULL,
  comments = NULL,
  apply_filter = c("none", "add-all", "remove-all"),
  add_area = NULL,
  remove_area = NULL,
  output = FALSE,
  overwrite = FALSE,
  opts = antaresRead::simOptions()
)
```

**Arguments**

name	District's name.
caption	Caption for the district.
comments	Comments for the district.
apply_filter	Possible values are add-all to add all areas to the district, remove-all to clear the district, or none (default) to don't apply a filter.
add_area	Character vector of area(s) to add to the district.
remove_area	Character vector of area(s) to remove from the district.
output	Logical, compute the results for the district or not?
overwrite	Logical, should the district be overwritten if already exist?
opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code>

**Value**

An updated list containing various information about the simulation.

**Examples**

```
## Not run:
createDistrict(
  name = "mydistrict",
  apply_filter = "add-all",
  remove_area = c("fr", "be")
)

## End(Not run)
```

---

 createDSR

*Create a Demand Side Response (DSR)*


---

## Description

Antares API: **OK**

Create a Demand Side Response (DSR)

## Usage

```
createDSR(
  areasAndDSRParam = NULL,
  spinning = 2,
  overwrite = FALSE,
  opts = antaresRead::simOptions()
)
```

```
getCapacityDSR(area = NULL, opts = antaresRead::simOptions())
```

```
editDSR(
  area = NULL,
  unit = NULL,
  nominalCapacity = NULL,
  marginalCost = NULL,
  spinning = NULL,
  opts = antaresRead::simOptions()
)
```

## Arguments

areasAndDSRParam	A data.frame with 4 columns area, unit, nominalCapacity, marginalCost and hour. Hour represent the number of activation hours for the DSR per day.
spinning	DSR spinning
overwrite	Overwrite the DSR plant if already exist. This will overwrite the previous area and links.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>
area	an area where to edit the DSR
unit	DSR unit number
nominalCapacity	DSR nominalCapacity
marginalCost	DSR marginalCost



**Value**

An updated list containing various information about the simulation.

getCapacityDSR() returns DSR capacity (unit \* nominalCapacity of virtual cluster) of the area

**Examples**

```
## Not run:

library(antaresEditObject)
path <- pathToYourStudy
opts <- setSimulationPath(path, simulation = "input")

# area, unit, nominalCapacity and marginalCost
dsrData <- data.frame(area = c("a", "b"), unit = c(10,20),
                      nominalCapacity = c(100, 120), marginalCost = c(52, 65), hour = c(3, 7))

createDSR(dsrData)

createDSR(dsrData, spinning = 3, overwrite = TRUE)
getAreas()

## End(Not run)
## Not run:

getCapacityDSR("a")
editDSR("a", unit = 50, nominalCapacity = 8000)
getCapacityDSR("a")

## End(Not run)
## Not run:

getCapacityDSR("a")
editDSR("a", unit = 50, nominalCapacity = 8000, marginalCost = 45, hour = 9)
getCapacityDSR("a")

## End(Not run)
```

---

createLink

*Create a link between two areas*

---

**Description**

Antares API: **OK**

Create a new link between two areas in an Antares study.

**Usage**

```

createLink(
  from,
  to,
  propertiesLink = propertiesLinkOptions(),
  dataLink = NULL,
  tsLink = NULL,
  overwrite = FALSE,
  opts = antaresRead::simOptions()
)

```

**Arguments**

from, to	The two areas linked together.
propertiesLink	a named list containing the link properties, e.g. hurdles-cost or transmission-capacities for example. See <a href="#">propertiesLinkOptions()</a> .
dataLink	See Details section below.
tsLink	Transmission capacities time series. First N columns are direct TS, following N are indirect ones.
overwrite	Logical, overwrite the previous between the two areas if exist
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

**Details**

The eight potential times-series are:

- **NTC direct** : the upstream-to-downstream capacity, in MW. Default to 1.
- **NTC indirect** : the downstream-to-upstream capacity, in MW. Default to 1.
- **Hurdle cost direct** : an upstream-to-downstream transmission fee, in euro/MWh. Default to 0.
- **Hurdle cost indirect** : a downstream-to-upstream transmission fee, in euro/MWh. Default to 0.
- **Impedances** : virtual impedances that are used in economy simulations to give a physical meaning to raw outputs, when no binding constraints have been defined to enforce Kirchhoff's laws. Default to 0.
- **Loop flow** : amount of power flowing circularly though the grid when all "nodes" are perfectly balanced (no import and no export). Default to 0.
- **PST min** : lower bound of phase-shifting that can be reached by a PST installed on the link, if any. Default to 0.
- **PST max** : upper bound of phase-shifting that can be reached by a PST installed on the link, if any. Default to 0.

According to Antares version, usage may vary :

< v7.0.0 : 5 first columns are used in the following order: NTC direct, NTC indirect, Impedances, Hurdle cost direct, Hurdle cost indirect.

>= **v7.0.0** : 8 columns in order above are expected.

>= **v8.2.0** : there's 2 cases :

- 8 columns are provided: 2 first are used in tsLink, other 6 are used for link data
- 6 columns are provided: you must provide NTC data in tsLink argument.

### Value

An updated list containing various information about the simulation.

### Note

In Antares, areas are sorted in alphabetical order to establish links between. For example, link between "fr" and "be" will appear under "be". So the areas are sorted before creating the link between them, and dataLink is rearranged to match the new order.

### See Also

[editLink\(\)](#), [removeLink\(\)](#)

### Examples

```
## Not run:

library(antaresRead)

# Set simulation path
setSimulationPath(path = "PATH/TO/SIMULATION", simulation = "input")

# Create a link between two areas
createLink(from = "first_area", to = "second_area")

## End(Not run)
```

---

createPSP

*Create a Pumped Storage Power plant (PSP)*

---

### Description

Antares API: **OK**

Create a Pumped Storage Power plant (PSP)

**Usage**

```

createPSP(
  areasAndCapacities = NULL,
  namePumping = "Psp_In",
  nameTurbinning = "Psp_Out",
  hurdleCost = 5e-04,
  timeStepBindConstraint = "weekly",
  efficiency = NULL,
  overwrite = FALSE,
  opts = antaresRead::simOptions()
)

getCapacityPSP(
  area = NULL,
  nameTurbinning = "Psp_Out",
  timeStepBindConstraint = "weekly",
  opts = antaresRead::simOptions()
)

editPSP(
  area = NULL,
  capacity = NULL,
  namePumping = "Psp_In",
  nameTurbinning = "Psp_Out",
  timeStepBindConstraint = "weekly",
  hurdleCost = 5e-04,
  opts = antaresRead::simOptions()
)

```

**Arguments**

areasAndCapacities	A data.frame with 2 columns installedCapacity and area.
namePumping	The name of the pumping area
nameTurbinning	The name of the turbinning area
hurdleCost	The cost of the PSP
timeStepBindConstraint	Time step for the binding constraint : daily or weekly
efficiency	The efficiency of the PSP
overwrite	Overwrite the Pumped Storage Power plant if already exist. This will overwrite the previous area and links.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>
area	an area name
capacity	PSP capacity for the area

**Value**

An updated list containing various information about the simulation.

getCapacityPSP() returns PSP capacity of the area

**Examples**

```
## Not run:

library(antaresEditObject)
path<-pathToYourStudy
opts<-setSimulationPath(path, simulation = "input")
pspData<-data.frame(area=c("a", "b"), installedCapacity=c(800,900))

createPSP(pspData, efficiency = 0.8)

createPSP(pspData, efficiency = 0.66, overwrite = TRUE)
createPSP(pspData, efficiency = 0.98, timeStepBindConstraint = "daily")
getAreas()

## End(Not run)

## Not run:

getCapacityPSP("a")
editPSP("a", capacity = 8000, hurdleCost = 0.1)
getCapacityPSP("a")

areaName<-"suisse"
createArea(areaName, overwrite = TRUE)
pspData<-data.frame(area=c(areaName), installedCapacity=c(9856))
createPSP(pspData, efficiency = 0.5, overwrite = TRUE, timeStepBindConstraint = "daily")

getCapacityPSP(areaName, timeStepBindConstraint = "daily")

## End(Not run)
```

---

create\_scb\_referential\_series\_type

*Create the correspondence data frame between the symbol and the type in scenario builder*

---

**Description**

Create the correspondence data frame between the symbol and the type in scenario builder

**Usage**

```
create_scb_referential_series_type()
```

**Value**

a data.frame.

---

deleteStudy	<i>Delete a study or a simulation</i>
-------------	---------------------------------------

---

**Description**

Delete a study or a simulation

**Usage**

```
deleteStudy(opts = simOptions(), prompt_validation = FALSE, simulation = NULL)
```

**Arguments**

opts	List. study options
prompt_validation	logical to put validation message to delete study (default FALSE)
simulation	simulation to be deleted (default NULL)

---

detect_pattern_in_binding_constraint	<i>Detect a pattern in a binding constraint coefficient</i>
--------------------------------------	-------------------------------------------------------------

---

**Description**

Detect a pattern in a binding constraint coefficient

**Usage**

```
detect_pattern_in_binding_constraint(pattern, opts = antaresRead::simOptions())
```

**Arguments**

pattern	The pattern to detect.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

**Value**

An updated list containing various information about the simulation.  
the names of the binding constraints containing the pattern

---

dicoAdequacySettings    *Correspondence between arguments of updateAdequacySettings and actual Antares parameters.*

---

**Description**

Correspondence between arguments of updateAdequacySettings and actual Antares parameters.

**Usage**

```
dicoAdequacySettings(arg)
```

**Arguments**

arg                    An argument from function updateAdequacySettings.

**Value**

The corresponding Antares general parameter.

---

dicoGeneralSettings    *Correspondence between arguments of updateGeneralSettings and actual Antares parameters.*

---

**Description**

Correspondence between arguments of updateGeneralSettings and actual Antares parameters.

**Usage**

```
dicoGeneralSettings(arg)
```

**Arguments**

arg                    An argument from function updateGeneralSettings.

**Value**

The corresponding Antares general parameter.

**Examples**

```
dicoGeneralSettings("year.by.year") # "year-by-year"
```

---

dicoOptimizationSettings      *Correspondence between arguments of  
updateOptimizationSettings and actual Antares parameters.*

---

**Description**

Correspondence between arguments of updateOptimizationSettings and actual Antares parameters.

**Usage**

```
dicoOptimizationSettings(arg)
```

**Arguments**

arg                      An argument from function updateOptimizationSettings.

**Value**

The corresponding Antares general parameter.

**Examples**

```
dicoGeneralSettings("year.by.year") # "year-by-year"
```

---

dicoOutputSettings      *Correspondence between arguments of updateOutputSettings and  
actual Antares parameters.*

---

**Description**

Correspondence between arguments of updateOutputSettings and actual Antares parameters.

**Usage**

```
dicoOutputSettings(arg)
```

**Arguments**

arg                      An argument from function updateOutputSettings.

**Value**

The corresponding Antares general parameter.



**Examples**

```
dicoOutputSettings("result.format") # "result-format"
```

---

editArea	<i>Edit an area in an Antares study</i>
----------	-----------------------------------------

---

**Description**

Antares API: **OK**

Edit an existing area in an Antares study.

**Usage**

```
editArea(
  name,
  color = NULL,
  localization = NULL,
  nodalOptimization = NULL,
  filtering = NULL,
  adequacy = NULL,
  opts = antaresRead::simOptions()
)
```

**Arguments**

name	Name of the area as a character, without punctuation except - and _.
color	Color of the node
localization	Localization on the map
nodalOptimization	Nodal optimization parameters, see <a href="#">nodalOptimizationOptions()</a> .
filtering	Filtering parameters, see <a href="#">filteringOptions()</a> .
adequacy	Adequacy parameters, see <a href="#">adequacyOptions()</a> .
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

**Value**

An updated list containing various information about the simulation.

**See Also**

[createArea\(\)](#), [removeArea\(\)](#)

**Examples**

```

## Not run:

library(antaresRead)

# Set simulation path
setSimulationPath(path = "PATH/TO/SIMULATION", simulation = "input")

# Edit an existing area
editArea("area", color = grDevices::rgb(230, 108, 44, max = 255),
  localization = c(1, 1),
  opts = antaresRead::simOptions())

editArea("de", nodalOptimization = list("spilledenergycost" = list(fr = 30)),
  opts = antaresRead::simOptions())

editArea("de", nodalOptimization = nodalOptimizationOptions(),
  opts = antaresRead::simOptions())

editArea(
  "de",
  filtering = list("filter_synthesis"=paste(c("hourly","daily"),collapse = ", "))
)

## End(Not run)

```

---

editBindingConstraint *Update an existing binding constraint*

---

**Description**

Antares API: **OK [Experimental]**

Update an existing binding constraint in an Antares study. The key search value of the constraint is the id field

**Usage**

```

editBindingConstraint(
  name,
  id = tolower(name),
  values = NULL,
  enabled = NULL,
  timeStep = NULL,
  operator = NULL,
  filter_year_by_year = NULL,
  filter_synthesis = NULL,
  coefficients = NULL,

```

```

    group = NULL,
    opts = simOptions()
)

```

### Arguments

name	The name for the binding constraint.
id	An id, default is to use the name.
values	Values used by the constraint. It contains one line per time step and three columns "less", "greater" and "equal" (see documentation below if you're using version study >= v8.7.0)
enabled	Logical, is the constraint enabled ?
timeStep	Time step the constraint applies to : hourly, daily or weekly.
operator	Type of constraint: equality, inequality on one side or both sides.
filter_year_by_year	Marginal price granularity for year by year
filter_synthesis	Marginal price granularity for synthesis
coefficients	A named list containing the coefficients used by the constraint, the coefficients have to be alphabetically ordered see examples below for entering weight or weight with offset.
group	"character" group of the constraint, default value : "default"
opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code>

### Value

An updated list containing various information about the simulation.

### Warning

Put values with rights dimensions :

- hourly : 8784
- daily = 366

>= **v8.7.0** : For each constraint name, one file .txt containing <id>\_lt.txt, <id>\_gt.txt, <id>\_eq.txt  
Parameter values must be named list ("lt", "gt", "eq") containing data.frame scenarized. see example section below.

### See Also

Other binding constraints functions: `createBindingConstraintBulk()`, `createBindingConstraint()`, `removeBindingConstraint()`

**Examples**

```

## Not run:
# < v8.7.0 :
editBindingConstraint(
  name = "myconstraint",
  values = matrix(data = rep(0, 8784 * 3), ncol = 3),
  enabled = FALSE,
  timeStep = "hourly",
  operator = "both",
  coefficients = list("fr%de" = 1)
)

# update binding constraint with weight + offset
editBindingConstraint(
  name = "myconstraint",
  values = matrix(data = rep(0, 8784 * 3), ncol = 3),
  enabled = FALSE,
  timeStep = "hourly",
  operator = "both",
  coefficients = list("fr%de" = "1%-5")
)

# >= v8.7.0 :

# data values scenarized (hourly)
df <- matrix(data = rep(0, 8784 * 3), ncol = 3)

# you can provide list data with all value
# or just according with 'operator' (ex : 'lt' for 'less')
values_data <- list(lt=df,
                   gt= df,
                   eq= df)

editBindingConstraint(name = "myconstraint",
                     values = values_data,
                     enabled = TRUE,
                     timeStep = "hourly",
                     operator = "both",
                     filter_year_by_year = "hourly",
                     filter_synthesis = "hourly",
                     coefficients = list("fr%de" = 1),
                     group = "myconstraint_group")

## End(Not run)

```

**Description**

Antares API: **OK** (thermal clusters only)

Edit parameters, pre-process data and time series of an existing cluster, thermal or RES (renewable energy source).

**Usage**

```
editCluster(
  area,
  cluster_name,
  ...,
  list_pollutants = NULL,
  time_series = NULL,
  prepro_data = NULL,
  prepro_modulation = NULL,
  add_prefix = TRUE,
  opts = antaresRead::simOptions()
)

editClusterRES(
  area,
  cluster_name,
  ...,
  time_series = NULL,
  add_prefix = TRUE,
  opts = antaresRead::simOptions()
)
```

**Arguments**

area	The area where to create the cluster.
cluster_name	Name for the cluster, it will be prefixed by area name, unless you set add_prefix = FALSE.
...	Parameters to write in the Ini file. Careful! Some parameters must be set as integers to avoid warnings in Antares, for example, to set unitcount, you'll have to use unitcount = 1L.
list_pollutants	list named with specific pollutants (only for Antares version >= 860)
time_series	the "ready-made" 8760-hour time-series available for simulation purposes.
prepro_data	Pre-process data, a data.frame or matrix, default is a matrix with 365 rows and 6 columns.
prepro_modulation	Pre-process modulation, a data.frame or matrix, if specified, must have 8760 rows and 1 or 4 columns.
add_prefix	If TRUE (the default), cluster_name will be prefixed by area name.
opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code>

**Value**

An updated list containing various information about the simulation.

**Note**

Parameter `list_pollutants` is only available for Antares studies  $\geq$  v8.6.0.

You must provide named `list` (numerical values or `NULL`) :

```
list( "nh3"= 0.25, "nox"= 0.45, "pm2_5"= 0.25, "pm5"= 0.25, "pm10"= 0.25, "nmvoc"= 0.25,
      "so2"= 0.25, "op1"= 0.25, "op2"= 0.25, "op3"= 0.25, "op4"= 0.25, "op5"= NULL, "co2"= NULL)
```

**See Also**

[createCluster\(\)](#) or [createClusterRES\(\)](#) to create new clusters, [removeCluster\(\)](#) or [removeClusterRES\(\)](#) to remove clusters.

**Examples**

```
## Not run:

# Update only nominalCapacity for an existing cluster
editCluster(
  area = "myarea",
  cluster_name = "mycluster",
  nominalcapacity = 10600.000
)

## End(Not run)
```

---

editClusterST

*Edit a short-term storage cluster*

---

**Description**

Antares API: **OK**

Edit parameters and time series of an existing `st`-storage cluster (Antares studies  $\geq$  v8.6.0).

**Usage**

```
editClusterST(
  area,
  cluster_name,
  group = NULL,
  storage_parameters = NULL,
  PMAX_injection = NULL,
  PMAX_withdrawal = NULL,
  inflows = NULL,
```

```

lower_rule_curve = NULL,
upper_rule_curve = NULL,
cost_injection = NULL,
cost_withdrawal = NULL,
cost_level = NULL,
cost_variation_injection = NULL,
cost_variation_withdrawal = NULL,
constraints_properties = NULL,
constraints_ts = NULL,
add_prefix = TRUE,
opts = antaresRead::simOptions()
)

```

### Arguments

area	The area where to create the cluster.
cluster_name	Name for the cluster, it will be prefixed by area name, unless you set add_prefix = FALSE.
group	Group of the cluster, one of : <i>PSP_open, PSP_closed, Pondage, Battery, Other</i> . It corresponds to the type of stockage ( <b>dynamic name for Antares version &gt;= 9.2</b> ).
storage_parameters	list Parameters to write in the Ini file (see Note).
PMAX_injection	Modulation of charging capacity on an 8760-hour basis. numeric {0;1} (8760I) (**numeric {0;1} (8760N) noting that N >= 1 for Antares version >= 9.3**).
PMAX_withdrawal	Modulation of discharging capacity on an 8760-hour basis. numeric {0;1} (8760I) (**numeric {0;1} (8760N) noting that N >= 1 for Antares version >= 9.3**).
inflows	Algebraic deviation of the state of charge of the storage, which does not induce any power generation or consumption on the system numeric {<0;>0} (8760I) (**numeric {<0;>0} (8760I) noting that N >= 1 for Antares version >= 9.3**).
lower_rule_curve	This is the lower limit for filling the stock imposed each hour. numeric {0;1} (8760I) (**numeric {0;1} (8760N) noting that N >= 1 for Antares version >= 9.3**).
upper_rule_curve	This is the upper limit for filling the stock imposed each hour. numeric {0;1} (8760I) (**numeric {0;1} (8760N) noting that N >= 1 for Antares version >= 9.3**).
cost_injection	Penalizes the injection flowrate at each hour (€/MWh) numeric {>0} (8760I) (**numeric {>0} (8760N) noting that N >= 1 for Antares version >= 9.3**).
cost_withdrawal	Penalizes the withdrawal flowrate at each hour (€/MWh) numeric {>0} (8760I) (**numeric {>0} (8760N) noting that N >= 1 for Antares version >= 9.3**).

cost_level	Penalizes the volume of stored energy at each hour (€/MWh) numeric {<0;>0} (8760I) (**numeric {<0;>0} (8760N) noting that N >= 1 for Antares version >= 9.3**).
cost_variation_injection	Penalizes injection flowrate variation every hour (€/MWh) numeric {>0} (8760I) (**numeric {>0} (8760N) noting that N >= 1 for Antares version >= 9.3**).
cost_variation_withdrawal	Penalizes the withdrawal variation every hour (€/MWh) numeric {>0} (8760I) (**numeric {>0} (8760N) noting that N >= 1 for Antares version >= 9.3**).
constraints_properties	list Parameters (see example)
constraints_ts	list of time series (see example)
add_prefix	If TRUE (the default), cluster_name will be prefixed by area name.
opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code>

**Value**

An updated list containing various information about the simulation.

**Note**

Put only properties or TS value you want to edit (see examples section).

**See Also**

`createClusterST()`, `removeClusterST()`

**Examples**

```
## Not run:
# study version >= "8.6.0"

# edit an existing cluster (see doc approved groups)
name_group <- "Pondage"

editClusterST(area = "areaname",
              cluster_name = "clustername",
              group = name_group)

# edit properties
all_params <- storage_values_default()
all_params[["efficiency"]] <- 0.9
all_params[["reservoircapacity"]] <- 1000
all_params[["initiallevel"]] <- 0.5
all_params[["withdrawalnominalcapacity"]] <- 250
all_params[["injectionnominalcapacity"]] <- 200
all_params[["initialleveloptim"]] <- TRUE

editClusterST(area = "areaname",
              cluster_name = "clustername",
```



```

        storage_parameters = all_params)

# edit time series
inflow_data <- matrix(3, 8760)
ratio_data <- matrix(0.7, 8760)

editClusterST(area = "areaname",
              cluster_name = "clustername",
              PMAX_withdrawal = ratio_data,
              inflows = inflow_data,
              PMAX_injection = ratio_data,
              lower_rule_curve = ratio_data,
              upper_rule_curve = ratio_data)

# study version >= "9.2" (new parameters and TS)

# edit group (dynamic)
name_group <- "MyOwnGroup"

editClusterST(area = "areaname",
              cluster_name = "clustername",
              group = name_group)

# edit properties
my_parameters <- storage_values_default()
my_parameters$efficiencywithdrawal <- 0.5
my_parameters$`penalize-variation-injection` <- TRUE
my_parameters$`penalize-variation-withdrawal` <- TRUE

editClusterST(area = "areaname",
              cluster_name = "clustername",
              storage_parameters = my_parameters)

# edit time series
ratio_data <- matrix(0.7, 8760)

editClusterST(area = "areaname",
              cluster_name = "clustername",
              cost_injection = ratio_data,
              cost_withdrawal = ratio_data,
              cost_level = ratio_data,
              cost_variation_injection = ratio_data,
              cost_variation_withdrawal = ratio_data)

# Edit optional constraints properties
# make a list with names for the section and mandatory parameters

constraints_properties <- list(
  "withdrawal-1" = list(
    variable = "withdrawal",
    operator = "equal",
    hours = c("[1,3,5]",
              "[120,121,122,123,124,125,126,127,128]"))

```

```

),
"netting-1"= list(
  variable = "netting",
  operator = "less",
  hours = c("[1, 168]")
))

# make a list for TS with same names like previous properties
TS_values <- matrix(0.2, 8760)

constraints_ts <- list(
  "withdrawal-1"=TS_values,
  "netting-1"=TS_values)0

editClusterST(area = "areaname",
              cluster_name = "clustername",
              constraints_properties = constraints_properties,
              constraints_ts = constraints_ts)

# study version >= "9.3" (new parameters)

my_parameters <- storage_values_default()
my_parameters$`allow-overflow` <- TRUE

# edit time series
ratio_data <- matrix(0.7, 8760, N)

editClusterST(area = "areaname",
              cluster_name = "clustername",
              cost_injection = ratio_data)

## End(Not run)

```

---

editLink

*Edit a link between two areas*


---

## Description

Antares API: **OK**

Edit a link between two areas in an Antares study.

## Usage

```

editLink(
  from,
  to,
  hurdles_cost = NULL,
  transmission_capacities = NULL,

```

```

    asset_type = NULL,
    display_comments = NULL,
    filter_synthesis = NULL,
    filter_year_by_year = NULL,
    dataLink = NULL,
    tsLink = NULL,
    opts = antaresRead::simOptions()
)

```

### Arguments

from, to	The two areas linked together.
hurdles_cost	Logical, which is used to state whether (linear) transmission fees should be taken into account or not in economy and adequacy simulations
transmission_capacities	Character, one of enabled, ignore or infinite, which is used to state whether the capacities to consider are those indicated in 8760-hour arrays or if zero or infinite values should be used instead (actual values / set to zero / set to infinite)
asset_type	Character, one of ac, dc, gas, virt or other. Used to state whether the link is either an AC component (subject to Kirchhoff's laws), a DC component, or another type of asset.
display_comments	Logical, display comments or not.
filter_synthesis	Character, vector of time steps used in the output synthesis, among hourly, daily, weekly, monthly, and annual
filter_year_by_year	Character, vector of time steps used in the output year-by-year, among hourly, daily, weekly, monthly, and annual
dataLink	See Details section below.
tsLink	Transmission capacities time series. First N columns are direct TS, following N are indirect ones.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

### Value

An updated list containing various information about the simulation.

### Note

See [createLink\(\)](#) for more documentation

### See Also

[createLink\(\)](#), [removeLink\(\)](#)

**Examples**

```
## Not run:
editLink(
  from = "area1",
  to = "area2",
  transmission_capacities = "infinite",
  filter_synthesis = c("hourly", "daily"),
  filter_year_by_year = c("weekly", "monthly")
)

## End(Not run)
```

---

```
fill_empty_hydro_ini_file
```

*Write default values in hydro.ini file if the section is empty*

---

**Description**

For a given area, if the data is empty, pick value from default values for use heuristic, follow load and reservoir sections.

**Usage**

```
fill_empty_hydro_ini_file(area, opts = antaresRead::simOptions())
```

**Arguments**

area	The area where to write the value, i.e. lhs in the section.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a> .

---

```
fill_empty_hydro_ts_file
```

*Write default input time series if mingen.txt or/and mod.txt is empty*

---

**Description**

Write default input time series if mingen.txt or/and mod.txt is empty

**Usage**

```
fill_empty_hydro_ts_file(area, opts = antaresRead::simOptions())
```

**Arguments**

area	The area where to write the input time series.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a> .

---

filteringOptions      *Output profile options for creating an area*

---

**Description**

Output profile options for creating an area

**Usage**

```
filteringOptions(  
  filter_synthesis = c("hourly", "daily", "weekly", "monthly", "annual"),  
  filter_year_by_year = c("hourly", "daily", "weekly", "monthly", "annual")  
)
```

**Arguments**

`filter_synthesis`  
Character, vector of time steps used in the output synthesis, among hourly, daily, weekly, monthly, and annual

`filter_year_by_year`  
Character, vector of time steps used in the output year-by-year, among hourly, daily, weekly, monthly, and annual

**Value**

a named list

**Examples**

```
filteringOptions(  
  filter_synthesis=c("hourly","daily"),  
  filter_year_by_year=c("weekly","monthly")  
)
```

---

getJobLogs      *Retrieve job log from API*

---

**Description**

Retrieve job log from API

**Usage**

```
getJobLogs(job_id, opts = antaresRead::simOptions())
```

**Arguments**

`job_id`            The job identifier.  
`opts`                List of simulation parameters returned by the function `antaresRead::setSimulationPath()`

**Value**

Logs as character string.

**Examples**

```
## Not run:

antaresRead::setSimulationPathAPI(
  host = "http://localhost:8080",
  study_id = "39c604fc-687f-46c4-9fa6-59b57ff9c8d1",
  token = NULL,
  simulation = "input"
)
job <- runSimulation()
getJobLogs(job)

## End(Not run)
```

---

<code>getJobs</code>	<i>Retrieve API jobs</i>
----------------------	--------------------------

---

**Description**

Retrieve API jobs

**Usage**

```
getJobs(job_id = NULL, opts = antaresRead::simOptions())
```

**Arguments**

`job_id`            The job identifier, if NULL (default), retrieve all jobs.  
`opts`                List of simulation parameters returned by the function `antaresRead::setSimulationPath()`

**Value**

A data.table with information about jobs.

**Examples**

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

---

```
get_default_hydro_ini_values  
    Get default hydro.ini values
```

---

**Description**

Get default hydro.ini values

**Usage**

```
get_default_hydro_ini_values(opts)
```

**Arguments**

opts                   List of simulation parameters returned by the function [antaresRead::setSimulationPath\(\)](#)

---

```
get_type_check_mingen_vs_hydrostorage  
    Get the type of control to execute using the 3 necessary booleans
```

---

**Description**

Get the type of control to execute using the 3 necessary booleans

**Usage**

```
get_type_check_mingen_vs_hydrostorage(hydro_params)
```

**Arguments**

hydro\_params       a list of 3 booleans to compute the type of control to make.

**Value**

a character containing the type of control to execute.

---

`get_type_check_mingen_vs_hydrostorage_to_trigger`

*Get the type of control to execute between mingen data and hydro storage data*

---

### Description

Compute the type of control to make between :

- `input/hydro/series/<area>/mingen.txt`
- `input/hydro/series/<area>/mod.txt`

This control is implemented in Antares too.

### Usage

```
get_type_check_mingen_vs_hydrostorage_to_trigger(
  area,
  opts = antaresRead::simOptions()
)
```

### Arguments

<code>area</code>	The area where the type of control must be computed.
<code>opts</code>	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code> .

### Value

a character containing the type of control to execute.

### Note

Function called only for an **Antares version >= 860**.

---

`get_type_check_mingen_vs_maxpower_to_trigger`

*Get the type of control to execute between mingen data and maxpower data*

---

### Description

Compute the type of control to make between :

- `input/hydro/series/<area>/mingen.txt`
- `input/hydro/common/capacity/maxpower_<area>.txt`

This control is implemented in Antares too. No control to execute if reservoir section in hydro.ini for the area is set to TRUE.



**Usage**

```

get_type_check_mingen_vs_maxpower_to_trigger(
  area,
  opts = antaresRead::simOptions()
)

```

**Arguments**

area            The area where the type of control must be computed.

opts            List of simulation parameters returned by the function [antaresRead::setSimulationPath\(\)](#).

**Value**

a character containing the type of control to execute.

**Note**

Function called only for an **Antares version >= 860**.

---

importZipStudyWeb	<i>Import a local study to Antares Web</i>
-------------------	--------------------------------------------

---

**Description**

Import a local study to Antares Web

**Usage**

```

importZipStudyWeb(
  host,
  token,
  zipfile_name,
  delete_zipfile = TRUE,
  folder_destination = NULL,
  opts = antaresRead::simOptions()
)

```

**Arguments**

host            Host of AntaREST server API.

token           API personal access token.

zipfile\_name   Name of the zipfile of the study.

delete\_zipfile Should the zipfile be deleted after upload.

folder\_destination  
Folder of the study in Antares Web.

opts            List of simulation parameters returned by the function [antaresRead::setSimulationPath\(\)](#)

**Value**

An updated list containing various information about the simulation.

---

```
list_pollutants_values
```

*Output pollutants list for thermal clusters*

---

**Description**

Output pollutants list for thermal clusters

**Usage**

```
list_pollutants_values(multi_values = NULL)
```

**Arguments**

`multi_values` put values to init list values, default as NULL

**Value**

a named list

**Examples**

```
list_pollutants_values()
```

---

```
mockSimulationAPI      Mock API usage
```

---

**Description**

Use this to generate command without an active API connection, it allow to use function to edit a study to later on get API commands.

**Usage**

```
mockSimulationAPI(force = FALSE, antares_version = "8.2.0")
```

**Arguments**

`force` Logical, force mocking simulation even if [antaresRead::setSimulationPathAPI](#) has already been called.

`antares_version` Antares version number.

**Value**

An updated list containing various information about the simulation.

**Examples**

```
## Not run:  
# Mock simulation API  
mockSimulationAPI()  
# Create an area  
createArea("new area")  
# Get commands  
getVariantCommands()  
  
## End(Not run)
```

---

nodalOptimizationOptions

*Nodal optimization parameters for creating an area*

---

**Description**

Nodal optimization parameters for creating an area

**Usage**

```
nodalOptimizationOptions(  
  non_dispatchable_power = TRUE,  
  dispatchable_hydro_power = TRUE,  
  other_dispatchable_power = TRUE,  
  spread_unsupplied_energy_cost = 0,  
  spread_spilled_energy_cost = 0,  
  average_unsupplied_energy_cost = 0,  
  average_spilled_energy_cost = 0  
)
```

**Arguments**

non\_dispatchable\_power  
logical, default to FALSE

dispatchable\_hydro\_power  
logical, default to FALSE

other\_dispatchable\_power  
logical, default to FALSE

spread\_unsupplied\_energy\_cost  
numeric, default to 0

spread\_spilled\_energy\_cost  
numeric, default to 0

average\_unsupplied\_energy\_cost  
                                   numeric, default to 0

average\_spilled\_energy\_cost  
                                   numeric, default to 0

**Value**

a named list

**Examples**

```
nodalOptimizationOptions()
```

---

playlist	<i>Get the playlist of an Antares study</i>
----------	---------------------------------------------

---

**Description**

Antares API: **OK**

getPlaylist gives the identifier of the MC years which will be simulated in the Antares study, taking into account the potential use of a playlist which can skip some MC years

setPlaylist is a function which modifies the input file of an ANTARES study and set the playlist in order to simulate only the MC years given in input

**Usage**

```
getPlaylist(opts = antaresRead::simOptions())
```

```
setPlaylist(playlist, weights = NULL, opts = antaresRead::simOptions())
```

**Arguments**

opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>
playlist	vector of MC years identifier to be simulated can be a list (V8 compatibility) but not recommended
weights	data.table, 2 columns : mcYears and weights. Only with after antares V8

**Value**

- getPlaylist returns a vector of the identifier of the simulated MC year.
- setPlaylist does not return anything. It is used to modify the input of an Antares study.

**Examples**

```

## Not run:
setSimulationPath("PATH/T0/STUDY/")
# or
setSimulationPathAPI(
  host = "http://localhost:8080",
  study_id = "6f98a393-155d-450f-a581-8668dc355235",
  token = NULL,
  simulation = "input"
)

# augment number of MC years
updateGeneralSettings(nbyears = 10)

# Get the actual playlist
getPlaylist()
# [1] 2 4 6

# set a new playlist
setPlaylist(c(3, 5, 7))

## End(Not run)

```

---

propertiesLinkOptions *Properties for creating a link*

---

**Description**

Properties for creating a link

**Usage**

```

propertiesLinkOptions(
  hurdles_cost = FALSE,
  transmission_capacities = "enabled",
  asset_type = "ac",
  display_comments = TRUE,
  filter_synthesis = c("hourly", "daily", "weekly", "monthly", "annual"),
  filter_year_by_year = c("hourly", "daily", "weekly", "monthly", "annual")
)

```

**Arguments**

**hurdles\_cost** Logical, which is used to state whether (linear) transmission fees should be taken into account or not in economy and adequacy simulations

**transmission\_capacities** Character, one of enabled, ignore or infinite, which is used to state whether the capacities to consider are those indicated in 8760-hour arrays or if zero or infinite values should be used instead (actual values / set to zero / set to infinite)

**asset\_type** Character, one of ac, dc, gas, virt or other. Used to state whether the link is either an AC component (subject to Kirchhoff's laws), a DC component, or another type of asset.  
**display\_comments** Logical, display comments or not.  
**filter\_synthesis** Character, vector of time steps used in the output synthesis, among hourly, daily, weekly, monthly, and annual  
**filter\_year\_by\_year** Character, vector of time steps used in the output year-by-year, among hourly, daily, weekly, monthly, and annual

**Value**

A named list that can be used in `createLink()`.

**Examples**

```

## Not run:
propertiesLinkOptions(
  hurdles_cost = TRUE,
  filter_synthesis=c("hourly","daily"),
  filter_year_by_year=c("weekly","monthly")
)
## End(Not run)

```

---

removeArea	<i>Remove an area from an Antares study</i>
------------	---------------------------------------------

---

**Description**

Antares API: **OK**  
 Remove an area in an Antares study.

**Usage**

```
removeArea(name, opts = antaresRead::simOptions())
```

**Arguments**

**name** An area name.  
**opts** List of simulation parameters returned by the function `antaresRead::setSimulationPath()`

**Value**

An updated list containing various information about the simulation.

**See Also**

[createArea\(\)](#), [editArea\(\)](#)

**Examples**

```
## Not run:  
removeArea("fictive_area")  
  
## End(Not run)
```

---

removeBindingConstraint

*Remove a Binding Constraint*

---

**Description**

Antares API: **OK [Experimental]**

Remove a binding constraint in an Antares study.

**Usage**

```
removeBindingConstraint(  
  name = NULL,  
  group = NULL,  
  opts = antaresRead::simOptions()  
)
```

**Arguments**

name	Name(s) of the binding constraint(s) to remove.
group	character Name(s) of group to delete
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

**Value**

An updated list containing various information about the simulation.

**Note**

Starting with version **v8.7.0**, you can delete binding constraints by name or by group.

**See Also**

Other binding constraints functions: [createBindingConstraintBulk\(\)](#), [createBindingConstraint\(\)](#), [editBindingConstraint\(\)](#)

## Examples

```
## Not run:
# < v8.7.0 :
removeBindingConstraint(name = "mybindingconstraint")

# >= v8.7.0 (delete by names group) :
# read
bc <- readBindingConstraints()

# select all groups
group_to_delete <- sapply(bc, function(x){
  x$properties$group
})

# delete all groups
removeBindingConstraint(group = group_to_delete)

## End(Not run)
```

---

removeCluster

*Remove a cluster*

---

## Description

Antares API: **OK**

Delete cluster(s), thermal, renewable (renewable energy source) or short-term storage, along with all its data (properties + TS).

## Usage

```
removeCluster(
  area,
  cluster_name,
  add_prefix = TRUE,
  opts = antaresRead::simOptions()
)
```

```
removeClusterRES(
  area,
  cluster_name,
  add_prefix = TRUE,
  opts = antaresRead::simOptions()
)
```

```
removeClusterST(
  area,
  cluster_name,
  add_prefix = TRUE,
```



```

    opts = antaresRead::simOptions()
  )

```

### Arguments

area	The area where to create the cluster.
cluster_name	Name for the cluster, it will be prefixed by area name, unless you set add_prefix = FALSE.
add_prefix	If TRUE (the default), cluster_name will be prefixed by area name.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

### Value

An updated list containing various information about the simulation.

### See Also

[createCluster\(\)](#), [createClusterRES\(\)](#) or [createClusterST\(\)](#) to create new clusters, [editCluster\(\)](#) or [editClusterRES\(\)](#) or [editClusterST\(\)](#) to edit existing clusters.

### Examples

```

## Not run:
createCluster(
  area = "fr",
  cluster_name = "fr_gas",
  group = "other",
  `marginal-cost` = 50
)

removeCluster(area = "fr", cluster_name = "fr_gas")

## End(Not run)

```

---

removeDistrict	<i>Remove a district</i>
----------------	--------------------------

---

### Description

Remove a district

### Usage

```
removeDistrict(name, opts = simOptions())
```

### Arguments

name	District's name.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

**Value**

An updated list containing various information about the simulation.

**See Also**

[createDistrict\(\)](#)

**Examples**

```
## Not run:
removeDistrict(
  name = "mydistrict",
  opts = simOptions()
)

## End(Not run)
```

---

removeLink	<i>Remove a link between two areas</i>
------------	----------------------------------------

---

**Description**

Antares API: **OK**

Remove a link between two areas in an Antares study.

**Usage**

```
removeLink(from, to, opts = antaresRead::simOptions())
```

**Arguments**

from, to	The two areas linked together.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

**Value**

An updated list containing various information about the simulation.

**Examples**

```
## Not run:
createLink(from = "myarea", to = "myarea2")
removeLink(from = "myarea", to = "myarea2")

## End(Not run)
```

---

replicate\_missing\_ts    *Replicate a data.table as many times as needed to get the same number of time series between 2 data.tables*

---

### Description

Replicate a data.table as many times as needed to get the same number of time series between 2 data.tables

### Usage

```
replicate_missing_ts(xts, yts)
```

### Arguments

xts                    a data.table of time series type to replicate if necessary.  
yts                    a data.table of time series type to use as reference to match its number of time series.

### Value

the data.table x replicated to match the number of time series of y.

---

rollback\_to\_previous\_data  
*Rollback to previous hydro data if the data is not consistent*

---

### Description

Rollback the data to previous one if the check is KO. For a given area, check if the data is consistent and rollback to previous data if the check is KO.

### Usage

```
rollback_to_previous_data(  
  area,  
  prev_data,  
  rollback_type,  
  opts = antaresRead::simOptions()  
)
```

### Arguments

area                    The area where to execute the control and rollback the data.  
prev\_data                The original data to restore if necessary.  
rollback\_type            The file to restore and the control(s) to execute.  
opts                    List of simulation parameters returned by the function `antaresRead::setSimulationPath()`.

**Note**

Function called only for an **Antares version >= 860**.

---

runSimulation	<i>Run an Antares Simulation</i>
---------------	----------------------------------

---

**Description**

Antares API: **OK**

Run an ANTARES study

**Usage**

```
runSimulation(
  name,
  mode = "economy",
  path_solver = getOption("antares.solver"),
  wait = TRUE,
  show_output_on_console = FALSE,
  parallel = TRUE,
  ...,
  opts = antaresRead::simOptions()
)
```

**Arguments**

name	Name of the simulation. In API mode, name will be used as output_suffix argument.
mode	Simulation mode, can take value "economy", "adequacy" or "draft".
path_solver	Character containing the Antares Solver path
wait	Logical, indicating whether the R interpreter should wait for the simulation to finish, or run it asynchronously.
show_output_on_console	Logical, indicating whether to capture the ANTARES log and show it on the R console.
parallel	Logical. If TRUE the ANTARES simulation will be run in parallel mode (Work only with ANTARES v6.0.0 or more). In that case, the number of cores used by the simulation is the one set in advanced_settings/simulation_cores (see ANTARES interface).
...	Additional arguments (API only), such as nb_cpu, time_limit, ... See API documentation for all available options.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

**Value**

In API mode it return a list with either the job id in case of success of the command or details about the error produce. In non-API mode the function does not return anything, it is used to launch an ANTARES simulation.

---

runTsGenerator	<i>Run Time-Series Generator</i>
----------------	----------------------------------

---

**Description**

Antares API: **NO**

**Usage**

```
runTsGenerator(
  path_solver = getOption("antares.solver"),
  wait = TRUE,
  show_output_on_console = FALSE,
  opts = antaresRead::simOptions()
)
```

**Arguments**

path_solver	Character containing the Antares Solver path.
wait	Logical, indicating whether the R interpreter should wait for the simulation to finish, or run it asynchronously.
show_output_on_console	Logical, indicating whether to capture the ANTARES log and show it on the R console.
opts	List of simulation parameters returned by the function antaresRead::setSimulationPath.

**Examples**

```
## Not run:
library(antaresRead)
setSimulationPath(path = "path/to/study")

library(antaresEditObject)
runTsGenerator(
  path_solver = "path/to/antares-6.0-solver.exe",
  show_output_on_console = TRUE
)

## End(Not run)
```

---

scenario-builder      *Read, create, update & deduplicate scenario builder*

---

## Description

Antares API: **OK**

Read, create, update & deduplicate scenario builder.

## Usage

```
scenarioBuilder(  
  n_scenario = 1,  
  n_mc = NULL,  
  areas = NULL,  
  areas_rand = NULL,  
  group_bc = NULL,  
  group_bc_rand = NULL,  
  coef_hydro_levels = NULL,  
  mode = NULL,  
  opts = antaresRead::simOptions()  
)  
  
readScenarioBuilder(  
  ruleset = "Default Ruleset",  
  as_matrix = TRUE,  
  opts = antaresRead::simOptions()  
)  
  
updateScenarioBuilder(  
  ldata,  
  ruleset = "Default Ruleset",  
  series = NULL,  
  clusters_areas = NULL,  
  links = NULL,  
  opts = antaresRead::simOptions()  
)  
  
clearScenarioBuilder(  
  ruleset = "Default Ruleset",  
  opts = antaresRead::simOptions()  
)  
  
deduplicateScenarioBuilder(  
  ruleset = "Default Ruleset",  
  opts = antaresRead::simOptions()  
)
```

**Arguments**

n_scenario	Number of scenario.
n_mc	Number of Monte-Carlo years.
areas	Areas to use in scenario builder, if NULL (default) all areas in Antares study are used.
areas_rand	Areas for which to use "rand".
group_bc	character Bindgind constraints's groups names to use.
group_bc_rand	character Bindgind constraints which to use "rand".
coef_hydro_levels	Hydro levels or hydro final level coefficients.
mode	character "bc" to edit binding constraints.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>
ruleset	Ruleset to read.
as_matrix	If TRUE (default) return a matrix, else a list.
ldata	A matrix obtained with scenarioBuilder, or a named list of matrices obtained with scenarioBuilder, names must be 'l', 'h', 'w', 's', 't', 'r', 'ntc', 'hl', 'bc', 'hfl', 'sts' or 'sta', depending on the series to update.
series	Name(s) of the serie(s) to update if ldata is a single matrix.
clusters_areas	A data.table with two columns area and cluster to identify area/cluster couple to update for thermal or renewable series. Default is to read clusters description and update all couples area/cluster.
links	Links to use if series is "ntc". Either a simple vector with links described as "area01%area02 or a data.table with two columns from and to. Default is to read existing links and update them all.

**Value**

scenarioBuilder : a matrix

readScenarioBuilder : a list of matrix or list according to as\_matrix parameters.

**Note**

- series = "ntc" is only available with Antares >= 8.2.0.
- For series = "hl/hfl", each value must be between 0 and 1.
- User must enable/disable custom-scenario property in settings/generaldata.ini by himself.
- series = "bc" is only available with Antares >= 8.7.0.

For a single matrix, value of series can be :

- h or hydro
- hl or hydrolevels
- l or load

- ntc
- r or renewables
- s or solar
- t or thermal
- w or wind
- hfl or hydro final level
- sts or sct apports
- sta or sct contraintes

### See Also

[Scenario Builder vignette](#)

### Examples

```
## Not run:

library(antaresRead)
library(antaresEditObject)

# simulation path
setSimulationPath(
  path = "pat/to/simulation",
  simulation = "input"
)

# Create a scenario builder matrix
sbuilder <- scenarioBuilder(
  n_scenario = 51,
  n_mc = 2040,
  areas_rand = c("fr", "be")
)
sbuilder[, 1:6]
dim(sbuilder)

# Create a scenario builder matrix for hydro levels (use case 1)
sbuilder <- scenarioBuilder(
  n_mc = opts$parameters$general$nbyyears,
  areas = c("fr", "be"),
  coef_hydro_levels = c(0.1, 0.9)
)

# Create a scenario builder matrix for hydro levels (use case 2)
sbuilder <- scenarioBuilder(
  n_mc = opts$parameters$general$nbyyears,
  areas = c("fr", "be"),
  coef_hydro_levels = c(runif(opts$parameters$general$nbyyears)
, runif(opts$parameters$general$nbyyears)
)
)
```



```
# Create a scenario builder matrix with
# bindings constraints groups (study version >= 8.7.0)
# Use parameter "mode" with "bc"
sbuilder <- scenarioBuilder(
  n_scenario = 51,
  n_mc = 2040,
  group_bc = c("my_bc_1", "my_bc_2"),
  group_bc_rand = "my_bc_2",
  mode = "bc"
)

# Read previous scenario builder
# in a matrix format
prev_sb <- readScenarioBuilder()

# Update scenario builder

# Single matrix for load serie
updateScenarioBuilder(ldata = sbuilder, series = "load") # can be l instead of load

# equivalent as
updateScenarioBuilder(ldata = list(l = sbuilder))

# for binding constraints (study version >= 8.7.0)
updateScenarioBuilder(ldata = sbuilder, series = "bc")

# update several series

# same input
sbuilder
updateScenarioBuilder(
  ldata = sbuilder,
  series = c("load", "hydro", "solar")
)

# List of matrix
updateScenarioBuilder(ldata = list(
  l = load_sb,
  h = hydro_sb,
  s = solar_sb
))

# for binding constraints (study version >= 9.3.0)
updateScenarioBuilder(ldata = sbuilder, series = "sts")
updateScenarioBuilder(ldata = sbuilder, series = "sta")

# Deduplicate scenario builder

deduplicateScenarioBuilder()

## End(Not run)
```

---

`searchStudy`*Search study in AntaREST*

---

**Description**

Search study in AntaREST

**Usage**

```
searchStudy(  
  workspace = NULL,  
  folder = NULL,  
  name = NULL,  
  ...,  
  host = NULL,  
  token = NULL  
)
```

**Arguments**

<code>workspace</code>	Space in which to search for a study.
<code>folder</code>	Folder in which to search for a study.
<code>name</code>	Name for the study.
<code>...</code>	Other query parameters.
<code>host</code>	Host of AntaREST server API.
<code>token</code>	API personal access token.

**Value**

a `data.table` with informations about studies on the server.

**Examples**

```
## Not run:  
  
searchStudies(host = "http://localhost:8080")  
  
## End(Not run)
```

---

setAPImode	<i>Set API mode</i>
------------	---------------------

---

### Description

Two modes are available when using the API:

- **async**: record all API calls, but nothing is sent to the server
- **sync**: send query to the API each time a function is used

### Usage

```
setAPImode(mode = c("sync", "async"), opts = antaresRead::simOptions())
```

### Arguments

mode	The mode you want to use.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

### Value

An updated list containing various information about the simulation.

### Examples

```
## Not run:
# See vignette for complete documentation
vignette("api-variant-management")

# Usage :
setAPImode("sync")

## End(Not run)
```

---

setSolverPath	<i>Set path to Antares Solver</i>
---------------	-----------------------------------

---

### Description

Set path to Antares Solver

### Usage

```
setSolverPath(path)
```

**Arguments**

path (optional) Path to the solver (e.g. antares-6.0-solver.exe in \bin directory where Antares is installed). If missing, a window opens and lets the user choose the directory of the simulation interactively.

**Examples**

```
## Not run:

setSolverPath(path = "C:/antares/bin/antares-6.0-solver.exe")

## End(Not run)
```

---

setThematicTrimming *Set the thematic trimming of an Antares Study*

---

**Description**

Antares API: **OK**

Put only variables names you want to keep in study output. You can add or remove variables (use study version >=v8.8).

**Usage**

```
setThematicTrimming(
  selection_variables,
  type_select = c("add", "suppr"),
  opts = simOptions()
)
```

**Arguments**

selection\_variables character of variables to add or remove.

type\_select character select mode to add or remove (default add mode).

opts List of simulation parameters returned by the function `antaresRead::setSimulationPath()`

**Value**

An updated list containing various information about the simulation.

**Note**

You can put only variables according to version of study

**Examples**

```
## Not run:

# list of variables (version >= v8.8)
vect_select_vars <- list_thematic_variables()

##
# add all variables
##
setThematicTrimming(selection_variables = vect_select_vars$variable)

##
# remove all variables
##
setThematicTrimming(selection_variables = vect_select_vars$variable,
                    type_select = "suppr")

## End(Not run)
```

---

storage\_values\_default

*Short Term Storage Property List*

---

**Description**

Default values are returned according to study version

**Usage**

```
storage_values_default(opts = simOptions())
```

**Arguments**

opts                   List of simulation parameters returned by the function [antaresRead::setSimulationPath\(\)](#)

**Value**

An updated list containing various information about the simulation.  
a named list

**Examples**

```
## Not run:
storage_values_default()

## End(Not run)
```

---

 updateAdequacySettings

*Update adequacy parameters of an Antares study*


---

### Description

Antares API: **OK**

Update adequacy parameters of an Antares study

### Usage

```
updateAdequacySettings(
  include_adq_patch = NULL,
  set_to_null_ntc_from_physical_out_to_physical_in_for_first_step = NULL,
  set_to_null_ntc_between_physical_out_for_first_step = NULL,
  include_hurdle_cost_csr = NULL,
  check_csr_cost_function = NULL,
  enable_first_step = NULL,
  price_taking_order = NULL,
  threshold_initiate_curtailment_sharing_rule = NULL,
  threshold_display_local_matching_rule_violations = NULL,
  threshold_csr_variable_bounds_relaxation = NULL,
  opts = antaresRead::simOptions()
)
```

### Arguments

`include_adq_patch`  
Logical. If TRUE, will run Adequacy Patch

`set_to_null_ntc_from_physical_out_to_physical_in_for_first_step`  
Logical. default to TRUE

`set_to_null_ntc_between_physical_out_for_first_step`  
Logical. default to TRUE

`include_hurdle_cost_csr`  
Logical. default to FALSE

`check_csr_cost_function`  
Logical. default to FALSE

`enable_first_step`  
Logical. default to TRUE

`price_taking_order`  
Character. can take values DENS (default value) and Load.

`threshold_initiate_curtailment_sharing_rule`  
Double. default to 0.0

`threshold_display_local_matching_rule_violations`  
Double. default to 0.0

threshold\_csr\_variable\_bounds\_relaxation  
Integer. default to 3

opts List of simulation parameters returned by the function `AntaresRead::setSimulationPath()`

### Value

An updated list containing various information about the simulation.

### Examples

```
## Not run:

updateAdequacySettings(
  include_adq_patch = TRUE,
  set_to_null_ntc_from_physical_out_to_physical_in_for_first_step = TRUE,
  set_to_null_ntc_between_physical_out_for_first_step = TRUE
)

## End(Not run)
```

---

updateGeneralSettings *Update general parameters of an Antares study*

---

### Description

Antares API: **OK**

Update general parameters of an Antares study

### Usage

```
updateGeneralSettings(
  mode = NULL,
  horizon = NULL,
  nyears = NULL,
  simulation.start = NULL,
  simulation.end = NULL,
  january.1st = NULL,
  first.month.in.year = NULL,
  first.weekday = NULL,
  leapyear = NULL,
  year.by.year = NULL,
  derated = NULL,
  custom.scenario = NULL,
  custom.ts.numbers = deprecated(),
  user.playlist = NULL,
  filtering = NULL,
```

```

active.rules.scenario = NULL,
generate = NULL,
nbtimeseriesload = NULL,
nbtimeserieshydro = NULL,
nbtimeserieswind = NULL,
nbtimeseriesthermal = NULL,
nbtimeseriessolar = NULL,
refreshtimeseries = NULL,
intra.modal = NULL,
inter.modal = NULL,
refreshintervalload = NULL,
refreshintervalhydro = NULL,
refreshintervalwind = NULL,
refreshintervalthermal = NULL,
refreshintervalsolar = NULL,
readonly = NULL,
geographic.trimming = NULL,
thematic.trimming = NULL,
opts = antaresRead::simOptions()
)

```

### Arguments

mode	Economy, Adequacy, Draft.
horizon	Reference year (static tag, not used in the calculations)
nbyears	Number of Monte-Carlo years that should be prepared for the simulation (not always the same as the Number of MC years actually simulated, see 'selection mode' below).
simulation.start	First day of the simulation (e.g. 8 for a simulation beginning on the second week of the first month of the year)
simulation.end	Last day of the simulation (e.g. 28 for a simulation ending on the fourth week of the first month of the year)
january.1st	First day of the year (Mon, Tue, etc.).
first.month.in.year	Actual month by which the Time-series begin (Jan to Dec, Oct to Sep, etc.)
first.weekday	In economy or adequacy simulations, indicates the frame (Mon- Sun, Sat-Fri, etc.) to use for the edition of weekly results.
leapyear	(TRUE/FALSE) indicates whether February has 28 or 29 days.
year.by.year	(False) No individual results will be printed out, (True) For each simulated year, detailed results will be printed out in an individual directory7 : Study_name/OUTPUT/simu_tag/Economy/mc-i-number
derated	See Antares General Reference Guide.
custom.scenario	See Antares General Reference Guide (see link below). Replace custom.ts.numbers.



custom.ts.numbers	See Antares General Reference Guide (see link below). Replaced by custom.scenario.
user.playlist	See Antares General Reference Guide (see link below).
filtering	See Antares General Reference Guide (see link below).
active.rules.scenario	See Antares General Reference Guide (see link below).
generate	See Antares General Reference Guide (see link below).
nbtimeseriesload	See Antares General Reference Guide (see link below).
nbtimeserieshydro	See Antares General Reference Guide (see link below).
nbtimeserieswind	See Antares General Reference Guide (see link below).
nbtimeseriesthermal	See Antares General Reference Guide (see link below).
nbtimeseriessolar	See Antares General Reference Guide (see link below).
refreshtimeseries	See Antares General Reference Guide (see link below).
intra.modal	See Antares General Reference Guide (see link below).
inter.modal	See Antares General Reference Guide (see link below).
refreshintervalload	See Antares General Reference Guide (see link below).
refreshintervalhydro	See Antares General Reference Guide (see link below).
refreshintervalwind	See Antares General Reference Guide (see link below).
refreshintervalthermal	See Antares General Reference Guide (see link below).
refreshintervalsolar	See Antares General Reference Guide (see link below).
readonly	See Antares General Reference Guide (see link below).
geographic.trimming	logical indicates whether to store the results for all time spans (FALSE) or for custom time spans (TRUE)
thematic.trimming	See Antares General Reference Guide (see link below).
opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code>

**Value**

An updated list containing various information about the simulation.

**See Also**

Antares General Reference Guide

### Examples

```
## Not run:  
  
# Update number of Monte-Carlo years  
updateGeneralSettings(nbyears = 42)  
  
# Use a vector to update a parameter that  
# can take multiple values  
updateGeneralSettings(generate = c("thermal", "hydro"))  
  
## End(Not run)
```

---

updateInputSettings     *Update input parameters of an Antares study*

---

### Description

Antares API: **OK**

Update input parameters of an Antares study

### Usage

```
updateInputSettings(import, opts = antaresRead::simOptions())
```

### Arguments

import	Series to import.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

### Value

An updated list containing various information about the simulation.

### Examples

```
## Not run:  
  
updateInputSettings(import = c("thermal"))  
updateInputSettings(import = c("hydro", "thermal"))  
  
## End(Not run)
```

---

 updateOptimizationSettings

*Update optimization parameters of an Antares study*


---

### Description

Antares API: **OK**

Update optimization parameters and other preferences of an Antares study

### Usage

```
updateOptimizationSettings(
  simplex.range = NULL,
  transmission.capacities = NULL,
  include.constraints = NULL,
  include.hurdlecosts = NULL,
  include.tc.min.stable.power = NULL,
  include.tc.min.up.down.time = NULL,
  include.dayahead = NULL,
  include.strategicreserve = NULL,
  include.spinningreserve = NULL,
  include.primaryreserve = NULL,
  include.exporttmps = NULL,
  solver.log = NULL,
  power.fluctuations = NULL,
  shedding.strategy = NULL,
  shedding.policy = NULL,
  unit.commitment.mode = NULL,
  number.of.cores.mode = NULL,
  renewable.generation.modelling = NULL,
  day.ahead.reserve.management = NULL,
  opts = antaresRead::simOptions()
)
```

### Arguments

simplex.range    week or day

transmission.capacities

true, false or infinite (since v8.4 can also take : local-values, null-for-all-links, infinite-for-all-links, null-for-physical-links, infinite-for-physical-links)

include.constraints

true or false

include.hurdlecosts

true or false

include.tc.min.stable.power

true or false

```

include.tc.min.up.down.time
    true or false
include.dayahead
    true or false
include.strategicreserve
    true or false
include.spinningreserve
    true or false
include.primaryreserve
    true or false
include.exportmps
    true or false (since v8.3.2 can take also : none, optim-1, optim-2, both-optimis)
solver.log
    true or false (available for version >= 8.8)
power.fluctuations
    free modulations, minimize excursions or minimize ramping
shedding.strategy
    share margins
shedding.policy
    shave peaks (accurate shave peaks for study >= v9.2)or minimize duration
unit.commitment.mode
    fast or accurate
number.of.cores.mode
    minimum, low, medium, high or maximum
renewable.generation.modelling
    aggregated or clusters
day.ahead.reserve.management
    global
opts
    List of simulation parameters returned by the function antaresRead::setSimulationPath\(\)

```

### Value

An updated list containing various information about the simulation.

### Examples

```

## Not run:

updateOptimizationSettings(
  simplex.range = "week",
  power.fluctuations = "minimize ramping"
)

## End(Not run)

```

---

updateOutputSettings    *Update output parameters of an Antares study*

---

### Description

Antares API: **OK**

Update output parameters of an Antares study

### Usage

```
updateOutputSettings(  
  synthesis = NULL,  
  storenewset = NULL,  
  archives = NULL,  
  result.format = NULL,  
  opts = antaresRead::simOptions()  
)
```

### Arguments

synthesis	Logical. If TRUE, synthetic results will be stored in a directory Study_name/OUTPUT/simu_tag/Economy.all. If FALSE, No general synthesis will be printed out. See Antares General Reference Guide (see link below).
storenewset	Logical. See Antares General Reference Guide (see link below).
archives	Character vector. Series to archive. See Antares General Reference Guide (see link below).
result.format	Character. Output format (txt-files or zip). See Antares General Reference Guide (see link below).
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

### Value

An updated list containing various information about the simulation.

### See Also

Antares General Reference Guide

### Examples

```
## Not run:  
  
updateOutputSettings(  
  synthesis = TRUE,  
  storenewset = FALSE,  
  archives = c("load", "wind"),  
  result.format = "zip"
```

```
)

## End(Not run)
```

---

```
update_generaldata_by_section
    Update a specific section in generaldata.ini file
```

---

### Description

Update a specific section in generaldata.ini file

### Usage

```
update_generaldata_by_section(opts, section, new_params)
```

### Arguments

opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>
section	The section to update.
new_params	The values to write in the section.

### Value

An updated list containing various information about the simulation.

---

```
variant
    Create a study's variant
```

---

### Description

**API:** create a new variant for a given study or use a pre-existing one.

### Usage

```
createVariant(name, opts = antaresRead::simOptions())

useVariant(name, variant_id = NULL, opts = antaresRead::simOptions())
```

### Arguments

name	Name for the variant to create or the name of an existent variant.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>
variant_id	ID of the variant to use, if specified name is ignored.

**Value**

An updated list containing various information about the simulation.

**Examples**

```
## Not run:
# See vignette for complete documentation
vignette("api-variant-management")

## End(Not run)
```

---

variant-commands	<i>Get API commands generated</i>
------------------	-----------------------------------

---

**Description**

Get API commands generated

**Usage**

```
getVariantCommands(
  last = NULL,
  actions = NULL,
  opts = antaresRead::simOptions()
)

writeVariantCommands(
  path,
  last = NULL,
  actions = NULL,
  ...,
  opts = antaresRead::simOptions()
)
```

**Arguments**

last	Return the last command generated if TRUE, or a numeric for returning a specified number of commands. Default is to return all commands.
actions	A character vector of actions to return.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>
path	Path to the JSON file to write on disk.
...	Additional arguments passed to <a href="#">jsonlite::write_json()</a>

**Value**

a list of commands to edit a variant

---

`write-ini`*Write configuration options in file or API*

---

## Description

Write configuration options in file or API

## Usage

```
writeIni(  
  listData,  
  pathIni,  
  opts = antaresRead::simOptions(),  
  ...,  
  default_ext = ".ini"  
)
```

```
writeIniFile(listData, pathIni, overwrite = FALSE)
```

```
writeIniAPI(listData, pathIni, opts)
```

## Arguments

<code>listData</code>	list, modified list obtained by <code>antaresRead::readIniFile</code> .
<code>pathIni</code>	Character, Path to ini file.
<code>opts</code>	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code>
<code>...</code>	Additional arguments.
<code>default_ext</code>	Default extension used for config files.
<code>overwrite</code>	logical, should file be overwritten if already exist?

## Examples

```
## Not run:  
pathIni <- "D:/exemple_test/settings/generaldata.ini"  
generalSetting <- readIniFile(pathIni)  
generalSetting$output$synthesis <- FALSE  
writeIni(generalSetting, pathIni)  
  
## End(Not run)
```



---

writeEconomicOptions    *Write Economic Options*

---

## Description

Antares API: **OK**

This function allows to create or edit economic options. Areas/options present in the input dataframe are edited, while all other values are left unchanged.

## Usage

```
writeEconomicOptions(x, opts = antaresRead::simOptions())
```

## Arguments

x	A dataframe. Must contain an area column listing some (but not necessarily all) areas of the study. Can contain up to 7 other columns among: average_unsupplied_energy_cost, spread_unsupplied_energy_cost, average_spilled_energy_cost, spread_spilled_energy_cost (numeric columns), non_dispatchable_power, dispatchable_hydro_power and other_dispatchable_power (logical columns).
opts	List of simulation parameters returned by the function antaresRead::setSimulationPath

## Examples

```
## Not run:

library(antaresRead)

# Set simulation path
setSimulationPath(path = "PATH/TO/SIMULATION", simulation = "input")

# Write some economic options for areas a, b and c
writeEconomicOptions(data.frame(
  area = c("a", "b", "c"),
  dispatchable_hydro_power = c(TRUE, FALSE, FALSE),
  spread_unsupplied_energy_cost = c(0.03, 0.024, 0.01),
  average_spilled_energy_cost = c(10, 8, 8),
  stringsAsFactors = FALSE
))

## End(Not run)
```

---

writeHydroValues	<i>Write Hydro Values</i>
------------------	---------------------------

---

### Description

Antares API: **OK**

Write waterValues, reservoirLevels, maxpower, inflowPattern and creditModulations data for a given area.

### Usage

```
writeHydroValues(
  area,
  type,
  data,
  overwrite = TRUE,
  opts = antaresRead::simOptions()
)
```

### Arguments

area	The area where to add the values.
type	Type of hydro file, it can be "waterValues", "reservoir", "maxpower", "inflowPattern" or "creditmodulations".
data	The data must have specific dimension depending on the type of file : <ul style="list-style-type: none"> <li>• waterValues: a 365x101 numeric matrix: marginal values for the stored energy based on date (365 days) and on the reservoir level (101 round percentage values ranging from 0% to 100%). OR a 3-column matrix with 365x101 rows. In this latter case the 3 columns must be 'date', 'level' and 'value' (in this order), and the rows must be sorted by: ascending day, ascending level.</li> <li>• reservoir: a 365x3 numeric matrix. The columns contains respectively the levels min, avg and max.</li> <li>• maxpower: a 365x4 numeric matrix.</li> <li>• inflowPattern: a 365x1 numeric matrix.</li> <li>• creditmodulations: a 2x101 numeric matrix.</li> </ul>
overwrite	Logical. Overwrite the values if a file already exists.
opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code> .

### Warning

For an **Antares version**  $\geq 860$ , control of data consistency between `mingen.txt` and `maxpower_<area>.txt` can be executed.

This control depends on the values you find in `hydro.ini` file.

**Examples**

```
## Not run:

writeHydroValues("fictive_area", type = "inflowPattern", data = matrix(rep(0, 365*1), nrow = 365))

## End(Not run)
```

---

writeIniHydro	<i>Edit hydro.ini values</i>
---------------	------------------------------

---

**Description**

Antares API: **OK**

For a given area, write its data in the hydro.ini file.

**Usage**

```
writeIniHydro(area, params, mode = "other", opts = antaresRead::simOptions())
```

**Arguments**

area	The area where to edit the values.
params	The list data must have specific names and specific types : <ul style="list-style-type: none"> <li>• follow load : logical or NULL</li> <li>• use heuristic : logical or NULL</li> <li>• use water : logical or NULL</li> <li>• hard bounds : logical or NULL</li> <li>• use leeway : logical or NULL</li> <li>• power to level : logical or NULL</li> <li>• reservoir : logical or NULL</li> <li>• inter-daily-breakdown : numeric, integer or NULL</li> <li>• intra-daily-modulation : numeric, integer or NULL</li> <li>• inter-monthly-breakdown : numeric, integer or NULL</li> <li>• leeway low : numeric, integer or NULL</li> <li>• leeway up : numeric, integer or NULL</li> <li>• pumping efficiency : numeric, integer or NULL</li> <li>• initialize reservoir date : numeric, integer or NULL</li> <li>• reservoir capacity : numeric, integer or NULL</li> </ul>
mode	Execution mode. Useful when you create a new area or remove an existing area to avoid control on hydro data.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a> .

**Warning**

For an **Antares version**  $\geq 860$ , control of data consistency between `mingen.txt` and `mod.txt` can be executed.

For an **Antares version**  $\geq 860$ , control of data consistency between `mingen.txt` and `maxpower_<area>.txt` can be executed.

These controls depend on the values you find in `hydro.ini` file.

**Examples**

```
## Not run:
opts <- setSimulationPath(studypath, simulation = "input")
createArea("fictive_area")
writeIniHydro(area = "fictive_area"
, params = list("leeway low" = 2.5, "leeway up" = 25))

## End(Not run)
```

---

writeInputTS

*Write input time series*


---

**Description**

Antares API: **OK**

This function writes input time series in an Antares project.

**Usage**

```
writeInputTS(
  data,
  type = c("load", "hydroROR", "hydroSTOR", "mingen", "wind", "solar", "tsLink"),
  area = NULL,
  link = NULL,
  overwrite = TRUE,
  opts = antaresRead::simOptions()
)
```

**Arguments**

<code>data</code>	A 8760*N matrix of hourly time series, except when <code>type</code> is "hydroSTOR". In this latter case "hydroSTOR" data must have either be 365 rows (Antares v7) or 12 rows (v6 and earlier).
<code>type</code>	Serie to write: "load", "hydroROR", "hydroSTOR", "wind", "solar", "tsLink" or "mingen". If <code>type == "mingen"</code> , "antaresVersion" should be $\geq 860$ . Refers to note section below.

area	The area where to write the input time series.
link	Link for which writing transmission capacities time series, must like "area01%area02" or "area01 - area02" or c("area01", "area02").
overwrite	Logical. Overwrite the values if a file already exists.
opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code>

### Value

An updated list containing various information about the simulation.

### Warning

You cannot use area and link arguments at the same time.

For an **Antares version**  $\geq 860$ , control of data consistency between `mingen.txt` and `mod.txt` can be executed.

These controls depend on the values you find in `hydro.ini` file.

### Note

For an **Antares version**  $\geq 860$ , the `mingen.txt` file is created.

The `mingen.txt` file can be created under two conditions:

- The number of columns must be equal to either 1 or the number in `mod.txt`
- If the `mod.txt` file is empty or has one column, then there is no dimension constraint

### Examples

```
## Not run:  
  
# Write solar time series  
writeInputTS(  
  area = "fictive_area",  
  type = "solar",  
  data = matrix(rep(4, 8760*2), nrow = 8760)  
)  
  
## End(Not run)
```

---

writeMiscGen	<i>Write Misc Gen data</i>
--------------	----------------------------

---

**Description**

Antares API: **OK**

**Usage**

```
writeMiscGen(data, area, opts = antaresRead::simOptions())
```

**Arguments**

data	Data to write.
area	Name of the area for which to write data.
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

**Value**

An updated list containing various information about the simulation.

**Examples**

```
## Not run:

writeMiscGen(matrix(data = c(rep(0, 8760 * 7), rep(-100000, 8760)), ncol = 8), "area1")

## End(Not run)
```

---

writeOutputValues	<i>Write output value for Antares</i>
-------------------	---------------------------------------

---

**Description**

Antares API: **NO**

This function write all output values for an Antares study.

**Usage**

```
writeOutputValues(data, opts = NULL)
```

**Arguments**

data	obtain with readAntares
opts	List of simulation parameters returned by the function <a href="#">antaresRead::setSimulationPath()</a>

**Examples**

```
## Not run:

library(antaresRead)
library(data.table)
opts <- setSimulationPath("my_study")
data <- readAntares(links = "all", areas = "all", clusters = "all")
writeOutputValues(data)

## End(Not run)
```

---

writeSeriesPrepro	<i>Write prepro data</i>
-------------------	--------------------------

---

**Description**

Antares API: **NO**

This function allows to write load, wind and solar prepro data. Using character (0) allows to erase data (cf Examples).

**Usage**

```
writeSeriesPrepro(
  area,
  type = c("load", "wind", "solar"),
  coefficients = NULL,
  daily_profile = NULL,
  translation = NULL,
  conversion = NULL,
  overwrite = TRUE,
  opts = antaresRead::simOptions()
)
```

**Arguments**

area	The area where to write prepro data.
type	Type of data to write : "load", "wind" or "solar".
coefficients	A 12*6 matrix of monthly values for the primary parameters alpha, beta, gamma, delta, theta and mu.
daily_profile	A 24*12 matrix of hourly / monthly coefficients K(hm) that are used to modulate the values of the stationary stochastic process by which the actual process is approximated.
translation	A vector of length 8760 (or 8760*1 matrix) to add to the time-series generated, prior or after scaling.

conversion	A 2*N matrix (with 1<=N<=50) that is used to turn the initial time-series produced by the generators into final data. See Antares General Reference Guide.
overwrite	Logical. Overwrite the values if a file already exists.
opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code> .

### Examples

```
## Not run:

writeSeriesPrepro("fictive_area", type = "solar", daily_profile = matrix(rep(1, 24*12), nrow = 24))

# Erase daily profile data:
writeSeriesPrepro("fictive_area", type = "solar", daily_profile = character(0))

## End(Not run)
```

---

writeWaterValues	<i>Write water values</i>
------------------	---------------------------

---

### Description

Antares API: **OK**

Write water values for a given area.

### Usage

```
writeWaterValues(
  area,
  data = NULL,
  overwrite = TRUE,
  opts = antaresRead::simOptions()
)
```

### Arguments

area	The area where to add the water values.
data	A 365x101 numeric matrix: table of marginal values for the stored energy, which depends on the date (365 days) and on the reservoir level (101 round percentage values ranging from 0% to 100%). OR a 3-column matrix with 365x101 rows. In this latter case the 3 columns must be 'date', 'level' and 'value' (in this order), and the rows must be sorted by: ascending day, ascending level.
overwrite	Logical. Overwrite the values if a file already exists.
opts	List of simulation parameters returned by the function <code>antaresRead::setSimulationPath()</code> .



**Examples**

```
## Not run:
```

```
writeWaterValues("fictive_area", data = matrix(rep(0, 365*101), nrow = 365))
```

```
## End(Not run)
```

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