

Package: rampl (via r-universe)

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Type Package

Title Tools to work with AMPL from R

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Author Sebastian Kranz

Maintainer Sebastian Kranz <sebastian.kranz@uni-ulm.de>

Description Tools to work with AMPL from R. Writing AMPL dat files,
running AMPL locally or using the NEOS solvers.

License GPL (>= 2)

Depends stringr, rgmpl, rneos, data.table, restorepoint

Repository <https://skranz.r-universe.dev>

RemoteUrl <https://github.com/skranz/rampl>

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ampl.make.dat.file *Generates an AMPL data file*

Description

Generates a AMPL data file for the model specified in dat.file sets and param are lists that contain the values of the sets and parameters that are specified in the GMPL model

Usage

```
ampl.make.dat.file(...)
```

Arguments

sets	a list with the sets used by the gmpl model
param	a list with the parameters used by the gmpl model
mod.file	path of the .mod file in which the gmpl model is specified
dat.file	path of the .dat file in which the data shall be written

ampl.make.run.file *Generate a default run file for a given AMPL model*

Description

Generate a default run file for a given AMPL model

Usage

```
ampl.make.run.file(name, run.name = name, options = "", var.out = NULL,
  neos = FALSE, path = getwd(), mod.file = paste(path, "/", name, ".mod",
  sep = ""), run.file = paste(path, "/", run.name, ".run", sep = ""),
  dat.file = paste(path, "/", run.name, ".dat", sep = ""))
```

Arguments

neos	if true a run file for the neos server is created, otherwise for a local call to AMPL
path	path in which mod.file, dat.file and run.file can be found

ampl.run.local

Solves an AMPL model using a local installation of AMPL

Description

You need to have a local AMPL installation with the corresponding solvers. It is assumed that a call to `ampl` finds the executable file, i.e. in Windows you have to add the AMPL directory to the system PATH variable

Usage

```
ampl.run.local(name = "", path = getwd(), run.file = paste(path, "/",
  name, ".run", sep = ""), display = TRUE)
```

Examples

```
## Not run:
# Model of power plant investments and dispatch included in package
mod.file = paste(.path.package(package = "rampl"), "/data/cournot.mod", sep="")
dat.file = paste(.path.package(package = "rampl"), "/data/cournot.dat", sep="")
run.file = paste(getwd(), "/cournot.run", sep="")

ampl.make.run.file(name="cournot", options=c("option solver minos;"), mod.file=mod.file, dat.file=dat.file, run.
ret = ampl.run.local(name="cournot", display=TRUE, run.file=run.file)
ret

# Solve for different parameter values
n = 2
sets = list(N=1:n)
param = list(a=1, b=1, c=c(0.1, 0.1))

dat.file = paste(getwd(), "/cournot.dat", sep="")
run.file = paste(getwd(), "/cournot.run", sep="")
ampl.make.run.file(name="cournot", options=c("option solver minos;"), mod.file=mod.file, dat.file=dat.file, run.

solve.cournot = function(c1=0, c2=0) {
  param$c = c(c1, c2)
  ampl.make.dat.file(mod.file=mod.file, dat.file=dat.file, sets = sets, param=param)
  ret = ampl.run.local(name="cournot", display=FALSE, run.file=run.file)
  t(ret$q)
}
solve.cournot(c1=0.1, c2=0)
library(sktools)
ret = run.scenarios(solve.cournot, par=list(c1=seq(0, 1, length=10), c2=0))
colnames(ret)=c("scen.id", "c1", "c2", "q1", "q2")
ret

## End(Not run)
```

ampl.run.neos

Solves an AMPL model remotely using the NEOS Server

Description

Solves an AMPL model remotely using the NEOS Server

Usage

```
ampl.run.neos(name = "", category = "cp", solver = "PATH",
  path = getwd(), wait = TRUE, mod.file = paste(path, "/", name, ".mod",
  sep = ""), dat.file = paste(path, "/", name, ".dat", sep = ""),
  run.file = paste(path, "/", name, ".run", sep = ""),
  log.file = paste(path, "/log_", name, "_", solver, ".txt", sep = ""))
```

Arguments

name	the model name
category	category of the optimization problem, call <code>neos.ampl.solvers()</code> for an overview
solver	desired solver, call <code>neos.ampl.solvers()</code> for a list
path	path in which <code>mod.file</code> , <code>dat.file</code> and <code>run.file</code> can be found
wait	default=TRUE shall R wait until NEOS returns the solution (may take some time)

Examples

```
## Not run:
# Model of power plant investments and dispatch included in package
mod.file = paste(.path.package(package = "rampl"), "/data/cournot.mod", sep="")
dat.file = paste(.path.package(package = "rampl"), "/data/cournot.dat", sep="")
run.file = paste(getwd(), "/cournot.run", sep="")
ampl.make.run.file(name="cournot", neos=TRUE, mod.file=mod.file, dat.file=dat.file, run.file=run.file, options=c())
ret = ampl.run.neos(name="cournot", category="nco", solver="MINOS", mod.file=mod.file, dat.file=dat.file, run.f
ret

# Solve for different parameter values
n = 2
sets = list(N=1:n)
param = list(a=1,b=1,c=c(0.1,0.1))

dat.file = paste(getwd(), "/cournot.dat", sep="")
run.file = paste(getwd(), "/cournot.run", sep="")

solve.cournot = function(c1=0,c2=0, neos=FALSE) {
  param$c = c(c1,c2)
  ampl.make.dat.file(mod.file=mod.file, dat.file=dat.file, sets = sets, param=param)

  if (!neos) {
```

```
    ampl.make.run.file(name="cournot", options=c("option solver minos;"), mod.file=mod.file, dat.file=dat.file, run.file=run.file,
      ret = ampl.run.local(name="cournot", display=FALSE, run.file=run.file)

  } else {
    ampl.make.run.file(name="cournot", neos=TRUE, mod.file=mod.file, dat.file=dat.file, run.file=run.file, options=c("option solver neos;"),
      ret = ampl.run.neos(name="cournot", category="nco", solver="MINOS", mod.file=mod.file, dat.file=dat.file, run.file=run.file,
        options=c("option solver neos;"))
  }
  t(ret$q)
}
solve.cournot(c1=0.1, c2=0, neos=TRUE)

## End(Not run)
```

fast_str_split_fixed *Quickly splits strings by a fixed pattern*

Description

Quickly splits strings by a fixed pattern

Usage

```
fast_str_split_fixed(pattern, text, ncol = NULL, ...)
```

neos.ampl.solvers *Returns a list of available solver for AMPL on NEOS*

Description

Returns a list of available solver for AMPL on NEOS

Usage

```
neos.ampl.solvers()
```

Examples

```
## Not run:
  neos.ampl.solvers()

## End(Not run)
```

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