

Package ‘ROI.models.miplib’

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Version 1.0-0

Title 'ROI' Access to 'MIPLIB' 2010 Benchmark Instances

Description The mixed integer programming library 'MIPLIB' (see <http://miplib.zib.de/>) is commonly used to compare the performance of mixed integer optimization solvers. This package provides functions to access 'MIPLIB' from the 'R' Optimization Infrastructure ('ROI'). More information about 'MIPLIB' can be found in the paper by Koch et al. available at <http://mpc.zib.de/index.php/MPC/article/viewFile/56/28>. The 'README.md' file illustrates how to use this package.

Depends R (>= 2.10)

Imports R.utils, Rglpk, ROI (>= 0.3-0)

License GPL-3

URL <http://R-Forge.R-project.org/projects/roi>

RoxygenNote 6.1.1

NeedsCompilation no

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miplib*Access the Downloaded MIPLIB*

Description

Get one or more optimization problems, meta information or a listing of the available MIPLIB 2010 problems.

Usage

```
miplib(x, folder = system.file("roi_op", package = "ROI.models.miplib"))
```

Arguments

x	a character giving the names of the optimization problems to be returned, if x is "all" all available problems are returned, if x is the name of a single problem the given problem is returned. If x is missing a listing of all available problems is returned. If x is "metainfo" the meta information about the problems is returned.
folder	the folder where the optimization problems are stored.

Details

The function `miplib` searches in the given folder for `.rds` files and returns them.

Examples

```
## Not run:  
## list all available MIPLIB-2010 problems  
miplib()  
## get all miplib problems  
miplib("all")  
## get a single problem  
miplib("rmine6")  
## get the meta information  
miplib("metainfo")  
  
## End(Not run)
```

miplib_download *Download the 'MIPLIB 2010' Test Problem Set*

Description

The MIPLIB 2010 test problem set is downloaded and transformed from the MPS format into the **ROI** format. The results are stored as '.rds' files at the location provided via the parameter folder.

```
miplib_download_metainfo()
```

Usage

```
miplib_download_all(  
  url = "http://miplib2010.zib.de/download/miplib2010-1.1.3-complete.tgz",  
  folder = system.file("roi_op", package = "ROI.models.miplib"),  
  method = NULL, quiet = TRUE, force = FALSE, cleanup = TRUE)
```

```
miplib_download_benchmark(  
  url = "http://miplib2010.zib.de/download/miplib2010-1.1.3-benchmark.tgz",  
  folder = system.file("roi_op", package = "ROI.models.miplib"),  
  method = NULL, quiet = TRUE, force = FALSE, cleanup = TRUE)
```

```
miplib_download_metainfo(  
  url = "http://miplib2010.zib.de/download/miplib2010_all.solu",  
  folder = system.file("roi_op", package = "ROI.models.miplib"),  
  force = FALSE)
```

Arguments

url	a character giving the url to MIPLIB 2010.
folder	an optional character giving the location where the MIPLIB 2010 test problem set should be downloaded to.
method	a character giving the method to be used for downloading files, for more information see download.file .
quiet	a logical giving if status messages should be suppressed.
force	a logical if TRUE (default is FALSE) the download is forced, regardless if the metainfo was downloaded previously.
cleanup	a logical if TRUE (default is TRUE) the downloaded temporary files are deleted after the download an conversion is completed.

Details

- `miplib_download_all` download all MIPLIB-2010 instances (around 1.3 GB).
- `miplib_download_benchmark` download the MIPLIB-2010 benchmark instances (around 94 MB).
- `miplib_download_metainfo` download the available meta information.

Examples

```
## Not run:  
  
## download all MIPLIB-2010 instances (around 1.3 GB)  
miplib_download_all()  
## or  
miplib_download_all(folder = "data/miplib")  
  
## download MIPLIB-2010 benchmark instances (around 94 MB)  
miplib_download_benchmark()  
## or  
miplib_download_benchmark(folder = "data/miplib")  
  
## download meta information  
miplib_download_metainfo()  
  
## End(Not run)
```

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