

Package ‘clpAPI’

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Type Package

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Imports methods

Description R Interface to C API of COIN-OR Clp, depends on COIN-OR Clp Version >= 1.12.0.

SystemRequirements COIN-OR Clp (>= 1.12.0)

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LazyLoad yes

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clpAPI-package	<i>R Interface to C API of COIN-OR Clp</i>
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Description

A low level interface to COIN-OR Clp (COIN Linear Program code).

Details

The package clpAPI provides access to the callable library of COIN-OR Clp from within R.

Author(s)

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References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

Examples

```
# load package
library(clpAPI)

# preparing the model
lp <- initProbCLP()

nrows <- 5
ncols <- 8

# objective function
obj <- c(1, 0, 0, 0, 2, 0, 0, -1)
```

```

# upper and lower bounds of the rows
rlower <- c(2.5, -1000, 4, 1.8, 3)
rupper <- c(1000, 2.1, 4, 5, 15)

# upper and lower bounds of the columns
clower <- c(2.5, 0, 0, 0, 0.5, 0, 0, 0)
cupper <- c(1000, 4.1, 1, 1, 4, 1000, 1000, 4.3)

# constraint matrix
ia <- c(0, 4, 0, 1, 1, 2, 0, 3, 0, 4, 2, 3, 0, 4)
ja <- c(0, 2, 4, 6, 8, 10, 11, 12, 14)
ar <- c(3.0, 5.6, 1.0, 2.0, 1.1, 1.0, -2.0, 2.8,
        -1.0, 1.0, 1.0, -1.2, -1.0, 1.9)

# direction of optimization
setObjDirCLP(lp, 1)

# load problem data
loadProblemCLP(lp, ncols, nrows, ia, ja, ar,
               clower, cupper, obj, rlower, rupper)

# solve lp problem
solveInitialCLP(lp)

# retrieve the results
getSolStatusCLP(lp)
getObjValCLP(lp)
getColPrimCLP(lp)

# remove problem object
delProbCLP(lp)

```

addColsCLP

Add Columns

Description

Low level interface function to the COIN-OR Clp function `Clp_addColumns`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
addColsCLP(lp, ncols, lb, ub, obj, colst, rows, val)
```

Arguments

lp	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
ncols	Number of columns to add.

lb	Lower bounds of the new columns.
ub	Upper bounds of the new columns.
obj	Objective coefficients of the new columns.
colst	Vector containing the starting indices of new rows (Arguments rows and val must be in column major order). The first element of colst must be 0, the last element must be length(val)+1.
rows	Row indices of the non zero elements in the new columns.
val	Numerical values of the new non zero elements.

Details

Interface to the C function addRows which calls the COIN-OR Clp function Clp_addRows.

Value

NULL

Author(s)

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Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

addRowsCLP

Add Rows

Description

Low level interface function to the COIN-OR Clp function Clp_addRows. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
addRowsCLP(lp, nrows, lb, ub, rowst, cols, val)
```

Arguments

lp	An object of class "clpPtr" as returned by initProbCLP . This is basically a pointer to a COIN-OR Clp problem object.
nrows	Number of rows to add.
lb	Lower bounds of the new rows.
ub	Upper bounds of the new rows.

rowst	Vector containing the starting indices of new rows (Arguments cols and val must be in row major order). The first element of rowst must be 0, the last element must be length(val)+1.
cols	Column indices of the non zero elements in the new rows.
val	Numerical values of the new non zero elements.

Details

Interface to the C function addRows which calls the COIN-OR Clp function Clp_addRows.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

chgColLowerCLP	<i>Set/Change Column Lower Bounds</i>
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Description

Low level interface function to the COIN-OR Clp function Clp_chgColumnLower. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
chgColLowerCLP(lp, lb)
```

Arguments

lp	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
lb	Numeric vector containing the lower bounds of the columns of the model.

Details

Interface to the C function chgColLower which calls the COIN-OR Clp function Clp_chgColumnLower.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

chgColUpperCLP

Set/Change Column Upper Bounds

Description

Low level interface function to the COIN-OR Clp function Clp_chgColumnUpper. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
chgColUpperCLP(lp, ub)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

ub Numeric vector containing the upper bounds of the columns of the model.

Details

Interface to the C function `chgColUpper` which calls the COIN-OR Clp function `Clp_chgColumnUpper`.

Value

NULL

Author(s)

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Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

chgObjCoefsCLP *Set/Change Objective Coefficients*

Description

Low level interface function to the COIN-OR Clp function `Clp_chgObjCoefficients`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
chgObjCoefsCLP(lp, objCoef)
```

Arguments

lp	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
objCoef	Numeric vector containing the objective coefficients of the model.

Details

Interface to the C function `chgObjCoefs` which calls the COIN-OR Clp function `Clp_chgObjCoefficients`.

Value

NULL

Author(s)

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Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

chgRowLowerCLP *Set/Change Row Lower Bounds*

Description

Low level interface function to the COIN-OR Clp function Clp_chgRowLower. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
chgRowLowerCLP(lp, rlb)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

rlb Numeric vector containing the lower bounds of the rows of the model.

Details

Interface to the C function `chgColLower` which calls the COIN-OR Clp function `Clp_chgRowLower`.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

chgRowUpperCLP *Set/Change Row Upper Bounds*

Description

Low level interface function to the COIN-OR Clp function Clp_chgRowUpper. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
chgRowUpperCLP(lp, rub)
```

Arguments

- lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.
- rub Numeric vector containing the upper bounds of the rows of the model.

Details

Interface to the C function `chgRowUpper` which calls the COIN-OR Clp function `Clp_chgRowUpper`.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

clpPtr-class

Class "clpPtr"

Description

Structure of the class "clpPtr". Objects of that class are used to hold pointers to C structures used by COIN-OR Clp.

Objects from the Class

Objects can be created by calls of the form
`test <- initProbCLP()`.

Slots

`clpPtrType`: Object of class "character" giving the pointer type.

`clpPointer`: Object of class "externalptr" containig the pointer to a C structure.

Methods

isCLPpointer signature(object = "clpPtr"): returns TRUE if clpPointer(object) is a pointer to a COIN-OR Clp problem object, otherwise FALSE.

isNULLpointerCLP signature(object = "clpPtr"): returns TRUE if clpPointer(object) is a NULL pointer, otherwise FALSE.

clpPointer signature(object = "clpPtr"): gets the clpPointer slot.

clpPtrType signature(object = "clpPtr"): gets the clpPtrType slot.

clpPtrType<- signature(object = "clpPtr"): sets the clpPtrType slot.

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References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

See Also

[initProbCLP](#)

Examples

```
showClass("clpPtr")
```

copyNamesCLP

Copy Column and Row Names in the Model

Description

Low level interface function to the COIN-OR Clp function Clp_copyNames. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
copyNamesCLP(lp, cnames, rnames)
```

Arguments

lp	An object of class "clpPtr" as returned by initProbCLP . This is basically a pointer to a COIN-OR Clp problem object.
cnames	Character vector, containing the column names, must not be longer than the number of columns in the model.
rnames	Character vector, containing the row names, must not be longer than the number of rows in the model.

Details

Interface to the C function copyNames which calls the COIN-OR Clp function Clp_copyNames.

Value

NULL

Author(s)

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References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

delColsCLP

Delete Columns in the Model

Description

Low level interface function to the COIN-OR Clp function Clp_deleteColumns. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
delColsCLP(lp, num, j)
```

Arguments

lp	An object of class "clpPtr" as returned by initProbCLP . This is basically a pointer to a COIN-OR Clp problem object.
num	Number of columns to delete.
j	Integer vector, containing the indices of columns to delete (the first column has index 0).

Details

Interface to the C function delCols which calls the COIN-OR Clp function Clp_deleteColumns.

Value

NULL

Author(s)

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References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

delProbCLP	<i>Delete Problem Object</i>
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Description

Low level interface function to the COIN-OR Clp function Clp_deleteModel. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
delProbCLP(lp)
```

Arguments

lp	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
----	---

Details

Interface to the C function `delProb` which calls the COIN-OR Clp function `Clp_deleteModel`.

Value

NULL

Author(s)

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Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

`delRowsCLP`*Delete Rows in the Model*

Description

Low level interface function to the COIN-OR Clp function `Clp_deleteRows`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
delRowsCLP(lp, num, i)
```

Arguments

<code>lp</code>	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
<code>num</code>	Number of rows to delete.
<code>i</code>	Integer vector, containing the indices of rows to delete (the first row has index 0).

Details

Interface to the C function `delRows` which calls the COIN-OR Clp function `Clp_deleteRows`.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

`dropNamesCLP`*Drop Names in the Model*

Description

Low level interface function to the COIN-OR Clp function `Clp_dropNames`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
dropNamesCLP(lp)
```

Arguments

`lp` An object of class "`clpPtr`" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `dropNames` which calls the COIN-OR Clp function `Clp_dropNames`.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

`dualCLP`*Solve LP Problem with the Dual Simplex Method*

Description

Low level interface function to the COIN-OR Clp function `Clp_dual`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
dualCLP(lp, ifValP = 0)
```

Arguments

- lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.
- ifValP An integer value.

Details

Interface to the C function `dual` which calls the COIN-OR Clp function `Clp_dual`.

Value

A return code.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getColDualCLP

Retrieve all Column Dual Values

Description

Low level interface function to the COIN-OR Clp function `Clp_dualColumnSolution`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getColDualCLP(lp)
```

Arguments

- lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getColDual` which calls the COIN-OR Clp functions `Clp_numberColumns` and `Clp_dualColumnSolution`.

Value

Returns all dual values of the structural variables as a numeric vector.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getColLowerCLP	<i>Retrieve Column Lower Bound</i>
----------------	------------------------------------

Description

Low level interface function to the COIN-OR Clp function Clp_columnLower. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getColLowerCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by [initProbCLP](#). This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function getColLower which calls the COIN-OR Clp functions Clp_numberColumns and Clp_columnLower.

Value

The lower bounds of the models columns (the corresponding structural variables) are returned.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getColPrimCLP *Retrieve all Column Primal Values*

Description

Low level interface function to the COIN-OR Clp function Clp_primalColumnSolution. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getColPrimCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getColPrim` which calls the COIN-OR Clp functions `Clp_numberColumns` and `Clp_primalColumnSolution`.

Value

Returns all primal values of the structural variables as a numeric vector.

Author(s)

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References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getColUpperCLP *Retrieve Column Upper Bounds*

Description

Low level interface function to the COIN-OR Clp function `Clp_columnUpper`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getColUpperCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getColLower` which calls the COIN-OR Clp functions `Clp_numberColumns` and `Clp_columnUpper`.

Value

The upper bounds of the models columns (the corresponding structural variables) are returned.

Author(s)

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References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getHitMaximumIterationsCLP

Returns True if Hit Maximum Iterations (or Time)

Description

Low level interface function to the COIN-OR Clp function `Clp_hitMaximumIterations`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getHitMaximumIterationsCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getHitMaximumIterations` which calls the COIN-OR Clp function `Clp_hitMaximumIterations`.

Value

True if hit maximum iterations (or time)

Author(s)

C. Jonathan Fritzeimer <clausjonathan.fritzeimer@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getIndCLP	<i>Retrieve Row Indices of the Non Zero Elements in the Constraint Matrix</i>
-----------	---

Description

Low level interface function to the COIN-OR Clp function Clp_getIndices. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getIndCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by [initProbCLP](#). This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function getInd which calls the COIN-OR Clp functions Clp_numberColumns and Clp_getIndices.

Value

An integer vector containing the row Indices of the non zero elements in the constraint matrix.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getLogLevelCLP *Retrieve the Log Level Flag*

Description

Low level interface function to the COIN-OR Clp function Clp_logLevel. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getLogLevelCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getLogLevel` which calls the COIN-OR Clp function `Clp_logLevel`.

Value

Returns the log level flag: 0: nothing, 1: just final, 2: just factorizations, 3: as 2 plus a bit more, 4: verbose.

Author(s)

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References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getMaximumIterationsCLP
Returns Maximum Number of Iterations

Description

Low level interface function to the COIN-OR Clp function `maximumIterations`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getMaximumIterationsCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getMaximumIterations` which calls the COIN-OR Clp function `maximumIterations`.

Value

Maximum number of iterations

Author(s)

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Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getMaximumSecondsCLP *Maximum Time in Seconds (from when Set called)*

Description

Low level interface function to the COIN-OR Clp function `Clp_maximumSeconds`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getMaximumSecondsCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getMaximumSeconds` which calls the COIN-OR Clp function `Clp_maximumSeconds`.

Value

Maximum time in seconds (from when set called)

Author(s)

C. Jonathan Fritzemeier <clausjonathan.fritzemeier@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getNnzCLP	<i>Retrieve the Non Zero Elements of the Constraint Matrix in Column Major Order.</i>
-----------	---

Description

Low level interface function to the COIN-OR Clp function Clp_getElements. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getNnzCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getNnz` which calls the COIN-OR Clp functions `Clp_getNumElements` and `Clp_getElements`.

Value

A numeric vector containing the non zero elements of the constraint matrix in column major order.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

`getNumColsCLP`*Retrieve the Current Number of Columns in the Model*

Description

Low level interface function to the COIN-OR Clp function `Clp_numberColumns`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getNumColsCLP(lp)
```

Arguments

`lp` An object of class "`clpPtr`" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getNumCols` which calls the COIN-OR Clp function `Clp_numberColumns`.

Value

The current number of columns in the model.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

`getNumNnzCLP`*Retrieve the Current Number of Non Zero Elements in the Model*

Description

Low level interface function to the COIN-OR Clp function `Clp_getNumElements`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getNumNnzCLP(lp)
```

Arguments

lp An object of class "`clpPtr`" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getNumNnz` which calls the COIN-OR Clp function `Clp_getNumElements`.

Value

Returns the current number of non zero elements in the model.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getNumRowsCLP

Retrieve the Current Number of Rows in the Model

Description

Low level interface function to the COIN-OR Clp function `Clp_numberRows`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getNumRowsCLP(lp)
```

Arguments

lp An object of class "`clpPtr`" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getNumRows` which calls the COIN-OR Clp function `Clp_numberRows`.

Value

The current number of rows in the model.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getObjCoefsCLP

Retrieve Objective Coefficients

Description

Low level interface function to the COIN-OR Clp function `Clp_objective`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getObjCoefsCLP(lp)
```

Arguments

`lp` An object of class "`clpPtr`" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getObjCoefs` which calls the COIN-OR Clp functions `Clp_numberColumns` and `Clp_objective`.

Value

A numeric vector containing the objective coefficients.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getObjDirCLP	<i>Retrieve Optimization Direction Flag</i>
--------------	---

Description

Low level interface function to the COIN-OR Clp function `Clp_optimizationDirection`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getObjDirCLP(lp)
```

Arguments

`lp` An object of class "`clpPtr`" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getObjDir` which calls the COIN-OR Clp function `Clp_optimizationDirection`.

Value

Returns the optimization direction flag: 1: minimize, -1: maximize, 0: ignore.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getObjValCLP	<i>Retrieve the Value of the Objective Function After Optimization</i>
--------------	--

Description

Low level interface function to the COIN-OR Clp function `Clp_objectiveValue`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getObjValCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getObjVal` which calls the COIN-OR Clp function `Clp_objectiveValue`.

Value

Returns the value of the objective function after optimization.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getRowDualCLP

Retrieve all Row Dual Values

Description

Low level interface function to the COIN-OR Clp function `Clp_dualRowSolution`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getRowDualCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getRowDual` which calls the COIN-OR Clp functions `Clp_numberRows` and `Clp_dualRowSolution`.

Value

Returns all dual values of the auxiliary variables as a numeric vector.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getRowLowerCLP	<i>Retrieve Row Lower Bound</i>
----------------	---------------------------------

Description

Low level interface function to the COIN-OR Clp function Clp_rowLower. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getRowLowerCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by [initProbCLP](#). This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function getRowLower which calls the COIN-OR Clp functions Clp_numberRows and Clp_rowLower.

Value

The lower bounds of the models rows are returned.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getRowPrimCLP *Retrieve all Row Primal Values*

Description

Low level interface function to the COIN-OR Clp function Clp_primalRowSolution. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getRowPrimCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getRowPrim` which calls the COIN-OR Clp functions `Clp_numberRows` and `Clp_primalRowSolution`.

Value

Returns all primal values of the auxiliary variables as a numeric vector.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getRowUpperCLP *Retrieve Row Upper Bound*

Description

Low level interface function to the COIN-OR Clp function `Clp_rowUpper`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getRowUpperCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getRowUpper` which calls the COIN-OR Clp functions `Clp_numberRows` and `Clp_rowUpper`.

Value

The upper bounds of the models rows are returned.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getScaleFlagCLP

Retrieve the Scale Flag

Description

Low level interface function to the COIN-OR Clp function `Clp_scalingFlag`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getScaleFlagCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getScaleFlag` which calls the COIN-OR Clp function `Clp_scalingFlag`.

Value

Returns the scaling flag: 0: off, 1: equilibrium, 2: geometric, 3: auto, 4: dynamic (later - maybe not implemented in CLP?).

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getSolStatusCLP	<i>Retrieve the Solution Status</i>
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Description

Low level interface function to the COIN-OR Clp function Clp_status. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getSolStatusCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by [initProbCLP](#). This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function getSolStatus which calls the COIN-OR Clp function Clp_status.

Value

The solution status: 0: optimal, 1: primal infeasible, 2: dual infeasible, 3: stopped on iterations etc, 4: stopped due to errors.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getVecLenCLP	<i>Retrieve the Number of Non Zero Elements per Column</i>
--------------	--

Description

Low level interface function to the COIN-OR Clp function Clp_getVectorLengths. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getVecLenCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getVecLen` which calls the COIN-OR Clp functions `Clp_numberColumns` and `Clp_getVectorLengths`.

Value

An integer vector containing the number of non zero elements per column.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

getVecStartCLP	<i>Retrieve Column Starts in Constraint Matrix</i>
----------------	--

Description

Low level interface function to the COIN-OR Clp function Clp_getVectorStarts. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
getVecStartCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `getVecStart` which calls the COIN-OR Clp functions `Clp_numberColumns` and `Clp_getVectorStarts`.

Value

An integer vector containing the column starts in the constraint matrix.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

idiotCLP

Solve LP Problem with the idiot Code

Description

Low level interface function to the COIN-OR Clp function `Clp_idiot`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
idiotCLP(lp, thd = 0)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

thd An integer value.

Details

Interface to the C function `idiot` which calls the COIN-OR Clp function `Clp_idiot`.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

initProbCLP

Create a COIN-OR Clp Problem Object

Description

Low level interface function to the COIN-OR Clp function Clp_newModel. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
initProbCLP(ptrtype = "clp_prob")
```

Arguments

ptrtype A name for the pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `initProb` which calls the COIN-OR Clp function `Clp_newModel`.

Value

An instance of class "`clpPtr`".

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

isAvailableFuncCLP	<i>Check if some newer functions relying on CLP version $\geq 1.17.2$ are available</i>
--------------------	--

Description

Checks if functions like setRowNameCLP, setColNameCLP, writeMpsCLP, and modifyCoefficientCLP are available.

Usage

```
isAvailableFuncCLP(funcname)
```

Arguments

funcname	The name of the function.
----------	---------------------------

Details

Some functions of the API require that the package was build against CLP version $\geq 1.17.2$, otherwise they will be dummy functions. These functions are setRowNameCLP, setColNameCLP, writeMpsCLP, and modifyCoefficientCLP. This function tests, if these functions are available.

Value

TRUE, if the respective function is available, returns FALSE, if it is not. If the funcname does not match one of the mentioned functions, it returns FALSE.

Author(s)

Mayo Roettger <mayo.roettger@hhu.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

lengthNamesCLP	<i>Length of the Names in the Model</i>
----------------	---

Description

Low level interface function to the COIN-OR Clp function Clp_lengthNames. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
lengthNamesCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `lengthNames` which calls the COIN-OR Clp function `Clp_lengthNames`.

Value

Number of characters of the longest name in the Model.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

loadMatrixCLP

Load Constraint Matrix

Description

Low level interface function to the COIN-OR Clp function `Clp_loadProblem`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
loadMatrixCLP(lp, ncols, nrows, ia, ja, ra)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

ncols Number of Columns.

nrows Number of Rows.

ia Row indices in the constraint matrix.

ja Column starts in constraint matrix.

ra Non zero elements of the constraint matrix.

Details

Interface to the C function `loadMatrix` which calls the COIN-OR Clp function `Clp_loadProblem`.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

ReferencesThe COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

loadProblemCLP

*Load Problem Data***Description**

Low level interface function to the COIN-OR Clp function Clp_loadProblem. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
loadProblemCLP(lp, ncols, nrows, ia, ja, ra,
               lb = NULL, ub = NULL, obj_coef = NULL,
               rlb = NULL, rub = NULL)
```

Arguments

lp	An object of class "clpPtr" as returned by initProbCLP . This is basically a pointer to a COIN-OR Clp problem object.
ncols	Number of Columns.
nrows	Number of Rows.
ia	Row indices in the constraint matrix.
ja	Column starts in constraint matrix.
ra	Non zero elements of the constraint matrix.
lb	Column lower bounds.
ub	Column upper bounds.
obj_coef	Objective coefficients.
rlb	Row lower bounds.
rub	Row upper bounds.

Details

Interface to the C function loadProblem which calls the COIN-OR Clp function Clp_loadProblem.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

ReferencesThe COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

modifyCoefficientCLP *Change matrix coefficients*

Description

Low level interface function to the COIN-OR Clp function Clp_modifyCoefficient. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
modifyCoefficientCLP(lp, i, j, e1, keepZero = TRUE)
```

Arguments

lp	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
i	Row index (starts with 0).
j	Column index (starts with 0).
e1	Coefficient to set.
keepZero	If set to TRUE, keep zeroes.

Details

Interface to the C function `modifyCoefficient` which calls the COIN-OR Clp function `Clp_modifyCoefficient`.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

primalCLP

Solve LP Problem with the Primal Simplex Method

Description

Low level interface function to the COIN-OR Clp function `Clp_primal`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
primalCLP(lp, ifValP = 0)
```

Arguments

<code>lp</code>	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
<code>ifValP</code>	An integer value.

Details

Interface to the C function `primal` which calls the COIN-OR Clp function `Clp_primal`.

Value

A return code.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

printModelCLP	<i>Print the Model to STDOUT</i>
---------------	----------------------------------

Description

Low level interface function to the COIN-OR Clp function Clp_printModel. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
printModelCLP(lp, prefix = "CLPmodel")
```

Arguments

lp	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
prefix	A character string containing a name for the model.

Details

Interface to the C function `printModel` which calls the COIN-OR Clp function `Clp_printModel`.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

probNameCLP	<i>Set Problem Name</i>
-------------	-------------------------

Description

Low level interface function to the COIN-OR Clp function Clp_problemName. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
probNameCLP(lp, pname)
```

Arguments

lp	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
pname	A single character string containing the problem name.

Details

Interface to the C function `probName` which calls the COIN-OR Clp function `Clp_problemName`.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

readMPSCLP

Read Problem in (Free) MPS Format

Description

Low level interface function to the COIN-OR Clp function `Clp_readMps`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
readMPSCLP(lp, fname, keepNames = TRUE, ignoreErrors = FALSE)
```

Arguments

lp	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
fname	A filename.
keepNames	Boolean, keep variable names.
ignoreErrors	If set to TRUE, errors will be ignored.

Details

Interface to the C function `readMPS` which calls the COIN-OR Clp function `Clp_readMps`.

Value

Returns zero on success, otherwise non zero.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

resizeCLP

Resize a Model

Description

Low level interface function to the COIN-OR Clp function Clp_resize. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
resizeCLP(lp, nrows, ncols)
```

Arguments

lp	An object of class "clpPtr" as returned by initProbCLP . This is basically a pointer to a COIN-OR Clp problem object.
nrows	Number of rows.
ncols	Number of columns.

Details

Interface to the C function `resize` which calls the COIN-OR Clp function `Clp_resize`.

The function `resize` can produce a larger model. If the current number of rows and columns is n and m respectively and you set `nrows` to i and `ncols` to j , the new number of rows and columns will be i and j . It is not possible to scale down the model. In order to delete rows or columns, use [delRowsCLP](#) or [delColsCLP](#).

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

See Also

[delRowsCLP](#) and [delColsCLP](#).

restoreModelCLP	<i>Restore model from file</i>
-----------------	--------------------------------

Description

Low level interface function to the COIN-OR Clp function `Clp_restoreModel`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
restoreModelCLP(lp, fname)
```

Arguments

lp	An object of class " <code>clpPtr</code> " as returned by initProbCLP . This is basically a pointer to a COIN-OR Clp problem object.
fname	A filename.

Details

Interface to the C function `restoreModel` which calls the COIN-OR Clp function `Clp_restoreModel`.

Value

Returns zero on success, otherwise non zero.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

return_codeCLP	<i>Translates a COIN-OR Clp Return Code into a Human Readable String</i>
----------------	--

Description

Translates a COIN-OR Clp return code into a human readable string.

Usage

```
return_codeCLP(code)
```

Arguments

code	Return code from COIN-OR Clp.
------	-------------------------------

Value

A character string associated with the COIN-OR Clp return code.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

saveModelCLP	<i>Save model to file</i>
--------------	---------------------------

Description

Low level interface function to the COIN-OR Clp function Clp_saveModel. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
saveModelCLP(lp, fname)
```

Arguments

lp	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
fname	A filename.

Details

Interface to the C function `saveModel` which calls the COIN-OR Clp function `Clp_saveModel`.

Value

Returns zero on success, otherwise non zero.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

scaleModelCLP	<i>Set/Unset the Scaling Flag (Method)</i>
---------------	--

Description

Low level interface function to the COIN-OR Clp function `Clp_scaling`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
scaleModelCLP(lp, mode)
```

Arguments

lp	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
mode	Scaling flag: 0: off, 1: equilibrium, 2: geometric, 3: auto, 4: dynamic (later - maybe not implemented in CLP?).

Details

Interface to the C function `scaleModel` which calls the COIN-OR Clp function `Clp_scaling`.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

setColNameCLP	<i>Set column name</i>
---------------	------------------------

Description

Low level interface function to the COIN-OR Clp function `Clp_setColumnName`. Consult the COIN-OR Clp documentation for more detailed information. This function is only available, if you are using COIN-OR Clp version $\geq 1.17.2$.

Usage

```
setColNameCLP(lp, j, cname)
```

Arguments

lp	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
j	Column index.
cname	A single character string containing the column name.

Details

Interface to the C function `setColName` which calls the COIN-OR Clp function `Clp_setColumnName`.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

setLogLevelCLP	<i>Set the Amount of Output to STDOUT</i>
----------------	---

Description

Low level interface function to the COIN-OR Clp function `Clp_setLogLevel`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
setLogLevelCLP(lp, amount)
```

Arguments

lp	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
amount	Log level flag: 0: nothing, 1: just final, 2: just factorizations, 3: as 2 plus a bit more, 4: verbose.

Details

Interface to the C function `setLogLevel` which calls the COIN-OR Clp function `Clp_setLogLevel`.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

`setMaximumIterationsCLP`*Set the Maximum Number of Iterations*

Description

Low level interface function to the COIN-OR Clp function `Clp_setMaximumIterations`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
setMaximumIterationsCLP(lp, iterations)
```

Arguments

<code>lp</code>	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
<code>iterations</code>	Number of iterations

Details

Interface to the C function `setMaximumIterations` which calls the COIN-OR Clp function `Clp_setMaximumIterations`.

Value

NULL

Author(s)

C. Jonathan Fritzscheier <clausjonathan.fritzscheier@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

setMaximumSecondsCLP *Set the Maximum Time in Seconds*

Description

Low level interface function to the COIN-OR Clp function Clp_setMaximumSeconds. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
setMaximumSecondsCLP(lp, seconds)
```

Arguments

lp	An object of class "clpPtr" as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
seconds	Maximum duration in seconds

Details

Interface to the C function `setMaximumSeconds` which calls the COIN-OR Clp function `Clp_setMaximumSeconds`.

Value

NULL

Author(s)

C. Jonathan Fritzeimer <clausjonathan.fritzeimer@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

setNumberIterationsCLP
Set the Number of Iterations

Description

Low level interface function to the COIN-OR Clp function `Clp_setNumberIterations`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
setNumberIterationsCLP(lp, iterations)
```

Arguments

lp	An object of class "clpPtr" as returned by initProbCLP . This is basically a pointer to a COIN-OR Clp problem object.
iterations	Number of iterations

Details

Interface to the C function `setNumberIterations` which calls the COIN-OR Clp function `Clp_setNumberIterations`.

Value

NULL

Author(s)

C. Jonathan Fritzemeier <clausjonathan.fritzemeier@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

setObjDirCLP

Set/Change Optimization Direction Flag

Description

Low level interface function to the COIN-OR Clp function `Clp_setOptimizationDirection`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
setObjDirCLP(lp, lpdire)
```

Arguments

lp	An object of class "clpPtr" as returned by initProbCLP . This is basically a pointer to a COIN-OR Clp problem object.
lpdire	Optimization direction flag: 1: minimize, -1: maximize, 0: ignore.

Details

Interface to the C function `setObjDir` which calls the COIN-OR Clp function `Clp_setOptimizationDirection`.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

ReferencesThe COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

`setRowNameCLP`*Set row name*

Description

Low level interface function to the COIN-OR Clp function `Clp_setRowName`. Consult the COIN-OR Clp documentation for more detailed information. This function is only available, if you are using COIN-OR Clp version $\geq 1.17.2$.

Usage

```
setRowNameCLP(lp, i, rname)
```

Arguments

<code>lp</code>	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
<code>i</code>	Row index.
<code>rname</code>	A single character string containing the row name.

Details

Interface to the C function `setRowName` which calls the COIN-OR Clp function `Clp_setRowName`.

Value

NULL

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

ReferencesThe COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

`solveInitialBarrierCLP`*Solve LP Problem with the Initial Barrier Method*

Description

Low level interface function to the COIN-OR Clp function `Clp_initialBarrierSolve`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
solveInitialBarrierCLP(lp)
```

Arguments

`lp` An object of class "`clpPtr`" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `solveInitialBarrier` which calls the COIN-OR Clp function `Clp_initialBarrierSolve`.

Value

A return code.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

`solveInitialBarrierNoCrossCLP`*Solve LP Problem with the Initial Barrier Method (no Crossover)*

Description

Low level interface function to the COIN-OR Clp function `Clp_initialBarrierNoCrossSolve`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
solveInitialBarrierNoCrossCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `solveInitialBarrierNoCross` which calls the COIN-OR Clp function `Clp_initialBarrierNoCrossSolve`.

Value

A return code.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

solveInitialCLP

Solve LP Problem with a General Solve Algorithm

Description

Low level interface function to the COIN-OR Clp function `Clp_initialSolve`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
solveInitialCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `solveInitial` which calls the COIN-OR Clp function `Clp_initialSolve`.

Value

A return code.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

solveInitialDualCLP *Solve LP Problem with the Initial Dual Simplex Method*

Description

Low level interface function to the COIN-OR Clp function Clp_initialDualSolve. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
solveInitialDualCLP(lp)
```

Arguments

lp An object of class "clpPtr" as returned by [initProbCLP](#). This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function solveInitialDual which calls the COIN-OR Clp function Clp_initialDualSolve.

Value

A return code.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

solveInitialPrimalCLP *Solve LP Problem with the Initial Primal Simplex Method*

Description

Low level interface function to the COIN-OR Clp function `Clp_initialPrimalSolve`. Consult the COIN-OR Clp documentation for more detailed information.

Usage

```
solveInitialPrimalCLP(lp)
```

Arguments

`lp` An object of class "`clpPtr`" as returned by `initProbCLP`. This is basically a pointer to a COIN-OR Clp problem object.

Details

Interface to the C function `solveInitialPrimal` which calls the COIN-OR Clp function `Clp_initialPrimalSolve`.

Value

A return code.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

<code>status_codeCLP</code>	<i>Translates a COIN-OR Clp Status Value into a Human Readable String</i>
-----------------------------	---

Description

Translates a COIN-OR Clp status value into a human readable string.

Usage

```
status_codeCLP(code)
```

Arguments

code Status code from COIN-OR Clp.

Value

A character string associated with the COIN-OR Clp status code.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

versionCLP

Determine COIN-OR Clp Callable Library Version

Description

Low level interface function to the COIN-OR Clp constant CLP_VERSION. Consult the COIN-OR Clp documentation for more detailed information.

Usage

versionCLP()

Details

Interface to the C function version which returns the COIN-OR Clp version number.

Value

Returns a single character value containing the COIN-OR Clp version number.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

writeMPSCLP *Write an MPS Format file to the given filename*

Description

Low level interface function to the COIN-OR Clp function `Clp_writeMps`. Consult the COIN-OR Clp documentation for more detailed information. This function is only available, if you are using COIN-OR Clp version $\geq 1.17.2$.

Usage

```
writeMPSCLP(lp, fname, formatType = 0, numberAcross = 1, objSense = 1)
```

Arguments

<code>lp</code>	An object of class " <code>clpPtr</code> " as returned by <code>initProbCLP</code> . This is basically a pointer to a COIN-OR Clp problem object.
<code>fname</code>	A filename.
<code>formatType</code>	Integer value: 0 = normal, 1 = extra or 2 = hex.
<code>numberAcross</code>	Number across is 1 or 2.
<code>objSense</code>	Use <code>objSense = -1</code> to flip the objective function around.

Details

Interface to the C function `writeMps` which calls the COIN-OR Clp function `Clp_writeMps`.

Value

Returns zero on success, otherwise non zero.

Author(s)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>

Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

The COIN-OR Clp home page at <https://projects.coin-or.org/Clp>

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