Package ‘clpAPI’

September 24, 2018

Type Package
Title R Interface to C API of COIN-OR Clp
Version 1.2.9
Date 2018-09-24
Depends R (>= 2.6.0)
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)
License GPL-3 | file LICENSE
LazyLoad yes
Collate generics.R clp_ptrClass.R clp.R clpAPI.R zzz.R
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NeedsCompilation yes
Repository CRAN
Date/Publication 2018-09-24 19:20:12 UTC

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

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, 0.5, 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 "clpPtr" as returned by initProbCLP. 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.
addRowsCLP

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)

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

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.
chgColLowerCLP

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

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 "clpPtr" as returned by initProbCLP. 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>
chgColUpperCLP

References

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

---

### Description

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

### Usage

```r
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)

- 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
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 "clpPtr" as returned by initProbCLP. 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)

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
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](https://projects.coin-or.org/Clp)

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### clpPtr-class

**Class "clpPtr"**

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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

```r
test <- initProbCLP()
```

Slots

- **clpPtrType**: Object of class "character" giving the pointer type.
- **clpPointer**: Object of class "externalptr" containing 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.

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](https://projects.coin-or.org/Clp)

See Also

initProbCLP

Examples

```r
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

```r
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)

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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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)

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

---

**delProbCLP**  
*Delete Problem Object*

**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 "clpPtr" as returned by `initProbCLP`. 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)**

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
**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**

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

**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 rows to delete.
- `i` 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](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**

```r
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](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**

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

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.
getColLowerCLP

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  Retrieve Column Lower Bound

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)
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

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)

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

Description

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

Usage

gHitMaximumIterationsCLP(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 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

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getIndCLP

Retrieve Row Indices of the Non Zero Elements in the Constraint Matrix

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)

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

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.
getMaximumSecondsCLP

**Usage**

```plaintext
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)**

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](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**

```plaintext
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`. 

getNnzCLP

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
Retrieve the Non Zero Elements of the Constraint Matrix in Column Major Order.

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**

```r
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](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**

```r
getNumNnzCLP(lp)
```

**References**

The COIN-OR Clp home page at [https://projects.coin-or.org/Clp](https://projects.coin-or.org/Clp)
getNumRowsCLP

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
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
```r
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

Retrieve Optimization Direction Flag

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

Retrieve the Value of the Objective Function After Optimization

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 get0bjVal 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

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.
**getRowLowerCLP**

**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](https://projects.coin-or.org/Clp)

---

**getRowLowerCLP**  
*Retrieve Row Lower Bound*

**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](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 "clPtr" as returned by initProbCLP. This is basically a pointer to a COIN-OR Clp problem object.

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
getScaleFlagCLP

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

getAddressFlagCLP(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?).
getSolStatusCLP

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  Retrieve the Solution Status

---

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

Retrieve the Number of Non Zero Elements per Column

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

Retrieve Column Starts in Constraint Matrix

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

Usage
giveVecStartCLP(lp)
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
**Description**

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

**Usage**

```c
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](https://projects.coin-or.org/Clp)
## loadMatrixCLP

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

### Usage
```r
call(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.

### Details
Interface to the C function `loadMatrixCLP` which calls the COIN-OR Clp function `clp_loadProblem`.

### 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](https://projects.coin-or.org/Clp)
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>

References

The 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)
primalCLP

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.
r1b 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>

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

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

ifValp An integer value.

Details

Interface to the C function \texttt{primal} which calls the COIN-OR Clp function \texttt{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 \url{https://projects.coin-or.org/Clp}

---

\textbf{printModelCLP}\quad Print the Model to STDOUT

---

Description

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

Usage

\begin{verbatim}
printModelCLP(lp, prefix = "ClPmodel")
\end{verbatim}

Arguments

lp An object of class "clpPtr" as returned by \texttt{initProbCLP}. 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 \texttt{printModel} which calls the COIN-OR Clp function \texttt{Clp_printModel}.

Value

NULL
probNameCLP

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**  
*Set Problem Name*

---

**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 "clpPtr" as returned by `initProbCLP`. 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 "clpPtr" as returned by `initProbCLP`. 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](https://projects.coin-or.org/Clp)
Description

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

Usage

```r
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](https://projects.coin-or.org/Clp)

See Also

delRowsCLP and delColsCLP.
**restoreModelCLP**

*Restore model from file*

**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 "clpPtr" 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](https://projects.coin-or.org/Clp)

---

**return_codeCLP**

*Translates a COIN-OR Clp Return Code into a Human Readable String*

**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 Save model to file

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 "clpPtr" 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 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>
scaleModelCLP

Set/Unset the Scaling Flag (Method)

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 “clpPtr” as returned by initProbCLP. 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
setLogLevelCLP

Set the Amount of Output to STDOUT

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 "clpPtr" as returned by initProbCLP. 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

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 setMaximumIterations which calls the COIN-OR Clp function Clp_setMaximumIterations.

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
**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**

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

**Arguments**

- `lp`  
  An object of class "clpPtr" as returned by `initProbCLP`. 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 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](https://projects.coin-or.org/Clp)

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**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

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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, lmdir)

Arguments

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

```r
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](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](https://projects.coin-or.org/Clp)

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**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)
solveInitialPrimalCLP

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

| status_codeCLP | Translates a COIN-OR Clp Status Value into a Human Readable String |

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
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
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