Package ‘clpAPI’

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Imports methods
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SystemRequirements COIN-OR Clp (>= 1.12.0)
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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.

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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)
cupper <- c(1000, 4.1, 1, 1, 4, 1000, 1000, 4.3)

# constraint matrix
ia <- c(0, 4, 0, 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.
**addRowsCLP**

- *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)**

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_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.
chgColLowerCLP

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

---

**chgColLowerCLP**

*Set/Change Column Lower Bounds*

**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**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>lp</td>
<td>An object of class “clpPtr” as returned by <code>initProbCLP</code>. This is basically a pointer to a COIN-OR Clp problem object.</td>
</tr>
<tr>
<td>lb</td>
<td>Numeric vector containing the lower bounds of the columns of the model.</td>
</tr>
</tbody>
</table>

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

**Value**
`NULL`
chgColUpperCLP

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)
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
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 "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)

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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**  
```r  
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](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**  
```r  
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>
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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" 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.

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

---

**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**

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

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
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

- **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)

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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
**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

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 stuctural 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 stuctural 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)
getHitMaximumIterationsCLP

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

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)
getIndCLP

Author(s)

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References

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

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**

```c
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](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)

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

---

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.
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

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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)

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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)
```
**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

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**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.
**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-duesseldor.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)
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)
getRowDualCLP

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

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

Usage
gRowDualCLP(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)

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

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**getDescription**

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**

`getDescription(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

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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

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
**initProbCLP**

**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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**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](https://projects.coin-or.org/Clp)
**lengthNamesCLP**  
*Length of the Names in the Model*

**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>

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)
modifyCoefficientCLP

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>

References

The COIN-OR Clp home page at [https://projects.coin-or.org/Clp](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, el, keepZero = TRUE)`
primalCLP

Arguments

lp An object of class "clpPtr" as returned by initProbCLP. This is basically a pointer to a COIN-OR Clp problem object.
i Row index.
j Column index.
el 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

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 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

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(printModelCLP)

Print the Model to STDOUT

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 "clpPtr" as returned by 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 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

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

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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 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

| 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

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>

References

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

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

setColNameCLP

Set column name

Description

Low level interface function to the COIN-OR Clp function Clp_setColumnNames. Consult the COIN-OR Clp documentation for more detailed information. This function is only available, if you are using COIN-OR Clp version >= 1.17.2.

Usage

setColNameCLP(lp, j, cname)

Arguments

lp An object of class "clpPtr" as returned by initProbCLP. 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.
**setLogLevelCLP**

**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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**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](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 `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

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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.
setObjDirCLP

**Usage**

```c
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](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**

```c
setObjDirCLP(lp, lpdir)
```

**Arguments**

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

**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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**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 >= 1.17.2.

**Usage**

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

**Arguments**

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

**References**

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

```r
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](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.
solveInitialCLP

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.
solveInitialDualCLP

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

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](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](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 >= 1.17.2.

Usage

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

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.
formatType Integer value: 0 = normal, 1 = extra or 2 = hex.
numberAcross Number across is 1 or 2.
objSense Use objSense = -1 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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