Package ‘clpAPI’

August 10, 2020

Type Package
Title R Interface to C API of COIN-or Clp
Version 1.3.0
Date 2020-08-07
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
Author Mayo Roettger [cre],
    Gabriel Gelius-Dietrich [aut],
    C. Jonathan Fritzemeier [ctb]
Maintainer Mayo Roettger <mayo.roettger@hhu.de>
NeedsCompilation yes
Repository CRAN
Date/Publication 2020-08-10 10:10:02 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)

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

Examples

```r
# 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, 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**

```r
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.
Add Rows

Description

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

Usage

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

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>lp</td>
<td>An object of class &quot;clpPtr&quot; as returned by initProbCLP. This is basically a pointer to a COIN-OR Clp problem object.</td>
</tr>
<tr>
<td>nrows</td>
<td>Number of rows to add.</td>
</tr>
<tr>
<td>lb</td>
<td>Lower bounds of the new rows.</td>
</tr>
<tr>
<td>ub</td>
<td>Upper bounds of the new rows.</td>
</tr>
</tbody>
</table>
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

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
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
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 \hspace{1cm} \textit{Set/Change Column Upper Bounds}

---

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

Usage
\begin{verbatim}
chgColUpperCLP(lp, ub)
\end{verbatim}

Arguments
\begin{itemize}
\item \texttt{lp} \hspace{1cm} An object of class \texttt{"clpPtr"} as returned by \texttt{initProbCLP}. This is basically a pointer to a COIN-OR Clp problem object.
\item \texttt{ub} \hspace{1cm} Numeric vector containing the upper bounds of the columns of the model.
\end{itemize}

Details
Interface to the C function \texttt{chgColUpper} which calls the COIN-OR Clp function \texttt{Clp_chgColumnUpper}.

Value
\begin{verbatim}
NULL
\end{verbatim}

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}
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)

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**

```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**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>lp</td>
<td>An object of class &quot;clpPtr&quot; as returned by initProbCLP. This is basically a pointer to a COIN-OR Clp problem object.</td>
</tr>
<tr>
<td>rub</td>
<td>Numeric vector containing the upper bounds of the rows of the model.</td>
</tr>
</tbody>
</table>

**Details**

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

**Value**

NULL

**Author(s)**

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>
Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

**References**

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

---

**clpPtr-class**

*Class "clpPtr"*

**Description**

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

**Objects from the Class**

Objects can be created by calls of the form

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

**Slots**

- `clpPtrType`: Object of class "character" giving the pointer type.
- `clpPointer`: Object of class "externalptr" containing the pointer to a C structure.
copyNamesCLP

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)

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

- **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

---

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>
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
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)

Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>
Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

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

**Drop Names in the Model**

**Description**

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

**Usage**

\[
\text{dropNamesCLP}(lp)
\]

**Arguments**

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

**Details**

Interface to the C function \textit{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**

\[
\text{dualCLP}(lp, ifValP = 0)
\]
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
gGetColDualCLP(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 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](https://projects.coin-or.org/Clp)

---

```r
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)
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

---

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**

```latex
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.
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

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**

```c
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**

```c
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

Description

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

Usage

ggetNumRowsCLP(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

Author(s)
Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>
Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

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

getObjCoefsCLP Retrieve Objective Coefficients

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

Usage
getObjCoefsCLP(lp)

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

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

Value
A numeric vector containing the objective coefficients.

Author(s)
Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>
Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

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

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

getRowDualCLP

Retrieve all Row Dual Values

Description

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

Usage

ggetRowDualCLP(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

---

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
getRowPrimCLP  
**Retrieve all Row Primal Values**

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

**Usage**
```
getRowPrimCLP(lp)
```

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

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

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

**Author(s)**
- Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>
- Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

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

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

**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](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

getScaleFlagCLP(lp)

Arguments

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

Details

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

Value

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

```r
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](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**

```r
getVecStartCLP(lp)
```
idiotCLP

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)

---

**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**

```r
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)
**isAvailableFuncCLP**  
*Check if some newer functions relying on CLP version >= 1.17.2 are available*

---

**Description**

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

**Usage**

```r
isAvailableFuncCLP(funcname)
```

**Arguments**

- `funcname`: The name of the function.

**Details**

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

**Value**

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

**Author(s)**

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

---

**lengthNamesCLP**  
*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**

```r
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](https://projects.coin-or.org/Clp)
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
```r
loadProblemCLP(lp, ncols, nrows, ia, ja, ra,
    lb = NULL, ub = NULL, obj_coef = NULL,
    rlb = NULL, rub = NULL)
```

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

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

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

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)

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 (starts with 0).
j    Column index (starts with 0).
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

```r
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
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

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.
`resizeCLP`  

**Value**  
Returns zero on success, otherwise non zero.

**Author(s)**  
Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>  
Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

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

---

`resizeCLP`  
*Resize a Model*

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

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

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

nrows  
Number of rows.

cols  
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>
restoreModelCLP

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

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.
scaleModelCLP

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>
setColNameCLP

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_setColumnName. 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

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>lp</td>
<td>An object of class &quot;clpPtr&quot; as returned by initProbCLP. This is basically a pointer to a COIN-OR Clp problem object.</td>
</tr>
<tr>
<td>j</td>
<td>Column index.</td>
</tr>
<tr>
<td>cname</td>
<td>A single character string containing the column name.</td>
</tr>
</tbody>
</table>

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

Value
NULL

Author(s)
Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>
Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

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

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

_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**

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

---

**setNumberIterationsCLP**  
*Set the Number of Iterations*

**Description**

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

**Usage**

```r
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**

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

**Arguments**

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

---

**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**

`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.

**Usage**

```r
solveInitialBarrierNoCrossCLP(lp)
```
solveInitialCLP

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

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

Value
A return code.

Author(s)
Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>
Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

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

solveInitialCLP       Solve LP Problem with a General Solve Algorithm

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

Usage
solveInitialCLP(lp)

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

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

Value
A return code.
solveInitialDualCLP  

**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)
versionCLP

Arguments

   code                      Status code from COIN-OR Clp.

Value

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

Author(s)

   Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>
   Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

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

versionCLP

Determine COIN-OR Clp Callable Library Version

Description

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

Usage

   versionCLP()

Details

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

Value

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

Author(s)

   Gabriel Gelius-Dietrich <geliudie@uni-duesseldorf.de>
   Maintainer: Mayo Roettger <mayo.roettger@hhu.de>

References

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

Write an MPS Format file to the given filename

Description

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