NAME

CUTEST_cdimsg – CUTEst tool to determine the number of nonzeros needed to store the sparse gradient of the objective function for the problem decoded from a SIF file by the script *sifdecoder*.

SYNOPSIS

CALL CUTEST_cdimsg(status, nnzg)

For real rather than double precision arguments, instead

CALL CUTEST_cdimsg_s(...)

and for quadruple precision arguments, when available,

CALL CUTEST_cdimsg_q(...)

DESCRIPTION

The CUTEST_cdimsg subroutine determines the number of nonzero elements required to store the gradient of the objective function for the problem decoded into OUTSDIF.d in the constrained minimization case. The gradient is stored in sparse format, i.e., only the indices and values of components that may be nonzero are stored.

The problem under consideration is to minimize or maximize an objective function $f(x)$ over all $x \in R^n$ subject to general equations $c_i(x) = 0$, $(i \in 1, \ldots, m_E)$, general inequalities $c_i^l \le c_i(x) \le c_i^{u,}$ $(i \in m_E + 1, \ldots, m)$, and simple bounds $x^l \le x \le x^{u.}$ The objective function is group-partially separable and all constraint functions are partially separable.

ARGUMENTS

The arguments of CUTEST_cdimsg are as follows

status [out] - integer
the outputr status: 0 for a succesful call, 1 for an array allocation/deallocation error, 2 for an array bound error, 3 for an evaluation error,

nnzg [out] - integer
the number of nonzero elements required to store the gradient.

AUTHORS

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SEE ALSO

CUTEst: a Constrained and Unconstrained Testing Environment with safe threads,
N.I.M. Gould, D. Orban and Ph.L. Toint,
Computational Optimization and Applications **60**:3, pp.545-557, 2014.

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N.I.M. Gould, D. Orban and Ph.L. Toint,
ACM TOMS, **29**:4, pp.373-394, 2003.

CUTE: Constrained and Unconstrained Testing Environment,
I. Bongartz, A.R. Conn, N.I.M. Gould and Ph.L. Toint,
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sifdecoder(1).