NAME

   CUTEST_cfn_threaded − CUTEst tool to evaluate function and constraints values.

SYNOPSIS

   CALL CUTEST_cfn_threaded(status, n, m, X, f, C, thread)

DESCRIPTION

   The CUTEST_cfn_threaded subroutine evaluates the value of the objective function and general constraint functions of the problem decoded from a SIF file by the script *sifdecoder* at the point X.

   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_cfn_threaded 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, 4 for an out-of-range thread,

   n [in] - integer
       the number of variables for the problem,

   m [in] - integer
       the total number of general constraints,

   X [in] - real/double precision
       an array which gives the current estimate of the solution of the problem,

   f [out] - real/double precision
       the value of the objective function evaluated at X,

   C [out] - real/double precision
       an array which gives the values of the general constraint functions evaluated at X. The i-th component of C will contain the value of $c_i(x)$,

   thread [in] - integer
       thread chosen for the evaluation; threads are numbered from 1 to the value threads set when calling CUTEST_csetup_threaded.

AUTHORS

   I. Bongartz, A.R. Conn, N.I.M. Gould, D. Orban and Ph.L. Toint

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.

   CUTEr (and SifDec): A Constrained and Unconstrained Testing Environment, revisited,
      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,
      ACM TOMS, **21**:1, pp.123-160, 1995.

   cutest_ufn_threaded(3M), sifdecoder(1).