## NAME

CUTEST_ureport_threaded − CUTEst tool to obtain statistics concerning function evaluation and CPU time used.

## SYNOPSIS

CALL CUTEST_ureport_threaded( status, CALLS, TIME, thread )

## DESCRIPTION

The CUTEST_ureport_threaded subroutine obtains statistics concerning function evaluation and CPU time used for unconstrained or bound-constrained optimization in a standardized format.

The problem under consideration is to minimize or maximize an objective function $f(x)$ over all $x \in R^n$ subject to the simple bounds $x^l \leq x \leq x^u$. The objective function is group-partially separable.

## ARGUMENTS

The arguments of CUTEST_ureport_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,

**CALLS** [out] - real array of length 4
gives the number of calls to the problem functions:

CALLS( 1 ): number of calls to the objective function

CALLS( 2 ): number of calls to the objective gradient

CALLS( 3 ): number of calls to the objective Hessian

CALLS( 4 ): number of Hessian times vector products,

**TIME** [out] - real array of length 2:

TIME( 1 ): CPU time (in seconds) for CUTEST_usetup_threaded

TIME( 2 ): CPU time (in seconds) since the end of CUTEST_usetup_threaded,

**thread** [in] - integer
statistics are for the specified thread; threads are numbered from 1 to the value threads set when calling CUTEST_usetup_threaded.

## AUTHORS

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

## SEE ALSO

*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, TOMS, **21**:1, pp.123-160, 1995.

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