NAME

snpma – CUTEr SNOPT test driver

SYNOPSIS

snpma

DESCRIPTION

The *snpma* main program test drives SNOPT on SIF problems from the CUTEr distribution.

The SNOPT package is designed to minimize smooth functions subject to constraints, which may include simple bounds, linear constraints, and smooth nonlinear constraints. The software uses a sequential quadratic programming algorithm, where bounds, linear constraints and nonlinear constraints are treated separately. SNOPT stores all matrices in dense format, and is therefore not intended for large sparse problems.

SNOPT has been written by Gill, Murray, Saunders and Wright, and is available from the Office of Technology Licensing at Stanford University.

USAGE

SNOPT 6.1 provides the library file libcutesnopt.a which should be copied to

$MYCUTER/*precision*/lib

or linked to from this directory.

OUTPUT

The main output from SNOPT is written (by default) in a file named fort.9. This file is subsequently renamed to probname.nps by sdnps. If this unit number has been changed in the SNOPT source code, then it must also be changed in the shell script nps. The unit number may also be changed in the SNOPT.SPC file, by adding the following lines (the second being optional):

```
Print file          output_id
Print frequency     k
```

which sends one line of the QP iteration log to the file having descriptor output_id every k-th minor iteration. This requires

```
Minor print level
```

to be positive. It is *not* the case in the default CUTEr spec file.

In addition, SNOPT can create a summary of the problem output. By the source code default, this summary is sent to unit 6 (stdout). If you wish to direct the summary output elsewhere, you may include the lines, the second line being optional

```
Summary file            output_id
Summary frequency       k
```

which sends one line of the QP iteration log to the device having descriptor output_id every k-th minor iteration. This requires

```
Minor print level
```

to be positive. It is *not* the case in the default CUTEr spec file.

NOTE

If no SNOPT.SPC file is present in the current directory, the default version is copied from $CUTER/common/src/pkg/snopt/.

The file SNOPT.SPC may be used to set various SNOPT parameters. These parameters are described in the chapter 'Optional Input Parameters' in the User's Guide for SNOPT.

The CUTEr default version of SNOPT.SPC is as follows

```
BEGIN SNOPT Problem
  Jacobian              SPARSE

  Derivative level         3

  Superbasics limit        2000

  Major iterations         2000
  Iteration limit       1000000

  Major print level        1
  Minor print level        0

  Verify level            -1
  Solution                No
END SNOPT Problem
```

ENVIRONMENT

CUTER

Parent directory for CUTEr

MYCUTER

Home directory of the installed CUTEr distribution.

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.

User's Guide for SNOPT (Version 4.0): A Fortran Package for Nonlinear Programming, P.E. Gill, W. Murray, and M.A. Saunders, Technical Report SOL xx-x, Systems Optimization Laboratory, Department of Operations Research, Stanford University, Stanford, USA, January 19xx.

sdsnp(1), snp(1).