

NAG Library Function Document

nag_glopt_bnd_mcs_optset_real (e05jgc)

1 Purpose

nag_glopt_bnd_mcs_optset_real (e05jgc) may be used to supply individual real optional arguments to nag_glopt_bnd_mcs_solve (e05jbc). The initialization function nag_glopt_bnd_mcs_init (e05jac) **must** have been called before calling nag_glopt_bnd_mcs_optset_real (e05jgc).

2 Specification

```
#include <nag.h>
#include <nage05.h>

void nag_glopt_bnd_mcs_optset_real (const char *optstr, double rvalue,
    Nag_E05State *state, NagError *fail)
```

3 Description

nag_glopt_bnd_mcs_optset_real (e05jgc) may be used to supply values for real optional arguments to nag_glopt_bnd_mcs_solve (e05jbc). It is only necessary to call nag_glopt_bnd_mcs_optset_real (e05jgc) for those arguments whose values are to be different from their default values. One call to nag_glopt_bnd_mcs_optset_real (e05jgc) sets one argument value.

Each real optional argument is defined by a single character string in **optstr** and the corresponding value in **rvalue**. For example the following illustrates how the local searches tolerance could be defined:

```
loctol = 1.0e-10;
e05jgc ('Local Searches Tolerance', loctol, &state, &fail);
```

A complete list of optional arguments, their symbolic names and default values is given in Section 12 in nag_glopt_bnd_mcs_solve (e05jbc).

4 References

None.

5 Arguments

- 1: **optstr** – const char * *Input*
On entry: a string identifying a real-valued optional argument (as described in Section 12 in nag_glopt_bnd_mcs_solve (e05jbc)).
- 2: **rvalue** – double *Input*
On entry: the value associated with the optional argument in **optstr**.
- 3: **state** – Nag_E05State * *Communication Structure*
state contains information required by other functions in this suite. You must not modify it directly in any way.
- 4: **fail** – NagError * *Input/Output*
The NAG error argument (see Section 3.6 in the Essential Introduction).

6 Error Indicators and Warnings

NE_ALLOC_FAIL

Dynamic memory allocation failed.
See Section 3.2.1.2 in the Essential Introduction for further information.

NE_BAD_PARAM

On entry, argument $\langle value \rangle$ had an illegal value.

NE_INTERNAL_ERROR

An internal error has occurred in this function. Check the function call and any array sizes. If the call is correct then please contact NAG for assistance.

An unexpected error has been triggered by this function. Please contact NAG.
See Section 3.6.6 in the Essential Introduction for further information.

NE_NO_LICENCE

Your licence key may have expired or may not have been installed correctly.
See Section 3.6.5 in the Essential Introduction for further information.

NE_NOT_INIT

Initialization function `nag_glopt_bnd_mcs_init` (e05jac) has not been called.

NE_OPT_NOT_READ

The supplied optional argument is invalid. A keyword or keyword combination was not recognized.

NE_OUT_OF_RANGE

Attempt to assign an out-of-bounds value of **Infinite Bound Size** (*infbnd*): $infbnd = \langle value \rangle$.

Attempt to assign too small a value of **Local Searches Tolerance** (*loctol*): $loctol = \langle value \rangle$.

Attempt to assign too small a value of **Target Objective Error** (*objerr*): $objerr = \langle value \rangle$.

Attempt to assign too small a value of **Target Objective Safeguard** (*objsg*): $objsg = \langle value \rangle$.

7 Accuracy

Not applicable.

8 Parallelism and Performance

`nag_glopt_bnd_mcs_optset_real` (e05jgc) is threaded by NAG for parallel execution in multithreaded implementations of the NAG Library.

Please consult the X06 Chapter Introduction for information on how to control and interrogate the OpenMP environment used within this function. Please also consult the Users' Note for your implementation for any additional implementation-specific information.

9 Further Comments

`nag_glopt_bnd_mcs_optset_file` (e05jcc) or `nag_glopt_bnd_mcs_optset_string` (e05jdc) may also be used to supply real optional arguments to `nag_glopt_bnd_mcs_solve` (e05jbc).

10 Example

See Section 10 in nag_glopt_bnd_mcs_optset_file (e05jcc).
