NAG Library Function Document

nag_glopt_bnd_mcs_optset_string (e05jdc)

1 Purpose

nag_glopt_bnd_mcs_optset_string (e05jdc) may be used to supply individual 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_string (e05jdc).

2 Specification

```
#include <nag.h>
#include <nage05.h>
void nag_glopt_bnd_mcs_optset_string (const char *optstr,
     Nag_E05State *state, NagError *fail)
```

3 Description

nag_glopt_bnd_mcs_optset_string (e05jdc) may be used to supply values for optional arguments to nag_glopt_bnd_mcs_solve (e05jbc). It is only necessary to call nag_glopt_bnd_mcs_optset_string (e05jdc) for those arguments whose values are to be different from their default values. One call to nag_glopt_bnd_mcs_optset_string (e05jdc) sets one argument value.

Each optional argument is defined by a single character string, consisting of one or more items. The items associated with a given optional argument must be separated by spaces, or equals signs [=]. Alphabetic characters may be upper or lower case. The string

```
Static Limit = 100
```

is an example of a string used to set an optional argument. For each optional argument the string contains one or more of the following items:

– a mandatory keyword;

– a phrase that qualifies the keyword;

– a number that specifies an integer or real value. Such numbers may be up to 16 contiguous characters.

For nag_glopt_bnd_mcs_optset_string (e05jdc), each user-specified optional argument is not normally printed as it is defined, but this printing may be turned on using the keyword **List**. Thus the statement

```
e05jdc ("List", &state, &fail);
```

turns on printing of this and subsequent options. Printing may be turned off again using the keyword **Nolist**.

Optional argument settings are preserved following a call to nag_glopt_bnd_mcs_solve (e05jbc) and so the keyword **Defaults** is provided to allow you to reset all the optional arguments to their default values before a subsequent call to nag_glopt_bnd_mcs_solve (e05jbc).

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 defining a single optional argument (as described in Section 3 and in Section 12 in nag_glopt_bnd_mcs_solve (e05jbc)). The implied data type (character, integer or real) of each value to set **must** match that expected by the optional argument.

2: **state** – Nag_E05State * *Communication Structure*

state contains information required by other functions in this suite. You must not modify it directly in any way.

3: **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.

NE_BAD_PARAM

On entry, argument ⟨*value*⟩ 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.

NE_NOT_INIT

Initialization function nag_glopt_bnd_mcs_init (e05jac) has not been called.

NE_NOT_PARSED

The value to be set could not be parsed. Check that it specifies a valid integer or real value.

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 illegal value of **Local Searches** ($lcsrch$): $lcsrch =$ "⟨*value*⟩".

Attempt to assign an illegal value of **Repeatability** ($repeat$): $repeat =$ "⟨*value*⟩".

Attempt to assign a non-positive value of **Function Evaluations Limit** (nf): $nf = \langle value \rangle$.

Attempt to assign a non-positive value of **Local Searches Limit** ($loclim$): $loclim = \langle value \rangle$.

Attempt to assign a non-positive value of **Static Limit** ($stclim$): $stclim = \langle value \rangle$.

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** ($objsfg$): $objsfg = \langle value \rangle$.

7 Accuracy

Not applicable.

8 Parallelism and Performance

Not applicable.

9 Further Comments

nag_glopt_bnd_mcs_optset_file (e05jcc), nag_glopt_bnd_mcs_optset_char (e05jec), nag_glopt_bnd_mcs_optset_int (e05jfc) or nag_glopt_bnd_mcs_optset_real (e05jgc) may also be used to supply optional arguments to nag_glopt_bnd_mcs_solve (e05jbc).

10 Example

See Section 10 in nag_glopt_bnd_mcs_optset_file (e05jcc).