

# NAG Library Function Document

## nag\_glopt\_bnd\_mcs\_init (e05jac)

### 1 Purpose

nag\_glopt\_bnd\_mcs\_init (e05jac) is used to initialize communication data for the suite of multi-level coordinate search functions: nag\_glopt\_bnd\_mcs\_solve (e05jbc), nag\_glopt\_bnd\_mcs\_optset\_file (e05jcc), nag\_glopt\_bnd\_mcs\_optset\_string (e05jdc), nag\_glopt\_bnd\_mcs\_optset\_char (e05jec), nag\_glopt\_bnd\_mcs\_optset\_int (e05jfc), nag\_glopt\_bnd\_mcs\_optset\_real (e05jgc), nag\_glopt\_bnd\_mcs\_option\_check (e05jhc), nag\_glopt\_bnd\_mcs\_optget\_int (e05jkc) and nag\_glopt\_bnd\_mcs\_optget\_real (e05jlc).

### 2 Specification

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

void nag_glopt_bnd_mcs_init (Integer n_r, Nag_E05State *state,
                             NagError *fail)
```

### 3 Description

nag\_glopt\_bnd\_mcs\_init (e05jac) initializes the structure **state** for the solver nag\_glopt\_bnd\_mcs\_solve (e05jbc) and the optional-argument handlers nag\_glopt\_bnd\_mcs\_optset\_file (e05jcc), nag\_glopt\_bnd\_mcs\_optset\_string (e05jdc), nag\_glopt\_bnd\_mcs\_optset\_char (e05jec), nag\_glopt\_bnd\_mcs\_optset\_int (e05jfc), nag\_glopt\_bnd\_mcs\_optset\_real (e05jgc), nag\_glopt\_bnd\_mcs\_option\_check (e05jhc), nag\_glopt\_bnd\_mcs\_optget\_int (e05jkc) and nag\_glopt\_bnd\_mcs\_optget\_real (e05jlc).

### 4 References

None.

### 5 Arguments

- 1: **n\_r** – Integer  
This argument is no longer accessed by nag\_glopt\_bnd\_mcs\_init (e05jac).
- 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.

**7 Accuracy**

Not applicable.

**8 Parallelism and Performance**

Not applicable.

**9 Further Comments**

The time taken by `nag_glopt_bnd_mcs_init` (e05jac) is negligible.

**10 Example**

See Section 10 in `nag_glopt_bnd_mcs_solve` (e05jbc) and `nag_glopt_bnd_mcs_optset_file` (e05jcc).

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