

NAG Library Routine Document

E05JGF

Note: before using this routine, please read the Users' Note for your implementation to check the interpretation of ***bold italicised*** terms and other implementation-dependent details.

1 Purpose

E05JGF may be used to supply individual real optional parameters to E05JBF. The initialization routine E05JAF **must** have been called before calling E05JGF.

2 Specification

```
SUBROUTINE E05JGF(OPTSTR, RVALUE, COMM, LCOMM, IFAIL)
INTEGER          LCOMM, IFAIL
double precision RVALUE, COMM(LCOMM)
CHARACTER*(*)    OPTSTR
```

3 Description

E05JGF may be used to supply values for real optional parameters to E05JBF. It is only necessary to call E05JGF for those parameters whose values are to be different from their default values. One call to E05JGF sets one parameter value.

Each real optional parameter 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 = 1.0D-10
CALL E05JGF ('Local Searches Tolerance', LOCTOL, COMM, LCOMM, IFAIL)
```

A complete list of optional parameters, their symbolic names and default values is given in Section 11 in E05JBF.

4 References

None.

5 Parameters

- 1: OPTSTR – CHARACTER*(*) *Input*
On entry: a string identifying a real-valued optional parameter (as described in Section 11 in E05JBF).
- 2: RVALUE – **double precision** *Input*
On entry: the value associated with the optional parameter in OPTSTR.
- 3: COMM(LCOMM) – **double precision** array *Communication Array*
On exit: COMM **must not** be altered between calls to any of the routines E05JBF, E05JCF, E05JDF, E05JEF, E05JFF, E05JGF, E05JHF, E05JIF, E05JKF and E05JLF.

4: LCOMM – INTEGER

Input

On entry: the dimension of the array COMM as declared in the (sub)program from which E05JGF is called.

Constraint: $\text{LCOMM} \geq 100$.

5: IFAIL – INTEGER

Input/Output

On entry: IFAIL must be set to 0, -1 or 1. If you are unfamiliar with this parameter you should refer to Section 3.3 in the Essential Introduction for details.

On exit: IFAIL = 0 unless the routine detects an error (see Section 6).

For environments where it might be inappropriate to halt program execution when an error is detected, the value -1 or 1 is recommended. If the output of error messages is undesirable, then the value 1 is recommended. Otherwise, if you are not familiar with this parameter, the recommended value is 0. **When the value -1 or 1 is used it is essential to test the value of IFAIL on exit.**

6 Error Indicators and Warnings

If on entry IFAIL = 0 or -1, explanatory error messages are output on the current error message unit (as defined by X04AAF).

Errors or warnings detected by the routine:

IFAIL = 1

On entry, $\text{LCOMM} < 100$,
or the initialization routine E05JAF has not been called.

IFAIL = 2

The optional parameter given in OPTSTR is invalid. The correct number of word ‘tokens’ are present but a keyword or keyword combination is invalid.

IFAIL = 3

The numerical value to be set is out of range with respect to optional parameter given in OPTSTR. See Section 11 in E05JBF for allowable values of the optional parameters.

IFAIL = 4

The optional-parameter name contained the wrong number of word ‘tokens’, so could not be recognized by the routine.

7 Accuracy

Not applicable.

8 Further Comments

E05JCF or E05JDF may also be used to supply real optional parameters to E05JBF.

9 Example

See Section 9 in E05JCF.