

# NAG Library Routine Document

## E05JFF

**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

E05JFF may be used to supply individual integer optional parameters to E05JBF. The initialization routine E05JAF **must** have been called before calling E05JFF.

### 2 Specification

```
SUBROUTINE E05JFF (OPTSTR, IVALUE, COMM, LCOMM, IFAIL)
INTEGER           IVALUE, LCOMM, IFAIL
REAL (KIND=nag_wp) COMM(LCOMM)
CHARACTER(*)      OPTSTR
```

### 3 Description

E05JFF may be used to supply values for integer optional parameters to E05JBF. It is only necessary to call E05JFF for those arguments whose values are to be different from their default values. One call to E05JFF sets one argument value.

Each integer optional parameter is defined by a single character string in OPTSTR and the corresponding value in IVALUE. For example, the following allows the function evaluations limit to be defined:

```
NF = 1000
CALL E05JFF ('Function Evaluations Limit', NF, COMM, LCOMM, IFAIL)
```

A complete list of optional parameters, their symbolic names and default values is given in Section 12 in E05JBF.

### 4 References

None.

### 5 Arguments

- 1: OPTSTR – CHARACTER(\*) *Input*  
*On entry:* a string identifying an integer-valued optional parameter (as described in Section 12 in E05JBF).
- 2: IVALUE – INTEGER *Input*  
*On entry:* an integer value associated with the optional parameter in OPTSTR.
- 3: COMM(LCOMM) – REAL (KIND=nag\_wp) array *Communication Array*  
*On exit:* COMM **must not** be altered between calls to any of the routines E05JBF, E05JCF, E05JDF, E05JEF, E05JFF, E05JGF, E05JHF, E05JJF, E05JKF and E05JLF.

4: LCOMM – INTEGER *Input*

*On entry:* the dimension of the array COMM as declared in the (sub)program from which E05JFF is called.

*Constraint:*  $LCOMM \geq 100$ .

5: IFAIL – INTEGER *Input/Output*

*On entry:* IFAIL must be set to 0, -1 or 1. If you are unfamiliar with this argument you should refer to Section 3.4 in How to Use the NAG Library and its Documentation for details.

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 argument, the recommended value is 0. **When the value -1 or 1 is used it is essential to test the value of IFAIL on exit.**

*On exit:* IFAIL = 0 unless the routine detects an error or a warning has been flagged (see Section 6).

## 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

Initialization routine E05JAF has not been called.

On entry,  $LCOMM = \langle value \rangle$ .

Constraint:  $LCOMM \geq 100$ .

IFAIL = 2

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

IFAIL = 3

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*):  $stclim = \langle value \rangle$ .

IFAIL = -99

An unexpected error has been triggered by this routine. Please contact NAG.

See Section 3.9 in How to Use the NAG Library and its Documentation for further information.

IFAIL = -399

Your licence key may have expired or may not have been installed correctly.

See Section 3.8 in How to Use the NAG Library and its Documentation for further information.

IFAIL = -999

Dynamic memory allocation failed.

See Section 3.7 in How to Use the NAG Library and its Documentation for further information.

## **7 Accuracy**

Not applicable.

## **8 Parallelism and Performance**

E05JFF 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 routine. Please also consult the Users' Note for your implementation for any additional implementation-specific information.

## **9 Further Comments**

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

## **10 Example**

See Section 10 in E05JCF.

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