

NAG Library Routine Document

E05JAF

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

E05JAF is used to initialize communication data for the suite of multi-level coordinate search routines: E05JBF, E05JCF, E05JDF, E05JEF, E05JFF, E05JGF, E05JHF, E05JJF, E05JKF and E05JLF.

2 Specification

```
SUBROUTINE E05JAF(N, COMM, LCOMM, IFAIL)
  INTEGER          N, LCOMM, IFAIL
  double precision COMM(LCOMM)
```

3 Description

E05JAF initializes the communication array COMM for the solver E05JBF and the optional-parameter handlers E05JCF, E05JDF, E05JEF, E05JFF, E05JGF, E05JHF, E05JJF, E05JKF and E05JLF.

4 References

None.

5 Parameters

- 1: N – INTEGER *Input*
On entry: n , the number of variables.
Constraint: $N > 0$.
- 2: 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, E05JJF, E05JKF and E05JLF.
- 3: LCOMM – INTEGER *Input*
On entry: the dimension of the array COMM as declared in the (sub)program from which E05JAF is called.
Constraint: $LCOMM \geq 100$.
- 4: 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:

$IFAIL = 1$

An input parameter is invalid. The output message provides more details of the invalid argument.

7 Accuracy

Not applicable.

8 Further Comments

The time taken by E05JAF is negligible.

9 Example

See Section 9 in E05JBF and E05JCF.
