NAG Library Routine Document

E04NMF/E04NMA

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

To supply individual optional parameters to E04NKF/E04NKA. More precisely, E04NMF must be used to supply optional parameters to E04NKF and E04NMA must be used to supply optional parameters to E04NKA.

E04NMA is a version of E04NMF that has additional arguments in order to make it safe for use in multithreaded applications (see Section 5). The initialization routine E04WBF **must** have been called before calling E04NMA.

2 Specification

2.1 Specification for E04NMF

```
SUBROUTINE E04NMF (STR)
CHARACTER(*) STR
```

2.2 Specification for E04NMA

```
SUBROUTINE E04NMA (STR, LWSAV, IWSAV, RWSAV, INFORM)
INTEGER            IWSAV(380), INFORM
REAL (KIND=nag_wp) RWSAV(285)
LOGICAL            LWSAV(20)
CHARACTER(*)       STR
```

3 Description

E04NMF/E04NMA may be used to supply values for optional parameters to E04NKF/E04NKA. It is only necessary to call E04NMF/E04NMA for those arguments whose values are to be different from their default values. One call to E04NMF/E04NMA sets one argument value.

Each optional parameter is defined by a single character string, of up to 72 characters, consisting of one or more items. The items associated with a given option must be separated by spaces, or equals signs [=]. Alphabetic characters may be upper or lower case. The string

```
Print Level = 1
```

is an example of a string used to set an optional parameter. For each option 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 40 contiguous characters in Fortran's I, F, E or D formats, terminated by a space if this is not the last item on the line.

Blank strings and comments are ignored. A comment begins with an asterisk (*) and all subsequent characters in the string are regarded as part of the comment.

For E04NMF, each user-specified option is normally printed as it is defined, on the current advisory message unit (see X04ABF), but this printing may be suppressed using the keyword **Nolist**. Thus the statement

```
CALL E04NMF ('Nolist')
```

suppresses printing of this and subsequent options. Printing will automatically be turned on again after a call to E04NKF and may be turned on again at any time using the keyword **List**.

For E04NMA printing is turned off by default, but may be turned on at any time using the keyword **List**.

Optional parameter settings are preserved following a call to E04NKF/E04NKA and so the keyword **Defaults** is provided to allow you to reset all the optional parameters to their default values before a subsequent call to E04NKF/E04NKA.

A complete list of optional parameters, their abbreviations, synonyms and default values is given in Section 12 in E04NKF/E04NKA.

4 References

None.

5 Arguments

1: STR – CHARACTER(*) *Input*

On entry: a single valid option string (as described in Section 3 and in Section 12 in E04NKF/E04NKA).

Note: *the following are additional arguments for specific use with E04NMA. Users of E04NMF therefore need not read the remainder of this description*.

2: LWSAV(20) – LOGICAL array *Communication Array*

3: IWSAV(380) – INTEGER array *Communication Array*

4: RWSAV(285) – REAL (KIND=nag_wp) array *Communication Array*

The arrays LWSAV, IWSAV and RWSAV **must not** be altered between calls to any of the routines E04NMA, E04NKA, E04NLA or E04WBF.

5: INFORM – INTEGER *Output*

On exit: contains zero if a valid option string has been supplied and a value > 0 otherwise (see Section 6).

6 Error Indicators and Warnings

INFORM $= 5$

The supplied option is invalid. Check that the keywords are neither ambiguous nor misspelt.

7 Accuracy

Not applicable.

8 Parallelism and Performance

E04NMF/E04NMA is not threaded in any implementation.

9 Further Comments

E04NLF/E04NLA may also be used to supply optional parameters to E04NKF/E04NKA.

10 Example

See Section 10 in E04NLF/E04NLA.