

NAG Library Routine Document

E04NEF/E04NEA

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 E04NCF/E04NCA. More precisely, E04NEF must be used to supply optional parameters to E04NCF and E04NEA must be used to supply optional parameters to E04NCA.

E04NEA is a version of E04NEF that has additional parameters in order to make it safe for use in multithreaded applications (see Section 5). The initialization routine E04WBF **must** have been called before calling E04NEA.

2 Specification

2.1 Specification for E04NEF

```
SUBROUTINE E04NEF(STR)
  CHARACTER*(*)    STR
```

2.2 Specification for E04NEA

```
SUBROUTINE E04NEA(STR, LWSAV, IWSAV, RWSAV, INFORM)
  INTEGER          IWSAV(610), INFORM
  double precision RWSAV(475)
  LOGICAL          LWSAV(120)
  CHARACTER*(*)    STR
```

3 Description

E04NEF/E04NEA may be used to supply values for optional parameters to E04NCF/E04NCA. It is only necessary to call E04NEF/E04NEA for those parameters whose values are to be different from their default values. One call to E04NEF/E04NEA sets one parameter 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 **double precision** value. Such numbers may be up to 16 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 E04NEF, 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 E04NEF ('Nolist')
```

suppresses printing of this and subsequent options. Printing will automatically be turned on again after a call to E04NCF and may be turned on again at any time using the keyword List.

For E04NEA 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 E04NCF/E04NCA 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 E04NCF/E04NCA.

A complete list of optional parameters, their abbreviations, synonyms and default values is given in Section 11 in E04NCF/E04NCA.

4 References

None.

5 Parameters

- 1: STR – CHARACTER*(*) *Input*
On entry: a single valid option string (as described in Section 3 and in Section 11 in E04NCF/E04NCA).

Note: *the following are additional parameters for specific use with E04NEA. Users of E04NEF therefore need not read the remainder of this description.*

- 2: LWSAV(120) – LOGICAL array *Communication Array*
 3: IWSAV(610) – INTEGER array *Communication Array*
 4: RWSAV(475) – **double precision** array *Communication Array*

The arrays LWSAV, IWSAV and RWSAV **must not** be altered between calls to any of the routines E04NEA, E04NCA, E04NDA 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

Errors or warnings detected by the routine:

INFORM = 5

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

7 Accuracy

Not applicable.

8 Further Comments

E04NDF/E04NDA may also be used to supply optional parameters to E04NCF/E04NCA.

9 Example

See Section 9 in E04NDF/E04NDA.
