NAG Fortran Library Routine Document

E04URF/E04URA

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 E04USF/E04USA. More precisely, E04URF must be used to supply optional parameters to E04USF and E04URA must be used to supply optional parameters to E04USA.

E04URA is a version of E04URF that has additional parameters in order to make it safe for use in multithreaded applications (see Section 5 below). The initialisation routine E04WBF **must** have been called prior to calling E04URA.

2 Specifications

2.1 Specification for E04URF

```
SUBROUTINE E04URF(STRING)
CHARACTER*(*)     STRING
```

2.2 Specification for E04URA

```
SUBROUTINE E04URA(STRING, LWSAV, IWSAV, RWSAV, INFORM)
INTEGER           IWSAV(610), INFORM
real              RWSAV(475)
LOGICAL           LWSAV(120)
CHARACTER*(*)     STRING
```

3 Description

E04URF/E04URA may be used to supply values for optional parameters to the corresponding routines E04USF/E04USA. It is only necessary to call E04URF/E04URA for those parameters whose values are to be different from their default values. One call to E04URF/E04URA 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) A mandatory keyword.

(b) A phrase that qualifies the keyword.

(c) A number that specifies an INTEGER or ***real*** 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 E04URF, 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 E04URF ('Nolist')
```

suppresses printing of this and subsequent options. Printing will automatically be turned on again after a call to E04USF and may be turned on again at any time using the keyword **list**.

For E04URA 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 E04USF/E04USA and so the keyword **defaults** is provided to allow you to reset all the optional parameters to their default values prior to a subsequent call to E04USF/E04USA.

A complete list of optional parameters, their abbreviations, synonyms and default values is given in Section 11 of the document for E04USF/E04USA.

4 References

None.

5 Parameters

1: STRING – CHARACTER*(*) *Input*

On entry: a single valid option string (as described in Section 3 above and in Section 11 of the document for E04USF/E04USA.

Note: *the following are additional parameters for specific use with E04URA. Users of E04URF therefore need not read the remainder of this section.*

2: LWSAV(120) – LOGICAL array *Workspace*
3: IWSAV(610) – INTEGER array *Workspace*
4: RWSAV(475) – ***real*** array *Workspace*

The arrays LWSAV, IWSAV and RWSAV **must not** be altered between calls to any of the routines E04WBF, E04USA, E04UQA or E04URA.

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

E04UQF/E04UQA may also be used to supply optional parameters to the corresponding routines E04USF/E04USA.

9 Example

See Section 9 of the document for E04UQF/E04UQA.