NAG Library Routine Document

E04WBF

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

E04WBF is used to initialize routines E04DGA, E04MFA, E04NCA, E04NFA, E04NKA, E04UCA, E04UFA, E04UGA and E04USA.

2 Specification

```
SUBROUTINE E04WBF (RNAME, CWSAV, LCWSAV, LWSAV, LLWSAV, IWSAV, LIWSAV,     &
                   RWSAV, LRWSAV, IFAIL)
INTEGER            LCWSAV, LLWSAV, IWSAV(LIWSAV), LIWSAV, LRWSAV,          &
                   IFAIL
REAL (KIND=nag_wp) RWSAV(LRWSAV)
LOGICAL            LWSAV(LLWSAV)
CHARACTER(*)       RNAME
CHARACTER(80)      CWSAV(LCWSAV)
```

3 Description

E04WBF initializes some or all of the arrays CWSAV, LWSAV, IWSAV and RWSAV for the routine specified by RNAME, and any associated option setting routines.

4 References

None.

5 Arguments

1: RNAME – CHARACTER(*) *Input*

On entry: the name of the routine to be initialized.

Constraint: RNAME must be the name of one of the routines initialized by E04WBF.

2: CWSAV(LCWSAV) – CHARACTER(80) array *Communication Array*

3: LCWSAV – INTEGER *Input*

On entry: the dimension of the array CWSAV as declared in the (sub)program from which E04WBF is called.

Constraints:

if RNAME = 'E04UFF' or 'E04UFA', LCWSAV $\geq$ 5;
otherwise LCWSAV $\geq$ 1.

4: LWSAV(LLWSAV) – LOGICAL array *Communication Array*

5: LLWSAV – INTEGER *Input*

On entry: the dimension of the array LWSAV as declared in the (sub)program from which E04WBF is called.

Constraints:

if RNAME = 'E04NKF' or 'E04NKA', LLWSAV $\geq$ 20;
if RNAME = 'E04UGF' or 'E04UGA', LLWSAV $\geq$ 20;
otherwise LLWSAV $\geq$ 120.

6: IWSAV(LIWSAV) – INTEGER array *Communication Array*

7: LIWSAV – INTEGER *Input*

On entry: the dimension of the array IWSAV as declared in the (sub)program from which E04WBF is called.

Constraints:

if RNAME = 'E04NKF' or 'E04NKA', LIWSAV $\geq$ 380;
if RNAME = 'E04UGF' or 'E04UGA', LIWSAV $\geq$ 550;
otherwise LIWSAV $\geq$ 610.

8: RWSAV(LRWSAV) – REAL (KIND=nag_wp) array *Communication Array*

9: LRWSAV – INTEGER *Input*

On entry: the dimension of the array RWSAV as declared in the (sub)program from which E04WBF is called.

Constraints:

if RNAME = 'E04NKF' or 'E04NKA', LRWSAV $\geq$ 285;
if RNAME = 'E04UGF' or 'E04UGA', LRWSAV $\geq$ 550;
otherwise LRWSAV $\geq$ 475.

10: 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

The routine name supplied in RNAME is invalid

IFAIL = 2

One or more of the workspace array lengths LCWSAV, LLWSAV, LIWSAV or LRWSAV is too small.

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

E04WBF is not threaded in any implementation.

9 Further Comments

The time taken by E04WBF is negligible.

10 Example

The use of E04WBF is illustrated by the example programs of the routines listed in Section 1.