

# NAG Fortran Library Routine Document

## E04WGF

**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 INTEGER optional parameters to E04WDF. The initialization routine E04WCF **must** have been called prior to calling E04WGF.

### 2 Specification

```
SUBROUTINE E04WGF (STRING, IVALUE, IW, RW, IFAIL)
INTEGER           IVALUE, IW(*), IFAIL
double precision RW(*)
CHARACTER*(*)    STRING
```

### 3 Description

E04WGF may be used to supply values for INTEGER optional parameters to E04WDF. It is only necessary to call E04WGF for those parameters whose values are to be different from their default values. One call to E04WGF sets one parameter value.

Each INTEGER optional parameter is defined by a single character string in STRING and the corresponding value in IVALUE. For example, the following allows the iteration limit to be defined:

```
ITNLIM = 1000
IF (M > 500) ITNLIM = 500
CALL E04WGF ('Iterations', ITNLIM, IW, RW, IFAIL)
```

Optional parameter settings are preserved following a call to E04WDF 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 E04WDF.

A complete list of optional parameters, their abbreviations, synonyms and default values is given in Section 11 of the document for E04WDF.

### 4 References

None.

### 5 Parameters

- 1: STRING – CHARACTER\*(\*) *Input*  
*On entry:* a single valid keyword of an INTEGER optional parameter (as described in Section 11 of the document for E04WDF).
- 2: IVALUE – INTEGER *Input*  
*On entry:* an INTEGER value associated with the keyword in STRING.

- 3: IW(\*) – INTEGER array *Communication Array*  
4: RW(\*) – *double precision* array *Communication Array*

The arrays IW and RW are defined in the document for E04WCF and **must not** be altered between calls to any of the routines E04WCF, E04WDF, E04WEF, E04WFF, E04WGF, E04WHF, E04WKF and E04WLF.

- 5: IFAIL – INTEGER *Input/Output*

*On entry:* IFAIL must be set to 0, -1 or 1. Users who are unfamiliar with this parameter should refer to Chapter P01 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, for users 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

The initialization routine E04WCF has not been called.

IFAIL = 2

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

## 7 Accuracy

Not applicable.

## 8 Further Comments

E04WEF or E04WFF may also be used to supply INTEGER optional parameters to E04WDF.

## 9 Example

See Section 9 of the documents for E04WDF and E04WEF.

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