

# NAG Fortran Library Routine Document

## X04ACF

**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

X04ACF opens a Fortran unit number for reading, writing or appending, and associates the unit with a named file.

### 2 Specification

```
SUBROUTINE X04ACF(IUNIT, FILE, MODE, IFAIL)
INTEGER          IUNIT, MODE, IFAIL
CHARACTER*(*)   FILE
```

### 3 Description

X04ACF is especially useful if the calling language is not Fortran. It opens a Fortran unit number for reading, writing or appending, and associates the unit with a filename specified by the parameter FILE.

Because it is not standard Fortran 77 to open a file for appending, this facility may not be available on all systems. See the Users' Note for your implementation for details.

### 4 References

None.

### 5 Parameters

- 1: IUNIT – INTEGER *Input*  
*On entry:* the Fortran unit number which identifies the file to be read from, written to or appended to. Note that this may be system dependent. Values in the range 7 to 1000 should however be safe on most systems.
- 2: FILE – CHARACTER\*(\*) *Input*  
*On entry:* the name of the file to be opened.  
*Constraint:* must contain a valid filename for the computer system being used.
- 3: MODE – INTEGER *Input*  
*On entry:* specifies whether the file is to be opened for reading, writing or appending as follows.  
If MODE = 0, the file is to be opened for reading.  
If MODE = 1, the file is to be opened for writing.  
If MODE = 2, the file is to be opened for appending.  
*Constraint:*  $0 \leq \text{MODE} \leq 2$ .
- 4: 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:

$IFAIL = 1$

On entry, MODE is invalid.

$IFAIL = 2$

Failure to open the file for reading.

$IFAIL = 3$

Failure to open the file for writing.

$IFAIL = 4$

Failure to open the file for appending.

## 7 Accuracy

Not applicable.

## 8 Further Comments

None.

## 9 Example

This example program simply illustrates how to open a file for writing.

### 9.1 Program Text

**Note:** the listing of the example program presented below uses *bold italicised* terms to denote precision-dependent details. Please read the Users' Note for your implementation to check the interpretation of these terms. As explained in the Essential Introduction to this manual, the results produced may not be identical for all implementations.

```
*      X04ACF Example Program Text.
*      Mark 19 Release. NAG Copyright 1999.
*      .. Parameters ..
INTEGER          NOUT
PARAMETER        (NOUT=6)
INTEGER          ICHAN
PARAMETER        (ICHAN=4)
CHARACTER*11     FNAME
PARAMETER        (FNAME='success.res')
*      .. Local Scalars ..
INTEGER          IFAIL
LOGICAL          EX, OP
*      .. External Subroutines ..
EXTERNAL         X04ACF
*      .. Executable Statements ..
WRITE (NOUT,*) 'X04ACF Example Program Results'
*
*      Test successful open for write
```

```
*
      IFAIL = 1
*
      CALL X04ACF(ICHAN,FNAME,1,IFAIL)
*
      INQUIRE (ICHAN,EXIST=EX,OPENED=OP)
      IF ((IFAIL.EQ.0) .AND. EX .AND. OP) THEN
          WRITE (NOUT,99998)
          WRITE (ICHAN,99998)
      ELSE
          WRITE (NOUT,99999) FNAME, ICHAN
      END IF
*
      STOP
*
99999 FORMAT (' ** FAILS to open "',A,'" and connect file to channel ',
+           I2)
99998 FORMAT (' OK file successfully opened for writing')
      END
```

## 9.2 Program Data

None.

## 9.3 Program Results

```
X04ACF Example Program Results
OK file successfully opened for writing
```

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