

## X05BAF – NAG Fortran Library Routine Document

**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

X05BAF returns the amount of processor time used since an unspecified previous time, via the routine name.

### 2 Specification

```
real FUNCTION X05BAF()
```

### 3 Description

X05BAF returns the number of seconds of processor time used since some previous time. The previous time is system dependent, but may be, for example, the time the current job or the current program started running.

If the system clock of the host machine is inaccessible for any reason, X05BAF returns the value zero.

### 4 References

None.

### 5 Parameters

None.

### 6 Error Indicators and Warnings

None.

### 7 Accuracy

The accuracy of the value returned depends on the accuracy of the system clock on the host machine.

### 8 Further Comments

Since the value returned by X05BAF is the amount of processor time since some unspecified earlier time, no significance should be placed on the value other than as a marker to be compared with some later figure returned by X05BAF. The amount of processor time that has elapsed between two calls of X05BAF can be simply calculated as the earlier value subtracted from the later value.

### 9 Example

This program makes a call to X05BAF, performs some computations, makes another call to X05BAF, and gives the time used by the computations as the difference between the two returned values.

## 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.

```

*      X05BAF Example Program Text
*      Mark 14 Release.  NAG Copyright 1989.
*      .. Parameters ..
      INTEGER          NOUT
      PARAMETER       (NOUT=6)
      real            ONE
      PARAMETER       (ONE=1.0e0)
*      .. Local Scalars ..
      real            CPTIME, E, S1, S2, T
      INTEGER          N
*      .. External Functions ..
      real            X05BAF
      EXTERNAL         X05BAF
*      .. Executable Statements ..
      WRITE (NOUT,*) 'X05BAF Example Program Results'
*
      S1 = X05BAF()
*
      E = ONE
      T = ONE
      DO 20 N = 1, 10000
          T = T/N
          E = E + T
20  CONTINUE
*
      S2 = X05BAF()
*
      CPTIME = S2 - S1
      WRITE (NOUT,99999) 'It took', CPTIME, ' seconds to compute e =', E
      STOP
*
99999 FORMAT (1X,A,1P,e10.2,A,e13.5)
      END

```

## 9.2 Program Data

None.

## 9.3 Program Results

```

X05BAF Example Program Results
It took 1.67E-02 seconds to compute e = 2.71828E+00

```

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