

# NAG Library Function Document

## nag\_iload (f16dbc)

### 1 Purpose

nag\_iload (f16dbc) broadcasts a scalar into an integer vector.

### 2 Specification

```
#include <nag.h>
#include <nagf16.h>
void nag_iload (Integer n, Integer alpha, Integer x[], Integer incx,
               NagError *fail)
```

### 3 Description

nag\_iload (f16dbc) performs the operation

$$x \leftarrow (\alpha, \alpha, \dots, \alpha)^T,$$

where  $x$  is an  $n$ -element integer vector and  $\alpha$  is an integer scalar.

### 4 References

Basic Linear Algebra Subprograms Technical (BLAST) Forum (2001) *Basic Linear Algebra Subprograms Technical (BLAST) Forum Standard* University of Tennessee, Knoxville, Tennessee <http://www.netlib.org/blas/blast-forum/blas-report.pdf>

### 5 Arguments

- |    |  |                     |
|----|--|---------------------|
| 1: | <b>n</b> – Integer   | <i>Input</i>        |
|    | <i>On entry:</i> $n$ , the number of elements in $x$ .   |                     |
|    | <i>Constraint:</i> $n \geq 0$ .  |                     |
| 2: | <b>alpha</b> – Integer   | <i>Input</i>        |
|    | <i>On entry:</i> the scalar $\alpha$ .   |                     |
| 3: | <b>x[<i>dim</i>]</b> – Integer   | <i>Output</i>       |
|    | <b>Note:</b> the dimension, $dim$ , of the array $x$ must be at least $\max(1, 1 + (n - 1) incx )$ .                               |                     |
|    | <i>On exit:</i> the scalar $\alpha$ is scattered with a stride of <b>incx</b> in $x$ . Intermediate elements of $x$ are unchanged. |                     |
| 4: | <b>incx</b> – Integer  | <i>Input</i>        |
|    | <i>On entry:</i> the increment in the subscripts of $x$ between successive elements of $x$ .                                       |                     |
|    | <i>Constraint:</i> <b>incx</b> $\neq 0$ .  |                     |
| 5: | <b>fail</b> – NagError *   | <i>Input/Output</i> |
|    | The NAG error argument (see Section 2.7 in How to Use the NAG Library and its Documentation).                                      |                     |

## 6 Error Indicators and Warnings

### NE\_ALLOC\_FAIL

Dynamic memory allocation failed.

See Section 3.2.1.2 in How to Use the NAG Library and its Documentation for further information.

### NE\_BAD\_PARAM

On entry, argument  $\langle value \rangle$  had an illegal value.

### NE\_INT

On entry,  $\mathbf{incx} = \langle value \rangle$ .

Constraint:  $\mathbf{incx} \neq 0$ .

On entry,  $\mathbf{n} = \langle value \rangle$ .

Constraint:  $\mathbf{n} \geq 0$ .

### NE\_INTERNAL\_ERROR

An unexpected error has been triggered by this function. Please contact NAG.

See Section 3.6.6 in How to Use the NAG Library and its Documentation for further information.

### NE\_NO\_LICENCE

Your licence key may have expired or may not have been installed correctly.

See Section 3.6.5 in How to Use the NAG Library and its Documentation for further information.

## 7 Accuracy

The BLAS standard requires accurate implementations which avoid unnecessary over/underflow (see Section 2.7 of Basic Linear Algebra Subprograms Technical (BLAST) Forum (2001)).

## 8 Parallelism and Performance

nag\_iloa (f16dbc) is not threaded in any implementation.

## 9 Further Comments

None.

## 10 Example

See Section 10 in nag\_dgeqpf (f08bec) and nag\_zgeqpf (f08bse).

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