

NAG C Library Function Document

nag_zge_load (f16thc)

1 Purpose

nag_zge_load (f16thc) initialises a complex general matrix.

2 Specification

```
void nag_zge_load (Nag_OrderType order, Integer m, Integer n, Complex alpha,
                  Complex diag, Complex a[], Integer pda, NagError *fail)
```

3 Description

nag_zge_load (f16thc) forms the complex m by n general matrix A given by

$$a_{ij} = \begin{cases} \text{diag} & \text{if } i = j \\ \text{alpha} & \text{if } i \neq j \end{cases}$$

4 References

None.

5 Parameters

- 1: **order** – Nag_OrderType *Input*
On entry: the **order** parameter specifies the two-dimensional storage scheme being used, i.e., row-major ordering or column-major ordering. C language defined storage is specified by **order = Nag_RowMajor**. See Section 2.2.1.4 of the Essential Introduction for a more detailed explanation of the use of this parameter.
Constraint: **order = Nag_RowMajor** or **Nag_ColMajor**.
- 2: **m** – Integer *Input*
On entry: m , the number of rows of the matrix A .
Constraint: $m \geq 0$.
- 3: **n** – Integer *Input*
On entry: n , the number of columns of the matrix A .
Constraint: $n \geq 0$.
- 4: **alpha** – Complex *Input*
On entry: the value to be assigned to the off-diagonal elements of A .
- 5: **diag** – Complex *Input*
On entry: the value to be assigned to the diagonal elements of A .
- 6: **a**[*dim*] – Complex *Output*
Note: the dimension, dim , of the array **a** must be at least $\max(1, pda \times n)$ when **order = Nag_ColMajor** and at least $\max(1, pda \times m)$ when **order = Nag_RowMajor**.
 If **order = Nag_ColMajor**, the (i, j) th element of the matrix A is stored in **a**[($j - 1$) \times **pda** + $i - 1$] and if **order = Nag_RowMajor**, the (i, j) th element of the matrix A is stored in **a**[($i - 1$) \times **pda** + $j - 1$].

On entry: the m by n general matrix A .

7: **pda** – Integer

Input

On entry: the stride separating matrix row or column elements (depending on the value of **order**) in the array **a**.

Constraints:

if **order** = **Nag_ColMajor**, **pda** \geq $\max(1, \mathbf{m})$;
 if **order** = **Nag_RowMajor**, **pda** \geq $\max(1, \mathbf{n})$.

8: **fail** – NagError *

Input/Output

The NAG error parameter (see the Essential Introduction).

6 Error Indicators and Warnings

NE_INT

On entry, **m** = $\langle value \rangle$.

Constraint: **m** \geq 0.

On entry, **n** = $\langle value \rangle$.

Constraint: **n** \geq 0.

On entry, **pda** = $\langle value \rangle$.

Constraint: **pda** \geq $\max(1, \mathbf{m})$.

On entry, **pda** = $\langle value \rangle$.

Constraint: **pda** \geq $\max(1, \mathbf{n})$.

NE_BAD_PARAM

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

7 Accuracy

Not applicable.

8 Further Comments

None.

9 Example

None.