

# Z01ZAFP

## NAG Parallel Library Routine Document

**Note:** before using this routine, please read the Users' Note for your implementation to check for implementation-dependent details. You are advised to enclose any calls to NAG Parallel Library routines between calls to Z01AAFP and Z01ABFP.

### 1 Description

Z01ZAFP returns information about the Library Grid set up by Z01AAFP.

### 2 Specification

```
SUBROUTINE Z01ZAFP(ICNTXT, MP, NP, MYROW, MYCOL)
  INTEGER          ICNTXT,MP,NP,MYROW,MYCOL
```

### 3 Usage

#### 3.1 Definitions

The following definitions are used in describing the logical processor grid within this document

- $m_p$  – the number of rows in the Library Grid.
- $n_p$  – the number of columns in the Library Grid.

#### 3.2 Global and Local Arguments

The following global **input** arguments must have the same value on entry to the routine on each processor and the global **output** arguments will have the same value on exit from the routine on each processor:

Global output arguments: MP, NP

The remaining arguments are local.

### 4 Arguments

- 1: ICNTXT — INTEGER *Local Input*  
*On entry:* the Library context, usually returned by a call to the Library Grid initialisation routine Z01AAFP.  
**Note:** the value of ICNTXT **must not** be changed.
- 2: MP — INTEGER *Global Output*  
*On exit:*  $m_p$ , the number of process rows in the Library Grid. If an invalid ICNTXT is detected internally by Z01ZAFP, then  $MP = -1$ .
- 3: NP — INTEGER *Global Output*  
*On exit:*  $n_p$ , the number of process columns in the Library Grid. If an invalid ICNTXT is detected internally by Z01ZAFP, then  $NP = -1$ .
- 4: MYROW — INTEGER *Local Output*  
*On exit:* the row coordinate of the calling process in the Library Grid. If an invalid ICNTXT is detected internally by Z01ZAFP, then  $MYROW = -1$ .
- 5: MYCOL — INTEGER *Local Output*  
*On exit:* the column coordinate of the calling process in the Library Grid. If an invalid ICNTXT is detected internally by Z01ZAFP, then  $MYCOL = -1$ .

## 5 Errors and Warnings

If MP, NP, MYROW or MYCOL is  $-1$ , then the Library context ICNTXT is invalid.

## 6 Further Comments

This is based on the BLACS routine BLACS\_GRIDINFO.

## 7 References

- [1] Blackford L S, Choi J, Cleary A, D'Azevedo E, Demmel J, Dhillon I, Dongarra J, Hammarling S, Henry G, Petitet A, Stanley K, Walker D and Whaley R C (1997) ScaLAPACK Users' Guide *SIAM* 3600 University City Science Center, Philadelphia, PA 19104-2688, USA. URL: <http://www.netlib.org/scalapack/slug/scalapack-slug.html>

## 8 Example

None.

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