

Chapter Z02

Error Checking Mode

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1 Scope of the Chapter

At this release, this chapter provides one routine to reduce the amount of error checking carried out on the input parameters by the NAG Parallel Library routines.

2 Background to the Problems

On entry, all NAG Parallel Library routines check the validity and consistency of the input parameters supplied. In the case of global input parameters, this involves some communication. The overheads associated with this error checking may be non-negligible depending upon the specific Library routine called, the characteristics of the computing environment and the numerical problem being solved. It can be significant for routines which are computationally inexpensive but are repeatedly called, and/or when a large number of processors is used.

Z02EAFP can be used to set the error checking level until either a subsequent call to Z02EAFP is made, or until the Library Grid termination routine Z01ABFP is called.

The error checks that can be disabled using Z02EAFP are specified in each routine document.

The user should be fully familiar with the information in Section 3 before using Z02EAFP.

3 Recommendations on Choice and Use of Available Routines

Particular caution must be exercised when a call to Z02EAFP is inserted in any application program to disable the checking of input parameters. Specifically, the correctness, reliability and robustness of the program must have been rigorously established as the possible consequences of non-validated input may include:

- incorrect or inaccurate program results,
- program deadlock,
- program crash.

Unpredictable behaviour may also occur when the user's program does not reinitialise the error parameter IFAIL between calls to NAG Parallel Library routines but relies instead on a value of IFAIL = 0 being returned on successful completion from a NAG Parallel Library routine. In such case, the program may perform incorrectly or behave unexpectedly.

This warning is repeated in Section 1 of the document for Z02EAFP.
