

# NAG Library Routine Document

## g22zmf

**Note:** please be advised that this routine is classed as ‘experimental’ and its interface may be developed further in the future. Please see Section 3.1.1 in How to Use the NAG Library and its Documentation for further information.

### 1 Purpose

**g22zmf** is a general option setting routine for routines in Chapter G22. It can set a single optional parameter or reset all of them to their default.

### 2 Specification

#### Fortran Interface

```
Subroutine g22zmf (handle, optstr, ifail)
  Integer, Intent (Inout)      :: ifail
  Character (*), Intent (In)   :: optstr
  Type (c_ptr), Intent (In)    :: handle
```

### 3 Description

**g22zmf** can only be called on G22 handles. Its purpose is to reset all optional parameters to their default values or set a single optional parameter to a user-supplied value.

Optional parameters and their values are, in general, presented as a character string of the form ‘*option = optval*’; alphabetic characters can be supplied in either upper or lower case. *optval* will normally be either an integer, real or character value as defined in the description of the specific optional parameter. In addition, all optional parameters can take an *optval* DEFAULT which resets the optional parameter to its default value.

In cases where an optional parameter may have multiple instances an *instance identifier* can be specified. This is presented using the form ‘*option : instance identifier = optval*’. In such cases, if the instance identifier is omitted, the value of all instances are changed.

Information relating to available option names, their corresponding valid values, whether the use of an instance identifier may be appropriate and what form it can take is given in the individual routine documents.

### 4 References

None.

### 5 Arguments

- 1: **handle** – Type (c\_ptr) *Input*  
*On entry:* the G22 handle which **must** have been initialized by one of Chapter G22s initialization routines.
- 2: **optstr** – Character(\*) *Input*  
*On entry:* a string identifying the option, its value and, where required, the instance identifier.

#### Defaults

Resets all options to their default values.

*option = optval*

Sets (all instances) of *option* to *optval*.

*option* : *instance identifier* = *optval*

Sets a single instance of *option* to *optval*.

*option* = **default**

Resets (all instances) of *option* to their default value.

*option* : *instance identifier* = **default**

Resets a single instance of *option* to its default value.

**optstr** is case insensitive and *option*, *instance identifier* and *optval* may consist of one or more tokens separated by white space.

See the documentation of the individual routines in the G22 Chapter Introduction for details of valid values for *option*, *instance identifier* and *optval*.

### 3: **ifail** – Integer

*Input/Output*

*On entry*: **ifail** must be set to 0, -1 or 1. If you are unfamiliar with this argument you should refer to Section 3.4 in How to Use the NAG Library and its Documentation for details.

For environments where it might be inappropriate to halt program execution when an error is detected, the value -1 or 1 is recommended. If the output of error messages is undesirable, then the value 1 is recommended. Otherwise, if you are not familiar with this argument, the recommended value is 0. **When the value -1 or 1 is used it is essential to test the value of ifail on exit.**

*On exit*: **ifail** = 0 unless the routine detects an error or a warning has been flagged (see Section 6).

## 6 Error Indicators and Warnings

If on entry **ifail** = 0 or -1, explanatory error messages are output on the current error message unit (as defined by **x04aaf**).

Errors or warnings detected by the routine:

**ifail** = 11

**handle** has not been initialized or is corrupt.

**ifail** = 12

**handle** is not a G22 handle.

**ifail** = 21

On entry, *option* was not recognized.

**optstr** = *<value>*.

**ifail** = 22

On entry, the expected delimiter '=' was not found.

**optstr** = *<value>*.

**ifail** = 23

On entry, *option* is read only.

**optstr** = *<value>*.

**ifail** = 24

On entry, could not convert *optval* to an integer.

**optstr** = *<value>*.

**ifail** = 25

On entry, could not convert *optval* to a real.  
**optstr** =  $\langle value \rangle$ .

**ifail** = 26

On entry, *optval* is not a valid value for *option*.  
**optstr** =  $\langle value \rangle$ .

**ifail** = 121

Invalid *instance identifier* for *option*.  
On entry, **optstr** =  $\langle value \rangle$ .

**ifail** = 122

Numeric *instance identifier* is out of range  
On entry, *instance identifier* =  $\langle value \rangle$ .  
Constraint:  $\langle value \rangle \leq \textit{instance identifier}$  and  $\textit{instance identifier} \leq \langle value \rangle$ .

**ifail** = 123

On entry, *option* cannot have an associated *instance identifier*. The supplied *instance identifier* was ignored.  
**optstr** =  $\langle value \rangle$ .

**ifail** = -99

An unexpected error has been triggered by this routine. Please contact NAG.  
See Section 3.9 in How to Use the NAG Library and its Documentation for further information.

**ifail** = -399

Your licence key may have expired or may not have been installed correctly.  
See Section 3.8 in How to Use the NAG Library and its Documentation for further information.

**ifail** = -999

Dynamic memory allocation failed.  
See Section 3.7 in How to Use the NAG Library and its Documentation for further information.

## 7 Accuracy

Not applicable.

## 8 Parallelism and Performance

**g22zmf** is not threaded in any implementation.

## 9 Further Comments

None.

## 10 Example

See the example for **g22yaf**.

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