

NAG Library Function Document

nag_blgm_optget (g22znc)

Note: please be advised that this function 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

nag_blgm_optget (g22znc) is a general option getting function for Chapter g22. It is used to query the value of optional parameters.

2 Specification

```
#include <nag.h>
#include <nagg22.h>

void nag_blgm_optget (void *handle, const char *optstr, Integer *ivalue,
                    double *rvalue, char *cvalue, Integer lcvalue, Nag_VariableType *optype,
                    NagError *fail)
```

3 Description

nag_blgm_optget (g22znc) can only be called on G22 handles. It can be used to query the current values of optional parameters and will return either an integer, real or character value dependent upon the type associated with the optional parameter being queried.

The optional parameter of interest is presented as a character string of the form ‘*option*’

In cases where an optional parameter may have multiple instances in a particular G22 handle an *instance identifier* can be specified. This is presented using the form ‘*option : instance identifier*’. In such cases, if the instance identifier is omitted, the value of the first instance is returned. If the value of optional parameter is not the same for all instances and an instance identifier is omitted, a warning is raised.

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 function documents.

4 References

None.

5 Arguments

1: **handle** – void * *Input*
On entry: the G22 handle which **must** have been initialized by one of Chapter g22 initialization functions.

2: **optstr** – const char * *Input*
On entry: a string identifying the option and, where required, the instance identifier.

identify

Returns a string description of the G22 handle supplied in **handle**. See Section 9 for more details.

option

Returns the value of *option*. If there are multiple instances of *option*, the value of the first is returned. If not all instances of *option* have the same value, **fail.code** = **NW_INSTANCE** is returned.

option : instance identifier

Returns the value of a single instance of *option*.

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

See the documentation of the individual Chapter g22 functions for details of valid values for *option* and *instance identifier*.

- 3: **ivalue** – Integer * *Output*
On exit: if **optype** = Nag_Integer, *option* identifies an integer-valued parameter and **ivalue** holds its current value.
- 4: **rvalue** – double * *Output*
On exit: if **optype** = Nag_Real, *option* identifies a real-valued parameter and **rvalue** holds its current value.
- 5: **cvalue** – char * *Output*
Note: the string returned in **cvalue** will never exceed min(**lcvalue**,41) characters in length, including the terminating null character.
On exit: if **optype** = Nag_Character, *option* identifies a character-valued parameter and **cvalue** holds its current value.
- 6: **lcvalue** – Integer *Input*
On entry: length of the string **cvalue**. At most **lcvalue** – 1 non-null characters will be written into **cvalue**.
Constraint: **lcvalue** > 1.
- 7: **optype** – Nag_VariableType * *Output*
On exit: indicates whether *option* is an integer, real or character-valued optional parameter and hence which of **ivalue**, **rvalue** or **cvalue** holds the current value.
optype = Nag_Integer
option is an integer-valued optional parameter; its current value has been returned in **ivalue**.
optype = Nag_Real
option is a real-valued optional parameter; its current value has been returned in **rvalue**.
optype = Nag_Character
option is a character-valued optional parameter; its current value has been returned in **cvalue**.
- 8: **fail** – NagError * *Input/Output*
The NAG error argument (see Section 3.7 in How to Use the NAG Library and its Documentation).

6 Error Indicators and Warnings

NE_ALLOC_FAIL

Dynamic memory allocation failed.

See Section 2.3.1.2 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_HANDLE

handle has not been initialized or is corrupt.

handle is not a G22 handle.

NE_INSTANCE

Invalid *instance identifier* for *option*.

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

Numeric *instance identifier* is out of range.

On entry, *instance identifier* = $\langle value \rangle$

Constraint: $\langle value \rangle \leq \textit{instance identifier}$ and $\textit{instance identifier} \leq \langle value \rangle$.

NE_INT

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

Constraint: **lvalue** > 1.

NE_INTERNAL_ERROR

An internal error has occurred in this function. Check the function call and any array sizes. If the call is correct then please contact NAG for assistance.

See Section 2.7.6 in How to Use the NAG Library and its Documentation for further information.

NE_INVALID_OPTION

On entry, *option* is not readable: **optstr** = $\langle value \rangle$.

On entry, *option* was not recognized: **optstr** = $\langle value \rangle$.

NE_NO_LICENCE

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

See Section 2.7.5 in How to Use the NAG Library and its Documentation for further information.

NW_INSTANCE

On entry, *option* cannot have an associated *instance identifier*. The supplied *instance identifier* was ignored.

optstr = $\langle value \rangle$.

option has multiple instances. Information from the first instance has been returned.

NW_TRUNCATED

On entry, *option* is a character optional parameter, but **cvalue** is too short to hold the stored value. The minimum number of characters to store the value is returned in **ivalue**. The value returned in **cvalue** will be truncated.

7 Accuracy

Not applicable.

8 Parallelism and Performance

nag_blgm_optget (g22znc) is not threaded in any implementation.

9 Further Comments

When **optstr** is set to **identify**, the following return values are possible:

Model Formula

G22 handle was returned by **nag_blgm_lm_formula (g22yac)** in **hform**.

Data Matrix Description

G22 handle was returned by **nag_blgm_lm_describe_data (g22ybc)** in **hddesc**.

Design Matrix Description

G22 handle was returned by **nag_blgm_lm_design_matrix (g22ycc)** in **hxdesc**.

10 Example

See the example for **nag_blgm_lm_formula (g22yac)**.
