NAG Library Function Document

nag_mip_opt_get (h02zlc)

1 Purpose
nag_mip_opt_get (h02zlc) is used to query the value of optional arguments available to supported problem solving functions in Chapter h.
Currently, only nag_mip_sqp (h02dac) is supported.

2 Specification
#include <nag.h>
#include <nagh.h>

void nag_mip_opt_get (const char *optstr, Integer *ivalue, double *rvalue,
 char *cvalue, Integer lcvalue, Nag_VariableType *optype,
 const Integer iopts[], const double opts[], NagError *fail)

3 Description
nag_mip_opt_get (h02zlc) is used to query the current values of options. It is necessary to initialize optional argument arrays using nag_mip_opt_set (h02zkc) before any options are queried.

nag_mip_opt_get (h02zlc) will normally return either an integer, real or character value dependent upon the type associated with the optional argument being queried. Some real and integer options also return additional information in cvalue. Whether the option queried is of integer, real or character type, and whether additional information is returned in cvalue, is indicated by the returned value of optype.

Information on optional argument names and whether these options are real, integer or character can be found in Section 11 in nag_mip_sqp (h02dac).

4 References
None.

5 Arguments

1:  optstr – const char *  
   On entry: a string identifying the option whose current value is required. See Section 11 in nag_mip_sqp (h02dac) for information on valid options. In addition, the following is a valid option:

   Identify
   nag_mip_opt_get (h02zlc) returns in cvalue the function name supplied to nag_mip_opt_set (h02zkc) when the optional argument arrays iopts and opts were initialized.

2:  ivalue – Integer *  
   On exit: if the optional argument supplied in optstr is an integer valued argument, ivalue will hold its current value.

3:  rvalue – double *  
   On exit: if the optional argument supplied in optstr is a real valued argument, rvalue will hold its current value.
4:  cvalue – char * 
   Output
   Note: the string returned in cvalue will never exceed min(lcvalue,41) characters in length
   (including the null terminator).
   On exit: if the optional argument supplied in optstr is a character valued argument, cvalue will
   hold its current value, cvalue will also contain additional information for some integer and real
   valued arguments, as indicated by optype.

5:  lcvalue – Integer 
   Input
   On entry: length of cvalue. At most lcvalue – 1 non-null characters will be written into cvalue.
   Constraint: lcvalue > 1.

6:  optype – Nag_VariableType * 
   Output
   On exit: indicates whether the optional argument supplied in optstr is an integer, real or character
   valued argument and hence which of ivalue, rvalue or cvalue holds the current value.
   
   optype = Nag_Integer
   optstr is an integer valued optional argument, its current value has been returned in ivalue.
   
   optype = Nag_Real
   optstr is a real valued optional argument, its current value has been returned in rvalue.
   
   optype = Nag_Character
   optstr is a character valued optional argument, its current value has been returned in cvalue.
   
   optype = Nag_Integer_Additional
   optstr is an integer valued optional argument, its current value has been returned in ivalue.
   Additional information has been returned in cvalue.
   
   optype = Nag_Real_Additional
   optstr is a real valued optional argument, its current value has been returned in rvalue.
   Additional information has been returned in cvalue.

7:  iopts[dim] – const Integer 
   Communication Array
   Note: the dimension, dim, of this array is dictated by the requirements of associated functions that
   must have been previously called. This array MUST be the same array passed as argument iopts
   in the previous call to nag_mip_opt_set (h02zkc).

8:  opts[dim] – const double 
   Communication Array
   Note: the dimension, dim, of this array is dictated by the requirements of associated functions that
   must have been previously called. This array MUST be the same array passed as argument opts
   in the previous call to nag_mip_opt_set (h02zkc).

9:  fail – NagError * 
   Input/Output
   The NAG error argument (see Section 3.6 in the Essential Introduction).

6  Error Indicators and Warnings

NE_ALLOC_FAIL
   Dynamic memory allocation failed.
   See Section 3.2.1.2 in the Essential Introduction for further information.

NE_BAD_PARAM
   On entry, argument ⟨value⟩ had an illegal value.
NE_INT
On entry, \texttt{lcvalue} = \langle value\rangle.
Constraint: \texttt{lcvalue} > 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.
An unexpected error has been triggered by this function. Please contact NAG.
See Section 3.6.6 in the Essential Introduction for further information.

NE_INVALID_OPTION
On entry, the \texttt{option} in \texttt{optstr} has not been recognized.
The arrays \texttt{iopts} and \texttt{opts} have either not been initialized, have become corrupted, or are not
compatible with this option setting function.

NE_NO_LICENCE
Your licence key may have expired or may not have been installed correctly.
See Section 3.6.5 in the Essential Introduction for further information.

NW_TRUNCATED
On entry, \texttt{optstr} indicates a character optional argument, but \texttt{cvalue} is too short to hold the stored
value. The returned value will be truncated.

7 Accuracy
Not applicable.

8 Parallelism and Performance
Not applicable.

9 Further Comments
None.

10 Example
See the example programs associated with the problem solving function you wish to use for a
demonstration of how to use \texttt{nag_mip_opt_get (h02zlc)} to query options.