

## NAG Toolbox

### nag\_mip\_optget (h02zl)

#### 1 Purpose

nag\_mip\_optget (h02zl) is used to query the value of optional parameters available to supported problem solving functions in Chapter H.

Currently, only nag\_mip\_sqp (h02da) is supported.

#### 2 Syntax

```
[ivalue, rvalue, cvalue, optype, ifail] = nag_mip_optget(optstr, iopts, opts)
[ivalue, rvalue, cvalue, optype, ifail] = h02zl(optstr, iopts, opts)
```

#### 3 Description

nag\_mip\_optget (h02zl) is used to query the current values of options. It is necessary to initialize optional parameter arrays using nag\_mip\_optset (h02zk) before any options are queried.

nag\_mip\_optget (h02zl) will normally return either an integer, real or character value dependent upon the type associated with the optional parameter 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 parameter names and whether these options are real, integer or character can be found in Section 11 in nag\_mip\_sqp (h02da).

#### 4 References

None.

#### 5 Parameters

##### 5.1 Compulsory Input Parameters

1: **optstr** – CHARACTER(\*)

A string identifying the option whose current value is required. See Section 11 in nag\_mip\_sqp (h02da) for information on valid options. In addition, the following is a valid option:

##### Identify

nag\_mip\_optget (h02zl) returns in **cvalue** the function name supplied to nag\_mip\_optset (h02zk) when the optional parameter arrays **iopts** and **opts** were initialized.

2: **iopts**(:) – INTEGER array

**Note:** the dimension 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\_optset (h02zk).

3: **opts**(:) – REAL (KIND=nag\_wp) array

**Note:** the dimension 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\_optset (h02zk).

## 5.2 Optional Input Parameters

None.

## 5.3 Output Parameters

1: **ivalue** – INTEGER

If the optional parameter supplied in **optstr** is an integer valued argument, **ivalue** will hold its current value.

2: **rvalue** – REAL (KIND=nag\_wp)

If the optional parameter supplied in **optstr** is a real valued argument, **rvalue** will hold its current value.

3: **cvalue** – CHARACTER(\*)

**Note:** the string returned in **cvalue** will never exceed 40 characters in length.

If the optional parameter 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**.

4: **optype** – INTEGER

Indicates whether the optional parameter supplied in **optstr** is an integer, real or character valued argument and hence which of **ivalue**, **rvalue** or **cvalue** holds the current value.

**optype** = 1

**optstr** is an integer valued optional parameter, its current value has been returned in **ivalue**.

**optype** = 2

**optstr** is a real valued optional parameter, its current value has been returned in **rvalue**.

**optype** = 3

**optstr** is a character valued optional parameter, its current value has been returned in **cvalue**.

**optype** = 4

**optstr** is an integer valued optional parameter, its current value has been returned in **ivalue**. Additional information has been returned in **cvalue**.

**optype** = 5

**optstr** is a real valued optional parameter, its current value has been returned in **rvalue**. Additional information has been returned in **cvalue**.

5: **ifail** – INTEGER

**ifail** = 0 unless the function detects an error (see Section 5).

## 6 Error Indicators and Warnings

Errors or warnings detected by the function:

**ifail** = 11

On entry, the *option* in **optstr** has not been recognized.

**ifail** = 41

On entry, **optstr** indicates a character optional parameter, but **cvalue** is too short to hold the stored value. The returned value will be truncated.

**ifail** = 61

The arrays **iopts** and **opts** have either not been initialized, have become corrupted, or are not compatible with this option setting function.

**ifail** = -99

An unexpected error has been triggered by this routine. Please contact NAG.

**ifail** = -399

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

**ifail** = -999

Dynamic memory allocation failed.

## **7 Accuracy**

Not applicable.

## **8 Further Comments**

None.

## **9 Example**

See the example programs associated with the problem solving function you wish to use for a demonstration of how to use `nag_mip_optget` (h02zl) to query options.

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