

## NAG C Library Function Document

### nag\_opt\_sparse\_nlp\_option\_set\_double (e04vnc)

#### 1 Purpose

nag\_opt\_sparse\_nlp\_option\_set\_double (e04vnc) may be used to supply individual double optional arguments to nag\_opt\_sparse\_nlp\_solve (e04vhc). The initialization function nag\_opt\_sparse\_nlp\_init (e04vnc) **must** have been called prior to calling nag\_opt\_sparse\_nlp\_option\_set\_double (e04vnc).

#### 2 Specification

```
#include <nag.h>
#include <nage04.h>
```

```
void nag_opt_sparse_nlp_option_set_double (const char *string, double rvalue,
    Nag_E04State *state, NagError *fail)
```

#### 3 Description

nag\_opt\_sparse\_nlp\_option\_set\_double (e04vnc) may be used to supply values for double optional arguments to nag\_opt\_sparse\_nlp\_solve (e04vhc). It is only necessary to call nag\_opt\_sparse\_nlp\_option\_set\_double (e04vnc) for those arguments whose values are to be different from their default values. One call to nag\_opt\_sparse\_nlp\_option\_set\_double (e04vnc) sets one argument value.

Each double optional argument is defined by a single character string in **string** and the corresponding value in **rvalue**. For example the following illustrates how the *LU* stability tolerance could be defined:

```
factol = 100.0;
if (illcon) factol = 5.0;
e04vnc ("LU Factor Tolerance", factol, &state, &fail);
```

Optional argument settings are preserved following a call to nag\_opt\_sparse\_nlp\_solve (e04vhc) and so the keyword **Defaults** is provided to allow you to reset all the optional arguments to their default values prior to a subsequent call to nag\_opt\_sparse\_nlp\_solve (e04vhc).

A complete list of optional arguments, their abbreviations, synonyms and default values is given in Section 11 of the document for nag\_opt\_sparse\_nlp\_solve (e04vhc).

#### 4 References

None.

#### 5 Arguments

1: **string** – const char \* *Input*

*On entry:* a single valid keyword of a double optional argument (as described in Section 11 of the document for nag\_opt\_sparse\_nlp\_solve (e04vhc)).

2: **rvalue** – double *Input*

*On entry:* the value associated with the keyword in **string**.

3: **state** – Nag\_E04State \* *Communication Structure*

**Note:** **state** is a NAG defined type (see Section 2.2.1.1 of the Essential Introduction).

**state** contains internal information required for functions in this suite. It must not be modified in any way.

4: **fail** – NagError \*

*Input/Output*

The NAG error argument (see Section 2.6 of the Essential Introduction).

## 6 Error Indicators and Warnings

### NE\_BAD\_PARAM

On entry, argument  $\langle value \rangle$  had an illegal value.

### NE\_E04\_OPTION\_INVALID

The supplied option is invalid. Check that the keywords are neither ambiguous nor misspelt. The option **string** is  $\langle value \rangle$  and **rvalue** =  $\langle value \rangle$ .

### NE\_E04VGC\_NOT\_INIT

Initialization function `nag_opt_sparse_nlp_init` (e04vgc) has not been called.

### 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 consult NAG for assistance.

## 7 Accuracy

Not applicable.

## 8 Further Comments

`nag_opt_sparse_nlp_option_set_file` (e04vkc) or `nag_opt_sparse_nlp_option_set_string` (e04vlc) may also be used to supply double optional arguments to `nag_opt_sparse_nlp_solve` (e04vhc).

## 9 Example

See Section 9 of the document for `nag_opt_sparse_nlp_option_set_file` (e04vkc).

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