

## NAG C Library Function Document

### nag\_opt\_sparse\_nlp\_option\_set\_string (e04v1c)

#### 1 Purpose

nag\_opt\_sparse\_nlp\_option\_set\_string (e04v1c) may be used to supply individual optional arguments to nag\_opt\_sparse\_nlp\_solve (e04vhc). The initialization function nag\_opt\_sparse\_nlp\_init (e04v1c) **must** have been called prior to calling nag\_opt\_sparse\_nlp\_option\_set\_string (e04v1c).

#### 2 Specification

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

```
void nag_opt_sparse_nlp_option_set_string (const char *string, Nag_E04State *state,
    NagError *fail)
```

#### 3 Description

nag\_opt\_sparse\_nlp\_option\_set\_string (e04v1c) may be used to supply values for optional arguments to nag\_opt\_sparse\_nlp\_solve (e04vhc). It is only necessary to call nag\_opt\_sparse\_nlp\_option\_set\_string (e04v1c) for those arguments whose values are to be different from their default values. One call to nag\_opt\_sparse\_nlp\_option\_set\_string (e04v1c) sets one argument value.

Each optional argument is defined by a single character string, consisting of one or more items. The items associated with a given option must be separated by spaces, or equals signs [=]. Alphabetic characters may be upper or lower case. The string

```
Print Level = 1
```

is an example of a string used to set an optional argument. For each option the string contains one or more of the following items:

- a mandatory keyword;
- a phrase that qualifies the keyword;
- a number that specifies an Integer or double value. Such numbers may be up to 16 contiguous characters which can be read using C's d or g formats, terminated by a space if this is not the last item on the line.

For nag\_opt\_sparse\_nlp\_option\_set\_string (e04v1c), each user-specified option is not normally printed as it is defined, but this printing may be turned on using the keyword **List**. Thus the statement

```
e04v1c ("List", &state, &fail);
```

turns on printing of this and subsequent options. Printing may be turned off again using the keyword **Nolist**.

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 option string (as described in Section 3 above and in Section 11 of the document for nag\_opt\_sparse\_nlp\_solve (e04vhc)).
- 2: **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.
- 3: **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  $\langle value \rangle$ .

### 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), nag\_opt\_sparse\_nlp\_option\_set\_integer (e04vmc) or nag\_opt\_sparse\_nlp\_option\_set\_double (e04vnc) may also be used to supply optional arguments to nag\_opt\_sparse\_nlp\_solve (e04vhc).

## 9 Example

See Section 9 of the documents for nag\_opt\_sparse\_nlp\_solve (e04vhc) and nag\_opt\_sparse\_nlp\_option\_set\_file (e04vkc).

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