

## NAG 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 (e04vgc) **must** have been called before 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 before 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 12 in nag\_opt\_sparse\_nlp\_solve (e04vhc).

#### 4 References

None.

## 5 Arguments

- 1: **string** – const char \* *Input*  
*On entry:* a single valid option string (see Section 3 in nag\_opt\_sparse\_nlp\_option\_set\_string (e04vlc) and Section 12 in nag\_opt\_sparse\_nlp\_solve (e04vhc)).
- 2: **state** – Nag\_E04State \* *Communication Structure*  
**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 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  $\langle value \rangle$  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

The 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 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\_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.

## 7 Accuracy

Not applicable.

## 8 Parallelism and Performance

Not applicable.

## 9 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).

## **10 Example**

See Section 10 in `nag_opt_sparse_nlp_option_set_file` (e04vkc).

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