

## NAG Library Function Document

### nag\_opt\_nlp\_option\_set\_double (e04whc)

#### 1 Purpose

nag\_opt\_nlp\_option\_set\_double (e04whc) may be used to supply individual double optional parameters to nag\_opt\_nlp\_solve (e04wdc). The initialization function nag\_opt\_nlp\_init (e04wcc) **must** have been called before calling nag\_opt\_nlp\_option\_set\_double (e04whc).

#### 2 Specification

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

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

#### 3 Description

nag\_opt\_nlp\_option\_set\_double (e04whc) may be used to supply values for double optional parameters to nag\_opt\_nlp\_solve (e04wdc). It is only necessary to call nag\_opt\_nlp\_option\_set\_double (e04whc) for those arguments whose values are to be different from their default values. One call to nag\_opt\_nlp\_option\_set\_double (e04whc) sets one argument value.

Each double optional parameter 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;
e04whc ("LU Factor Tolerance", factol, &state, &fail);
```

Optional parameter settings are preserved following a call to nag\_opt\_nlp\_solve (e04wdc) and so the keyword **Defaults** is provided to allow you to reset all the optional parameters to their default values before a subsequent call to nag\_opt\_nlp\_solve (e04wdc).

A complete list of optional parameters, their abbreviations, synonyms and default values is given in Section 12 in nag\_opt\_nlp\_solve (e04wdc).

#### 4 References

None.

#### 5 Arguments

- 1: **string** – const char \* *Input*  
*On entry:* a single valid keyword of a double optional parameter (as described in Section 12 in nag\_opt\_nlp\_solve (e04wdc)).
- 2: **rvalue** – double *Input*  
*On entry:* the value associated with the keyword in **string**.
- 3: **state** – Nag\_E04State \* *Communication Structure*  
**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 2.7 in How to Use the NAG Library and its Documentation).

## 6 Error Indicators and Warnings

### NE\_ALLOC\_FAIL

Dynamic memory allocation failed.  
See Section 2.3.1.2 in How to Use the NAG Library and its Documentation 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 ' $\langle value \rangle$ ' and **rvalue** =  $\langle value \rangle$ .

### NE\_E04WCC\_NOT\_INIT

The initialization function nag\_opt\_nlp\_init (e04wcc) 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 2.7.6 in How to Use the NAG Library and its Documentation for further information.

### NE\_NO\_LICENCE

Your licence key may have expired or may not have been installed correctly.  
See Section 2.7.5 in How to Use the NAG Library and its Documentation for further information.

## 7 Accuracy

Not applicable.

## 8 Parallelism and Performance

nag\_opt\_nlp\_option\_set\_double (e04whc) is not threaded in any implementation.

## 9 Further Comments

nag\_opt\_nlp\_option\_set\_file (e04wec) or nag\_opt\_nlp\_option\_set\_string (e04wfc) may also be used to supply double optional parameters to nag\_opt\_nlp\_solve (e04wdc).

## 10 Example

See Section 10 in nag\_opt\_nlp\_option\_set\_file (e04wec).

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