# NAG Library Function Document

# nag_opt_init (e04xxc)

## 1    Purpose

nag_opt_init (e04xxc) is the options structure initialization function for Chapter e04. This function or nag_opt_read (e04xyc) must be called before using the options structure.

## 2    Specification

```
#include <nag.h>
#include <nage04.h>
void nag_opt_init (Nag_E04_Opt *options)
```

## 3    Description

The optimization functions of Chapter e04 have a number of optional arguments, which are set by means of a structure of type Nag_E04_Opt. Optional argument values may be assigned to members of an options structure directly in the program text and/or by supplying the optional values in a file which can be read by the function nag_opt_read (e04xyc).

If optional argument values are assigned directly in the program text and no use is made of nag_opt_read (e04xyc), then nag_opt_init (e04xxc) **must** be called before any assignments are made to the options structure. Initialization is still required even if no assignments are made to the structure before it is passed to the optimization function.

If the file reading function nag_opt_read (e04xyc) is used then this will automatically initialize the options structure if this has not already been done. Any direct assignment to the options structure made **after** a call to nag_opt_read (e04xyc) must **not** be preceded by a call to nag_opt_init (e04xxc) otherwise the values set by nag_opt_read (e04xyc) will be lost. Direct assignments to the options structure made **before** calling nag_opt_read (e04xyc) must, of course, still be preceded by a call to nag_opt_init (e04xxc).

The purpose of nag_opt_init (e04xxc) is to initialize the options structure members with null values which indicate to the optimization function that the optional argument that a structure member represents is not to be changed from its default value.

## 4    References

None.

## 5    Arguments

1:     **options** – Nag_E04_Opt *                                                                                            *Output*

        *On exit*: the initialized options structure.

## 6    Error Indicators and Warnings

None.

## 7    Accuracy

Not applicable.

# 8 Parallelism and Performance

Not applicable.

# 9 Further Comments

None.

# 10 Example

See Section 10 in nag_opt_lsq_no_deriv (e04fcc), nag_opt_lsq_deriv (e04gbc), nag_opt_lp (e04mfc), nag_opt_qp (e04nfc), nag_opt_nlp_solve (e04wdc) and nag_opt_lsq_covariance (e04ycc).