

NAG Toolbox for MATLAB

e04vl

1 Purpose

e04vl may be used to supply individual optional parameters to e04vh. The initialization function e04vg **must** have been called before calling e04vl.

2 Syntax

```
[cw, iw, rw, ifail] = e04vl(string, cw, iw, rw)
```

3 Description

e04vl may be used to supply values for optional parameters to e04vh. It is only necessary to call e04vl for those parameters whose values are to be different from their default values. One call to e04vl sets one parameter value.

Each optional parameter is defined by a single character string, of up to 72 characters, 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 parameter. 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 in Fortran's I, F, E or D formats, terminated by a space if this is not the last item on the line.

For e04vl, 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

```
[cw, iw, rw, ifail] = e04vl('List', cw, iw, rw);
```

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

Optional parameter settings are preserved following a call to e04vh 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 e04vh.

A complete list of optional parameters, their abbreviations, synonyms and default values is given in Section 11 of the document for e04vh.

4 References

None.

5 Parameters

5.1 Compulsory Input Parameters

1: **string** – **string**

A single valid option string (as described in Section 3 and in Section 11 of the document for e04vh).

2: **cw(*)** – **string array**

Note: the dimension of the array **cw** must be at least **lencw** (see e04vg).

3: **iw(*)** – **int32 array**

Note: the dimension of the array **iw** must be at least **leniw** (see e04vg).

4: **rw(*)** – **double array**

Note: the dimension of the array **rw** must be at least **lenrw** (see e04vg).

5.2 Optional Input Parameters

None.

5.3 Input Parameters Omitted from the MATLAB Interface

None.

5.4 Output Parameters

1: **cw(*)** – **string array**

Note: the dimension of the array **cw** must be at least **lencw** (see e04vg).

2: **iw(*)** – **int32 array**

Note: the dimension of the array **iw** must be at least **leniw** (see e04vg).

3: **rw(*)** – **double array**

Note: the dimension of the array **rw** must be at least **lenrw** (see e04vg).

4: **ifail** – **int32 scalar**

0 unless the function detects an error (see Section 6).

6 Error Indicators and Warnings

Errors or warnings detected by the function:

ifail = 1

The initialization function e04vg has not been called.

ifail = 2

The supplied option is invalid. Check that the keywords are neither ambiguous nor misspelt.

7 Accuracy

Not applicable.

8 Further Comments

e04vm or e04vn may also be used to supply optional parameters to e04vh.

9 Example



```
string = 'Major iterations limit 50';  
[cw, iw, rw, ifail] = e04vg();  
[cw, iw, rw, ifail] = e04vl(string, cw, iw, rw);  
[ivalue, cw, iw, rw, ifail] = e04vr('Major iterations limit', cw, iw, rw)  
  
ivalue =  
        50  
cw =  
    array elided  
iw =  
    array elided  
rw =  
    array elided  
ifail =  
        0
```
