

NAG Toolbox for MATLAB

e04vn

1 Purpose

e04vn may be used to supply individual double optional parameters to e04vh. The initialization function e04vg **must** have been called before calling e04vn.

2 Syntax

```
[cw, iw, rw, ifail] = e04vn(string, rvalue, cw, iw, rw)
```

3 Description

e04vn may be used to supply values for double optional parameters to e04vh. It is only necessary to call e04vn for those parameters whose values are to be different from their default values. One call to e04vn sets one parameter 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
end
[cw, iw, rw, ifail] = e04vn('LU Factor Tolerance', factol, cw, iw, rw);
```

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 keyword of a double optional parameter (as described in Section 11 of the document for e04vh).

2: **rvalue – double scalar**

The value associated with the keyword in **string**.

3: **cw(*)** – **string array**

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

4: **iw(*)** – **int32 array**

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

5: **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

e04vl may also be used to supply double optional parameters to e04vh.

9 Example



```
string = 'Infinite bound size';  
rvalue = 10000000000;  
[cw, iw, rw, ifail] = e04vg();  
[cw, iw, rw, ifail] = e04vn(string, rvalue, cw, iw, rw);  
[rvalueOut, cw, iw, rw, ifail] = e04vs(string, cw, iw, rw)
```

```
rvalueOut =  
    1.0000e+10  
cw =  
    array elided  
iw =  
    array elided  
rw =  
    array elided  
ifail =  
        0
```
