

## NAG Toolbox

### nag\_opt\_qpconvex2\_sparse\_option\_string (e04ns)

#### 1 Purpose

nag\_opt\_qpconvex2\_sparse\_option\_string (e04ns) may be used to supply individual optional parameters to nag\_opt\_qpconvex2\_sparse\_solve (e04nq). The initialization function nag\_opt\_qpconvex2\_sparse\_init (e04np) **must** have been called before calling nag\_opt\_qpconvex2\_sparse\_option\_string (e04ns).

#### 2 Syntax

```
[cw, iw, rw, ifail] = nag_opt_qpconvex2_sparse_option_string(string, cw, iw, rw)
[cw, iw, rw, ifail] = e04ns(string, cw, iw, rw)
```

#### 3 Description

nag\_opt\_qpconvex2\_sparse\_option\_string (e04ns) may be used to supply values for optional parameters to nag\_opt\_qpconvex2\_sparse\_solve (e04nq). It is only necessary to call nag\_opt\_qpconvex2\_sparse\_option\_string (e04ns) for those arguments whose values are to be different from their default values. One call to nag\_opt\_qpconvex2\_sparse\_option\_string (e04ns) sets one argument 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 nag\_opt\_qpconvex2\_sparse\_option\_string (e04ns), 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] = e04ns('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 nag\_opt\_qpconvex2\_sparse\_solve (e04nq) 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\_qpconvex2\_sparse\_solve (e04nq).

A complete list of optional parameters, their abbreviations, synonyms and default values is given in Section 12 in nag\_opt\_qpconvex2\_sparse\_solve (e04nq).

#### 4 References

None.

## 5 Parameters

### 5.1 Compulsory Input Parameters

1: **string** – CHARACTER(\*)

A single valid option string (see Section 3 in `nag_opt_qpconvex2_sparse_option_string` (e04ns) and Section 12 in `nag_opt_qpconvex2_sparse_solve` (e04nq)).

2: **cw(:)** – CHARACTER(8) array

The dimension of the array **cw** must be at least **len<sub>cw</sub>** (see `nag_opt_qpconvex2_sparse_init` (e04np))

3: **iw(:)** – INTEGER array

The dimension of the array **iw** must be at least **len<sub>iw</sub>** (see `nag_opt_qpconvex2_sparse_init` (e04np))

4: **rw(:)** – REAL (KIND=`nag_wp`) array

The dimension of the array **rw** must be at least **len<sub>rw</sub>** (see `nag_opt_qpconvex2_sparse_init` (e04np))

### 5.2 Optional Input Parameters

None.

### 5.3 Output Parameters

1: **cw(:)** – CHARACTER(8) array

The dimension of the array **cw** will be **len<sub>cw</sub>** (see `nag_opt_qpconvex2_sparse_init` (e04np))

2: **iw(:)** – INTEGER array

The dimension of the array **iw** will be **len<sub>iw</sub>** (see `nag_opt_qpconvex2_sparse_init` (e04np))

3: **rw(:)** – REAL (KIND=`nag_wp`) array

The dimension of the array **rw** will be **len<sub>rw</sub>** (see `nag_opt_qpconvex2_sparse_init` (e04np))

4: **ifail** – INTEGER

**ifail** = 0 unless the function detects an error (see Section 5).

## 6 Error Indicators and Warnings

Errors or warnings detected by the function:

**ifail** = 1

The initialization function `nag_opt_qpconvex2_sparse_init` (e04np) has not been called.

**ifail** = 2

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

**ifail** = -99

An unexpected error has been triggered by this routine. Please contact NAG.

**ifail** = -399

Your licence key may have expired or may not have been installed correctly.

**ifail** = -999

Dynamic memory allocation failed.

## 7 Accuracy

Not applicable.

## 8 Further Comments

`nag_opt_qpconvex2_sparse_option_integer_set` (e04nt) or `nag_opt_qpconvex2_sparse_option_double_set` (e04nu) may also be used to supply optional parameters to `nag_opt_qpconvex2_sparse_solve` (e04nq).

## 9 Example

### 9.1 Program Text

```
function e04ns_example
fprintf('e04ns example results\n\n');
string = 'Iterations limit 50';
% Initialize
[cw, iw, rw, ifail] = e04np;
% Set option
[cw, iw, rw, ifail] = e04ns( ...
    'Iterations limit 50', cw, iw, rw);
% Get option value
[ivalue, cw, iw, rw, ifail] = e04nx( ...
    'Iterations limit', cw, iw, rw);
fprintf('Iterations limit has been set to %4d\n',ivalue);
```

### 9.2 Program Results

```
e04ns example results
Iterations limit has been set to 50
```

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