## nag_restore_random_state (g05cgc)

1. Purpose
nag_restore_random_state (g05cgc) restores the value of the seed used by the basic generator in the g05 Chapter after a previous call to nag_save_random_state (g05cfc).
2. Specification
\#include <nag.h>
\#include <nagg05.h>
void nag_restore_random_state(Integer istate[], double xstate[], NagError *fail)

## 3. Description

This function restores the state of the basic generator, using information saved by a previous call to nag_save_random_state (g05cfc).

## 4. Parameters

istate[9]
xstate[4]
Input: information about the generator, which must be unchanged from the previous call of nag_save_random_state (g05cfc).
fail
The NAG error parameter, see the Essential Introduction to the NAG C Library.
5. Error Indications and Warnings

## NE_STATE_CORRUPT

istate or xstate has been corrupted since the previous call to nag_save_random_state (g05cfc).
6. Further Comments

None.
7. See Also
nag_random_continuous_uniform (g05cac)
nag_save_random_state (g05cfc)

## 8. Example

The program prints 10 pseudo-random numbers generated by nag_random_continuous_uniform (g05cac); it saves the generator state after the 2 nd , and restores it after the 7 th, so that the 8 th, 9 th and 10 th numbers are the same as the 3 rd, 4 th and 5 th.
8.1. Program Text

```
/* nag_restore_random_state(g05cgc) Example Program
    *
    * Copyright 1990 Numerical Algorithms Group.
    *
    * Mark 1, 1990.
    */
#include <nag.h>
#include <stdio.h>
#include <nag_stdlib.h>
#include <nagg05.h>
```

```
main()
{
    Integer seed = 0;
    Integer i, istate[9];
    double x[5], xstate[4];
    Vprintf("g05cgc Example Program Results\n");
    g05cbc(seed);
    for (i= 0; i<5; ++i)
        {
            x[i] = g05cac();
            if (i == 1)
                g05cfc(istate, xstate);
        }
    for (i=0; i<5; ++i)
        Vprintf("%9.4f%s", x[i], (i%5==4 || i==4) ? "\n": " ");
    for (i=0; i<5; ++i)
        {
            x[i] = g05cac();
            if (i == 1)
                g05cgc(istate, xstate, NAGERR_DEFAULT);
        }
    for (i=0; i<5; ++i)
        Vprintf("%9.4f%s", x[i], (i%5==4 || i==4) ? "\n": " ");
    exit(EXIT_SUCCESS);
}
```

8.2. Program Data

None.

### 8.3. Program Results

| g05cgc Example Program Results |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.7951 | 0.2257 | 0.3713 | 0.2250 | 0.8787 |  |  |  |  |  |  |
| 0.0475 | 0.1806 | 0.3713 | 0.2250 | 0.8787 |  |  |  |  |  |  |

