

## NAG Library Function Document

### nag\_enum\_value\_to\_name (x04nbc)

#### 1 Purpose

nag\_enum\_value\_to\_name (x04nbc) returns the name of the NAG enumeration member given the enumeration member's value.

#### 2 Specification

```
#include <nag.h>
#include <nagx04.h>

const char * nag_enum_value_to_name (int enum_value)
```

#### 3 Description

nag\_enum\_value\_to\_name (x04nbc) takes an integer argument, which must be the value of a NAG enumeration member and returns a string which is the name of that member (e.g., "Nag\_ColMajor", "Nag\_LogNormal", etc.). If the input value does not correspond to a NAG enumeration member then the function returns 0.

The reverse process of converting from enumeration member name to enumeration member value is also available using nag\_enum\_name\_to\_value (x04nac).

Converting enumeration members to and from name and value may be of use when saving a set of problem arguments to file or reading problem arguments from a file for use in an application. In the case of saving problem arguments, any enumeration members to be saved should be saved using their names to be subsequently read as strings. nag\_enum\_value\_to\_name (x04nbc) can be used to get enumeration member names for writing.

#### 4 References

None.

#### 5 Arguments

1: **enum\_value** – int *Input*  
*On entry:* the value of a NAG enumeration member.

#### 6 Error Indicators and Warnings

If the value 0 is returned then the input value is not recognized as a valid NAG enumeration member value.

#### 7 Accuracy

Not applicable.

#### 8 Parallelism and Performance

nag\_enum\_value\_to\_name (x04nbc) is not threaded in any implementation.

## 9 Further Comments

None.

## 10 Example

This example takes a set of NAG enumeration members and checks that the value used has a name that matches the member name.

### 10.1 Program Text

```
/* nag_enum_value_to_name (x04nbc) Example Program.
 *
 * NAGPRODCODE Version.
 *
 * Copyright 2016 Numerical Algorithms Group.
 *
 * Mark 26, 2016.
 */

#include <stdio.h>
#include <nag.h>
#include <nag_stdlib.h>
#include <nag_string.h>
#include <nagx04.h>

int main(void)
{
    /* Scalars */
    Integer exit_status = 0;
    Nag_OrderType order;
    Nag_TransType trans;
    Nag_DiagType unitdiag;
    Nag_MatrixType matrix;

    /* Pointers */
    const char *str_order, *str_trans, *str_matrix, *str_unitdiag;
    const char *status;

    printf("nag_enum_value_to_name (x04nbc) Example Program Results\n\n");

    /* Set some Nag types using enum member names */
    order = Nag_ColMajor;
    trans = Nag_Trans;
    matrix = Nag_GeneralMatrix;
    unitdiag = Nag_NonUnitDiag;

    /* Convert the values held by these typed variables to strings */

    /* nag_enum_value_to_name (x04nbc).
     * Converts NAG enum member value to its name
     */
    str_order = nag_enum_value_to_name(order);
    str_trans = nag_enum_value_to_name(trans);
    str_matrix = nag_enum_value_to_name(matrix);
    str_unitdiag = nag_enum_value_to_name(unitdiag);

    /* Check strings match member names and print. */
    printf("    Member name      String returned  Status\n");
    printf("-----\n");
    status = "OK";
    if (strcmp(str_order, "Nag_ColMajor")) {
        status = "Error";
        exit_status++;
    }
    printf("%-17s %-17s %-6s\n", "Nag_ColMajor", str_order, status);

    status = "OK";
```

```

    if (strcmp(str_trans, "Nag_Trans")) {
        status = "Error";
        exit_status++;
    }
    printf("%-17s %-17s %-6s\n", "Nag_Trans", str_trans, status);

    status = "OK";
    if (strcmp(str_matrix, "Nag_GeneralMatrix")) {
        status = "Error";
        exit_status++;
    }
    printf("%-17s %-17s %-6s\n", "Nag_GeneralMatrix", str_matrix, status);

    status = "OK";
    if (strcmp(str_unitdiag, "Nag_NonUnitDiag")) {
        status = "Error";
        exit_status++;
    }
    printf("%-17s %-17s %-6s\n", "Nag_NonUnitDiag", str_unitdiag, status);

    return exit_status;
}

```

## 10.2 Program Data

None.

## 10.3 Program Results

nag\_enum\_value\_to\_name (x04nbc) Example Program Results

Member name	String returned	Status
Nag_ColMajor	Nag_ColMajor	OK
Nag_Trans	Nag_Trans	OK
Nag_GeneralMatrix	Nag_GeneralMatrix	OK
Nag_NonUnitDiag	Nag_NonUnitDiag	OK

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