

NAG Library Chapter Introduction

x07 – IEEE Arithmetic

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1 Scope of the Chapter

This chapter provides functions to handle various aspects of IEEE floating-point arithmetic behaviour.

2 Background to the Problems

Modern systems allow you to control what happens to your program when an exceptional event such as overflow or division by zero occurs. Often, the default behaviour is for program execution to continue, while setting an appropriate flag. Sometimes the default behaviour is to halt execution and print a warning or error message.

The functions in Chapter x07 allow creation and detection of NaNs (Not a Number) and infinities, as well as alteration of the behaviour of a program when an exception occurs.

3 Functionality Index

Create a floating-point infinity	nag_create_infinity (x07bac)
Create a floating-point NaN (Not a Number)	nag_create_nan (x07bbc)
Determine whether a floating-point number is finite	nag_is_finite (x07aac)
Determine whether a floating-point number is NaN (Not a Number)	nag_is_nan (x07abc)
Get current behaviour of floating-point exceptions	nag_get_ieee_exception_mode (x07cac)
Set behaviour of floating-point exceptions	nag_set_ieee_exception_mode (x07cbc)

4 Auxiliary Functions Associated with Library Function Arguments

None.

5 Functions Withdrawn or Scheduled for Withdrawal

None.
