The NAG C Library is a large and comprehensive numerical library. It contains over 1,400 functions that provide solutions to a vast range of mathematical and statistical problems. The NAG C Library contains algorithms which are powerful, flexible and ready for use from a range of systems, languages, environments and packages.

NAG’s numerical capabilities have become synonymous with quality and flexibility. There are many reasons for this including; the calibre of the expert contributors from within NAG, academia and industry; the extensive documentation that accompanies all of its software; the stringent verification process to which every algorithm is subject.

Using the NAG C Library strengthens user capability in numerical and statistical areas such as:

- Optimization – local and global optimization solvers
- Ordinary and partial differential equations
- Wavelet transforms
- Option pricing
- Partial least squares and ridge regression
- Nearest correlation matrix
- Quantiles
- Mesh generation
- Numerical integration
- Roots of nonlinear equations
- Dense, banded and sparse linear equations
- Eigenvalue problems
- Linear and nonlinear least squares problems

- Special functions
- Curve and surface fitting and interpolation
- Large scale eigenproblems
- Large, sparse systems of linear equations
- Random number generation
- Simple calculations of statistical data
- Correlation and regression analysis
- Multivariate methods
- Analysis of variance and contingency table analysis
- Time series analysis
- Nonparametric statistics
- Copulas
- Mixed effects regression

Key features

Mathematical and statistical functionality
NAG’s collection of world-class numerical functions are organised into chapters, each devoted to a mathematical or statistical area. This makes algorithmic selection extremely easy.

Detailed documentation
Each function is accompanied by expert documentation with advice on the selection of the best algorithm and interpretation of the results returned.

Every function has an example program
Each NAG function has an example program to demonstrate how to access it by solving a sample problem. This template can then be easily adapted to reflect your specific problem and help you manage and analyse your data.

Quality assured
The validity of each function is tested on each of the machine ranges for which the Library is available. Only when an implementation satisfies our stringent accuracy requirements is it released. As a result you can rely on the proven correctness and reliability of the functions to give you the right answers.
Why should I use the NAG C Library?

**Features**
- Unrivalled numerical functionality – over 1,400 functions
- Proven correctness and robustness
- Highly flexible and can be used from multiple languages and environments
- Thread safe routines

**Benefits**
- Save time by not writing your own algorithmic code
- Future proof accuracy of application and reduce maintenance time
- NAG software evolves to reflect your programming language and environment advances
- Safely develop multithreaded applications

**Product availability**
The NAG C Library is available for Linux, Microsoft Windows as a static library or as a DLL (Dynamic Link Library) and for Mac OS. It is also callable from other software packages, programming languages and development environments.

**Contact us**

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