

Oracle Developer Studio Performance Library



KEY FEATURES

- Enhanced and newly added mathematical subroutines
- Highly tuned for Oracle systems (SPARC and x86)

KEY BENEFITS

- Leverages parallelization features of the Oracle Developer Studio C, C++ and Fortran compilers
- Maximizes compute-intensive application performance

The Oracle Developer Studio Performance Library maximizes compute-intensive application performance across Oracle systems (SPARC and x86) using advanced numeric solver libraries, enabling the creation of high-performance applications

Guidelines Introduction

The Oracle Developer Studio Performance Library is a set of optimized mathematical subroutines for solving linear algebra and other numerically intensive problems. It provides a performance boost to compute-intensive applications that use standard, basic numerical functions, such as applications for machine learning, analytics, finance, supply-chain management, scheduling, and technical models. The Performance Library contains enhanced and newly added standard routines that are tuned for optimal performance on the latest Oracle systems.

Tuned and Parallelized for SPARC and x86

The Oracle Developer Studio Performance Library contains highly performance-tuned functions for Oracle SPARC- and x86-based systems. The Performance Library is available for Oracle Solaris, Oracle Linux, and Red Hat Enterprise Linux operating systems.

The performance tuning is implemented at the micro-architecture level with assembler coding. Parallelization is heavily used at the macro level by leveraging the advanced, OpenMP features of the Oracle Developer Studio C, C++, and Fortran compilers. Coding is done to take the most advantage of the instruction-level features and cache memories of each supported CPU, thus making the best use of the latest multicore, multsocket, and clustered systems.

The Performance Library is the only such library available for the Oracle Solaris platform and for SPARC-based systems. Unlike other vendors, Oracle offers the Performance Library as part of the Oracle Developer Studio suite of compilers and tools, as opposed to delivering it as an additional download with an additional cost.

Advanced Numerical Solver Libraries

The Performance Library is based on internally developed routines such as transpose, convolution, correlation, sort and a collection of public domain subroutines available from Netlib at <http://www.netlib.org>, which have been enhanced, optimized, and bundled together. All the interfaces of the following libraries are implemented:

- **LAPACK:** Version 3.6.1 for solving linear algebra problems
- **BLAS1 (Basic Linear Algebra Subprograms):** For performing vector-vector operations
- **BLAS2:** For performing matrix-vector operations
- **BLAS3:** For performing matrix-matrix operations
- **Netlib Sparse-BLAS:** For performing sparse vector operations
- **NIST Fortran Sparse BLAS:** Version 0.5 for performing fundamental sparse matrix operations
- **SuperLU:** Version 3.0 for solving sparse linear systems of equations
- **FFTPACK and VFFTPACK Fourier transforms**





Included are the standard Fortran interfaces as well as C interfaces for BLAS and LAPACK, including, in addition, the CBLAS interfaces. In addition, there are functions for sorting, convolution, correlation, and matrix transposition.



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For more information about Oracle Developer Studio, visit oracle.com/goto/developerstudio or call +1.800.ORACLE1 to speak to an Oracle representative.

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