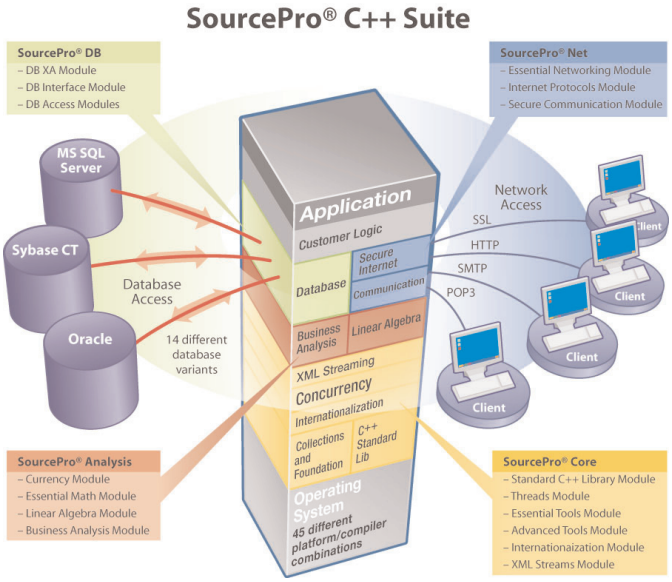
ROGUE WAVE® SOURCEPRO® ANALYSIS

OLD WAVE. NEW WAVE. **ROGUE WAVE.**

SOURCEPRO® C++

The most trusted foundation to build enterprise C++ applications, Rogue Wave® SourcePro® C++ is a set of C++ libraries and integrated, cross-platform components that provide the basic building blocks to create or extend applications. The set of four SourcePro® components is: SourcePro® Core, SourcePro® DB, SourcePro® Net, and SourcePro® Analysis.



Client: Enterprise Risk Management Software Provider

Challenge: The Company's suite of products help financial institutions calculate and report on a wide range of risk factors for a variety of conditions. According to the Director of Application Development, "The demands placed on risk management software require that it be robust enough to consistently deliver thorough and accurate analysis in a timely fashion." To meet these demands, the Director wanted to use standard C++ components that could measure up to these stringent requirements and still meet his budget and scheduling requirements.

Solutions: In developing its suite of risk management solutions, The Company used SourcePro® Core to provide basic C++ objects, such as arrays and lists, and to perform basic algorithms such as sorting. The Company's Risk-Scenario Engine uses SourcePro® DB to access third-party databases, such as Sybase® and Oracle®. Lastly, SourcePro® Analysis supplies random number generation and a variety of matrix manipulation functions to GenLib, The Company's high-performance, multi-threaded scenario generation and pricing library—written internally.

Benefits:

- Considerable reduction in development time
- Professional developers are able to concentrate on the main application areas rather than low-level details
- Faster time to market

ROGUE WAVE SOFTWARE

A QUOVADX DIVISION

SOURCEPRO® ANALYSIS

SourcePro® Analysis contains a wide range of C++ components for solving mathematical problems in business and research. Developers can rely on the algorithms in SourcePro Analysis for accurate, precise calculations, allowing them to focus on building appropriate data models.

SOURCEPRO® ANALYSIS IS COMPRISED OF FOUR MODULES:

THE ESSENTIAL MATH MODULE includes a broad range of basic math classes, such as vectors, matrices and arrays, dramatically simplifying programming for any code that manipulates numerical arrays. The Essential Math Module also contains classes for complex numbers, persistent streams, Fast Fourier Transforms, linear algebra decompositions, histograms, random distributions and linear regressions. This broad range of features make it the ideal choice for financial modeling, signal processing, engineering applications, simulation modeling and more.

THE LINEAR ALGEBRA MODULE provides C++ classes for performing numerical linear algebra, encapsulating the FORTRAN LAPACK library and offering comparable performance. Instead of having to master a procedural interface, developers can use the intuitive C++ classes to translate linear algebra problems from mathematics to C++ code. Developers can specify the exact features they wish to control while other features automatically take on their default behavior.

The Linear Algebra Module expands the functionality of the Essential Math Module by adding a wide range of specialized matrix classes for a total of 29 different matrix types, each with a similar interface, shortening the learning curve. It also includes similarly interfaced factorization classes and classes for symmetric and non-symmetric eigenvalue decomposition. Each of the classes in the Linear Algebra Module offer both simplicity for novice users and flexibility for advanced users to control every aspect of the computation, including algorithm and algorithm parameters.

THE BUSINESS ANALYSIS MODULE handles the granular details of the statistical capabilities of C++ so developers can concentrate on the business logic to create appropriate data models. The C++ classes are intuitive, object-oriented abstractions for performing sophisticated data analysis, allowing mathematical objects to be expressed using accepted arithmetic. To boost application performance, the classes in the Business Analysis Module take advantage of optimized BLAS routines where available.

The Business Analysis Module offers a wide range of functionality, including classes for both multiple linear and logistic regression, parameter calculation classes and model selection classes. The regression classes couple data and parameter calculations so the currently calculated parameters and the regression data are always in sync. The parameter calculation classes let developers use a provided calculation method or specify their own, while offering the flexibility to change calculation methods at runtime. Model selection classes allow developers to use one of the provided model selection techniques or to define their own model evaluation function.

THE CURRENCY MODULE supplies a variety of classes that make it easier to deal with currency and money in C++ applications, including conversion policies, flexible formatting classes, and classes for representing and manipulating decimal fractions exactly. In addition, the module provides transparent currency conversions and monetary calculations, so developers can specify the source of the exchange rates to be used, making it easier to use live feeds or other sources of data. Developers can extend or override default conversion algorithms, allowing them to design applications that meet business needs.

While the C++ language's built-in floating point types only approximate decimal numbers, the Currency Module allows representation of up to 28 digits of precision. This helps protect mission-critical applications from expensive errors by providing precise arithmetic methods and gives developers complete control over how to handle errors in their application.

The Currency Module provides the most complete solution to the euro challenge, combining currency conversions, monetary representations and decimal precision to help developers adapt existing or newly built systems to accommodate the euro. The Currency Module supplies conversion capabilities for both bilateral and the mandated triangulated conversion methods within the eurozone countries.

SUPPORTED PLATFORMS FOR SOURCEPRO® C++

OPERATING SYSTEMS	COMPILER
Microsoft® Windows®	Microsoft® Visual C++®, Intel® C++ Compiler
Sun Solaris™	SunONE™ Studio, Sun Forte™ Compiler, GNU gcc
HP HP-UX	HP aCC
Red Hat® Enterprise Linux	GNU gcc, Intel C++ Compiler
SuSE® Enterprise Linux	GNU gcc
IBM® AIX®	IBM® Visual Age®/XLC C++

Some SourcePro Analysis Modules are supported on a subset of these platforms. Please contact your account representative for the latest information on platform support.

ROGUE WAVE® SOURCEPRO® ANALYSIS

FEATURES	BENEFITS
Intuitive C++ interfaces to essential mathematical algorithms	Encapsulates the complexity of working with mathematical algorithms, thus shortening the learning curve and increasing productivity. Provides an easier way to map mathematics to C++, allowing developers to devote more time to value-added business logic instead of focusing on C++ implementation details.
Accuracy and precision	Reliable algorithms for accurate, precise calculations.
Intuitive C++ classes for performing numerical linear algebra	Encapsulates and offers comparable performance to the FORTRAN LAPACK library. Easily translates linear algebra problems from mathematics to C++ code through an efficient, intuitive, easy-to-use interface. Provides simple, higher-level interfaces, while allowing for additional control when needed for more complex situations.
C++ classes for performing sophisticated data analysis for business intelligence	Allows mathematical objects to be expressed naturally, using the arithmetic operators developers are accustomed to using. Developers can choose one of the provided model selection techniques or calculation methods, or define their own.
Intuitive C++ classes for handling currency and money	Supplies transparent currency conversions and monetary calculations, improving developer productivity. Simplifies adaptation of existing and newly built systems to accommodate the euro. Allows for the simple, highly flexible formatting of decimals. Allows developers to extend or override default conversion algorithms to design an application that meets business needs. Provides the flexibility to specify the source of the exchange rates, making it easier to use live feeds or other sources of data.
Decimal classes for representing and manipulating decimal fractions exactly	Represent up to 28 digits of precision, ensuring accuracy. Protects mission-critical applications from expensive errors by providing precise arithmetic and allowing developers complete control over error handling.

For more information on Rogue Wave SourcePro® C++ Products, go to:
www.roguewave.com/products/sourcepro

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