

Insightful Miner

INTELLIGENCE FROM DATA

Highly Scalable Data Analysis Workbench

- Powerful Predictive Analysis Without Programming
- Flexible and Extensible to Adapt to Changing Needs
- Fast Deployment of Results

"Insightful Miner's extensibility will appeal to new users and the large S-PLUS community. Plus, Insightful Miner's server versions and its production-ready features will enable businesses to more easily deploy predictive analysis against their largest data sets, extracting actionable intelligence from these huge data investments."

Dan Vesset
Research Manager, Analytics and Data Warehousing
IDC



Deliver the Power of Predictive Analysis to Your Decision Makers

NOW S-PLUS USERS CAN APPLY METHODS TO BIG DATA

S-PLUS users already know Insightful's powerful analytical capabilities. Now with Insightful Miner you can take data analysis to a whole new level.

Imagine being able to apply your predictive models created in S-PLUS to gigabyte-class data sets. Insightful Miner's unique pipeline architecture handles the details of splitting the scoring data into manageable chunks, and passing them sequentially to the S-PLUS model object. Since the entire data set is never all loaded into memory at once, the only limitation is the amount of space available on disk to store the results.

Insightful Miner helps you manage your S-PLUS applications, too. By embedding S-PLUS scripts into Insightful Miner's self-documenting visual workflows, you can see exactly how you built your model, making maintenance of complex applications a breeze. And Insightful Miner lets you share your workflows quickly and easily with anyone in the organization—even those that don't use S-PLUS—ensuring the benefit of your work gets to those who need it most.

"Insightful has long been an industry leader due to their excellent algorithms, and their predictive analysis workbench lives up to their reputation. They pay attention to the whole data analysis process."

**Herb Edelstein,
Industry Analyst and President
Two Crows Corporation**

Drive better decisions faster by getting the most from your data

Insightful Miner is a highly scalable data analysis workbench for creating analytic applications that give your decision makers the answers needed to improve business performance and mitigate financial risks. Insightful Miner supports the entire data analysis process with point-and-click ease, allowing a broad range of organizations to deploy predictive analytics to reduce costs in their operations and drive top-line stability and growth.

VISUAL WORKFLOWS MAKE ANALYTICS EASY TO BUILD, MAINTAIN AND SHARE

Insightful Miner speeds and simplifies the process of building sophisticated data analysis applications with its modern and intuitive visual workmap interface. With point-and-click ease, even new data analysts can build rigorous analytic applications in a fraction of the time required with traditional methods. There is no need for specialized programming expertise so you can generate results immediately using your existing resources.

Insightful Miner supports every step of the data analysis process with tightly integrated components that handle all your data access, preparation, modeling and deployment tasks. And the visual workmaps automatically document each step as you create your application. Now you can always understand and explain the key decisions in each analysis. This precise visual history makes it easy to replicate all or parts of your analysis and share this work with less-technical decision makers throughout the organization. By deploying best practices, more time is now spent analyzing results, not obtaining them, dramatically improving your team's productivity.

DEPLOY PREDICTIVE ANALYSIS TO THOSE WHO NEED THE ANSWERS

Your company's decision makers may be spread across the globe, but they need fast answers to specific questions, and the results must be presented in ways that are actionable, convenient and just-in-time. Insightful Miner puts answers at your organization's fingertips. From publishing Web-ready reports to scoring data records with automated processes, Insightful Miner's open and flexible architecture has numerous deployment options that scale up to the heaviest demands.

By easily deploying data analysis processes and results, Insightful Miner addresses a range of modeling problems found within finance, biopharmaceutical and manufacturing organizations. So whether VPs need to drill down into key performance indicators, or a team of portfolio managers must know which assets to hold, whether your biologists must uncover promising drug therapies, or marketing professionals must identify the best customers for a new offer, Insightful Miner effectively connects your analysts to your decision-makers so they can take action quickly and decisively for increased productivity, reduced costs, and better competitive position.

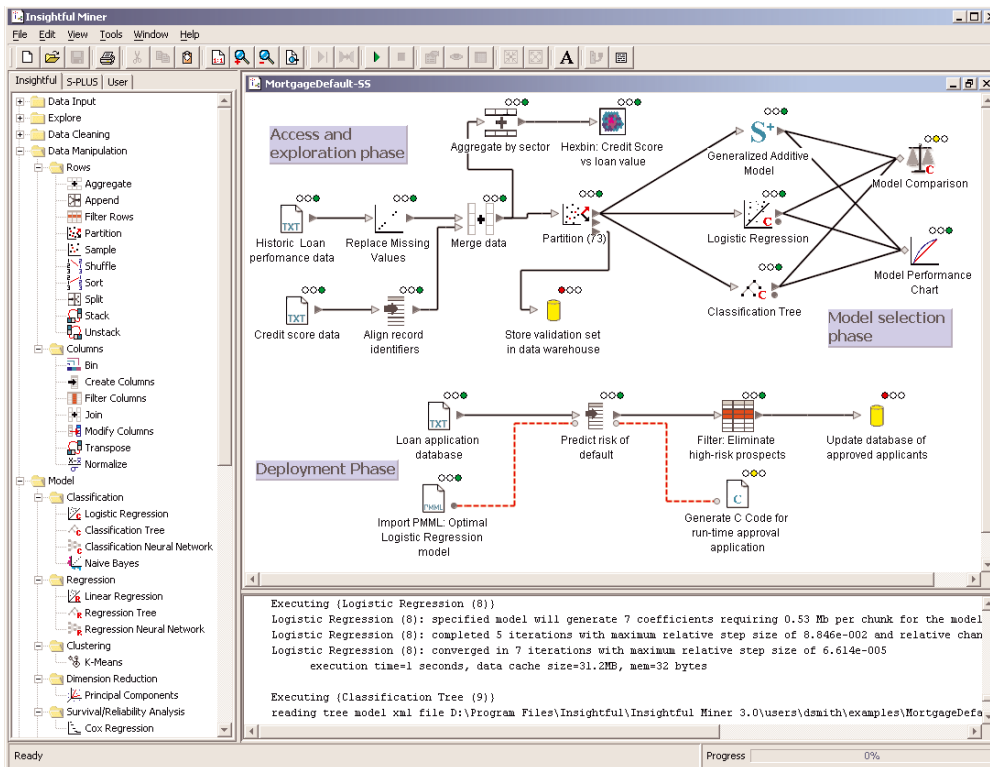
"All pharmaceutical companies accumulate large volumes of data during clinical trials at great expense. The challenge is to leverage this investment with secondary analysis of aggregated data to augment the knowledge we have from the individual primary study analyses. Insightful Miner fits our knowledge discovery needs very well. It easily handles very large data sets and its intuitive, self-documenting interface makes the entire analysis process more efficient. Approaching analysis from multiple perspectives using its suite of statistical tools makes our inferences more reliable."

**Dr. Drew Griffin Levy
Director, Exploratory Data Analysis
Pfizer**

Deploy Predictive Models and Leverage Your Analytic Expertise

Insightful Miner's visual workflow interface improves productivity and communication. Drag-and-drop components to create a self-documenting workflow that describes every step of your data analysis process. Share workflows with colleagues as templates for standardized operations.

A tool that adapts to your changing needs. Create new custom components for advanced predictive modeling, charting and reporting using Insightful's award-winning S-PLUS programming language. Leverage your expertise throughout the organization by creating and sharing libraries of user-defined components.



Scalable data analysis. Insightful Miner contains a comprehensive range of components, each implementing a particular step in the data analysis process. Insightful Miner's unique pipeline architecture processes your data incrementally—instead of loading it all into memory at once—so data size limitations are a thing of the past.

Deploy predictive models in automated environments. Use Insightful Miner's new C-code generation component for run-time model scoring in Web-based or independent desktop applications. Or simply use the batch mode processor to update warehouses at scheduled intervals using native database access.

FLEXIBLE ANALYTICS THAT ADAPT TO CHANGING NEEDS

Adjusting to fast-changing market realities—and capitalizing on them—is a business imperative. Insightful Miner dramatically speeds your time to market with applications that seize new opportunities and effectively manage new risks. Its comprehensive toolset provides unmatched flexibility to meet your changing requirements. From data preparation and cleansing to modeling and deployment, Insightful Miner does it all, quickly and easily. Add built-in access to all major file types and databases, and you can now leverage your data investments to improve your operations. And when an opening arises to advance your competitive position with proprietary analysis, use Insightful's award-winning S-PLUS programming language and vertical toolkits to power business decisions that leave your rivals behind.

SCALABLE ANALYSIS TO WORK WITH DATA OF ANY SIZE

Many data analysis applications restrict the size of data you can analyze to the available physical memory on your computer, forcing you to sample before your analysis begins. Insightful Miner eliminates these limitations. Its unique pipeline architecture allows you to read, manipulate, clean, and analyze data sets of essentially unlimited size, from a few megabytes to hundreds of gigabytes. Now you can create predictive analytics using all your data for superior accuracy and performance, or you can sample when it fits your particular requirements. The choice is yours.

"I have successfully used Insightful Miner to extend sophisticated portfolio analysis capabilities to our less technical decision makers. Optimizing loan portfolio performance requires that predictive analysis be applied to large data sets in order to determine if a portfolio of loans should be held or sold. Insightful Miner 3 lets us leverage our custom methods developed in S-PLUS and its visual workmap interface making it much easier to share these techniques with those who must perform the analysis, but don't necessarily need to learn how to program."

William Alexander
Sr. Vice President
Consumer Deposit Risk Management
Bank of America

Insightful Miner

feature summary

Visual Workflow Environment

- Create self-documenting visual programs
- Intuitive drag-and-drop interface
- Link nodes together to describe analytic process
- On-screen annotations
- Node-level change-tracking for multi-user collaboration
- Visual confirmation of validity and caching
- Save and share worksheets as templates for best practices
- Export worksheet image to a file

Data Access (Input & Output)

- Delimited ASCII files
- Fixed format ASCII
- Data dictionary support
- SAS®, SPSS®, Excel & many other flat file formats
- ODBC access to compliant databases (Windows)
- Native access Oracle, DB2, Microsoft SQL Server, Sybase

Data Manipulation

- Powerful sampling, including stratified methods
- Row: Aggregate, Append, Partition, Shuffle, Sort, Stack, and Unstack
- Column: Bin, Filter, Join, Transpose and Normalize
- Automatically bin continuous variables
- Continuous, date, categorical and string data types
- Create or modify columns and filter rows using powerful expression language

Data Cleaning

- Detect and repair missing values with variance-preserving methods
- Missing value handling: drop, replace, impute and last observation carried forward

- Detect multi-dimensional outliers with leading-edge robust methods

Exploratory Data Analysis & Visualization

- Trellis graphics quickly show structure of high-dimension data
- Univariate descriptive statistics, plus Correlation and Covariance calculations
- Table views and Visual Crosstabs rapidly slice and dice data
- Compare datasets for validation purposes
- 1-D Charts: Pie, Bar, Column, Dot, Histogram, Boxplot
- 2-D Charts: Scatterplot, Boxplot, Strip plot, Quantile-Quantile, Density**
- Hexagonal Binning chart to view relationships between variables of very large data sets**
- 3-D Charts: Contour, Level plot, Surface plot, Cloud plot**
- Multivariate charts: Scatterplot matrix, Parallel plot**
- Time series charts: Line plot, High-Low plot, Stacked Bar plot**

Model Types, Algorithms & Visualizers

- Prediction and classification outcome models with basic and advanced model options
- Highly scalable algorithms: train models on very large data sets without the need for sampling or aggregation
- Decision trees for classification and regression with single-tree or ensemble techniques using Block Model Averaging™; K-Fold cross-validation, plus Gini and Entropy splitting rules
- Linear and logistic regression implemented as QR decomposition with Householder transformations

- Neural Networks with Multi-layer perceptrons
- Neural Network training methods: Resilient Propagation, Quick Propagation, Delta-Bar-Delta, Conjugate Gradient, and Online methods.
- Neural Networks: up to three hidden layers with user-specified number of nodes per layer
- Interactive Neural Network visualizer allows real-time control over learning process
- Naive Bayes Classifier
- Principal components analysis
- Cox Proportional Hazard models for censored data with time-varying covariates
- Customer segmentation models with K-Means Clustering
- Collapsible tree viewer with interactive dendrogram
- Assess models with gain charts, lift charts, ROC charts and agreement matrices
- Variable importance tool for selection of the most significant variables
- Automatic calculation of dummy variable and interaction columns

Scalability

- All components operate out-of-memory and in-memory
- Unique "Pipeline Architecture" moves data in blocks through processing components
- Classical incremental techniques
- Block Model Averaging™ techniques
- Tailor size of blocks to optimize use of computing resources
- Automatic and manual control of caching to balance quick response with massive scalability

*Requires Insightful Miner Server with Production Pack option
**Requires S-PLUS 6 or later

Extensibility

- Compound nodes: create an entire process within a single node
- Create new nodes using S-PLUS programming language**
- Complete access to all S-PLUS functions and libraries**
- Create custom predictive models, charts and reports**
- Create and share user libraries of custom nodes
- Manage multiple custom libraries

Deployment and Scoring

- Web-ready graphical reports
- HTML model summary exports
- Non-interactive batch execution of all components*
- Model ports support automatically-updating scoring components
- Score custom predictive models created using S-PLUS on very large databases**
- Predictive Model Markup Language (PMML) model import and export
- Generate C code for run-time model scoring*

System Configurations & Requirements

- Single-user Desktop and multi-user Server versions available
- Supports Microsoft Windows: NT(SP6)/2000/XP/2003 (Desktop and Server versions)
- Supports Microsoft Terminal Services (Server version)
- Supports Sun Solaris 2.6, 7, 8, 9 (Server version)
- 256MB RAM Min, 512MB RAM recommended
- 300 MB free disk for installation
- 5X free disk to data (minimum), 10X recommended

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about insightful

Insightful Corporation (NASDAQ: IFUL) provides enterprises with scalable data analysis solutions that drive better decisions faster by revealing patterns, trends and relationships. The company is a leading supplier of software and services for statistical data analysis, data mining and knowledge access enabling clients to gain intelligence from numerical and text data.

Insightful products include InFact®, Insightful Miner, S-PLUS®, StatServer®, and S-PLUS Analytic Server®. Insightful consulting services provide specialized expertise and proven processes for the design, development and deployment of customized solutions. The

company has been delivering industry-leading, high-ROI solutions for 16 years to thousands of companies in financial services, pharmaceuticals, biotechnology, telecommunications, manufacturing, plus government and research institutions.

Headquartered in Seattle, Insightful has offices in New York City, North Carolina, France, Germany, Switzerland, and the United Kingdom with distributors around the world. For more information, visit www.insightful.com, email info@insightful.com or call 1-800-569-0123.

PostScript Picture
Logos

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