



SAS® VISUAL DATA DISCOVERY

Unmatched analytics, data access and interactive, dynamic data visualization in a single, easy-to-use package

What does SAS® Visual Data Discovery do?

SAS Visual Data Discovery, powered by JMP® 7, provides a point-and-click interface to the advanced analytic capabilities of SAS. It enhances advanced analytics and exploratory data analysis with interactive data visualization, leading to better analyses, faster decisions and more effective presentations of analytic results.

Why is SAS® Visual Data Discovery important?

SAS Visual Data Discovery (client/server version) combines the power of SAS data access and advanced analytics with JMP software's interactive interface. It provides unmatched advanced analytics with interactive data visualization, delivering the ability to interactively explore ideas, investigate patterns, discover previously hidden facts and reveal opportunities through visual queries.

For whom is SAS® Visual Data Discovery designed?

SAS Visual Data Discovery is designed for business analysts, researchers, statisticians, engineers and scientists who are looking to better leverage information assets. It is designed for those who have a need for advanced statistical capabilities along with dynamic visualization in a self-provisioned, interactive environment and who are restricted by the limitations in desktop statistical packages, spreadsheets and static graphs.



**THE
POWER
TO KNOW®**

Today's organizations are overwhelmed with data. The challenge is to access the data, analyze it and deliver the resulting information quickly and effectively to decision makers so appropriate actions can be taken.

For many organizations, the data needed to answer key questions lies in disparate data sources. IT is often needed to create custom extracts, and niche solutions that are not integrated require further IT intervention. It is difficult to provide self-sufficiency to users so that the organization can leverage all key information assets.

In addition, data sources have gotten so large and varied that the majority of statistical software products just can't handle them. Increasingly advanced statistical methods are called for, along with analyses that can be verified and documented to meet government compliance standards. On top of that, static reports and graphs have no interactive capabilities for dynamically exploring data, making it difficult to discover relationships and determine organizational impacts.

Mixing and matching software packages to achieve analytic excellence can tax your IT resources as well as everyone's patience. SAS Visual Data Discovery can help organizations enhance analytic effectiveness for faster insights and actions. The client/server version of SAS Visual Data Discovery combines SAS' top-selling products (Base SAS, SAS/STAT®, SAS/GRAPH® and SAS Enterprise Guide®) with JMP® 7's interactive interface to provide an easy-to-install, easy-to-use advanced analysis and data visualization package.

Key benefits

- Enhance analytic effectiveness for faster insights and actions.** Exploratory data analysis and interactive data visualization are provided in an extendable point-and-click environment so information can be viewed in more compelling ways. Sharing analytic results in an interactive and visual manner leads to enhanced communication with consumers of analytic results, enabling them to make faster, better decisions.
- Take advantage of all data to uncover new opportunities.** SAS Visual Data Discovery is designed to handle large, disparate data sources, enabling you to leverage all data available for analysis. The interactive and comprehensive visualization environment empowers even more users with advanced analytics from SAS.
- Reduce overall costs and complexity with a consolidated vendor portfolio.** A full range of analysis, reporting and visualization capabilities from one vendor reduces the cost of licensing, maintenance, training and support and ensures that consistent information is available across the enterprise.
- Achieve corporate and governmental compliance.** You can produce repeatable results that are easily documented and verified to meet the requirements of auditors and regulators.
- Move the discovery process forward by applying the latest statistical techniques.** SAS statistical capabilities are constantly being updated to reflect the latest advances in statistical methodology. And, SAS technical support delivers a level of service not often found with other software vendors.

Product overview

SAS Visual Data Discovery provides point-and-click access to the most needed data preparation, graphical and analytic functions from SAS. This means that users have access to all corporate data assets and can realize interactive, analytic excellence. Analytic excellence is achieved when the right data and the best analytic techniques are available to the full analyst community and the results can be easily shared across the enterprise.

With SAS Visual Data Discovery, statisticians can easily create dynamic, interactive analyses that can be made available across the organization. These reports and analyses can be created without requiring SAS programming skills. However, SAS programmers can use this product to create plug-ins to JMP that can further leverage the full power of SAS' deep analytic capabilities.

Highly interactive statistical graphics

When users can interact visually with data and analysis results, they can more easily explore information and glean new insights. With SAS Visual Data Discovery, users can grab, spin and slice their data, viewing it from multiple-direction dimensions. Interactive graphs range from 3-D scatter plots to trellis plots, needle plots and summary charts. Animated bubble plots let you put graphs in motion for a more engaging experience.

Visual querying and data filtering

With SAS Visual Data Discovery, you don't have to develop complex SQL queries because querying data is visual, intuitive and dynamic, and results are displayed immediately. SAS Visual Data Discovery can handle virtually unlimited amounts of data. Users can interactively

filter and query data, browsing and rearranging data at will. It is all point and click to visually subset data, animate reports or drill down to underlying data. Any number of columns can be added to the data filter, including continuous, categorical and hierarchical variables. You can preview a fixed number of rows, choose columns, generate SQL or write custom code—all through an intuitive point-and-click interface. All graphs and reports are dynamically linked and updated automatically.

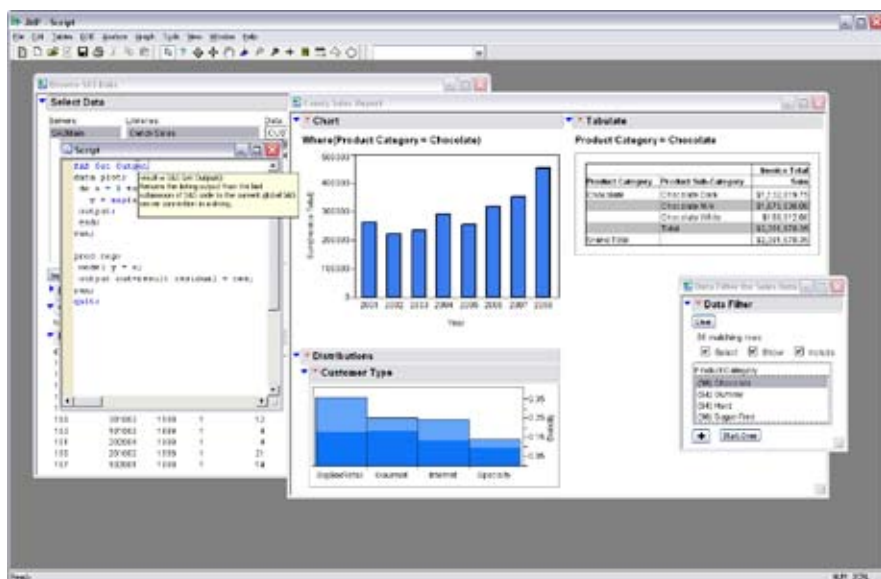
Extensible visual analytics

SAS Visual Data Discovery brings an interactive exploration environment to SAS' advanced analytics. With the ability to run SAS Stored Services (also known as SAS Stored Processes), business analysts and others can take advantage of existing models and reports.

A depth of support is available for programmers who want to create point-and-click interfaces to SAS' powerful analytics. Syntax "autofill," syntax tool tips and online help with sample code are provided. SAS Visual Data Discovery supports both the information producer and the information consumer with the ability to surface information and share visual results in an easy-to-understand manner. By distilling complex data structures into succinct, dynamic graphs and reports, more users across the organization can quickly assess and realize the value in information assets.

Comprehensive set of tools for exploratory and advanced statistical analysis

With SAS Visual Data Discovery, you get the broad and deep range of SAS' advanced analytics available from an interactive, point-and-click interface.



SAS Visual Data Discovery provides point-and-click access to the most needed data preparation, graphical and analytic functions.

Analysis of variance

Analysis of variance is a technique for analyzing experimental data. With SAS Visual Data Discovery, users can perform analysis of variance for balanced or unbalanced designs, multivariate analysis of variance and repeated measurements analysis of variance. Users can also fit general linear models and mixed models for a variety of data situations.

Regression

Regression analysis examines the relationship between a response variable and a set of explanatory variables. SAS Visual Data Discovery uses least squares to estimate parameters, includes nine different model selection methods and produces a variety of diagnostic measures. More specialized procedures fit generalized linear models, mixed linear models, nonlinear models and quadratic response surface models.

Categorical data analysis

In categorical data, the outcome of interest reflects categories with data often presented in tabular form, known as contingency tables. Users can investigate the association in a contingency table as well as produce measures that indicate the strength of that relationship. Parametric models can be used to investigate the variation of a function of the outcome variable across levels.

Multivariate analysis

Multivariate analyses encompass a variety of methods for modeling data with two or more response variables or for identifying relationships among several variables without designating particular variables as response or explanatory variables. Common factor analysis can be used to explain the correlations among a set of variables in terms of a limited number of unobservable, or latent, variables. Principal component

analysis summarizes a large number of variables with a small number of linear combinations.

Survival analysis

Survival analysis concerns data that measures lifetime or time until an event. In many cases, only upper or lower bounds are available for some observations. This is known as censoring. Survival analysis methods correctly use both censored and uncensored observations. SAS Visual Data Discovery compares survival distributions for the event-time variable, fits accelerated failure time models to event-time data and performs regression analysis based on the proportional hazards model.

Psychometric analysis

Psychometric methods are well-suited for analyzing data on human judgment and perception, such as market research data, but can be used for many other types of data. Multidimensional scaling estimates the coordinates of a set of objects and is often used to analyze judgments of product similarity.

Cluster analysis

Cluster analysis places observations into groups based on similarity. SAS performs hierarchical clustering of multivariate data or distance data with graphical tree diagrams, disjoint clustering of large data sets, and nonparametric clustering with hypothesis tests for the number of clusters.

Nonparametric analysis

Nonparametric analysis analyzes data not requiring specific distributional assumptions such as normality. SAS performs nonparametric analysis of variance as well as other rank tests for balanced or unbalanced one-way or two-way designs. Exact probabilities are computed for many nonparametric statistics.

Survey data analysis

Researchers often use sample survey methodology to obtain information about a large population by selecting and measuring a sample from that population. SAS Visual Data Discovery provides tools for selecting probability-based random samples from a study population and analyzing the sample survey data. Procedures for computing summary statistics, analyzing contingency tables and building linear and logistic regression models enable users to incorporate the sample design into analysis.

Multiple imputation

Missing values are an issue in many analyses. SAS Visual Data Discovery enables you to fill in missing values multiple times to generate a series of complete data sets, analyze the data sets using standard statistical analyses and combine the results to produce valid statistical inferences.

Power and sample size computation

Study planning procedures enable you to optimize your resource usage during the design of a study, aid in determining the sample size required to get statistically significant results and help you to detect a meaningful effect.

Leverage core SAS® capabilities

With SAS Visual Data Discovery, you get dynamic statistical analysis capabilities that are integrated with the industry's most comprehensive software platform. It provides the ability to leverage core SAS capabilities, including analytics, stored services/processes, centralized metadata, SAS code, SAS reports and SAS output. This means users don't have to depend on IT to fulfill their ad hoc requests. They can explore data on their own, see trends and communicate the results quickly where needed across the entire organization.

SAS® Visual Data Discovery Technical Requirements (client/server version)

Client environment

- Windows (x86-32): Windows NT 4 Server, Windows 2000 Server, Windows Server 2003, Windows Vista
- Internet Explorer 5.5 and 6

Server environment

- AIX: Release 5.1, 5.2, 5.3 on POWER
- HP-UX PA-RISC: Release 11i Version 1, 2 and 3
- HP-UX Itanium: Release 11i Version 1, 2 and 3
- Linux for x86 (x86-32): Red Hat Linux 8.0, RHAS 2.1, RHEL 3.0 and 4.0, SuSE SLES 8 and 9
- Solaris on SPARC: Version 8, 9, 10
- Solaris on x64: Version 10
- Windows (x86-32): Windows NT 4 Server, Windows 2000 Server, Windows Server 2003
- Windows (on Itanium): Windows Server 2003 for Itanium-based systems

Software included

- Base SAS®
- SAS/ACCESS® engine of choice
- SAS/GRAPH®
- SAS/STAT®
- SAS® Enterprise Guide®
- SAS® Integration Technologies
- JMP® 7

Key Features

Highly interactive statistical graphics

- Animated bubble plots show data with sized bubbles that move over time.
- 3-D scatter plots with categorical and continuous data.
- Scatter plot matrix with categorical and continuous data.
- Trellis plots.
- Summary charts.
- Line plots.
- Needle charts.
- Creation of new graphics via the JSL programming language.
- All graphics interact via the data table with brushing, highlighting, hiding and other capabilities.
- Many other graphical reports.

Visual querying, data filtering and extensible visual analytics

- Handle virtually unlimited data.
- Rearrange data at will.
- Interactively tabulate data.
- View and interact with dynamically linked statistics and graphics.
- Extend beyond built-in analytics capabilities by adding custom analyses with the SAS programming language.

Comprehensive set of tools for advanced statistical analysis

- Analysis of variance.
- Regression.
- Categorical data analysis.
- Multivariate analysis.
- Survival analysis.
- Psychometric analysis.
- Cluster analysis.
- Nonparametric analysis.
- Survey data analysis.
- Multiple imputation for missing values.
- Power and sample size computation.
- Time series analysis.
- Design of experiments.
- Nonlinear modeling.
- Decision trees.

Leverage core SAS® capabilities

- SAS® Analytics.
- SAS Stored Services (also known as SAS Stored Processes).
- Integrated metadata.
- SAS code.
- SAS reports.
- SAS output.



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