



## SAS® Visual Analytics

Visually explore your data for better, faster insights, create reports and share results to the Web and mobile devices

### What does SAS® Visual Analytics do?

SAS Visual Analytics enables organizations of all sizes to gain analytical insights from large amounts of data through engaging exploratory analysis. You can visually explore all of your data with an easy-to-use, drag-and-drop interface without the need to subset or sample data. The solution helps you identify new patterns, trends and relationships in data that were not evident before.

### Why is SAS® Visual Analytics important?

The software allows users of all skill levels to explore their data while tapping into SAS' powerful analytics capabilities. It provides an unprecedented way to derive value from all of your data, empowering you to uncover unexpected insights, find answers to complex problems, and quickly identify new and better courses of action. With SAS Visual Analytics, you can now share information gleaned from data discovery via the Web and mobile devices.

### For whom is SAS® Visual Analytics designed?

SAS Visual Analytics supports data discovery and exploration for users across your organization, from decision makers and analysts to statisticians and data scientists. Designed for users of all skill levels, the solution provides an easy way for IT to protect and manage the integrity and security of data, while enabling business users to communicate results via dashboards and KPIs.

Regardless of their size or sector, organizations today collect all kinds and amounts of data. Unfortunately, however, traditional architectures and existing infrastructures often have difficulty performing the fast analytical processing needed to deliver instantaneous insights.

IT also is burdened with ever-growing requests for data, ad hoc analyses and one-off reports. Decision makers become frustrated because it takes too long – or is even impossible – to produce the reports they need to answer questions quickly. And increasingly, they want to be able to access information from mobile devices such as iPad® or Android tablets.

SAS Visual Analytics combines an easy-to-use, dynamic interface with powerful in-memory technology to enable all types of users to visually explore data, execute analytic correlations on any size of data within minutes or seconds, understand what the data means, and deliver the results quickly wherever needed via Web reports and mobile devices.

### Key Benefits

- **Broaden access to analytics and empower all users.** SAS Visual Analytics enables users of all skill levels to conduct fast, thorough explorations on all available data – revealing more options and prompting more precise decisions. Easy-to-use, interactive Web interfaces help everyone glean new insights for greater success faster than ever before.
- **Answer complex questions faster and enhance the productivity of your analytical talent.** SAS Visual Analytics augments the data discovery and exploration process by providing extremely fast results to enable better, more focused analysis. The solution dramatically improves the productivity of your analytically savvy users by helping them quickly identify areas of opportunity or concern.
- **Improve information sharing and collaboration.** A variety of users, including those with limited analytical skills, can quickly view and interact with reports and charts via the Web, Adobe PDF files and iPad mobile devices, while IT maintains control of the underlying data and security. The solution provides the right information to the right person at the right time to improve productivity and organizational knowledge.
- **Liberate IT by giving users a new way to access the information they need.** Free IT from the constant barrage of demands from users requesting access to different amounts of data, data views, ad hoc reports and one-off requests. With SAS Visual Analytics, IT can load and prepare data for multiple users in one instance. Users can then dynamically explore data, create reports and share information, all without constantly requiring IT support.
- **Grow at a self-determined pace.** SAS Visual Analytics provides the option of using commodity hardware or database appliances from EMC Greenplum and Teradata. Designed from the ground up for performance optimization and scalability, the solution meets the needs of all organizations, regardless of their size.



## Product Overview

SAS Visual Analytics combines powerful in-memory analytics with an extremely visual, easy-to-use exploration interface so that organizations can derive value from their data faster than ever before. Armed with reliable information, organizations can solve difficult problems, improve business performance and mitigate risk – rapidly and confidently.

### High-performance in-memory SAS® LASR™ Analytic Server

The SAS LASR Analytic Server provides the foundation for this solution and greatly accelerates analytic computations. Because of its in-memory capabilities, SAS Visual Analytics provides extremely fast processing of data, right out of the box. Whether running in a small business, work group, department or the data center of a large enterprise,

SAS Visual Analytics provides fast processing regardless of the amount of data to be explored and analyzed.

### Easy set-up and data administration for IT

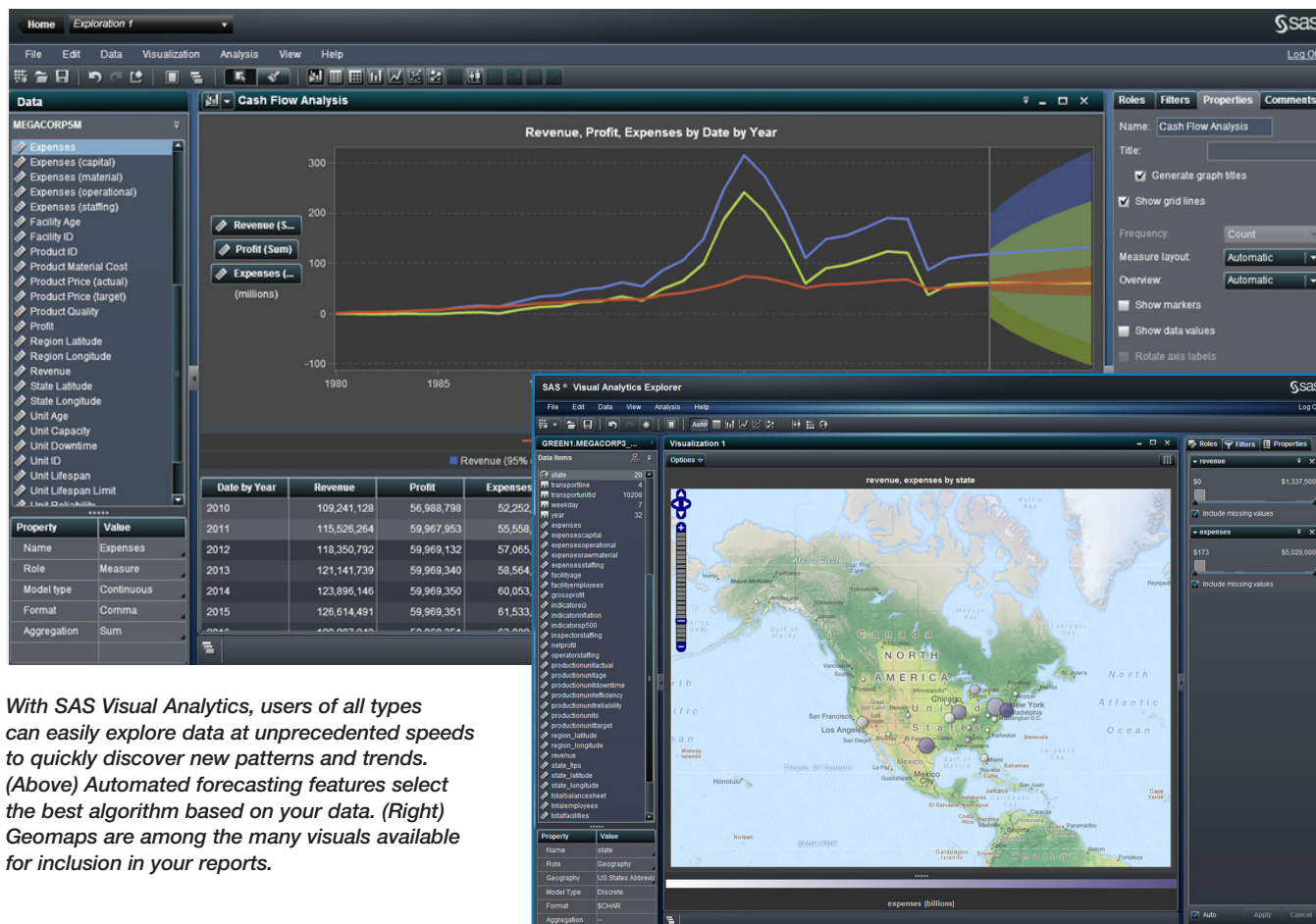
SAS Visual Analytics empowers many types of users. With easy-to-use administration tools, IT can set up a single working environment that allows business users, analysts and information consumers to perform their individual functions from within the same application environment. IT can easily load and prepare data for multiple users, translate data structures into terms that everyone can understand, as well as define and apply business rules in a consistent manner. With the ability to control how much and which types of data can be accessed and retrieved, IT maintains data security and integrity without infringing on users' productivity and flexibility to explore and query data as needed. No longer forced to respond

to the incessant demand for new views of data or one-off reports, your limited IT resources can now focus on more strategic tasks.

### Visual data exploration

Once IT has loaded data from any source into the SAS LASR Analytic Server, SAS Visual Analytics empowers users to visually and interactively explore data to gain insights and discover patterns and trends for further analysis. Through interactive, Web-based exploratory analysis, even users without analytical expertise can extend their use of analytics to gain more precise insights. Nontechnical users can easily create and change queries by selecting items displayed from a sidebar or dynamically filtering and grouping data items.

Drag-and-drop and autocharting further broadens the audience, allowing more users of all skill levels to understand



With SAS Visual Analytics, users of all types can easily explore data at unprecedented speeds to quickly discover new patterns and trends. (Above) Automated forecasting features select the best algorithm based on your data. (Right) Geomaps are among the many visuals available for inclusion in your reports.

their data. Autocharting automatically selects the visualization that best suits the type of data chosen. Additionally, users themselves can choose from a wide variety of compelling visuals to display results, including animated bubble charts. The “what does it mean” pop-up boxes provide easy explanations of complex analytic functions and data correlations, helping everyone better understand the data and what the analysis is showing.

In addition, analytically savvy users can spot trends and derive intelligence quickly and easily. This eliminates much of the everyday trial-and-error process currently used to identify areas that need additional analysis.

### **Self-service approachable analytics**

Data of any size is easily conquered and analyzed with the in-memory SAS LASR Analytic Server. Analytic features are tailored for different skill levels so that a wide variety of users can explore data autonomously without learning new skills or engaging IT.

The solution makes it easy to explore and seek correlations between variables. New automated forecasting capabilities generate forecasts dynamically by automatically selecting the most appropriate forecasting method for the data chosen, enabling even novice users to forecast reliably.

Build-it-yourself hierarchies eliminate the need for data analysts to constantly seek help from IT. Users can drill up and down through the hierarchies and slice and dice data on any level. This enables advanced analysts to explore more data more quickly, while helping nontechnical users easily navigate through the different levels of data by removing the complexity of different data structures.

## **Key Features**

### **High-performance in-memory SAS® LASR™ Analytic Server**

- Uses in-memory analytics to quickly conduct exploration and analysis.
- Designed to run in a single-server mode for smaller organizations and departments.
- Optimized for distributed environments to use the parallel processing capabilities of many nodes to scale as your organization and data grow.
- Integrates with Hadoop for performance optimization and scalability.
- Can be used on commodity hardware or on database appliances from our partners EMC Greenplum and Teradata.

### **Easy set-up and data administration for IT**

- User authentication and information authorization is persisted across all solution components to support data governance and IT policy implementation.
- Data is provisioned to in-memory servers based on volume, frequency of required updates and scalability requirements.
- Data can interactively be prepared for analysis, including joining tables, defining custom calculated columns and creating custom expressions.
- A single Web-based interface is provided to manage SAS information assets, including users, servers and data.

### **Visual data exploration**

- Web-based, interactive data exploration mode for all types of users.
- Autocharting capability within the solution helps determine the chart best suited to display data based on items selected for analysis (e.g., one measure yields a frequency chart, two measures yield a scatter plot, three measures yield a bubble chart, etc.).
- Geographical map views provide a quick understanding of geospatial data.
- “What does it mean” capabilities automatically identify and explain the relationships between variables.
- Exploration capabilities are provided for in-memory server data sources.
- Graphical skins can be applied for 3-D appearance and light effects on visuals.
- Compelling visuals include box plots, heat maps, bubble charts and more.
- The toggle feature displays grid lines and lets you adjust axes to optimize viewing.
- Queries can be changed by selecting items to be displayed from a sidebar or by dynamically filtering and grouping.
- A resizable overview bar lets you visually subset a portion of data sets with many records (high cardinality).
- Viewable descriptive statistics, such as min, max and mean, enable you to gain an overall sense of a particular measure.

### **Self-service approachable analytics**

- Explore and seek correlations on data using in-memory server sources for any size analysis.
- Query data from a seamless set of viewing modes.
- Slice and dice multidimensional data by applying filters on any level of a hierarchy.
- Drill up and down through hierarchies, or expand and collapse entire levels.
- View descriptive statistics, such as min, max and mean, to gain an overall sense of a particular measure.
- Calculate new measures and add them to any view.
- Predict what might happen in the future with new forecasting capabilities.
- Generate forecasts on the fly with forecasting confidence intervals included.
- Know that the the most appropriate forecasting algorithm for specific data has been automatically selected.
- Save views as report packages to share with other advanced data exploration users in Web reports, images or SAS mobile apps.
- Remove complexity of data structures for nontechnical users.

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## Robust report design, creation and distribution

SAS Visual Analytics provides a Web-based interface that makes report design, creation and distribution easy for users of all skill levels. Specialized groups or business users can build reports within boundaries established by IT. Extensive presentation layouts speed report creation. With a comprehensive suite of graphical data presentation options, users can create and easily incorporate charts and plots in reports. It is easy to design and produce business graphics, apply corporate design standards and then publish the reports to a Web-based viewer, iPad or Android tablet.

## Report viewing and mobile BI

Large numbers of users can quickly open, view and interact with reports from the Web, via an Adobe PDF file or from an iPad or Android tablet. The mobile app can be downloaded from Apple's iTunes® store and Google Play. Advanced analysts can quickly view data quickly from multiple angles and interact with the data in many ways. Easy-to-use collaboration capabilities promote idea sharing while saving valuable time. You can annotate screen captures of reports and email them to others, who can then add their thoughts as well. Or capture your comments via video and audio to share.

## Centralized user hub

The SAS Visual Analytics Hub is the home page and launching pad for all of the solution's applications. It provides a central log-on facility so users can view and open recent content, add their favorites and use Google-like search capabilities to find any content that they are authorized to see.

## Key Features (continued)

### Robust report design, creation and distribution

- Web-based, interactive report-building interface is provided for report authors.
- Data acquisition wizard is available for previewing, filtering or sampling data prior to creating visualizations or reports.
- Precision layout capabilities provide flexibility in report layout and design. Stack or group items, use send-to-back or bring-to-the-front capabilities, and more.
- On-the-fly hierarchy creation lets you add drill-down capabilities to visualizations and reports.
- Ability to select predefined filters, set groupings and sorting, and override default formatting; or create custom calculations and filters.
- A variety of charts are included: bar/3-D bar with multiple lines, pie/3-D pie, line, scatter, heat map, bubble, and tile – all of which allow annotated reference lines to be added.
- Easy-to-integrate common action elements such as radio buttons, drop-down/combination boxes, check boxes and sliders add filtering and selection capabilities to your reports.

### Report viewing

- A Web-based, interactive report viewing interface is provided for all information consumers.
- Interactive report viewing is available on iPad and Android devices.
- Reports can be previewed as they will display on targeted mobile devices before they are published.
- Rich desktop-like experience with drag-and-drop functionality enables objects to be resized on the screen.
- Reports can be printed as PDFs or PNGs.

### Mobile BI

- Native iPad and Android support uses the most popular gestures and capabilities, including zoom, swipe, etc., to optimize ease of use and user engagement.
- Flexible layouts let you create content tailored to different needs.
- Link indicators enable data brushing as defined while creating reports. A selection in one indicator is applied as a filter or selection in the related indicator(s).
- Reports can be viewed securely on mobile devices either online or offline.
- Comments can be added to reports for better collaboration. Report links with comments can be emailed to others.
- Screenshots can be captured and comments shared with others.
- Alerts are provided to mobile devices when reports are updated.

### Centralized user hub

- Thumbnails of recent and favorite items can be viewed and selected to open them.
- Items can be opened directly from the SAS Visual Analytics Hub, whether they are reports, visualizations or data sources for exploration.

## For More Information

To learn more about SAS Visual Analytics, download white papers, view screenshots and see other related material, please visit [sas.com/visualanalytics](http://sas.com/visualanalytics). Or, try SAS Visual Analytics for yourself at [sas.com/vademos](http://sas.com/vademos).