Organizations in every sector depend on data and analysis to provide new insights, gain competitive advantage and make informed decisions. For many though, the complexity and volume of their data has outgrown other statistical software products.

SAS/STAT software provides extensive statistical capabilities that scale to meet the expanding requirements of specialized and enterprisewide analysis.

Whether you want to perform customer preference studies, analyze the results of clinical trials, predict credit card usage patterns, model air pollution patterns or design a health behavior survey, SAS/STAT is the software of choice. And because SAS remains committed to its long tradition of constantly enriching its statistical offerings, you’ll continue to have the most up-to-date statistical techniques.

**Benefits**

- **Apply the latest statistical techniques to any kind and size of data.** With an accelerated release schedule, SAS/STAT keeps up with new methods emerging from the rapidly expanding field of statistics. SAS/STAT includes exact techniques for small data sets, high-performance statistical modeling tools for large-data tasks and modern methods for analyzing data with missing values.
- **Simplify with a single environment.** You get integrated software so you can access and manage data, build and deploy statistical models, and readily understand your results using hundreds of built-in graphs. And, metadata is stored in a centralized repository so it’s easy to incorporate SAS/STAT models with other SAS solutions.
- **Depend on proven and validated algorithms.** SAS has nearly four decades of experience developing advanced statistical analysis software and an established reputation for delivering superior, reliable results. You can produce code that is easily documented and verified to meet corporate and governmental compliance requirements.
- **Take advantage of our technical support and web user communities.** Have a question and need answers quickly? Our technical support is staffed by highly experienced statisticians who provide a level of service and knowledge rarely found with other software vendors. You can also use our web user communities to ask questions and share experiences.
Overview

Statistics is a rapidly expanding discipline, and SAS/STAT is keeping pace. An accelerated release schedule delivers more state-of-the-art statistical methods and high-performance computational tools, along with user-requested enhancements. SAS/STAT software provides the foundation for many of SAS’ analytic offerings. It delivers a complete, comprehensive set of statistical tools that can meet the data analysis requirements of your entire organization.

Expansive library of ready-to-use statistical procedures

With SAS/STAT, you get more than 80 prewritten procedures for statistical analysis. They encapsulate and deliver significant functionality that can be executed with just a few simple commands, enabling programmers to be more efficient and productive. This wide range of robust statistical methods can help you address your most complicated business problems, such as uncovering new information for improving processes, driving development and revenues, and retaining valued and satisfied customers.

Highly interpretable statistical output

Clarity and consistency of statistical output, which include a wealth of automatically produced graphs, enable users to readily understand analysis results.

Comprehensive documentation and training

Extensive online documentation, including a rich set of introductory examples, enables users to get up and running with the software quickly and effectively. Free “how to” videos, tutorials and demos help you build your knowledge of statistical methods and learn how to apply SAS/STAT in your work.

Figure 1: Plot of component densities for a finite mixture model created with the FMM procedure.

Figure 2: A model-building progress plot created with the GLMSELECT procedure.
Rigorous software testing and quality assurance
SAS maintains a rigorous software testing and quality assurance program focused on functional testing, error handling, product documentation completeness, and most importantly numerical validation. SAS is documented and verified for regulatory compliance.

Unmatched stability and reliability
SAS has a history of innovation and using customer input for software development and enhancements. As a result, the software is reliable and proven for enterprise situations that require the most accurate, secure and trustworthy statistical analysis. In 2013, SAS reinvested 25 percent of its overall revenue back into research and development.

Technical support and large, established users community
All SAS customers receive technical support by highly experienced statisticians. Support includes one-to-one telephone/email support for current and previous software releases, software maintenance and updates, and problem and product change notification. You can also use our web-based communities to share your questions, experiences and thoughts on best practices using statistical procedures.

Cross-platform support and scalability
SAS runs on all major computing platforms, can access nearly any data source, easily integrates into any organization’s computing environment and can scale as your analytical problems become more complex or your environment grows. Plus, SAS code developed on one platform runs easily on others. Your SAS code works without modifications through the years.

Key Features

Analysis of Variance
- Balanced and unbalanced designs.
- Multivariate analysis of variance and repeated measurements.
- Linear models.
- More analysis of variance features.

Bayesian Analysis
- Bayesian modeling and inference for generalized linear models, accelerated failure time models, Cox regression models (piecewise constant baseline hazard) and finite mixture models.
- General Bayesian statistical models with user-specified priors and likelihood functions.
- Bayesian discrete choice modeling.
- More Bayesian analysis features.

Categorical Data Analysis
- Contingency tables and measures of association.
- Bioassay analysis.
- Generalized linear models.
- More categorical data analysis features.

Cluster Analysis
- Hierarchical clustering of multivariate data or distance data.
- Disjoint clustering of large data sets.
- Nonparametric clustering with hypothesis tests for the number of clusters.
- More cluster analysis features.

Descriptive Statistics
- Box-and-whisker plots.
- Compute directly and indirectly standardized rates and risks for study populations.
- Estimate statistics such as means, totals, proportions, quantiles and ratios from complex multistage survey designs with stratification, clustering and unequal weighting.
- More descriptive statistics features.

Discriminant Analysis
- Canonical discriminant analysis.
- Stepwise discriminant analysis.
- More discriminant analysis features.

Distribution Analysis
- Univariate and bivariate kernel density estimation.
- More distribution analysis features.

Exact Methods
- Exact p-values and confidence intervals for many test statistics and measures based on one-way and n-way frequency and contingency tables.
- Exact tests for the parameters of a logistic regression model.
- Exact tests for the parameters of a Poisson regression model.
- More exact methods features.

Group Sequential Design and Analysis
- Design interim analyses for group sequential clinical trials.
- Perform interim analyses for group sequential clinical trials.
- More on group sequential design and analysis features.

Market Research
- Simple and multiple correspondence analysis.
- Two-way and three-way, metric and nonmetric multidimensional scaling models.
- Regression analysis of survival data based on the Cox proportional hazards model.
- More market research features.

Mixed Models
- Linear and nonlinear mixed models.
- Generalized linear mixed models.
- Nested models.
- More mixed models features.
### Key Features (continued)

#### Multiple Imputation
- Regression and propensity score methods for monotone missing patterns.
- MCMC method for arbitrary missing patterns.
- Sensitivity analysis.
- More multiple imputation features.

#### Regression
- Nonlinear regression and quadratic response surface models.
- Finite mixture models.
- Multivariate adaptive regression splines.
- More regression features.

#### Spatial Analysis
- Ordinary kriging in two dimensions.
- Generalized linear mixed models.
- General linear models with fixed and random effects.
- More spatial analysis features.

#### Structural Equations
- Fit structural equation models.
- Estimate parameters and test hypotheses for constrained and unconstrained problems.
- More structural equation features.

#### Survey Sampling and Analysis
- Sample selection.
- Descriptive statistics and t-tests.
- Linear and logistic regression.
- More survey sampling and analysis features.

#### Survival Analysis
- Nonparametric analysis for interval-censored data.
- Competing-risk model of Fine and Gray nonparametric estimation of survivor function.
- Accelerated failure time models.
- Proportional hazards models.
- Quantile regression models.
- More survival analysis features.

#### Transformations
- Compute various measures of distance, dissimilarity, or similarity between the observations (rows) of a SAS data set.
- Score data sets.
- More transformation features.

#### Multivariate Analysis
- Exploratory and confirmatory factor analysis.
- Principal components analysis.
- Canonical correlation and partial canonical correlation.
- More multivariate analysis features.

#### Nonparametric Analysis
- Exact probabilities computed for many nonparametric statistics.
- Kruskal-Wallis, Wilcoxon-Mann-Whitney and Friedman tests.
- Other rank tests for balanced or unbalanced one-way or two-way designs.
- More nonparametric analysis features.

#### Power and Sample Size
- Interface for computation of sample sizes and characterization of power for t-tests, confidence intervals, linear models, tests of proportions and rank tests for survival analysis.
- More power and sample size features.

#### Psychometric Analysis
- Multidimensional scaling.
- Conjoint analysis with variable transformations.
- Item response theory (IRT) models.
- More psychometric analysis features.

#### Statistical Graphics
- ODS statistical graphics.
- Scatter plots, diagnostic plots, histograms, box-and-whisker plots and more.

#### Postfitting Inference
- A breadth of postfitting analyses available once model is fitted and parameters estimated.
- Includes model fit information stored from these same procedures to perform additional analyses without refitting the model.

For more information, see the SAS/STAT documentation.

To learn more about SAS/STAT, visit sas.com/stat. For ordering information, check out our purchasing options. Or you can request a personalized price quote.