



Highlights

- Deploy interactive SPSS Statistics output on multiple smart devices simultaneously.
 - Produce presentation-ready output with conditional formatting and automation.
 - Create heat maps using Monte Carlo simulation, which now also supports automatic linear modeling and simulating strings.
 - Easily search and download programmability extensions.
 - Improve performance and scalability with SQL pushback in SPSS Statistics Server.
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IBM SPSS Statistics: What's New

New tools and features to help you accelerate and simplify your analysis

Analytics plays an increasingly important role in helping your organization achieve its objectives. The IBM® SPSS® Statistics family delivers the core capabilities needed for end-to-end analytics. To ensure that the most advanced techniques are available to a broader group of analysts and business users, we have made enhancements to the features and capabilities of IBM SPSS Statistics Base and its many specialized modules.

IBM SPSS Statistics 22 continues to increase accessibility to advanced analytics through improved tools, output and ease-of-use features. This release focuses on increasing the analytic capabilities of the software through:

- **Decisions anytime, anywhere** – Deploy SPSS Statistics output on multiple smart devices simultaneously.
- **More powerful simulation modeling** – Improve model accuracy with enhanced Monte Carlo simulation, which includes new features such as heat maps, automatic linear modeling and simulating strings.
- **Specialized techniques to improve overall performance** – Obtain more accurate results faster, and increase productivity and effectiveness.

Our suite of statistical software comes in three editions: IBM SPSS Statistics Standard, IBM SPSS Statistics Professional and IBM SPSS Statistics Premium. These editions group essential features and functionality, and are a convenient way to ensure you have the capabilities you need to generate the insights your organization requires for effective decision-making



View interactive output on smart devices

Now you can take your SPSS Statistics charts and tables wherever you go and make decisions anytime, anywhere. The latest release enables you to view output on the following platforms and devices (see Figure 1) without the need for a dedicated SmartReader or other application:

- Windows, Mac and Linux desktop environments
- iPod, iPhone and iPad
- Android phones and tablets (versions 2.1 and above)
- Windows 8 devices

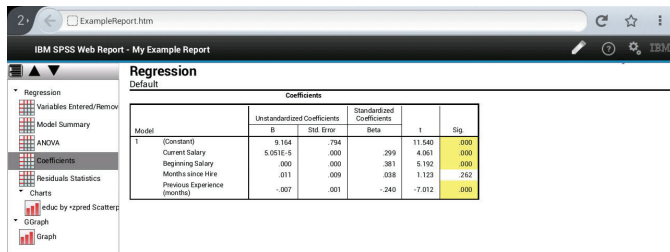


Figure 1: A sample SPSS Statistics output table viewed on a smartphone.

Generate presentation-ready output quickly and easily

Making your SPSS Statistics output ready for presentation is easier than ever. In SPSS Statistics 22, you can highlight specific rows, columns or cells to show their importance in your discussions or when presenting the results of your analysis to decision-makers. Create tables directly from procedure dialogs with conditional formatting - simply specify

rules, select an object from the output table (whichever meets that rule) and apply formatting (see Figure 2) to it. You also have the ability to automate common edits to your output document to save time and for greater speed and flexibility.

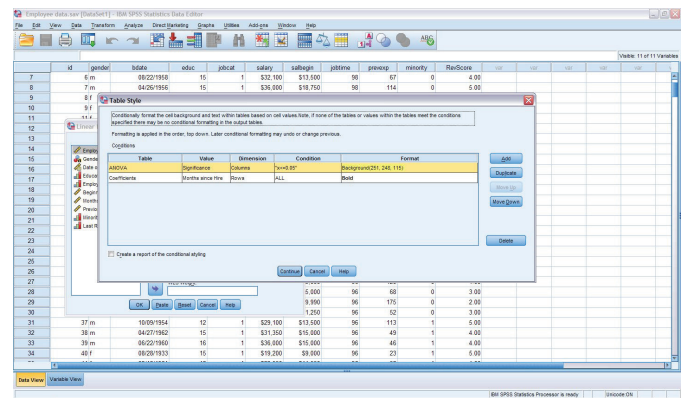


Figure 2: Conditional formatting enables users to apply styling to SPSS Statistics output tables.

Improve model building with Monte Carlo simulation

The Monte Carlo simulation capability includes new features to help you build more accurate predictive models when inputs are uncertain, including:

- **Simulating strings** – Non-numeric variables such as “male” and “female” can now be used. This release supports fitting a categorical distribution to a string field in the active dataset. For example, if a model contains gender as an input, when users load the model and fit the model inputs to the active dataset, SPSS Statistics will fit a categorical distribution for string fields
- **Support for Automatic Linear Modeling (ALM)** – Export a model from ALM and use it as the starting point for a simulation.

- **Heat maps** – Generate heat maps (see Figure 3) automatically when displaying scatterplots in which the target or the input, or both, are categorical. Scatterplots that contain a categorical target and/or categorical input are displayed as heat maps.

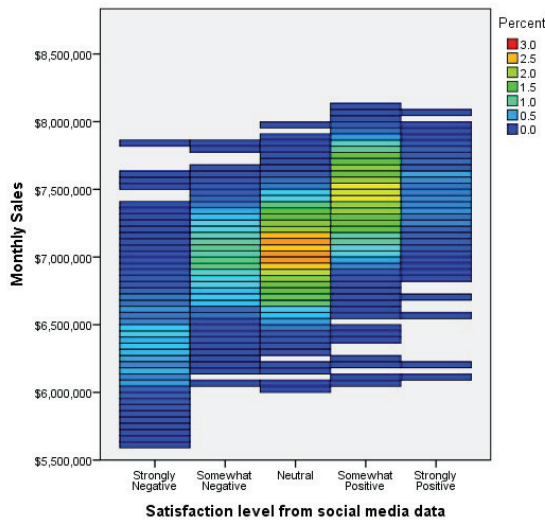


Figure 3: A company generates heat maps to determine whether or not customer satisfaction levels extracted from social media data provided by existing customers had an impact on its monthly sales target of \$7,000,000. When the satisfaction level is “Neutral” the monthly sales numbers are spread roughly evenly around the \$7,000,000 target. However, when the social media satisfaction level is “Somewhat Positive” the sales distribution shifts so that the bulk of the distribution (for that satisfaction level) exceeds the target. This suggests that customer satisfaction level as measured by social media data is an integral part of achieving the sales target.

- **Association between categorical inputs** – Automatically determine and use associations between categorical inputs when generating data for those inputs. You can compute a multiway contingency table for all inputs that are fit to a categorical distribution and use that table when generating data for those inputs.
- **Generating data in the absence of a predictive model** – You can specify which variables you want to simulate and either fit them to the active dataset or manually specify their distributions.

Find features faster on a new landing page

In SPSS Statistics 22, the “What do you want to do today?” dialog has been replaced with a new landing page format that will make it easier to find the newest and most exciting features. This page also includes links to other helpful information you might need for your analysis.

Improve performance and scalability using SPSS Statistics Server with SQL push back

The latest version of SPSS Statistics Server includes SQL pushback to help you make the best use of your existing IT infrastructure. Now you can perform data transformations without moving data into and out of the proprietary format, helping you conserve resources, deliver results faster and reduce overall IT costs. The database wizard can also be updated to create new transformations to push back.

All of these improvements make working with large data faster and more scalable, and improve its overall stability by providing you with:

- Greater resilience of Statistics Server in the event of network failures
- Asynchronous reading of data to get data to the procedures faster
- Improvements to importing/exporting from/to database
- ODBC pooling for more reliable database connections

Make custom programming easier

We've added features to make programming in SPSS Statistics easier than ever. Now you can:

- Install the Python plug-in as part of the main installation.
- Search for, download and install available extensions from within SPSS Statistics. You can also search for updates to installed extensions, and download and install the updated versions.
- Read and write case data faster from and to the active dataset.

Get more work done in less time

SPSS Statistics 22 includes a number of productivity enhancements to help you work faster and more efficiently.

- Use a simplified method to specify user-defined estimands in SPSS Amos.
- Benefit from Improved logging support for Enterprise Standard in the Platform Standards.
- Enable other applications to read/write encrypted Statistics data files with i/o dll.
- Generate pivot table output for non-parametric procedures.

System requirements

Requirements vary by platform. Find the system requirements for your operating system at: ibm.com/software/analytics/spss/products/statistics/requirements

Reasons to upgrade your SPSS Statistics software

If you're using an earlier version of IBM SPSS Statistics, you'll gain all of these time-saving features—and many more—when you upgrade to version 22.

Added in IBM SPSS Statistics 21

- Monte Carlo simulation for building better models to uncertain inputs
- Ability to compare two data files or data sets to ensure the data values and records are compatible
- Password protection of data and output files (encryption) to prevent others from seeing confidential information
- Improved and faster file merging
- Enhanced pivot tables with new features such as easier navigation and sorting operations
- Easier model specification in IBM SPSS Statistics Amos for structural equation modeling (SEM)
- Programming in SPSS Statistics with a Java plug-in
- Ability to import IBM® Cognos® Business Intelligence data into SPSS Statistics for additional analysis
- Exporting of output to Microsoft Excel 2007/2010
- Better scalability and performance with load balancing with IBM SPSS Collaboration and Deployment Services
- Single sign-on between SPSS Statistics client and server
- For security restricted environments, the option to run SPSS Statistics server as a non-root user on UNIX/LINUX
- Compression of data files for increased storage space
- Version compatibility to support new clients with old servers and vice versa (ie., client V21 and server V20 OR client V20 and server V21)

Added in IBM SPSS Statistics 20

- Pre-built map templates and support for ESRI files in SPSS Statistics Base
- Faster pivot table output
- GLMM procedure in IBM SPSS Advanced Statistics can be run with ordinal values
- Non-graphical, programmatic method for specifying models in SPSS Amos
- Run SPSS Statistics Server jobs offline by disconnecting the SPSS Statistics client.
- Compress temporary files created by the sort procedure within SPSS Statistics Server to save disk space when sorting large files.

Added in IBM Statistics 19

- Automatic Linear Models (ALM) gives non-specialist users the tools to build powerful linear models automatically and predict numerical outcomes
- Generalized Linear Mixed Models (GLMM), in SPSS Advanced Statistics, lets you create more accurate models for predicting non-linear outcomes based on hierarchical/nested data or data that includes repeated measures
- Several new capabilities in IBM SPSS Direct Marketing
- Faster performing tables in SPSS Statistics Base
- More than a dozen performance and ease-of-use enhancements to the Syntax Editor, available in all products in the SPSS Statistics family
- The Statistics portal provides internal or external users with interactive online access to analysis (requires SPSS Statistics Server and SPSS Collaboration and Deployment Services)
- Compiled transformations is a feature in SPSS Statistics Server that improves the performance of SPSS Statistics programs that execute a large number of data transformations
- Analysts using SPSS Statistics Base can score customer data, access pre-built models and interface directly with data in Salesforce.com
- Pivot columns and crosstabulations in SPSS Statistics Base and IBM SPSS Custom Tables
- Work with smaller and sparse datasets on Linux and Mac operating systems in IBM SPSS Exact Tests
- Run SPSS Statistics Base Server on IBM System z (requires SuSE Linux)

Added in IBM SPSS Statistics 18

- Prepare data in a single step using the new Automated Data Preparation feature
- New Nonparametric tests in SPSS Statistics Base
- Post computed categories in SPSS Custom Tables
- SPSS Direct Marketing module
- SPSS Bootstrapping module
- Rule checking on Secondary SPC Charts
- IBM SPSS Statistics Developer
- Ability to view significance tests in the main results table in SPSS Custom Tables
- Interactive Model Viewer on Two-Step Cluster Analysis and Automated Data Preparation procedures
- Improved display of large pivot tables
- Improved performance on procedures within SPSS Statistics Base Server for Frequencies, Descriptives, Crosstabs
- Support for 64-bit hardware on desktop for Windows and Mac
- Support for Snow Leopard on Mac OS X 10.6

Added in IBM SPSS Statistics 17

- Syntax Editor with features to make it easier to create, test and deploy syntax jobs
- Switch user interface language
- Mac OS X and Linux platforms can connect clients to SPSS Statistics Server
- Updated plug-ins for Python, .NET and R
- Support for graphic packages written in R
- Create user-defined interfaces for existing procedures and user-defined procedures with Custom Dialog Builder
- Call front-end Python scripts or scripting APIs explicitly from within back-end Python programs
- Support for Predictive Enterprise View, a common data interface that can be defined once and used by all IBM SPSS analytic tools
- Administrative enhancements in SPSS Statistics Server, including optimized multithreading, virtualization support and a “file in use” message to reduce errors in data created by more than one person writing to an SPSS Statistics file at the same time
- Read access to SPSS Statistics data files as an ODBC/JDBC data source, allowing these files to be read using SQL Codebook procedure to automatically describe the dataset
- Spell-checking of long text strings
- IBM SPSS EZ RFM module
- Multiple imputation of missing data in IBM SPSS Missing Values module
- Regularization methods: Ridge regression, the Lasso, Elastic Net in IBM SPSS Categories
- Model selection methods: 632(+), bootstrap, cross validation (CV), in IBM SPSS Categories
- Nearest Neighbor analysis in SPSS Statistics Base
- Median transformations function in COMPUTE procedure
- Option to use aggressive versus conservative rounding in COMPUTE procedure
- Create new variables that contain the values of existing variables from preceding or subsequent cases
- Graphboard integration, enabling users of SPSS Statistics products to deploy new or customer graph templates created in the new IBM SPSS Visualization Designer stand-alone module
- Wrapping and shrinking of wide tables in Word and PowerPoint
- Smartreader feature to allow the viewing and pivoting of SPSS Statistics output

Added in IBM SPSS Statistics 16

- Mac and Linux versions of SPSS Statistics
- Several multithreaded procedures for improved performance and scalability
- In the Data Editor: ability to customize variable view, spell checking for value labels and variable labels, sort by variable name, type, format, etc.
- Unicode support
- Import/export Excel 2007 data
- Syntax to change string length and basic data type of existing variables
- Creation of value labels and missing values on strings of any length
- Ability to set a permanent default working directory
- IBM SPSS Neural Networks module
- Complex Samples Cox Regression added to SPSS Complex Samples
- Latent Class Analysis in SPSS Amos
- Partial Least Squares regression
- Support for R algorithms
- Find and Replace feature in the Output Viewer

For more information on the latest version of SPSS Statistics, go to: ibm.com/software/analytics/spss/products/statistics.

About IBM Business Analytics

IBM Business Analytics software delivers data-driven insights that help organizations work smarter and outperform their peers. This comprehensive portfolio includes solutions for business intelligence, predictive analytics and decision management, performance management, and risk management.

Business Analytics solutions enable companies to identify and visualize trends and patterns in areas, such as customer analytics, that can have a profound effect on business performance. They can compare scenarios, anticipate potential threats and opportunities, better plan, budget and forecast resources, balance risks against expected returns and work to meet regulatory requirements. By making analytics widely available, organizations can align tactical and strategic decision-making to achieve business goals. For further information please visit ibm.com/business-analytics.

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