

> What's New in PASW Statistics 18

Analytics plays an increasingly important role in helping your organization achieve its objectives. Recognizing this, SPSS Inc. continues to enhance our PASW Statistics product family so that analytics is more accessible for an even broader group of analysts and business users.

PASW Statistics 18 combines new and enhanced capabilities to support users throughout the analytical cycle and to ensure that your organization can effectively use data in decision making. In this release, you'll find:

- Innovative features that automate time-consuming, manual operations
- New analysis and reporting capabilities that help improve results and solve business problems
- Improvements to the product family's architecture and technology that deliver faster performance and greater scalability

An important change with this release is that every module can now be installed and run separately or in conjunction with any other modules. **PASW® Statistics Base*** is no longer a requirement, since capabilities such as data access and management and charting have been added to every module. This gives you greater flexibility in how you install and use this versatile software.

* PASW Statistics Base, formerly called SPSS Statistics Base, is part of SPSS Inc.'s Predictive Analytics software portfolio.

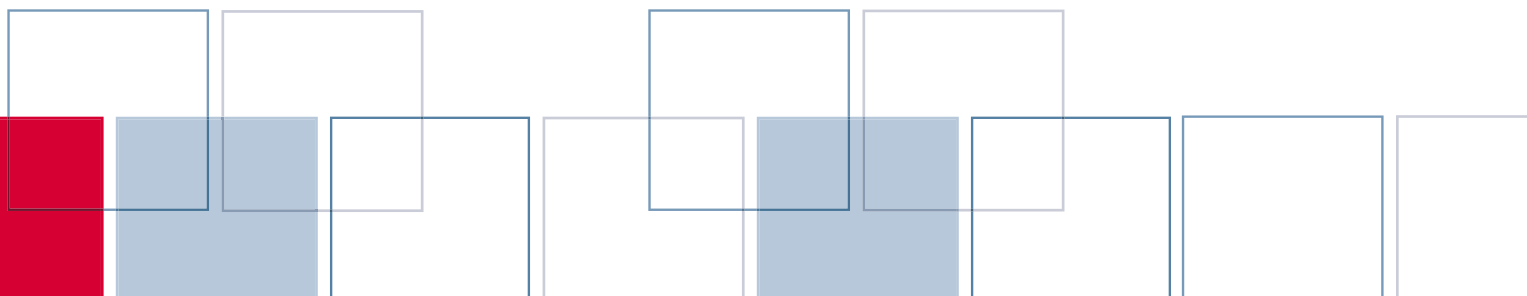
PASW Statistics Base is still available and will continue to form the basis of many deployments, since it contains statistical tests and procedures that are fundamental to many analyses.

An easier path to specialized analytics

Another important change is the introduction of **PASW® Statistics Developer**. This is a version of PASW Statistics for those who wish to create their own analytical functionality using the R and Python® programming languages.

With PASW Statistics Developer, any R package can be automatically “wrapped” in PASW Statistics syntax so that it takes on the appearance of a standard PASW Statistics algorithm – which can then easily be invoked through any PASW Statistics module. These packages can be used for specialized analytical tasks or for automating processes, all of which contributes to a more effective use of analytics.

PASW Statistics Developer's graphical interface and data management features make it easier for non-specialists – social scientists, analysts working in academic or commercial environments, researchers in any field, and those teaching statistics – to access and work in R.



While some programming skills are required to wrap R packages, once created they can then be used by anyone familiar with PASW Statistics. In PASW Statistics Developer, statistical programmers have an ideal development platform on which to draw upon the thousands of free procedures available in R, and then to implement customized or unique analytical solutions that can be accessed and executed by anyone familiar with PASW Statistics products.

Enhancements to the Custom Dialog Builder in this release will make it even easier for those who work with R or Python to create dialogs that less experienced users can call upon in their work. (SPSS Inc. continues to provide full integration with R, Python and the .NET version of Microsoft® Visual Basic® through the **PASW® Statistics Programmability Extension****.)

New modules make analytic techniques more accessible

This release also introduces two new modules: **PASW® Bootstrapping**, which makes using bootstrapping techniques easier; and **PASW® Direct Marketing**, which makes a number of analytical processes accessible to marketers from a single interface.

Bootstrapping is a useful technique for testing the stability of analytical models, particularly when data are not normally distributed. For example, it can help determine the most effective variables for generating accurate results. PASW Bootstrapping enables you to use this technique with a number of different statistical procedures in just a few easy steps. It estimates the sampling distribution of an estimator by re-sampling with replacement from the original sample.

*** The PASW Statistics Programmability Extension, PASW Data Preparation, and PASW Custom Tables, formerly called SPSS Statistics Programmability Extension, SPSS Data Preparation™, and SPSS Custom Tables, are part of SPSS Inc.'s Predictive Analytics software portfolio.*

With PASW Bootstrapping, you can reliably estimate the standard errors and confidence intervals of a population parameter like a mean, median, proportion, odds ratio, correlation coefficient, regression coefficient, and numerous others.

The other new module, PASW Direct Marketing, gives marketers a straightforward way to perform analyses that will help them plan and carry out more effective marketing activities. From a single interface, they can choose to:

- Profile contacts
- Group customers or prospective customers through cluster analysis
- Identify which of these have the greatest propensity to purchase
- Perform RFM (recency-frequency-monetary value) analysis
- Test the effectiveness of direct response packages
- Analyze response rate by zip code or postal code

Analyses that used to require multiple steps can now be performed in a single step, and do not require marketers to know which specific statistical tests are being applied. (Note: the capabilities formerly offered through PASW® EZ RFM are now included in PASW Direct Marketing.)

New techniques provide greater speed and flexibility

Innovations in this release will help users prepare data for analysis faster. The Automated Data Preparation (ADP) feature, available in the **PASW® Data Preparation**** module, helps you detect and correct quality errors and impute missing values in one efficient step. ADP provides an easy-to-understand report to help you determine which data to use in your analysis, complete recommendations and visualizations.

These visualizations are presented through PASW Statistics' enhanced interactive Model Viewer. With the Model Viewer, you can explore data and models and uncover hidden relationships quickly and easily. In the PASW Data Preparation module, the Model Viewer shows results of the ADP process, and in PASW Statistics Base, it shows results of the non-parametric statistics tests and two-step cluster analysis.

The new, non-parametric statistics tests in this release enable you to make multiple comparisons about your data, and can automatically choose the most appropriate non-parametric test, based on your data. In addition, the underlying algorithms have been improved to deal with larger datasets more easily.

Additional enhancements for analysis and reporting

Those who are familiar with **PASW® Custom Tables**** will find enhancements in this release that will save time and minimize opportunities for error. The first enhancement is the ability to compute new categories in a table after it has been created, simply by creating and applying open-ended expressions to existing categories. This eliminates the need to export results to Excel® or another spreadsheet program for such calculations.

The second enhancement is the inclusion of significance test results in the main table, instead of in a separate one. This saves time by avoiding the need for copying output to a Word document and manually entering the significance differences in the table.

If your work involves statistical process control charts, another enhancement in PASW Statistics Base allows you to request rule-checking on both primary and secondary control charts and, as a result, gain a better understanding of whether a process is operating normally.

Technologies for faster performance, greater scalability

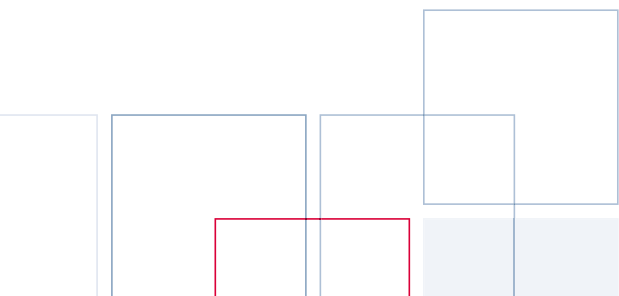
In past releases, SPSS has improved the performance of specific algorithms and procedures in PASW Statistics software. In this release, the streamlined procedures are those that you may perform multiple times a day: frequencies, crosstabs, and descriptives. Through data compression technologies available in PASW® Statistics Server, these procedures will now operate more rapidly, so that you'll spend less time waiting for results and have more time to interpret them and share them with others.

Other enhancements to PASW Statistics technology will help anyone who works with large datasets. Improvements to the way large pivot tables are displayed make it easier to navigate through such a table and manipulate its contents. You can automatically filter some of the data, which improves performance during the initial rendering, editing, exporting, printing, and other processes. This functionality will be available to anyone working with the server versions of PASW Statistics Base and its modules.

For those working with client versions of the software, PASW Statistics 18 offers support for 64-bit desktop hardware on both Windows and Mac platforms – providing greater performance and scalability for those users.

Gain greater value with collaboration

To share and re-use assets efficiently, protect them in ways that meet internal and external compliance requirements, and publish results so that a greater number of business users can view and interact with them, consider augmenting your PASW Statistics software with PASW Collaboration and Deployment services (formerly SPSS Predictive Enterprise Services™). More information about these valuable capabilities can be by downloading the "Collaboration" brochure at www.spss.com/software/deployment/cds.



System requirements

PASW Statistics Base 18 for Windows

- Operating System: Microsoft Windows XP (32-bit versions) or Vista® (32-bit or 64-bit versions)
- Hardware:
 - Intel® or AMD x86 processor running at 1GHz or higher
 - Memory: 1GB or more recommended
 - Minimum free drive space: 800MB**
 - CD-ROM drive
 - Super VGA (800x600) or higher-resolution monitor
 - For connecting with a PASW Statistics Base Server, a network adapter running the TCP/IP network protocol
- Web browser: Internet Explorer 6 or above

PASW Statistics Base 18 for MAC OS X

- Operating system: Apple Mac OS 10.5 (Leopard™) or 10.6 (Snow Leopard™) (32-bit or 64-bit versions)
- Hardware
 - Intel processor
 - Memory: 1GB or more recommended
 - Minimum free drive space: 800MB*
 - CD-ROM drive
 - Super VGA (800x600) or higher-resolution monitor
- Web browser: Safari™
- Java™ Standard Edition 5.0 (J2SE 5.0)

PASW Statistics Base 18 for Linux

- Operating system: any Linux OS that meets the following requirements**: (32-bit only)
 - Kernel 2.6.26.25 or higher
 - glibc 2.8 or higher
 - XFree86-4.7 or higher
 - libstdc++6
- Hardware:
 - Processor: Intel or AMD x86 processor running at 1GHz or higher
 - Memory: 1GB or more recommended*
 - Minimum free drive space: 800MB
 - CD-ROM drive
 - Super VGA (800x600) or a higher-resolution monitor
- Web browser: Mozilla® Firefox®

* Installing Help in all languages requires 1.1GB free drive space

** Note: PASW Statistics 18 was tested on and is supported only on Red Hat® Enterprise Linux 4x and 5.

PASW Statistics modules

Requirements vary by platform.

Amos 18

- Operating system: Windows XP or Windows Vista
- Hardware:
 - Memory: 256MB RAM minimum
 - 125MB or more available hard-drive space
 - Web browser: Internet Explorer 6

PASW Statistics Base Server 18

- Operating system: Windows Server 2003 or Windows Server 2008 (32-bit or 64-bit); Sun™ Solaris™ (SPARC) 9 and 10 (64-bit only); IBM® AIX® 5.3 and 6; or Red Hat Enterprise Linux® 4x or 5 or Advanced Platform 5 (32-bit and 64-bit), or Advanced Server 4x (64-bit); HP-UX™ Ili (64-bit Itanium)
- Hardware:
 - Minimum CPU: Two CPUs recommended, running at 1GHz or higher
 - Memory: 4GB RAM recommended
 - Minimum free drive space: 500MB
 - Required temporary disk space: Calculate by multiplying 2.5 x number of users x expected size of dataset in megabytes

PASW Statistics Adapter for PASW Collaboration and Deployment Services

- Requires PASW Statistics Base 18 and PASW Collaboration and Deployment Services†

Version comparison chart: new features added by version number and by area

New feature	Version number	18	17.0	16.0	15.0	14.0	13.0
General							
Switch user interface language		X	X				
PASW Statistics users on Mac OS X and Linux platforms can connect clients to PASW Statistics Base Server		X	X	X			
Desktop versions available on Windows, Mac OS X, or Linux		X	X	X			
Resizable dialogs and drag-and-drop in dialogs		X	X	X			
Programmability							
PASW Statistics Developer enables analysts to “wrap” procedures written in R in PASW Statistics syntax		X					
Updated plug-ins for Python, .NET, and R, including support for graphic “packages” written in R		X	X				
Call front-end Python scripts or scripting APIs explicitly from within back-end Python programs.		X	X				
Addition of Python as a “front-end” cross-platform scripting language		X	X	X			
Custom Dialog builder to create user-defined interfaces for existing procedures and user-defined procedures		X	X				
Ability to create a data source, including variables and cases, without having to import the active data source into PASW Statistics		X	X	X			
Control the flow of your syntax jobs or create your own user-defined algorithms using external programming languages (through the PASW Programmability Extension)		X	X	X	X	X	
Python programming language included		X	X	X	X		
Ability to create first-class, user-defined procedures		X	X	X	X		
Syntax control of output files		X	X	X	X		
Enterprise							
Improved performance of FREQUENCIES, CROSSTABS and DESCRIPTIVES procedures (in PASW Statistics Base Server)		X					
Several multithreaded procedures for improved performance and scalability		X	X	X			
Support for the enterprise view, a common data interface that can be defined once and used by all SPSS Inc. analytic tools		X	X				
Statistics Adapter for PASW Collaboration and Deployment Services (added in SPSS 14.0.1)		X	X	X	X		
Updated PMML to include transformations		X	X	X	X		
Administrative enhancements in PASW Statistics Base 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 a file at the same time		X	X				
Single administration utility for PASW Statistics Base Server, PASW Modeler†, and PASW Collaboration and Deployment Services		X	X	X	X		
Stripe temporary files over multiple disks for increased performance (in PASW Statistics Base Server)		X	X	X	X		
Data-free client (in PASW Statistics Base Server)		X	X	X	X	X	
In-database data preparation (sort and aggregate) to improve performance (in PASW Statistics Base Server)		X	X	X	X	X	X
Predictor Selection and Naïve Bayes algorithms (in PASW Statistics Base Server)		X	X	X	X	X	

† PASW Modeler, PASW Collaboration and Deployment Services, and PASW Data Collection Data Model, formerly called Clementine®, SPSS Predictive Enterprise Services™, and Dimensions™ Data Model™, are part of SPSS Inc.'s Predictive Analytics software portfolio.

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Data access and data management

Read access to PASW Statistics data files as an ODBC/JDBC data source, allowing these files to be read using SQL		X	X				
Codebook procedure to automatically describe the dataset		X	X				
Improved Data Editor		X	X	X			
Ability to customize variable view		X	X	X			
Improved syntax editor, with auto-completion, auto-indentation, color-coding and error-coding of syntax, gutter to display line numbers and break point, and stepping through of syntax jobs		X	X				
Spell-checking of long text strings		X	X				
Spell checking for value labels and variable labels		X	X	X			
Ability to sort by variable name, type, format, etc.		X	X	X			
Unicode support		X	X	X			
Syntax to change string length and basic data type of existing variables		X	X	X			
Creation of value labels and missing values on strings of any length		X	X	X			
Ability to set a permanent default working directory		X	X	X			
Export to Database Wizard		X	X	X	X		
Clone dataset command		X	X	X	X	X	
Ability to open multiple datasets within a single PASW Statistics session		X	X	X	X	X	
Export data to recent versions of Excel, including Excel 2007, and SAS®		X	X	X	X	X	X
Very long text strings (up to 32,767 bytes)		X	X	X	X	X	X
Long value labels (up to 120 bytes)		X	X	X	X	X	
Custom Attributes for user-defined meta data in the Data Editor		X	X	X	X		
Read/write Stata® files		X	X	X	X	X	
Export to PASW Data Collection Data Model†		X	X	X	X		
OLE DB data access (Windows only)		X	X	X	X	X	
Optimal Binning (in PASW Data Preparation add-on module)		X	X	X	X		
Subset variable views		X	X	X	X		

Analysis

PASW Direct Marketing add-on module enables business users to perform RFM analysis, segment and profile customers and conduct other marketing analyses from a single interface		X	X				
PASW Neural Networks [‡] add-on module		X	X	X			
Multiple imputation of missing data (in PASW Missing Values add-on module)		X	X				
Complex Samples Cox Regression (in PASW Complex Samples)		X	X	X			
Latent Class Analysis in Amos		X	X	X			
Partial Least Squares regression***		X	X	X			
Support for R algorithms***		X	X	X			
Regularization methods (in PASW Categories add-on module): Ridge regression, the Lasso, Elastic Net		X	X				
Model selection methods (in PASW Categories): 632(+), bootstrap, Cross Validation (CV)		X	X				

Version comparison chart: new features added by version number and by area

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PASW Bootstrapping module helps ensure the stability of statistical models		X					
Preference scaling (in PASW Categories)		X	X	X	X	X	
Non-parametric tests (in PASW Statistics Base) support the analysis of data that are not normally distributed		X					
Nearest Neighbor analysis, which can be used for prediction or for classification (in PASW Statistics Base)		X	X				
Median transformation function in COMPUTE procedure		X	X				
Option to use aggressive versus conservative rounding in COMPUTE procedure		X	X				
Create new variables that contain the values of existing variables from preceding or subsequent cases		X	X				
Perform calculations on data even after they have been placed in a table to create new categories (in PASW Custom Tables)		X					
Generalized linear models (in PASW Advanced Statistics)		X	X	X	X		
Generalized estimating equations (in PASW Advanced Statistics)		X	X	X	X		
Ordinal regression to model ordinal outcomes (in PASW Statistics Base)		X	X	X	X		
Complex samples ordinal regression (in PASW Complex Samples)		X	X	X	X		
Automated Data Preparation (ADP) helps detect and correct quality errors in one efficient step (in PASW Data Preparation [‡])		X					
Validate Data procedure (in PASW Data Preparation)		X	X	X	X	X	
Anomaly Detection for multivariate outliers (in PASW Data Preparation)		X	X	X	X	X	
Enhanced PASW Forecasting add-on module with Expert Modeler		X	X	X	X	X	
Bayesian estimation—MCMC algorithm (in Amos structural equation modeling software)		X	X	X	X	X	
Data imputation, including multiple imputation (in Amos structural equation modeling software)		X	X	X	X	X	
Estimation and imputation of ordered-categorical and censored data (in Amos structural equation modeling software)		X	X	X	X		
Run significance tests on multiple response variables, excluding categories used in subtotal calculations (in PASW Custom Tables [‡] add-on module)		X	X	X	X	X	X
Display results of significance tests in the main results table (in PASW Custom Tables)		X					
Graphs							
GraphBoard integration, enabling users of PASW Statistics products to deploy new or customer graph templates created in the new PASW Viz Designer stand-alone module		X	X				
Chart Builder user interface for graphics		X	X	X	X	X	
Support for SPSS Inc.'s Graphics Production Language (GPL)		X	X	X	X	X	
Dual-Y axis and overlay charts		X	X	X	X		
Enhanced process control charts		X	X	X	X		
2-D line charts (both axes can be scale axes) and charts for multiple response sets		X	X	X	X	X	

[‡] PASW Neural Networks, and PASW Decision Trees, formerly known as SPSS Neural Networks™, and SPSS Decision Trees, are part of SPSS Inc.'s Predictive Analytics software portfolio.

*** Available at SPSS Developer Central; requires the PASW Statistics Programmability Extension.

Version comparison chart: new features added by version number and by area

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Output							
Find and Replace feature in the Output Viewer		X	X	X			
Wrapping and shrinking of wide tables in Word and PowerPoint		X	X				
Create a new worksheet in Excel by appending rows and columns		X	X				
Export output to Microsoft PowerPoint®		X	X	X	X	X	X
Export output to PDF		X	X	X	X		
Improved pivot table display for easier manipulation of data in large tables		X					
Enhanced Model Viewer for clearer understanding of results of ADP, Two-Step Cluster analysis and non-parametric tests.		X					
Syntax to automate report production		X	X				
Output Management System (turn pivot table output, such as PASW Statistics data files, XML, and HTML, into data/input)		X	X	X	X	X	X
Interactive interface for the output management system		X	X	X	X	X	X
Publish data to Web browser		X	X				
PASW® Smartreader to allow the viewing and pivoting of PASW Statistics output		X	X				
Licensing improvements							
All modules can run separately, with or without PASW Statistics Base and in conjunction with any other modules		X					
Network license reservations and priority settings		X	X	X	X		
Network commuter license		X	X	X	X		
License manager redundancy		X	X	X	X		
Help							
“SPSS Inc. Manuals on CD,” featuring manuals in PDF format for PASW Statistics Base and all add-on modules		X	X	X	X	X	X
Chart tutorial		X	X	X	X	X	

Features subject to change based on final product release.

To learn more, please visit www.spss.com. For SPSS Inc. office locations and telephone numbers, go to www.spss.com/worldwide.

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