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## What's new in SAS 9.2

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# Agenda

- SAS 9.2 Key Highlights
- Proc SORT
- ODS Graphics Editor
- PDF Output
- SAS/GRAPH – new Procs
- Conclusion / Questions

# Key Highlights

## Universal Printing

- PNG (Portable Network Graphics)
- SVG (Scalable Vector Graphics)
- PDF/A (Archivable PDF documents)

## National Language Support

- Additional international informats and formats
- Linguistic collation for sorting

## Internet Protocol

- The new IPv6 is supported

# Key Highlights

## Performance

- Resume batch jobs exactly where they stopped
- Proc SQL has been optimized for queries to external DBMS

## Security

- The AES (Advanced Encryption Standard) is supported

## Diagnostics

- New SCAPROC Proc (SAS Code Analyzer)
- New JAVAINFO Proc



# Key Highlights

## User Defined Functions

- New PROTO Proc - create new functions in C, C++
- New FCMP Proc - create new functions in SAS

## ODS Statistical Graphics

- Now embedded in 50+ Procs
- ODS Graphics Editor - GUI

## SAS/Graph

- New Statistical Graphics (SG) Procedures
- Graph Template Language (GTL) to customize graphics

# 1 - Proc SORT

uppercase and lowercase letters are **sorted based on their internal storage representation**, NOT their position in the alphabet.

ASCII encoding: **uppercase Z precedes lowercase a**  
(Windows, UNIX)

 **Sorting mixed case will be problematic!**

**SAS 9.2 solution:** SORTSEQ = LINGUISTIC option

- Sorts based on the language rules for the current locale setting

# ASCII collating sequence

- UNIX, Windows & OpenVMS

- English-language ASCII sequence:

```
blank ! " # $ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 :
; < = > ? @ A B C D E F G H I J K L M N O P Q R
S T U V W X Y Z [ \ ] ^ _ a b c d e f g h i j k l m n o p
q r s t u v w x y z { } ~
```

- Digits are sorted before uppercase letters  
Uppercase letters are sorted before lowercase

# Strength

PRIMARY or 1	PRIMARY specifies differences between base characters (for example, "a" < "b").	It is the strongest difference. For example, dictionaries are divided into different sections by base character.
SECONDARY or 2	Accents in the characters are considered secondary differences (for example, "as" < "às" < "at").	A secondary difference is ignored when there is a primary difference anywhere in the strings. Other differences between letters can also be considered secondary differences, depending on the language.
TERTIARY or 3	Upper and lowercase differences in characters are distinguished at the tertiary level (for example, "ao" < "Ao" < "aò").	A tertiary difference is ignored when there is a primary or secondary difference anywhere in the strings. Another example is the difference between large and small Kana.
QUATERNARY or 4	When punctuation is ignored at level 1-3, an additional level can be used to distinguish words with and without punctuation (for example, "ab" < "a-b" < "aB").	The quaternary level should be used if ignoring punctuation is required or when processing Japanese text. This difference is ignored when there is a primary, secondary, or tertiary difference.
IDENTICAL or 5	When all other levels are equal, the identical level is used as a tiebreaker. The Unicode code point values of the Normalization Form D (NFD) form of each string are compared at this level, just in case there is no difference at levels 1-4.	This level should be used sparingly, because code-point value differences between two strings rarely occur. For example, only Hebrew cantillation marks are distinguished at this level.

## 2 - SAS/Graph

It's a tedious task to make **minor changes to the graphs!**

### **SAS 9.2 solution: ODS Graphics Editor:**

Interactive GUI to make changes easy

- No more complex coding with the Graph Template Language (GTL)
- Edit, add or delete title and footnotes
- Reposition the legends
- Customize the visual properties of plots and axes
- Add free-form annotation
- Save and export the graphic

## 3 - PDF Output

The PDF destination of ODS is great, but the documents it produces **aren't secured!**

### **SAS 9.2 Solution: New Systems Options**

- **PDFSECURITY**

  - encrypt your PDF output

  - two levels: 40-bit (low) and 128-bit (high)

- **PDFPASSWORD**

  - User password - used to open an encrypted PDF document

  - Owner password - used to validate the owner

## 4 – SAS/GRAPH : new Statistical Graphics Procs

ODS Statistical Graphics are nice but don't you wish you had more choices for **exploratory data analysis** and for producing **customized graphs** ?

### SAS 9.2 Solution: New SAS/GRAPH Procedures

- Proc SGPANEL
- Proc SGPLOT
- Proc SGSCATTER
- Proc SGRENDER

# To learn more

- **Short News**

SAS advances enterprise intelligence with significant software release

<http://www.sas.com/news/preleases/031708/SAS9.2.html>

- **Documentation**

What's new SAS 9.2

<http://support.sas.com/documentation/whatsnew/index.html>

SAS 9.2 Technical Documentation

<http://support.sas.com/cdlsearch?ct=80000>



## To learn more

- **New Courses for SAS 9.2**

<http://support.sas.com/training/canada/curric.html>

- **Courses in Canada**

<http://support.sas.com/training/canada/locations.html>

# Questions?



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Thanks!

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