

# What New in SAS® 9.2?

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# SAS® 9.2

Partial Release – Summer 2008

Products available now:

- Base SAS
- SAS/Access
- SAS/AF
- Sas/Assist
- SAS/Connect
- SAS/EIS
- SAS/ETS
- SAS/FSP
- SAS/Graph
- SAS/IML
- SAS/Insight
- SAS/Lab
- SAS OLAP Server
- SAS/OR
- SAS/QC
- SAS/Secure
- SAS/Share
- SAS/Stat

# SAS® 9.2 Phase 2

Scheduled for Release in May ??? 2009

- Products that rely on metadata
- Phase 2 Products include:
  - SAS® BI Products (used for VCU Banner) including:
    - Enterprise Guide
    - Web Report Studio
    - MS Office Add-In
  - Enterprise Miner
  - Text Miner
  - SAS OLAP Server
  - SAS Integration Technologies
  - SAS Bridge to ESRI

# New SAS® 9.2 Features

- Easier Installation for Windows
  - 1 DVD for SAS Foundation
- Additional Operating Systems
- Import/Export additions
- New Procedures
- Additional security features
- Macro language enhancements
- SAS Disk Cleanup Handler Utility
- SAS/Graph statistical graphics suite
- Output Delivery System (ODS) graphics
- Complete List:

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

# Easier Installation

- 1 DVD for Foundation
- Typical Install takes 30 to 45 minutes
- May take up to 1.5 hours
- Distributed at VCU by DVD exchange from Technology Services HelpDesk
- We are emailing users link to installation instructions on our website

<http://www.ts.vcu.edu/faq/stats/sasv92install.html>

# SAS<sup>®</sup> 9.2

## Additional Operating Systems

- Microsoft Windows x64 editions
- Linux on x86-64-based CPUs
- Solaris 10 x64
- OpenVMS on HP Integrity (Itanium)

# Import/Export Additions

- SAS<sup>®</sup> 9.1.3 could import/export:
  - Excel (2002), MSAccess(2002), \*.csv,\*.txt, Lotus (\*.wk4) , dBase
- SAS<sup>®</sup> 9.2 added to Import Wizard, Export Wizard, Proc Import, Proc Export :
  - JMP (\*.jmp)
  - SPSS (\*.sav)
  - Stata (\*.dta)
  - Paradox (\*.db)
- New PROC IMPORT options for Excel files:
  - DBMS=Excel option reads first 8 rows to determine column type
  - DBMS=XLS option reads all rows to determine column type
- Office 2007 to be supported in SAS<sup>®</sup> 9.2 Phase 2

# New PROCs Include...

<http://support.sas.com/documentation/cdl/en/whatsnew/61982/HTML/default/procwhatsnew902.htm>

- Proc GLIMMIX is now production (SAS/STAT)
  - For analyzing multilevel data with non-normal, such as count or dichotomous outcome variables.
- PROC COUNTREG (ETS)
  - For econometrics and time series.
- PROC SCAPROC (Base)
  - SAS Code Analyzer
- PROC SOAP
  - Reads and Writes XML

# New Experimental Procs

- Experimental (SAS/STAT) PROCS:
  - PROC MCMC - For Bayesian models using Markov Chain Monte Carlo (MCMC) simulation
  - PROC HPMIXED - designed to cope with estimation problems that involve a large number of fixed effects, a large number of random effects, or a large number of observations.
  - PROC SEQDESIGN - designs interim analyses for clinical trials
  - PROC SEQTEST - performs the interim analyses based on the sample sizes and boundary values produced by the SEQDESIGN procedure.
  - PROC TCALIS - updates the CALIS procedure for structural equation modeling.

# Performance Enhancements

- Using the new Checkpoint Mode, multistep batch programs that terminate can be resubmitted in RESTART mode resuming at the DATA or PROC step that was executing when the program terminated.
- PROC SQL performance improved for both databases and SAS libraries
- PROC SORT determines if table is sorted before attempting to sort (PRESORTED option)

# New Security Features

- The Secure File Transfer Protocol (SFTP) access method provides a secure connection and file transfers.
- AES (Advanced Encryption Standard) data encryption algorithm is now supported
- The PWENCODE procedure uses a 256-bit key encryption method to generate encoded passwords.

# Macro Enhancements

- New automatic macro variables for:
  - SAS session encoding
  - Local and remote computer names
  - SAS log error and warning messages
- The **SECURE** option
  - Enables you to write **secure** macros
  - Protects intellectual property contained in stored compiled macros

# Functions

- User written functions in C, C++ or SAS language now supported
- Use PROC PROTO to register C or C++ functions
- Use PROC FCMP to write functions in SAS
- New FUNCTIONS DICTIONARY table contains info on all functions
- New functions include:
  - Return information about character position or words in a character string.
  - Return date and time interval

# SAS® Default Directory Path

- In previous versions of SAS®, the directory path was:

**C:\Program Files\SAS\SAS X.X.**

- For SAS® 9.2:

**C:\Program Files\SAS\SASFoundation\9.2.**

This path maps to the **!SASROOT** directory

# SAS® Disk Cleanup Handler Utility

- Searches for and cleans any temporary files or directories that were generated by SAS.
- Cleans directories such as SAS Work and SAS\_util directories as well.
- Available for Windows only
- Type cleanmgr from the command prompt.

# Other New Features

- Universal Printing now supports:
  - PNG (Portable Network Graphics)
  - SVG (Scalable Vector Graphics)
  - PDF/A (archivable PDFs)
- IPv6 support
  - For next generation Internet protocol
- New Dictionary Tables:
  - Functions
  - Information Maps
  - ODS Destinations
  - EXTFILES - access method and device types

# Graphics

- Traditional SAS® Graphics:
  - Saved in SAS® Catalogs
  - GOPTIONS statement controls appearance
  - Usually required 3 steps:
    - Create output to plot
    - Data step to prepare for plotting
    - SAS/Graph
  - Viewed in Graph Window
- ODS Graphics
  - New in SAS® 9.2
  - Extension of the Output Delivery System (ODS)
    - Produces the same destinations and styles as ODS tabular output
  - Graphs in standard image formats (\*.PNG, \*.JPEG)
  - ODS styles control appearance
  - Displayed using standard viewers (Web browsers)
  - Can be edited with ODS Graphics Editor
  - Graph Template Language for creating custom templates
  - Must be licensed for SAS® /Graph



# Styles for ODS Graphical Output

Desired Output	Style Name	Default For Destination
Color	ANALYSIS	
	DEFAULT	HTML
	LISTING	Listing
	PRINTER	PRINTER,PDF, PS
	RTF	RTF
	STATISTICAL	
Grey Scale	JOURNAL	
Black and White	JOURNAL2	

To override default use: `STYLE= option;`  
`ODS LISTING STYLE=JOURNAL;`

# Image Management

- Can copy and paste images being viewed in HTML, RTF and PDF destinations (Windows)
- PDF and RTF
  - Images and tabular output saved in same file
  - Use FILE= option to specify file location:  
`ODS PDF FILE='c:\mysasfiles\report1.pdf';`
- LISTING and HTML
  - Use FILE= to specify for tabular output file  
Use GPATH= to specify folder for graphics files  
`ODS LISTING FILE='c:\mysasfiles\report1.html';`  
`ODS LISTING GPATH='c:\mysasgraphics';`
  - To specify graphics format use IMAGEMGT= option:  
`ODS GRAPHICS ON / IMAGEFMT=JPEG';`

# ODS Graphics Editor

- Primarily annotation tool for ODS Graphics
- Limited ability to edit (titles, footnotes, styles)
- By default ODS graphics cannot be edited
- To use:
  - Enable with Results Windows active and enter SGEDIT ON in the command line
  - Then create editable SAS graphs
  - In Results Window right click on chart and select edit
- Selecting Edit in the Windows Picture and Fax Viewer opens chart in Paint

# Proc Freq – ODS Graphics Demo

```
ODS GRAPHICS ON;  
PROC FREQ DATA=SASHELP.Cars;  
  TABLES Type * Origin;  
  TABLES Origin * Type;  
  TITLE "ODS Graphics Demo";  
RUN;  
ODS GRAPHICS OFF;
```

Graphics are automatically produced because of:

```
ODS GRAPHICS ON;
```

Graphics will be produced in PROCs until turned off:

```
ODS GRAPHICS OFF;
```

# Proc Reg – ODS Graphics Demo

```
*Demo of graphics in HTML and selection of output  
  components;  
ods graphics on;  
ods html;  
ods select ParameterEstimates FitPlot;  
proc reg data=sashelp.Class;  
model Weight=Height;  
quit;  
ods html close;  
ods graphics off;
```

For additional examples: UCLA: Academic Technology Services  
<http://statistics.ats.ucla.edu/stat/sas/seminars/whatsnew92/default.htm>

# SAS<sup>®</sup> e-Learning

- Replaces SAS<sup>®</sup> OnlineTutor
- Modules include:
  - SAS<sup>®</sup> Programming Library
  - SAS<sup>®</sup> Advanced Programming Library
  - Enterprise Guide

# SAS Logging Facility – Phase 2

- Logs SAS Server and program messages based on categories such as authentication, administration and performance.
- Six message levels: TRACE, DEBUG, WARN, INFO, ERROR and FATAL
- Log message content can be customized
- View SAS Server log messages in SAS Management Console
- SAS program messages can be written to a user specified log file
- Does NOT replace traditional SAS log.

# Need Help with SAS® ?

- SAS® 9.2 Manuals available:

- On SASHelp Menu
- On the Web

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

- Other SAS® documentation:

- UCLA Stat Portal

<http://www.ats.ucla.edu/stat/sas/>

# Acknowledgements

- SAS Institute Inc. 2009  
*What's New in SAS® 9.2*. Cary, NC:  
SAS Institute Inc.
- Delwiche, Laura D. and Susan J. Slaughter. 2008  
*The Little SAS® Book, Fourth Edition*  
Cary, NC: SAS Institute Inc.
- UCLA: Academic Technology Services  
Statistical Consulting Group
- Papers from SAS® Global Forum:
  - **Getting Started with ODS Statistical Graphics in SAS® 9.2**  
<http://www2.sas.com/proceedings/forum2008/305-2008.pdf>
  - **Enhancements to SAS® /GRAPH® in SAS® 9.2**  
<http://www2.sas.com/proceedings/forum2008/323-2008.pdf>
  - **Introduction to Graph Template Language**  
<http://support.sas.com/resources/papers/sgf2008/gtl.pdf>