

Exploring JMP® 8 Integration with SAS® 9.2: A Rich Set of Development Tools for the Analytic/Dynamic Report Application Developer

Mike Vorburger, SAS Institute Inc.

ABSTRACT

Come see how JMP® 8 offers a rich client environment to develop applications that exploit the dynamic graphical environment of JMP. The JMP Scripting Language (JSL) can be used to create user dialogs, submit SAS code, create native JMP reports from SAS output, surface ODS output, and integrate SAS output into native JMP output/reports.

CONTACT INFORMATION

Mike Vorburger
SAS Institute Inc.
mike.vorburger@sas.com

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Exploring JMP® 8 Integration with SAS® 9.2:

Mike Vorburger

Topics

- Basics of JMP and SAS integration
- Submitting SAS code
- Moving Data
- Handling SAS output
- Integrating SAS and JMP output
- JSL as a dialog language

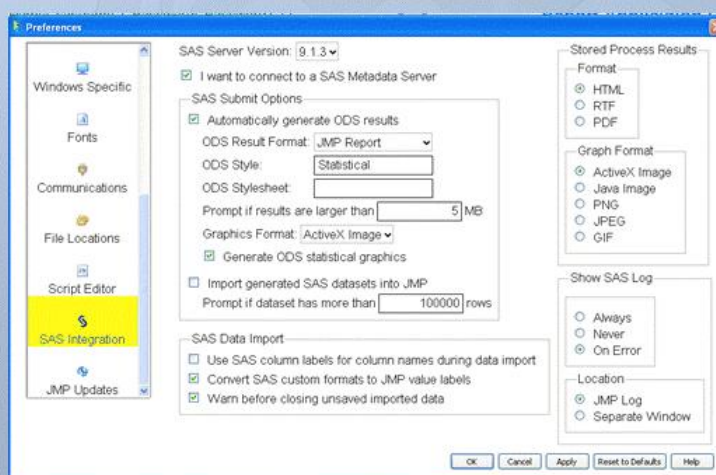


SAS Menu Items

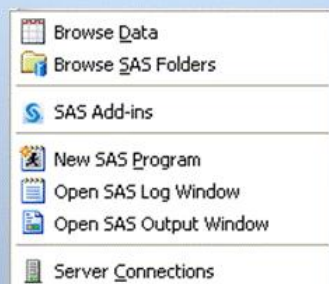


SAS Connection Preferences

- User can set up default SAS Metadata Server connection info, allow password to be securely stored.
- SAS Programmers may want to choose to display the SAS log in a separate window and always show the SAS log.
- Options to generate ODS and consume results are also available in the preference controls



Server Connections



- Use the File -> SAS (or SAS toolbar) dialogs to control:
 - Connections to:
 - Physical SAS server (local or remote)
 - A SAS Metadata server
 - Or manage the connection to a current connection
 - Launch the SAS add-ins
 - Open a new SAS program editor
 - View the Log or Output Windows
 - Browse SAS data or SAS folders on the server
 - Used to query/import SAS data
 - Execute SAS Stored Processes



Using JMP as a programming environment for SAS



JMP 7 Being Used as a Programming Interface to SAS

- Remember to set the preferences such that the SAS log is always displayed and viewed in a separate window
- Choose the SAS log icon on the SAS toolbar to display the SAS log
- Open a new SAS program editor to write SAS code
- If you want to retrieve or view data on the SAS server, choose the Browse Data tool

SAS Log

SAS Editor

SAS Browser

```

Program Editor
1  data random;
2  do x = 1 to 10000;
3  y = log(x);
4  output;
5  end;
6  run;
7
8  proc reg data=random;
9  model y = x;
10 output out=res residuals = resids;
11 quit;
    
```



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JMP 8 Being Used as a Programming Interface to SAS

The screenshot displays the JMP 8 software interface with several windows open:

- SAS Log:** Shows the execution of SAS code, including a note about the data set WORK.RES having 1000 observations and 3 variables, and the PROC REG procedure results.
- Report: SAS Results:** Displays the results of the PROC REG procedure, including the number of observations, analysis of variance, fit statistics, and parameter estimates.
- Program Editor:** Shows the SAS code being executed, including a data step to generate random data and a PROC REG procedure.
- Select Data:** A dialog box for selecting data, showing the 'Data' tab with 'RANDOM' selected, and the 'Columns' tab with 'x', 'y', and 'resids' selected.

The SAS Log window contains the following code and output:

```
35 188 output out=res residual = resids;
36 189 quit;
37
38 NOTE: The data set WORK.RES has 1000 observations and 3 variables.
39 NOTE: PROCEDURE REG used (Total process time):
40      real time      13.53 seconds
41      cpu time       0.50 seconds
42
43
44 190
45 191
46 192 /****** BEGIN JMP Generated Code *****/
47 193 /**/quitrun;
48 194 ODS GRAPHICS OFF;
49 195 ODS _ALL_ CLOSE;
50 196 ODS LISTING;
51 197 QUIT; RUN;
52 198 /****** END JMP Generated Code *****/
53 199
54
55
56
```

The Report: SAS Results window shows the following results:

The SAS System
The REG Procedure
Model: MODEL1
Dependent Variable: y

Number of Observations
Analysis of Variance
Fit Statistics
Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	4.42076	0.0304	145.412	0
x	1	0.00298	5.26e-5	56.63	0

Model: MODEL1
Dependent Variable: y

Panel of fit diagnostics for y.

Fit Diagnostics for y

The Select Data dialog box shows the following data sources and columns:

Servers	Libraries	Data	Columns
Local	MAPS	RANDOM	x
	SASHELP		y
	SASUSER		resids
	WORK		

Simple JSL for SAS integration

	Data is on the JMP Client	Data on the SAS Server
Functionality is in SAS	Use SASExportData to move data to server, run SAS code, retrieve results or data via SASImportData	Use EG 4.2 to create a stored process to deliver the needed SAS content
Functionality is in JMP	No SAS involved, use native analytics and graphics in the JMP client	Use EG 4.2 and the JMP packager to create a SAS Stored Process or JLS/SAS program that returns data and JSL to launch the desired JMP analysis
Functionality is needed from JMP and SAS	Use SASExportData to move data to SAS, perform that analysis, return the data, then run the JSL to launch the desired JMP analysis	Use EG 4.2 and the JMP packager to create a SAS Stored Process or JLS/SAS program that returns data and JSL to launch the desired JMP analysis

Simple JSL for SAS integration

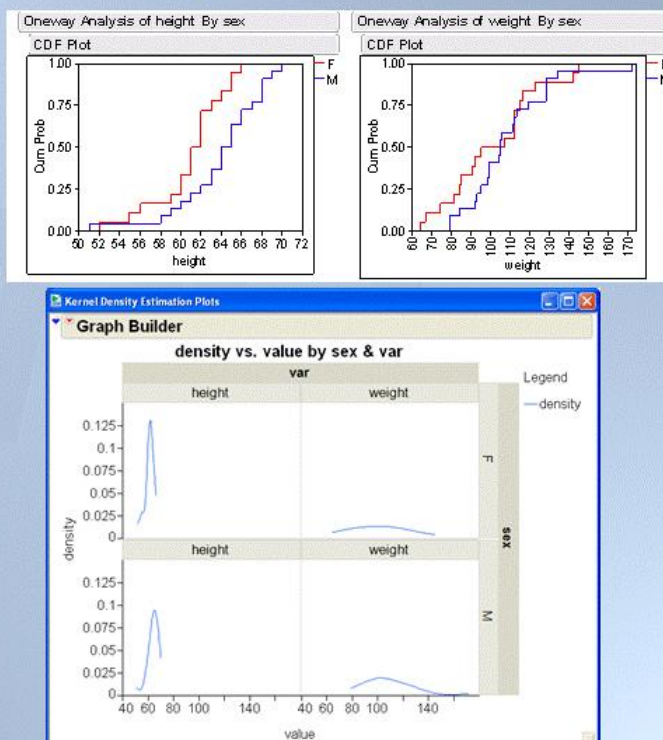
- With some regularity we are asked about statistical routines that do not exist in JMP, many times there are workarounds, but some times there is a real need to produce some result that can not be generated by JMP “out-of-the-box”. One option is to write a routine in JSL to fill the gap
- A second option is to build a JSL program that submits the data and SAS code to the server, generated the desired statistical results, then returns the processed data or output back to JMP. JSL may then be used to nicely display the results.

Simple JSL for SAS integration

- Consider the problem of comparing many distributions. This can be performed with the distribution platform, but it is hard to see them all at once.
 - One option is to use the Fit Y by X platform and choose the CDF plot.
 - Another option is to use the SAS PROC KDE routine to generate kernel density estimates

Simple JSL for SAS integration

- The first set of output was generated by using the Fit Y by X platform and choosing the CDF plot
- The second graphic was generated by the Graph Builder platform using data from SAS PROC KDE.



Simple JSL for SAS integration

- Your job is to build a JSL program to generate an overlay plot of kernel density estimates for height and weight by sex. This is to be done for the Big Class data set.



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