



What's New in SAS Enterprise Guide 8.1

Why Update SAS Enterprise Guide?

Things we can do better

Max 2 tabs

Single monitor

Dated look

Forced to work with a project

SAS Enterprise Guide



Do you want to replace the results from the previous run?

Choosing "No" will save the changes to a new task, named "Program (2)".

Yes

No

Annoying modal dialogs



Enterprise Guide is not able to open this data set in update mode; it will remain, or will be opened, in read-only mode.

The open data operation failed. The following error occurred.
[Error] A lock is not available for SASUSER.MYFAFMMSG.DATA.

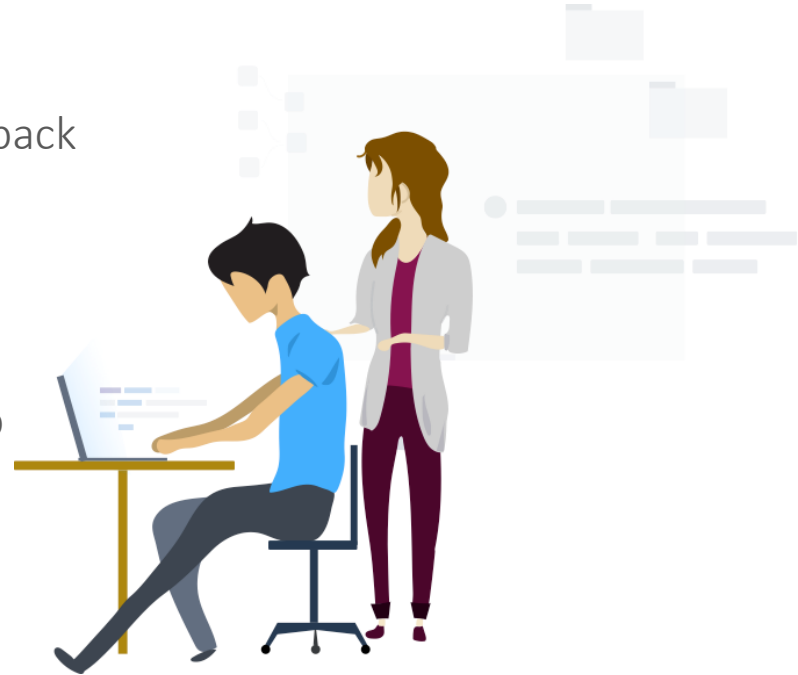
OK

Data locking

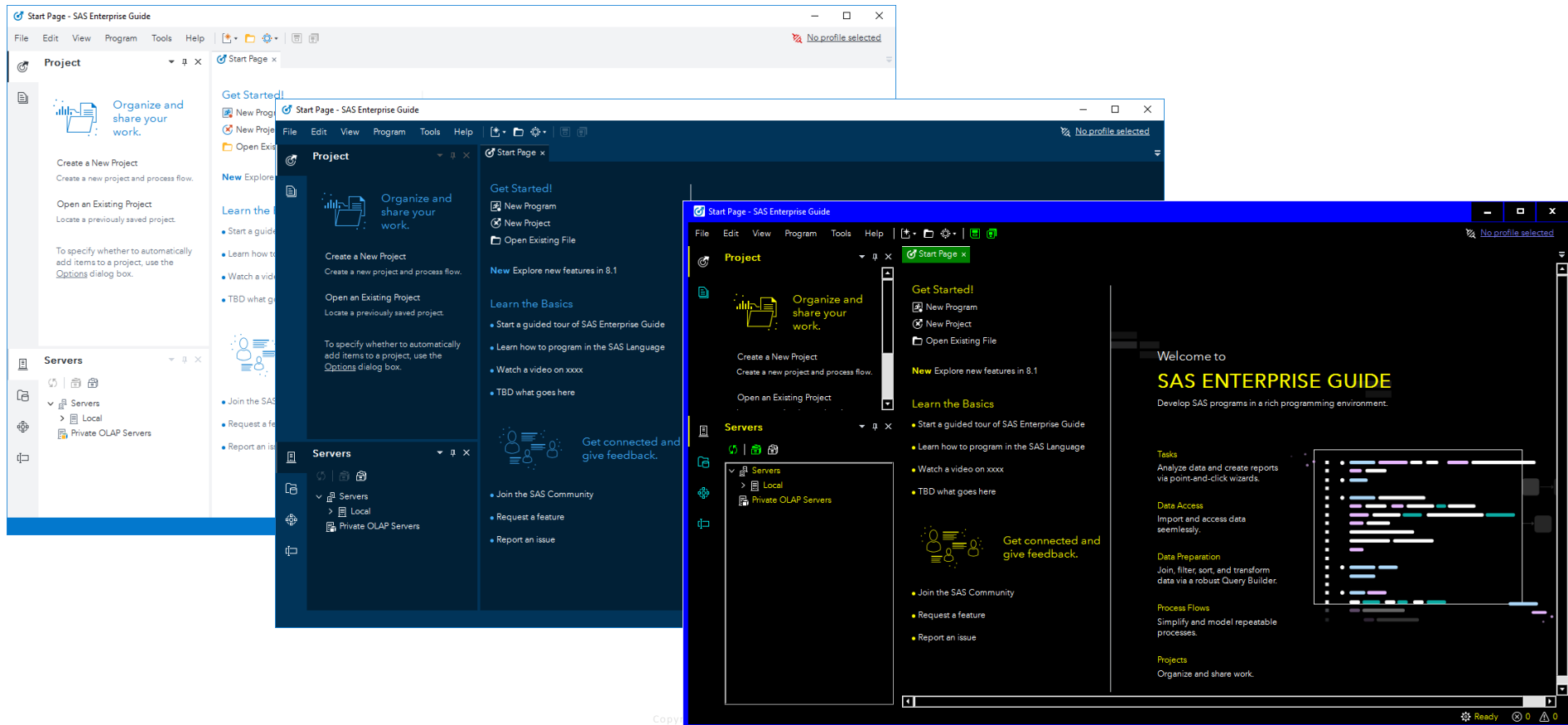
The Plan

Modernize, Yet Keep the Essence

- Why?
 - Supporting the work you do
 - Listening and responding to your feedback
 - Interchangeability with SAS Studio
- How?
 - Attractive, flexible, smart
 - Take advantage of being a desktop app
- When?
 - June 18, 2019



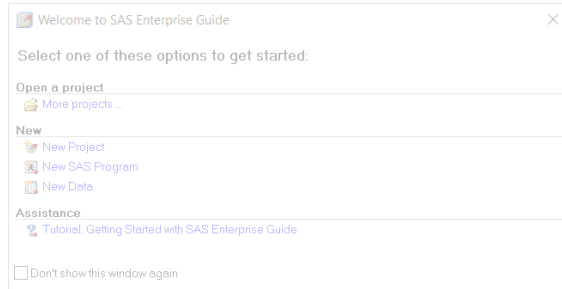
Meet SAS Enterprise Guide 8.1



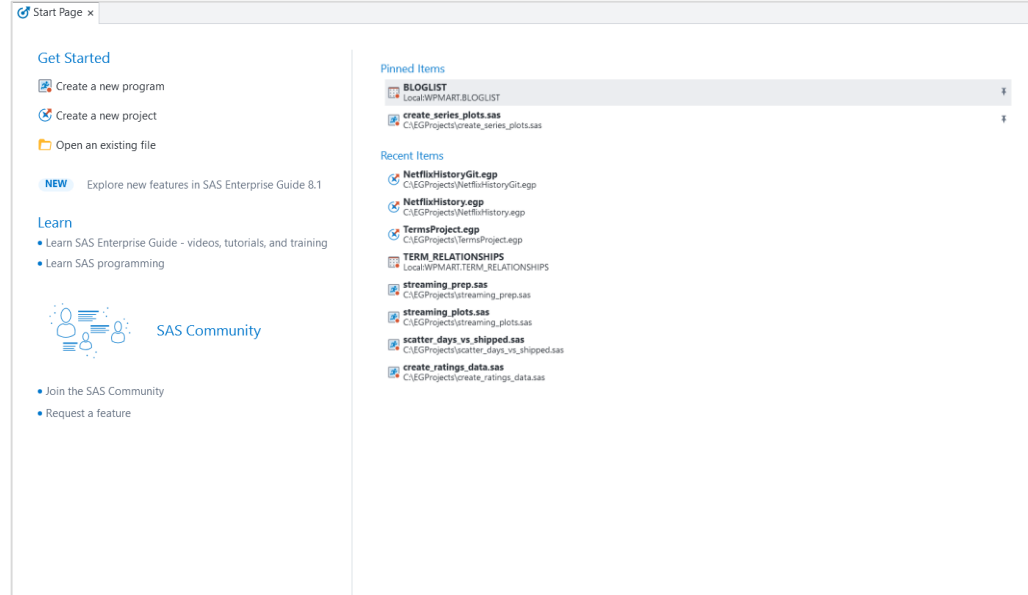
Onboarding

First Impressions Matter

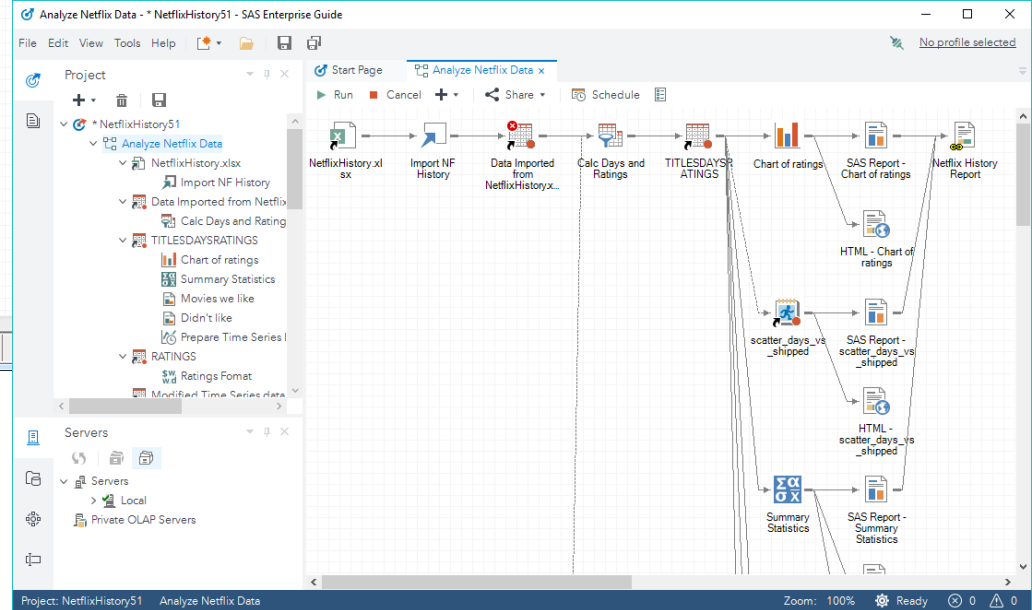
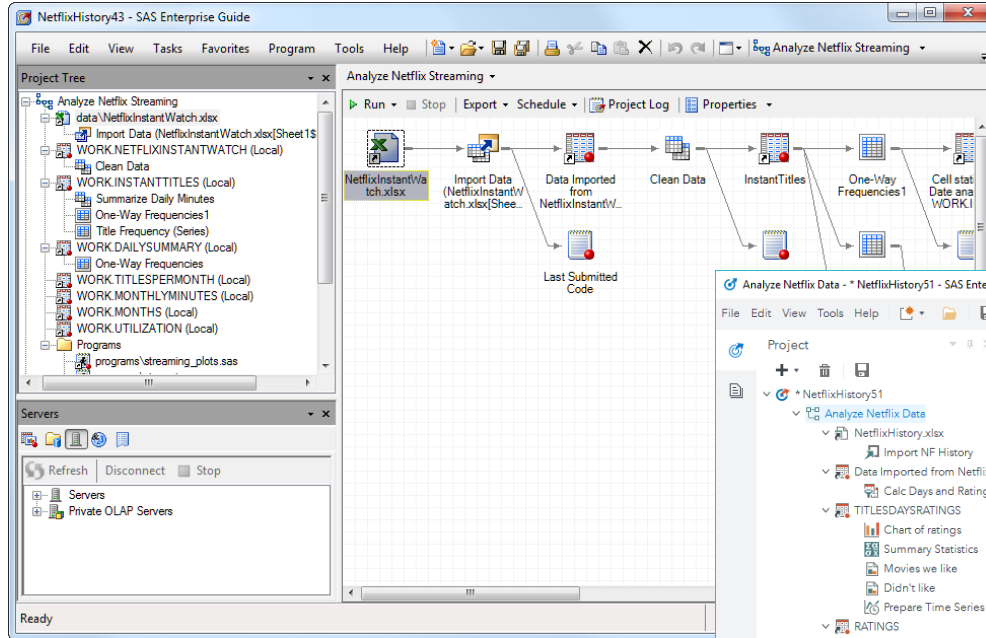
Before



After



Refresh the Look



Refresh the Look

The screenshot shows the SAS Enterprise Guide interface with the following components and annotations:

- Navigation side bar with panes:** Located on the left, it includes a Project pane showing a tree view of the project structure (Process Flow, Programs, Program 1, Program 1.sas, Program 2, SampleProgram.sas) and a Servers pane showing Local, Libraries, Files, and Private OLAP Servers.
- Workspace area:** The central area displaying the SAS code for SampleProgram.sas. The code includes comments and SAS steps for data subsetting and means calculation.
- Tools area:** Located at the bottom right, it contains the Submission Status pane with tabs for All, Errors, Warnings, Queued, Cancel all, and Clear all. It also shows a table of submission status information.
- Status bar:** Located at the bottom of the window, it displays the current project and program being worked on.
- Profile connection:** A blue box with an arrow pointing to the 'No profile selected' status in the top right corner.

Code in the Workspace area:

```
1 /* use a DATA step to subset data test */
2 data localCars;
3   set sashelp.cars(where=(origin="USA"));
4 run;
5
6 title "All USA cars, all variables";
7 /* produces a report of all numeric variables */
8 proc means data=localCars
9   mean stddev median mode n;
10 run;
11
12 title "All USA cars, just MPG numbers";
13 /* narrows the processing to MPG numbers */
14 proc means data=localCars
15   mean stddev median mode n;
16 var mpg_highway mpg_city;
17 run;
18
19 title "All USA cars, just MPG numbers";
20 title2 "by type?";
21 proc means data=localCars
```

Submission Status Table:

Submission	Status	Run Time	Submitted	Completed	Process Flow	Server
SampleProgram.sas	Collecting...		10/13/2018 3:06:08 PM		Process Flow	Local
SampleProgram.sas	Preparing server...				Process Flow	Local

The Navigation Panes

Most of the panes are trees that contain folders and files. You can do many things from them:

- Create, delete, and rename files and folders.
- Move files and folders with drag and drop.
- Use the context menu to explore all options.



Tip: Drag and drop these panes and use the Layout Guide to help you position them where you like them.

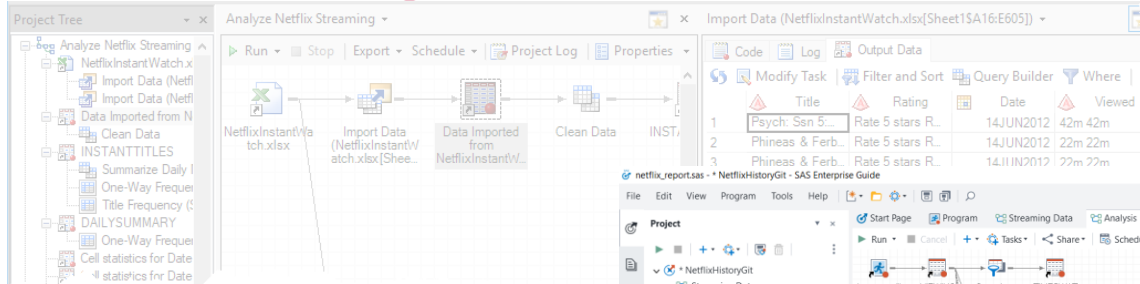


Open Items - At a glance you can see a list of your currently opened files.

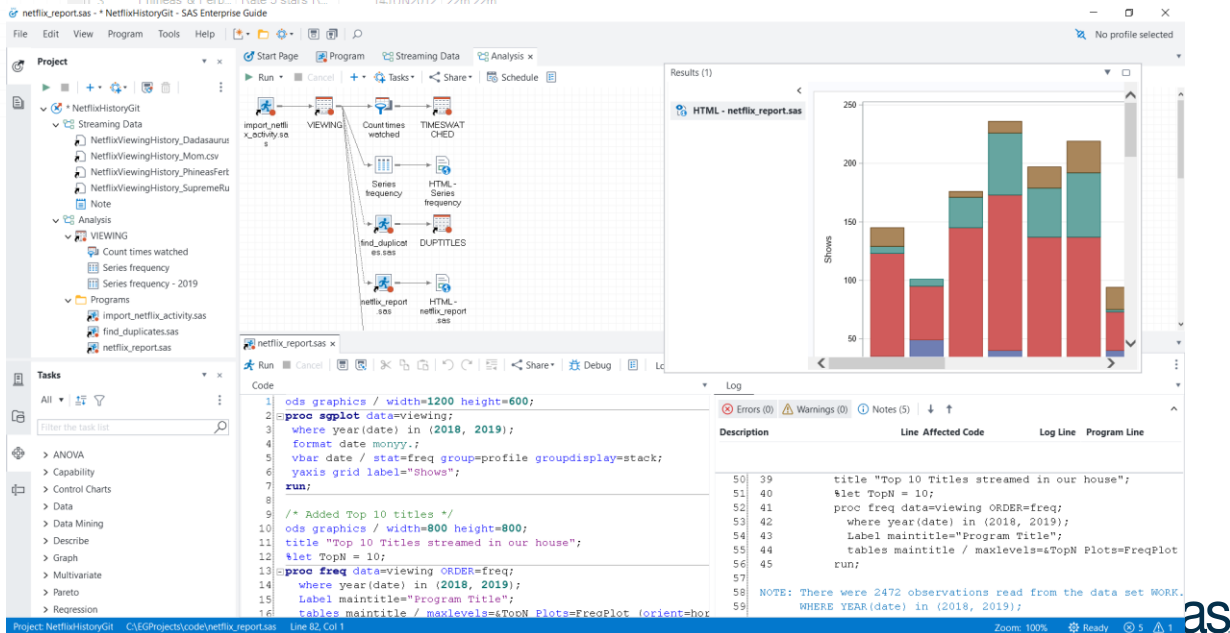
Flexible Layout

Tab groups, floating, docking, oh my!

Before: Max 2 tabs and single monitor



After: Unlimited tabs & multiple monitors



Working with Code, Log, Results

At the Same Time!

Before: Choose which ONE to view

Program ▾

Program* Log Output Data (4) Results

Refresh Export Send To Create Publish Properties

Percent utilization

Obs	Make	Model	Type	Origin	DriveTrain	MSRP
1	Audi	A6 4.2 Quattro 4dr	Sedan	Europe	All	\$49,690
2	Audi	A8 L Quattro 4dr	Sedan	Europe	All	\$69,190
3	Audi	S4 Quattro	Sedan	Europe	All	\$48,040

After: View ALL

* Program x

Run Cancel [Icons] Share Debug Local ▾

Code Results (1) Output Data (4)

```
1 proc sort data=sashelp.cars out=cars;
2 by make;
3 run;
4 data testme;
5 set cars(where=(cylinders eq 8)) nobs=numObs;
6 format dollarsPerHorse dollar20.2 runningAverageHorsepower=runningHorses/_n_;
7 retain runningHorses;
8 by make;
9 if _n_ eq 1 then runningHorses=0; else runningHorses=runningHorses+1;
10 runningAverageHorsepower=runningHorses/_n_;
11 dollarsPerHorse=invoice/Horsepower;
12 run;
13 proc print;
14 run;
15 data _null_;
16 y=(0.1 + 0.2) + 0.3;
17 z=0.1 + (0.2 + 0.3);
18 if y eq z then do;
19 put "equal";
20 end;
21 run;
22 data a;
23 set sashelp.class;
24 if sex eq "F";
25 output;
26 run;
27 data b;
28 set sashelp.class;
29 where sex eq "F";
30 run;
```

Obs	Make	Model	Type	Origin	DriveTrain	MSRP
1	Audi	A6 4.2 Quattro 4dr	Sedan	Europe	All	\$49,690
2	Audi	A8 L Quattro 4dr	Sedan	Europe	All	\$69,190
3	Audi	S4 Quattro 4dr	Sedan	Europe	All	\$48,040
4	Audi	RS 6 4dr	Sports	Europe	Front	\$84,800
5	Audi	S4 Avant Quattro	Wagon	Europe	All	\$49,090
6	BMW	X5 4.4i	SUV	Europe	All	\$52,195
7	BMW	545iA 4dr	Sedan	Europe	Rear	\$54,995
8	BMW	745i 4dr	Sedan	Europe	Rear	\$69,195
9	BMW	745i i 4dr	Sedan	Europe	Rear	\$73,195

Log

Errors (0) Warnings (0) Notes (17) | ↓ ↑

```
101
102 NOTE: There were 9 observations read from the
103       WHERE sex='F';
104 NOTE: The data set WORK.B has 9 observations.
105 NOTE: DATA statement used (Total process time:
106       real time           0.01 seconds
107       cpu time             0.01 seconds
108
109
110 57
111 58          %LET _CLIENTTASKLABEL=;
112 59          %LET _CLIENTPROCESSFLOWNAME=;
```

Working with Code, Log, Results

Drag a tab then use the Layout Guide to help you position the tab

The screenshot displays the SAS Enterprise Guide interface with three main windows: Code, Log, and Results (1).

Code Window: Contains SAS code for generating a stacked bar chart and a frequency plot.

```
1 ods graphics / width=1200 height=600;
2 proc sgplot data=viewing;
3   where year(date) in (2018, 2019);
4   format date monyy.;
5   vbar date / stat=freq group=profile groupdisplay=stack;
6   yaxis grid label="Shows";
7 run;
8
9 /* Added Top 10 titles */
10 ods graphics / width=800 height=800;
11 title "Top 10 Titles streamed in our house";
12 %let TopN = 10;
13 proc freq data=viewing ORDER=freq;
14   where year(date) in (2018, 2019);
15   label maintitle="Program Title";
16   tables maintitle / maxlevels=&TopN Plots=FreqPlot (orient=horizontal scale=pe
17 run;
```

Log Window: Shows the execution log with the following content:

```
37 34 yaxis grid label="Shows";
38 35 run;
39
40 NOTE: PROCEDURE SGPLOT used (Total process time):
41   real time      0.31 seconds
42   cpu time       0.11 seconds
43
44 NOTE: There were 2472 observations read from the data set WORK.VIEWING.
45   WHERE YEAR(date) in (2018, 2019);
46
47 36
48 37 /* Added Top 10 titles */
```

Results (1) Window: Displays a stacked bar chart titled "Shows" on the y-axis. The x-axis represents the year (2018, 2019) and the y-axis represents the frequency of shows. The chart shows that the number of shows increased significantly in 2019 compared to 2018.

Year	Shows
2018	100
2019	250

Working with Code, Log, Results

Or use preset layouts

The screenshot shows the SAS Enterprise Guide interface with the 'netflix_report.sas' project open. The 'View' menu is open, and the 'Program tab presets' submenu is also open, showing options like 'Standard', '1:1 Vertical split', '1:1 Horizontal split', '1:2 Vertical split', and '1:2 Horizontal split'. The main window displays the SAS code for a PROC SGPLOT, the log output, and a stacked bar chart titled 'Results (1)' showing the distribution of 'Shows' across years.

```
/* width=1200 height=600;
data=viewing;
date) in (2018, 2019);
monyy.;
stat=freq group=profile groupdisplay=stack;
label="Shows";

10 titles */
/ width=800 height=800;
house";
N Plots=FreqPlot (orient=horizontal scale=percent);

14 where year
15 label main
16 tables mai
17 run;
```

Log

Description	Line	Affected Code	Log Line	Program Line
	37	34 yaxis grid label="Shows";		
	38	35 run;		
	39			
	40	NOTE: PROCEDURE SGPLOT used (Total process time):		
	41	real time 0.31 seconds		
	42	cpu time 0.11 seconds		
	43			
	44	NOTE: There were 2472 observations read from the data set WORK.VIEWING.		
	45	WHERE YEAR(date) in (2018, 2019);		
	46			
	47	36		
	48	37 /* Added Top 10 titles */		

Results (1)

Shows

250

200

150

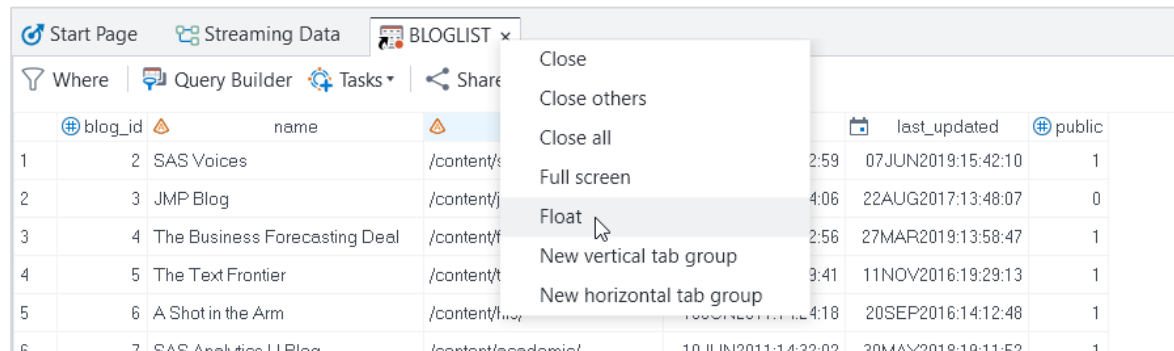
100

0

Project: NetflixHistoryGit C:\EGProjects\code\netflix_report.sas

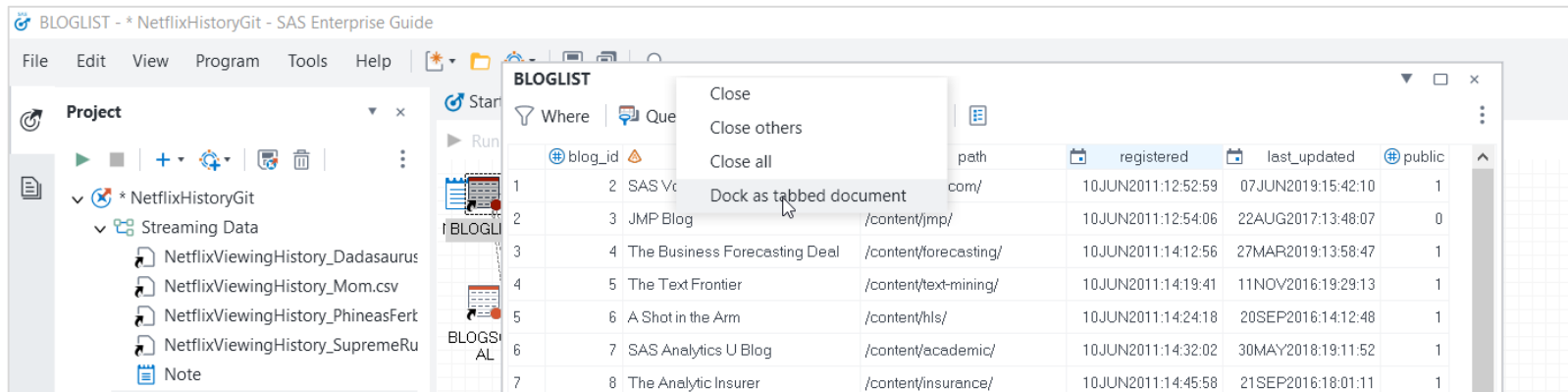
Ready 5 1

Float a Tab Within the App or To Another Monitor



The screenshot shows the SAS interface with the 'BLOGLIST' tab selected. A context menu is open over the tab, showing options to manage the tab. The 'Float' option is highlighted, indicating the action to be performed.

blog_id	name	last_updated	public
1	2 SAS Voices	07JUN2019:15:42:10	1
2	3 JMP Blog	22AUG2017:13:48:07	0
3	4 The Business Forecasting Deal	27MAR2019:13:58:47	1
4	5 The Text Frontier	11NOV2016:19:29:13	1
5	6 A Shot in the Arm	20SEP2016:14:12:48	1
6	7 SAS Analytics U Blog	30MAY2018:19:11:52	1



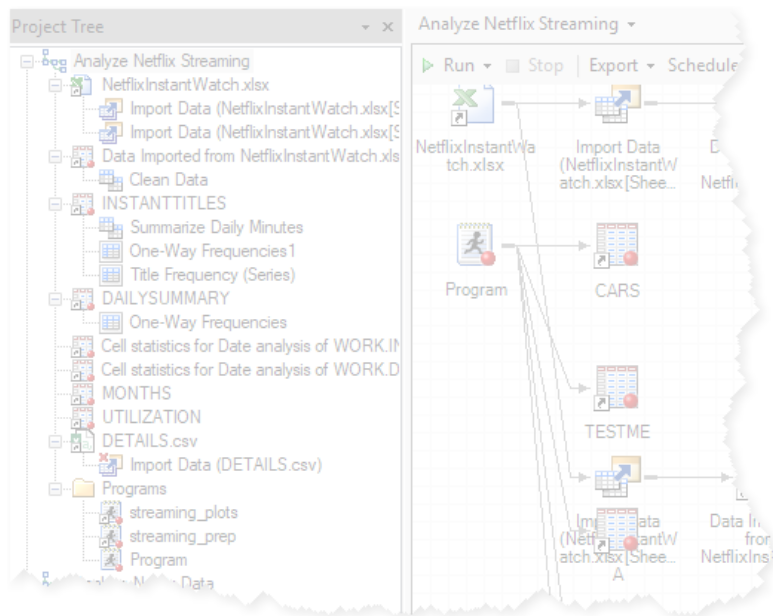
The screenshot shows the SAS interface with the 'BLOGLIST' tab selected. A context menu is open over the tab, showing options to manage the tab. The 'Dock as tabbed document' option is highlighted, indicating the action to be performed.

blog_id	name	path	registered	last_updated	public
1	2 SAS Voices	/content/sas/	10JUN2011:12:52:59	07JUN2019:15:42:10	1
2	3 JMP Blog	/content/jmp/	10JUN2011:12:54:06	22AUG2017:13:48:07	0
3	4 The Business Forecasting Deal	/content/forecasting/	10JUN2011:14:12:56	27MAR2019:13:58:47	1
4	5 The Text Frontier	/content/text-mining/	10JUN2011:14:19:41	11NOV2016:19:29:13	1
5	6 A Shot in the Arm	/content/hls/	10JUN2011:14:24:18	20SEP2016:14:12:48	1
6	7 SAS Analytics U Blog	/content/academic/	10JUN2011:14:32:02	30MAY2018:19:11:52	1
7	8 The Analytic Insurer	/content/insurance/	10JUN2011:14:45:58	21SEP2016:18:01:11	1

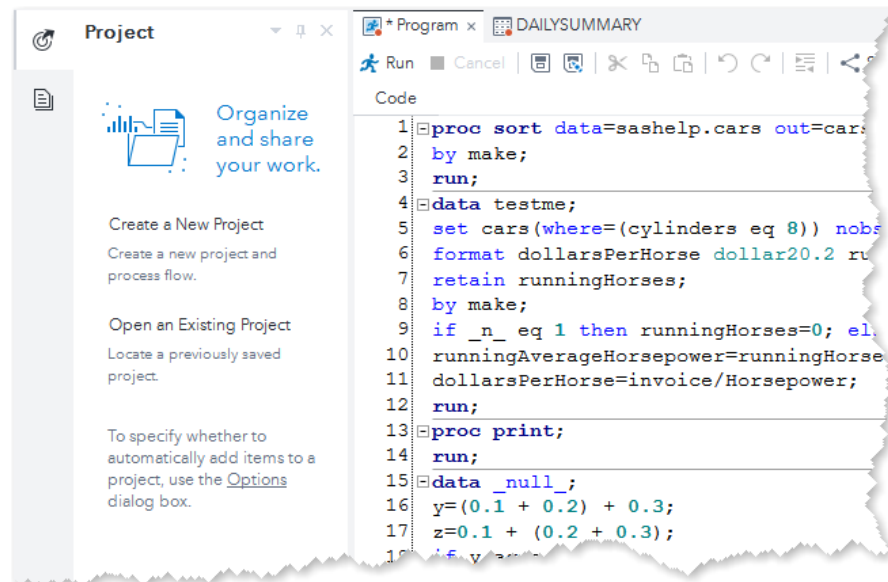
Working with a Project or NOT!

Program-centric Development

Before: Project required!

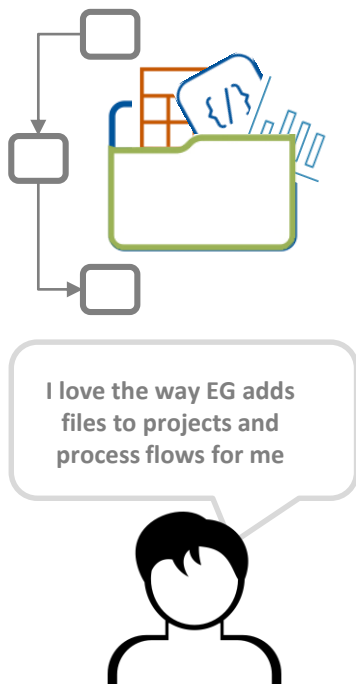


After: Project optional!



Adding Files to a Project

Automatically



Project and Process Flows

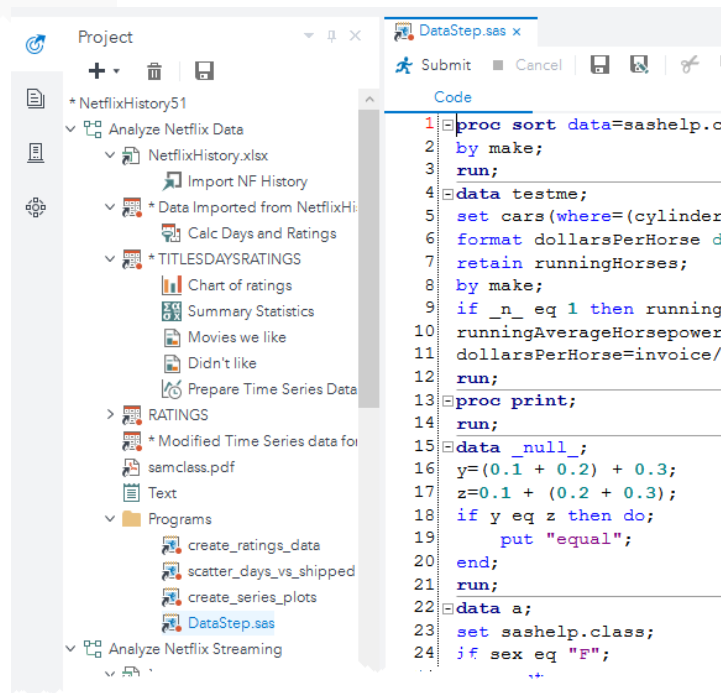
[Reset](#)

☒ When an item is opened automatically add to the project

General

☐ Enable automatic file saving for new projects

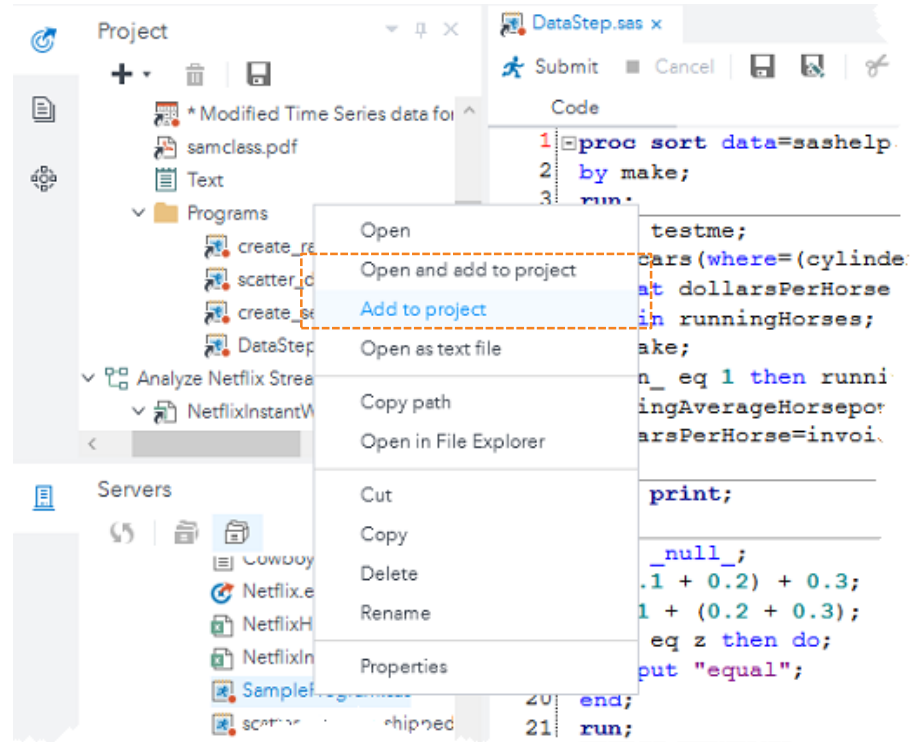
Option to automatically add items to a project



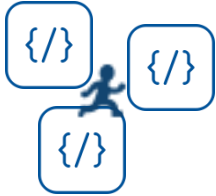
Add Files to a Project Manually



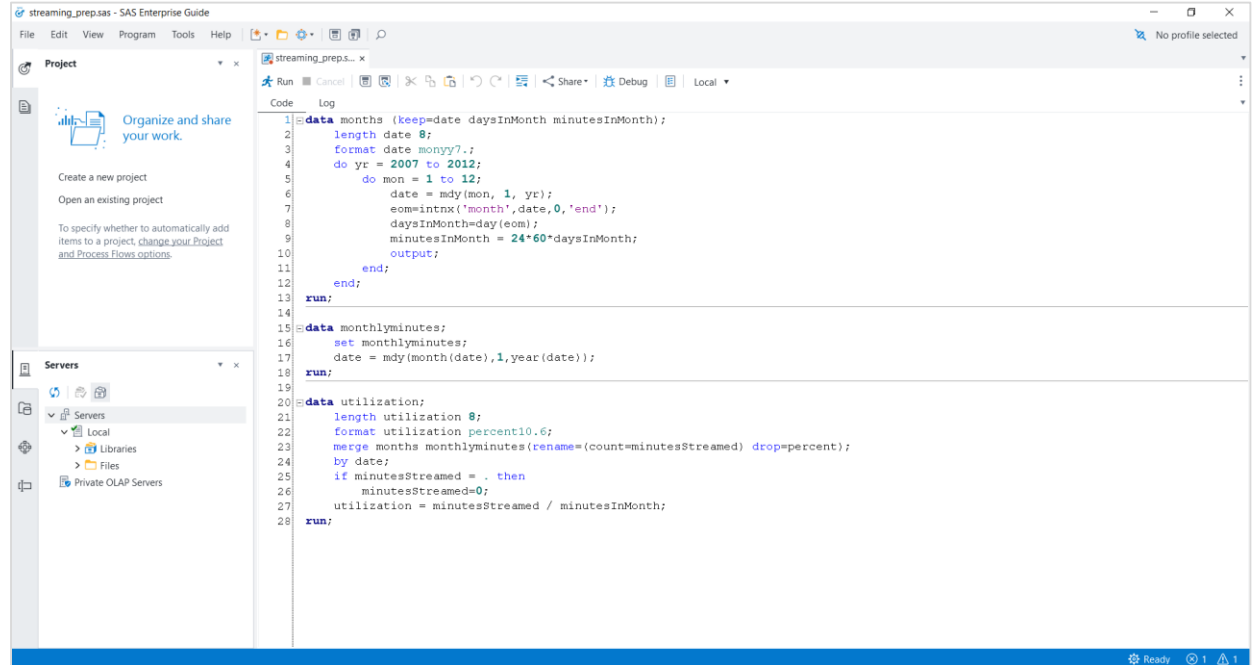
I love the idea of a projects and process flows, but I want to add files myself



No Project!



I just want to program – not
interested in projects or
process flows



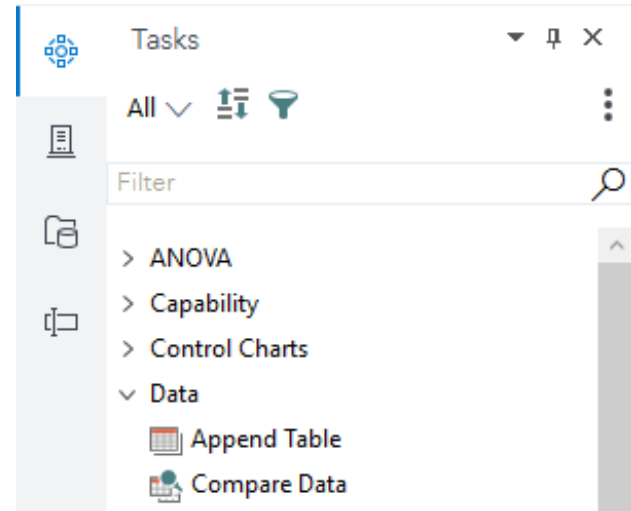
Items That Don't Require a Project

These items do not require a project. They can be opened and edited in a 'project-less' environment. We plan on adding more items, such as tasks, to the list in subsequent releases.

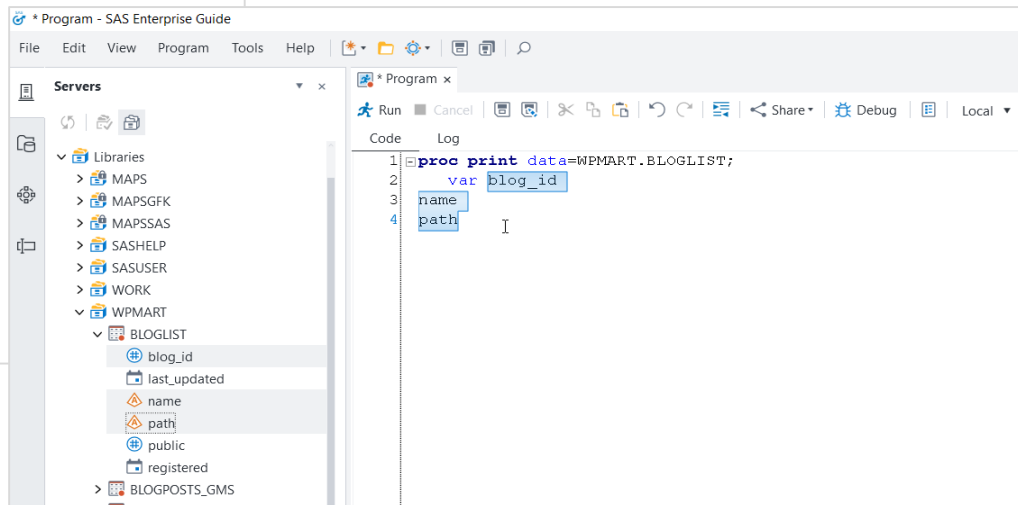
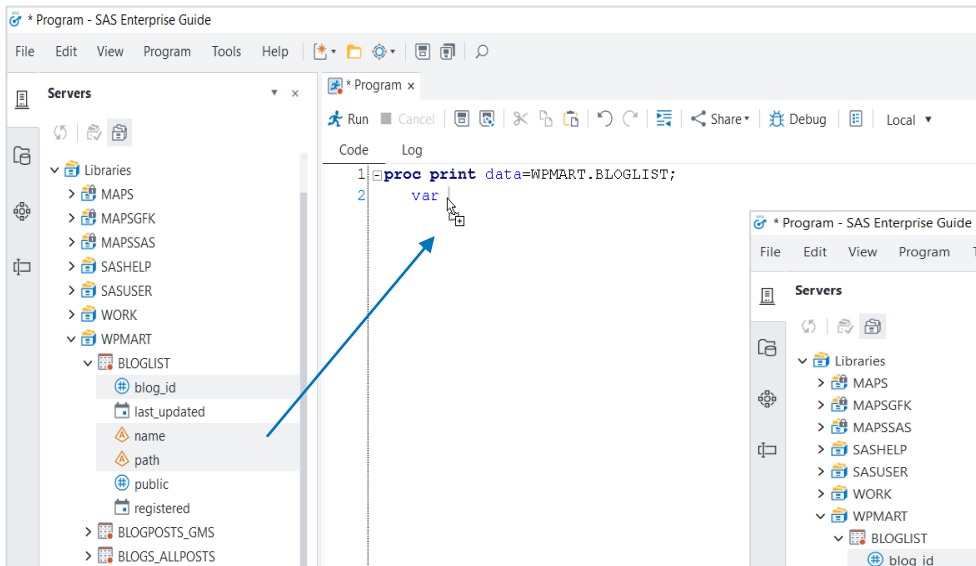
- Programs
- Data
- OLAP Cubes
- SAS Report Results
- SAS Visual Analytics Reports
- Logs

Working with Tasks

- Tasks now available from the Tasks pane
- Query Builder and Import automatic favorites
- Still need a project to use tasks
- SAS Studio tasks are available



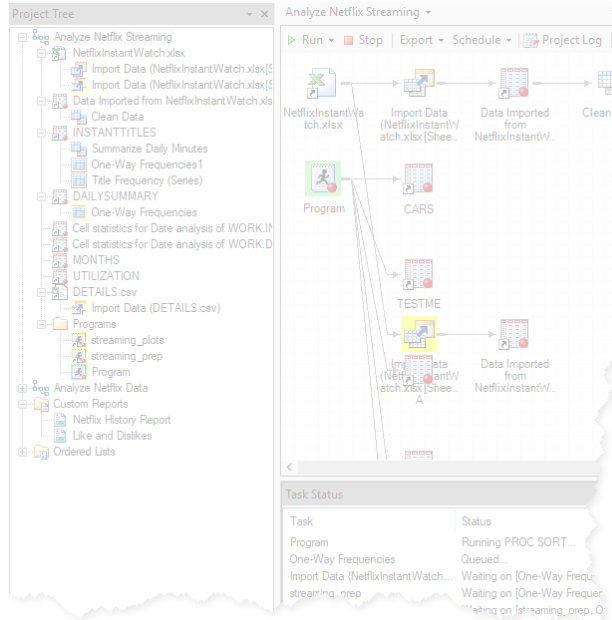
Drag and Drop Data Set Names and Variables into a Program



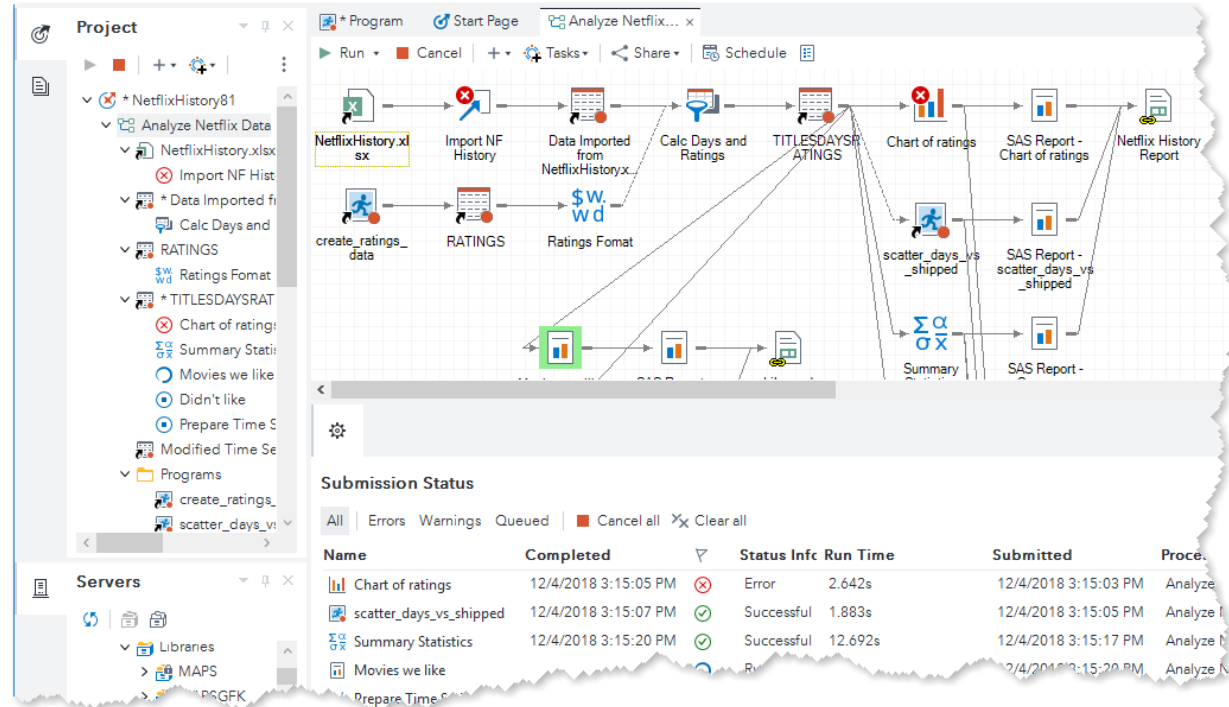
What's Happening?

Submission Feedback

Before: Some status information

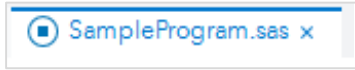


After: Knowing status at a glance



Running Multiple Items without Locking the UI

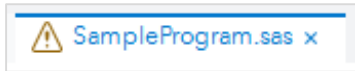
Status icons



Program is queued in the order of submission.



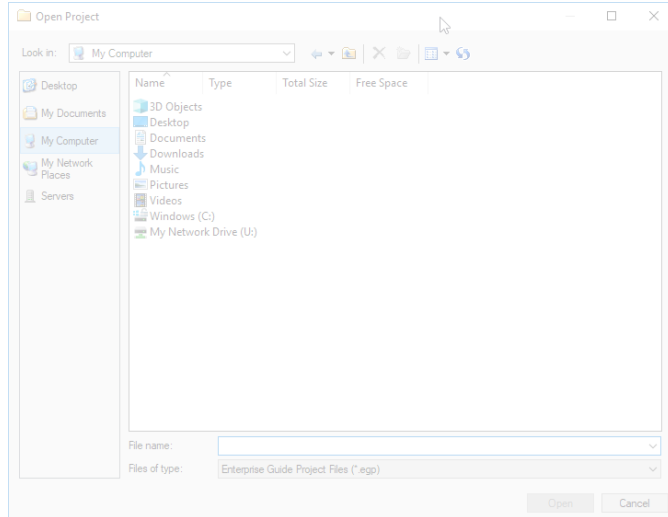
Program is in the process of being submitted.



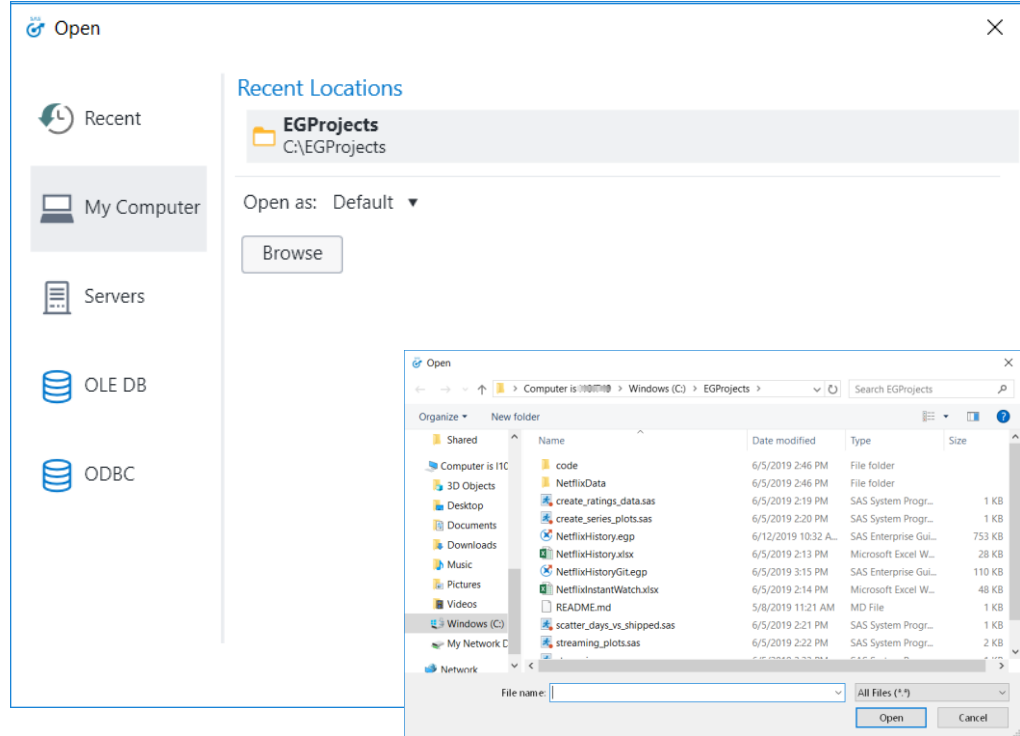
Status icons will show you, at a quick glance, if your program ran with errors or warnings.

Opening Files

Before



After



Search

- Search panel that can toggle on and off
- Search for items in a project and in the Open Files pane

The screenshot displays the SAS Enterprise Guide interface. The main workspace shows a project workflow for 'Analyze Netflix Data'. The workflow includes tasks such as 'Import NF History', 'Data Imported from Netflix...', 'Calc Days and Ratings', 'TITLES DAY SRATINGS', 'Chart of ratings', 'HTML - Chart of ratings', 'scatter_days_vs_shipped_sas', 'HTML - scatter_days_vs_shippe...', 'Movies we like', 'SAS Report - Movies we like', 'Like and Dislikes', 'Summary Statistics', and 'HTML - Summary Statistcine'. The left pane shows the 'Project' tree with folders like 'NetflixHistory', 'Analyze Netflix Data', 'NetflixHistory.xlsx', 'Import NF History', 'Data Imported from NetflixHistory', 'Calc Days and Ratings', 'RATINGS', 'Ratings Format', 'TITLES DAY SRATINGS', 'Chart of ratings', 'Summary Statistics', 'Movies we like', 'Didn't like', and 'Prepare Time Series Data'. The bottom left pane shows the 'Tasks' list with a search filter. The bottom right pane shows the 'Search' results for 'Netflix', listing 26 results.

Refine Results	Name	Type	Process Flow
<input checked="" type="checkbox"/> All	Data Imported from NetflixHistory.xlsx	Data	Analyze Netflix Data
<input type="checkbox"/> Program	Data Imported from NetflixInstantWatch.xlsx	Data	Analyze Netflix Streaming
<input type="checkbox"/> Task	Calc Days and Ratings	Query	Analyze Netflix Data
<input type="checkbox"/> Report	Clean Data	Query	Analyze Netflix Streaming
<input type="checkbox"/> Data	Import NF History	Task	Analyze Netflix Data
<input type="checkbox"/> Query	Import Data (NetflixInstantWatch.xlsx(Sheet1\$A16:E605))	Task	Analyze Netflix Streaming
<input type="checkbox"/> Stored process	Log	Log	Analyze Netflix Data
<input type="checkbox"/> Cube	Log	Log	Analyze Netflix Data

Output Data Performance Options

- New options for controlling what output data to open automatically

When generating tables in a program, automatically open:

Last table ▾

☒ Unlock open data after inactivity (minutes):

☐ Unlock all open data before running code

☐ Automatically refresh open data tabs after running code

DataStep.sas x

Submit Cancel Save Copy Paste Print Refresh Run Log Results (1) Output Data (4) Share Debug Changes Commit History

Code Log Results (1) Output Data (4)

Where Query Builder Open with Task

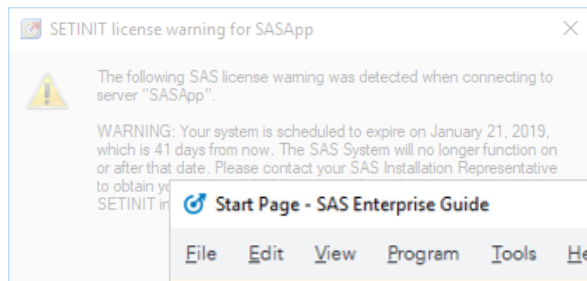
	Make	Model	Type	Origin	DriveTrain	MSRP	Invoice	EngineSize
1	Audi	A6 4.2 Quattro...	Sedan	Europe	All	\$49,690	\$44,936	4
2	Audi	A8 L Quattro 4dr	Sedan	Europe	All	\$69,190	\$64,740	4
3	Audi	S4 Quattro 4dr	Sedan	Europe	All	\$48,040	\$43,556	4
4	Audi	RS 6 4dr	Sports	Europe	Front	\$84,600	\$76,417	4
5	Audi	S4 Avant Quatt...	Wagon	Europe	All	\$49,090	\$44,446	4
6	BMW	X5 4.4i	SUV	Europe	All	\$52,195	\$47,720	4
7	BMW	545iA 4dr	Sedan	Europe	Rear	\$54,995	\$50,270	4
8	BMW	745i 4dr	Sedan	Europe	Rear	\$69,195	\$63,190	4
9	BMW	745Li 4dr	Sedan	Europe	Rear	\$73,195	\$66,830	4
10	Cadillac	Escalade	SUV	USA	Front	\$52,795	\$48,377	5
11	Cadillac	SRX V8	SUV	USA	Front	\$46,995	\$43,523	4
12	Cadillac	Deville 4dr	Sedan	USA	Front	\$45,445	\$41,650	4
13	Cadillac	Deville DTS 4dr	Sedan	USA	Front	\$50,595	\$46,362	4
14	Cadillac	Seville SLS 4dr	Sedan	USA	Front	\$47,955	\$43,841	4
15	Cadillac	XLR convertible...	Sports	USA	Rear	\$76,200	\$70,546	4
16	Cadillac	Escalade EXT	Truck	USA	All	\$52,975	\$48,541	4
17	Chevrolet	Suburban 1500...	SUV	USA	Front	\$42,735	\$37,422	5
18	Chevrolet	Tahoe LT	SUV	USA	All	\$41,465	\$36,287	5
19	Chevrolet	Camaro 3dr	Sports	USA	Rear	\$44,535	\$39,069	5

Notifications

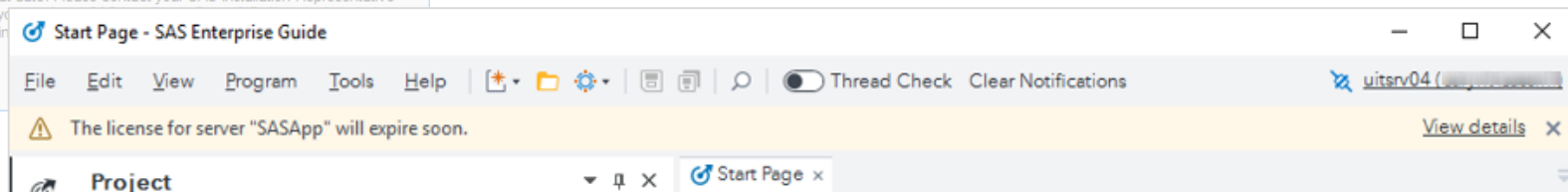
What do you really need to know?

- Get out of your way so you can continue working
- Better messaging

Before



After



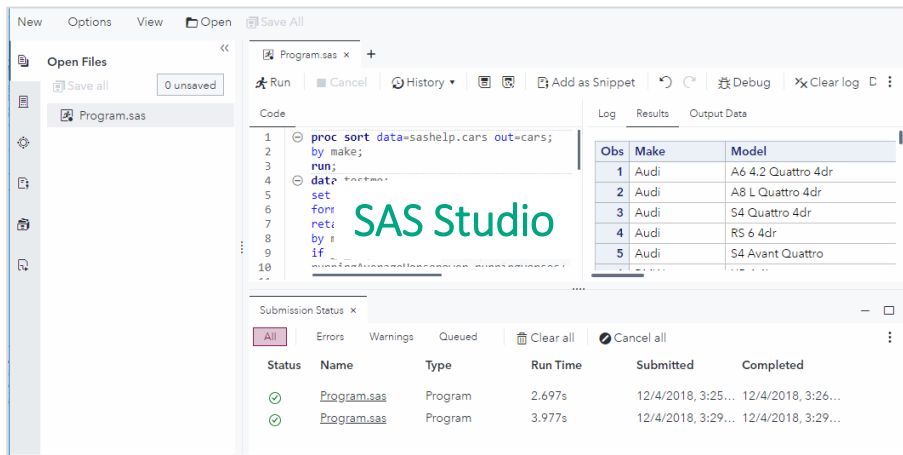
Behind the Scenes

- Always responsive
 - Gracefully handle server unresponsiveness
- More responsible with open data
 - Not locking as long
 - Not opening when unnecessary
- Improved handling of large project logs
- Product help is now online!



SAS Enterprise Guide and SAS Studio

Future Forward



The screenshot shows the SAS Studio interface. The top menu bar includes New, Options, View, Open, and Save All. The left sidebar has an 'Open Files' pane showing 'Program.sas' with '0 unsaved' changes. The main editor displays SAS code for a PROC SORT operation. A green 'SAS Studio' watermark is overlaid on the code. Below the code editor, there is a 'Log' pane showing a table of results and a 'Submission Status' pane showing a table of submission records.

Code:

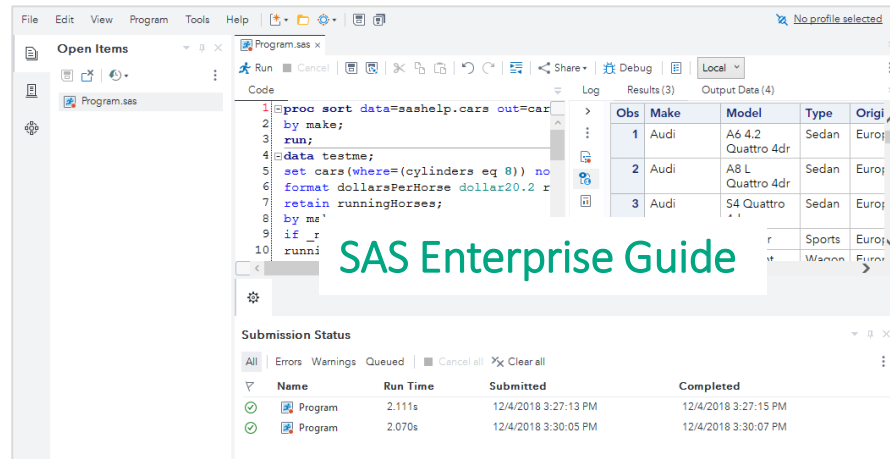
```
1 proc sort data=sashelp.cars out=cars;  
2 by make;  
3 run;  
4 data testme;  
5 set cars;  
6 format dollarsPerHorse dollar20.2;  
7 retain runningHorses;  
8 by make;  
9 if _type_ = 'Sedan' then runningHorses = 0;  
10 if _type_ = 'SUV' then runningHorses = 1;  
11 run;
```

Log Results:

Obs	Make	Model
1	Audi	A6 4.2 Quattro 4dr
2	Audi	A8 L Quattro 4dr
3	Audi	S4 Quattro 4dr
4	Audi	RS 6 4dr
5	Audi	S4 Avant Quattro

Submission Status:

Status	Name	Type	Run Time	Submitted	Completed
✓	Program.sas	Program	2.697s	12/4/2018, 3:25...	12/4/2018, 3:26...
✓	Program.sas	Program	3.977s	12/4/2018, 3:29...	12/4/2018, 3:29...



The screenshot shows the SAS Enterprise Guide interface. The top menu bar includes File, Edit, View, Program, Tools, and Help. The left sidebar has an 'Open Items' pane showing 'Program.sas'. The main editor displays SAS code for a PROC SORT operation. A green 'SAS Enterprise Guide' watermark is overlaid on the code. Below the code editor, there is a 'Log' pane showing a table of results and a 'Submission Status' pane showing a table of submission records.

Code:

```
1 proc sort data=sashelp.cars out=cars;  
2 by make;  
3 run;  
4 data testme;  
5 set cars(where=(cylinders eq 8)) noobs;  
6 format dollarsPerHorse dollar20.2;  
7 retain runningHorses;  
8 by make;  
9 if _type_ = 'Sedan' then runningHorses = 0;  
10 if _type_ = 'SUV' then runningHorses = 1;  
11 run;
```

Log Results:

Obs	Make	Model	Type	Origin
1	Audi	A6 4.2 Quattro 4dr	Sedan	Euro
2	Audi	A8 L Quattro 4dr	Sedan	Euro
3	Audi	S4 Quattro	Sedan	Euro

Submission Status:

Name	Run Time	Submitted	Completed
Program	2.111s	12/4/2018 3:27:13 PM	12/4/2018 3:27:15 PM
Program	2.070s	12/4/2018 3:30:05 PM	12/4/2018 3:30:07 PM

Die Roadmap für SAS Enterprise Guide

- Die Strategie für Frontends für SAS Viya sind Web-Clients.
Derzeit sind das z.B: SAS Studio, SAS Model Studio, SAS Visual Analytics, ...
- Der SAS Enterprise Guide als .NET Applikation wird nach der Version 8.2 nicht mit neuen Features weiterentwickelt, sondern es werden nur mehr Hotfixes herausgebracht.
- Bestehende Kunden können SAS Enterprise Guide 8.1 (bzw. 8.2) weaternutzen.
- SAS arbeitet derzeit an einem neuen Interface, das die Features von SAS Studio, SAS Enterprise Guide und tlw. auch von SAS Data Integration Studio in eine Oberfläche verpackt (einheitlicher Prozessfluss, Query Builder, ...).
- Dieses Interface wird für das 2. Halbjahr 2020 erwartet und wird ebenfalls ein Web-Client sein.
- Für Kunden, die in der Zwischenzeit auf SAS Viya wechseln bzw. schon auf SAS Viya sind, steht der SAS Enterprise Guide 8.2 (Limited Availability für diese Kunden) zur Verfügung.
- SAS Enterprise Guide 8.2 erlaubt die Verbindung zu einem Workspace Server ohne Metadaten server und ermöglicht so den Zugriff auf die SAS Viya Plattform und auch den Start einer CAS Session.