



Is SAS® Studio the Replacement for SAS® Enterprise Guide®?

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Ask the Expert - November 16, 2021



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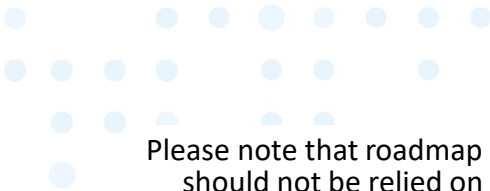
Subject to the disclaimers below, the goal of this presentation is to assist SAS programmers in understanding the differences between SAS Enterprise Guide and SAS Studio, how to move assets between them, and what roadmap is planned.

Abstract:

SAS Studio, a browser-based interface to SAS, was introduced in 9.4 and has quickly become an alternative to other popular interfaces like SAS Enterprise Guide and SAS Display Manager. For SAS Viya, SAS Studio is the primary interface – not only replacing those two interfaces but also SAS Data Integration Studio. SAS Studio on SAS Viya aims to provide a comfortable home for fans of the SAS 9 interfaces and is also the landing point for content migrated from SAS 9 to Viya from those interfaces. In this session you will learn about

- strengths and weaknesses of SAS Studio on 9.4 and tips to help you choose between SAS Studio and SAS Enterprise Guide
- what's new in SAS Studio on SAS Viya and what's planned
- how SAS Enterprise Guide projects and SAS Data Integration Studio jobs are converted to SAS Studio flows on SAS Viya.

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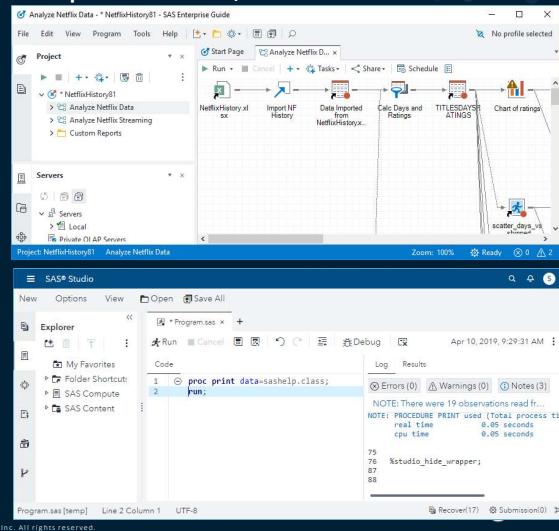
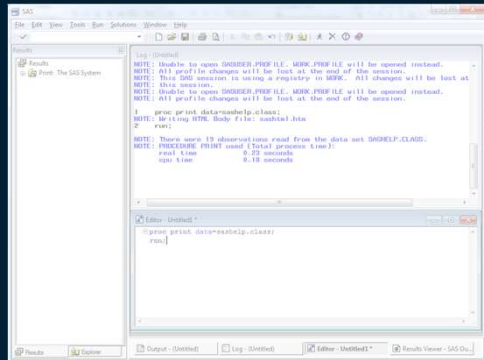
Please note that roadmap information aims to outline general product direction and should not be relied on in purchase decisions.

The delivery and timing of any future functionality described for our products is subject to change without prior notification.

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November 2021

Where We've Come From SAS Display Manager, SAS Enterprise Guide, SAS Studio



SAS Display Manager (DMS or PC SAS or the SAS Windowing Environment) was a revolutionary way to submit and manage SAS code when SAS was first released on PC's (late 1980's). So much more interactivity than submitting batch jobs. SAS Enterprise Guide (1999) introduced assistance in creating and organizing code – providing more of a point & click experience and the ability to interact with SAS on a server. SAS Studio (2014) takes advantage of a browser to provide zero footprint on the local machine and the flexibility to submit code from anywhere.

Work was done to make SAS Studio and SAS Enterprise Guide (release 8.x) have a similar look and feel so that the transition to SAS Studio could be as smooth as possible.

While DMS and SAS Enterprise Guide are still supported, there's no new development planned for them. Instead, resources are concentrated on SAS Studio.

Do I Have SAS Enterprise Guide or SAS Studio?

SAS release older than SAS 9.4?

| | |
|-------------------------|---|
| ENTERPRISE GUIDE | Available since SAS 8.0. |
| SAS STUDIO | Not available as introduced in SAS 9.4. |

Available on SAS Viya?

| | |
|-------------------------|---|
| ENTERPRISE GUIDE | Can connect to SAS Viya. |
| SAS STUDIO | Can connect to SAS Viya and available as a native SAS Viya application. |

Not Installed?

| | |
|-------------------------|--|
| ENTERPRISE GUIDE | Your IT policy may not allow desktop apps. If they are, ask your administrator to install. |
| SAS STUDIO | Ask your administrator to configure SAS Studio and provide you with an URL. |

Not Licensed?

| | |
|-------------------------|--|
| ENTERPRISE GUIDE | Some licenses have unlimited seats, some are restricted. |
| SAS STUDIO | Free with any SAS license. |



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There are a few cases where the choice is taken out of your hands:

On a SAS release older than SAS® 9.4 – SAS Enterprise Guide is your only choice as SAS Studio was introduced in SAS 9.4.

Not licensed – While most SAS server licenses include unlimited seats for SAS Enterprise Guide, there are some in which only a specific number are licensed. SAS Studio, however, is free with any SAS license; there is no per seat charge.

Not installed – If it's a case of an IT policy forbidding desktop applications, then you won't be able to use SAS Enterprise Guide. Otherwise, it's a matter of finding a sympathetic administrator to install SAS Enterprise Guide or to configure SAS Studio and provide you the URL to access it.

On SAS® Viya® – SAS Studio is the only native SAS Viya application. You can use both SAS Studio and SAS Enterprise Guide to access a CAS server (submit code, get results, load data, and so on) from a SAS 9.4 environment.

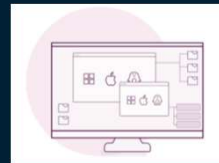
Biggest Difference

Browser-based

versus

Desktop

- Centralized maintenance
- Access anywhere



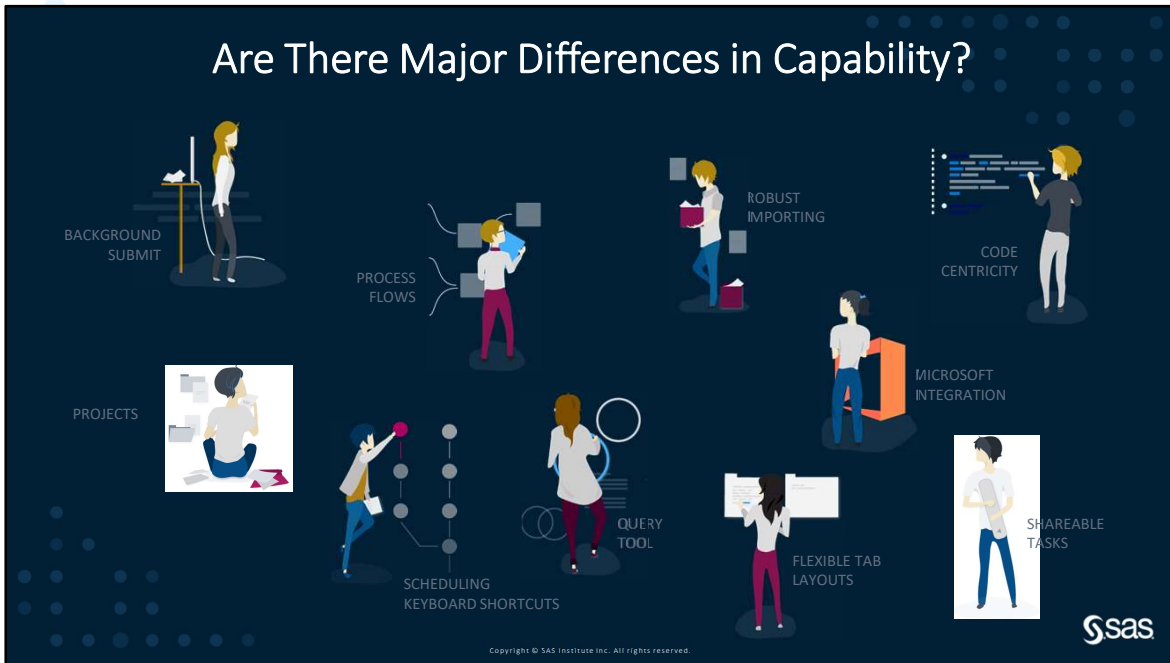
- Tight connection to local files and applications
- Robust screen management

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Think of Excel on your desktop versus in a browser.

Are There Major Differences in Capability?



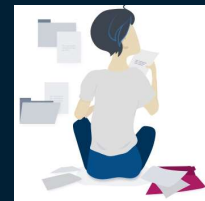
Overview of the areas where there's a difference between SAS Enterprise Guide and SAS Studio. Let's dive into them for more detail.

Only Available in One



BACKGROUND SUBMIT
Only available in SAS
Studio

PROJECTS
Only available in SAS
Enterprise Guide

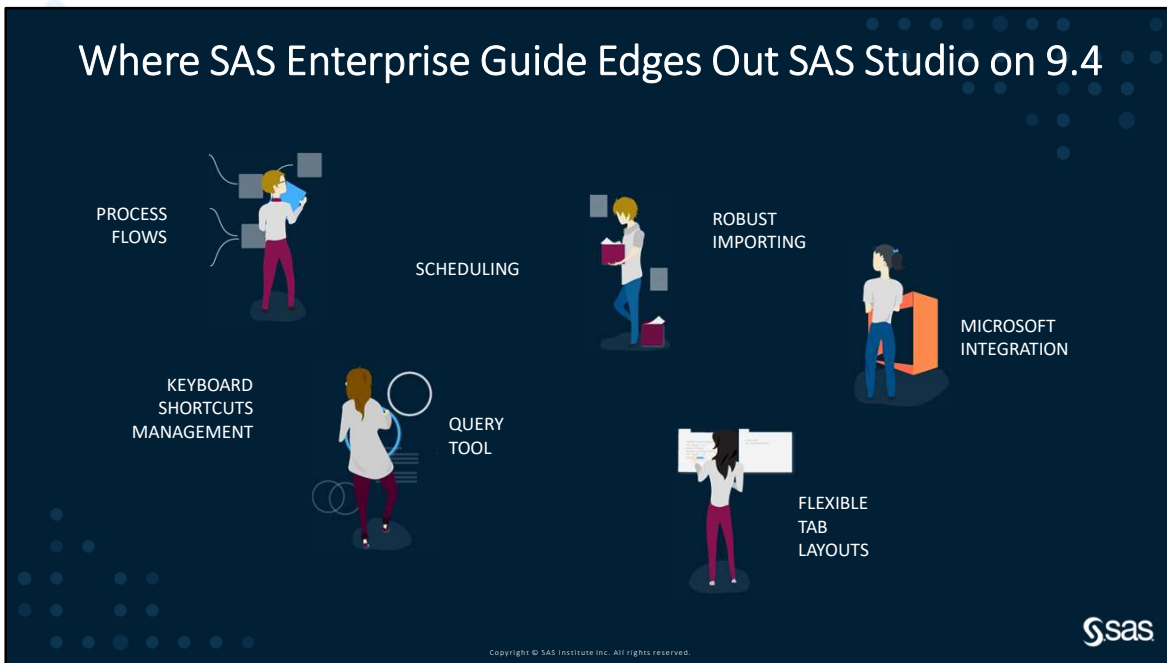


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If it's important to have your work organized into a project for you, then use SAS Enterprise Guide. Projects do not yet exist in SAS Studio. If you have existing SAS Enterprise Guide projects (EGP files), you can read them into SAS Studio 3.8 or import them into SAS Viya 4 and they will be converted (using SAS Studio process flows, code, and so on). This is a one-way street.

SAS Studio allows you to right-click on a .sas file and execute it outside of the interface. This means you can disconnect without waiting for it to finish. The next time you log on, you can see the results and log that are placed in the same location as the .sas file. Really handy for long running jobs or just to be able to do several things at once. This functionality is not available in SAS Enterprise Guide.

Where SAS Enterprise Guide Edges Out SAS Studio on 9.4




A query tool, basically a point-and-click way of building SQL, has been in SAS Enterprise Guide for a very long time, so it's very robust. The query tool in SAS Studio 3.8 is much younger, so not as full-featured (for example, it does not currently support creating calculated columns). The query tool in SAS Studio on SAS Viya is getting a lot closer to the one in SAS Enterprise Guide in terms of what it can do.

Similar situation to the query tool. SAS Enterprise Guide process flows have more features than the process flows in SAS Studio 3.8. More robust flows are coming for SAS Studio 5.x.

Robust importing - SAS Enterprise Guide has the edge here as there are many ways to import many types of input data via tools and tasks. SAS Studio has a basic import tool on 9.4 and a much more robust one on Viya 4.

Both SAS Studio and SAS Enterprise Guide do a good job letting you manage your screen real estate. SAS Enterprise Guide wins here since, as a desktop application, it has a lot more options for viewing multiple tabs as well as tearing off tabs to view on another monitor.

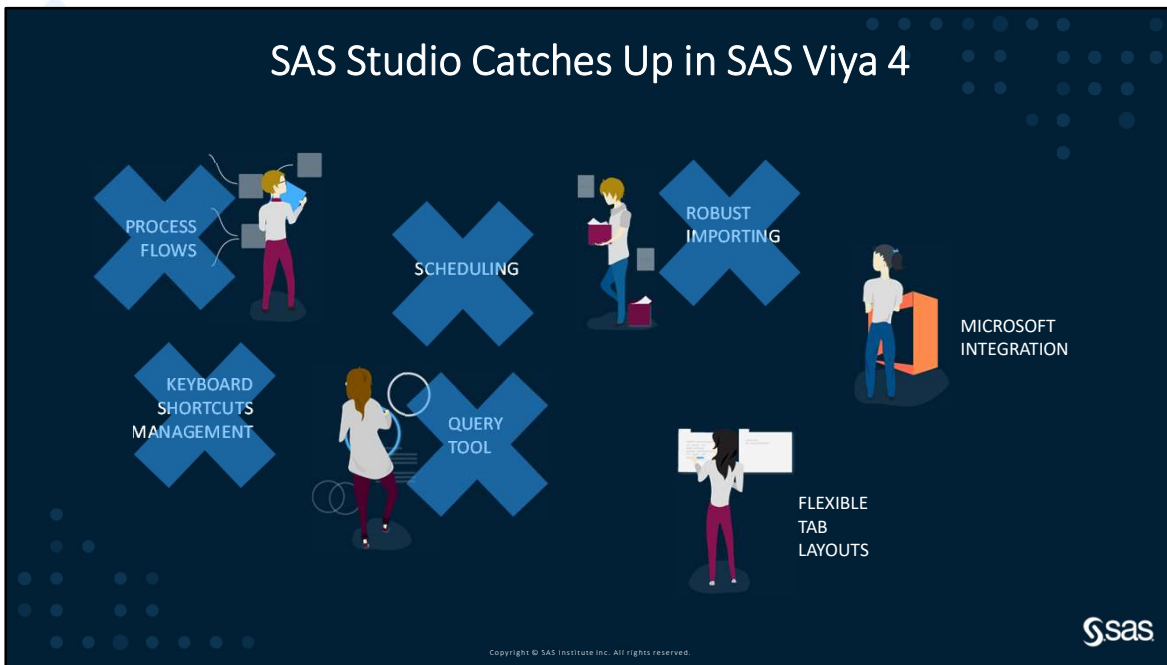


SAS Enterprise Guide is a Microsoft Windows desktop application, so it can use native Windows protocols to talk to Microsoft Excel, Microsoft PowerPoint, Microsoft Word, and so on. SAS Studio is limited to talking through the SAS server to communicate with Microsoft Office applications and relies on a web browser to upload and download files. SAS Enterprise Guide has by far the better integration.

OTHERS:

- DATA Step Debugger

SAS Studio Catches Up in SAS Viya 4



In SAS Viya 4, SAS Studio has added quite a bit of functionality. Essentially catching up if not surpassing SAS Enterprise Guide in the areas marked off. What's left are the advantages SAS Enterprise Guide has as a desktop app. Though as browsers become more robust and Microsoft moves further into Office 365 / Online apps, that advantage will also fade.

Where SAS Studio Edges Out SAS Enterprise Guide



CODE
CENTRICITY



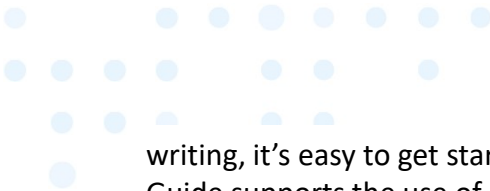
SHAREABLE
TASKS



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SAS Enterprise Guide was introduced as a point-and-click tool for SAS. SAS programmers have been writing code in SAS Enterprise Guide for years and sometimes complain that SAS Enterprise Guide hides code or does a bit more on their behalf than they'd like. SAS Studio was designed for coding in SAS. Specifically, it was designed to appeal to users familiar with the SAS Windowing Environment (also known as SAS Display Manager or PC SAS). The code editor is front and center and anytime you use an assistive function like a task or query tool, the code being generated is prominently shown. If you're more about coding, SAS Studio is likely going to feel more comfortable. SAS Enterprise Guide 8.x new features focused on adding code-friendly features without taking away the point and click.

Both SAS Studio and SAS Enterprise Guide allow you to create your own tasks – that is, front ends to your code that you can give to others allowing them to run your code and, optionally, prompt them for changes to the code. Creating SAS Enterprise Guide tasks requires you to use .NET programming (ex. C# or VB.NET). This is not typically in the skill set of most SAS users. As a compiled language, you have full control, but there is a steeper learning curve. SAS Studio tasks, on the other hand, are designed for SAS programmers and rely on simple XML or JSON (in SAS Viya 4). With sample tasks to copy as a starting point and many papers and documentation to support task

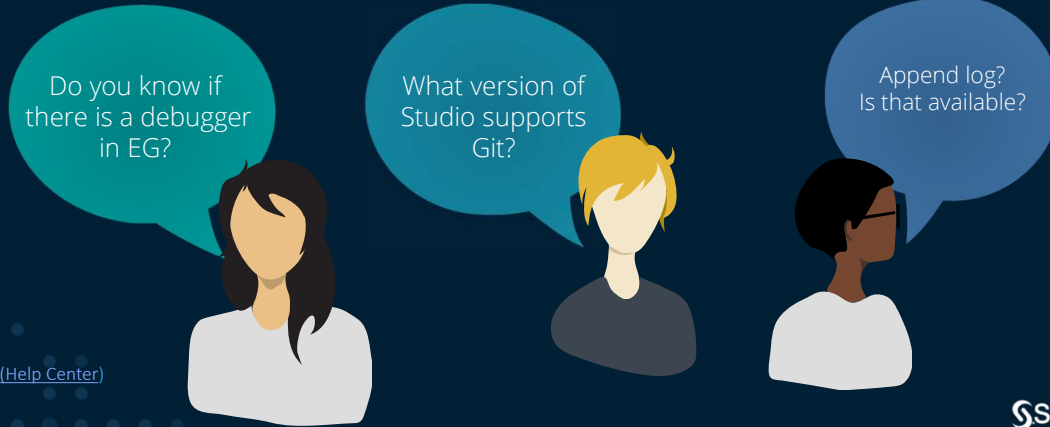


writing, it's easy to get started. An important point to know is that SAS Enterprise Guide supports the use of built-in SAS Studio tasks and, starting with release 8.2 supports user-defined SAS Studio 5.2 tasks.

Something to note that both SAS Enterprise Guide and SAS Studio support is an interface to Git.

Git is a source management system used to track and manage changes to assets like .sas files, which is especially useful when more than one programmer is working on the same set of assets. Many organizations are standardizing their work using Git. SAS Enterprise Guide has had basic Git functionality since release 7.1, such as committing changes, viewing history, and comparing versions. Other operations such as cloning a repository, branching, pushing changes, and pulling changes had to be done outside of the SAS Enterprise Guide application. SAS Studio 3.8, SAS Studio 5.2, SAS Studio 2021.x, and SAS Enterprise Guide 8.2 all have more robust Git functionality, allowing you to work with a repository without having to leave the application. You can clone a repository, push and pull changes, manage branching and merging – all from the SAS Studio or SAS Enterprise Guide interface. Both applications support working with remote repositories (such as GitHub and Atlassian Bitbucket).

http://support.sas.com/software/products/sas-studio/faq/SASStudio_vsEG.htm



Since this info will change often, we'll keep the table in the FAQ up to date so check there. Check the SAS Studio FAQ - http://support.sas.com/software/products/sas-studio/faq/SASStudio_vsEG.htm. If you check it out, let us know what is missing in any current releases.

http://support.sas.com/software/products/sas-studio/faq/SASStudio_vsEG.htm

| General Feature Comparison between SAS® Studio and SAS® Enterprise Guide® | SAS® Enterprise Guide® | | SAS® Studio | | | |
|---|------------------------|-----------|-------------|-----|--------|--------|
| | 7.1x | SAS 9 8.2 | 3.8 | 5.2 | 2021.x | Future |
| Programming | | | | | | |
| Standard SAS programming | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Interactive SAS programming | | | ✓ | ✓ | ✓ | ✓ |
| DATA Step debugger | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Append log | | | ✓ | ✓ | ✓ | ✓ |
| Python support | | | | ✓ | ✓ | ✓ |
| General | | | | | | |
| Background submit | | | ✓ | ✓ | ✓ | ✓ |
| Show list of open items | | | | ✓ | ✓ | ✓ |
| Command line interface | | ✓ | | | | |
| Console | | | | ✓ | ✓ | ✓ |
| Git integration | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Keyboard management | | | | ✓ | ✓ | ✓ |
| Schedule | ✓ | ✓ | | ✓ | ✓ | ✓ |
| SAS Viya job execution support | | | | ✓ | ✓ | ✓ |
| Stored process support | | ✓ | | | | |
| Information Map support | ✓ | ✓ | | | | |
| OLAP cube support | ✓ | ✓ | | | | |
| Tab layout | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Data | | | | | | |
| Quick filter | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Expression builder | ✓ | ✓ | | ✓ | ✓ | ✓ |
| Freeze columns | | | | ✓ | ✓ | ✓ |
| Query Builder | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Joins | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Calculated columns | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Where | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Having | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Entities | | ✓ | | ✓ | ✓ | ✓ |



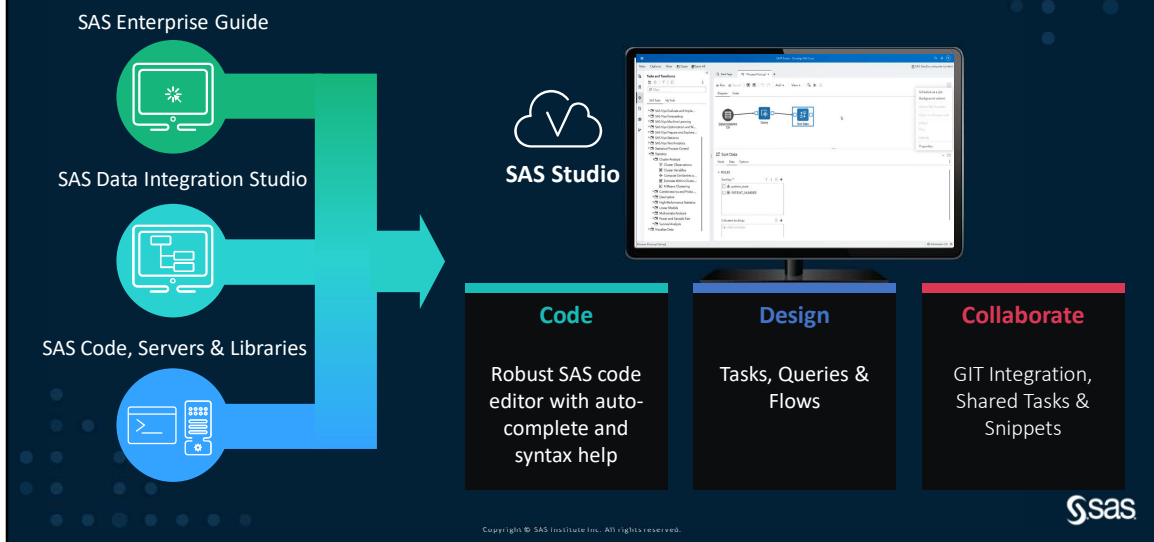
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Here's a sample of the information on the table in the FAQ which lists features that exist in each application called out by release. SAS Studio 3.8 is the current release on 9.4. SAS Studio 5.2 is available on SAS Viya 3.5. The SAS Studio releases numbered 2021.x are on SAS Viya 4.

SAS Enterprise Guide 8.1 was released June 2019 on SAS 9.4. This release brings many SAS Studio features (like the ability to code without a process flow or project) to SAS Enterprise Guide.

http://support.sas.com/software/products/sas-studio/faq/SASStudio_vsEG.htm

SAS Studio – Unified Integrated Development Environment



Web Based Integrated Development Environment for Analytics & Data Management
built for Viya new workloads

Intuitive, Flexible Graphical User Interface

All the power of SAS code

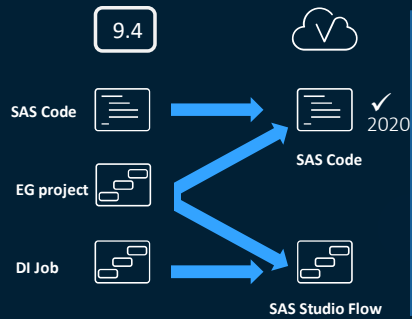
Powerful process flow diagram lets you visually organize and maintain your work

Built-in Data management and Data quality transformations

Custom steps for extending the range of business problems that be solved

Integration with other SAS Viya modules

Migration from 9.4 to SAS Studio A Phased Approach



Progressive Supported Migration Levels:

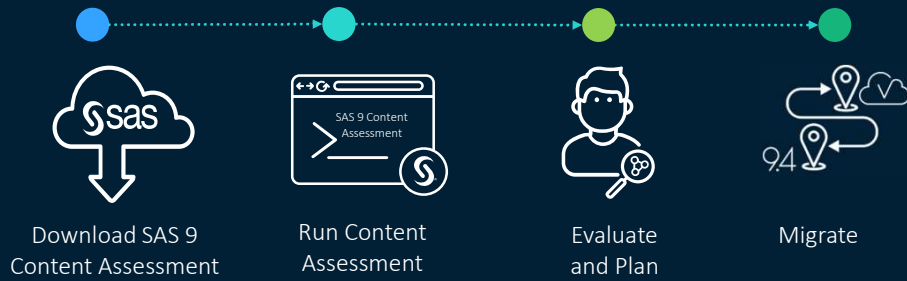
1. EG Project to Code
2. EG Project / DI Job to Flow – Code Based
EG nodes / Select DI transforms to SAS Program steps
3. EG Project / DI Job to Flow – Like to Like
Most used EG nodes / DI transforms to similar steps :
Query/Join->Query, Import/File Reader->Import, ...
4. As full a conversion as possible including prompts
and referenced programs
5. Migration with automated testing and execution
and design optimizations

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- Migrating to SAS Studio on SAS Viya
- Accelerate Your Migration to SAS Viya -
<https://www.youtube.com/watch?v=T0PptdL2GP8>

SAS Global Migration Framework

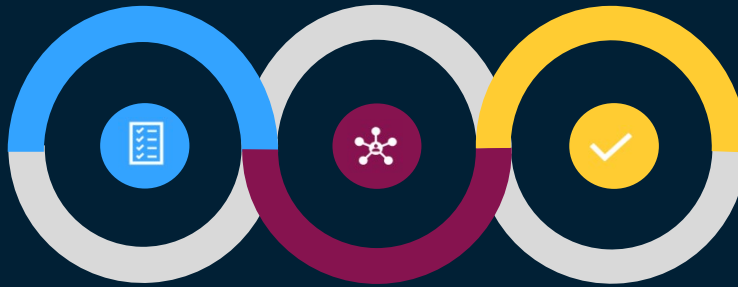


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What is SAS 9 Content Assessment

A collection of applications designed to help you understand various characteristics of your SAS 9.4 system and content produced from it.



SAS 9 Inventory

Counts and collects data about content produced by your SAS 9 environment

SAS 9 Profile

Provides details of SAS artifacts identified

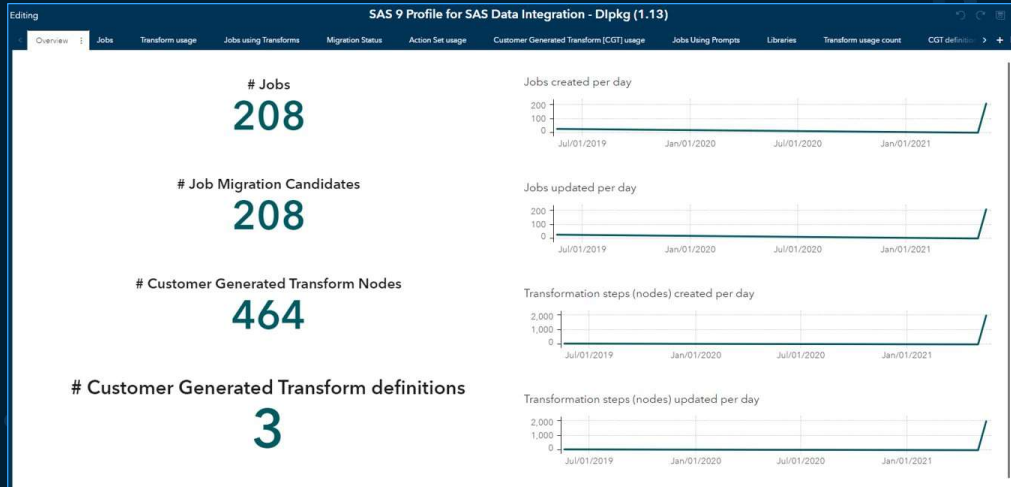
SAS 9 Code Check

Identifies issues with SAS code that may be incompatible with SAS® Viya®

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SAS 9 Content Assessment Reporting



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SAS 9 Content Assessment Reporting

SAS Visual Analytics - Explore and Visualize

SAS 9 Profile for SAS Data Integration - Dtpkg (1.13)

Overview | Jobs | Transform usage | Jobs using Transforms | Migration Status | Action Set usage | Customer Generated Transform (CGT) usage | Jobs Using Prompts | Libraries | Transform usage count | CGT definition details | CGT Using Prompts | CGT Prompts

This page shows the transforms used in your jobs and which of those transforms are currently supported for migration to SAS Viya. To see only the jobs that should migrate well to SAS Viya, select 'Ready to migrate' to review the list of candidates. The migration candidates are the green rows.

Ready to Migrate (208)

Select a row to filter the table below.

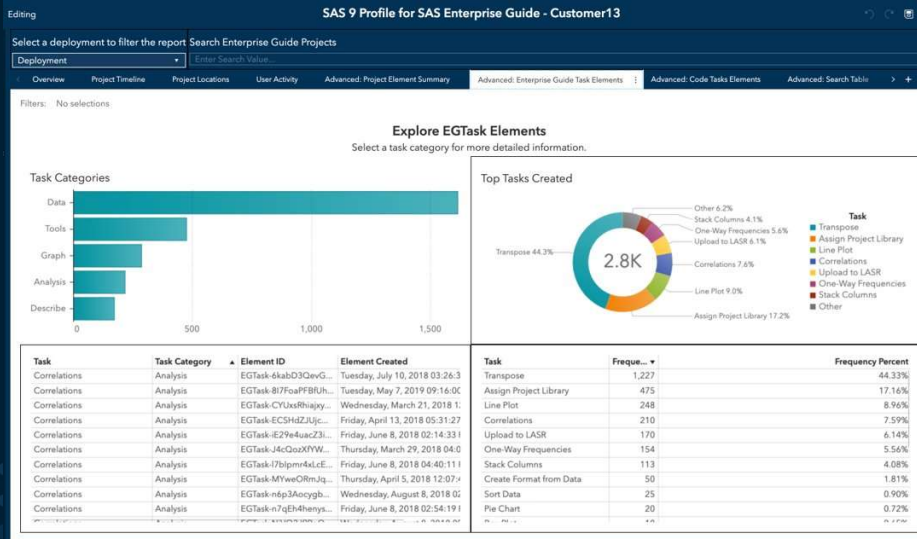
| Job with Path | Migration Status |
|--|------------------|
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Table Load/8.4.1.2 Summary Marts/8.4.1.2.9_S2_E6_Pseudo_CRT_History | Ready to Migrate |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Table Load/8.4.1.2 Summary Marts/8.4.1.2.8_Creater_CDV_File_for_Absacus_Upload | Ready to Migrate |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Table Load/8.4.1.2 Summary Marts/8.4.1.2.7_E7A_Consolidated_Figures | Ready to Migrate |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Table Load/8.4.1.2 Summary Marts/8.4.1.2.4_E6E6_Financial_Figures | Ready to Migrate |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Table Load/8.4.1.2 Summary Marts/8.4.1.2.4_E6E6_Financial_Figures | Ready to Migrate |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Table Load/8.4.1.2 Summary Marts/8.4.1.2.3_Claims_Estimates_BoP | Ready to Migrate |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Table Load/8.4.1.2 Summary Marts/8.4.1.2.2_S2_Pseudo_CRT_ETB | Ready to Migrate |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Table Load/8.4.1.2 Summary Marts/8.4.1.2.10_S2_E4_E6_ET_splnk_reports | Ready to Migrate |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Table Load/8.4.1.2 Summary Marts/8.4.1.2.1_S2_Pseudo_CRT_History | Ready to Migrate |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Detail Marts/8.4.1.1.9 CRT_calculation_jobs/8.4.1.1.9.8_ETB_Sub | Ready to Migrate |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Table Load/8.4.1.1 Detail Marts/8.4.1.1.9 CRT_calculation_jobs/8.4.1.1.9.7_ETB | Ready to Migrate |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Table Load/8.4.1.1 Detail Marts/8.4.1.1.9 CRT_calculation_jobs/8.4.1.1.9.4_E6_Sub | Ready to Migrate |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Table Load/8.4.1.1 Detail Marts/8.4.1.1.9 CRT_calculation_jobs/8.4.1.1.9.3_E6 | Ready to Migrate |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Table Load/8.4.1.1 Detail Marts/8.4.1.1.9 CRT_calculation_jobs/8.4.1.1.9.2_E4_Sub | Ready to Migrate |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Table Load/8.4.1.1 Detail Marts/8.4.1.1.9 CRT_calculation_jobs/8.4.1.1.9.1_E4 | Ready to Migrate |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Table Load/8.4.1.1 Detail Marts/8.4.1.1.8 PARIS/8.4.1.1.8-GRT-File-SI-Paris-Policy-Maximize | Ready to Migrate |

| Full Path | Transform Name | Transform Internal Name | Supported/Transform |
|--|----------------|-------------------------|---------------------|
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Source Systems/8.1.2 Source to Stage/8.1.2.3 PARIS/8.2.1.3.1_01_Extract | User Written | User Written | User Written |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.4.1 Source Systems/8.1.2 Source to Stage/8.1.2.4 ALPS/8.2.2.4.1_01_Extract | User Written | User Written | User Written |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Presentation Layer/8.2.1 Table Load/8.2.1.1 Extract/8.2.1.1.1 Mapping/8.2.1.1.1.1_01_loi_mapping_files | Extract | Extract | Extract |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Staging Layer/8.2.1 Table Load/8.2.1.1 Extract/8.2.1.1.1 Mapping/8.2.1.1.1.1_01_loi_mapping_files | File Reader | File Reader | File Reader |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Staging Layer/8.2.1 Table Load/8.2.1.1 Extract/8.2.1.1.1 Mapping/8.2.1.1.1.1_01_loi_mapping_files | Table Loader | Table Loader | Table Loader |
| /Shared Data/Customer1/Solvency/ID/Tree/8.4 Staging Layer/8.2.1 Table Load/8.2.1.1 Extract/8.2.1.1.1 Mapping/8.2.1.1.1.1_01_loi_mapping_files | User Written | User Written | User Written |



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SAS 9 Content Assessment Reporting



Converting SAS Enterprise Guide Projects to SAS Studio Flows

The image displays two SAS software interfaces side-by-side. The left window is SAS Enterprise Guide, showing a project named 'ReactionFrequency' with a process flow containing tasks: DEMOGRAPHICS, Query Builder, EVENTSEVERITY, and Bar Chart. The right window is SAS Studio Flow Designer, showing the same process flow converted into a visual flow diagram with nodes for 'EVENTS', 'Query Builder', 'EVENTSEVERITY', 'Table Analysis', and 'Bar Chart'. Below the flow diagram, the 'Query Builder' task is expanded to show a table definition:

| Table | Source | Name | Label | Type | Length | Format |
|-------|--------------|--------------|------------------|-----------|--------|---------|
| H | USM000 | USM000 | Character | Character | 200 | |
| H | AGE | AGE | Age | Number | 8 | BEST12. |
| H | SEX | SEX | Sex | Character | 2 | |
| H | HEIGHTWEIGHT | HEIGHTWEIGHT | Height or Weight | Character | 200 | |

Converting SAS Data Integration Studio Jobs to SAS Studio Flows

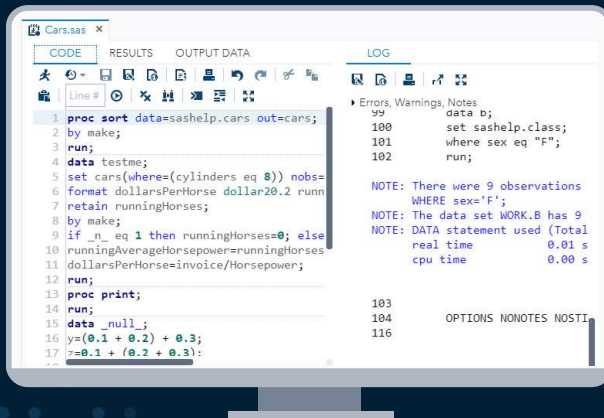
The image displays two screenshots illustrating the conversion of a SAS Data Integration Studio (DIStudio) job into a SAS Studio Flow.

The top screenshot shows the DIStudio job interface for '8.4.1.1.6.2_Genius_E4E6_Base_Table'. The job flow consists of three main steps: 1. 'Genius_Claims_base_Table' (data source), 2. 'Extract' (with the description 'Subsets the data for the current reporting...'), and 3. 'Table Loader' (with the mode 'REPLACE ALL'). The output of the Table Loader is 'S2_E4E6_Standard_Bas...'. A note 'To get 15 years of dat...' is visible on the left.

The bottom screenshot shows the 'SAS Studio Flow' for the same job, titled '8.4.1.1.6.2_Genius_E4E6_Base_Table.fiw'. The flow is visualized as a sequence of nodes: 'Genius_Claims_base_table' (Job pre-code) connects to 'Extract', which connects to 'Table Loader', which connects to 'S2_E4E6_Standard_Bas...'. A second 'Table Loader' node is shown below, connected to 'S2_E6_Standard_Bas...'. The flow is managed through a 'Start Page' with options for 'Run', 'Cancel', and 'Submission'.

Efficiency Tips

Layout Tabs to Maximize Workspace - SAS Studio



- Layout primary (main) tabs side-by-side horizontally or vertically
- Layout tabs within a program



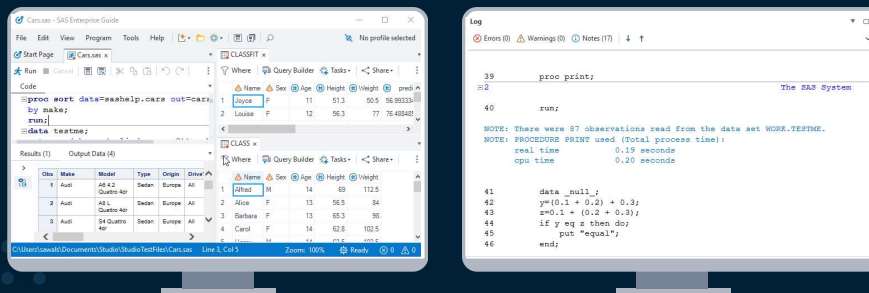
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You might be limited to one monitor or you might have six, but inevitably you want to see a lot more than one thing at a time. Something that's new in SAS Enterprise Guide 8.1 is the ability to have multiple tabs of information open and drag them around as you like. This is something you've been able to do in SAS Studio, though many people don't realize this. <https://communities.sas.com/t5/SAS-Communities-Library/SAS-Studio-tip-How-to-Layout-Tabs/ta-p/476111> is an excellent overview. SAS Studio is limited (due to browser limitations) to dragging things around within your browser window. If you have multiple monitors, you can open multiple browser windows each with its own SAS Studio session, or you can drag a browser window across monitors, then arrange your tabs.

Efficiency Tips

Layout Tabs to Maximize Workspace - SAS Enterprise Guide

- Very flexible tab layout
 - Drag tabs anywhere – use the Layout Guide
 - Tear off tabs – great for >1 monitors



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Since SAS Enterprise Guide is a desktop app, there are a lot more options. SAS Enterprise Guide 8.1 allows dragging tabs all around the app or you can just peel off a tab and drag it to a completely different monitor.

<https://communities.sas.com/t5/SAS-Communities-Library/The-Future-of-SAS-Enterprise-Guide-and-SAS-Studio-a-SAS-Global/ta-p/457437> has several examples.

Efficiency Tips

Change the Editor's Appearance

- Change theme
- Change font
- Change syntax colors

Example taken from SAS Enterprise Guide

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This and the next slide show just a few of the features available in the editor. To see more, go to these two excellent articles: for SAS Enterprise Guide, see - <https://blogs.sas.com/content/sasdummy/2017/07/03/sas-program-editor-tricks/> and for SAS Studio, see - <https://communities.sas.com/t5/SAS-Communities-Library/Tips-for-Programming-Efficiently-in-SAS-Studio/ta-p/239367>. There are differences in the editors currently but that will change in the future so that you won't have to remember.

Efficiency Tips

Select and Edit Columns

1. Hold down the Alt key and drag mouse over text area you want to work with (Alt+Select).

```
CODE LOG RESULTS
infile datalines pad truncover;
input column row number $ 10-12 abbreviation $ 14-16 element $ 18
datalines;
1 10 1 H Hydrogen Nonmetals, Primordial, Gas
1 9 3 Li Lithium xxxxxx metals, Primordial, Solid
1 8 11 Na Sodium xxxxxx metals, Primordial, Solid
1 7 19 K Potassium xxxxxx metals, Primordial, Solid
1 6 37 Rb Rubidium xxxxxx metals, Primordial, Solid
1 5 55 Cs Caesium Alkali metals, Primordial, Solid
1 4 87 Fr Francium Alkali metals, Natural radio, So
2 9 4 Be Beryllium Alkaline earth metals, Primordia
2 8 12 Mg Magnesium Alkaline earth metals, Primordia
2 7 20 Ca Calcium Alkaline earth metals, Primordia
```

2. Start typing to replace selected code.

```
CODE LOG RESULTS
infile datalines pad truncover;
input column row number $ 10-12 abbreviation $ 14-16 element $ 18-33 descri
datalines;
1 10 1 H Hydrogen Nonmetals, Primordial, Gas
1 9 3 Li Lithium Alk metals, Primordial, Solid
1 8 11 Na Sodium Alk metals, Primordial, Solid
1 7 19 K Potassium Alk metals, Primordial, Solid
1 6 37 Rb Rubidium Alk metals, Primordial, Solid
1 5 55 Cs Caesium Alkali metals, Primordial, Solid
1 4 87 Fr Francium Alkali metals, Natural radio, Solid
2 9 4 Be Beryllium Alkaline earth metals, Primordial, Solid
2 8 12 Mg Magnesium Alkaline earth metals, Primordial, Solid
2 7 20 Ca Calcium Alkaline earth metals, Primordial, Solid
2 6 38 Sr Strontium Alkaline earth metals, Primordial, Solid
2 5 56 Ba Barium Alkaline earth metals, Primordial, Solid
```

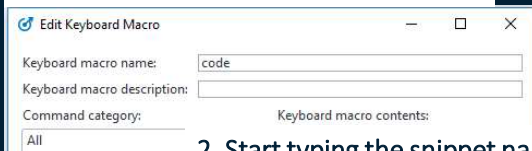
Example taken from SAS Studio

Both SAS Studio and SAS Enterprise Guide support selecting and editing columns using ALT+Select. SAS Studio goes a step further so that you can edit multiple columns at the same time.

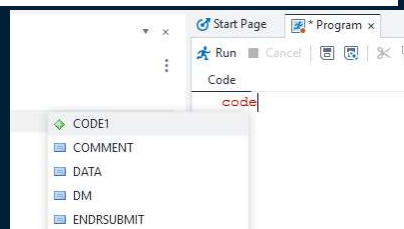
Efficiency Tips

Snippets to Insert Reusable Code

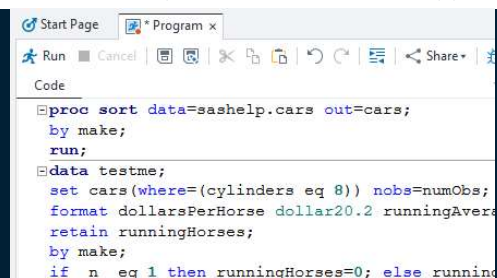
1. Name and define the snippet of code.



2. Start typing the snippet name.



3. Select and press Enter to insert snippet.



Example taken from SAS Enterprise Guide

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You can increase productivity by using code snippets to reduce the amount of time spent typing repetitive code or searching for samples. In SAS Enterprise Guide, snippets (abbreviations) show in autocomplete mixed with other suggestions. SAS Studio has a dedicated snippet picker (**Insert Snippet** using Alt+I or @ then typing the abbreviation. There is also support for tab-completion). type a *snippet prefix*, and press Tab to insert a snippet.

Both SAS Enterprise Guide and SAS Studio offer keyboard shortcuts. This is a combination of keys that, when pressed, provide functionality you commonly use – like upcasing a string of text or wrapping comment symbols around a piece of code. There are a lot more than you might realize since keyboard shortcuts are an integral piece of accessibility requirements, making the interface usable to folks with disabilities and folks who just don't want to move their hands from their keyboard. Go to this link to learn about a few in SAS Enterprise Guide - <https://blogs.sas.com/content/sasdummy/2013/10/29/five-keyboard-shortcuts/>. For SAS Studio, from the Help menu, select Keyboard Shortcuts or go to the keyboard shortcuts section of the User's Guide.

You can insert code snippets into the editor with a few keystrokes, which is handy for things you use a lot. In SAS Enterprise Guide and SAS Studio you create snippets. (See the Program Editor tricks blog above.) In SAS Studio, use a keyboard shortcut to insert a saved snippet. In EG you use an abbreviation to insert.

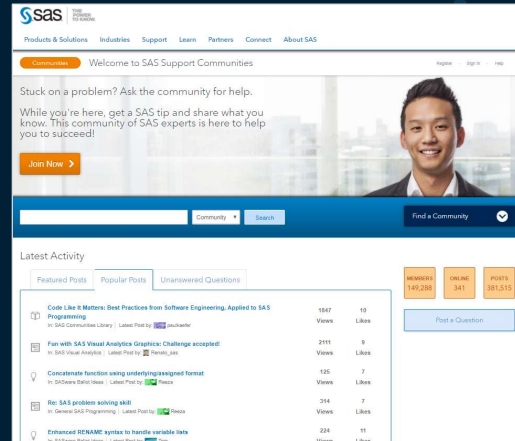
Submit code: F3 (Fn+F3) has been *the* keyboard shortcut for submitting SAS code. If you have nothing selected, F3 (Fn+F3) will run the entire program. If you select only some of the code, F3 (Fn+F3) will submit just the selected code. Great when you want to test out a part of your program. Note: The log is overwritten each time you submit, unless you're in SAS Studio and have turned on 'append log'.

Be a Part of the Discussion

Connect with us!

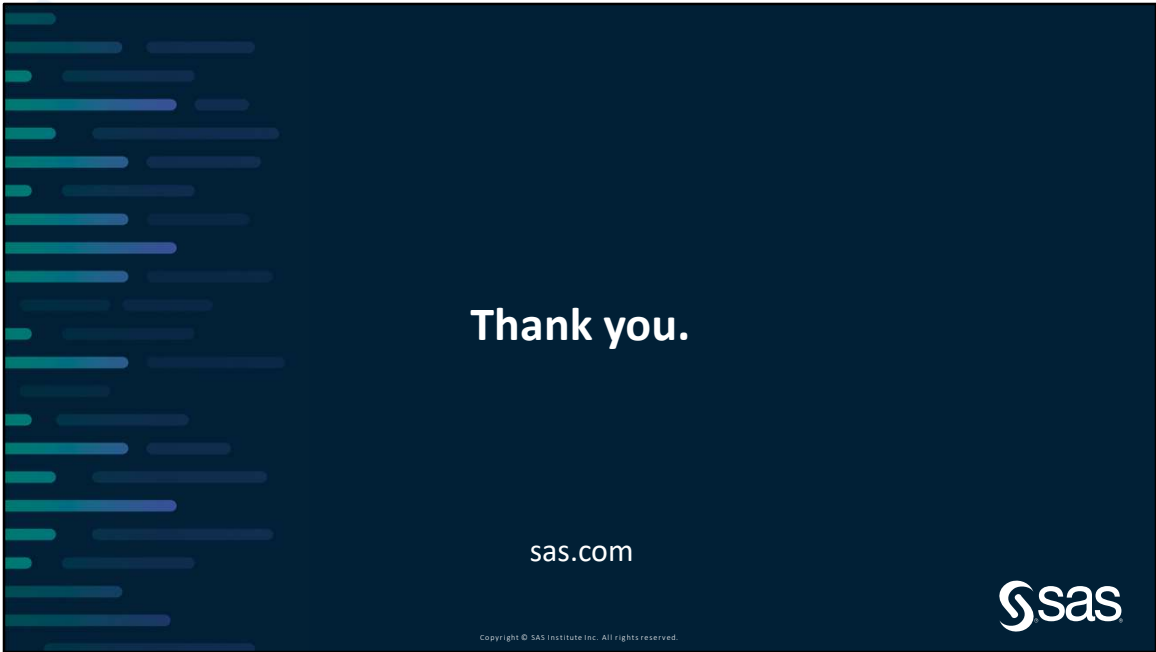
On SAS Communities

- [SAS Studio community](#) – find it under SAS Programming
- [SAS Enterprise Guide community](#) – find it under Business Intelligence
- [SASware ballot ideas](#)




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Thank you.

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