

SAS Enterprise Guide Integration in SAS Viya 4

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sas **innovate**
on tour 2024

Motivation for SAS Enterprise Guide 8.4

Help customers migrate to SAS Viya 4 and SAS Studio



SAS Enterprise Guide is very popular with many users



Customers have numerous projects, many very elaborate with a complex migration path



SAS Enterprise Guide 8.4 is a bridge from SAS 9 to SAS Viya 4
Leverage Viya 4 benefits while continuing to use SAS Enterprise Guide

Functional Focus

The power of SAS Viya 4 from the comfort of SAS Enterprise Guide

Viya 4 Compute Server

Access the powerful Viya 4 compute service from SAS Enterprise Guide including new procedures

Compute Server Filesystem

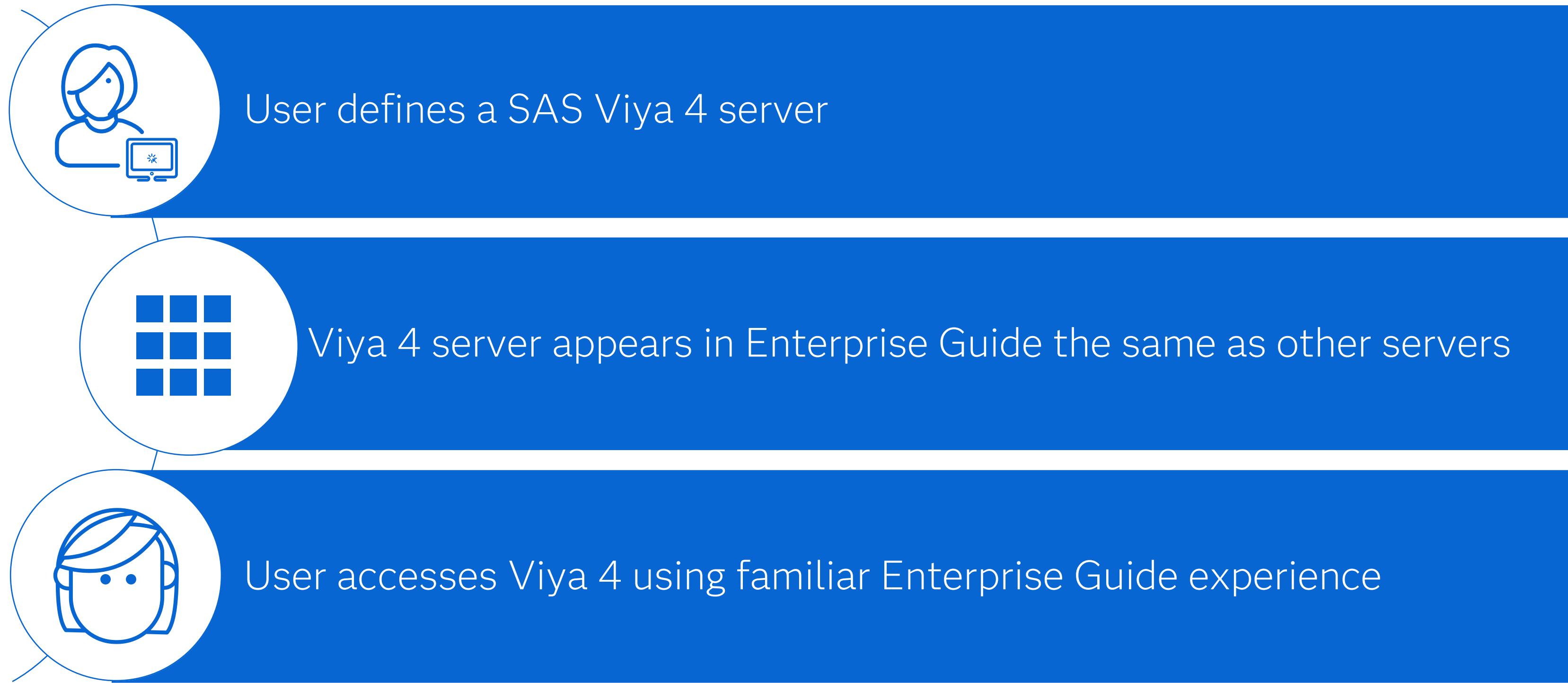
Save SAS program to persistent storage to access them from both SAS Enterprise Guide and SAS Studio

Hybrid Enterprise Guide projects

Project nodes can run any mix of SAS Viya 4, SAS Viya 3.5, and SAS 9.4

Using the SAS Viya 4 support

Power of the SAS Viya 4 compute service from SAS Enterprise Guide



Capabilities not available with Viya 4 connection



What's In

- Support for multiple SAS Viya 4 Compute Server Contexts
- Access to SAS Libraries (session based)
- Access to remote file system
- All core features:
 - Program submit
 - View tables
 - View results and logs
 - Prompts that have no metadata dependency
- Access to SAS Content (post release 8.4)



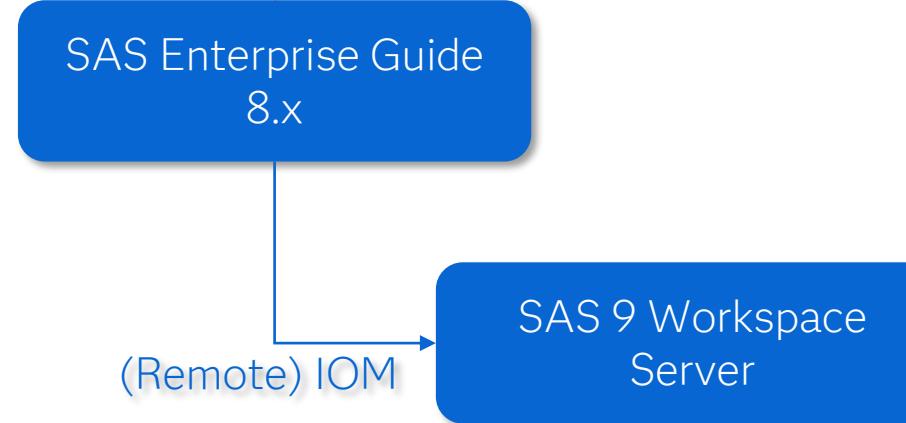
What's Out

- **No new steps or tasks**
- **No metadata related features:**
 - Stored procedures
 - Info maps
 - OLAP cubes
 - Registered tables
 - Dynamic prompts
 - **Prompts that provide lists of libraries/tables/columns**
- **No Interactive table editing**

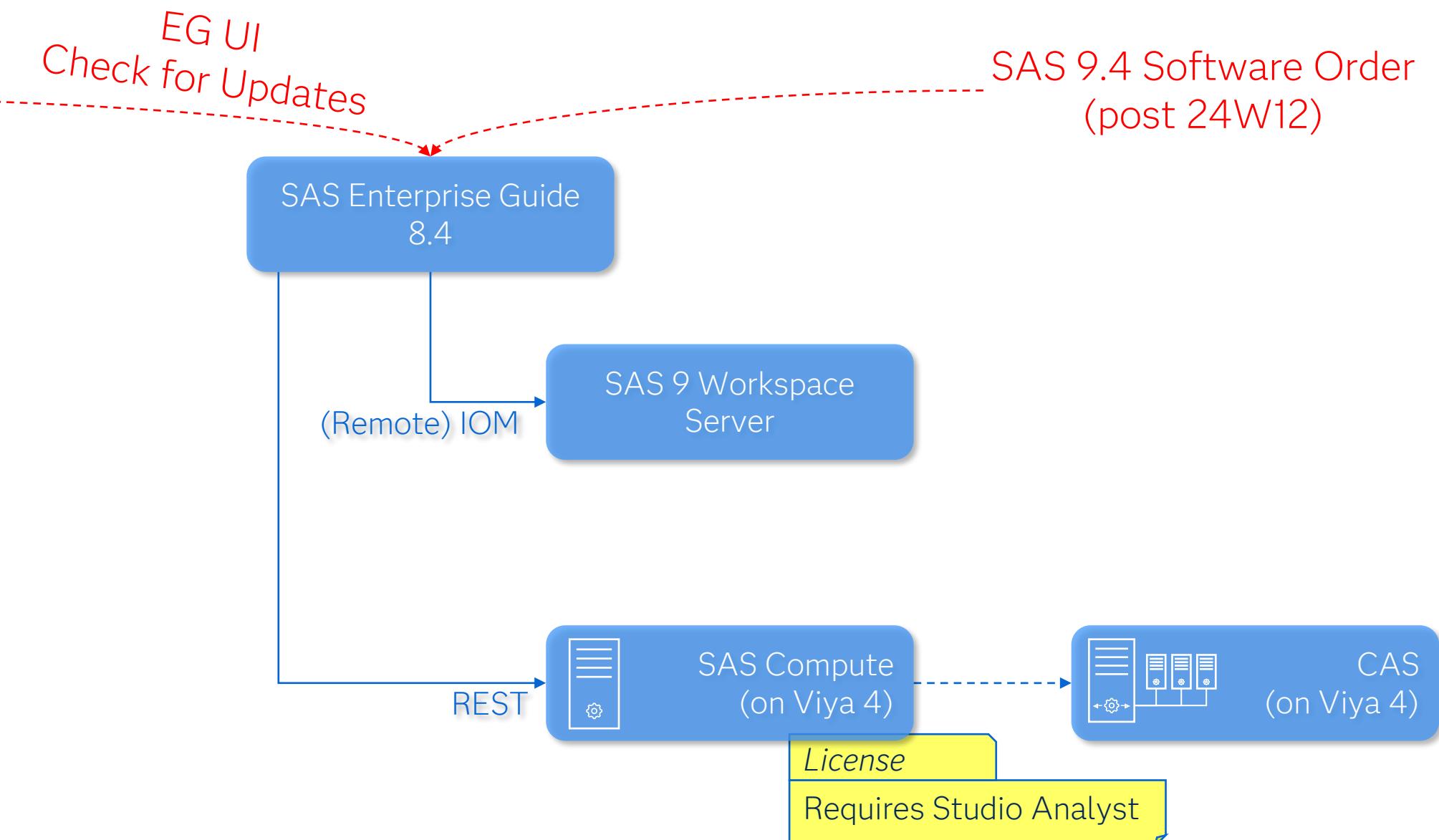
See this section in the EG 8.4 User's Guide:
[Working without a Metadata Server Connection](#)

Where can I get the software?

SAS Enterprise Guide 8.x

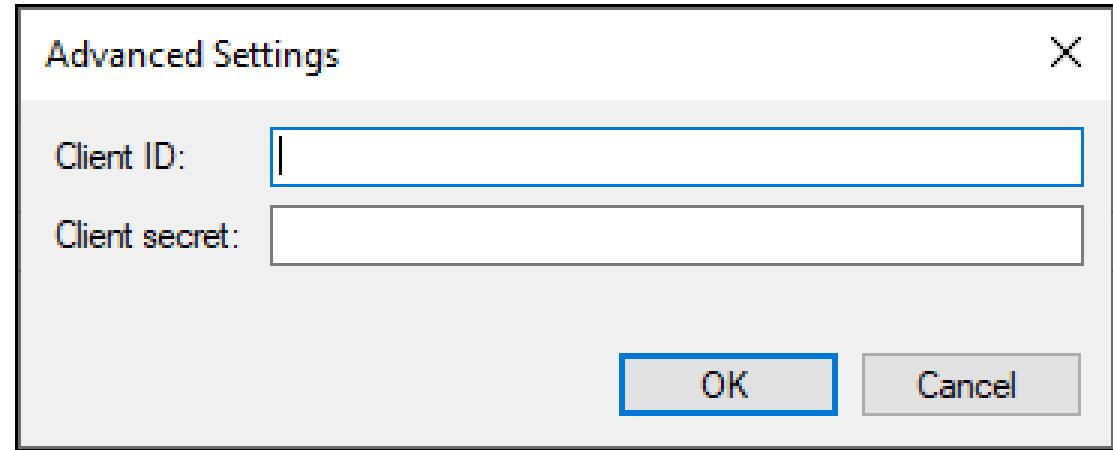


SAS Enterprise Guide 8.4



Which SAS Viya 4 versions are supported?

All versions (*)



- (*) SAS Viya 2024.05 or earlier require the SAS Administrator to define a client ID and client secret, and the Server connection definition in EG to specify these properties.

More details in the following documentation:

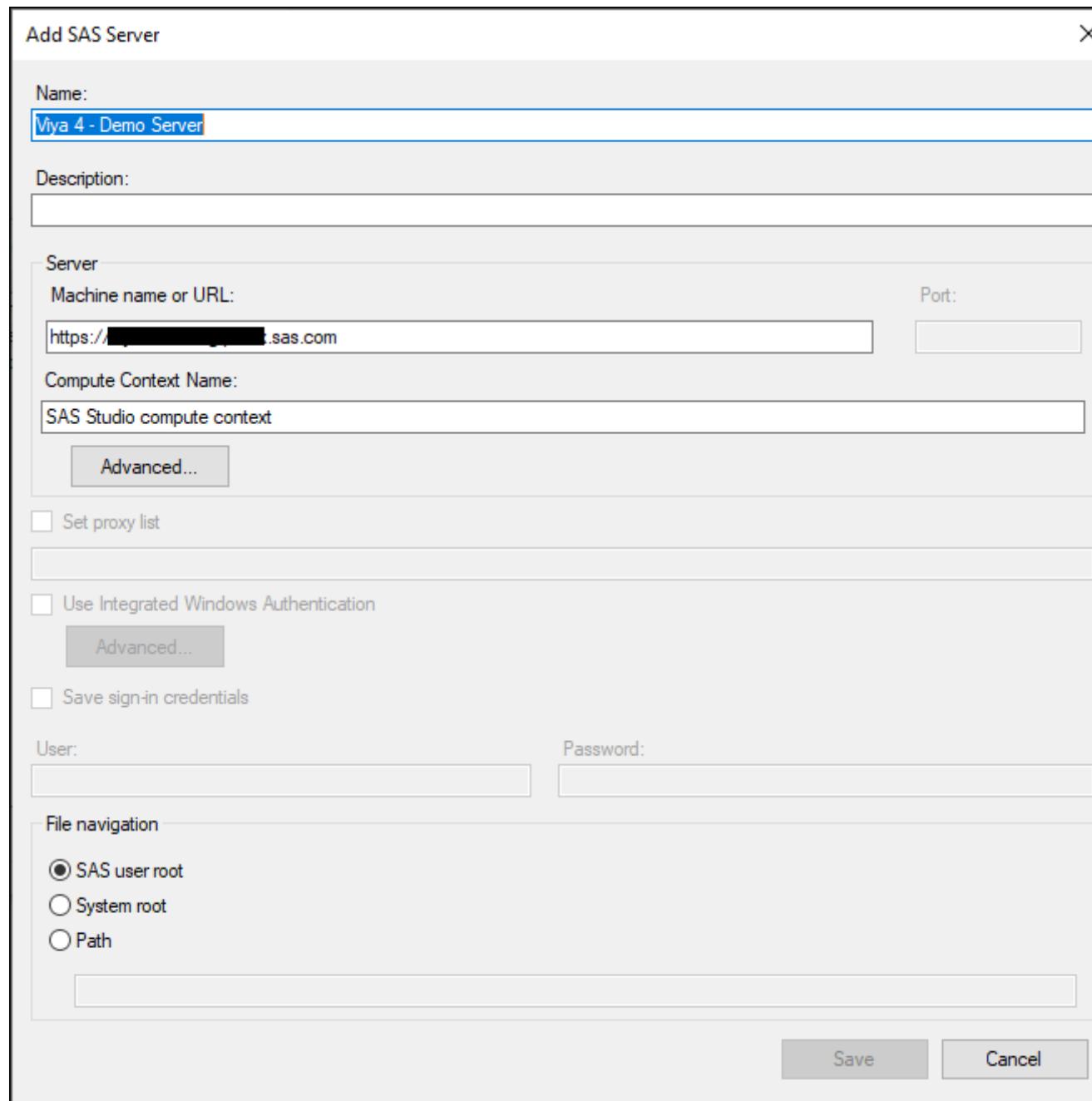
- [Defining and Connecting to a SAS Viya 4 Compute Server in SAS Enterprise Guide 8.4 User's Guide](#)
- [Registering an OAuth Client ID in SAS Enterprise Guide and SAS Add-In for Microsoft Office: Administrator's Guide.](#)

How does it work?

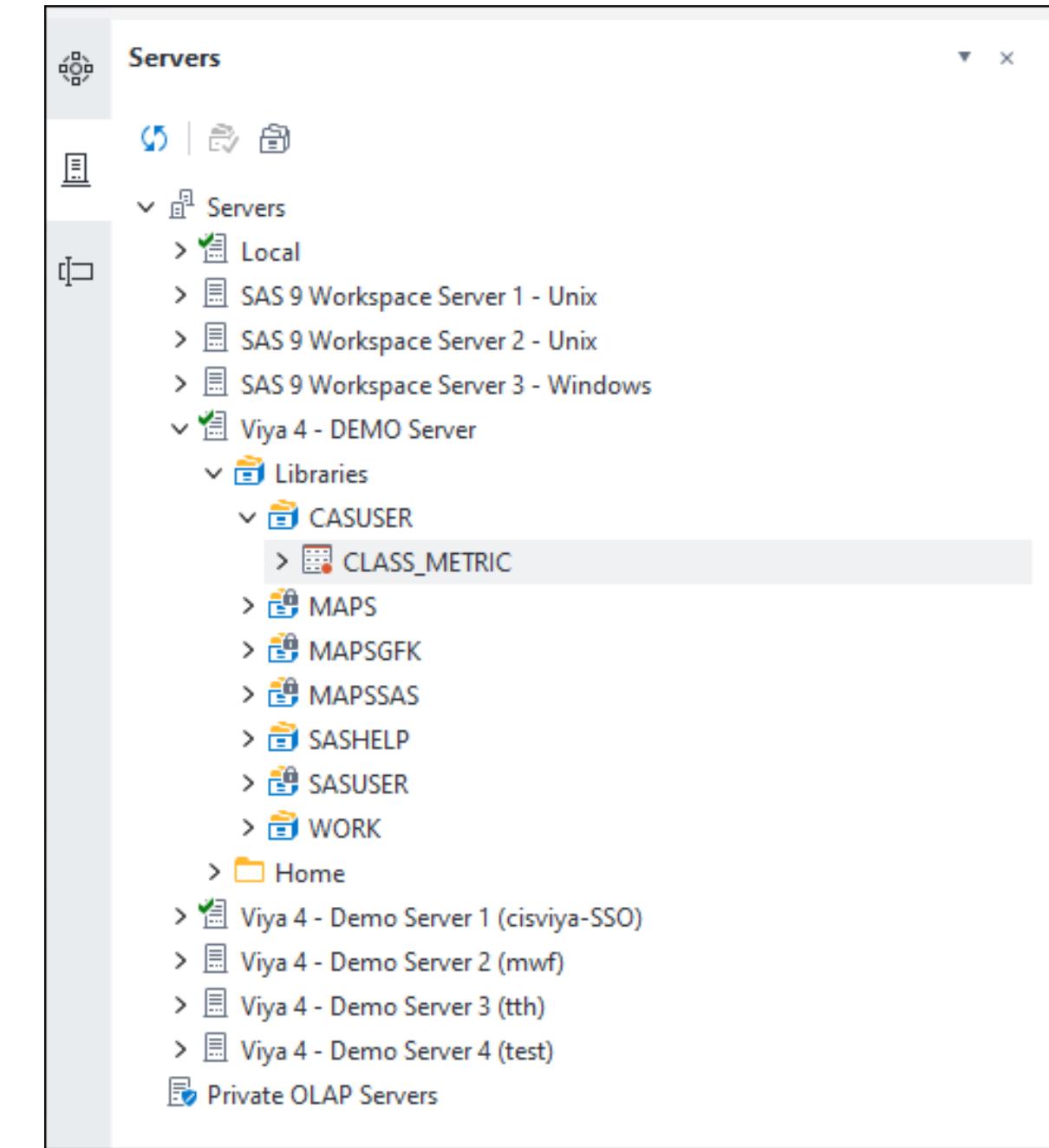
More details and demo

How does it work?

Define server connection

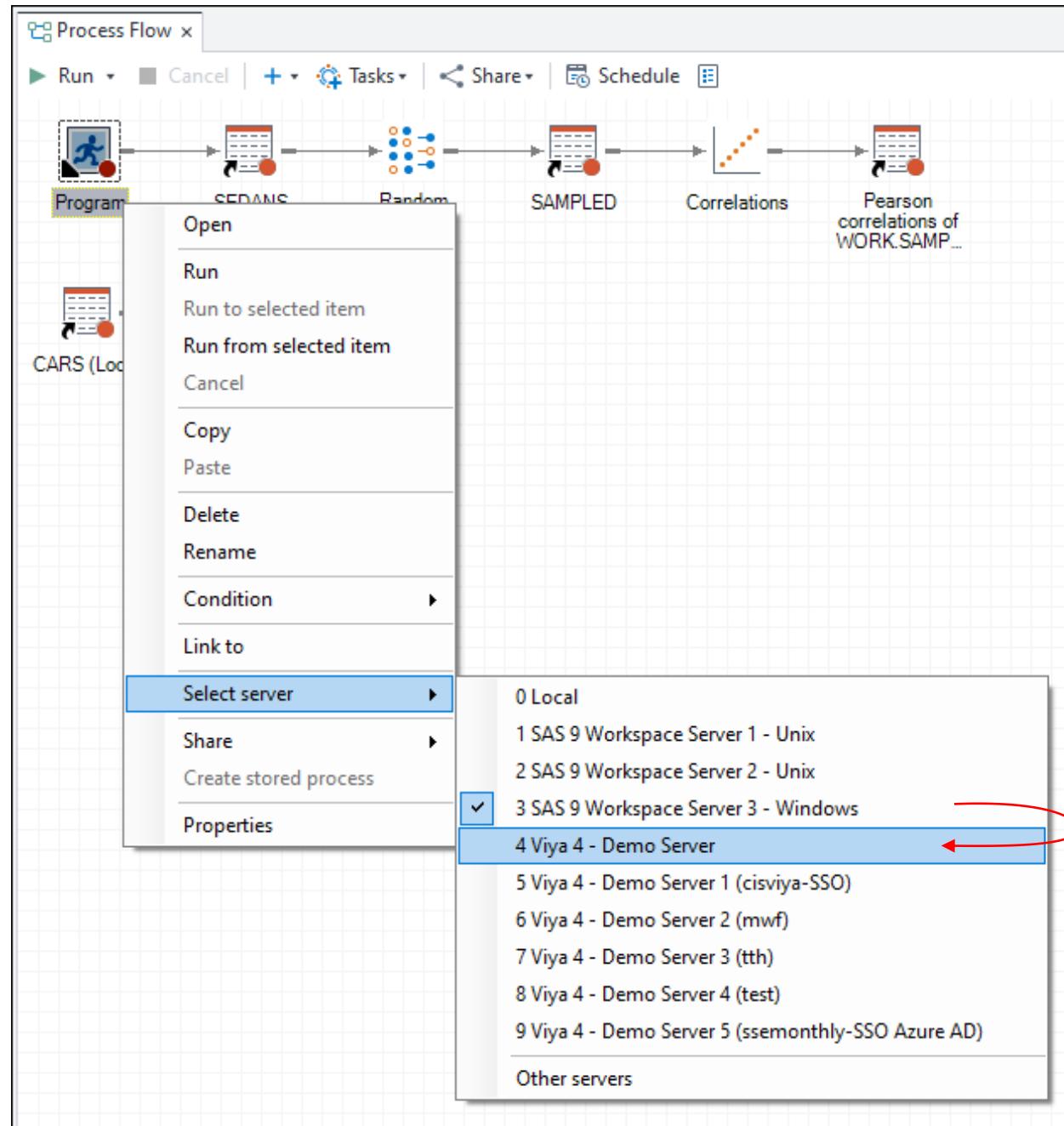


Navigate server



How does it work?

Update server association on node



Supported scenarios

- Update one node at a time for testing purposes
- Wizards to update all server references^(*)
 - Across all Process Flows in EG project
 - Across all EG projects in a folder

() Also supports changing Data Source to use (SAS Library)*

Taking advantage of SAS Viya 4 capabilities

Demo part 2

Proc python

Process Flow - 02 - * Project EG84 - proc python - using syslast and prompt - SAS Enterprise Guide

File Edit View Program Tools Help | * | | | | | |

Project

* Project EG84 - proc python - using syslast and prompt

> Process Flow 01

< Process Flow - 02

TEST42

Programs

Program using Prompt

Proc Python

Prompt Manager

Name	Used By
Prompt_1_nrecords	Program using Prompt (Process F...

Process Flow - 02 x

Proc Python TEST42 DATASET_FRO M_Python

Run Cancel Tasks Share Schedule

Program using Prompt TEST42 Proc Python DATASET_FRO M_Python

Submission Status

All Errors Warnings Queued Cancel All Clear All

Name	Server	Status Information
Program using Prompt	Viya 4 - Demo Server 3 (tth)	Successful
Proc Python	Viya 4 - Demo Server 3 (tth)	Successful

Proc python

Process Flow - 02 - * Project EG84 - proc python - using syslast and prompt - SAS Enterprise Guide

File Edit View Program Tools Help | * | Folders | Run | Stop | Search |

Project

- * Project EG84 - proc python - using syslast and prompt
 - Process Flow 01
 - Process Flow - 02
 - TEST42
 - Programs
 - Program using Prompt
 - Proc Python

Process Flow - 02 x Proc Python TEST42 DATASET_FRO...
Run Cancel + Tasks Share Schedule

```
graph LR; A[Program using Prompt] --> B[TEST42]; B --> C[Proc Python]; C --> D[DATASET_FRO M_Python]
```

Submission Status

All	Errors	Warnings	Queued	Cancel All	Clear All
Name	Server				
Program using Prompt	Viya 4 - Demo Server 3 (tth)				
Proc Python	Viya 4 - Demo Server 3 (tth)				

Specify Values for Project Prompts

Show only required items (denoted by *)

General

* Max. number of records (5-25)
12

Process Flow - 02 x TEST42 x
Where Query Builder Tasks Share

#	number	number_roman	#	number_squared
1	1	I		1
2	2	II		4
3	3	III		9
4	4	IV		16
5	5	V		25
6	6	VI		36
7	7	VII		49
8	8	VIII		64
9	9	IX		81
10	10	X		100
11	11	XI		121
12	12	XII		144

Proc python

The screenshot displays the SAS Enterprise Guide interface with three main windows:

- Code Editor (Left):** Shows the SAS code for a Proc Python step. The code uses SAS macro variable `syslast` to reference the last created table. It includes a `submit` block with Python code to convert the table to a DataFrame and back to a SAS dataset. A red dashed box highlights the section where the DataFrame is converted back to a SAS dataset.

```
1 /* SAS macro variable syslast point to
2  * last created table in the session
3  */
4 %proc python;
5 submit;
6
7 dsname = SAS.symget('syslast')
8 dsname_with_dsoptions = dsname + '(obs=5)'
9
10 df = SAS.sd2df(dsname_with_dsoptions)
11
12 # Python algorithm goes here
13 print(df)
14
15 ds = SAS.df2sd(df, "work.dataset_from_python");
16
17 endsubmit;
18 run;
```

- Process Flow (Middle):** Shows the flow of data from a "Program using Prompt" step to a "TEST42" step, then to a "Proc Python" step, and finally to a "DATASET_FROM_PYTHON" step.
- Dataset View (Right):** Displays the contents of the "DATASET_FROM_PYTHON" dataset, which contains five rows of data: 1, 2, 3, 4, and 5, with their corresponding Roman numerals (I, II, III, IV, V) and a value of 25.

Using CAS

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

- Project View:** Displays the project structure. A note titled "Process Flow - connecting to CAS" is selected.
- Servers View:** Shows a list of servers, including Local, SAS 9 Workspace Server 1 - Unix, SAS 9 Workspace Server 2 - Unix, SAS 9 Workspace Server 3 - Windows, Viya 4 - Demo Server, Viya 4 - Demo Server 1 (cisviya-SSO), Viya 4 - Demo Server 2 (mwf), and Viya 4 - Demo Server 3 (tth).
- Process Flow Editor:** Shows a process flow diagram with three nodes: "Program - CAS processing", "CLASS_METRIC", and "List Data".
- Code Editor:** Displays the program code for the process flow:

```
cas;
libname CASUSER cas caslib="casuser";
proc print data=CASUSER.class (pointintg to caslib on Viya 4 CAS server)
proc cas; action ...
```
- Submission Status:** Shows the submission status for two tasks:

Name	Server	Status Information
Program - CAS processing	Viya 4 - Demo Server	Successful
List Data	Viya 4 - Demo Server	Successful

Using CAS

CAS action report is shown in Results tab of Program node

The screenshot shows the SAS Enterprise Guide interface with a project titled "Project EG84 - CAS - Call CAS action". The code editor contains two programs: "proc print CASUSER.CLASS" and "proc cas;". The "proc print" program prints the "CLASS" dataset from the "casuser" library. The "proc cas" program calls various CAS actions like "table.caslibInfo" and "table.tableInfo" on the "CLASS" table.

The "Results" tab is selected, displaying three reports:

- Calling CAS actions using proc cas**
Results from table.tableInfo
Table Information for Caslib CASUSER(Wilbram.Hazejager@sas.com)

Table Name	Number of Rows	Number of Columns	Number of Indexed Columns	NLS encoding	Created	Last Modified	Accessed	Java Character Set	Promoted Table	Duplicate R
CLASS	19	5	0	utf-8	2024-03-26T10:36:03+00:00	2024-03-26T10:36:03+00:00	2024-03-26T10:36:03+00:00	UTF8	No	
- Calling CAS actions using proc cas**
Results from table.columnInfo
Column Information for CLASS in Caslib CASUSER(Wilbram.Hazejager@sas.com)

Column	Id	Type	Length	Formatted Length	Format Width	Format Decimal
Name	1	char	8	8	0	0
Sex	2	char	1	1	0	0
Age	3	double	8	12	0	0
Height	4	double	8	12	0	0
Weight	5	double	8	12	0	0

Demo

- Part 1
 - Defining a Viya 4 connection
 - Updating tasks in a SAS Enterprise Guide Process Flow to use a Viya 4 connection
 - Running those updated tasks
- Part 2
 - Using Python
 - Using CAS (with static prompts)

Note: A step-by-step description of this demo is also available on SAS Communities, <https://communities.sas.com/t5/SAS-Communities-Library/Using-SAS-Enterprise-Guide-with-SAS-Viya-4/ta-p/921481>

Roadmap

Roadmap

Focus is on integration with SAS Viya

- SAS Viya Workbench integration
- SAS Content folder support
- Standalone installer (only supports SAS Viya 4 connections)
 - Tentative name: SAS Enterprise Guide for SAS Viya installer
 - Delivery: Free download from support.sas.com
- SAS Content Assessment reports on Prompt Types used in EG projects

Note: Planned for Q3

Resources

EG integration with Viya 4

Communication / Collateral - Customer-facing

Viya Release Highlights

March 19



SAS Communities

March 22

A screenshot of the SAS Communities Library page. A post titled "Using SAS Enterprise Guide with SAS Viya 4" by Wilbram-SAS is displayed. The post includes a screenshot of the SAS Enterprise Guide interface showing a connection to SAS Viya. Below the post is a "Connections" dialog box.

SAS Blogs

March 22

A screenshot of the SAS Blogs page. A blog post by Wilbram Hazegae titled "Promise delivered: SAS Enterprise Guide integration with SAS Viya 4" is shown. The post discusses the integration of SAS Enterprise Guide with SAS Viya 4. It includes a screenshot of the SAS Enterprise Guide interface and a screenshot of the SAS Studio interface.

EG on www.sas.com

March 19

A screenshot of the SAS Enterprise Guide landing page on www.sas.com. It features a large image of the SAS Enterprise Guide interface and a section for "Sas viya".

EG on support.sas.com

May 7

A screenshot of the SAS Enterprise Guide landing page on support.sas.com. It includes sections for "Explore resources" and "Learn the basics".

March 19

Ask the Expert webinar

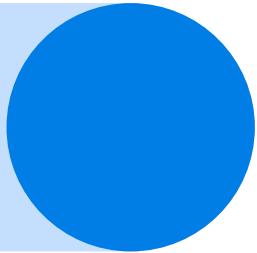
A screenshot of the "ASK THE EXPERT WEBINAR SERIES" page. It features a section for "SAS' Enterprise Guide® Is Now Integrated With SAS® Viya 4" and a registration form.

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EG integration with Viya 4

Links to resources

- www.sas.com - EG product page
- support.sas.com - EG page
- support.sas.com - Studio vs EG comparison matrix
- [Viya Release Highlights Show](#) (EG section starts at 21:00 mark)
- [SAS Blog: Promise delivered: SAS Enterprise Guide integration with SAS Viya4](#)
- [Article: Using SAS Enterprise Guide with SAS Viya 4 - SAS Support Communities](#)



SAS Content Assessment

Links to resources



- [SAS Content Assessment: quickly accessing results \(SAS Communities\)](#)
- [Download SAS 9 Content Assessment \(support.sas.com\)](#)

Q&A

That's it folks!

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