

SAS Enterprise Guide Integration in SAS Viya 4

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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

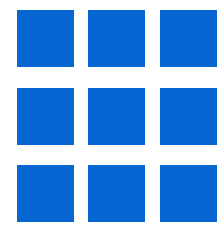
Project nodes can run any mix of SAS Viya 4, SAS Viya 3.5, and SAS 9.4

Using the SAS Viya 4 support

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



User defines a SAS Viya 4 server



Viya 4 server appears in Enterprise Guide the same as other servers



User accesses Viya 4 using familiar Enterprise Guide experience

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

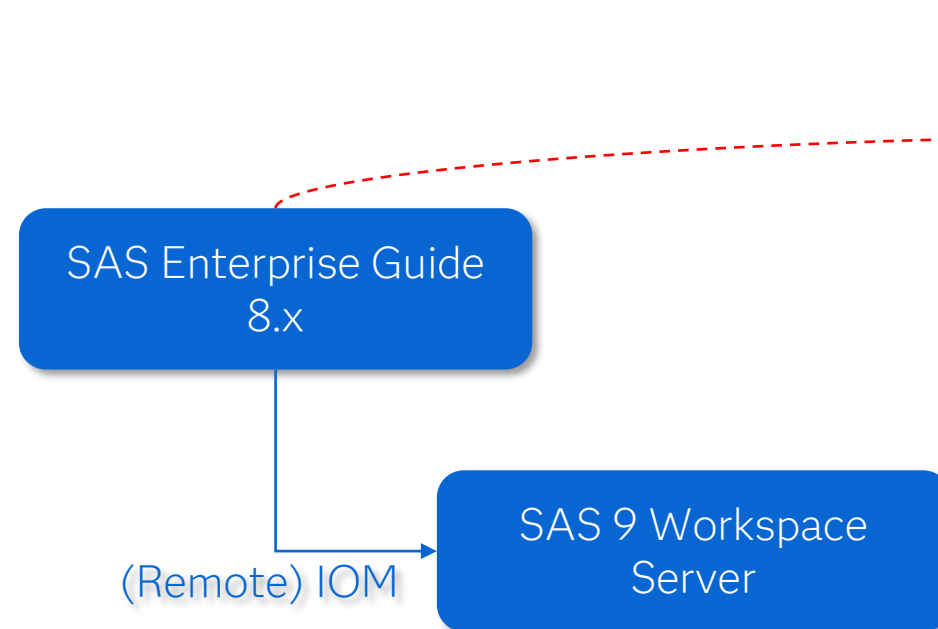
- **No new steps or tasks**
- **No metadata related features:**
 - Stored procedures
 - Info maps
 - OLAP cubes
 - Registered tables
 - Dynamic prompts
 - Prompts that provide lists of libraries/tables/columns
- **No Interactive table editing**



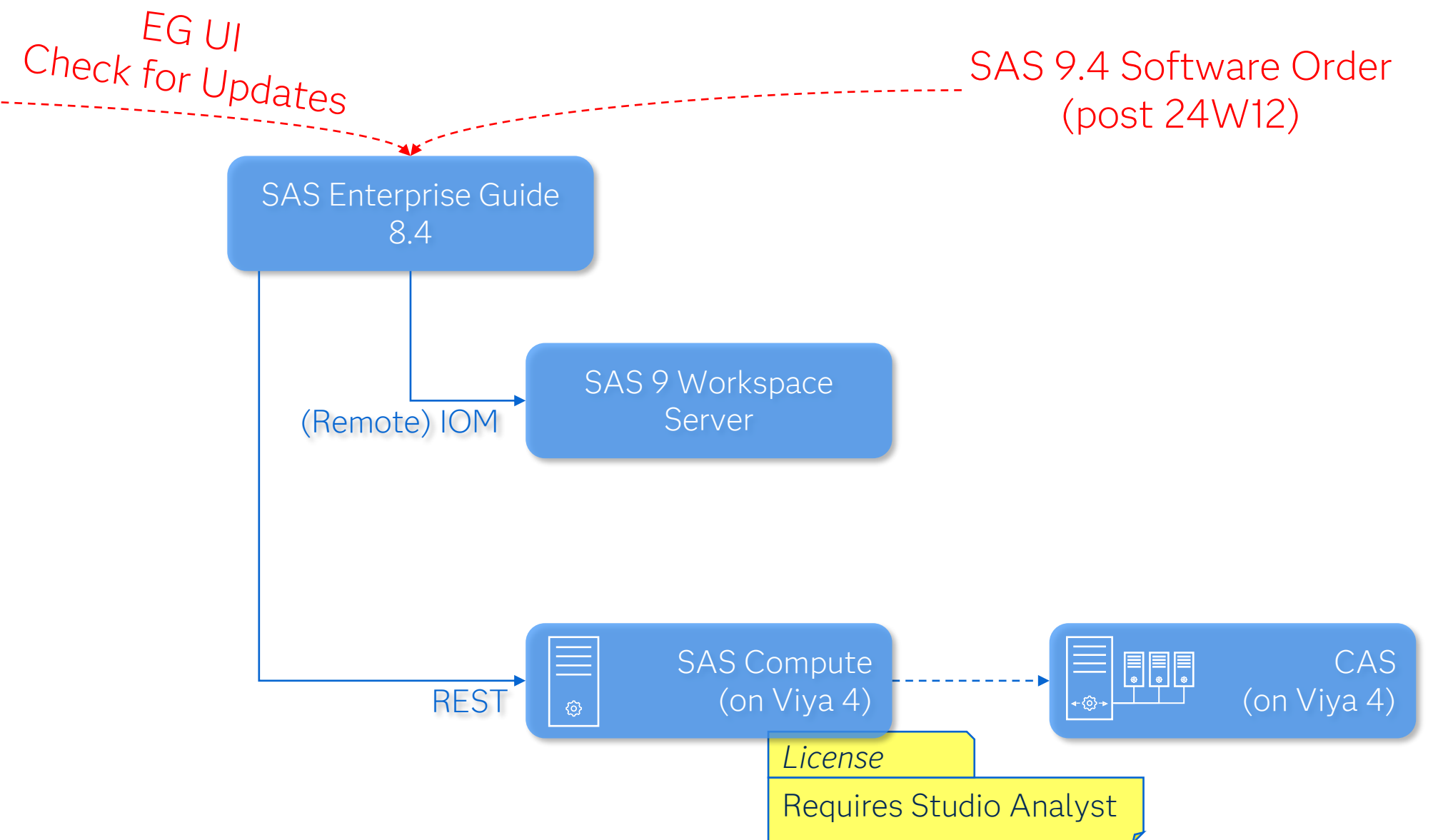
See this section in the EG 8.4 User's Guide:
[Working without a Metadata Server Connection](#)

Where can I get the software?

SAS Enterprise Guide 8.x

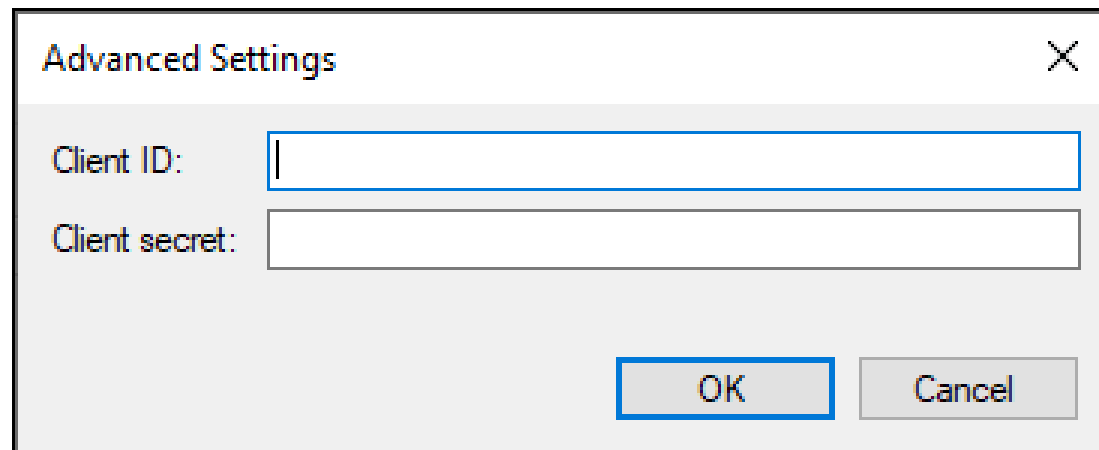


SAS Enterprise Guide 8.4



Which SAS Viya 4 versions are supported?

All versions (*)

A screenshot of a dialog box titled "Advanced Settings" with a close button (X) in the top right corner. The dialog contains two input fields: "Client ID:" and "Client secret:". The "Client ID:" field has a blue border and a cursor. Below these fields are two buttons: "OK" and "Cancel".

- (*) **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:

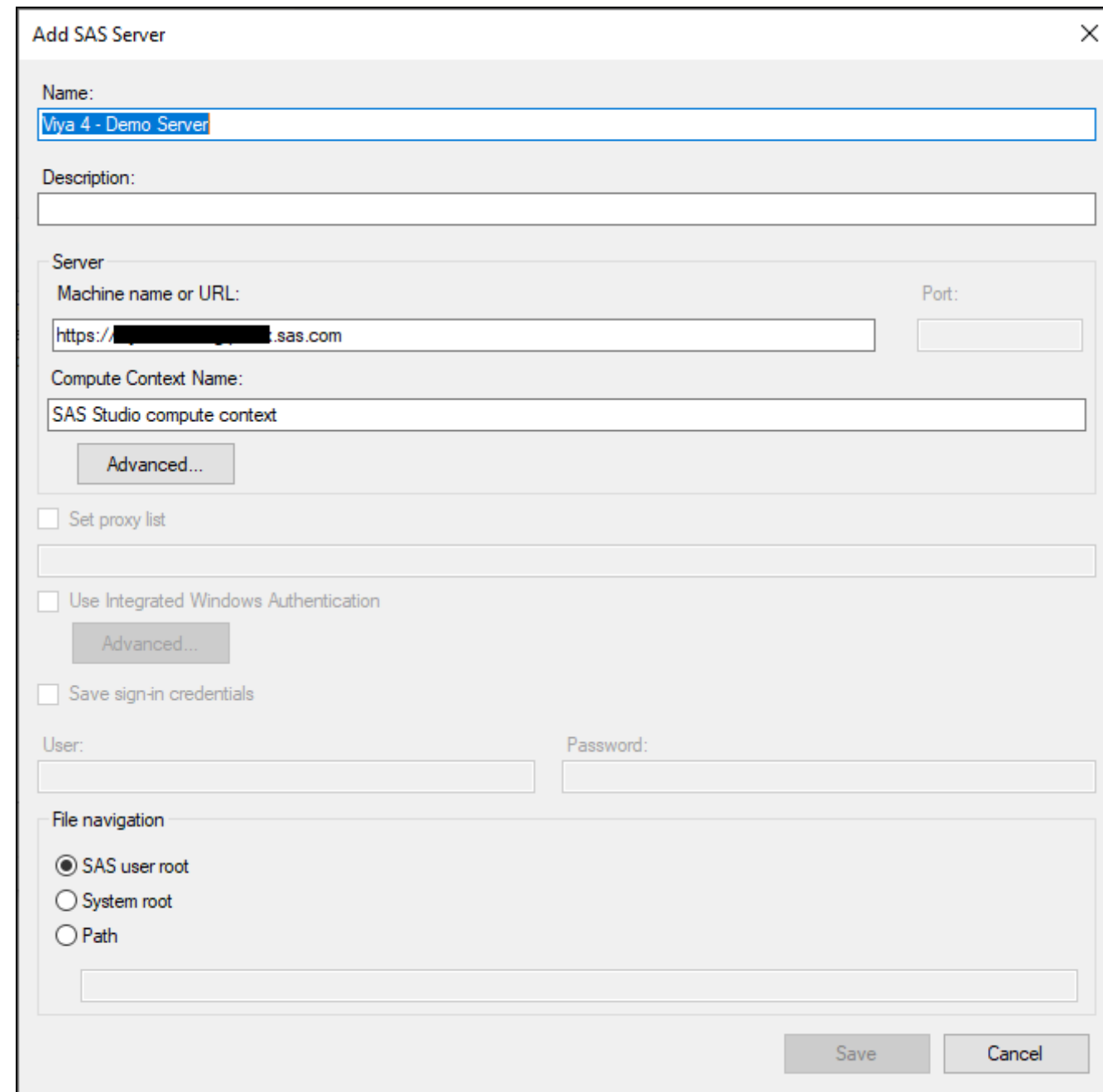
- [Defining and Connecting to a SAS Viya 4 Compute Server](#) in SAS Enterprise Guide 8.4 User's Guide
- [Registering an OAuth Client ID](#) in SAS Enterprise Guide and SAS Add-In for Microsoft Office: Administrator's Guide.

How does it work?

More details and demo

How does it work?

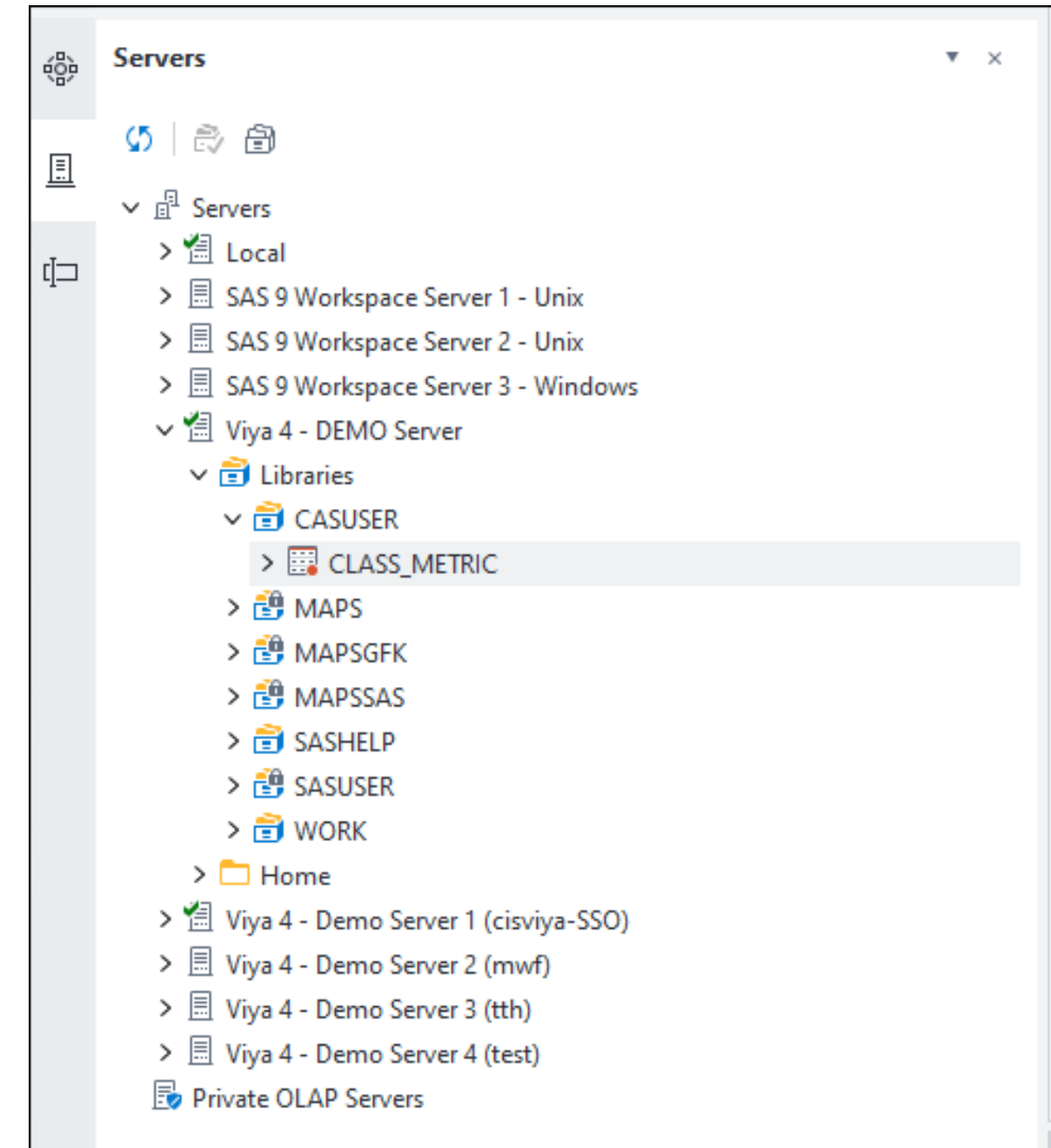
Define server connection



The 'Add SAS Server' dialog box is shown with the following fields and options:

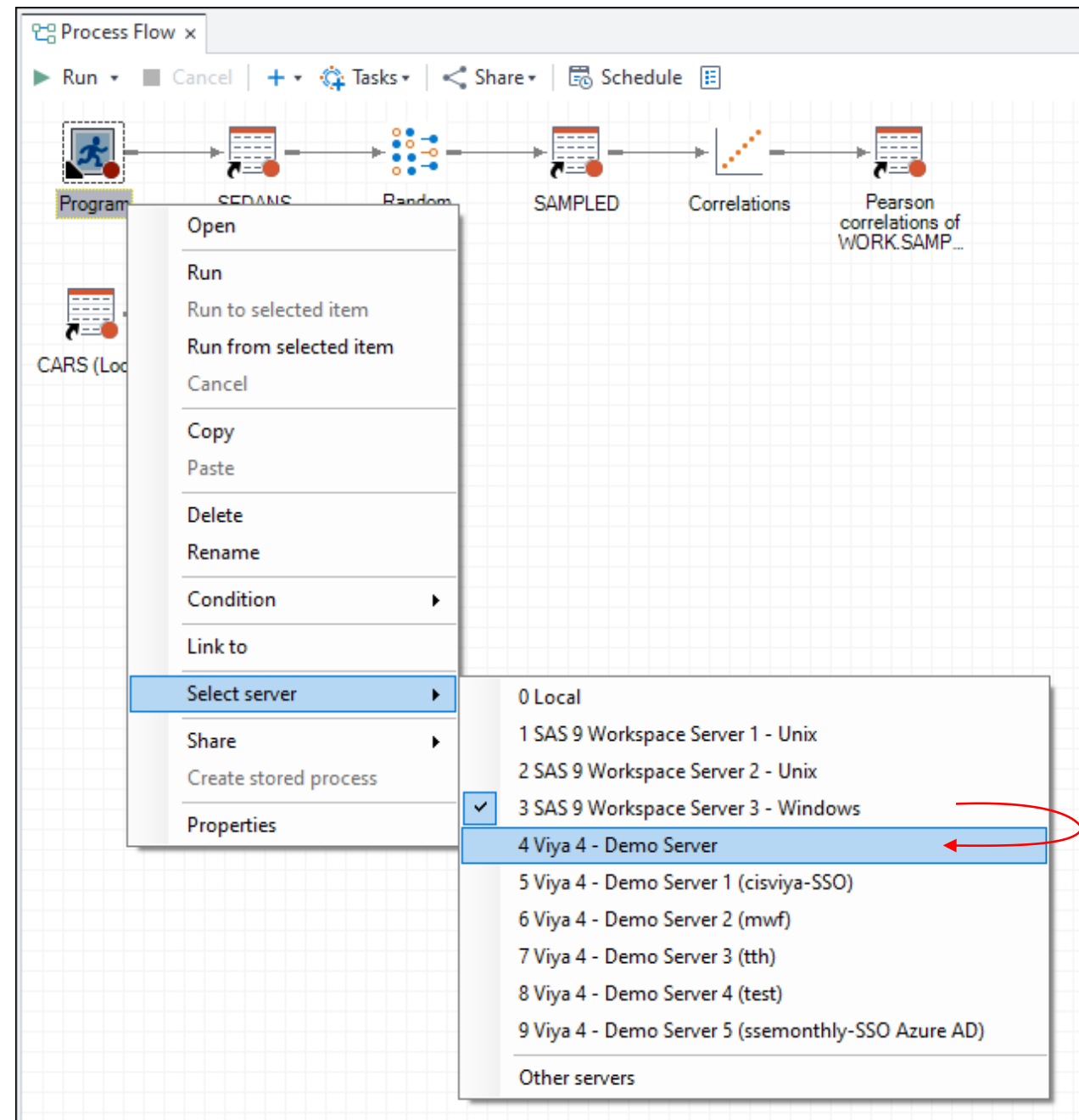
- Name:** Viya 4 - Demo Server
- Description:** (empty)
- Server:**
 - Machine name or URL:** https://[redacted].sas.com
 - Port:** (empty)
 - Compute Context Name:** SAS Studio compute context
 - Advanced...** button
- ☐ Set proxy list
- ☐ Use Integrated Windows Authentication
- Advanced...** button
- ☐ Save sign-in credentials
- User:** (empty)
- Password:** (empty)
- File navigation:**
 - ☒ SAS user root
 - ☐ System root
 - ☐ Path
 - (empty text box)
- Save** and **Cancel** buttons at the bottom right.

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

NameUsed By

Prompt_1_nrecordsProgram using Prompt (Process F...

Process Flow - 02 x Proc Python TEST42 DATASET_FROM_...

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

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_FROM_...

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 |
|----------------------|------------------------------|
| 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 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. The top window, titled "Process Flow - 02 - * Project EG84 - proc python - using syslast and prompt - SAS Enterprise Guide", shows a process flow diagram with four steps: "Program using Prompt", "TEST42", "Proc Python", and "DATASET_FROM_M_PYTHON". Below the diagram is a "Submission Status" table.

The bottom window, titled "Process Flow - 02" and "TEST42", shows the code editor for the "Proc Python" task. The code is as follows:

```
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;
```

The "Submission Status" table shows the following data:

| Name | Server |
|----------------------|----------------------|
| Program using Prompt | Viya 4 - Demo Server |
| Proc Python | Viya 4 - Demo Server |

The "DATASET_FROM_M_PYTHON" window shows a table with the following data:

| | number | number_roman | number_squ... |
|---|--------|--------------|---------------|
| 1 | 1 | I | 1 |
| 2 | 2 | II | 4 |
| 3 | 3 | III | 9 |
| 4 | 4 | IV | 16 |
| 5 | 5 | V | 25 |

Using CAS

Process Flow - connecting to CAS - Project EG84 - CAS - Session - caslib - table creation - print - CASL - SAS Enterprise Guide

File Edit View Program Tools Help

Project

Project EG84 - CAS - Session - caslib - table creation - print

Process Flow - connecting to CAS

Note

CLASS_METRIC

List Data

Programs

Program - CAS processing

Servers

Servers

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)

Viya 4 - Demo Server 3 (tth)

Process Flow - c... x

Run Cancel Tasks Share Schedule

Program - CAS processing

CLASS_METRIC

List Data

Program nodes:

cas;

libname CASUSER cas caslib="casuser";

proc print data=CASUSER.class (pointintg to caslib on Viya 4 CAS server)

proc cas; action ...

List Data node:

also uses CASUSER.class

Submission Status

All Errors Warnings Queued Cancel All Clear All

| 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

Program - proc print CASUSER.CLASS - Project EG84 - CAS - Call CAS action - SAS Enterprise Guide

File Edit View Program Tools Help

Project

Process Flow - C... Program - proc p...

Run Cancel

Log Results (1) Output Data (1)

Code

1 cas;
2 libname casuser cas caslib="casuser";
3
4 data casuser.class;
5 set sashelp.class;
6 run;
7
8 /**
9 proc print data=casuser.class;
10 title "listing CAS table using proc print";
11 run;
12 ***/
13
14 proc cas;
15 title "Calling CAS actions using proc cas";
16 action table.caslibInfo
17 / caslib="casuser";
18 action table.tableInfo
19 / caslib="casuser" name="class";
20 action table.columnInfo
21 / table={caslib="casuser", name="class"};
22 run;
23 title;

Log

Results (1)

Output Data (1)

Library Type Description Path directories included Session local Active
CASUSER (Wilbram.Hazejager@sas.com) PATH Personal File System Caslib /cas/data/caslibs/casuserlibraries/wilbram.hazejager@sas.com/ Yes No Yes

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 Duplica 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

Servers

Tasks

Servers

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)

Viya 4 - Demo Server 3 (tth)

Viya 4 - Demo Server 4 (test)

Viya 4 - Demo Server 5 (ssemontly-SSC)

Viya 4 - GTP (SSO)

Viya 4 - InnovationLab

Private OLAP Servers

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

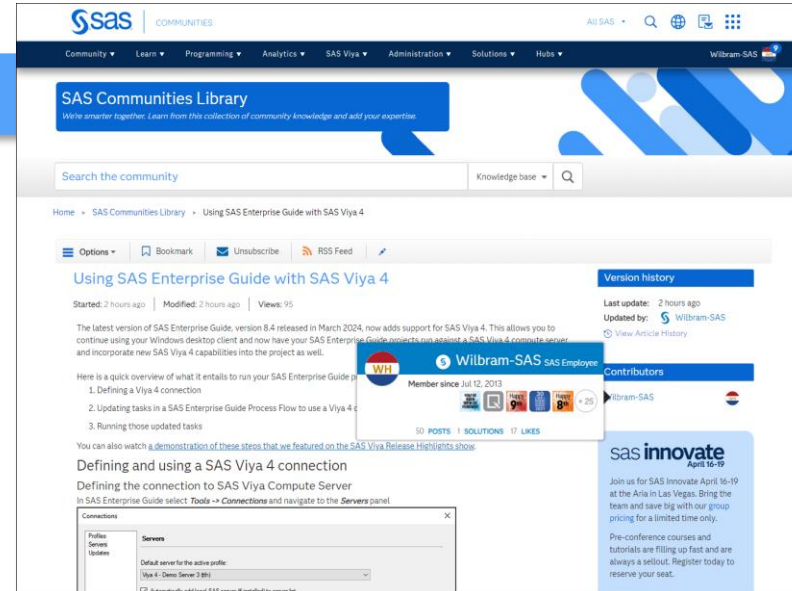
Viya Release Highlights

March 19



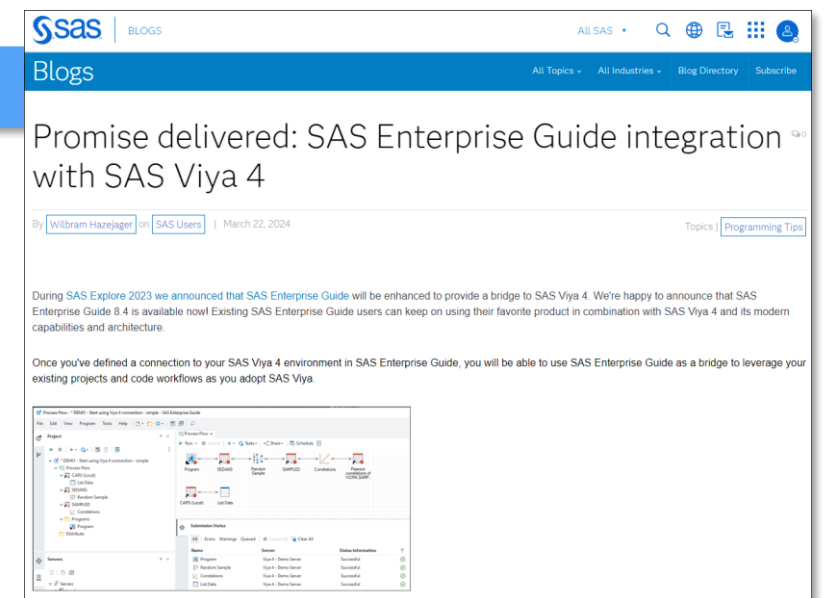
SAS Communities

March 22



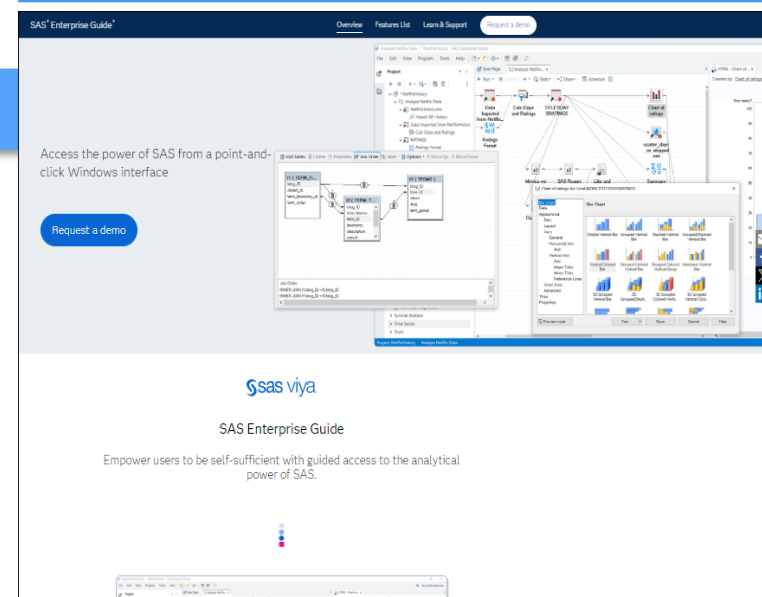
SAS Blogs

March 22

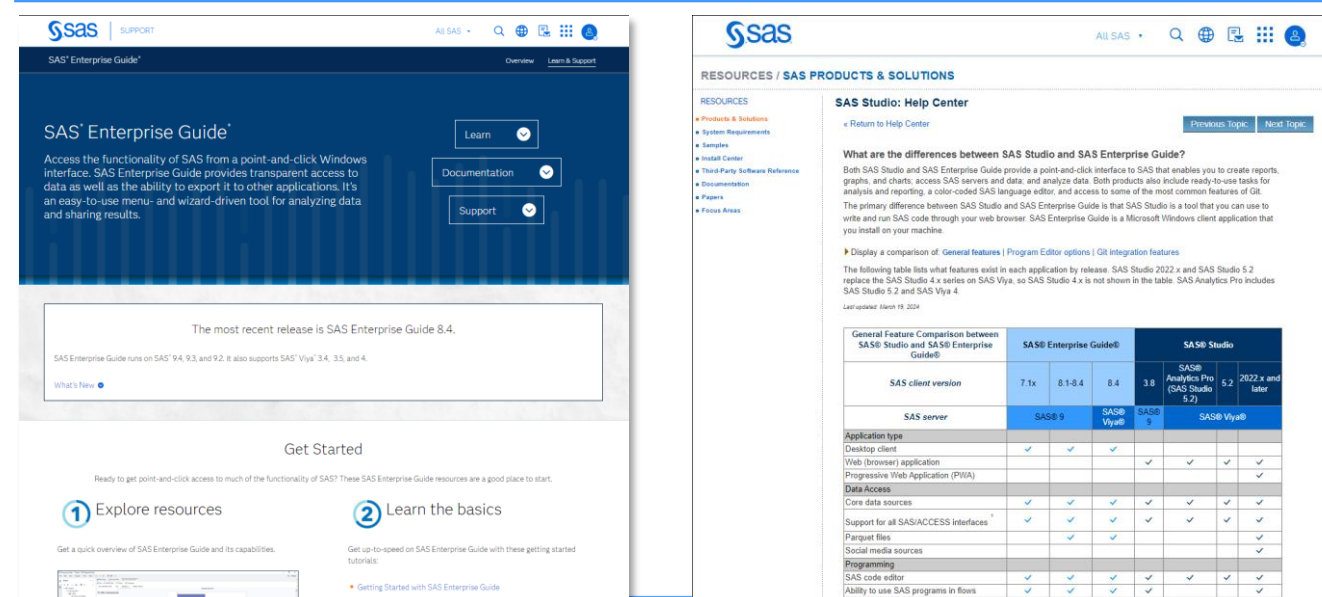


EG on www.sas.com

March 19

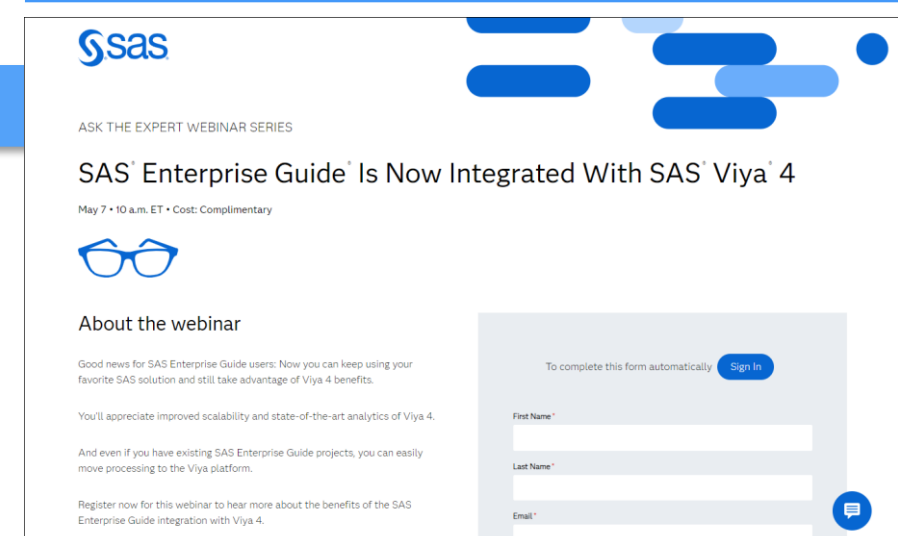


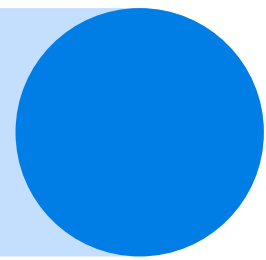
EG on support.sas.com



Ask the Expert webinar

May 7

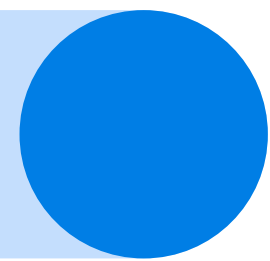




EG integration with Viya 4

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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