



SAS 9 Content Assessment

Introduction and Overview

Shannon Moore

Senior Systems Engineer, SAS

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Senior Systems Engineer, SAS

As a charter member of the Customer Success organization, Shannon helped create the strategy and practices of this post-sales group. The team's goal is to help with the adoption and modernization of customers' SAS solutions. Moore frequently speaks at users groups events and customer sites, either in person or via the web, on a wide range of topics including business analytics, system architecture, enhancing graphics and report output, and software updates.



Plan



Deploy



Migrate

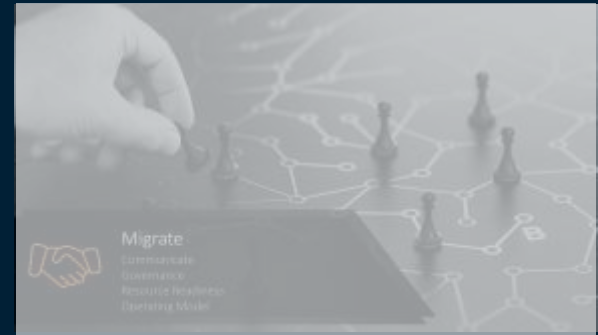


Plan for your migration

Plan

Deploy

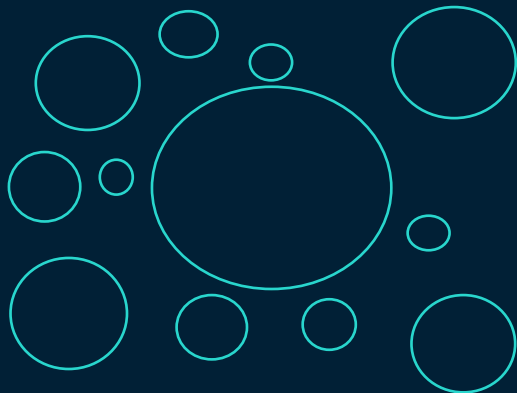
Migrate



SAS 9 Content Assessment

Answer key questions on the road to modernization

What do I have and how am I using it?



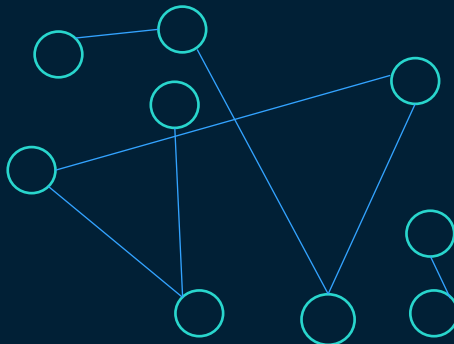
Inventory

Profile

Summarize SAS Log Steps

Gather SAS Code

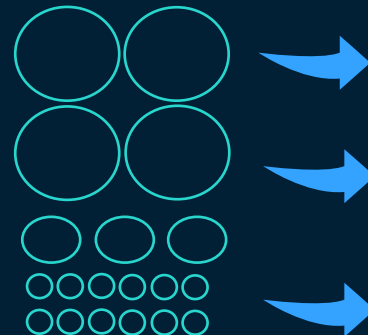
Will my code work in SAS Viya?



Code Check

Code Check for Internationalization

What is my ideal migration path?



Modify SAS Code

Create SAS Packages

Create FAR Packages

The SAS 9 Content Assessment helps organizations understand the state of their SAS 9 systems.



SAS 9 Content Assessment helps organizations understand their SAS 9.4 systems

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Counts and collects data about what exists on the SAS 9 system.

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Provides details about selected SAS artifacts.

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Validates that code will migrate to SAS Viya.

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SAS 9 Code Check for Internationalization

Finds internationalization (I18N) issues in SAS programs.

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SAS 9 Publish

Prepares results for reporting.

7

SAS 9 Summarize SAS Log Steps

Summarizes SAS 9 log steps to analyze SAS Code for optimization when used in SAS Viya.

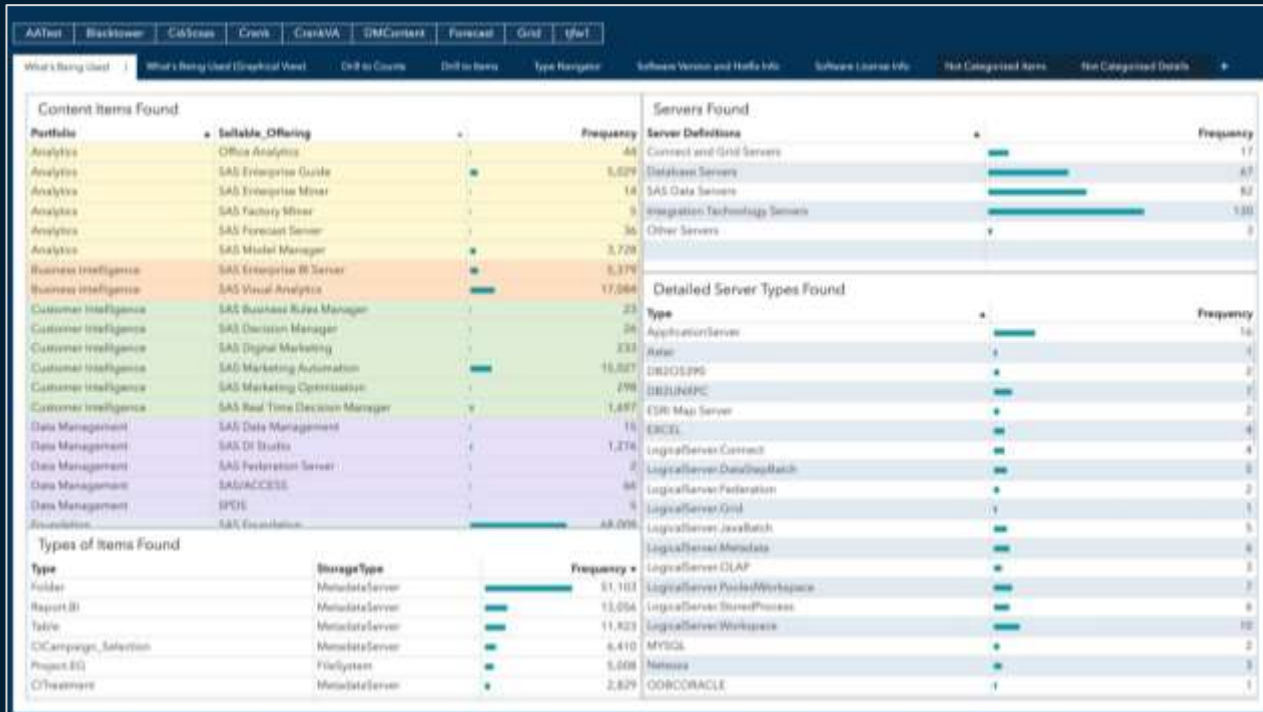
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SAS 9 System Evaluation

Analyzes SAS 9.4 system and configuration details to identify known deployment issues.

SAS 9 Inventory

SAS 9 Inventory counts artifacts and content on your SAS 9.4 system.



SAS 9 Content Assessment helps organizations understand their SAS 9.4 systems

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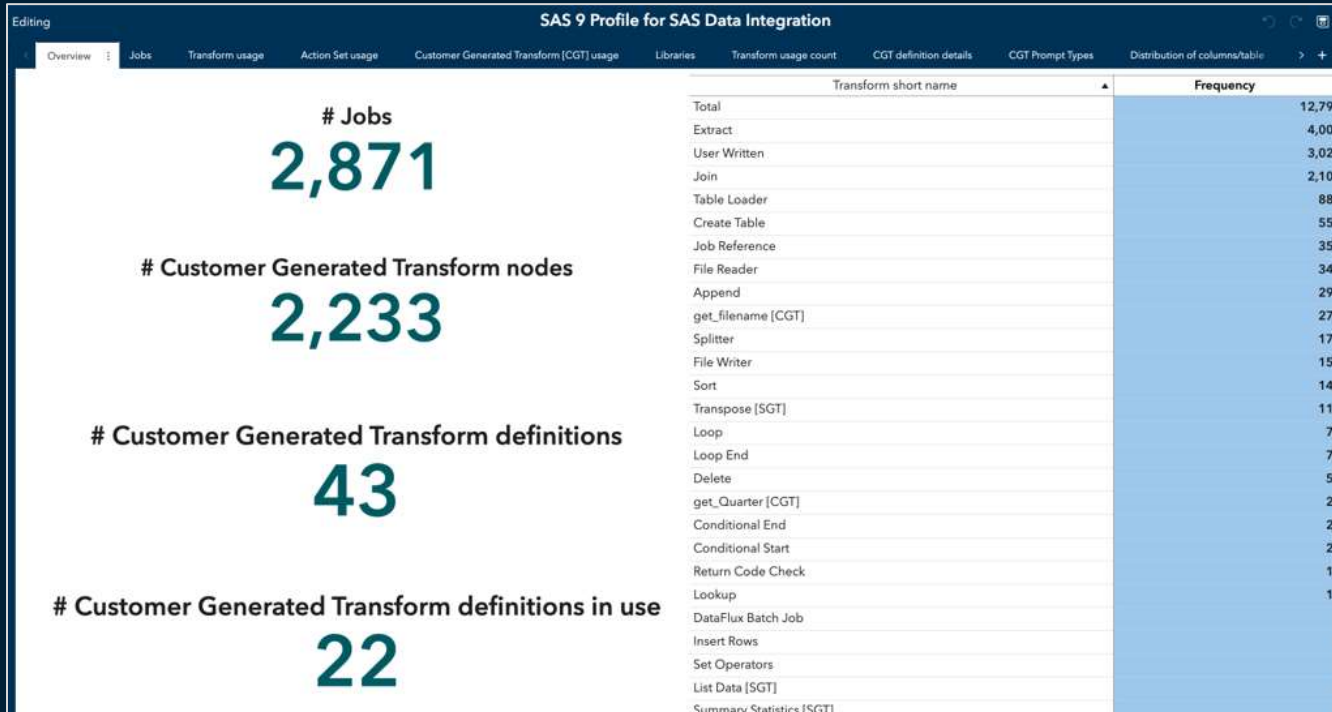
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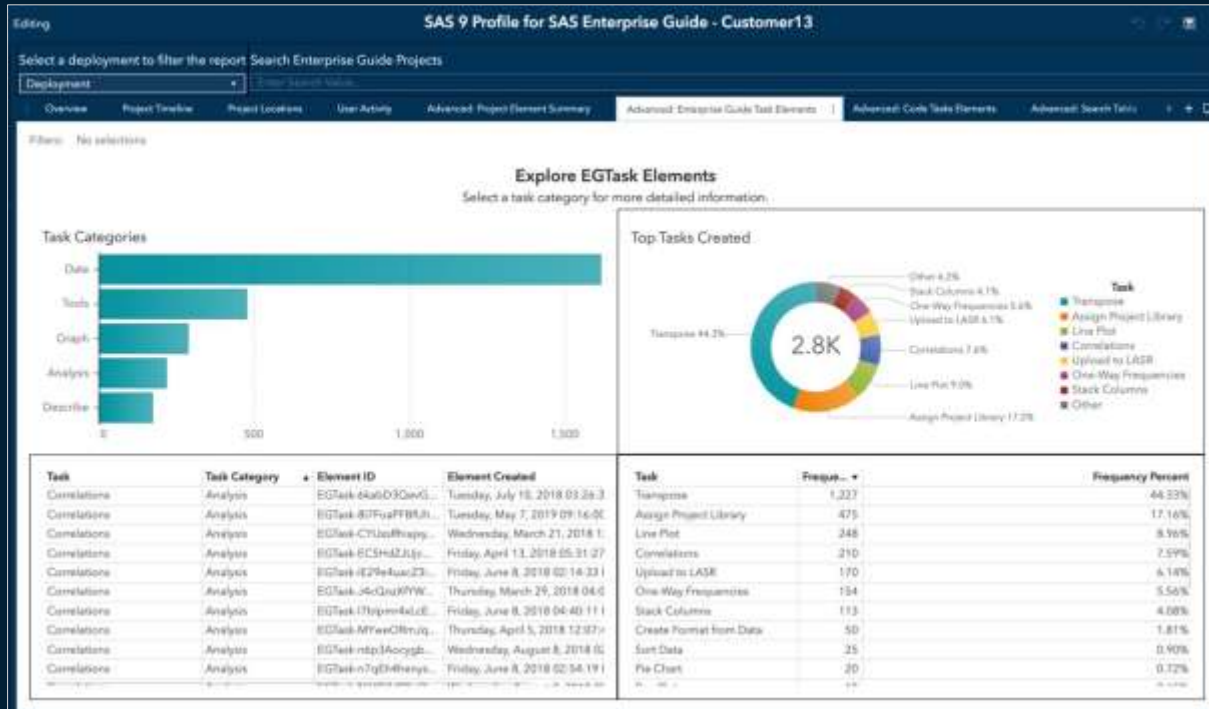
SAS 9 Profile

SAS 9 Profile takes a deeper dive, looking at the details of your SAS artifacts.



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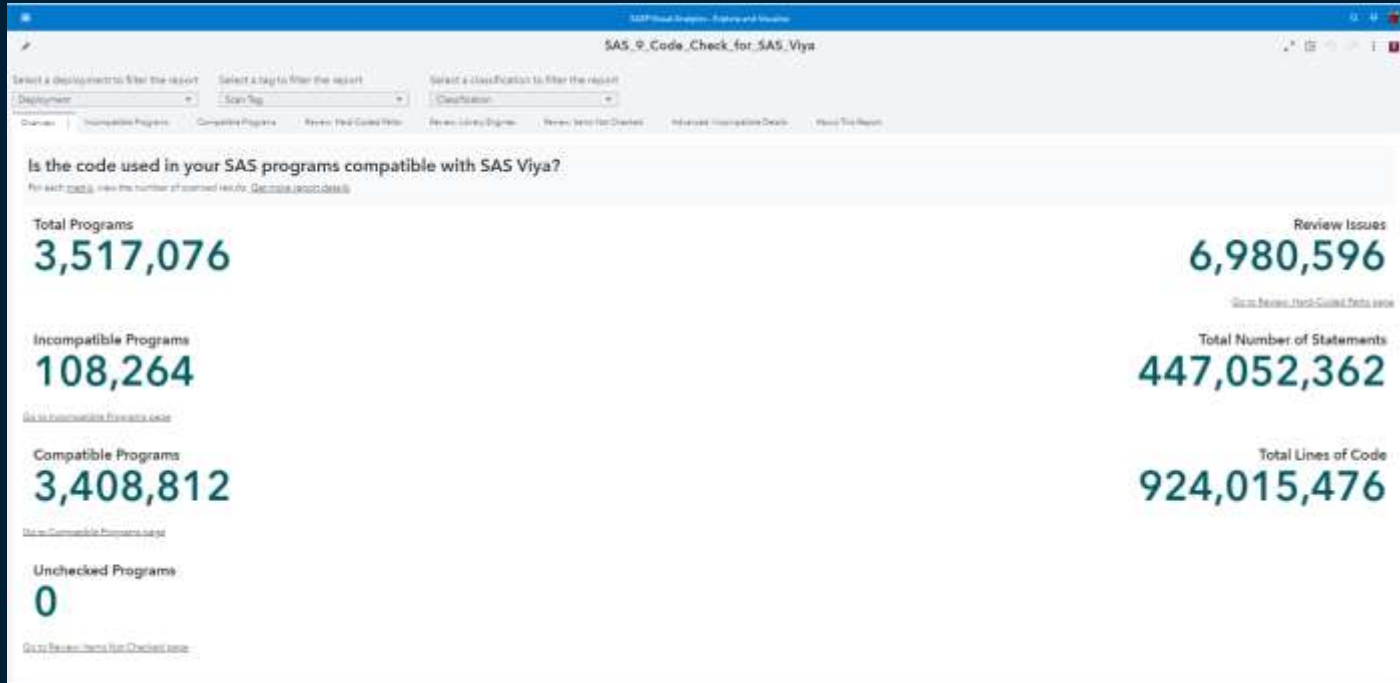
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SAS 9 Code Check

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The screenshot displays the SAS 9 Code Check interface for a SAS Viya Report. The main heading is "Which SAS 9 library engines are used in your SAS programs?". Below this, there is a table with columns for "Library Engine", "Library Engine", "Full Program Name", "Statement Line Number", and "Source Code Statement". The table lists various SAS library engines such as BASE, VAR, SASNAME, INPH, SASHELP, SASOLA, and SAS, along with their corresponding program names and statement line numbers. The "Source Code Statement" column shows the actual SAS code used in the programs.

Library Engine	Library Engine	Full Program Name	Statement Line Number	Source Code Statement
<input type="checkbox"/> BASE	SASOLA	(Project)Digital Intelligence Cluster-Memory-DIGITAL_ACTIVATE_PATH...	5	LIBNAME VALBLE SASOLA TAG=HPS PORT=10011 HOST="XXXXXXXXXXXXXXXXXXXX" SIGNER=...
<input type="checkbox"/> VAR	SASOLA	(Project)Digital Intelligence Cluster-Memory-DIGITAL_CLICKSTREAM_DA...	5	LIBNAME VALBLE SASOLA TAG=HPS PORT=10011 HOST="XXXXXXXXXXXXXXXXXXXX" SIGNER=...
<input type="checkbox"/> SASNAME	SASOLA	(Project)Digital Intelligence Cluster-Memory-DIGITAL_PROD_INTEREST ...	5	LIBNAME VALBLE SASOLA TAG=HPS PORT=10011 HOST="XXXXXXXXXXXXXXXXXXXX" SIGNER=...
<input type="checkbox"/> INPH	SASOLA	(Shared)DataLASFICARDATA - Load Job Thu May 23 08:16:24 EDT 2018...	5	LIBNAME VALBLE SASOLA TAG=HPS PORT=10011 HOST="XXXXXXXXXXXXXXXXXXXX" SIGNER=...
<input type="checkbox"/> SASHELP	SASOLA	(Shared)DataLASFICARD - Load Job Thu May 23 08:16:24 EDT 2018...	5	LIBNAME VALBLE SASOLA TAG=HPS PORT=10011 HOST="XXXXXXXXXXXXXXXXXXXX" SIGNER=...
<input checked="" type="checkbox"/> SASOLA	SASOLA	(Shared)DataLASFICARD - Load Job Thu May 23 08:16:24 EDT 2018...	5	LIBNAME VALBLE SASOLA TAG=HPS PORT=10011 HOST="XXXXXXXXXXXXXXXXXXXX" SIGNER=...
<input type="checkbox"/> SAS	SASOLA	(Shared)DataLASFICARD - Load Job Thu May 23 08:16:24 EDT 2018...	5	LIBNAME VALBLE SASOLA TAG=HPS PORT=10011 HOST="XXXXXXXXXXXXXXXXXXXX" SIGNER=...
<input type="checkbox"/> FORLES	SASOLA	(Shared)DataLASFICARD - Load Job Thu May 23 08:16:24 EDT 2018...	5	LIBNAME VALBLE SASOLA TAG=HPS PORT=10011 HOST="XXXXXXXXXXXXXXXXXXXX" SIGNER=...
<input type="checkbox"/> SASHELP	SASOLA	(Shared)DataLASFICARD - Load Job Thu May 23 08:16:24 EDT 2018...	5	LIBNAME VALBLE SASOLA TAG=HPS PORT=10011 HOST="XXXXXXXXXXXXXXXXXXXX" SIGNER=...
<input type="checkbox"/> INPH	SASOLA	(Shared)DataLASFICARD - Load Job Thu May 23 08:16:24 EDT 2018...	5	LIBNAME VALBLE SASOLA TAG=HPS PORT=10011 HOST="XXXXXXXXXXXXXXXXXXXX" SIGNER=...
<input type="checkbox"/> EXCEL	SASOLA	(Shared)DataLASFICARD - Load Job Thu May 23 08:16:24 EDT 2018...	5	LIBNAME VALBLE SASOLA TAG=HPS PORT=10011 HOST="XXXXXXXXXXXXXXXXXXXX" SIGNER=...
<input type="checkbox"/> ACCESS	SASOLA	(Shared)DataLASFICARD - Load Job Thu May 23 08:16:24 EDT 2018...	5	LIBNAME VALBLE SASOLA TAG=HPS PORT=10011 HOST="XXXXXXXXXXXXXXXXXXXX" SIGNER=...
<input type="checkbox"/> FDSYSTEM	SASOLA	(Shared)DataLASFICARD - Load Job Thu May 23 08:16:24 EDT 2018...	5	LIBNAME VALBLE SASOLA TAG=HPS PORT=10011 HOST="XXXXXXXXXXXXXXXXXXXX" SIGNER=...
<input type="checkbox"/> RDSOURCE	SASOLA	(Shared)DataLASFICARD - Load Job Thu May 23 08:16:24 EDT 2018...	5	LIBNAME VALBLE SASOLA TAG=HPS PORT=10011 HOST="XXXXXXXXXXXXXXXXXXXX" SIGNER=...



When SAS 9 Code Check is used with SAS 9 Gather SAS Code you can get a comprehensive analysis of your SAS code.



SAS 9 Code Check

Examines any SAS programs with the extension .sas in the specified directory and all subdirectories.



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The screenshot shows the SAS 9 Code Check for SAS Viya Report interface. The main heading is "Which SAS 9 library engines are used in SAS 9 code?". Below this, there is a table with columns for "Library engine" and "Programs". The table lists various SAS library engines and the number of programs that use them. The "BASE" engine is highlighted with a blue bar and has a count of 186.

Library engine	Programs
ACCESS	5
BASE	186
EXCEL	8
JSON	14
PDFRES	10
PYTHON	8
REACTJS	1
SASCREP	7
SASERNAME	16
SASFREE	14
VS	11
XML	30
XMLOD	2

Below the table, there is a section for "Source Code Statement" and "Statement Line Number". The "Statement Line Number" column is highlighted with a blue bar. The "Statement Line Number" column shows the line numbers of the source code statements that use the library engines. The "Statement Line Number" column is highlighted with a blue bar.



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The screenshot shows a window titled "SAS 9 Code Check for SAS Viya Report" with a "What to Fix" dialog box open. The dialog box contains the following text:

Although external references are not an incompatibility issue, they are also listed here for your review because they contain implicit, or explicit, file system references.

Statement Line Number	How to resolve	Source Code Statement
27	Check library support	LIBNAME SASLIB SADIOLA TAG=VAPUBLIC PORT=10031 HOST=*
29	Procedure not supported: DLAP	PROC DLAP CUBE = "New Folder\Star Cube 1" MAX_RETRIES = 1

A "Close" button is visible in the bottom right corner of the dialog box.

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SAS 9 Code Check for SAS Viya Report

Select a deployment to filter the report: Deployment
Select a tag to filter the report: SAS1 Tag
Select a classification to filter the report: Classification

Which SAS 9 elements with hard-coded paths could have migration issues?
Click the graph to filter the table. Macro variables were not evaluated during the code check. Select a button to filter these elements in or out of the table. From the table, view the program name that has path issue, the line number on which to find the statement in the code, and the source code statement from the code.

Before migrating elements with hard-coded paths, verify the hard-coded pathnames that appear are available on the SAS Viya target system.

SAS program element	# SAS Program	Has a macro variable	Has a macro variable
MACRODEF	20		
FILENAME	175		
FILE	176		
LIBNAME	537		

Statement Line Number	Source Code Statement	Full Program Name
231	%let temp=temp;	D:\appsascode\SASHome\SASFoundation\4\appsascode\
232	%let temp=temp;	D:\appsascode\SASHome\SASFoundation\4\appsascode\
234	%let temp=temp;	D:\appsascode\SASHome\SASFoundation\4\appsascode\
671	%let temp=temp; end=ast;	D:\appsascode\SASHome\SASFoundation\4\appsascode\
154	%let temp=temp; end=ast;	D:\appsascode\SASHome\SASFoundation\4\appsascode\
179	%let temp=temp; end=ast;	D:\appsascode\SASHome\SASFoundation\4\appsascode\
89	%let temp=temp; end=ast;	D:\appsascode\SASHome\SASFoundation\4\appsascode\
519	%let temp=temp; end=ast;	D:\appsascode\SASHome\SASFoundation\4\appsascode\
147	%let temp=temp; end=ast;	D:\appsascode\SASHome\SASFoundation\4\appsascode\
112	%let temp=temp; end=ast;	D:\appsascode\SASHome\SASFoundation\4\appsascode\
239	%let temp=temp; end=ast;	D:\appsascode\SASHome\SASFoundation\4\appsascode\
246	%let temp=temp; end=ast;	D:\appsascode\SASHome\SASFoundation\4\appsascode\



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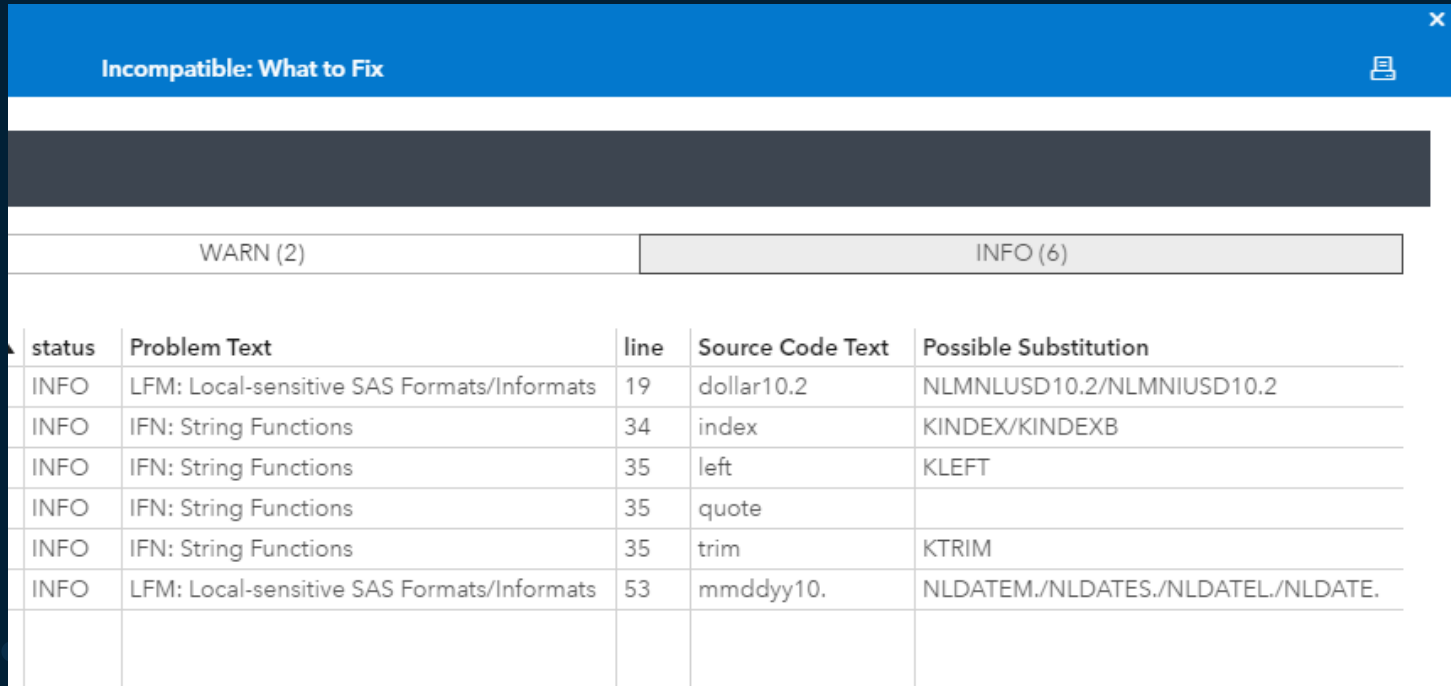
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SAS 9 System Evaluation

Analyzes SAS 9.4 system and configuration details to identify known deployment issues.

SAS 9 Code Check for Internationalization

Is the code used in your SAS files compatible with UTF-8 encoding in SAS Viya



The screenshot shows a window titled "Incompatible: What to Fix" with a close button (X) in the top right corner. Below the title bar is a dark grey bar. Underneath, there are two summary boxes: "WARN (2)" and "INFO (6)". The main content is a table with the following columns: status, Problem Text, line, Source Code Text, and Possible Substitution.

status	Problem Text	line	Source Code Text	Possible Substitution
INFO	LFM: Local-sensitive SAS Formats/Informats	19	dollar10.2	NLMNLUUSD10.2/NLMNIUSD10.2
INFO	IFN: String Functions	34	index	KINDEX/KINDEXB
INFO	IFN: String Functions	35	left	KLEFT
INFO	IFN: String Functions	35	quote	
INFO	IFN: String Functions	35	trim	KTRIM
INFO	LFM: Local-sensitive SAS Formats/Informats	53	mmddy10.	NLDATEM./NLDATES./NLDATEL./NLDATE.

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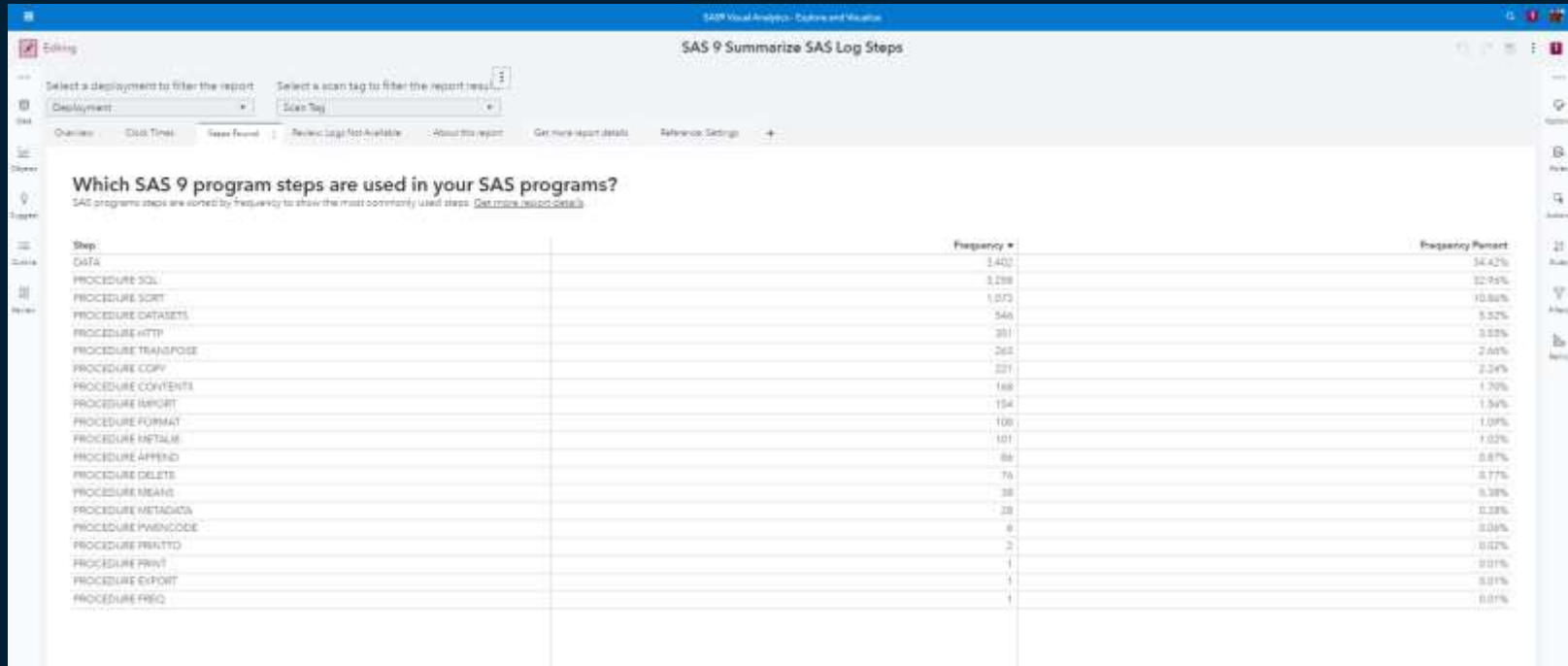
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SAS 9 Summarize SAS Log Steps

Parses SAS 9 Batch Server, Store Process Server, Workspace Server Logs and logs end-users save to disk with a file extension of “.log”



SAS 9.4

Download the SAS 9 Content Assessment

The screenshot shows the SAS Support website interface. At the top, there is a navigation bar with the SAS logo, the word 'SUPPORT', and several utility icons (user profile, globe, envelope, grid, search). Below the navigation bar, the page title is 'SUPPORT / DOWNLOADS & HOT FIXES'. On the left side, there is a sidebar menu with categories like 'SUPPORT', 'Manage Tracks', 'SAS Administrators', 'Security Bulletins', 'License Assistance', 'Manage My Software Account', 'Downloads & Hot Fixes', and 'Knowledge Base'. The 'Downloads & Hot Fixes' category is expanded, showing sub-items for SAS System Software, SAS DataFlux Software, JMP Software, Mobile Device Software, Third Party Software, Additional Products, and Hot Fixes. The main content area is titled 'All Downloads' and 'Downloads', with the specific download 'SAS 9 Content Assessment 2022.1.1' highlighted. Below the title, there is a brief description of the assessment tool and a note to select the appropriate item from the table. The table has columns for Platform, Description, Request Download, Size, Release Date, and README. Three rows are listed for different operating systems: 64-bit enabled AIX, 64-bit enabled Linux, and 64-bit enabled Windows. At the bottom of the page, there is a note to contact the Product Support Group for questions.

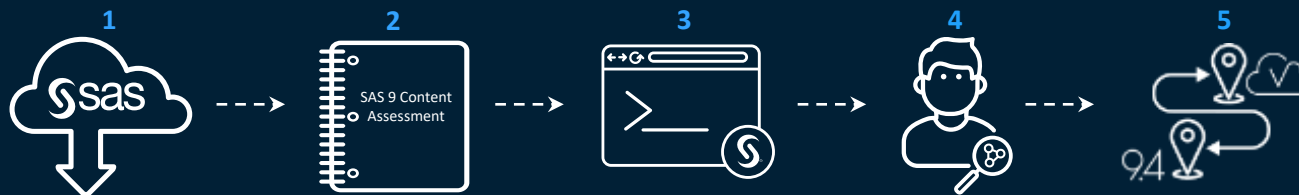
SAS 9 Content Assessment 2022.1.1

Platform	Description	Request Download	Size	Release Date	README
64-bit enabled AIX	SAS 9 Content Assessment 2022.1.1 for AIX	SAS9ContentAssessment.2022.1.1.aix.tar	66.6 MB	2022-05	pdf
64-bit enabled Linux	SAS 9 Content Assessment 2022.1.1 for LAX	SAS9ContentAssessment.2022.1.1.lax.igz	80.3 MB	2022-05	pdf
64-bit enabled Windows	SAS 9 Content Assessment 2022.1.1 for Windows	SAS9ContentAssessment.2022.1.1.win.zip	80.5 MB	2022-05	pdf

For questions you may have about this download, please contact our Product Support Group

<https://support.sas.com/downloads/package.htm?pid=2465>

SAS 9 Content Assessment Steps



1. Download SAS 9 Content Assessment to a directory.
2. Read the [SAS 9 Content Assessment documentation](#) and review prerequisites.
3. Run SAS 9 Content Assessment per instructions in the documentation.
4. Validate the SAS 9 Content Assessment output.
5. Analyze the reports to create a plan.

Q&A

Please submit your questions using the Q&A icon located in the menu at the bottom of your screen

