## **SAS 9 Content Assessment**

Jarno Lindqvist, FANS 8.6.2021



## Assessment – Prepare for Migration

Migration is moving data and content from one environment to another. This could include moving to the same or a new version of the software.





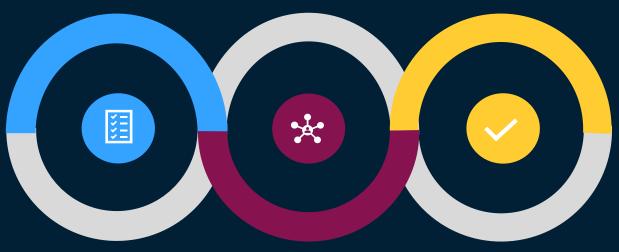
## Steps from Assessment to Migration





### 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**

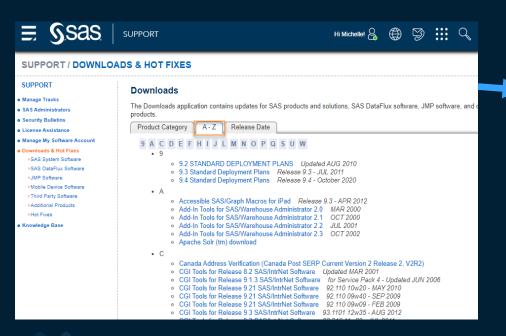
Provides details of SAS artifacts identified

#### **SAS 9 Code Check**

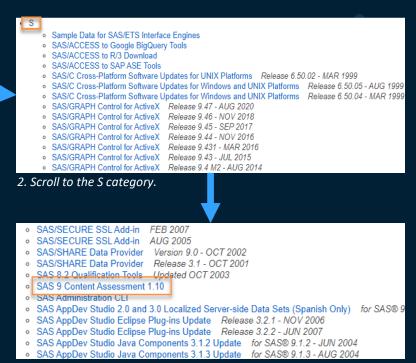
Identifies issues with SAS code that may be incompatible with SAS® Viya®



### Find it on support.sas.com



1. Navigate to Downloads & Hot Fixes and choose the A-Z tab. https://support.sas.com/downloads/package.htm?pid=2465#



3. Find the SAS 9 Content Assessment download.



### SAS 9 Content Assessment Download Page

All Downloads

#### **Downloads**

SAS 9 Content Assessment 1.10

SAS® 9 Content Assessment is a collection of applications designed to examine the characteristics of your SAS® 9 system. Each application examines your SAS 9 system for relevant information, gathers key details, and produces results from each part of the assessment.

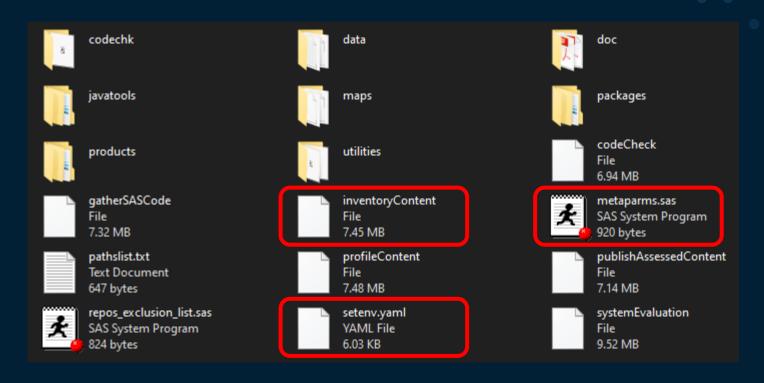
To begin the download process, select the item in the table below which best meets your needs.

SAS 9 Content Assessment 1.10							
Platform	Description	Request Download	Size	Release Date	ReadME		
64-bit enabled AIX	SAS Content Assessment 1.10 for AIX	SAS9ContentAssessment.v1.10.aix.tar	47.4 MB	2021-02	pdf		
64-bit enabled Linux	SAS Content Assessment 1.10 for LAX	SAS9ContentAssessment.v1.10.lax.tgz	58.9 MB	2021-02	pdf		
64-bit enabled Windows	SAS Content Assessment 1.10 for Windows	SAS9ContentAssessment.v1.10.win.zip	58.5 MB	2021-02	pdf		
OT DIT CHADICA WINDOWS	SAS CONCINASCOSMENT 1. TO TO! WINDOWS	CACCOMICITAGE SATISFIEL VI. TO. WIII.ZIP	00.0 NID	2021-02	PC		

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



## What you get in the Content Assessment download





### Preparation for Content Assessment

Content Assessment runs as command line programs on your system.

To prepare, modify the following files:

#### 1. metaparms.sas

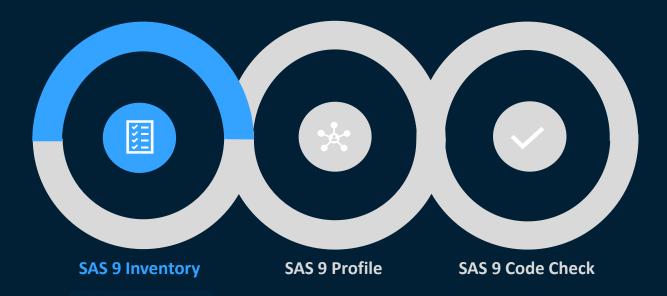
- Metadata server connection parameters
- An optional password to encrypt the resulting data mart

#### 2. setenv.yaml

- SAS\_HOME: the location of the SASHome directory
- ASSESSMENT\_CONFIGDIR: the location of the SAS Configuration
   Directory to be assessed
- ENTERPRISE\_GUIDE\_PROJECTSDIR: any location(s) on this machine to scan for EG projects.



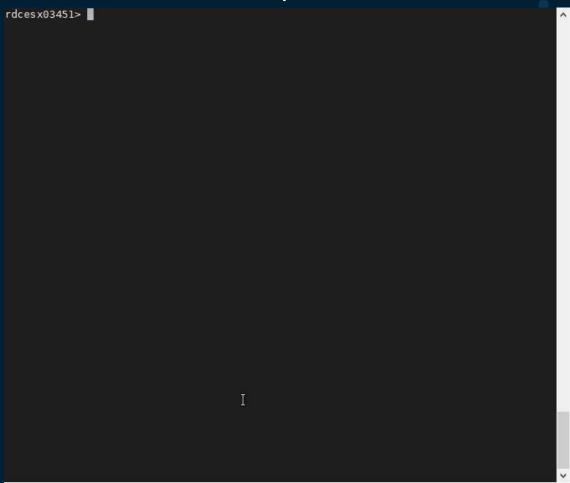
# Inventory SAS 9 content for basic information, such as counts & locations for each item



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

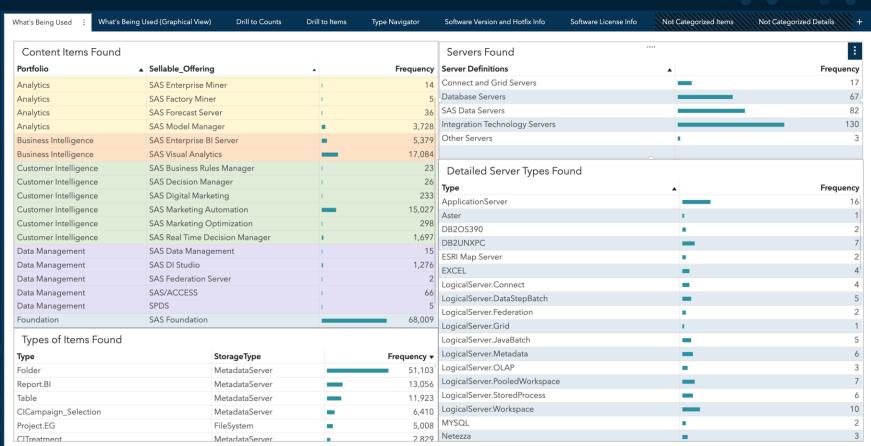


## Inventory Content

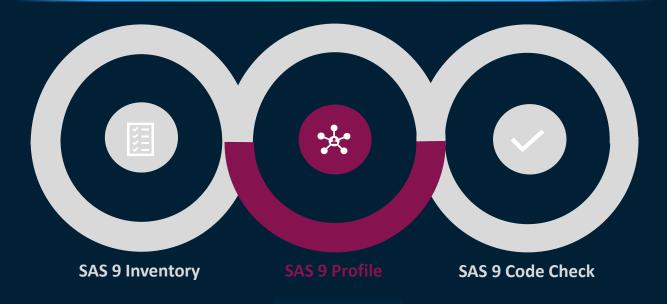




## **SAS 9 Content Assessment: Inventory**



# Profile SAS 9 content to provide details related to SAS artifacts



Provides details of SAS artifacts identified



### **SAS 9 Content Assessment - Artifacts**

We looked at 18 environments across 4 customers

# BI Reports

15,522

# Information Maps

1,620

# OLAP Cubes

456

# DI Studio Jobs

13,629

# Libraries

2,909

# Tables

84,441

### System at-a-glance

Select an item below to explore further

#### **BI Reports**

#### **Information Maps**

Relational Expressions (Pattern Reduction)
OLAP measures used

#### **OLAP Cubes**

<u>Calculated Measures</u> (Pattern Reduction)

<u>Dimensions and Hierarchies</u>

<u>Member level permissions</u> (Pattern Reduction)

#### **Data Integration Studio Jobs**

#### **Stored Processes**

#### <u>Libraries</u> and <u>Tables</u>

Scan performed at Wednesday, May 15, 2019 09:59:35 AM.

# Deployments

18

# Server Contexts

33

# Stored Processes

6,620

# Relational expressions

37,218

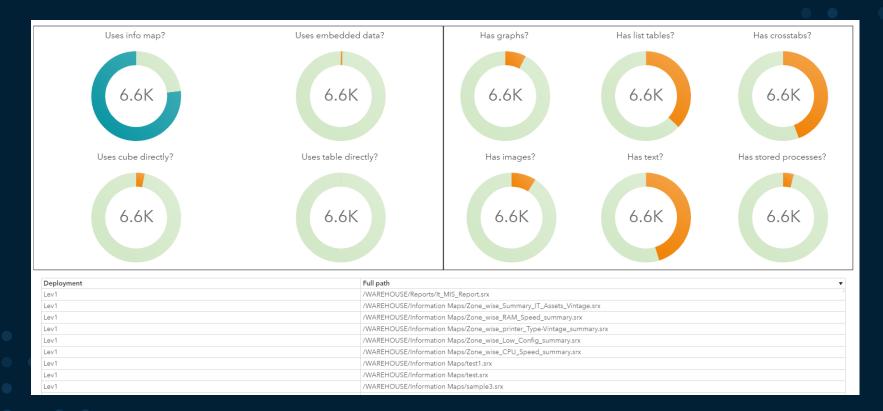
# OLAP Measures

7,311

# OLAP Permissions

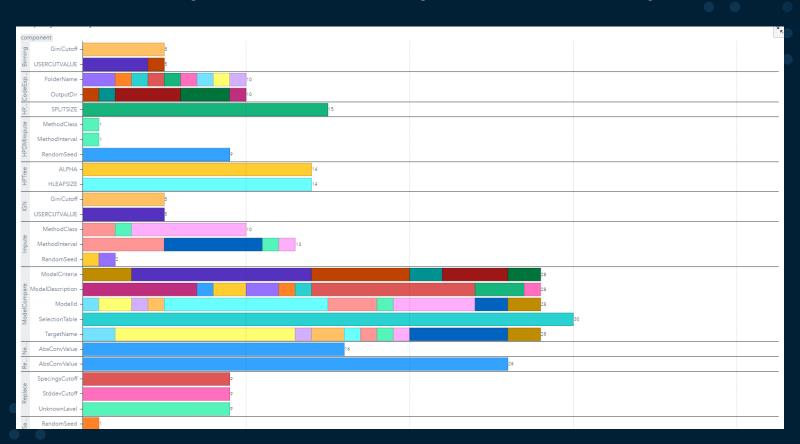
644

## SAS Web Report Studio source and graph usage





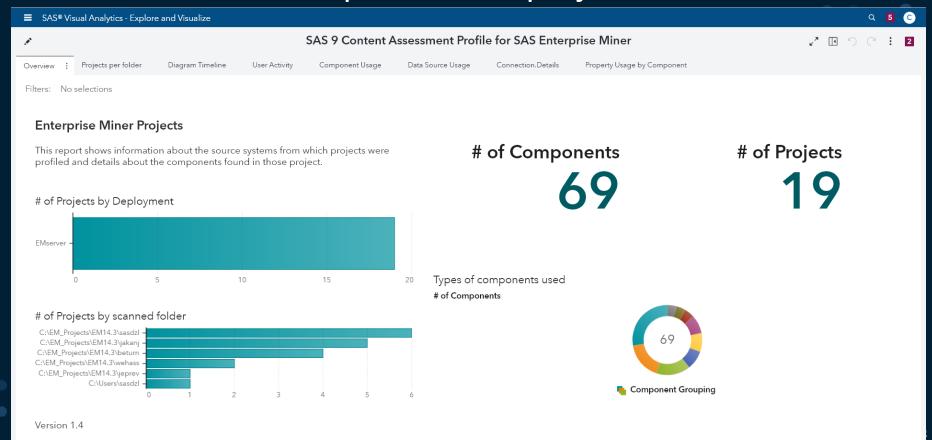
## **SAS Enterprise Miner Components and Properties**





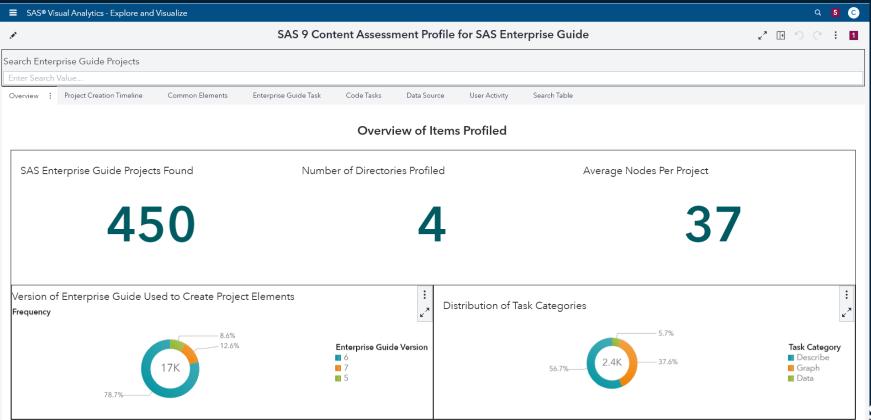
# What did SAS 9 Profile find about my Enterprise Miner projects?





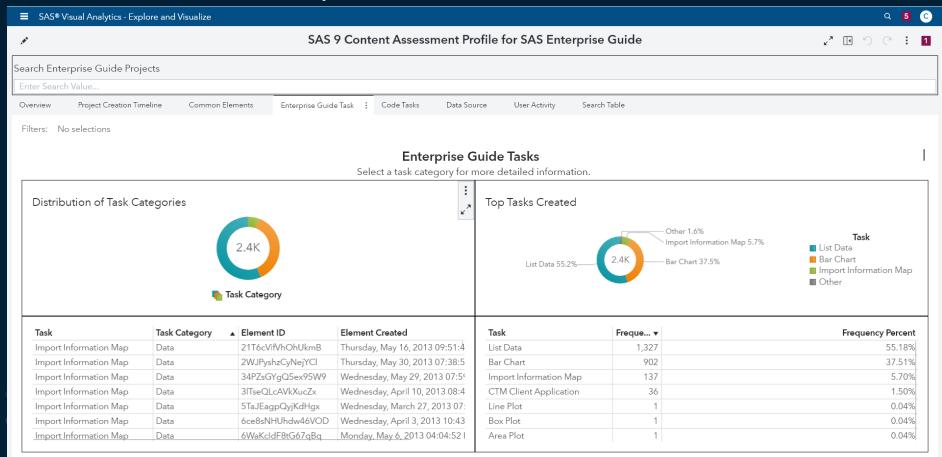


# Which Enterprise Guide items are profiled?



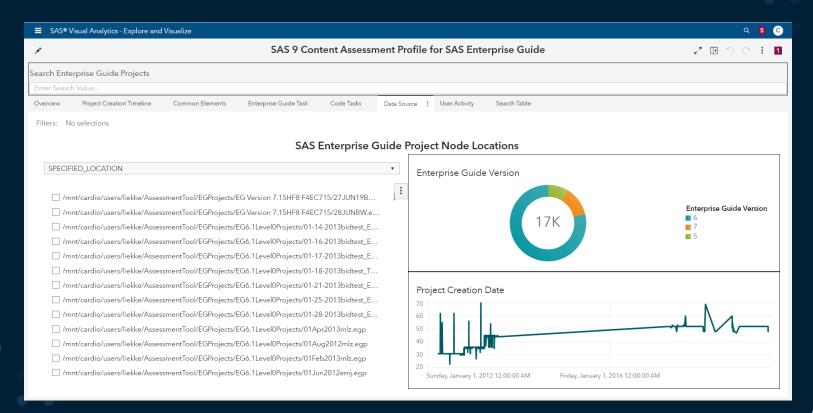


# Which Enterprise Guide tasks are used most?





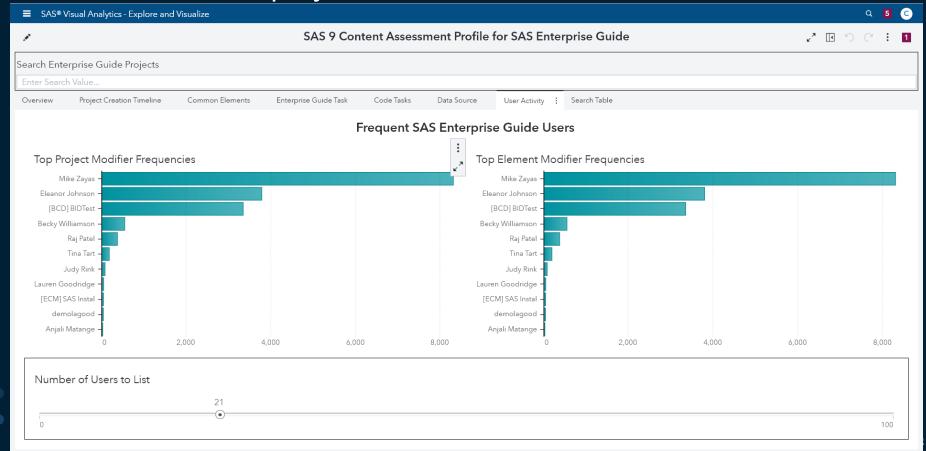
# Where are Enterprise Guide project nodes located?



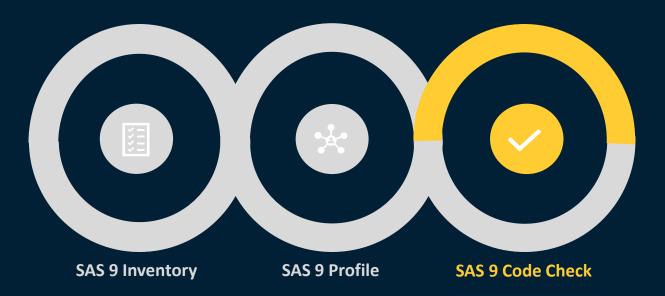


# Which users edit Enterprise Guide projects and elements most?





# Code Check SAS 9 to surface issues related to SAS Code

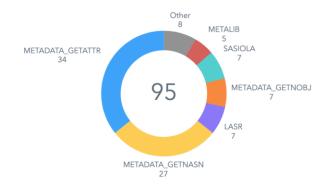


Identifies issues with SAS code that may be incompatible with SAS® Viya®



## SAS 9 Code Check – Code changes needed?

#### Which SAS 9 elements by name have code support issues in SAS Viya?

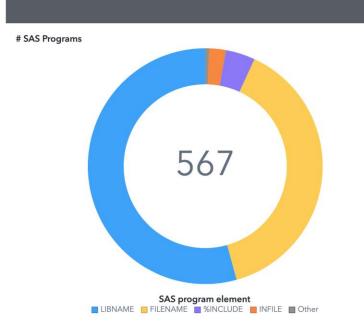


SAS program element	Full program name	Source code statement
UNIVARIATE	$\verb \cardio DIS_testing  assessment \SASProgs \or \samps rc\en \ools chrt. sas$	proc univariate;
METADATA_GETNASN	$\verb \cardio DIS_testing  assessment  Phase I-Profiling  ViyaReadiness Utility  new run-LASR$	$code\_items = metadata\_getnasn (infomap\_uri, "SourceCode", i\_code, code\_uri);$
RISK	$\verb \cardio DIS_testing  assessment  SASProgs  risk  ucmacros  en  rdui\_idx\_xref. sas  for the continuous cont$	$create\ table\ \&dest\_table\ (label="identify\ columns\ for\ xref\ lookups\ by\ api")\ (\ OBJECT\_TYPE\ num\ "the\ internal\ numeric\ valled)$
METADATA_GETNASN	$\verb \cardio DIS_testing  assessment  Phase I-Profiling  ViyaReadiness Utility  new run-LASR$	do while (metadata_getnasn(tree_uri,"ParentTree",1,parent_uri)>0);
METADATA_GETNOBJ	$\verb \cardio DIS_testing  assessment  Phase I-Profiling  ViyaReadiness Utility  new run-LASR$	$gen\_tform\_rc = metadata\_getnobj("omsobj:Prototype?@PublicType='GeneratedTransform'", i\_gen\_tform\_obj, gen\_tform\_obj, gen\_tfo$
METADATA_GETNOBJ	$\verb \cardio DIS_testing  assessment  Phase I-Profiling  ViyaReadiness Utility  new run-LASR$	$in fomap\_items = metadata\_getnobj("omsobj: Transformation? @Public Type\ contains\ 'Information Map'",\ i\_infomap\_obj,\ information Map''',\ i\_infomap\_obj,\ information Map'''',\ i\_infomap\_obj,\ information Map''',\ i\_infomap\_obj,\ information Map'''',\ i\_infomap\_obj,\ information Map''''',\ i\_infomap\_obj,\ information Map'''',\ i\_infomap\_obj,\ information Map'''',\ i\_infomap\_obj,\ information Map'''',\ i\_infomap\_obj,\ information Map''''',\ i\_infomap\_obj,\ information Map''''',\ i\_infomap\_obj,\ information Map'''',\ i\_infomap\_obj,\ information Map''''',\ i\_infomap\_obj,\ information Map''''',\ i\_infomap\_obj,\ information Map''''',\ i\_infomap\_obj,\ information Map'''''',\ i\_infomap\_obj,\ information Map'''''',\ i\_infomap\_obj,\ information Map''''''''''''''''''''''''''''''''''''$
ACCESS	\\cardio\DIS testing\assessment\SASProgs\dbi\sampsrc\en\PCFReadDatabase.sas	libname db access "&srcdb" access=readonly;

## SAS 9 Code Check – Check paths for access

#### Which SAS 9 elements with hard-coded paths could have code support issues in SAS Viya?

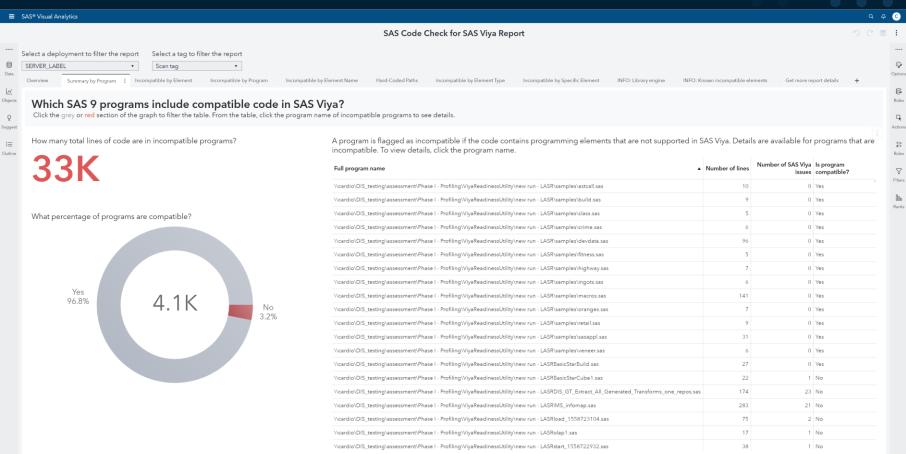
Before migrating elements with hard-coded paths, verify the hard-coded pathnames that appear are available on the SAS Viya target system.



	;;;	
SAS program element	Source code statement	Full program name
LIBNAME	LIBNAME olap BASE "/tstgen/wky/tst-v920/olap/testsio/lax";	\\cardio\DIS_testing\assessment\Phase I - Profi
%INCLUDE	%include "&basedir./products/IMS/IMS_InfoMapExpr.sas";	\\cardio\DIS_testing\assessment\Phase I - Profi
FILENAME	filename blob "&outfilesdir./imblob.xml";	\\cardio\DIS_testing\assessment\Phase I - Profi
FILENAME	filename request "&outfilesdir./tmpInput.xml" encoding="utf-8";	\\cardio\DIS_testing\assessment\Phase I - Profi
FILENAME	filename result "&outfilesdir./tmpOutput.xml" encoding="utf-8";	\\cardio\DIS_testing\assessment\Phase I - Profi
%INCLUDE	%include "&basedir./metaparms.sas";	\\cardio\DIS_testing\assessment\Phase I - Profi
%INCLUDE	%include "&basedir./definitions.sas";	\\cardio\DIS_testing\assessment\Phase I - Profi
%INCLUDE	%include "&basedir./products/IMS/IMS_InfoMapOlapExpr.sas";	\\cardio\DIS_testing\assessment\Phase I - Profi
FILENAME	filename imxmlmap "&mapsdir./exprgeneric.map";	\\cardio\DIS_testing\assessment\Phase I - Profi
%INCLUDE	%include "&basedir./products/IMS/IMS_expressions.sas";	\\cardio\DIS_testing\assessment\Phase I - Profi
LIBNAME	LIBNAME SmallTab BASE "Data/VDB/SmallTables";	\\cardio\DIS_testing\assessment\Phase I - Profi
INFILE	infile 'gdevice.txt' length=len;	\\cardio\DIS_testing\assessment\Phase I - Profi
LIBNAME	LIBNAME dporstar BASE "Data/orstar";	\\cardio\DIS_testing\assessment\Phase I - Profi
LIBNAME	LIBNAME VAPUBLIC SASHDAT PATH="/vapublic" SERVER="vafi	\\cardio\DIS_testing\assessment\Phase I - Profi
LIBNAME	LIBNAME dporstar BASE "Data/orstar";	\\cardio\DIS_testing\assessment\Phase I - Profi
LIBNAME	LIBNAME VAPUBLIC SASHDAT PATH="/vapublic" SERVER="vafi	\\cardio\DIS_testing\assessment\Phase I - Profi
LIBNAME	libname samples base '????????';	\\cardio\DIS_testing\assessment\SASProgs\dbj

## SAS 9 Content Assessment - Code Check





# Understanding SAS 9 to Viya Migration

- Some SAS 9 objects are migrated to new types in Viya
- Some SAS 9 applications are combined into common applications in Viya



## SAS 9 to SAS Viya Migration Examples

SAS 9 SAS Viya **DI Studio Jobs SAS Studio Flows Enterprise Guide Projects SAS Studio Flows Visual Analytics Reports Visual Analytics Reports** SAS Jobs and Visual Analytics Data Views **OLAP Cubes** Relational Information Maps SAS Jobs **Stored Processes** SAS Jobs

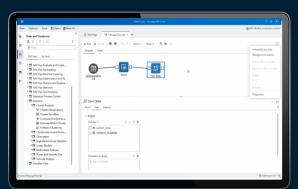


## **SAS Studio – Unified Integrated Development Environment**

SAS Enterprise Guide SAS Data Integration SAS Code, Servers & Libraries



**SAS Studio** 



#### Code

Robust SAS code editor with autocomplete and syntax help

#### Design

Tasks, Queries & Flows

#### **Collaborate**

GIT Integration, Shared Tasks & Snippets



## SAS Code & Data Management – Path Moving Forward

#### **SAS Code**



- SAS 9 Code check able to scan large numbers of SAS programs and determines where SAS Code needs review
- Generates output report like other Assessment modules

#### Stored Process Libraries



- Stored Processes are <u>converted to SAS Viya Job Definition</u>. Many of the converted Viya Jobs run as-is. SAS 9 Code Check can help identify issues
- Most SAS library definitions convert to CAS libraries with authorization.

# **Enterprise Guide**



- Enterprise Guide projects will be migrated to SAS Studio Flows
- Supported migration features will be gradual starting from EG tasks to SAS Program steps, to EG tasks to similar Studio Flow steps.

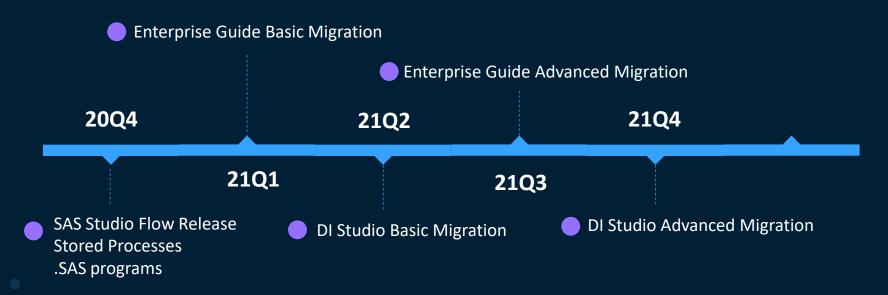
#### Data Integration



- SAS Data Integration Studio will also be migrated to SAS Studio Flows
- Supported migration features will be gradual starting from DI nodes to SAS Program steps, to DI node to similar Studio Flow steps.



## Step-by-Step Roadmap for migration capabilities





## Summary

- Content Assessment tool is free and available to help you start your migration planning
- It helps you understand the effort required to migrate your content to SAS Viya

Also useful for estimating promotions between the same SAS version



# Questions?

sas.com

