

# See What's Possible with SAS® VA Workshop

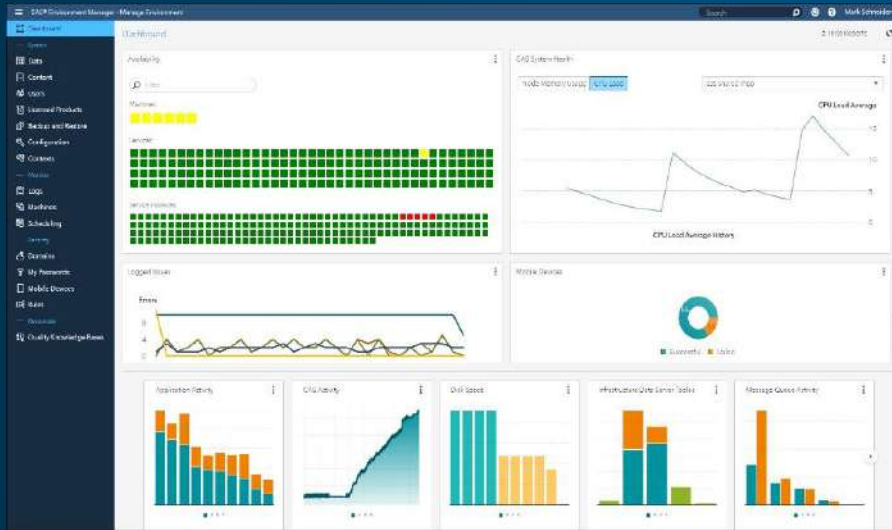
8<sup>th</sup> January 2019 – Afternoon Session



# Managing SAS<sup>®</sup> Viya<sup>®</sup> VA environment



# Governance



- Identity Management (e.g. users, groups)
- Authorization (e.g. data, content, capabilities)
- Row Level Security
- Performance Monitoring
- Auditing

# Initial Administration Tasks

1 Setting up Users and Groups

2 Setting up User Roles

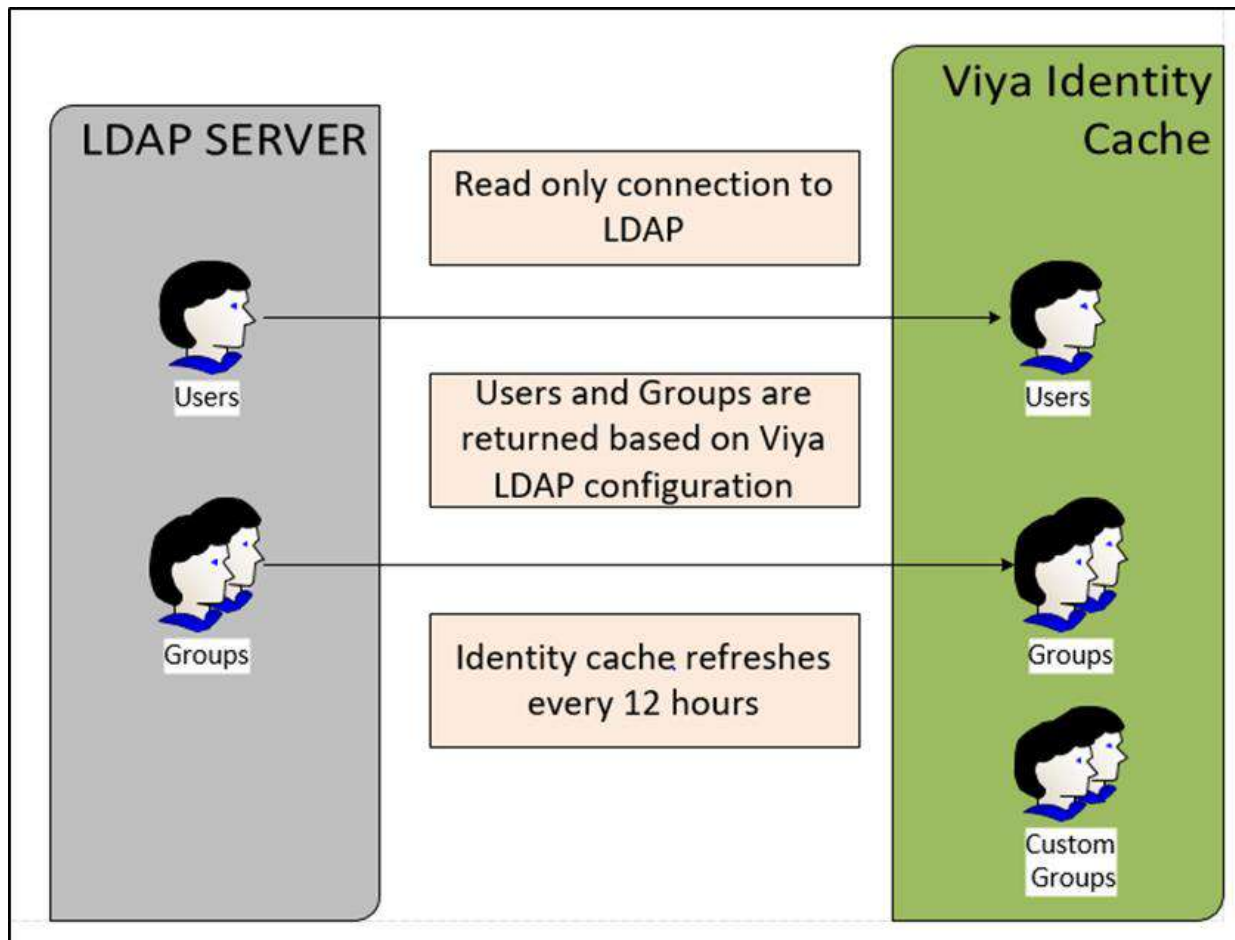
3 Securing Folders and Content

4 Providing Access to Data and Securing Data

5 Promotion of Content

# Users and Groups in Viya

Viya Visual interfaces supports a variety of authentication methods. Regardless of the authentication method selected an LDAP server must be used for identity management



# Users Management LDAP / MS Active Directory



LDAP - uid=Ahmed,ou=users,dc=gelrace,dc=com - Apache Directory Studio

File Edit Navigate Search LDAP Window Help

LDAP Browser

Root DSE (2)

- dc=gelrace,dc=com (2)
  - ou=groups (13)
    - cn=cas
    - cn=Finance
    - cn=gelcorp
    - cn=GELCorpContentAdmins
    - cn=GELCorpSystemAdmins
    - cn=HR
    - cn=Managers
    - cn=powerusers
    - cn=Sales
    - cn=sas
    - cn=sasadmins
    - cn=sasldap
    - cn=sasusers
  - ou=users (32)
    - uid=Alex
    - uid=Amanda
    - uid=cas
    - uid=Delelah
    - uid=Douglas
    - uid=Far

uid=Ahmed,ou=users,dc=gelrace,dc=com

DN: uid=Ahmed,ou=users,dc=gelrace,dc=com

Attribute	Description	Value
objectClass	inetOrgPerson (structural)	
objectClass	organizationalPerson (structural)	
objectClass	posixAccount (auxiliary)	
objectClass	top (abstract)	
cn		Ahmed
gidNumber		2003
homeDirectory		/home/Ahmed
sn		Ahmed
uid		Ahmed
uidNumber		4005
displayName		Ahmed
employeeNumber		P301
l		Cory
mail		Ahmed@gelcorp.com
o		GELCorp
title		Platform Administrator
userPassword		Plain text password

Outline

- uid=Ahmed,ou=users,dc=gel
  - userPassword (1)
  - homeDirectory (1)
  - mail (1)
  - displayName (1)
  - objectClass (4)
  - cn (1)
  - l (1)
  - title (1)
  - o (1)
  - employeeNumber (1)
  - uid (1)
  - uidNumber (1)
  - sn (1)
  - gidNumber (1)

Connections

- gelraceldap

Modification Logs

```
#!CONNECTION ldap://sasviya01.race.sas.com:389
#!DATE 2019-01-04T02:34:54.203
#!ERROR [LDAP: error code 50 - no write access to parent]
dn: uid=Ahmed,uid=Ahmed,ou=users,dc=gelrace,dc=com
changetype: add
o:: R0VMQ29ycCAg
cn:: Ahmed
```

Search Logs

Error Log

Progress

- Rename Entry (Finished at 9:00)
- Error while re...to old entry

# LDAP Integration

## One Time Setup during Configuration



IT Administrator

SAS® Environment Manager - Manage Environment

Search

Configuration

View: Basic services

Filter

- Backup service
- Identities service
- Mail service

The following configuration instances are required for the service "Identities service". To see all configuration instances for this service, select this service from the "All services" view in the navigation pane:

Filter

customEnvironmentPro... (none)

host:\* intviya01.race.sas.com  
The host name of the LDAP server to connect to.

password:\* .....  
The password for logging on to the LDAP server. If anonymousBind is enabled, specify a value of 'none'.

pool.enabled:\* ☐  
Enables pooling of LDAP connections.

# User Group from LDAP / MS Active Directory

The screenshot shows the SAS Environment Manager interface. The top navigation bar includes the title 'SAS® Environment Manager - Manage Environment', a search bar, and user information 'sasboot'. The left sidebar contains a list of user groups, with 'HR' highlighted. The main content area displays the details for the 'HR' group, including a group icon, ID, and a list of members.

**Users**

View: Groups Filter

Recently viewed: HR

**HR**

ID: HR

Description:

**Members (10)** **Member Of (1)** **Advanced**

- CAS System Account
- Delilah
- geladm
- Hamish
- Hazel
- Heather
- Helena
- Henrik



# User Login from LDAP / MS Active Directory

The screenshot displays the SAS Environment Manager interface for managing users. The top navigation bar includes the title "SAS® Environment Manager - Manage Environment", a search bar, and user information "sasboot". The left sidebar contains various icons for navigation. The main content area is titled "Users" and features a "View: Users" dropdown, a "Filter" search bar, and a list of users: Ahmed, Alex, Amanda, CAS System Account, Delilah, Douglas, Fay, Fernanda, Fiona, Frank, Fred, Hamish, and Hazel. On the right, the "HR" group is selected, showing its details (ID: HR, Description: ) and a list of members (10) including CAS System Account, Delilah, geladm, Hamish, Hazel, Heather, Helena, and Henrik.

SAS® Environment Manager - Manage Environment

Search

sasboot

## Users

View: Users

Filter

- Ahmed
- Alex
- Amanda
- CAS System Account
- Delilah
- Douglas
- Fay
- Fernanda
- Fiona
- Frank
- Fred
- Hamish
- Hazel

### HR

ID: HR

Description:

Members (10) Member Of (1) Advanced

- CAS System Account
- Delilah
- geladm
- Hamish
- Hazel
- Heather
- Helena
- Henrik

# Creating New User Group

## Only for SAS Viya Platform

The screenshot shows the SAS Environment Manager interface. The top navigation bar includes the title 'SAS® Environment Manager - Manage Environment', a search bar, and user information 'sasboot'. The left sidebar contains a vertical menu with icons for various functions, with the 'Users' icon highlighted. The main content area is titled 'Users' and shows a 'View: Custom groups' dropdown, a 'Filter' input, and a list of user groups: 'Application Administrators', 'Data Builders', 'Esri Users', and 'SAS Administrators'. A 'Recently viewed: HR' dropdown is also present. A modal dialog box titled 'New Custom Group' is open in the center, featuring three input fields: 'Name: \*' with the value 'Report Developer', 'ID: \*' with the value 'ReportDevelopers', and 'Description:' with the value 'Users who can create reports and analysis'. At the bottom of the dialog are 'Save' and 'Cancel' buttons. In the background, a list of users is partially visible, including 'Heather', 'Helena', and 'Henrik'.

# Adding Members

The screenshot shows the 'Edit Members for Report Developers' dialog box within the SAS Environment Manager interface. The dialog has a title bar with a close button (X) and a search bar. The main content area is divided into three sections: a filter section on the left, a 'Selected Identities' section in the middle, and a 'Recently viewed' section on the right. The filter section has a dropdown menu set to 'Users' and a list of names: Ahmed, Alex, Amanda, CAS System Account, Delilah, Douglas, Fay, Fernanda, Fiona, and Frank. The 'Selected Identities' section is currently empty, displaying 'No items selected.' and a count of 0. The 'Recently viewed' section shows '(none)'. At the bottom right, there are 'OK' and 'Cancel' buttons. A large exclamation mark icon is centered in the dialog, with the text 'Select an item to view more information.' below it.

SAS® Environment Manager - Manage Environment

Search

sasboot

### Edit Members for Report Developers

Filter by: **Users**

Filter

- Ahmed
- Alex
- Amanda
- CAS System Account
- Delilah
- Douglas
- Fay
- Fernanda
- Fiona
- Frank

**Selected Identities**

No items selected.

Count: 0

Recently viewed: (none)

Select an item to view more information.

OK Cancel

# Initial Administration Tasks

1 Setting up Users and Groups

**2 Setting up User Roles**

3 Securing Folders and Content

4 Providing Access to Data and Securing Data

5 Promotion of Content

# Define User Roles for Custom User Group

SAS® Environment Manager - Manage Environment

Search

Rules

Rules Filter

Apply

Object URI

URI or URI pattern

Container URI

Principal (no filter)

☐ Authenticated User

☐ Everyone

☐ Guest

Choose Identities

Setting (no filter)

Media Type (no filter)

Rule Status (no filter)

Description

Reason

## Edit Rule

Object URI:

Container URI:

Media type:

Principal type:

Principal:

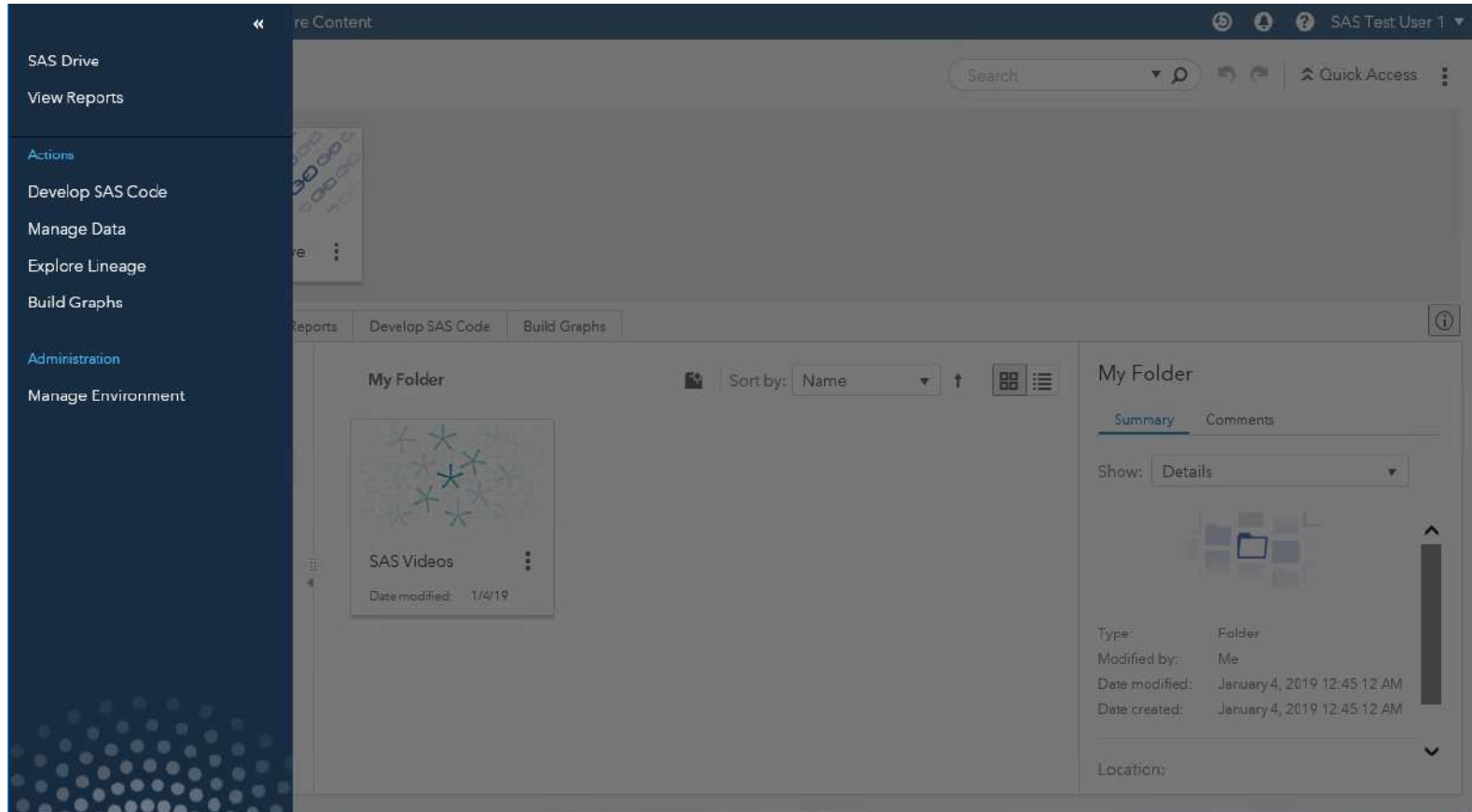
Rule type:

Condition:

Permissions:

Description:

# SAS User Login After Rules Assign



# Initial Administration Tasks

1 Setting up Users and Groups

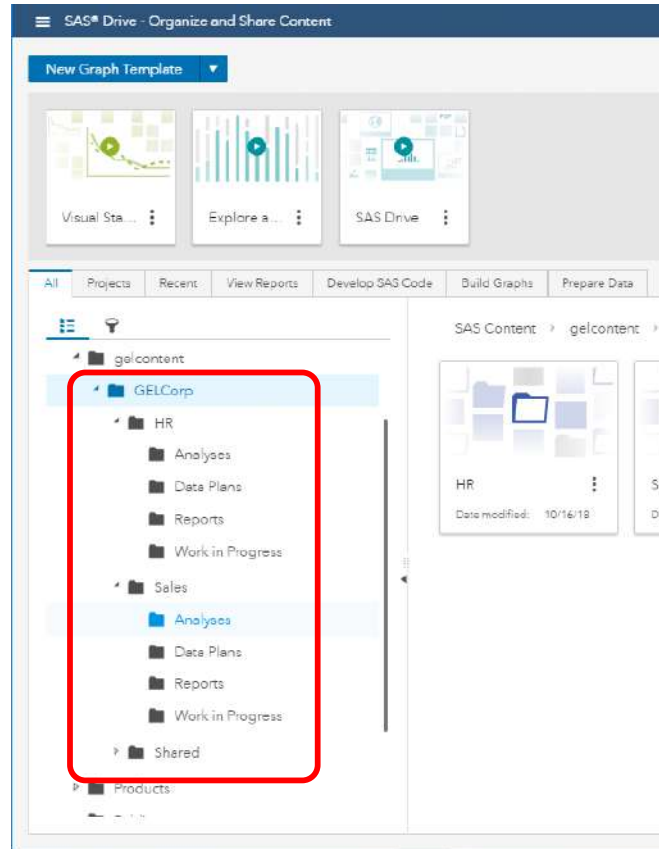
2 Setting up User Roles

**3 Securing Folders and Content**

4 Providing Access to Data and Securing Data

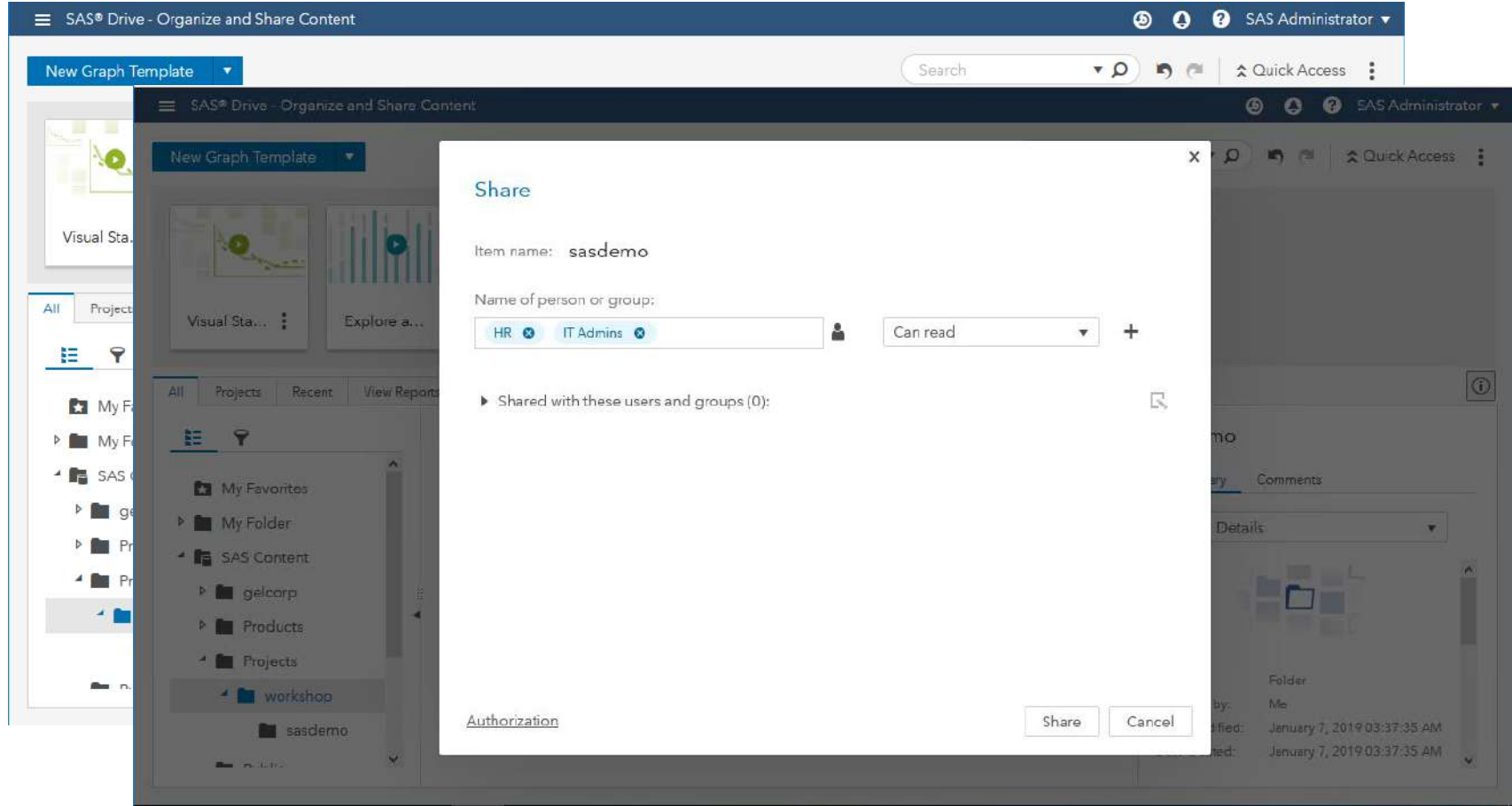
5 Promotion of Content

# Create Customizable Folder Structure

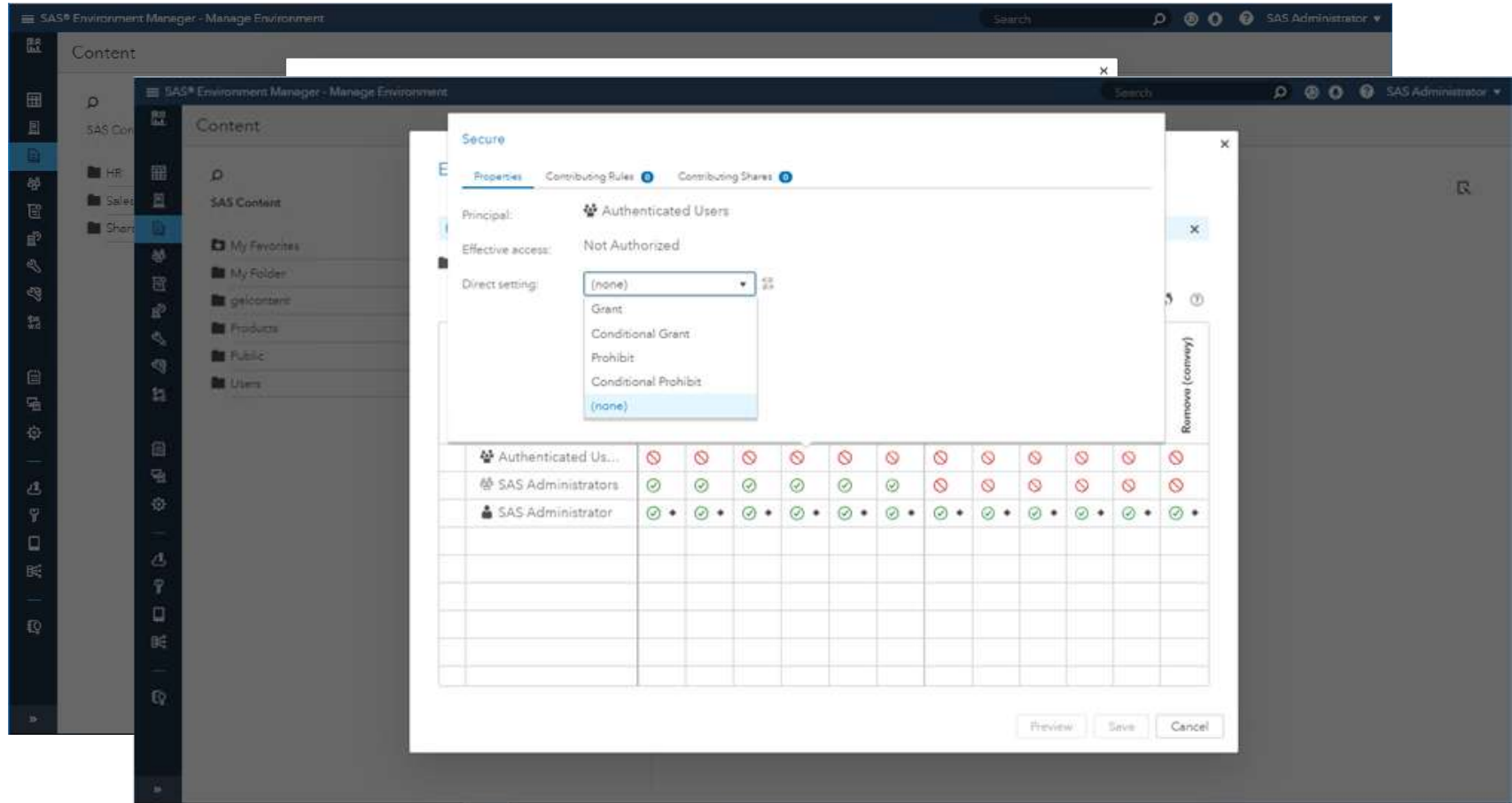




# Share Folder with Others User / User Group



## Assign Access Right (Only Administrator)



# Object Permissions

SAS® Environment Manager - Manage Environment

Search

SAS Administrator

Content

SAS Content

Analyses

Data Plans

Reports

Work in Progress

### Edit Authorization

Inheritance flows to child members from only the second set of permissions.

Analyses

☐ Show horizontal column headings

Principal	Read	Update	Delete	Secure	Add	Remove	Read (convey)	Update (convey)	Delete (convey)	Secure (convey)	Add (convey)	Remove (convey)
Authenticated Us...	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
GELCorp Content...	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HR	✓	✗	✗	✗	✓	✓	✓	✓	✓	✗	✓	✓

Preview Save Cancel

Permissions for this object

Permissions for this object's children

# Initial Administration Tasks

1 Setting up Users and Groups

2 Setting up User Roles

3 Securing Folders and Content

**4 Providing Access to Data and Securing Data**

5 Promotion of Content

# RDBMS Connection Definition

The screenshot displays the SAS Environment Manager interface with the 'Data' section selected. A 'Connection Settings' dialog box is open, allowing the user to define a new connection. The background shows a list of 'Data Sources' with 'cas-shared-default' selected.

**Connection Settings**

Name:  Server:

Type:  Source type:

☒ Persist this connection beyond the current session.

Settings: **Advanced**

Specify the advanced connection information.

Connection domain:

Data transfer mode:

Number of read nodes:

Number of write nodes:

# Database / Schema Privilege

SAS® Environment Manager - Manage Environment

Search

SAS Administrator

## Edit Authorization

hrdl

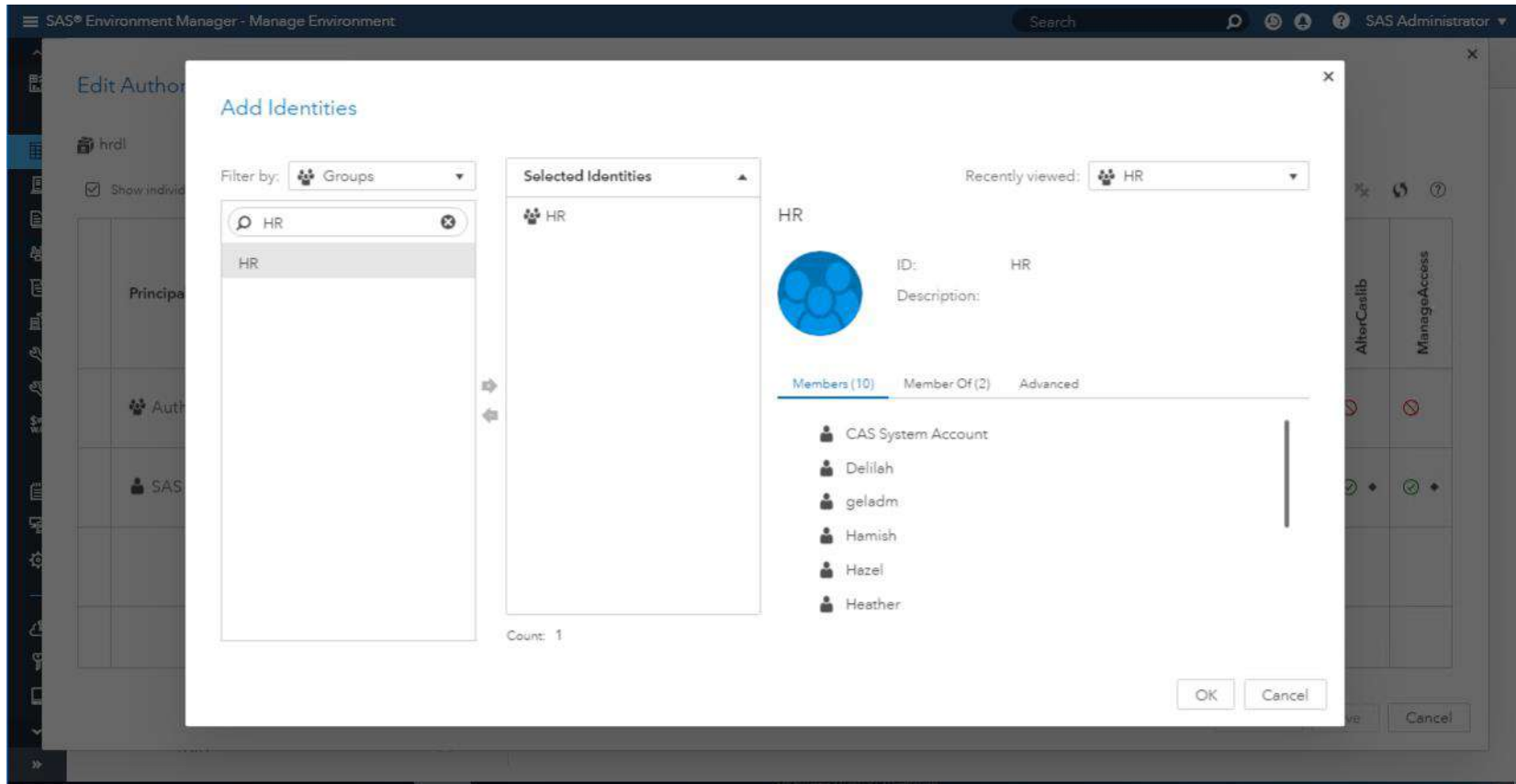
☒ Show individual permissions

☐ Show horizontal column headings

Principal	Access Level	ReadInfo	Select	LimitedPromote	Promote	CreateTable	DropTable	DeleteSource	Insert	Update	Delete	AlterTable	AlterCaslib	ManageAccess
Authenticated Users	No Access 													
SAS Administrator	Full Control 													

Preview Save Cancel

# Adding User/Group Data Access Privilege



# Grant User/Group Data Access Privilege

SAS® Environment Manager - Manage Environment

Search

SAS Administrator

## Edit Authorization

hrdl

Any membership-based impact of unsaved changes is not displayed.

☒ Show individual permissions ☐ Show horizontal column headings

Principal	Access Level	ReadInfo	Select	LimitedPromote	Promote	CreateTable	DropTable	DeleteSource	Insert	Update	Delete	AlterTable	AlterCaslib	ManageAccess
Authenticated Users	No Access	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
SAS Administrator	Full Control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HR	Read	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗

Preview Save Cancel



# Grant User/Group Data Access Privilege

SAS® Environment Manager - Manage Environment

Search

SAS Administrator

## Edit Authorization

hrdl

Any membership-based impact of unsaved changes is not displayed.

☒ Show individual permissions ☐ Show horizontal column headings

Principal	Access Level	ReadInfo	Select	LimitedPromote	Promote	Create Table	DropTable	DeleteSource	Insert	Update	Delete	AlterTable	AlterCaslib	ManageAccess
Authenticated Users	No Access													
SAS Administrator	Full													
HR	Read													

Promote  
Principal: HR

Grant  
Deny  
(none)  
Deny

Preview Save Cancel

HR_SUMMARY
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☐ Show horizontal column headings

Preview Save Cancel

# Row Level Access Control

SAS® Environment Manager - Manage Environment

Search

SAS Administrator

## Edit Authorization

HR\_SUMMARY

☒ Show individual permissions ☐ Show horizontal column headings

Principal	Access Level	ReadInfo	Select	LimitedPromote	CreateTable	DropTable	DeleteSource	Insert	Update	Delete	AlterTable	ManageAccess
Authenticated Users	No Access	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘
HR	Select		✓	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘
Amanda	Row-Level Grant	✓	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘
SAS Administrator	Grant	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Preview Save Cancel

# Filter Condition for Row-Level Security

The screenshot displays the SAS Environment Manager interface. The main window is titled "SAS® Environment Manager - Manage Environment" and shows the "Edit Authorization" page for the "HR\_SUMMARY" dataset. A modal dialog box titled "Row-Level Filter" is open in the center. The dialog contains a "Filter expression:" label and a text input field with the value "branch\_id EQ 'B001'". Below the input field are "OK" and "Cancel" buttons. The background interface shows a table of permissions for various principals, including "Authenticated Users", "HR", "Amanda", and "SAS Administrator". The table has columns for "DeleteSource", "Insert", "Update", "Delete", "Alter Table", and "ManageAccess". The "SAS Administrator" row shows "Full Control" for all operations, while "Amanda" shows "Read" control.

Principal	DeleteSource	Insert	Update	Delete	Alter Table	ManageAccess
Authenticated Users	Deny	Deny	Deny	Deny	Deny	Deny
HR	Deny	Deny	Deny	Deny	Deny	Deny
Amanda	Read	Deny	Deny	Deny	Deny	Deny
SAS Administrator	Full Control	Full Control	Full Control	Full Control	Full Control	Full Control

# Initial Administration Tasks

1 Setting up Users and Groups

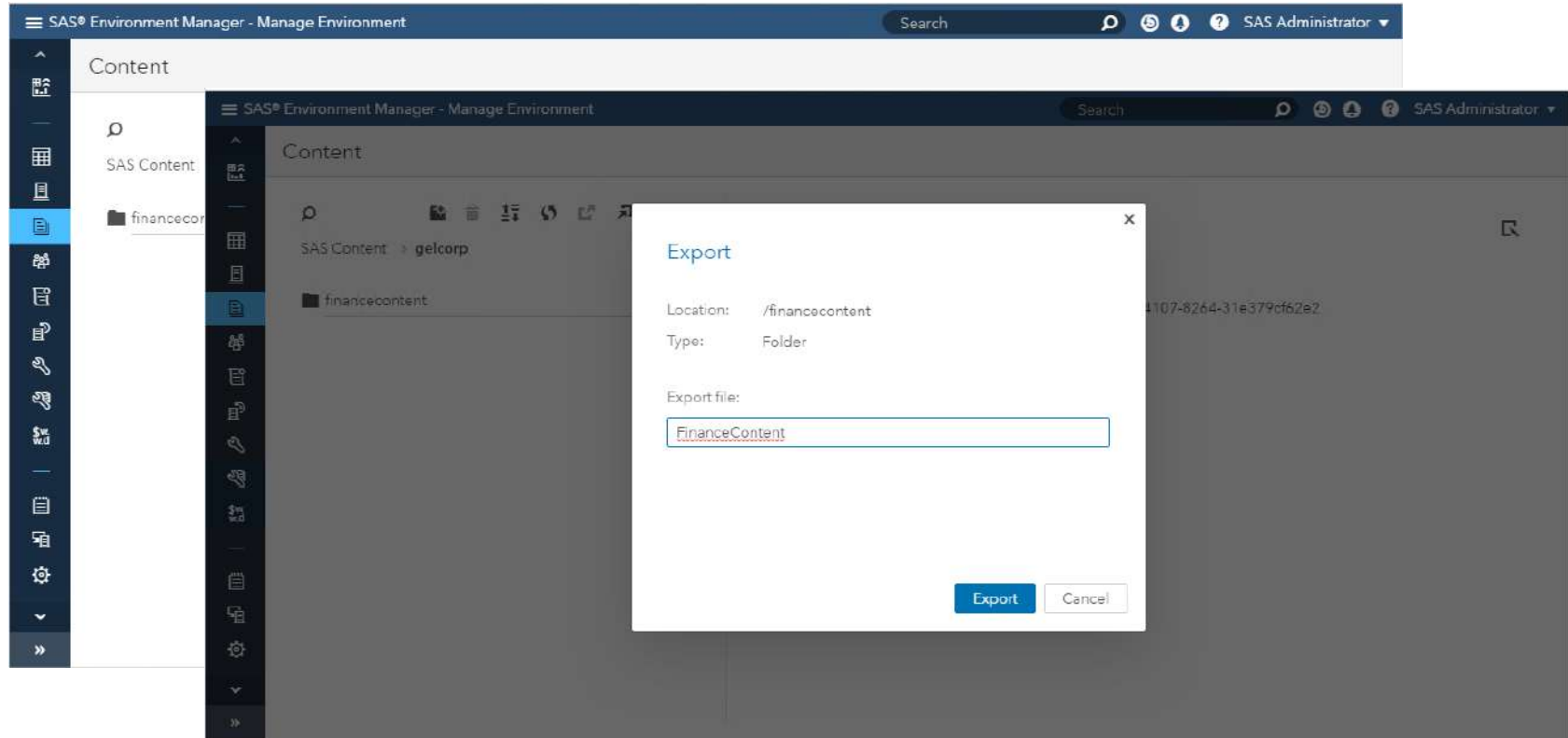
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# Export Viya Contents



# Import Package File

Import Finish - Step 3 of 3

1 Select source — 2 Mapping — 3 Finish

Select the Import button to apply the mappings and import your source content.

Mapping file: No mapping file was selected

Total tasks: 4 Succeeded: 4 Failed: 0 Completed with errors: 0 Completed with warnings: 0 Skipped: 0

Reminders Results

Name	Status	Message	Path	Start Time	Completed Time
financecontent	✓	The resource was succ...	/gelcorp/financecontent	January 7, 2019 04:07:...	January 7, 2019 04:07:...
Reports	✓	The resource was succ...	/gelcorp/financeconte...	January 7, 2019 04:07:...	January 7, 2019 04:07:...
gelcorp	✓	The resource was succ...	/gelcorp	January 7, 2019 04:07:...	January 7, 2019 04:07:...
SalesPerformanceReport	✓	The resource was succ...	/gelcorp/financeconte...	January 7, 2019 04:07:...	January 7, 2019 04:07:...



# Migrating from SAS<sup>®</sup> 9 VA to SAS<sup>®</sup> Viya<sup>®</sup> VA



# Supported Resources from SAS 9.4

For Visual Analytics the following resources [participate](#) in migration:

- **Configuration**
  - identities
  - authorization
  - data definitions
- **Content**
  - folders
  - reports
  - explorations
  - stored processes\*
  - supporting resources (themes, images, graphs templates)



# Quick Walkthrough SAS VA Migration

# SAS VA 7.4 Report



# Load Data into CAS Library

SAS® Environment Manager - Manage Environment

Search

viyademo01

## Data

Available Data Sources Import 1

Import (1) ?

financials.sas7bdat  
Local File

financials.sas7bdat

Import Item Import All

Importing file...

Target table name: \*

financials

Target destination: \*

cas-shared-default/Public Find

If target table name exists:

☒ Cancel import

☐ Replace file

Label:

Enter label

File Specifications Advanced

Password:

Enter password

# Export SPK from SAS 9.4 Environment

The screenshot displays the SAS Management Console (SASAdmin) interface. On the left, a tree view shows the folder structure under 'SAS Folders', including 'My Folder', 'Admin Tools', 'gelcorp', 'financecontent', 'Analysis', 'Data', 'Lasr Data', 'Source Data', 'Reports', 'hrcontent', 'salescontent', 'shared', 'Products', 'shared Data', 'System', and 'User Folders'. The 'Reports' folder is selected. In the center, the 'Export SAS Package' wizard is open, titled 'Welcome to the Export SAS Package Wizard'. It provides instructions and options for exporting objects. The 'Specify a package to contain the collection of objects that you are exporting.' section shows a text box with the path 'D:\workshop\SalesPerformanceReport.spk' and a 'Browse...' button. The 'Export Options' section includes two unchecked checkboxes: 'Include empty folders' and 'Include dependent objects when retrieving initial collection of objects'. The 'Filtering' section shows a text box with 'No filters applied.' and a 'Filter...' button. At the bottom of the wizard are buttons for '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'. In the background, a table lists objects, including 'FinanceOverTime' and 'SAS report (2G)'. The status bar at the bottom indicates '4 objects', 'sasadm@saspw as Unrestricted', and 'sasclient : 8561'.

SAS Management Console - SASAdmin

File Edit View Actions Tools Help

Plug-ins Folders Search

SAS Folders

- My Folder
- Admin Tools
- gelcorp
  - financecontent
    - Analysis
    - Data
      - Lasr Data
      - Source Data
    - Reports
  - hrcontent
  - salescontent
  - shared
- Products
- shared Data
- System
- User Folders

Export SAS Package

Welcome to the Export SAS Package Wizard

This wizard helps you export a collection of objects, including stored processes, information maps, reports, and folders.

Specify a package to contain the collection of objects that you are exporting.

D:\workshop\SalesPerformanceReport.spk Browse...

Export Options

- ☐ Include empty folders
- ☐ Include dependent objects when retrieving initial collection of objects

Filtering

No filters applied. Filter...

< Back Next > Finish Cancel Help

Name	Description	Type	Last Modified
FinanceOverTime		SAS report (2G)	Sep 4, 2018 7:25:44 AM
			4, 2018 7:25:44 AM
			4, 2018 7:25:44 AM
			6, 2019 10:08:12 PM

4 objects

sasadm@saspw as Unrestricted

sasclient : 8561

# Import Report into SAS Viya Environment

The image displays three overlapping screenshots of the SAS Environment Manager 'Import' wizard, showing the progression from selecting a source to completing the import.

**Step 1: Select source - Step 1 of 3**

**Step 2: Mapping - Step 2 of 3**

**Step 3: Finish - Step 3 of 3**

Progress indicators show 1/3, 2/3, and 3/3 steps completed.

Instructions: Select the Import button to apply the mappings and import your source content.

Mapping file: No mapping file was selected

Summary: Total tasks:1 Succeeded:1 Failed:0 Completed with errors:0 Completed with warnings:0 Skipped:0

Reminders Results

Name	Status	Message	Path	Start Time	Completed Time
SalesPerformanceReport	✓	The resource was succ...	/gelcorp/financeconte...	January 7, 2019 12:39:...	January 7, 2019 12:39:...

# SAS VA Report in Viya Platform





# Summary



## 9.4 to Viya Steps

1. Configure Identity Management in Viya
2. Ensure that required data is available in CAS or LASR data and path based data is accessible to the Viya
3. Export packages from 9.4
4. Import packages to Viya
  - I. Create identity mapping (cli)
  - II. Identities
  - III. Libraries and Servers
  - IV. Data
  - V. Reports and Explorations

# Promotion Considerations

- You **must be an administrator** to export and import content in VA 7.x to Viya
- Content from **VA 7.x will need to be secured with Viya rules** if authorization is not included in the export
- If authorization is included in the export **the security model should be thoroughly tested** in the target environment
- Must **validate** every report to identify issues (import does not identify problematic reports)
- Import is **all or nothing** from the transfer package
- **Cannot specify a new location** for imported objects
- Importing VA 8.x content **merges authorization rules** from source



# Additional Information

# Links

- Free Trials

- [https://www.sas.com/en\\_my/trials/software/visual-analytics/ep-form.html](https://www.sas.com/en_my/trials/software/visual-analytics/ep-form.html)
- [https://www.sas.com/en\\_my/trials/software/data-mining-machine-learning/ep-form.html](https://www.sas.com/en_my/trials/software/data-mining-machine-learning/ep-form.html)
- [https://www.sas.com/en\\_my/trials.html](https://www.sas.com/en_my/trials.html)

- eLearning

- <https://support.sas.com/edu/elearning.html?ctry=us&productType=library>
- <https://video.sas.com/category/videos/sas-viya>

# Links

- SAS Community
  - <https://communities.sas.com/>
- SAS on Github
  - <https://github.com/sassoftware>