

SAS Visual Analytics on SAS Viya

Administration, Data Preparation & Visual Interface

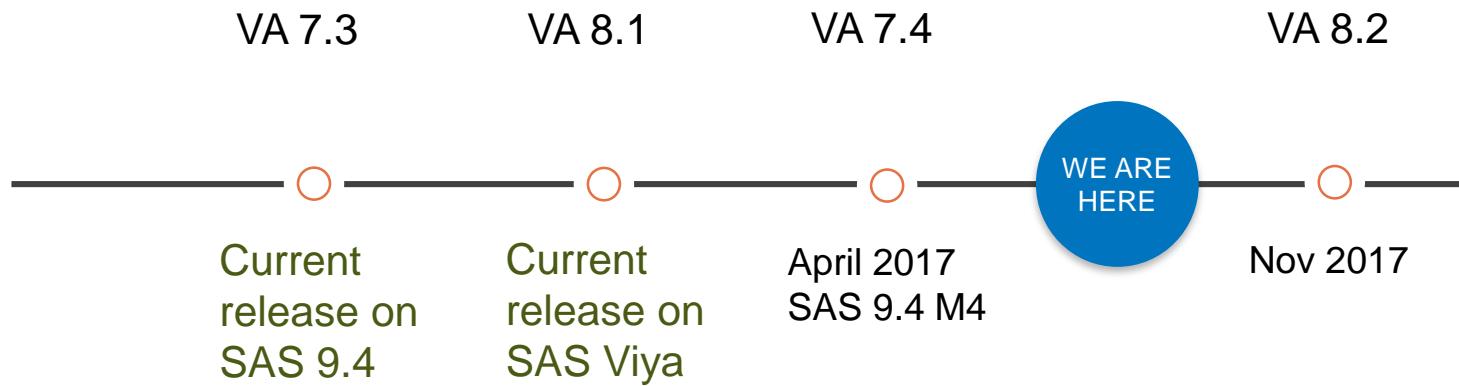
28.06.2017 Bonn

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Agenda

- Basic Administration Steps in SAS Environment Manager
- Loading data into CAS
- Using a Data Connector to access data
- Data Management in SAS Visual Data Builder
- SAS® Visual Analytics 8.2 on Viya™

SAS Visual Analytics 2017



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Authentication Basics

- The default authentication provider for Visual Analytics is LDAP
- Unlike in VA 7.x with Metadata Server, there is no longer the need to maintain user identity objects
- Default configuration after deployment: Authenticated users can access SAS Visual Analytics capabilities
- SAS Visual Data Builder requires membership in a custom group
- Administering SAS Visual Analytics requires membership in a custom group
- There is no predefined custom group for report viewing

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Predefined Custom Groups

Group Name	Initial Authorizations	Assumable?	Initial Memberships
SAS Administrators	<p>Have access to:</p> <ul style="list-style-type: none">• all tasks in SAS Environment Manager and CAS Server Monitor• all folders and all objects that the folders contain (for example, plans and reports)• all application functionality (for example, functions in SAS Visual Analytics) <p>Note: Access to data (CAS libraries) is not included. For example, users in this group can create, run, and view reports only if they have explicitly been granted access to the underlying data.</p>	Yes	CAS Superuser role
Application Administrators	<p>Can access the following items from SAS Home:</p> <ul style="list-style-type: none">• Manage SAS Home• Manage Collections• SAS Theme Designer	No	None
Data Builders	Can access SAS Visual Data Builder and advanced import features.	No	None
Esri Users	Can access Esri systems for geo map access.	No	None

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Using Custom Groups to restrict access

The following steps are necessary to restrict access to capabilities in SAS Visual Analytics 8.1

- Create a custom group in SAS Environment Manager for report authors
- Assign groups/users from LDAP that should be able to create reports to that custom group
- Replace Authenticated Users by the new custom group for report authors in the rules that grants access to SAS Visual Analytics
- Administering SAS Visual Analytics requires membership in a custom group
- There is no predefined custom group for report viewing

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Important default rules

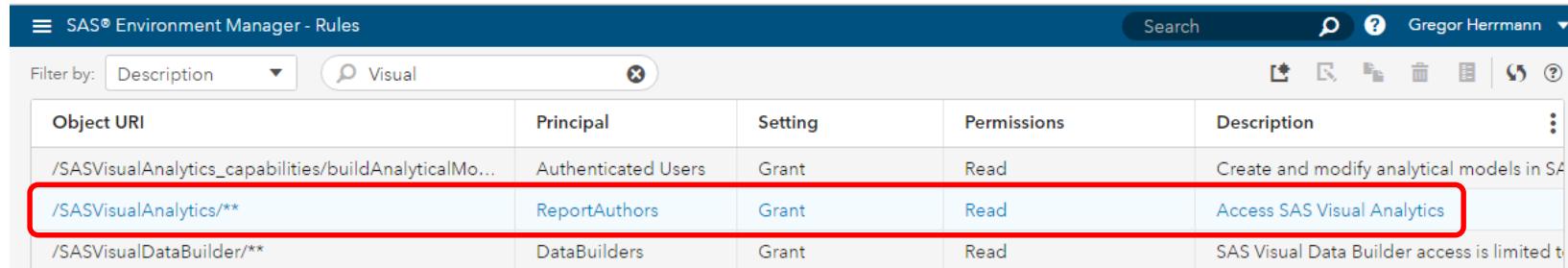
SAS® Environment Manager - Rules				
Object URI	Principal	Setting	Permissions	Description
/SASVisualAnalytics_capabilities	Authenticated Users	Grant	Read	Create and modify analytical models in SAS Visual Analytics.
/SASVisualAnalytics/**	Authenticated Users	Grant	Read	Access SAS Visual Analytics
/SASVisualDataBuilder/**	DataBuilders	Grant	Read	SAS Visual Data Builder access is limited to users in Data Builders custom group.

- Authenticated Users have access to SAS Visual Analytics (including report creation)
- Authenticated Users can create models
- SAS Visual Data Builder requires membership in the DataBuilders custom group

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Restricting access for information consumers

- After successful deployment, all users that are able to authenticate can create SAS Visual Analytics reports
- To restrict authenticated users to a viewing role:
 - Create a custom group
 - Add report authors to that custom group
 - Replace the principal in the rule that grants access to SAS Visual Analytics with the newly created custom group



The screenshot shows the SAS Environment Manager - Rules interface. The top navigation bar includes 'SAS® Environment Manager - Rules', a search bar, and a user profile for 'Gregor Herrmann'. Below the header is a toolbar with icons for search, refresh, and file operations. A filter bar allows filtering by 'Description' (set to 'Visual') and includes a search icon. The main area displays a table of security rules:

Object URI	Principal	Setting	Permissions	Description
/SASVisualAnalytics_capabilities/buildAnalyticalMo...	Authenticated Users	Grant	Read	Create and modify analytical models in SA
/SASVisualAnalytics/**	ReportAuthors	Grant	Read	Access SAS Visual Analytics
/SASVisualDataBuilder/**	DataBuilders	Grant	Read	SAS Visual Data Builder access is limited to

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Demo Authentication/Group Membership



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Loading Data into CAS

Available data sources without SAS/ACCESS module:

Local:

- SAS datasets (*.sas7bdat, *.sashdat)
- Textfiles (*.csv, *.txt)

Server:

- LASR

Social Media

- Twitter
- Facebook
- Google Analytics
- YouTube

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Loading Data into CAS

Available data sources with SAS/ACCESS to PC Files:

Data Source Summary for Linux Environment			
Data Source	Identifier	PROC IMPORT	PROC EXPORT
Excel using XLSX file formats	XLSX	Yes	Yes
Excel using XLS file formats	XLS	Yes	Yes
dBase using DBF file formats	DBF	Yes	Yes
dBase file format with MEMO support	DBFMEMO	Yes	Yes
JMP using Version 7 or later JMP file formats	JMP	Yes	Yes
Paradox using DB file formats	DB	Yes	Yes
SPSS using SAV file formats	SAV	Yes	Yes
Stata using DTA file formats	DTA	Yes	Yes
Comma-separated file	CSV	Yes	Yes
Tab-separated file	TAB	Yes	Yes
Delimiter-separated file	DLM	Yes	Yes

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Loading Data into CAS –General remarks

- Loading data into CAS does not mean the table will be loaded completely into memory
- CAS uses memory mapping techniques to use physical memory most effectively
- Data has not to be loaded upfront before opening a report
- Local and Server tables do not have to be registered before you can use them in SAS Visual Data Builder (*.sas7bdat, *.sashdat, *.csv)

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Loading Data from Local with VDB

Data sources that can be loaded interactively from local:

- Microsoft Excel : you must have a license for SAS/ACCESS to PC Files
- Text Files (either CSV or TAB delimited files)
- SAS Data Sets (either *.sas7bdat or *.sashdat)
- Data from Clipboard

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Loading Data from Local with VDB

Open Data Source

All Recent Import

Local

- Microsoft Excel
- Text Files
- SAS Data Set
- From Clipboard

Server

- LASR
- Oracle
- Teradata
- Hadoop
- PostgreSQL

Social Media

- Twitter
- Facebook
- Google Analytics
- YouTube

Import local files

Choose Files

Source File	Table Name	Table Options
<input checked="" type="checkbox"/> AIR.csv	AIR	

Options

Specify a file delimiter:

Comma
 Semicolon
 Space
 Tab
 Other

First row contains column names
 Variable length character strings

Number of rows to scan: 500

Encoding: utf8

Locale:

Apply Cancel

Advanced

Caslib:

cas-shared-default:Public

OK Cancel

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Loading Data from Server with VDB

Data sources that can be loaded interactively from Server:

- LASR: you must have detailed connection and authorization info but you do not need a
- Database table: you must have a SAS/ACCESS license for the corresponding database and the database client must have been installed and configured

Note: SAS/ACCESS currently does not allow to write back to the database

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Loading Table from Oracle

Open Data Source

All Recent Import

Search

Local

- Microsoft Exc..
- Text Files
- SAS Data Set
- From Clipbo...

Server

- LASR
- Oracle
- Teradata
- Hadoop
- PostgreSQL

Social Media

Import Oracle Tables

Search

<input type="checkbox"/> Input Table Name	<input type="checkbox"/> Output Table Name
COUNTRIES	COUNTRIES
DEPARTMENTS	DEPARTMENTS
EMP_DETAILS_VIEW	EMP_DETAILS_VIEW
EMPLOYEES	EMPLOYEES
JOB_HISTORY	JOB_HISTORY
JOBs	JOBs
LOCATIONS	LOCATIONS
REGIONS	REGIONS

Connection Information

Specify the Oracle connection information.

User ID: * SAS

Password: *

Schema: HR

Path: * //m1494485.unx.sas.com:1521/o

Connect Cancel

Status

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Loading LASR Table with VDB

- To load LASR tables interactively you have to provide detailed connection information for the source system
- After connecting successfully you will see a list of loaded LASR tables in the specified library
- Advantages:
 - No SAS/ACCESS engine required
 - Existing data preparation routines can be used in transition phase

Connection Information

Specify the LASR connection information.

User ID:

Password:

Server: *

Port: *

Tag:

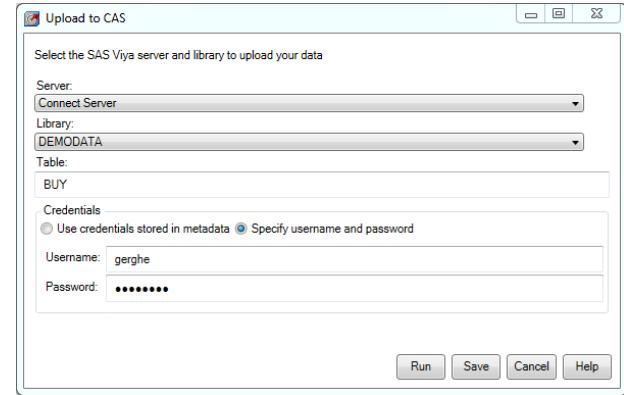
Metadata libref:

Signer:

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Loading Data with SAS Enterprise Guide

- The latest version of Enterprise Guide comes with an Upload To CAS task
- The task makes use of the SAS/CONNECT bridge



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Data Management with VDB

- Data Management in SAS Visual Data Builder is CAS action oriented, meaning every data management action will be executed in-memory
- You can save a series of actions in a plan with undo/redo capability
- There is no scheduling capability in VA 8.1, this is planned for VA 8.2
- There is no way to view or edit the generated code
- Visual Data Builder 8.1 is targeted to accommodate self-service data preparation capabilities, it does not replace an ETL solution

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In-memory Data Management Actions

- In-Memory Join
 - Multiple join keys
 - Color Coding
- Transpose Table
- Append Table

In-memory Column Transformations

- Split columns
- Trim & Compress
- Change Case
- Filter
- Sort

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Demo Loading and Modifying Data



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Key Takeaways

- Simplified authorization process
- Unified HTML5 interface
- In-memory data preparation