SAS® GLOBAL FORUM 2018

USERS PROGRAM

April 8 – 11 | Denver, CO
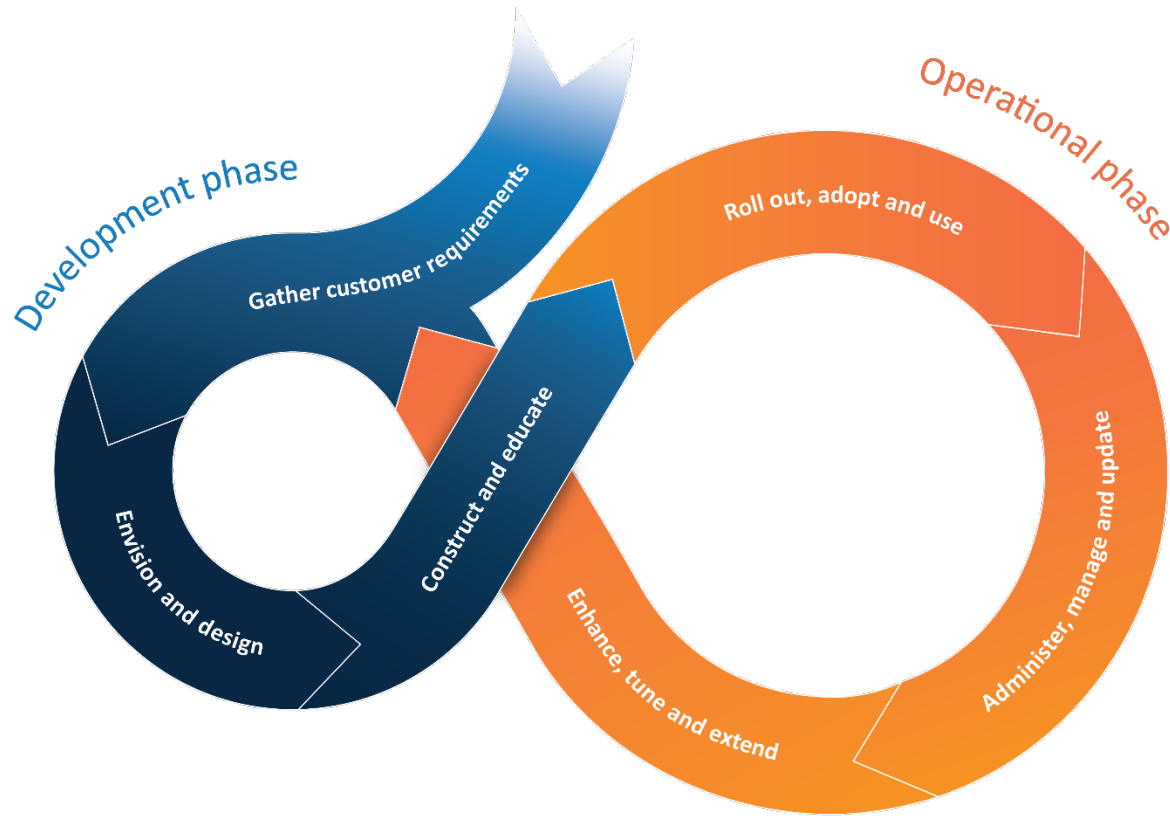Colorado Convention Center

#SASGF

SGF Administration Paper Review

SAS® Administration Lifecycle

Envision and Design

Managing Complex SAS® Metadata Security Using Nested Groups to Organize Logical Roles
Stephen Overton, Overton Technologies – 1789-2018

- Scalable security schema
  - Nested groups + logical roles
- Authentication vs. Authorization
- Controlling access
  - Data
  - Functionality
 - Folders
- Template security model
- Naming standards

Logical Role (User Group)

Inherited Group	[A] Administrator	[A] AML Administrator	[A] AML Scenario Administrator	[A] ECM Developer	[A] BSA Manager	[A] CTR Manager	[A] SAR Manager	[A] CDD/EDD Manager	[A] SAR Supervisor	[A] CTR Supervisor	[A] CDD/EDD Supervisor	[A] SAR Analyst	[A] CTR Analyst	[A] CDD/EDD Analyst
[ECM-WF] BSA Manager				X	X									
[ECM-WF] SAR Process				X	X	X	X		X					
[ECM-WF] CTR Process				X	X	X	X		X	X			X	
[ECM-WF] Watchlist				X	X		X	X	X		X			
[ECM-WF] CDD/EDD				X	X			X			X			X
(F) Analyst												X	X	X
(F) Investigator												X	X	X
(F) Supervisor									X	X	X			
(F) Manager					X	X	X	X						
(F) Report Consumer					X	X	X	X	X	X	X	X	X	X
(F) Report Author					X	X	X	X	X	X	X			
(F) Report Developer														
(F) ECM Developer	X			X										
(F) eFiler					X		X		X			X	X	
(F) Portal Administrator	X													
(F) User Administrator	X													
(F) Administrator	X													
(F) Scenario Administrator		X	X											
(ECM-UI) Internal Employee	X			X	X	X	X	X	X	X	X			
(ECM-UI) Restricted Customers	X			X	X	X	X	X	X	X	X			
(ECM-UI) Case Assignment	X			X	X	X	X	X	X	X	X			
(ECM-UI) Scenario Admin	X	X	X	X										
(DR) ECM Application		X		X										
(DR) FCS Reporting		X		X										
(DR) FCF Core		X	X	X							X			X
(DW) FCF Core Staging		X		X										
(DR) FCF Knowedge Center		X	X	X							X			X

Frequently Asked Questions about Getting Started with SAS® Grid

Andy Peredery, Nick Welke, and Ivan Gomez, Zencos Consulting– 2752-2018

- What is SAS Grid?
- How does it compare to Hadoop?
- What about SAS MP Connect?
- What is the SAS Grid architecture
- Why add SAS Grid to my environment?
- What should I consider when…
 - planning for SAS Grid?
  - educating my users?

Computer Resources

LSF
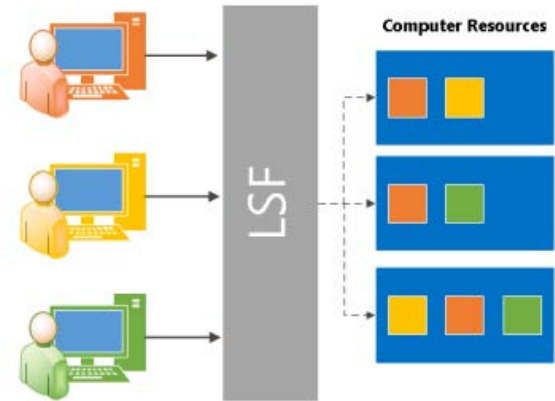
The Ins and Outs of Internal and External Host Names with SAS® Grid Manager

Paula Kavanagh, SAS Institute Inc. – <u>SAS1775-2018</u>

- Internal hostname <> external hostname = *potential trouble*
  - SAS Grid Manager
  - SAS Environment Manager
- Overview of Grid components
- Communication flow
- Central Authentication Service (CAS) <> "CAS"
- 2 Problems:
  - External Grid Module client → internal hostnames
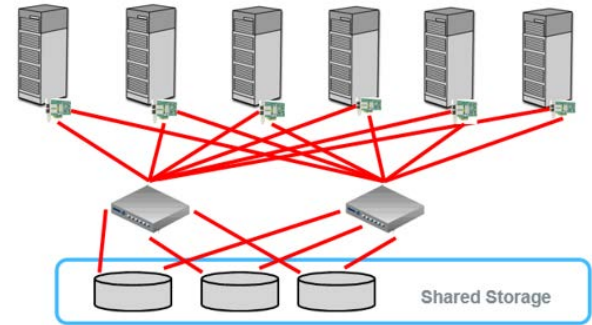 - Internal Agent → external hostnames
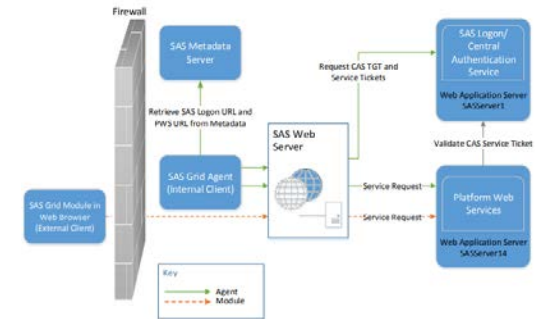
SAS® Grid Manager for High Availability: Implementation Best Practices
Edoardo Riva, SAS Institute Inc. – SAS2155-2018

- Levels of High Availability in a Grid
  - Hardware
  - LSF software
  - SAS Services
  - SAS programs
- SAS Environment Manager
  - SAS Grid Manager module
- HA Configuration Manager
- Tips

Shared Storage

High-availability services in enterprise environment with SAS® Grid Manager

Andrey Turlov, Allianz Technology SE; Nikolaus Hartung, SAS – 1726-2018

- HA in SAS Components
- Use Case: EBI + Grid
  - Topology
  - IBM® Platform LSF® & EGO® Configuration
  - Metadata Server Configuration
  - SAS Services metadata
- Dynamic LSF and static metadata

Shared Storage
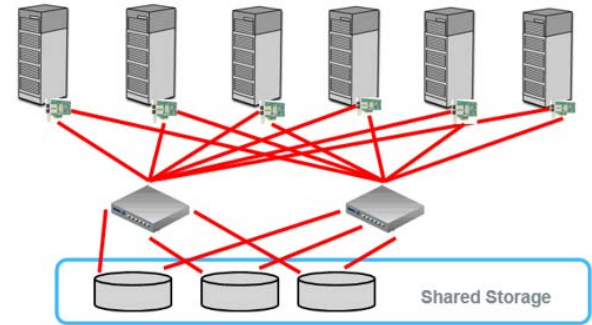
Optimizing Red Hat GFS2® on SAS® Grid

Tony Brown, SAS Institute Inc. – SAS1929-2018

- Red Hat Global File System 2
- Performance Architecture Reviews
- Limitations
- Installation
- Host Node Tuning
- Distributed Lock Manager tuning
- Hardware Connection

Deploying SAS® Grid Systems on VMware ESXi Virtually Provisioned Storage
Tony Brown, SAS Institute Inc. – SAS1931-2018

- BIOS Settings
- Physical Host Issues
- VM Configuration
- SAN Storage
- LUN Specifics

Creating a Multi-Tenant Environment using SAS® Enterprise Guide® and SAS Grid®
Tim Acton, General Dynamics Health Solutions– 2642-2018

- Centers for Medicare & Medicaid Chronic Condition Warehouse Virtual Research Data Center (CMS CCW VRDC)
- External user access to data
- Why EG and Grid?
- CCW infrastructure
- EG as a service
- Grid-launched workspace servers
- CCW-specific autoexec tuning
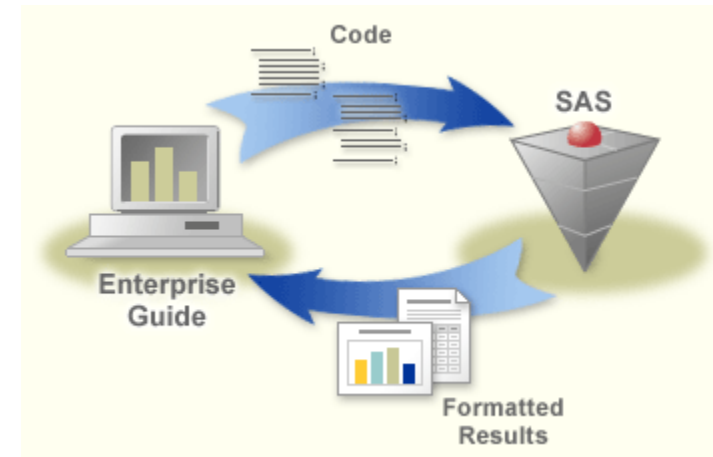
Planning for Migration from SAS® 9.4 to SAS® Viya®

Don B. Hayes, DLL Consulting Inc.; Spencer Hayes & Michael Shealy, Cached Consulting LLC; Rebecca Hayes, Green Peach Consulting Inc. – 2391-2018
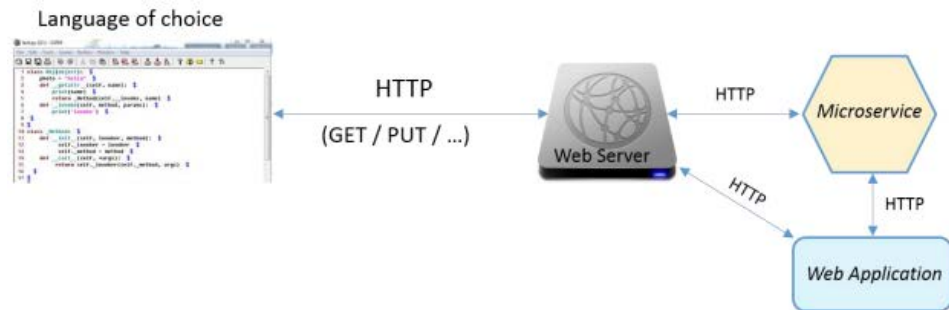
- SAS 9 vs. SAS Viya architecture

- Supported OSes

- Pre-installation

- Installation

  - SDW vs. Ansible

- Administration

- Libraries

- Upgrades/Migration

SAS® Viya® Service Layer Architecture Overview
Eric Bourn, SAS Institute Inc. – SAS2272-2018

- SAS Viya architecture
- Microservices
- Service registration and config
- REST communication
- SAS Message Broker
- SAS Infrastructure Data Server
- Scaling & High Availability
- SAS Environment Manager & CLIs

SAS® Viya®: Architect for High Availability Now and Users Will Thank You Later
Jerry Read, SAS Institute Inc. – SAS1835-2018

- What is H/A?
- Load balancing…
  - CAS
  - Programming Runtime Servers
  - Microservices
  - Infrastructure Servers

Construct, Roll Out, Manage, and Update

Automated Management of UNIX/Linux Multi-Tiered SAS® Services: The Enhanced SAS_lsm Utility
Clifford J. Meyers, SAS Institute Inc. – SAS1921-2018

- SAS_lsm (SAS0339-2017)
- Multi-tier SAS Environment
- Start / Stop / Status
- Deploying SAS_lsm
- Configuration File
- Example 3-Tier Config
- Use-cases

External Databases: Tools for the SAS® Administrator
Mathieu Gaouette, Prospective MG inc. – 2357-2018

- DB library config levels

- SAS Management Console

- Creating libraries
  - Required options
  - Advanced options

- Validating access

- Other considerations

Recent SAS® 9.4 Middle-Tier Platform Updates for Fun and Profit

Zhiyong Li and Qing Gong, SAS Institute Inc. – [SAS1918-2018](SAS1918-2018)

- Middle Tier updates since SGF 2017
- Middle Tier primer
- 3rd party updates in 9.4M4 and 9.4M5
- Horizontal cluster updates
- OpenSSL security
- Preservation of SSL & reverse proxy settings
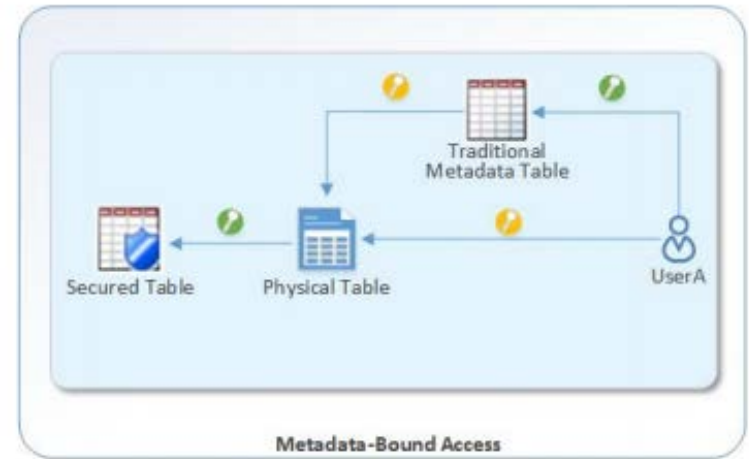- Security hardening
- SAS Environment Manager updates
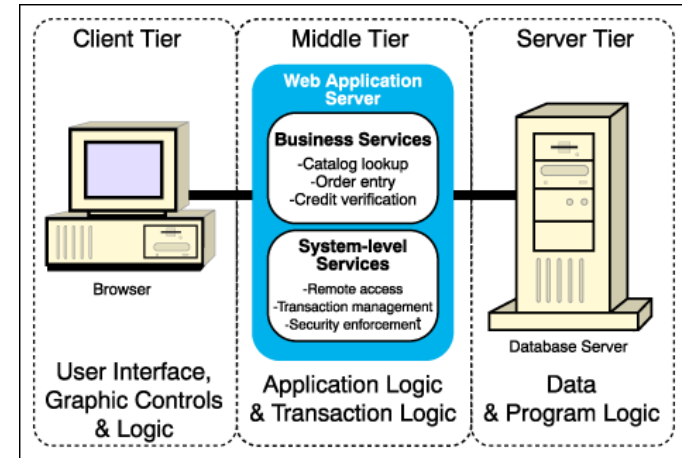
A Programming Approach to Implementing SAS® Metadata-Bound Libraries for SAS® Data Set Encryption

Deepali Rai, SAS Institute Inc. – [SAS2181-2018](#)

- Metadata-bound libraries
  - Concepts
  - Value
- Administrator/user challenges
- Planning
- Implementation
  - SASMC
  - PROC AUTHLIB
- Monitoring and Maintenance

Troubleshooting your SAS® Grid Environment
Jason Hawkins, Amadeus Software Limited– 2620-2018

- Grid topology
- Grid benefits
- IBM® Spectrum™ LSF®
- Sequence of events for job
- Local vs. Shared installation and config files
- Troubleshooting
  - Logging
  - LSF commands
  - SAS Environment Manager & Enterprise Grid Orchestrator
- Problem resolution
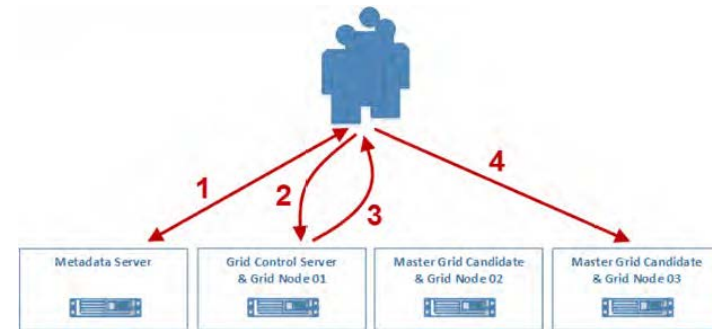
Taming Change: Bulk Upgrading SAS® 9.4 Environments to a New Maintenance Release

Javor Evstatiev, EVS; Andrey Turlov, Allianz Technology SE – 1825-2018

- Maintenance – Why?
- Preparation
  - Mass Upgrading
  - Reusable Tools
  - Testing
  - Depot Management
- Execution
  - UIP
  - Install & Migrate

Latest and Greatest:
Best Practices for Migrating to SAS® 9.4
Alec Fernandez and Leigh Fernandez, SAS Institute Inc. – SAS2117-2018

- "Migration"
- Ground Rules
- Preparation
- Analyzing Source System
- Packing - SAS Migration Utility
- Unpacking - SAS Deployment Wizard

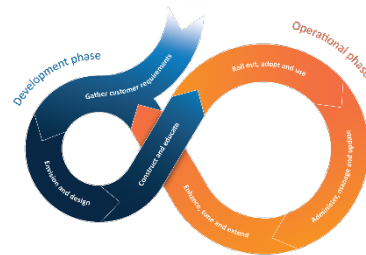# A "Big Red Button" for SAS® administrators: Myth or Reality?
Sergey Iglov, SASIT Limited – 1828-2018

- Simplifying cloud deployment
  - Infrastructure provisioning
  - Installation
  - Configuration
- IaaS vs. PaaS vs. SaaS
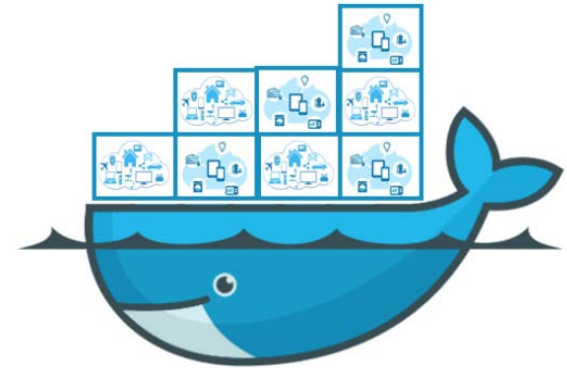- SAS 9 & **SAS Viya**
- AWS example

Docker Toolkit for Data Scientists – How to Start Doing Data Science in Minutes!
Donna De Capite, SAS Institute Inc. – SAS1875-2018

- Docker containers
- Container orchestrators
- SAS® Analytics for Containers
  - Building
  - Deploying
- Pre-requisites
  - AWS
  - Google Cloud Platform
  - Azure
- AWS EMR Hadoop integration

SAS® Environment Manager –
A SAS® Viya® Administrator's Swiss Army Knife
Michelle Ryals, Trevor Nightingale, SAS Institute Inc. – SAS2260-2018

- SAS Environment Manager for Viya 3.3
- Dashboard
- Resource Administration
  - Users & Groups
  - User-defined Formats
  - Scheduling
- Monitoring
- Deployment Administration
  - Configuration
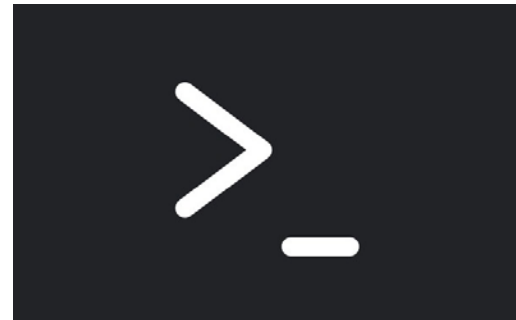 - Licensed Products
  - Backup / Restore

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Command-Line Administration in SAS® Viya®
Danny Hamrick, SAS Institute Inc. – SAS2233-2018

- CLIs leveraging REST
- Benefits
  - Run-time free
  - Profile mechanism
  - Install where you need it
- Built-in help
- sas-admin examples
  - Folders
  - Rules
  - Configuration
  - CASLIBs
- Automation

Enhance, Tune, and Extend

Tracking Down the Culprit of a
SAS® Workspace Server Initialization Delay
Jessica Franklin, SAS Institute Inc. – SAS2003-2018

- Slow Workspace Server startup
- Identifying delay
- Root cause
  - Pre-assigned libraries
  - System hardware
  - Network
    - Linux
    - Windows
- *Lots* of diagnostic command examples

SAS® 9.4 Middle-Tier Performance Optimization

Glenn Horton, SAS Institute Inc. – SAS1663-2018

- Tuning is site-specific

- *SAS 9.4 Web Applications: Tuning for Performance and Scalability*

- Web Application Server

- Operating System

- Monitor
  - SAS Environment Manager
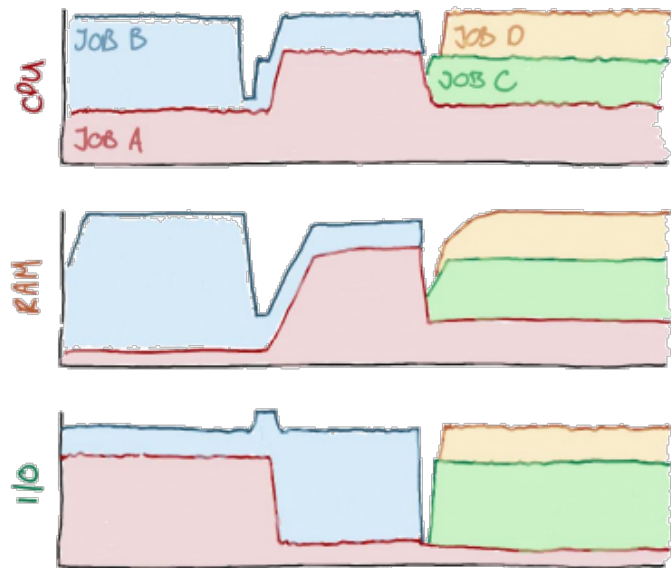 - jvisualvm & nmon
  - garbage collection

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Fluid and Dynamic: Using measurement-based workload prediction to dynamically provision your Cloud
Nikola Marković, Boemska UK – 2057-2018

- Analytic Workloads
- Cloud Resources
- Workload Requirements
- Orchestrating the Perfect Schedule
- Interactive Workloads

Important Performance Considerations When Moving SAS® to a Public Cloud
Margaret Crevar, SAS Institute Inc. – SAS1866-2018

- Performance for SAS 9 and SAS Viya
- Assess SLA for SAS workload
- Determine cloud infrastructure
  - Instance type
  - Storage type
  - SAS Grid shared file system
  - SAS client location
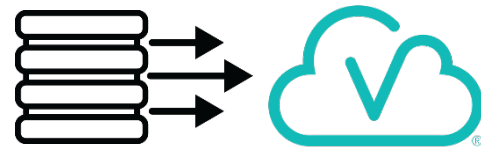 - Data sources
  - H/A and Security

Five Approaches for High-Performance Data Loading to the SAS® Cloud Analytic Services Server
Rob Collum, SAS Institute Inc. – SAS1854-2018

- Parallel vs. Serial

1. SASHDAT on Hadoop
2. SAS Data Connect Accelerators
3. SASHDAT on DNFS
4. SAS7BDAT in parallel
5. Multi-node data transfer

- Additional tips

Security and Auditing

SAS® 9.4 on Microsoft Windows:
Unleashing Kerberos on Apache Hadoop
Stuart J Rogers, SAS Institute Inc. – SAS1878-2018

- Microsoft Windows focus
- SAS authentication
- IWA
- Configuration Changes
- Challenges
- Troubleshooting
- Testing

Understanding Security for
SAS® Visual Analytics 8.2 on SAS® Viya®

Antonio Gianni and Faisal Qamar, SAS Institute Inc. – SAS2130-2018

- *Applicable for all SAS Viya offerings*
- Identity Management
- Authentication
- Encryption
- Authorization
  - CAS
  - General
- Case Study

OpenID Connect Opens the Door to SAS® Viya® APIs
Mike Roda, SAS Institute Inc. – SAS1737-2018

- OAuth and OpenID Connect for Authentication
- Overview of SAS Viya's Use
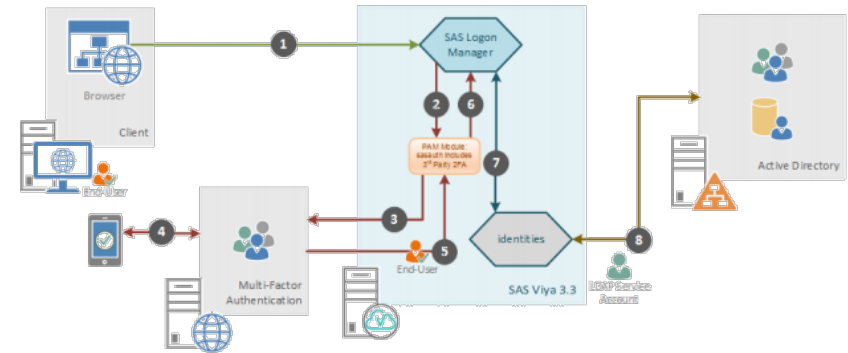- Client Registration
- Tokens
- SAS Viya APIs

Multi-Factor Authentication with SAS® and Symantec VIP

Jody Steadman and Mike Roda, SAS Institute Inc. – [SAS2142-2018](#)

- SAS 9.4 and SAS Viya MFA
- Symantec VIP
- SAS 9.4 Example
  - Apache 2.4
  - MFA for VA
  - MFA for EG
- SAS Viya Example
  - RADIUS Validation Server
  - MFA for Web Apps

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