

SAS[®] GLOBAL FORUM 2019

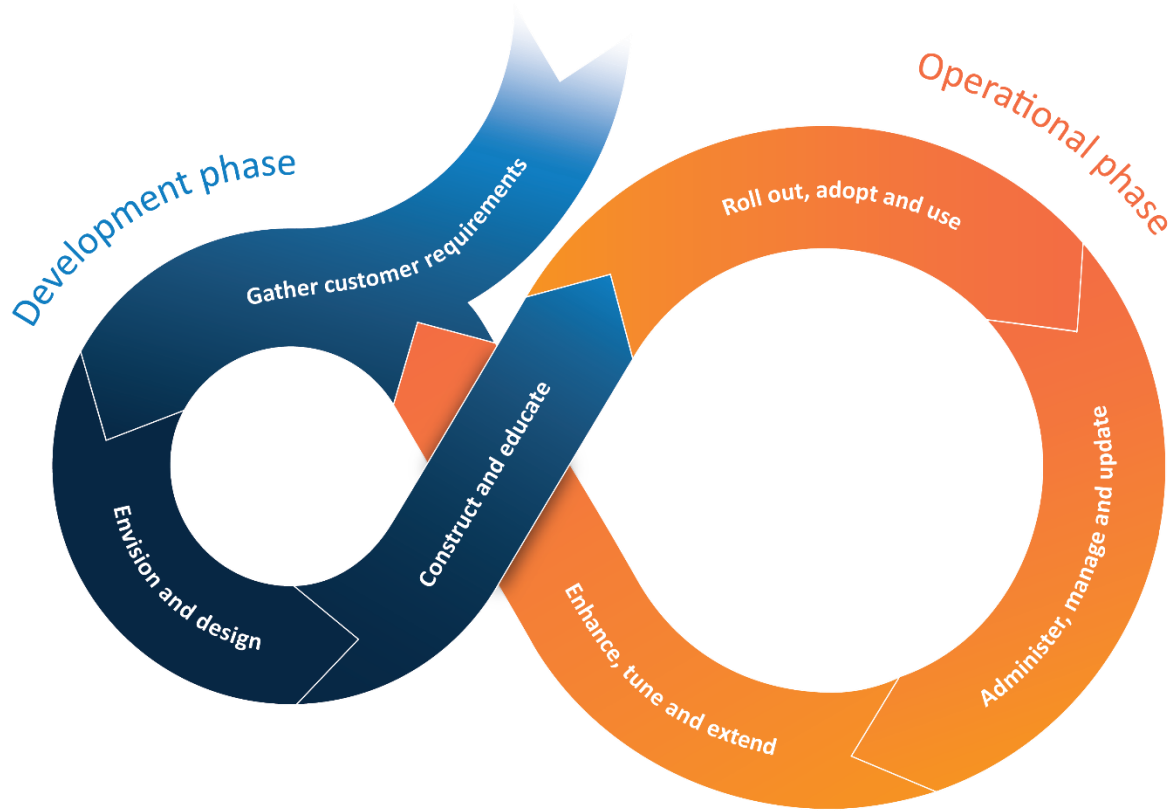
USERS PROGRAM

APRIL 28 - MAY 1 | DALLAS, TX



SGF 2019 Administration Paper Review

SAS[®] Administration Lifecycle

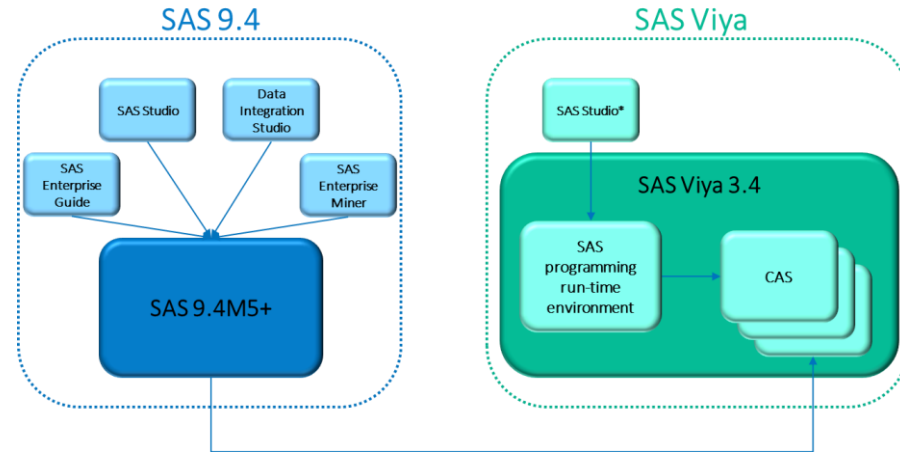


Envision and Design

Comparing SAS[®] Viya[®] and SAS[®] 9.4: How Their Features Complement Each Other

Mark Schneider, SAS Institute Inc. – [SAS3503-2019](#)

- Platform architecture equivalents
- Flagship SAS 9 code in SAS Viya
- SAS Viya adds...
 - Speed
 - Methods
 - Data types
 - Open
 - Resilience
- Product equivalency/inclusion



Important Performance Considerations When Moving SAS® to a Public Cloud

#SASGF

Margaret Crevar, SAS Institute Inc. – [SAS3363-2019](#)

- Considerations 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
 - Quick Starts
 - H/A and Security



5W1H Method: SAS® Viya® as Your Cloud Analytics Platform?

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Who, What, When, Where, Why, and How

Daniel Hatton, Sopra Steria Limited – [3938-2019](https://www.sas.com/industry/3938-2019)

- “5W1H” questioning technique
 - **What** is a Modern Analytics Platform?
 - **Why** are we considering SAS Viya?
 - **Who** are the stakeholders?
 - **Where** should the platform be hosted?
 - **When** is the right time to move to SAS Viya?
 - **How** do I proceed in getting SAS Viya?



Lessons Learned Architecting a Modern Data Analytics Platform in the Cloud Using MapR and SAS® Viya® ^{#SASGF}

Shane Gibson, PitchBlack – [3174-2019](#)

- MapR in Microsoft Azure
- SAS Viya & SAS 9.4 in AWS via SAS Global Hosting
- Lessons learned
- Multi-cloud integration
- Multi-tenancy
- SAS Viya and SAS 9.4 tradeoffs
- Authentication and authorization
- Data integration patterns between SAS Viya and MapR data
- Automation required for DataOps vision



SAS® Viya®

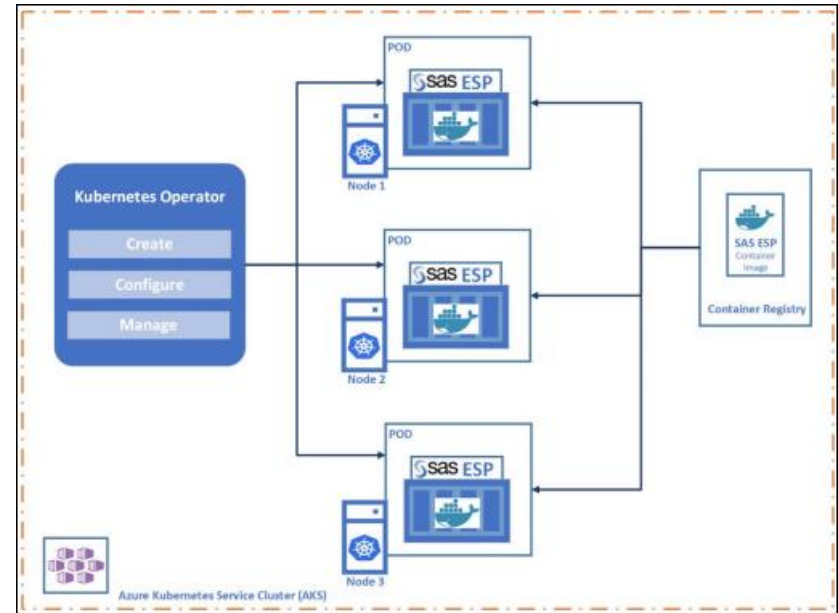


Full Stream Ahead: Design and Engineering Patterns for SAS® Event Stream Processing in the Cloud

#SASGF

Alessio Tomasino and Louis Katsouris, SAS Institute Inc. – [3198-2019](#)

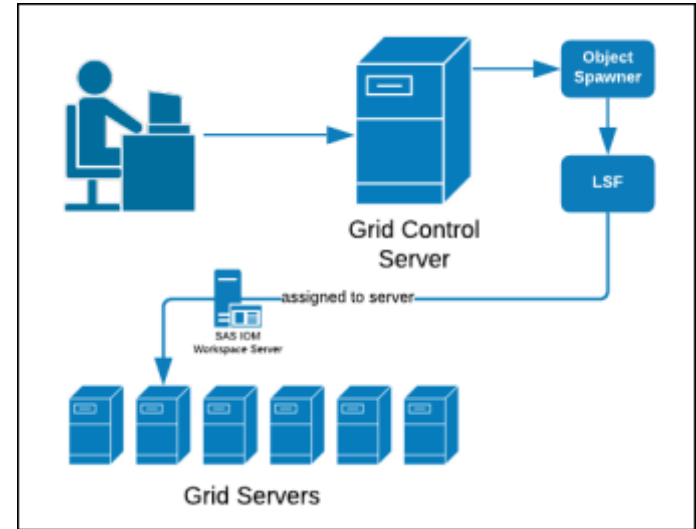
- ESP cluster deployment on Kubernetes in Azure
- DevOps
- Container architectures
 - Ansible, Docker, Kubernetes
- ESP architecture
 - Kafka integration
 - 1+N failover
- ESP on containers
 - Automated builds
 - Rolling updates
 - Failover



Gimme Five: Building Better SAS® Environments with the Five Pillars

Ryan Martis, Demarq Ltd. – [3881-2019](https://www.demarq.com)

- SAS Grid Manager environment
- Demarq's Five Pillars of environment management
 - Workload management
 - Alerting & monitoring
 - Logging & audit
 - Resilience & availability
 - Continuity & recovery



Top SAS® Architecture Pitfalls: Lessons Learned the Hard Way

Margaret Crevar, SAS Institute Inc. – [3609-2019](#)

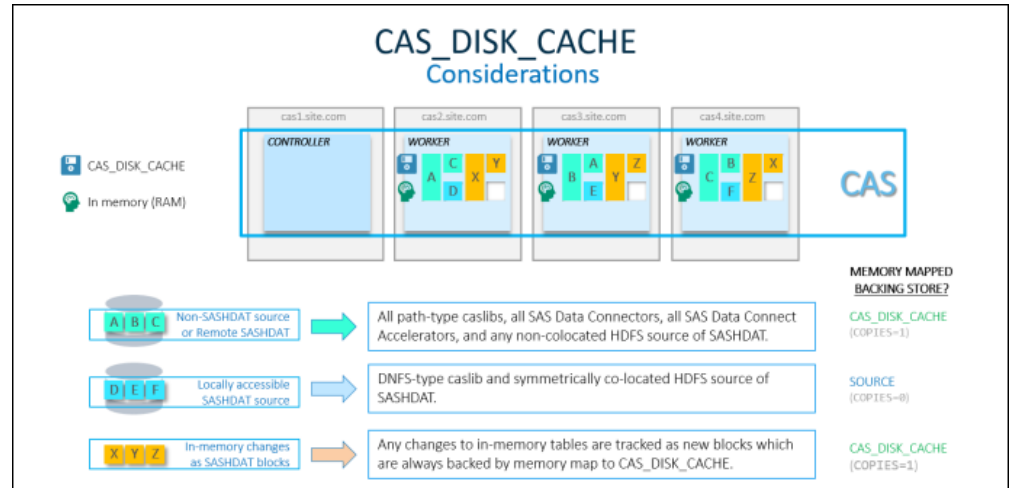
- Understand your
 - Workload requirements
 - Hardware needs
 - SLAs
- Proximity of components
- Underlying hardware specs
- Network bandwidth for SAS and storage
- Shared filesystem needs
- Virtualization config
- Storage config



Engineering CAS Performance Hardware Network, and Storage Considerations for CAS Servers

Tony Brown, SAS Institute Inc. – [SAS3351-2019](#)

- CAS performance through parallelization
- Code optimization
- Workload planning
- System resources
- CAS configuration
 - Controller staging cache
 - Disk cache
 - H/A
- Containers & Virtualization



Deploying SAS® Products on Red Hat Platforms: What IT Administrations Should Know

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Barry Marson, Red Hat, Inc. – [3737-2019](tel:3737-2019)

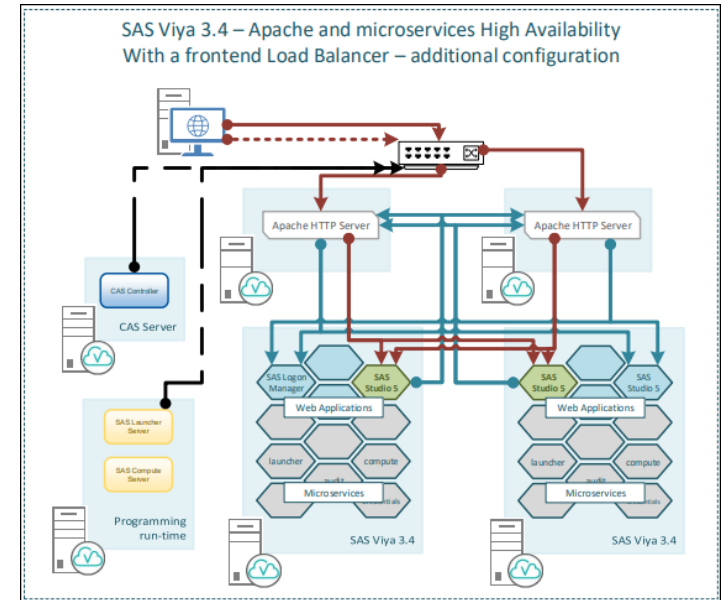
- RHEL 6 & 7
- Configure subsystems before installing
 - File System
 - I/O Stack
 - Kernel
- Virtualization
- SAS Grid Manager



Proper Planning Prevents Possible Problems: SAS® Viya® High-Availability Considerations

Edoardo Riva, SAS Institute Inc. – [SAS3481-2019](#)

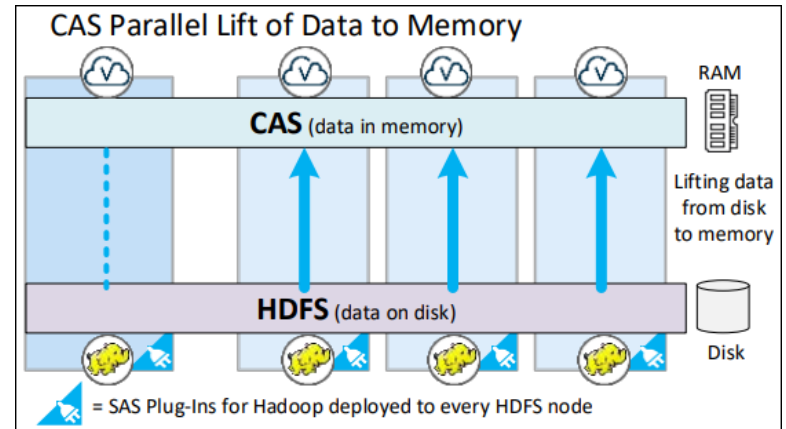
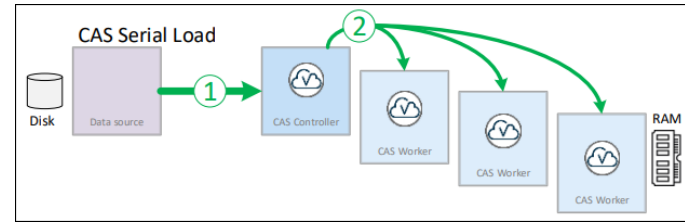
- SAS Viya design principles
- Service discovery & routing
- Planning and designing for H/A in SAS Viya
- Administering H/A in SAS Viya
 - Monitoring
 - Operating
- Service failure and recovery



Seriously Serial or Perfectly Parallel Data Transfer with SAS® Viya®

Rob Collum, SAS Institute Inc. – [SAS3479-2019](#)

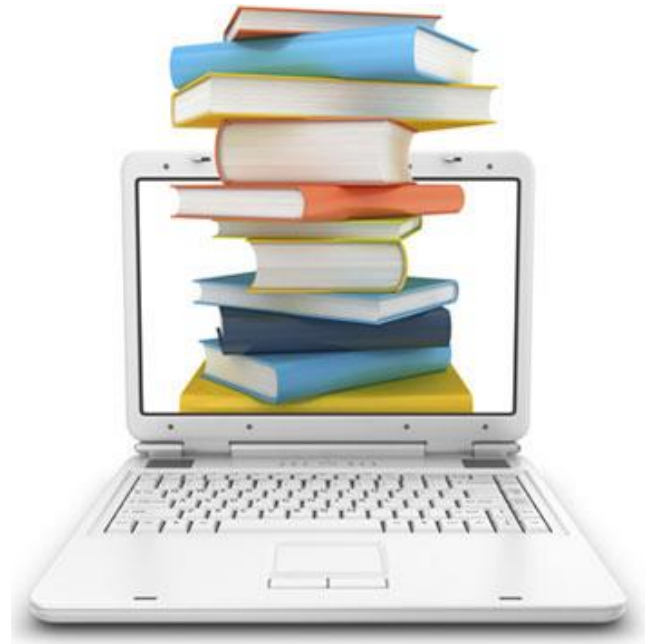
- Serial to CAS
- Parallel to CAS
 - HDFS
 - Shared file system
 - Embedded Process
 - Multi-node transfer
- Native data sources
- External data sources
- Fallback from parallel to serial



A Collection of Pre-installation Resource Documentation for SAS® 9.4 #SASGF

Jim Kuell, SAS Institute Inc. – [3497-2019](#)

- Virtualization
- Public Cloud
- OS Tuning / CPU / Memory
- I/O
 - SAS file systems
 - File system types
 - Shared file systems
 - Storage arrays
- H/A
- Monitoring
- Admin Checklist

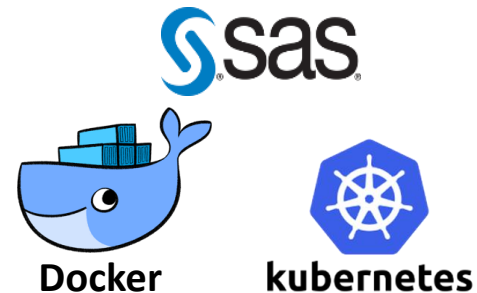


Construct, Roll Out, Manage, and Update

SAS® and Containers: The State of the Union 2019

Paul Kent, SAS Institute Inc. – [SAS3007-2019](#)

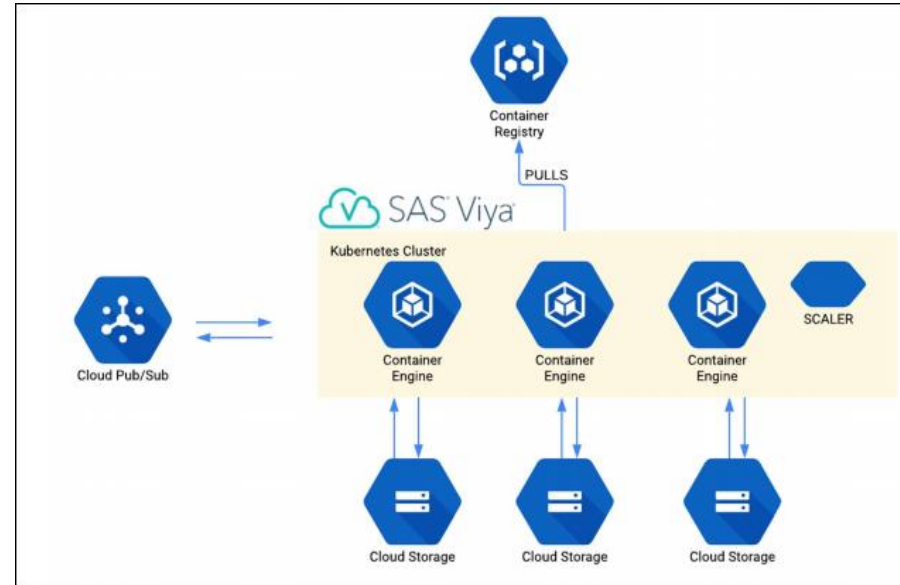
- 3 Models
 - Individual programming
 - Individual programming for larger problems
 - Multi-user software stack
- Containers / Docker primer
- SAS and containers
- Kubernetes orchestration
- SAS and Kubernetes



SAS® on Kubernetes: Container Orchestration of Analytic Work Loads

Sumanth Yamala, Core Compete – [3733-2019](#)

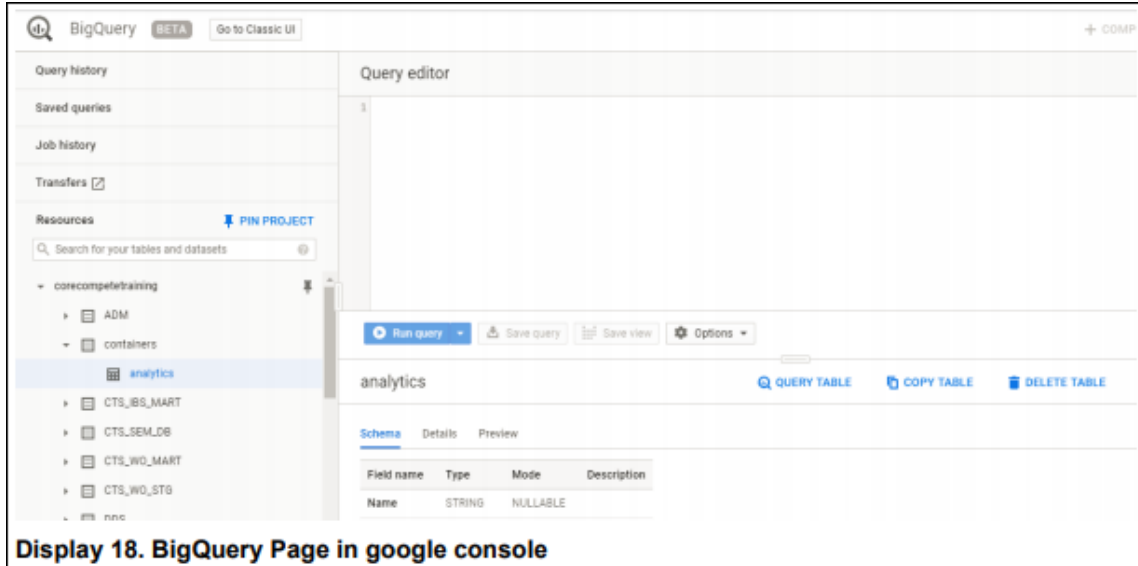
- Analytics divide-and-conquer
- Retailer scenario
- Containerized subsystems
 - Analytic
 - Storage
 - Message pipeline
 - Compute
 - Orchestration



Integration of Google BigQuery with SAS[®] Analytics Pro^{#SASGF} in Docker Container on Cloud Environment

Sanket Mitra/Srivalli Avadhanula/Fahad Ali, Core Compete – [2987-2019](#)

- Google BigQuery
- SAS Analytics for Containers
- Docker installation
- SAS ↔ BigQuery
- Building SAS container
- Deploying SAS container
- Validation

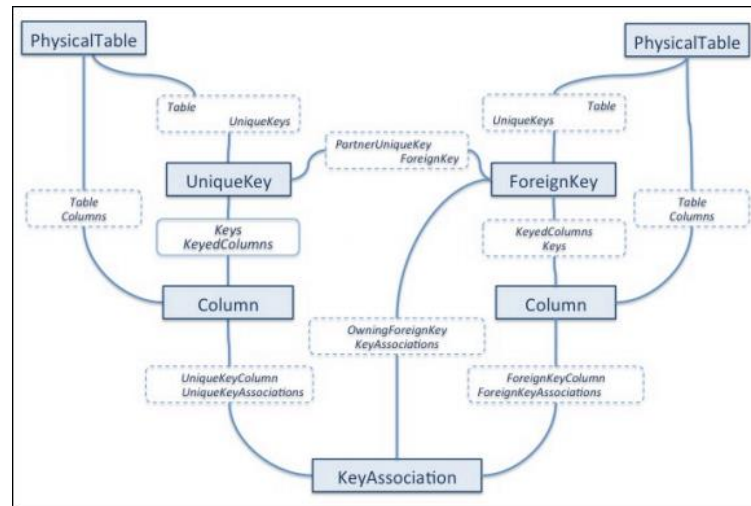


Display 18. BigQuery Page in google console

Making your Way through the Metadata Maze

Frank Poppe, Laurent de Walick, PW Consulting – [3645-2019](https://www.pwconsulting.nl/3645-2019)

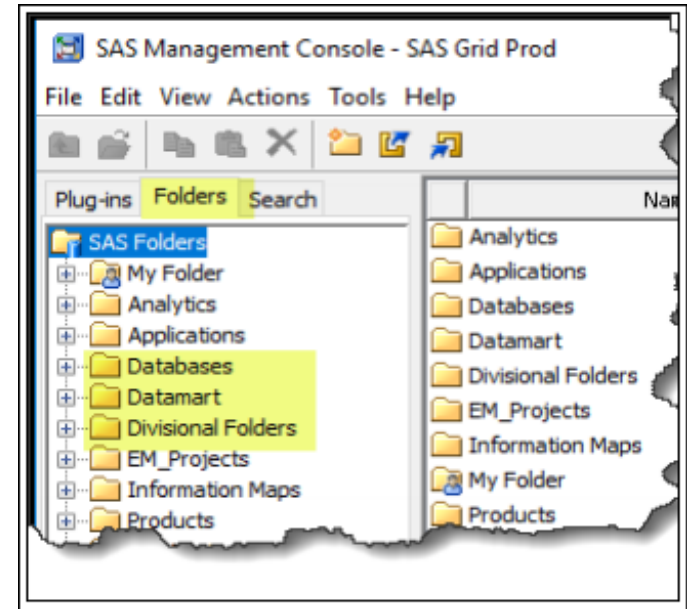
- PW Metadata Explorer stored process
 - <https://www.pwconsulting.nl/metadata-explorer-en/>
- Metadata primer
- Use cases
 - Where is a job used?
 - Is a column used as a foreign key?
- PW Metadata Explorer UI
- How it works



The Mother Of All Metadata Files: Using SAS[®] Provided Macros To Manage Metadata

Hugh G. McCabe, Excellus Blue Cross Blue Shield – [2977-2019](#)

- Auditing user access
- Goal: Central repository of user info
- Harvesting Metadata
- Assembling results
- Supporting Code
- Use cases



Introducing SAS® Workload Orchestrator, the New SAS® Grid Manager Workload Manager

Doug Haigh, SAS Institute Inc. – [SAS3430-2019](#)

- SAS Grid “providers”
 - IBM Platform LSF
 - Apache Hadoop Yarn
 - **SAS Workload Orchestrator**
- Architecture
- Operation
- Configuration
- Provider comparison



Smart SAS® Environment Manager Agent for SAS® Grid Manager with a Shared Configuration Directory

#SASGF

Zhiyong Li, SAS Institute Inc. – [SAS3350-2019](#)

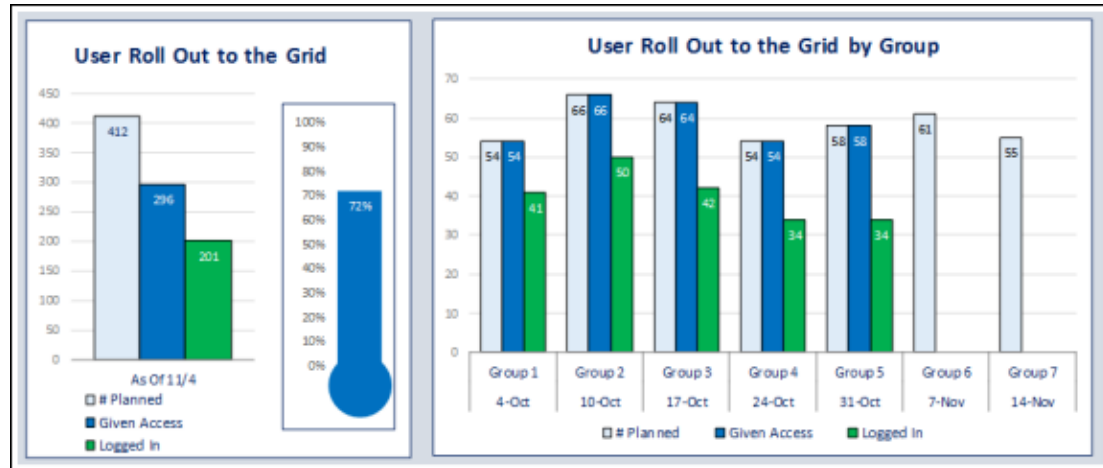
- Challenge: Installing EV agent on all new SAS Grid nodes
- Stopgap: Tech Support script
- 9.4M6: Smarter agent
- Design
- Implementation
- Deployment process
- Value
- +What's New in 9.4M6 Middle Tier



Our Journey: Getting on SAS® Grid

*David Wilson, Annette M. Green, and Karen Terminiello,
RTI International – [3585-2019](https://www.rti.com)*

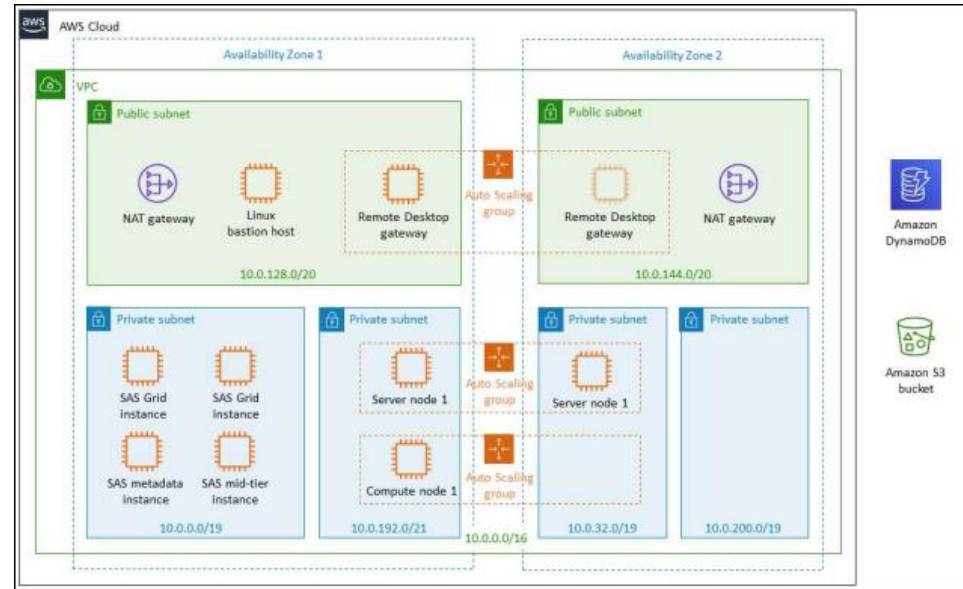
- SAS PC → SAS Grid Manager
- Benefits
- Engaging Stakeholders
- Planning
- Design, Build, & Test
- Rollout
- Support



SAS® Grid Quick Start 2.0 on Amazon Web Services

Siddharth Prasad and Srikanth Mergu, Core Compete Inc.

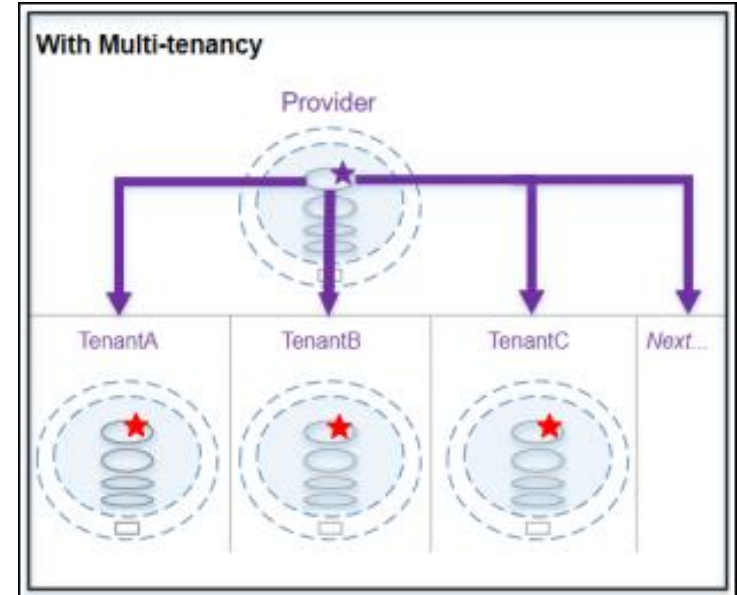
- Automated install of SAS Grid in AWS EC2
- Storage + SAS Grid + SAS 9 tiers
- Step-by-step deployment
- Cost / licensing
- ~3 hours



Multi-tenancy in SAS[®] Viya[®]: Considerations and Implementation

Eric Davis, SAS Institute Inc. – [SAS3322-2019](#)

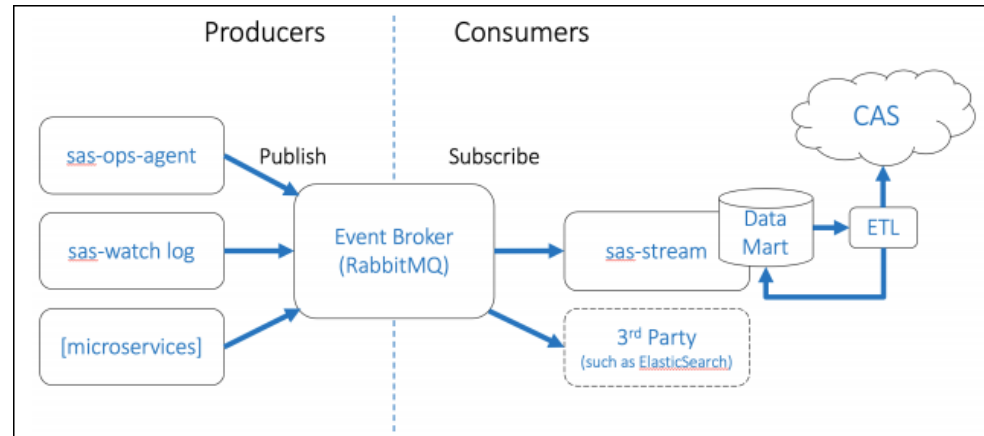
- Why multi-tenancy?
 - Security and segregation
 - Chargeback
 - Multiple LDAP connections
- Why **not** multi-tenancy?
- Terminology
- SAS Viya specifics
- Implementation
 - Deployment
 - Onboarding tenants
 - Offboarding tenants



Exploring the SAS® Viya® Operations Infrastructure

Bryan Ellington, SAS Institute Inc. – [SAS3393-2019](#)

- Architectural goals
- Operations Infrastructure components
 - sas-ops-agent
 - sas-peek
 - sas-watch
 - sas-stream
 - Data Mart
- Event flows
- sas-ops CLI
- Examples



Enhance, Tune, and Extend

Solving SAS® Performance Problems: Our Methodology

Jim Kuell, SAS Institute Inc. – [3490-2019](https://www.sas.com/forums/3490-2019)

- SAS Performance Lab standard methodology
- Gathering info
 - What's the problem?
 - Application inventory
 - Infrastructure
 - Logs
- Analyzing
 - FULLSTIMER
 - nmon
 - RHEL I/O and Gather Information scripts
- Real-life scenarios



Using the SAS® Object Spawner Log to Identify Issues More Quickly and Avoid Downtime

Jessica Franklin, SAS Institute Inc. – [SAS3418-2019](#)

- Object Spawner overview
- Object Spawner log
 - Location
 - Initialization vs. Rolling log
- Loggers
- Common issues
- Before you call Tech Support...

```

0', Command: '"C:\Program Files\SASHome\SASFoundation\9.4\objspawn" -name "SAS [Config-Lvl] Object Spawner"'
:SYSTEM@SASHOST - SAS Object Spawner Daemon III version 9.40.20170906 is initializing.
:SYSTEM@SASHOST - Command line (0x0) C:\Program Files\SASHome\SASFoundation\9.4\objspawn
:SYSTEM@SASHOST - Option (0xc0000007) name
:SYSTEM@SASHOST - value (0x0) SAS [Config-Lvl] Object Spawner
:SYSTEM@SASHOST - Option (0x4) dnsMatch
:SYSTEM@SASHOST - value (0x0) SASHOST.na.sas.com
:SYSTEM@SASHOST - Option (0xe) sasspawncrn
:SYSTEM@SASHOST - value (0x0) Object Spawner - SASHOST
:SYSTEM@SASHOST - Option (0x10) xmlconfigfile
:SYSTEM@SASHOST - value (0x0) D:\SAS\Config\Level\ObjectSpawner\metadataConfig.xml
:SYSTEM@SASHOST - Option (0x80000020) sspi
:SYSTEM@SASHOST - Option (0x8000000f) logconfigloc
:SYSTEM@SASHOST - value (0x0) D:\SAS\Config\Level\ObjectSpawner\logconfig.xml
:SYSTEM@SASHOST - Processing configuration file (D:\SAS\Config\Level\ObjectSpawner\metadataConfig.xml).
:SYSTEM@SASHOST - New out call client connection (1) for user sastrust@saspw. Encryption level is Everything
:SYSTEM@SASHOST - Objspawn is executing on host SASHOST.SAS.com (ab80::a489:5c8:cd2d:2efg%4).
:SYSTEM@SASHOST - Also known as:
:SYSTEM@SASHOST - localhost
:SYSTEM@SASHOST - SASHOST
:SYSTEM@SASHOST - view-localhost
:SYSTEM@SASHOST - ab80::a489:5c8:cd2d:2efg%4
:SYSTEM@SASHOST - ab80::a489:5c8:cd2d:2efg%6
:SYSTEM@SASHOST - ab80::1c56:b841:9567:d345%11
:SYSTEM@SASHOST - 10.11.12.13
:SYSTEM@SASHOST - 111.122.123.1
:SYSTEM@SASHOST - 111.122.31.1
:SYSTEM@SASHOST - :11
:SYSTEM@SASHOST - 127.0.0.1
:SYSTEM@SASHOST - Processing parsed configuration results.
:SYSTEM@SASHOST - Objspawn is proceeding with the configuration results processing utilizing the A5WN99NR.AZ000
  
```

Hidden Treasures in SAS® Scheduler Land

Randolph S. Williams, SAS Institute Inc. – [SAS3439-2019](#)

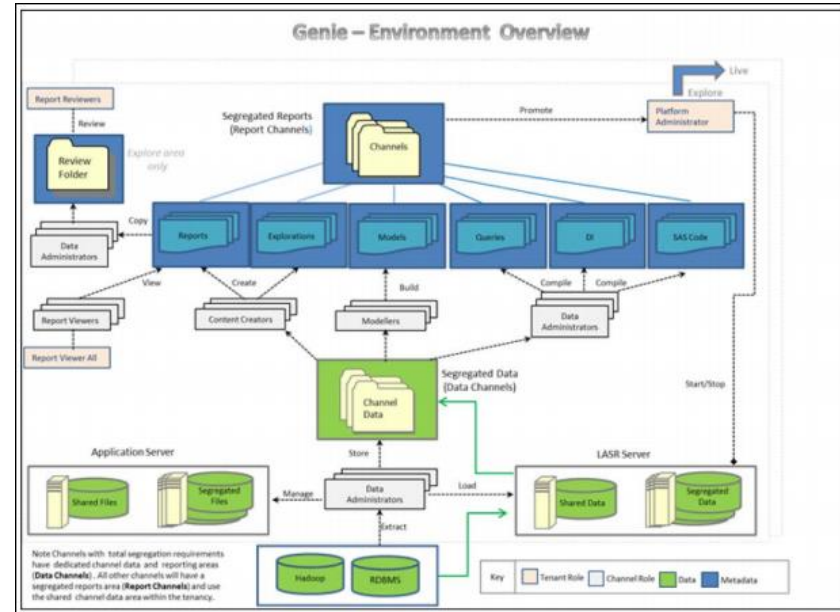
- Schedule Manager in SAS Management Console
- “Easter eggs”
 - How to unlock
 - Import flow
 - Validate job command properties
- Managing huge flows
- Choosing a scheduler
 - Platform Process Manager
 - SAS Job Flow Scheduler
 - Distributive In-process Services
 - OS Services



How many Genies can you fit in one bottle? Multi Tenancy and all the wishes you want

Ross Sansom, RBS – [3717-2019](#)

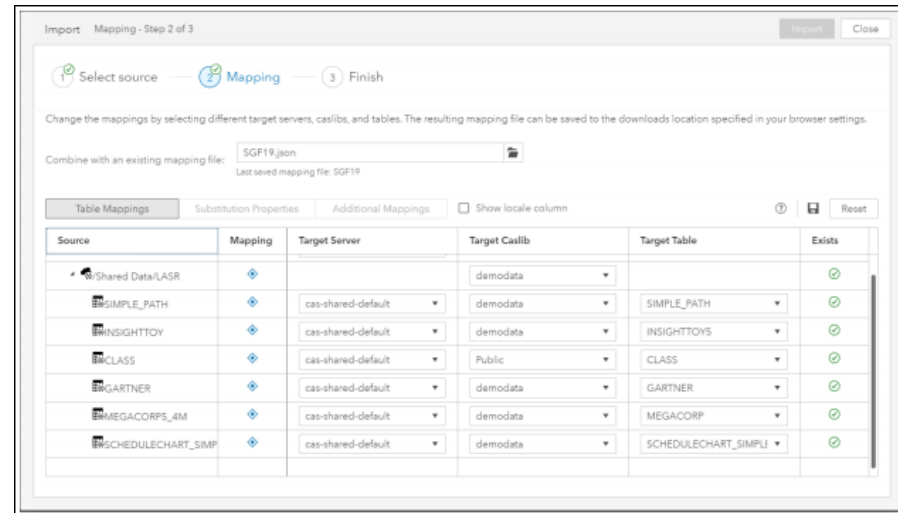
- RBS 3-year journey – “Genie”
- Genie components (SAS 9.4)
 - SAS Grid Manager
 - VA & EG
 - Hadoop / Teradata / Mainframe
- Little Green Button
- User management
- Data segregation



Modernize Your Business Intelligence Content from SAS[®] 9 to SAS[®] Viya[®] in Three Steps

Gregor Herrmann, SAS Institute Inc. – [3375-2019](https://www.sas.com/forums/3375-2019)

- Content promotion from VA 7.4 → VA 8.x
- System requirements
- Three Steps
 - Take inventory
 - Pre-promotion tasks
 - Execute the promotion
 - Export packages
 - Mapping file
 - SAS Environment Manager

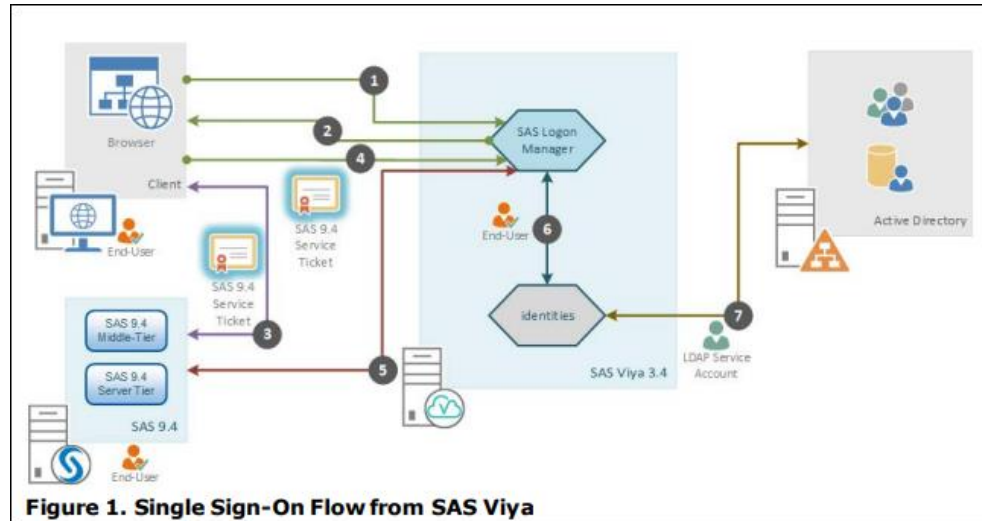


Security

Under One Umbrella: Single Sign-On with SAS® 9.4 and SAS® Viya®

Mike Roda, SAS Institute Inc. – [SAS3426-2019](#)

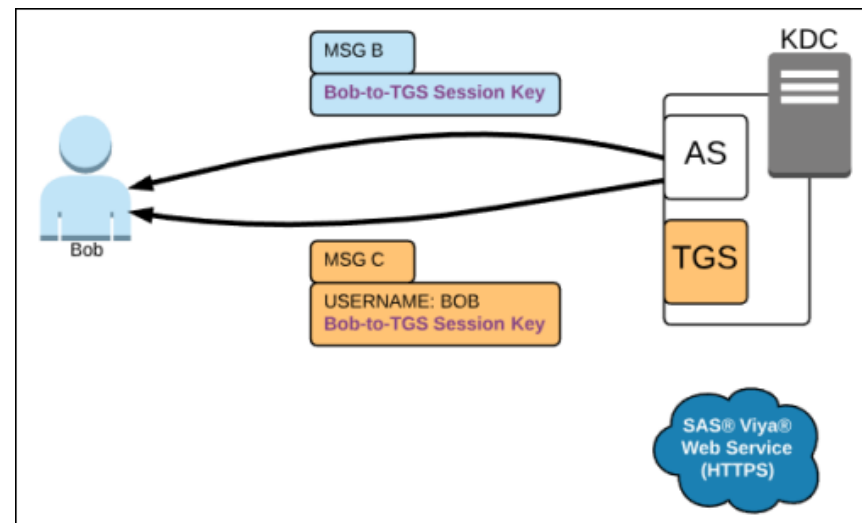
- SAS Logon Manager in SAS 9 vs. SAS Viya
- Authentication overview
- SAS 9 / SAS Viya SSO Configuration
- User name compatibility



SAS® Viya® and Kerberos: From the Ground Up

Michael Shealy and Spencer Hayes, Cached Consulting LLC – [3137-2019](https://www.cachedconsulting.com)

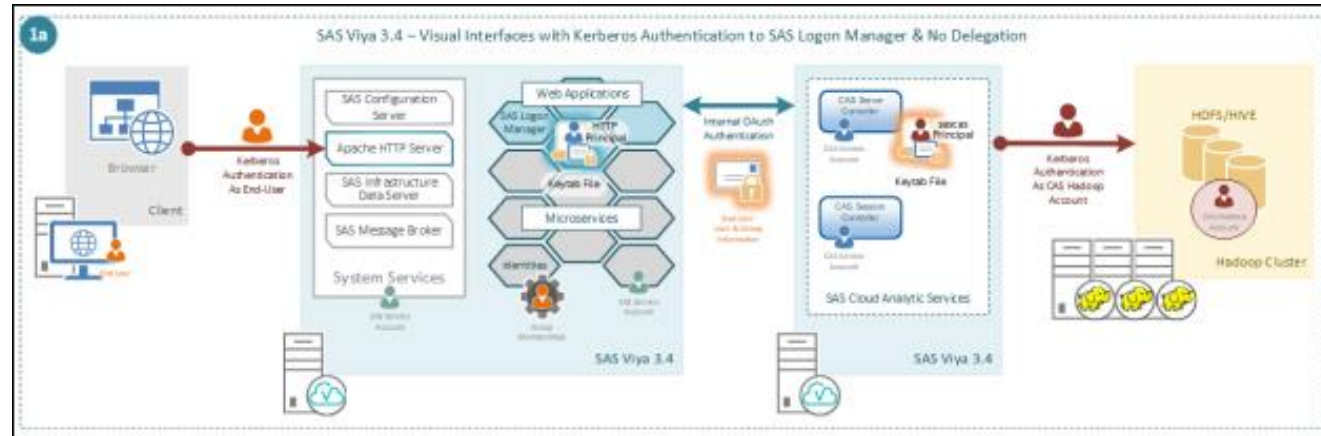
- Example Environment
 - SAS Viya, CentOS, Cloudera Hadoop, Active Directory Kerberos, IWA
- Kerberos primer
- Linux config
- SSH config
- Kerberos principals
- Hadoop config
- SAS Viya config
- IWA config



Extending the Reach of Kerberos Authentication from SAS[®] Viya[®] 3.4 to Apache Hadoop

Stuart J Rogers, SAS Institute Inc. – [SAS3000-2019](#)

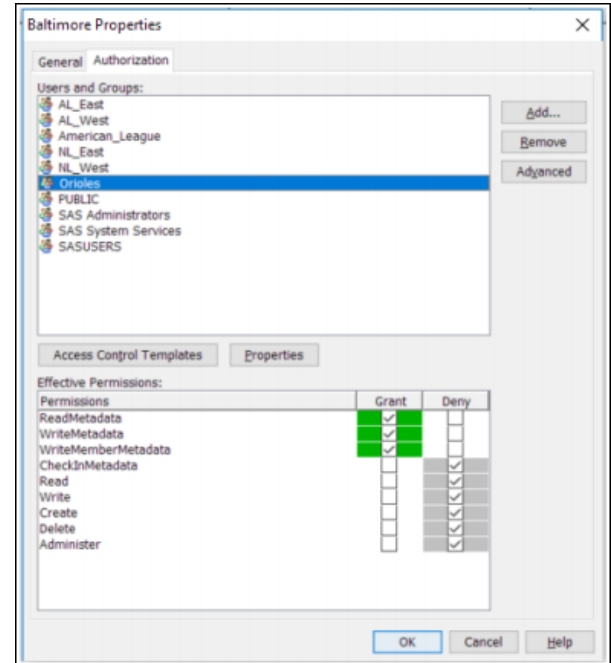
- Authentication into, within, and out of SAS Viya
- Kerberos and SAS Viya overview
- Prerequisites
- Configuration
- Edge Cases



Honey, Where Are My Grants? Tips for Creating a SAS® Viya® Content-Security Model Based on SAS® 9

Mark Dragone, SAS Institute Inc. – [SAS3500-2019](#)

- SAS 9 security model → SAS Viya
- Direct access controls
- Deconstructing ACTs
- Promotion process
- Sample code for administering security models



Thank you!

Mark.Schneider@sas.com

#SASGF



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Kay Bailey Hutchison Convention Center