



ASK THE EXPERT

An Introduction to SAS® Viya® Environment Manager

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Kevin has been with SAS since 1998 and has held various technical roles in sales, consulting and customer success. Kevin's expertise has been in data management, business intelligence, SAS administration and SAS architecture. His focus is to help SAS customers understand the value and potential of their SAS investment.



Introduction To Viya Environment Manager

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Agenda

An Introduction to SAS® Viya® Environment Manager

- Admin Tasks
- Viya Administrators personas
- Other Admin Tools
- Environment Manager Demo overview

SAS Environment Manager

SAS Environment Manager is a web application for SAS administration activities in a SAS Viya environment.

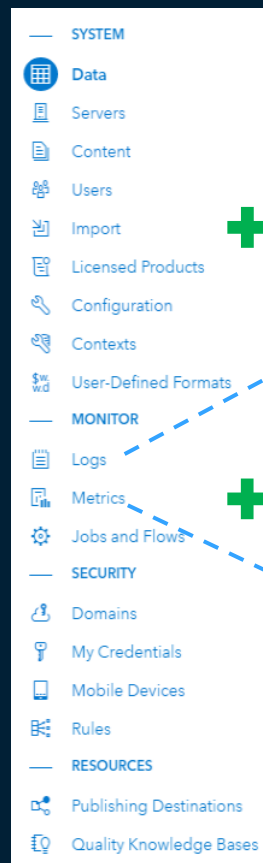
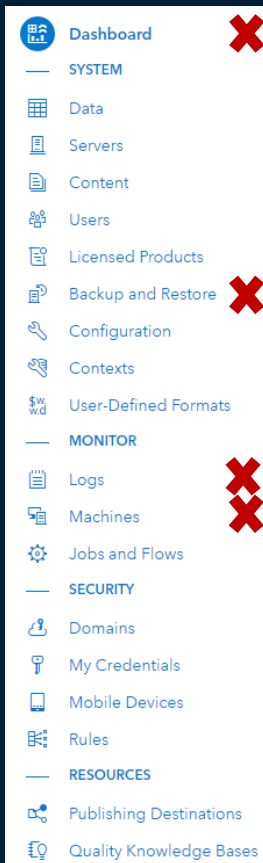
SAS Environment Manager consists of a set of pages. Each page enables you to examine and manage a particular aspect of the Viya environment.

Differences

- Viya 4 Environment Manager Configure links to external apps for logging and monitoring
- Notice that the Dashboard, Backup and Restore, and Machines pages are no longer part of the new Viya Environment Manager interface.
- In the Monitor group, the logs page must be configured to link to a logging application for viewing log messages (e.g., Kibana)
- Metrics page must be configured to link to a monitoring application (e.g., Grafana).

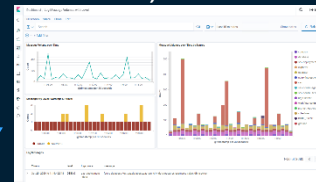
SAS Environment Manager Pages

Viya 3.x



Viya 4.x

Kibana, etc.

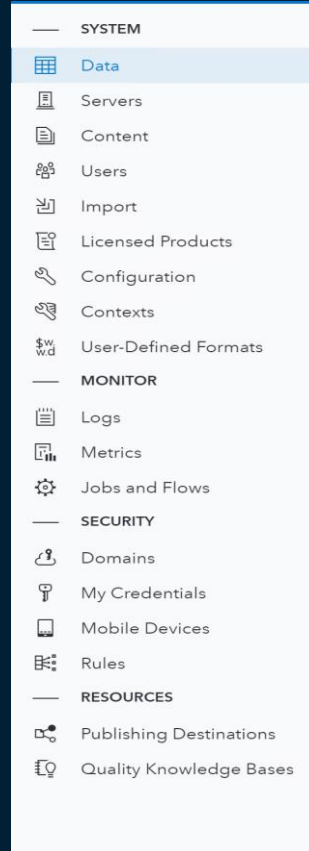


Grafana, etc.



Viya 4 Environment Manager: Functions

- **Data** CAS tables, caslibs, other data sources
- **Servers** configuration and information for CAS servers and launcher servers
- **User content** saved reports and data, favorites, and history
- **User information** users and groups from your directory service and SAS groups
- **Import** Use the Import page Import icon to migrate resources that exist in one environment to another environment.
- **License** information your SAS licenses and expiration dates.
- **Configuration** data for SAS Viya microservices
- **Contexts** values such as environment variables and port ranges that are used when launching a process
- **Publishing destinations** for publishing decisions, models, and rule sets from SAS applications (available only if SAS Model Manager, SAS Decision Manager, or Model Studio is installed)



- **User-defined formats** user-defined data formats and format libraries
- **Logs** log messages from SAS applications and services.
- **Jobs** monitoring of current and past jobs and schedules for jobs
- **Domain's authentication** domains (for storing a user ID and password), encryption domains (for storing an encryption key), and connection domains (for storing a user ID without a password)
- **Credentials personal** credentials for the authenticated user across authentication and connection domains
- **Mobile device** access lists that allow or prevent access to the system by specific mobile devices
- **Rules** access controls and rules that control who can access resources and content in your system
- **Quality Knowledge Bases** collections of files that store data and the logic that define data quality operations such as parsing, standardization, and matching (available only if SAS Data Quality is installed)

How to Access to Functionality in SAS Environment Manager

Not all users can see all available pages. If you want to change the distribution of access to functionality

Predefined authorization rules affect access to functionality as follows:

- All authenticated users can access SAS Environment Manager.
- SAS Administrators can see all available pages because the SAS Administrators group has a universal grant.
- In a multi-tenant environment, the administrator of the provider tenant can see all available pages.
- Other authenticated users can see only a subset of pages, as documented in the following table.

How to Access to Functionality in SAS Environment Manager

URIs for Access to SAS Environment Manager Functionality

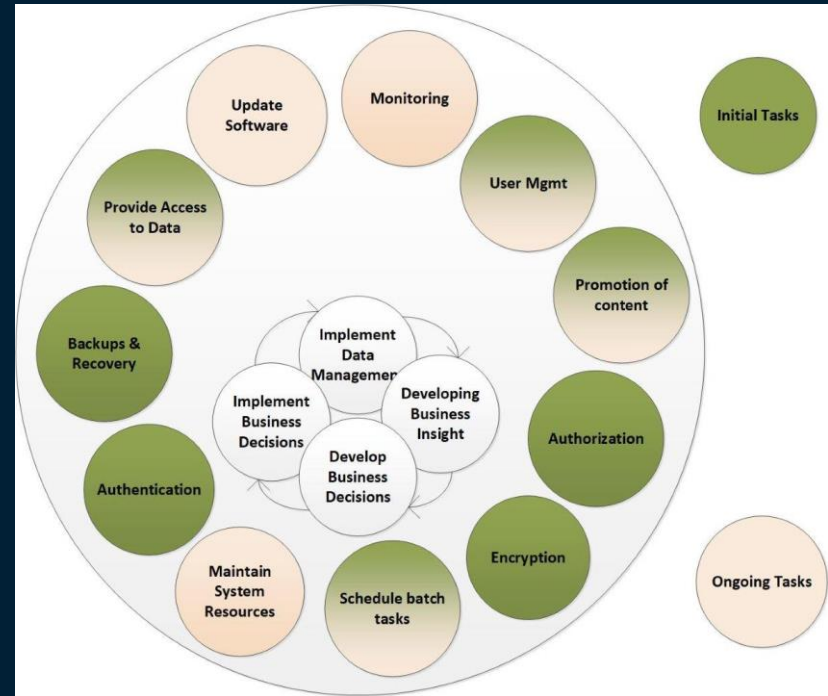
Feature	URI	Predefined Grant
All pages	/SASEnvironmentManager/**	SAS Administrators
Application	/SASEnvironmentManager/	Authenticated Users
Content page	/SASEnvironmentManager/content	Authenticated Users
Data page	/SASEnvironmentManager/data	Authenticated Users
Jobs and Flows page	/SASEnvironmentManager/jobs	Authenticated Users
My Credentials page	/SASEnvironmentManager/credentials	Authenticated Users
Quality Knowledge Bases page	/SASEnvironmentManager/qkbs	Authenticated Users
Servers page	/SASEnvironmentManager/servers	Authenticated Users
Configuration page	/SASEnvironmentManager/configuration	(none)

Feature	URI	Predefined Grant
Contexts page	/SASEnvironmentManager/contexts	(none)
Domains page	/SASEnvironmentManager/domains	(none)
Features page	/SASEnvironmentManager/features	(none)
Import page	/SASEnvironmentManager/import	(none)
Licensed Products page	/SASEnvironmentManager/licenses	(none)
Logs page	/SASEnvironmentManager/logs	(none)
Metrics page	/SASEnvironmentManager/metrics	(none)
Mobile Devices page	/SASEnvironmentManager/devices	(none)
Publishing Destinations page	/SASEnvironmentManager/destinations	(none)
Rules page	/SASEnvironmentManager/rules	(none)
Users page	/SASEnvironmentManager/identities	(none)
User-Defined Formats page	/SASEnvironmentManager/udf	(none)

Administrative Tasks

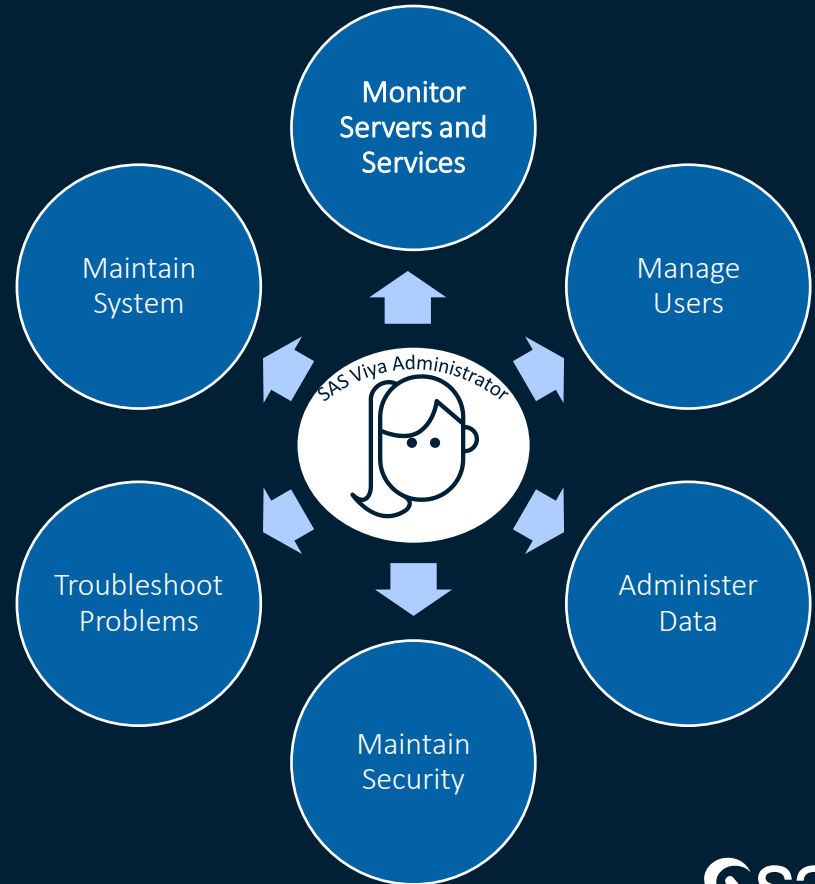
- Initial Tasks:

1. Immediately after a deployment initial administration tasks may include activities necessary to protect the integrity of your system.
2. For example, configuring encryption, authentication and authorization and establishing a regular backup schedule.
3. These tasks may only be performed once and perhaps updated occasionally depending on business requirements change.



Use Viya Environment Manager To Manage Ongoing Tasks

1. Once a Viya deployment is up and running it requires regular management and maintenance to keep it healthy.
2. Ongoing tasks include monitoring servers, updating software, managing content, maintaining storage capacity and monitoring servers and activity, managing users, administrating data, maintaining security, troubleshooting and maintaining the Viya systems.



Viya Administrators personas

Overlapping Responsibilities

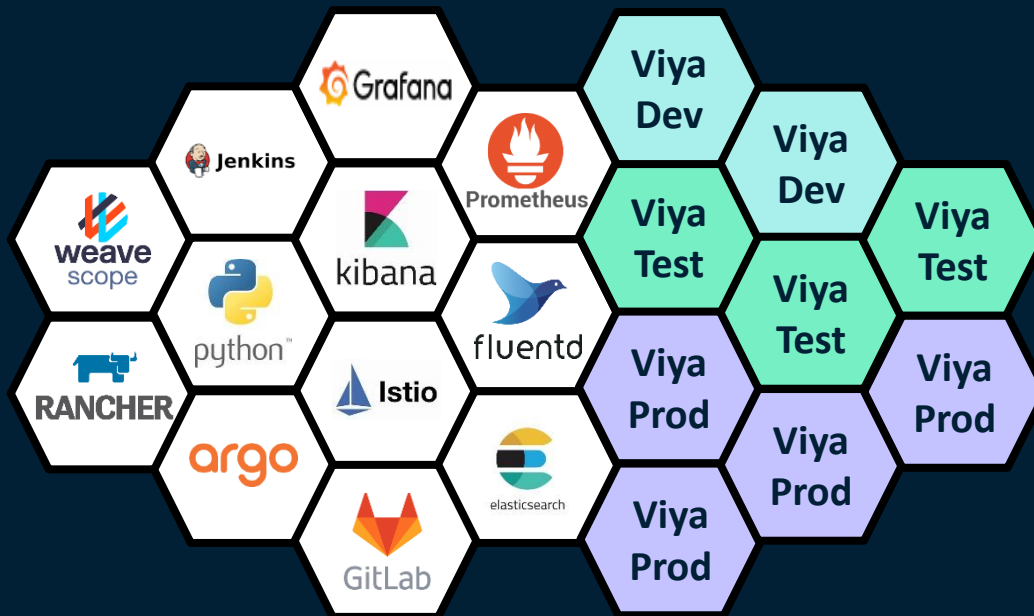
K8s admin

Manages and may use

Viya admin

May use

Manages

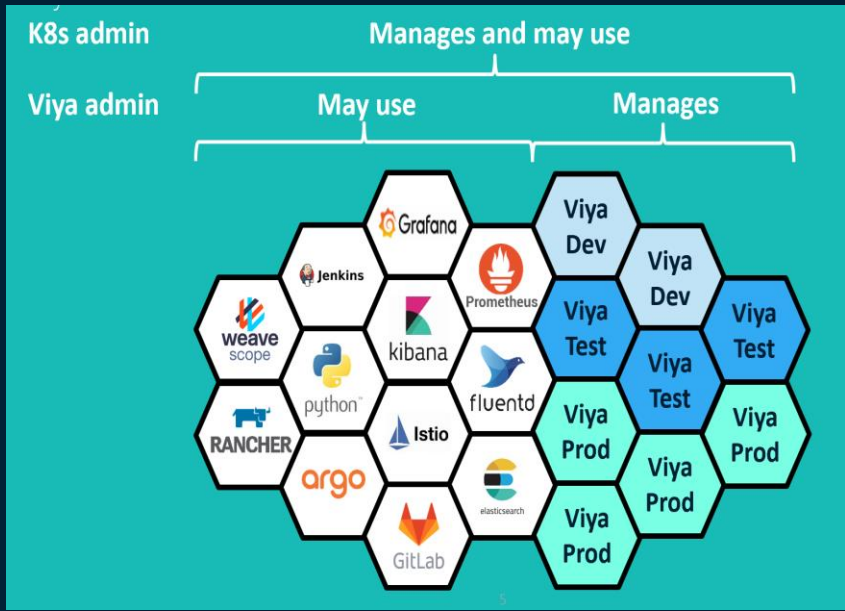


Note: the K8 Admin will need to grant expanded rights to the Viya Admin to perform some Viya administration tasks or perform them on the Viya Admin's behalf

Viya Administrators personas

There are two primary administration personas: a Kubernetes administrator and a Viya administrator

Whether the Kubernetes and Viya administrator personas are filled by one or more people is likely to differ from customer to customer and is not all that important.



Kubernetes Administrator

Role Description

An IT Administrator responsible for the entire Kubernetes cluster. Responsible for all applications running within the cluster, not just SAS Viya.

Task Examples

- Deploy, update and manage the SAS Viya software
- Ensure that system requirements are met and planning workload placement in the cluster
- Customizing the environment to meet the needs of the business and its users
- Performing backups and restoring, moving environments
- Create and administer cloud security model
- Monitoring the cluster and managing appropriate access for Viya admin
- Managing logging for Viya solutions
- Starting, stopping, restarting cluster services, including SAS Viya

Skills

- Experience with cloud provider for deployment (Azure, Google, Amazon, Openshift, etc.)
 - Storage
 - Ingress
 - Identity Management
- Expert in Kubernetes concepts and tasks
 - Declarative deployments with manifests
 - kubectl commands
 - kustomize and kustomization files
- YAML
- terraform
- Logging and monitoring concepts
- Git concepts

Viya Administrator

Role Description

SAS Platform Administrator responsible for the health, safety and performance of the SAS Viya applications. Familiar with the workload patterns of CAS, the Compute Service, and how SAS Solution usage impacts the SAS environment.

Task Examples

- User configuration and access
- System configuration, lifecycle management
- Synchronization of environments
- Manage data import, load, unload, access
- Metadata management, including backups
- Issue tracking, log review and analysis
- Manage interaction with SAS Technical Support
- System clean up / tuning
- Coordinate with Kubernetes admin (or do independently with appropriate access):
 - Monitoring Viya performance in the cluster
 - Managing/reviewing Viya logging
 - Starting, stopping, restarting Viya services

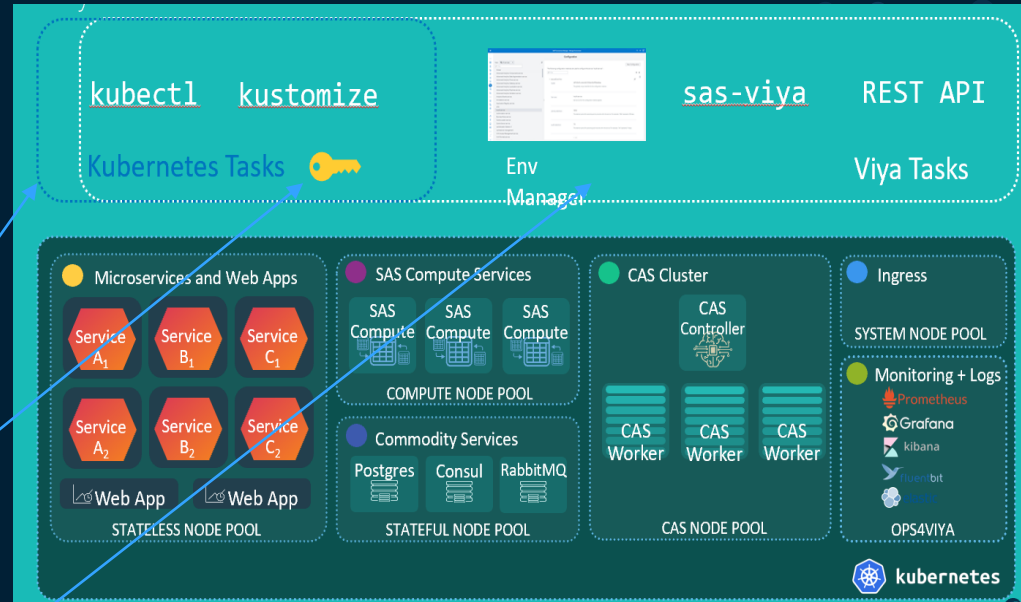
Skills

- SAS Environment Manager
- **SAS Viya admin command-line interface**
- CAS Actions
- Hardware, File systems
- Networking
- Security
- Logging and monitoring concepts
- Git concepts
- Familiarity with Kubernetes concepts and tasks
 - Declarative deployments with manifests
 - kubectl commands
 - kustomize and kustomization files
- Familiarity with YAML

Other Admin Tools

Administration Tools

- Due to the complexity of a Viya deployment you will likely find yourself using several administration tools.
- Kubectl and Kustomize are two tools you will need for carrying out Kubernetes tasks such as stopping or restarting Viya, modifying configuration settings, and scaling services.
- You can see that reflected in the diagram by the blue dotted line.
- Notice that these tools are outside of the Kubernetes cluster and may require certain cluster or namespace permissions, represented by the yellow key.
- Typical Viya-related admin tasks can be done using SAS Environment Manager, the sas-viya CLI, or REST calls from Python or any other language.



Environment Manager

SAS Environment Manager is still a crucial portal for the Viya administrator.

The screenshot displays the SAS Environment Manager interface. The left sidebar contains a navigation menu with categories: SYSTEM, MONITOR, and SECURITY. The main content area is titled 'Data' and shows a list of data sources. The 'SASVIYATYPES' data source is selected, and its details are shown in a table. The table has columns for #, Name, Label, Type, Raw..., For..., For..., and T... . The table contains 8 rows of data. On the right side, there is a metadata panel showing 'Date profiled: (none)', 'Columns: 8', 'Size: 48 KB', 'Label: (not available)', 'Location: cas-shared-default/', 'Date created: Aug 23, 2021 04:09', 'Date modified: Aug 23, 2021 04:09', 'Date last accessed: Aug 23, 2021 04:09', 'Source table: (not available)', and 'Source CAS Library:'.

#	Name	Label	Type	Raw...	For...	For...	T... !
1	Scannable		var...	0	1		
2	Portfolio		var...	31	31		
3	Sellable Offering		var...	50	50		
4	DisplayName		var...	47	47		
5	Type		var...	47	47		
6	TypeDescription		var...	284	284		
7	Product		var...	39	39		
8	Internal		var...	16	16		



Viya Environment Manager Demo