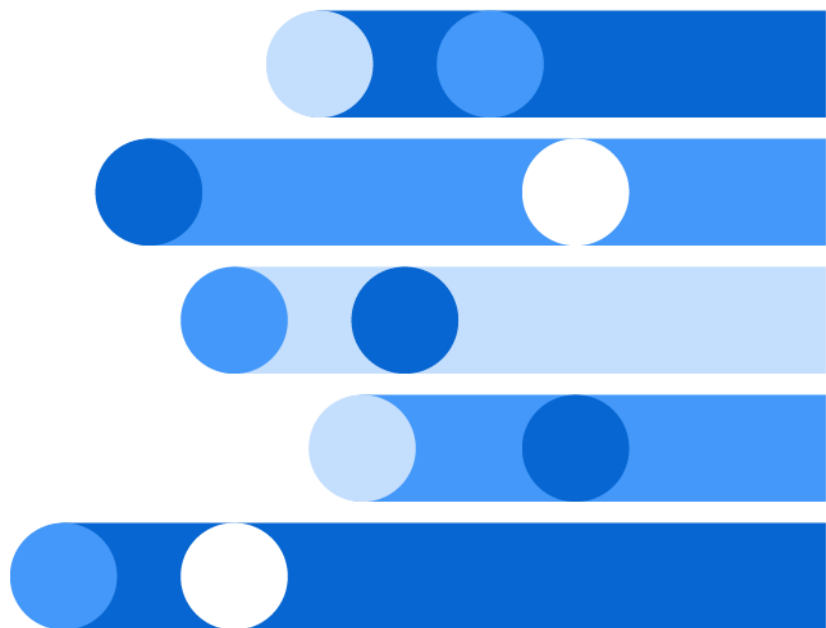




What's New in SAS[®] Viya[®] Platform Administration

2020.1 - 2026.05*



* This document might apply to additional versions of the software. Open this document in [SAS Help Center](#) and click on the version in the banner to see all available versions.



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What's New in SAS® Viya® Platform Administration

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LTS 2026.03 (May 2025)

The 2026.03 long-term support release is based on the 2026.03 stable release. It includes all features in the 2025.09 long-term support release plus all stable releases from 2025.10 to 2026.03.

Servers

New Scaling Controls for a Pool of Reusable Compute Servers

Compute contexts that are configured for reusable servers now support additional attributes that can be used to proactively control the scaling of the pool of servers to meet the current demand.

The pool of available compute servers can automatically scale up when the usage reaches a defined threshold set by `serverPoolScaleThreshold` attribute. A configured number of servers set by the `serverPoolScaleStep` attribute is added until the maximum number of servers that is set by `serverMaxAvailable` attribute is reached, which ensures faster response times for analytical workloads.

For more information, see [“Compute Context Attributes” in SAS Viya Platform: Programming Run-Time Servers](#) and [“Configure a Pool of Available Compute Servers” in SAS Viya Platform: Programming Run-Time Servers](#).

External URL Access Control in SAS Programming Run-Time Servers

SAS LOCKDOWN security now supports an allowlist for external URLs that are used in `FILENAME URL` and `PROC HTTP` statements to ensure that the outbound access is explicitly approved by the administrators. This control helps to reduce data exfiltration risk and meet compliance requirements while retaining audited and intentional access to trusted endpoints. To obtain a secure environment, the SAS administrator can control which URL paths are allowed by adding at least one URL path to the URL allowlist. For more information, see [URL syntax and details](#).

The URL allowlist applies to only SAS language execution paths and does not affect third-party languages.

CAS Server Optional for Programming-Only Deployments

If your software order includes the SAS Viya Programming offering, you can exclude the default CAS server from your deployment. You must be able to run all of your programming use cases using only Programming Runtime servers such as SAS Compute Server. Excluding the CAS server enables your SAS programmers to

access SAS Viya analytics using familiar PROC interfaces. For more information, see [“Configure CAS” in SAS Viya Platform: Deployment Guide](#).

If you exclude the default CAS server in your initial deployment but decide that you want to add it after the deployment is complete, see [“Add CAS Server to SAS Viya Programming-Only Deployment” in SAS Viya Platform: SAS Cloud Analytic Services](#). If you are interested in excluding the default CAS server from your deployment after the initial deployment, see [“Remove CAS Server from SAS Viya Programming-Only Deployment” in SAS Viya Platform: SAS Cloud Analytic Services](#).

Crunchy Postgres for Kubernetes

Version Upgrade

Crunchy Postgres for Kubernetes, the version of Kubernetes that is included for internal instances of PostgreSQL, is being upgraded from 5.7.5 to 5.8.3. As part of the upgrade, the source base image is being upgraded from the Red Hat Universal Base Image 8 (UBI8) to the Red Hat Universal Base Image 9 (UBI9). No user intervention is required.

SAS Environment Manager

SAS Viya Copilot Page

SAS Viya Copilot is now available for use with the SAS Viya platform. The copilot is managed in SAS Environment Manager. [Read more](#)

SAS Viya Copilot is a GenAI-powered assistant built into the SAS Viya platform, designed to accelerate productivity across the analytics life cycle. It uses large language models (LLMs) stored on the SAS Azure tenant and accessed through a secure gateway, to enable conversational, AI-driven assistance.

SAS Viya Copilot is deployed as part of the SAS Viya platform. After you have deployed the SAS Viya platform, and if you have the combination of products currently supported by SAS Viya Copilot, SAS Environment Manager includes a new SAS Viya Copilot page, from which you can activate the copilot. If you do not have the products that enable the activation of the copilot, the SAS Viya Copilot page is not available. For more information about setting up the copilot, see [“Credential and Secrets Setup for SAS Viya Copilot” in SAS Viya Platform: Licensing](#).

For more general information about SAS Viya Copilot, see [SAS Viya Copilot: Foundation Overview](#).

For more information about managing SAS Viya Copilot in SAS Environment Manager, see [“SAS Viya Copilot Page”](#) in *SAS Environment Manager: User’s Guide*.

Managing Credentials

The following changes have been made to manage credentials from the **Domains** page and **Credentials view**.

- When adding a new credential, only one identity can be added. Prior to SAS Viya 2025.12, multiple identities could be added when creating a new credential. When multiple identities are needed for the same credential, [create a custom group](#). Identities can be added and removed from that custom group.
- When editing a credential, the identity can no longer be changed. To change the identity for a credential, delete the credential and add a new credential with the new identity.

For more information, see [“Manage Credentials”](#) in *SAS Environment Manager: User’s Guide*.

Authentication

Change to SAML Authentication Default Settings

You might need to make a configuration change if you are using SAML for authentication to the SAS Viya platform. No action is necessary if either condition is true:

- you have defined a property for `issuer.uri` under the `sas.logon.jwt` configuration, as described in [Configure the issuer.uri](#)
- you are using the `sas.logon.saml` configuration and have defined an `entityBaseURL` property

The `AssertionConsumerService` URL in the SAML metadata will continue to use URLs that were defined using those methods. Otherwise, SAS Logon Manager defaults to use `http://localhost/SASLogon` starting in 2026.03. SAML logins might start to fail.

Refer to [“Configure the SAS Viya Platform as a SAML Service Provider”](#) in *SAS Viya Platform: Authentication* for information about setting the `issuer.uri` property with the `sas.logon.jwt` configuration.

Command-Line Interface

Suggestions and Autocompletion

The **sas-viya** command-line interface has been enhanced to include autocompletion and suggestions for partial or incorrect commands.

For more information, see [“Auto-Completion” in SAS Viya Platform: Using the Command-Line Interface](#).

Encryption

NETENCRYPTALGORITHM= System Option Values RC2, RC4, DES, TRIPLEDES, and AES Are Deprecated

The NETENCRYPTALGORITHM= (alias NETENCALG=) system option values of RC2, RC4, DES, TRIPLEDES, and AES are deprecated. These values will be removed in an upcoming SAS Viya release. Change the option value to SSL to specify the use of the TLS protocol.

For more information, see [“NETENCRYPTALGORITHM= System Option” in SAS Viya Platform Encryption: Data in Motion](#).

SAS Workload Orchestrator

Time-Based Minimum Node Scaling

For any SAS Workload Orchestrator scalable host type, you can define a minimum number of nodes that must be available for that host type for the current time-based configuration.

This behavior ensures that the required compute capacity is made available and ready during peak hours, while still enabling autoscaling to expand as demand grows. The result is more predictable performance when you need it most and provides improved cost efficiency during off-peak hours.

For details, see:

- [“How SAS Workload Orchestrator Uses Kubernetes Cluster Autoscaler to Scale Up”](#) in *SAS Viya Platform: Workload Management*
- [“Enable Autoscaling for a Host Type”](#) in *SAS Environment Manager: User's Guide*

Services

Change to Default Memory Allocation for the Identities Service

A default setting for the identities service has been changed in order to improve its performance. As a result of testing to derive optimal values for container memory, the minimum memory requirement for the identities service has changed in 2025.11 from 650 Mi to 1500 Mi.

Increased performance and reliability is expected for medium-sized or large deployments. In small environments where RAM resources are minimal, you can reduce the default setting. A Kubernetes administrator can change the `requests.memory` setting in the pod template.

SAS SpeedyStore

Default Collation

Documentation has been added about a default SingleStore setting that can affect string comparisons. For case-sensitive comparisons, you might need to change the server collation setting in the SingleStore deployment. For more information and instructions to change the default setting, see [“Setting or Modifying the Collation”](#) in *SAS SpeedyStore: Administration and Configuration Guide*.

SAS Launcher

Command Allowlist

SAS Launcher now enforces a secure-by-default policy. When the SAS Launcher's command allowlist is empty, operating system command execution is denied. To

enable specific commands, add them to the allowlist. For more information, see [“Enable Security Using the Allowlist”](#) in *SAS Viya Platform: Programming Run-Time Servers*.

SAS Launcher Configuration Properties

The default and the maximum memory request limit is now 6Gi. For more information, see [“Configuration Properties: Launcher Service”](#) in *SAS Viya Platform: Programming Run-Time Servers*.

LTS 2025.09 (November 2025)

The 2025.09 long-term support release is based on the 2025.09 stable release. It includes all features in the 2025.03 long-term support release plus all stable releases from 2025.04 to 2025.09.

SAS Workload Orchestrator

SAS Workload Orchestrator Database Performance Improvements

SAS Workload Orchestrator is enhanced for performance, resilience, and efficiency by optimizing database interactions and improving system reliability.

The following enhancements significantly increase system resilience by improving database performance:

- optimized query updates.
- better job management.
- automated cleanup of completed jobs records. For details, see [“Deleting Job Records”](#) in *SAS Viya Platform: Workload Management*.
- enhanced table indexing.
- reduced size of job history tables.

The improvements address issues with compute sessions and jobs that were slow to start, which were reported in earlier releases. The enhancements deliver a more reliable and responsive experience for the users and ensure smoother operations.

Jobs and Flows

Ability to Delete Obsolete Job Objects

The job plug-in to the sas-viya CLI provides new commands for deleting obsolete job instances and orphaned job definitions from the SAS Viya platform database. See [“Deleting Job Objects from the SAS Viya Platform Database”](#) in *SAS Viya Platform: Jobs and Flows*.

New Argument for Compute Provider for Job Execution Service

A new argument is available that enables you to avoid an overly long key name for fileref results. See [“Change Key Names for Results”](#) in *SAS Viya Platform: Jobs and Flows*.

File-Event Triggers

You can now include a file-event trigger when scheduling a job flow by using the Jobs and Flows page.

See [Schedule a Job Flow](#) and [“Create a File-Event Trigger for a Job Flow”](#) in *SAS Environment Manager: User’s Guide*.

New Execution Path for Short Duration Jobs Using Compute Tasks

Compute Tasks is a new method of executing short duration jobs (typically that complete in less than a couple of seconds) that prioritizes speed over resilience. When using Compute Tasks, you can submit a program and receive its output in a single HTTP request. It is designed to be a lightweight alternative to Job Execution Service when scheduling, result persistence, and fault tolerant retries are not required.

For more information, see [Compute Tasks Concepts](#) and [“Work with Compute Tasks”](#) in *SAS Viya Platform: Programming Run-Time Servers*.

For instructions to edit the existing job definition so that it is executed using Compute Tasks instead of Job Execution Service, see [“Executing a Job as a Compute Task”](#) in *SAS Job Execution Web Application: User’s Guide*.

Encryption

Customer-provided Root CA Certificate Is Supported

Instructions have been included in the documentation to replace the SAS Viya platform root CA certificate with a customer-provided root CA certificate post deployment.

See [Replace the SAS Viya Platform Root CA Certificate](#).

Authentication

New SAML Option

A new option for SAML authentication is now available: entityIDAlias.

When you configure `sas.logon.saml.sp` for SAML authentication, you can now specify an alias that the entity ID can use in SAML URLs, such as the AssertionConsumerService URL. The SAML service provider metadata and SAML authentication request include the alias as part of SAML URLs. For more information, see “[Configure the SAS Viya Platform as a SAML Service Provider](#)” in *SAS Viya Platform: Authentication*.

SAS Sign-in Window

SAS Logon Manager has a new user interface design. As a result, when you update to 2025.09 or later, the SAS Sign in window might be displayed with misaligned fields and unexpected icons. The formatting of the Sign in window could be determined by old styling components that are saved in your browser’s cache.

You can clear your browser’s cache from your browser’s privacy settings. On most browsers, if you press the Shift key while refreshing the page, the browser bypasses the cache and loads the page directly from the server. Doing this should display the new theme, correcting any issues with the Sign in window.

Migration

SAS Viya Inventory Report

The SAS Viya inventory report has been refreshed and updated.

SAS Viya Inventory Report

The SAS Viya inventory report has been refreshed and updated.

New CSV File for Internal Objects on Inventory Scan

Internal objects are now listed in a new SASViyaInventory_Internal.csv file when you run the scan play of the Plan and Backup Ansible playbook. Previously, these objects were included in the SASViyaInventory.csv file.

New CSV File for Transfer Packages on Inventory Scan

Transfer packages are now included in the Inventory Scan. A new CSV file is created: SASViyaInventory_TransferPkgs.csv. The results are included in a new page in the SAS Viya Inventory report.

Share SAS Viya 3.x Inventory Results with SAS

The SAS Viya 3.x inventory scan can now be shared with SAS to help you with your migration planning. For more details see [“Sending Results to SAS for Analysis” in SAS Viya 3 Content Assessment](#).

Migration Documentation

The documentation that explains how to migrate from SAS Viya 3.x to the SAS Viya platform has been restructured. Now the [common planning steps](#) are separated

from the detailed migration steps. The latter are dependent on the migration method that you are using.

SAS Environment Manager Import Page

The Import user interface has been improved and enhanced.

External Credentials

External Credentials Management

SAS Environment Manager provides the ability to restrict applications when using an Authentication (password) domain. When creating or modifying a password domain, you can select the **Restrict applications** check box and list the applications to restrict. For more information,

Infrastructure Servers

Changing PersistentVolumeClaim Size and the StorageClass on Redis Nodes

Redis now has a transformer file that enables you to modify the PersistentVolumeClaim size or the StorageClass for nodes. The transformer file can be applied on the deployment of your SAS Viya platform software. For details, see [“Modify PersistentVolumeClaim \(PVC\) or Storage Class” in SAS Viya Platform: Infrastructure Servers](#).

Themes

Refreshed SAS Viya Themes

The SAS Viya themes have been refreshed and include the following enhancements:

- improved focus indicator visibility for keyboard users

- the Dark theme now provides a better low-light experience, reduces eye strain, and supports extended use
- an updated graph palette, which provides a new default color scheme for graphs
- the High Contrast theme now makes reading and understanding complex graphs easier for users with visual impairments
- redesigned elements, such as buttons, input fields, and tiles now provide a more consistent experience
- a new typeface with improved legibility, a refreshed color palette, and an updated illustration style

Notifications

Purge Old Notifications

A new property is available that controls the behavior of purging old notifications. Administrators can manage storage by periodically cleaning up old notification records. For more information, see [“Purge Old Notifications” in SAS Environment Manager: User’s Guide](#).

Domains

SAS Environment Manager Domain’s Page

Changes have been made to the SAS Environment Manager Domain’s page as follows:

- Domain type Authentication (token) is renamed to Authentication (OAuth2.0). Prior to 2025.08, the domain type Authentication (token) was used for OAuth 2.0. Use this domain type to configure group-managed service accounts.
- Domain type Authentication (token) provides a flexible way to specify credential properties and secrets for tokens.

LTS 2025.03 (May 2025)

The 2025.03 long-term support release is based on the 2025.03 stable release. It includes all features in the 2024.09 long-term support release plus all stable releases from 2024.10 to 2025.03.

Auditing

New Database Columns for Audit Service Activity Records

The SAS Viya audit service now populates two new columns in the user activity database `activity_audit_data`.

For activity events that applications send to the audit service using a REST endpoint, the new column `user_interaction` records validation information from the HTTP header of the events. For activity events that are sent to the audit service POST endpoint, the `user_interaction` column records information sent by applications or by end-users.

The second new database column, `secured`, records a value of true for events that are sent to a REST endpoint of the audit service. The value is false for events that are sent to the POST endpoint.

Values in the two new columns can be displayed using the audit service CLI. Note that these columns will be empty for all activity records that were generated prior to the deployment of the 2024.12 release.

SAS Viya applications are currently being updated to deliver the revised activity events. The SAS Viya Visual Analytics application supports this update in the 2024.12 release.

For more information about the new database columns, see [“Activity Records” in SAS Viya: Auditing](#).

Authentication

Additional Security

Additional security has been applied to all deployments. A one-time procedure is required to create a configuration for `sas.logon.jwt`. For more information, see [“Configure the issuer.uri” in SAS Viya Platform: Deployment Guide](#). Previous settings are preserved for deployments that you update to 2024.12, but SAS recommends that you perform this procedure.

SAS has also added support for federated authentication between Microsoft Entra ID and Amazon S3. When you configure this support, end users can log in to the SAS Viya platform running in a cloud environment that uses Entra ID (Microsoft Azure or another platform) and access data stored in S3 without additional authentication. SAS Viya programs can access Amazon S3 without being prompted for AWS credentials.

For more information, see [“Set Up Federated Authentication for Azure and AWS” in SAS Viya Platform: Authentication](#).

Streamlined LDAP Directory Queries

Querying group memberships in LDAP directories can be resource-intensive. The SAS Viya platform supports new configuration parameters that can reduce the overhead of LDAP directory queries.

In OIDC or SAML environments, optional group-membership information can be included in the authentication claims from the identity provider. The SAS Viya platform can now read and apply this information when users log in. If you configure the required IdP settings and set the corresponding SAS Viya platform authentication parameters, you can enable SAS Logon Manager to use the group information from the OIDC token or SAML claim for user authentication instead of querying LDAP for group information. The two parameters that must be set in order to enable this mapping are `attributeMappings.external_groups` and `groupMappingMode`. For more information, see [“Configure OAuth and OIDC” in SAS Viya Platform: Authentication](#).

Backup and Restore

Backup Version Information

- The status.json file for each backup now includes the cadence and cadence version of the deployment. See [“Best Practices for Performing Restores” in SAS Viya Platform: Backup and Restore](#) for more information.
- The backup progress feature provides real-time information about the status of an ongoing backup operation. Specifically, it provides users with the estimated time to complete the overall backup. See [“Backup Progress” in SAS Viya Platform: Backup and Restore](#) for more information.

Validation of Purges

After a backup job is purged, storage resources such as the space available on the PVC are validated proactively by default to help ensure that there is adequate space on the PVC to store data for the next scheduled job. See [“Backup and Restore: Purge Backups” in SAS Viya Platform: Backup and Restore](#) for more information.

CAS Server

New CAS Server Option

The new server option `cas.MAXCORESPERWORKER` specifies the maximum number of cores per worker. Reducing the maximum number of cores per worker can help reduce contention between cores and improve performance. This is especially true when multiple users are running highly concurrent actions on the CAS server. By specifying this option, you can change the default maximum for all sessions on your CAS server. For more information, see [“cas.MAXCORESPERWORKER='n’” in SAS Viya Platform: SAS Cloud Analytic Services](#).

Global Tables Read-Only by Default

Read-Only access to global tables and other state components is now enabled by default during [CAS state transfer](#). This allows actions that read data to continue to run, which provides a better user experience by minimizing disruptions.

Jobs and Flows

Time Duration Setting

Starting in release 2025.03, you can set job requests to include a time duration value on all job instances submitted from the job request. After a job instance completes running and the specified time duration (such as three days) has elapsed, the job instance expires and is deleted.

The Job Plug-In CLI

For information about using the job plug-in to the sas-viya CLI to set the `expiresAfter` value for a specific job request, see [“Setting Job Instances to Expire” in SAS Viya Platform: Jobs and Flows](#).

The New Configuration Property

For information about using the new global configuration property, see [“job.execution - expiresAfter” in SAS Viya: Configuration Dictionaries](#) and [“Edit Configuration Instances” in SAS Environment Manager: User’s Guide](#).

Change in When Compute Provider Saves Results for a Job Execution Service Job

Starting in release 2025.02, if the `_omitSessionResults` argument is not present, the default behavior for the Compute provider is that it no longer saves results from the Compute job. This means that results generated by the job’s code are lost unless the results are saved in another way.

The Job Plug-In CLI

For information about using the job plug-in to the sas-viya CLI to change how results are saved, see [“Control the Compute Provider Functionality That Saves Results from Job Requests” in SAS Viya Platform: Jobs and Flows](#).

The New Configuration Property

For information about using the new global configuration property, see [“sas.compute.service”](#) in *SAS Viya Platform: Programming Run-Time Servers* and [“Edit Configuration Instances”](#) in *SAS Environment Manager: User's Guide*.

Jobs and Flows CLI Now Provides an Advanced Help Command

The job plug-in to the sas-viya command-line interface (CLI) has added an `advanced-help` command. The command writes to Stdout the web address of the applicable documentation Jobs and Flows in the SAS Viya Platform Administration Help Center. The user can copy the web address from the CLI output and paste the web address into their browser to easily load the associated topic. It provides detailed syntax information as well as examples.

These are the new commands:

- [“job actions advanced-help”](#) in *SAS Viya Platform: Jobs and Flows*
- [“job definitions advanced-help”](#) in *SAS Viya Platform: Jobs and Flows*
- [“job flows advanced-help”](#) in *SAS Viya Platform: Jobs and Flows*
- [“job requests advanced-help”](#) in *SAS Viya Platform: Jobs and Flows*
- [“job schedulers advanced-help”](#) in *SAS Viya Platform: Jobs and Flows*

File-Event Trigger Support in the jobs CLI

The file-event trigger is now available to use for scheduling job flows in the jobs CLI.

For CLI information, see [“File-Event Trigger Definition”](#) in *SAS Viya Platform: Jobs and Flows*. For concepts, see [“Schedule a Job Flow with a Time-Event Trigger, File-Event Trigger, or Both”](#) in *SAS Viya Platform: Jobs and Flows*.

File-Event Trigger Support in SAS Environment Manager

SAS Environment Manager support for scheduling job flows with file-event triggers is now available on the Jobs and Flows page.

See [“Schedule Job Flows”](#) in *SAS Environment Manager: User's Guide*.

Combination Triggers

New information is now available about how to combine file-event triggers and time-event triggers. For concepts, see [“How SAS Job Flow Scheduler Evaluates Combination Triggers”](#) in *SAS Viya Platform: Jobs and Flows*. For task guidance, see [“Combine Triggers”](#) in *SAS Viya Platform: Jobs and Flows*.

File-Status Polling Interval Configuration Property

A new configuration property is now available that is used by the file-event trigger. See [“Adjust the File-Status Polling Interval”](#) in *SAS Viya Platform: Jobs and Flows*.

General

SAS Redis Server Dependency on SAS Redis Operator Is Removed

SAS Redis Server is no longer managed by the SAS Redis Operator. Events that were handled by the operator are now performed by the SAS Redis server pods. For details, see [“SAS Redis Server”](#) in *SAS Viya Platform: Infrastructure Servers*.

AnnotationIndexingEnabled Configuration Property

The **AnnotationIndexingEnabled** configuration property is new for the **sas.searchindex** configuration instance. It is disabled by default to improve performance. If you want to index annotation objects, see [“Enable Annotation Object Indexing”](#) in *SAS Environment Manager: User's Guide*.

Change in Storage Class for PostgreSQL Server

SAS now recommends that you use a block storage device for the PostgreSQL server persistent storage. This recommendation applies equally to an internal or an external PostgreSQL server.

For an internal PostgreSQL server, to change the storage class to block storage after the initial deployment is completed, see [“Change the Storage Class of the Data Pod”](#) in *SAS Viya Platform: Infrastructure Servers*.

Command-Line Interface

The new migrationmanagement plug-in to the sas-viya command-line interface (CLI) manages data from a run of the SAS Content Assessment inventory application. For more information, see [“Using the migrationmanagement Plug-in” in SAS Viya Platform: Content Migration From SAS 9.4.](#)

SAS Environment Manager Content Page

Starting in the 2024.12 (December 2024) release, the SAS Drive application is deprecated and disabled by default.

SAS Drive content management functionality is included in the **Content** page functionality of SAS Environment Manager. For more information see [“SAS Drive Deprecation in December 2024” in SAS Environment Manager: User’s Guide.](#)

Migration

Migrating from Specific Versions of SAS Viya 3.5

You must move from SAS Viya 3.4 to SAS Viya 3.5 revision 24w44 (October 29, 2024) or later to use the full system migration method to migrate to SAS Viya 4.

New System Evaluation Report

In a SAS Viya 3.x to SAS Viya 4 migration, the Plan and Backup Ansible playbook now has an evaluate play. Running the playbook with the evaluate play creates the SAS 3.x System Evaluation report that contains information about the CPU, operating systems, and the installed software. It also displays information about the eligibility of your SAS Viya 3.x deployment to migrate to SAS Viya 4 using the full-system migration method.

For more information about running the evaluate play of the Plan and Backup Ansible playbook, see [Plan for Migration](#). For more information about the report, see [“SAS Viya 3.x System Evaluation Report” in SAS Viya 3 Content Assessment.](#)

Command-Line Interface

The new migrationmanagement plug-in to the sas-viya command-line interface (CLI) manages data from a run of the SAS Content Assessment inventory application. For more information, see [“Using the migrationmanagement Plug-in”](#) in *SAS Viya Platform: Content Migration From SAS 9.4*.

SAS Compute

Compute Provider Arguments for Use with Job Requests

When you define a job request, you can specify these arguments that are used by the Compute provider to further control how the job request is processed. These arguments can be specified by using the job plug-in to the sas-viya CLI. See [“arguments”](#) in *SAS Viya Platform: Jobs and Flows* and [“Example of a Job-Request Definition”](#) in *SAS Viya Platform: Jobs and Flows*.

SAS/CONNECT

Authentication Domain Support for SAS/CONNECT Spawner Sign-Ons

The SAS/CONNECT client can now leverage authentication domains that are maintained by the Credentials microservice in SAS Viya for Spawner sign-ons. By using an authentication domain, you do not need to hardcode or manually enter credentials in your SAS programs. This reduces the risk of exposing sensitive information. Administrators can manage and update credentials centrally in the SAS Credential Service, making it easier to maintain security and compliance. Using authentication domains ensures consistent credential usage across different applications and users.

You can continue to use AUTHDOMAIN to sign on when you migrate from SAS 9 to the SAS Viya platform.

For more information, see [“Authentication Methods”](#) in *SAS/CONNECT for the SAS Viya Platform: User’s Guide*.

Welcome Experience

New Welcome to SAS Viya Page

The new Welcome to SAS Viya page is now available. You can access demos, learn more about SAS Viya platform applications, and change your global settings. It replaces SAS Drive as the default landing page when a user logs on to a SAS Viya web application with the root URL. [Read more](#)

SAS Landing Page

The root URL for the SAS Viya platform now routes users to the Welcome to SAS Viya page (<https://prod.example.com/SASLanding/>). Previously, the root URL was routed to SAS Drive (<https://prod.example.com/SASDrive/>) by default.

This default setting can be changed.

For all SAS users

See [“Change the Initial SAS Viya Landing Page for SAS Users”](#) in *SAS Environment Manager: User’s Guide*.

For a user

See [“Settings”](#) in *SAS Viya Platform: General Usage Help for Web Applications*. A user’s preference takes precedence over a change that is made by an administrator that affects all SAS users who log in to the root URL.

SAS Drive Is Now Deprecated

The SAS Drive application is deprecated and disabled by default, starting in the 2024.12 (December 2024) release. The functionality of SAS Drive is now available on the Content page in SAS Environment Manager, and administrators can re-enable SAS Drive until its official retirement in the 2025.12 release. [Read more](#)

Workload Management

Enhancements to SAS Workload Orchestrator

Note: The new functionality described in this section has been added to this release of SAS Viya platform after the initial release. To ensure that you have received the new functionality, either perform a patch update to your current release or update to a newer release of the software.

SAS Workload Orchestrator is enhanced for performance, resilience, and efficiency by optimizing database interactions and improving system reliability.

The following enhancements significantly increase system resilience by improving database performance:

- optimized query updates.
- better job management.
- automated cleanup of completed jobs records. For details, see [“Deleting Job Records” in SAS Viya Platform: Workload Management](#).
- enhanced table indexing.
- reduced size of job history tables.

The improvements address issues with compute sessions and jobs that were slow to start, which were reported in earlier releases. The enhancements deliver a more reliable and responsive experience for the users and ensure smoother operations.

LTS 2024.09 (November 2024)

The 2024.09 long-term support release is based on the 2024.09 stable release. It includes all features in the 2024.03 long-term support release plus all stable releases from 2024.04 to 2024.09.

Auditing

New Logger for SAS Auditing Service

The auditing service now uses the SAS_LOG_LEVEL_SERVICE_AUDIT logger.

The prior loggers are no longer supported. For details see [Loggers for Auditing](#).

Updated Action Codes for Audit

The Audit service receives action codes to filter and classify incoming audit events. The list of action codes now consists of analyze, append, check-in, complete, drop, export, import, load, move, pause, print, promote, release, share, start, unload, and update. The following action codes are no longer recognized by the Audit service: accept, add, lock, login, push, reallocateTable, schedule, seed, submit, and transfer. Audit events with action codes that are not recognized by the Audit service receive the action code **unknown**. To learn more, see [“Audit Records” in SAS Viya: Auditing](#).

New Default Values for Audit Configuration Instances

In SAS Environment Manager, the default value of `sas.audit.archive.system > storage.local.remainingSpaceThreshold` has changed from 20 to 25. If your deployment uses the default value, then the transfer of audit records from database to archive will now end earlier than in previous releases. The value 25 represents the percentage of free space that remains in the audit file system. At that point, the Audit service stops the transfer of audit records from the audit database to the audit archive file system. For more information, see [“sas.audit.archive.system” in SAS Viya: Auditing](#).

The default value of `sas.audit.reporting > include.app.records` has changed from Off to true. If your deployment uses the default value, then you will see an increase in audit messages moving into the audit database and the audit archive. You might also see changes in the User Activity Report. For more information, see [“sas.audit.reporting” in SAS Viya: Auditing](#).

Authentication

New Authentication Configuration

A new configuration field lets you manage logout behavior when users log out of a SAS Viya user interface. The **performRplnInitiatedLogout** configuration property instructs SAS Logon Manager to log the user out of the identity provider when the user logs out. When configuring the OIDC identity provider, you must specify a value for either the **logoutUrl** or the **discoveryURL** property. If a logoutURL is not provided, the OIDC identity provider configuration must include an `end_session_endpoint` field.

For more information, see the description of the new **performRplnInitiatedLogout** field in [“Provide the SAS Viya Platform with Information about the OIDC IdP” in SAS Viya Platform: Authentication](#).

Customized Authorization Code Flow

SAS Logon Manager now lets you include additional parameters to send to an OIDC provider in order to customize aspects of the authorization code flow. You can specify key-value pairs for the new **additionalAuthzParameters** field, enabling you to request custom behavior from the IdP.

Note: This functionality is available for OAuth and OIDC in 2024.04 and later. It does not apply to Microsoft Entra ID or to Okta.

For more information, see the description of the new `additionalAuthzParameters` field in [“Provide the SAS Viya Platform with Information about the OIDC IdP” in SAS Viya Platform: Authentication](#).

Backup and Restore

Pre-validation of Backup Resources

Storage resources such as the space available on the PVC are pre-validated by default to help ensure that there is adequate space on the PVC to store data for a backup job. If the pre-validation fails, the backup job fails. See [“Best Practices for Performing Backups” in SAS Viya Platform: Backup and Restore](#) for more information.

Pre-validation of Restore Resources

Resources such as CPU and memory are now pre-validated by default to help ensure that restore jobs complete successfully. If the pre-validation fails, the restore job will fail. See [“Best Practices for Performing Restores”](#) in *SAS Viya Platform: Backup and Restore* for more information.

CAS Server

Backing Store for Memory Allocations

To avoid out of memory failures, you can now set a backing store for CAS memory allocations. For a fuller explanation of the backing store and the benefits that it provides, see [“Backing Store for CAS Memory Allocations”](#) in *SAS Viya Platform: SAS Cloud Analytic Services*. For the steps to create the backing store, see [Configure a Backing Store for Memory Allocations](#).

New Server Options

Two new server options are available that help in minimizing the disruption during state transfer for CAS servers. For details, see [cas.MAXSESSIONTRANSFERSIZE](#) and [cas.STATETRANSFERMODEL](#) in *SAS Viya Platform: SAS Cloud Analytic Services*.

Credentials Management

External Credentials Management

The `sas-viya` command-line interface (CLI) can be used to configure a group-managed service account for use with Jobs and Flows. When configuring the group-managed service account for Jobs and Flows, you must specify the application (client) IDs that are required for Jobs and Flows using the `--allowed-client` option.

For information, see [“Jobs and Flows: Using a Group-Managed Service Account”](#) in *SAS Viya Platform: External Credentials*.

Cross-Origin Resource Sharing

The default values and descriptions for the Cross-Origin Resource Sharing (CORS) properties have changed. The documentation for the **sas.common.web.security.cors** definition has been updated with minor changes to the descriptions of the `allowedHeaders` and `allowedMethods` configuration fields. The default values have changed for the `allowedHeaders`, `allowedMethods`, and `allowCredentials` fields.

For more information, see [“Configure Cross-Origin Resource Sharing”](#) in *SAS Viya Platform: Authentication*.

Jobs and Flows

How to Export Job Flows and Requests

Information that describes how to export job flows and job requests (and their components) from a SAS Viya 4 deployment and import the job flows and job requests into another SAS Viya 4 deployment is now available. See [“Promote Job Flows and Job Requests”](#) in *SAS Viya Platform: Jobs and Flows*.

Job Flows and the SAS Launcher Service Allowlist

Information is now available about how the SAS Launcher Service allowlist feature can affect command-line commands in a job flow. For details, see [Job-Action Definition](#) and [“Command-Line Command Fails in a Job Flow”](#) in *SAS Viya Platform: Jobs and Flows*.

Remote SAS Data Agent

Red Hat Enterprise Linux 9 is supported when running the container with Podman. For more information, see [“Podman on Linux”](#) in *Remote SAS Data Agent: Deployment and Administration Guide*.

Also, additional environment variables are available to help manage idle sessions. For more information, see [“Configure Remote SAS Data Agent”](#) in *Remote SAS Data Agent: Deployment and Administration Guide*.

SAS Batch Server

- SAS Batch servers can be configured to be reusable when you create a batch context. For details, see [“Configure Reusable Batch Servers” in SAS Viya Platform: Programming Run-Time Servers](#) and [“Create a Batch Context” in SAS Environment Manager: User’s Guide](#).
- You now have the option to store the files in a mounted file system that is accessible by the user in the pod. This option improves performance by eliminating the need to download and upload files. For more information, see [“Input and Output File Storage” in SAS Viya Platform: Programming Run-Time Servers](#).
- The batch plug-in to the SAS Viya CLI now includes command options that enable reusable batch servers and the use of mounted file systems. For more information, see [Using the batch Plug-In for the SAS Viya Platform Command-Line Interface](#).

SAS Compute

Troubleshooting When SAS Compute Server Fails to Start

A new guide is now available to assist in troubleshooting SAS Compute server when it fails to start. The following components are involved in this guide:

- SAS Compute server
- SAS Compute service
- SAS Launcher service
- SAS Workload Orchestrator

See [“Troubleshoot a Failure to Start Compute Server” in SAS Viya Platform: Troubleshooting](#).

SAS Refresh Token

SAS Compute server provides the ability to execute the SAS Refresh Token, which automatically refreshes the client token during long running operations or jobs, reducing potential failures due to token expiration. For more information, see [“Enable SAS Refresh Token” in SAS Viya Platform: Programming Run-Time Servers](#).

SAS/CONNECT

SAS/CONNECT Server and SAS/CONNECT Spawner

You can no longer spawn a SAS/CONNECT server inside a SAS/CONNECT spawner pod.

- The ability to locally spawn a SAS/CONNECT server inside the SAS/CONNECT spawner pod has been removed. It was previously deprecated in the 2024.03 Stable and Long-Term Support release.
- Starting in 2024.09, you can configure high availability (HA) for the SAS/CONNECT Spawner by applying the HA transformer: `$deploy/sas-bases/overlays/scaling/ha/enable-ha-transformer.yaml`.

Server Contexts

The Server Contexts documentation is merged with Programming Run-time documentation. For all the details, see [SAS Viya Platform: Programming Run-Time Servers](#).

Troubleshooting

Documentation for Troubleshooting

A new guide to assist in troubleshooting SAS Viya platform is now available. See [SAS Viya Platform: Troubleshooting](#) and [Troubleshooting Strategies](#).

Workload Management

Workload Management Documentation

The Workload Management documentation is now located in "Servers and Services." See [SAS Viya Platform: Workload Management](#).

SAS Workload Orchestrator

Host information is no longer displayed to users who are not SAS Workload Orchestrator administrators. This change was required by a security best practice. For the affected tasks, see "[Managing Hosts](#)" in *SAS Environment Manager: User's Guide*.

Your Environment

Describing Your SAS Viya Platform Deployment

A new guide helps you to determine and catalog important information about your SAS Viya platform environment.

In order to successfully administer your SAS Viya platform environment it helps to have gathered and recorded important details about your deployment. You can use this information when troubleshooting issues in your deployment. See "[Describe Your SAS Viya Platform Deployment](#)" in *SAS Viya Platform: Troubleshooting*.

LTS 2024.03 (May 2024)

The 2024.03 long-term support release is based on the 2024.03 stable release. It includes all features in the 2023.10 long-term support release plus all stable releases from 2023.11 to 2024.03.

Auditing

Enhanced Audit Records

To increase traceability, the Audit service now creates enhanced audit records for an expanded set of user activities. To decrease network traffic and reduce storage requirements, only user activities and selected internal API activities become audit records. As needed, you can enable the creation of audit records for read-only events for a specified subset of SAS services. For more information, see [“Audit: Concepts” in SAS Viya: Auditing](#).

Audit

The SAS Audit CLI now consists of four commands. All four commands return information from records in the Audit database. Two of the commands return information from database searches. The other two commands return detailed information from a specified record ID.

The configuration property `sas.audit.record` has also been updated. The creation of records is determined by the configuration instances `audit.recording.level` and `activity.recording.level`. Each configuration instance now supports the `disabled` value. Also, `service.list` now forces the creation of records for all READ events that are received from the services that are named in the list.

For more information, see the How to (CLI) and Configuration Reference chapters in [SAS Viya Administration: Auditing](#).

Authentication

Default Refresh Token Expiration

Starting in 2023.11, the default refresh token expiration is 14 days. A few applications and key services override this setting so that the token persists for a maximum of 90 days. These services include the credentials service, the scheduler, and the event monitor.

In addition, clients can now have their own refresh token validity. You can change the default setting using SAS Environment Manager.

Integration with Microsoft Entra ID

The SAS Viya platform is now integrated with Microsoft Entra ID by means of an enterprise app. The SAS Viya SSO app, which is available in the Microsoft Entra ID Gallery, assists you in configuring single sign-on in a SAML environment. From the gallery, the app can be securely deployed into Entra ID tenants without leaving the Azure portal.

End users can add the SAS Viya SSO app to their personal app dashboard. Microsoft provides a detailed tutorial to help the administrator with app setup. When you have configured it for your environment, users can then click the app in their dashboard to perform an immediate login with SAS Logon Manager.

The SAS Viya SSO app streamlines the process for configuring single sign-on for SAML in Azure. The creation of a non-gallery Azure enterprise app is no longer required. For more information, see [“Using the Preconfigured App for Microsoft Azure” in SAS Viya Platform: Authentication](#).

Private Keys Using JSON Web Tokens

SAS Logon Manager now includes support for private keys using JSON web tokens (JWT). The [OAuth documentation](#) describes private key JWT as “a method of client authentication where the client creates and signs a JWT using its own private key.” When using OAuth and OIDC for client authentication, you can enable the use of JWT authentication with SAS Logon Manager instead of using basic authentication and client secrets. The OIDC standard defines `private_key_jwt` as a replacement for client secrets.

Note: This functionality is available for OIDC with Okta in 2024.01. Support for JWT authentication with Microsoft Entra ID requires an update to 2024.03.

For more information, see the description of the new `jwtclientAuthentication` parameter in [“Scenario: OIDC with Okta” in SAS Viya Platform: Authentication](#).

Authentication

SAS Logon Manager now includes support for private keys using JSON web tokens (JWT). The [OAuth documentation](#) describes private key JWT as “a method of client authentication where the client creates and signs a JWT using its own private key.” When using OAuth and OIDC for client authentication, you can enable the use of JWT authentication with SAS Logon Manager instead of using basic authentication and client secrets. The OIDC standard defines `private_key_jwt` as a replacement for client secrets.

This functionality is available for OIDC with Okta and OIDC with Microsoft Entra ID.

For more information, see [Configure JWT Client Authentication for Okta](#) or [Configure JWT Client Authentication for Microsoft Entra ID](#).

Backup and Restore

Options for Backing Up External PostgreSQL

Backup and restore use only SAS Viya platform processes to back up and restore all data, including all registered instances of PostgreSQL. This is the default method. Now you can use cloud-provider processes to back up external PostgreSQL, and SAS Viya platform processes to back up the remaining data. For improved performance, this is the recommended approach. See [“Backup and Recovery: Workflows” in SAS Viya Platform: Backup and Restore](#).

Incremental Backups

You can now perform an incremental backup that optimizes backup times by capturing only changed or differential data between successive backups. For more information, see [“Incremental Backups” in SAS Viya Platform: Backup and Restore](#).

Extended Support for Point-in-Time-Recovery

Point-in-Time-Recovery (PITR) is now available for internal Crunchy Data PostgreSQL and valid for restore-in-place scenarios. See [“Backup and Recovery: Workflows” in SAS Viya Platform: Backup and Restore](#).

Backup and Restore

A suspended CronJob, `sas-scheduled-backup-all-sources`, is now available to trigger backup jobs that use SAS Viya 4 to back up all data (including PostgreSQL) even if the `INCLUDE_POSTGRES` configMap parameter is set to false. Backups that use SAS Viya 4 processes for all data are required for disaster recovery and SAS Viya 4 to SAS Viya 4 migrations. See [“Enable Suspended CronJob to Back Up All Content with the SAS Viya Platform \(Including PostgreSQL\)” in SAS Viya Platform: Backup and Restore](#).

Command-Line Interfaces

Command-Line Interfaces

The `sas-viya` command-line interface (CLI) is now available in a container image. The image contains the `sas-viya` CLI and related scripts to support the batch operation of the `sas-viya` CLI in SAS Viya Platform deployments or to function as a standalone container. See [“Overview” in SAS Viya Platform: Using the Command-Line Interface](#).

Credentials Management

Credentials Management for Amazon Web Services

You can now store and use credentials for accessing Amazon Web Services (AWS) by defining an authentication domain for use with an AWS service account or an individual user.

For more information, see [“Using Amazon Web Services \(AWS\) with an Authentication Domain” in SAS Viya Platform: External Credentials](#).

Google Cloud Storage Credentials Can Be Managed Using an Authentication Domain

Starting with 2023.10, you can store and use credentials for accessing Google Cloud Storage (GCS) by defining an authentication domain for use with a GCS service account or an individual user.

For more information, see [“Using Google Cloud Storage \(GCS\) with an Authentication Domain” in SAS Viya Platform: External Credentials](#).

Amazon Web Services Credentials Can Be Managed Using an Authentication Domain

Starting with 2024.01, you can store and use credentials for accessing Amazon Web Services (AWS) by defining an authentication domain for use with an AWS service account or an individual user.

For more information, see [“Using Amazon Web Services \(AWS\) with an Authentication Domain”](#) in *SAS Viya Platform: External Credentials*.

Using External Credentials Stored in Azure Key Vault

Administrators can now configure the SAS Viya platform to use credentials that are stored externally in Azure Key Vault. When you have configured SAS Viya for single sign-on to Microsoft Entra ID (Azure AD), integration with Azure can also incorporate special authentication domains in order to securely access external credentials in Azure Key Vault.

For more information, see [“Using Secrets Stored in Azure Key Vault”](#) in *SAS Viya Platform: External Credentials*.

Encryption

ClamAV for File Scanning

The files service uses ClamAV (AntiVirus) for scanning uploaded files. To provide encrypted communication between the files service and ClamAV, you need to configure a secure socket using a proxy server. The proxy server handles files service communications with ClamAV. External clients can communicate with the reverse proxy rather than communicating directly with ClamAV. For more information, see [“Encrypt Communication between the Files Service and ClamAV \(Antivirus\)”](#) in *SAS Viya Platform Encryption: Data in Motion*.

Jobs and Flows

Access to Job Definitions in Jobs and Flows

A new default authorization rule for job definitions is now in effect. The `jobDefinitions` rule prevents non-administrators from accessing job definitions unless the non-administrator created the job definition.

This change prevents user accounts, other than the creator of the job definition or a SAS administrator, from running job requests that use the affected job definition. Affected user accounts include group-managed service accounts.

For more information, see [Controlling Access to Job Definitions](#) and “[A Job Request Fails to Execute with 403 FORBIDDEN](#)” in *SAS Viya Platform: Jobs and Flows*.

New Option for job flows list-history Command

The `--allExecutedInstances` option is available as of release 2.6.47 of the job CLI plug-in. You can use this option with the `job flows list-history` command. The option returns a combined history of flow instances that have been executed (either immediately or via a schedule). For details, see “[job flows list-history](#)” in *SAS Viya Platform: Jobs and Flows*.

Adjust Jobs and Flows for Daylight Saving Time

A procedure is available to adjust scheduled job requests and job flows for Daylight Saving Time. For details, see “[Adjust for Daylight Saving Time](#)” in *SAS Viya Platform: Jobs and Flows*.

Visual Description of the Jobs and Flows Process

The process overview about how jobs and flows works now provides slideshows and diagrams that describe the process visually. See “[Process Overview](#)” in *SAS Viya Platform: Jobs and Flows*.

New job flows trigger Command

The `job flows trigger` command is now available in the job plug-in to the `sas-viya` command-line interface (CLI). This command enables the use of a manual trigger, which is useful for debugging job flows. See [“job flows trigger” in SAS Viya Platform: Jobs and Flows](#).

SAS/CONNECT

SAS/CONNECT Server and SAS/CONNECT Spawner

IMPORTANT Deprecation Warning

The ability to locally spawn SAS/CONNECT server inside the SAS/CONNECT spawner is deprecated as of the 2024.03 Stable and Long-Term Support release. It was removed from the 2024.09 Stable and Long-Term Support release.

For more information, see [“-NOLOCALLAUNCH” in SAS Viya Platform: Programming Run-Time Servers](#) and [“Spawn SAS/CONNECT Servers Within the Spawner Pod” in SAS Viya Platform: Deployment Guide](#).

SAS Data Explorer

New Launch Behavior

The Data page in SAS Environment Manager now launches the full SAS Data Explorer product. Previously an embedded version of SAS Data Explorer was invoked.

SAS Workload Orchestrator

Maximum Jobs Allowed

As of release 2023.11, the default value for **Maximum jobs allowed** in new installations is 250. See “[Host-Type Definition Parameters](#)” in *SAS Viya Platform: Workload Management*.

Server and Service Management

Starting and Stopping SAS Viya Platform

Using Kustomize transformers to start or stop SAS Viya platform deployment is no longer supported. Use `sas-stop-all` and `sas-start-all` CronJobs to stop and start your SAS Viya platform deployments.

For more information, see “[Starting and Stopping a SAS Viya Platform Deployment](#)” in *SAS Viya Platform: General Management of Servers and Services*.

Long-Term Support Releases in Limited Support

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Note: For more information about Limited Support, see [Support Levels for the SAS Viya Platform](#).
.....

LTS 2023.10 (November 2023)

The 2023.10 long-term support release is based on the 2023.10 stable release. It includes all features in the 2023.03 long-term support release plus all stable releases from 2023.04 to 2023.10.

Release Notes

Deprecated Features

The [SAS Viya Release Notes](#) interface now includes the option to show only deprecated and obsolete features under the type What's New.

Migration

CronJob Replaces Restore Step

In a SAS Viya 4 to SAS Viya 4 full-system migration, a restore CronJob now performs the restore. If you want to use the restore step from the 2023.09 release of SAS Viya 4, it is temporarily supported. The restore step documentation for the 2023.09 release of SAS Viya 4 is available at [Perform a Restore](#) in *SAS Viya Platform Administration*.

- 1 When you complete the restore step using the 2023.09 documentation, return to the instructions in your release of SAS Viya 4 [here](#) to scale up the CAS deployments.
- 2 Then continue with your release of the SAS Viya 4 documentation when you have completed scaling up the CAS deployments.

Migrate from Internal to External PostgreSQL

In a SAS Viya 4 to SAS Viya 4 non-multi-tenant or multi-tenant migration, you can now migrate from a source environment with internal PostgreSQL to a target environment with external PostgreSQL as long as the source and target use the same cloud provider and SAS Viya version.

Tenant Migration

Tenant migration is supported. Tenant migration is the process of re-creating one or more non-provider tenants while preserving the tenant-specific configuration and content to a new or existing deployment that differs from the source environment. It is available when migrating from SAS Viya 4.

Tenant migration to SAS Viya 4 includes moving content and data from one or more non-provider tenants in a source SAS Viya 4 multi-tenancy environment to another target SAS Viya 4 multi-tenancy environment.

Enhanced SAS Viya 3.x to SAS Viya 4 Migration

In a SAS Viya 3.x to SAS Viya 4 migration, you can now specify a list of schemas to exclude from the timestamp time zone conversion that takes place in SAS Viya 4.

Command-Line Interface

QKB Plug-In

The QKBs plug-in to the sas-viya CLI is no longer available as of version 2023.10.

Job Plug-In to the Command-Line Interface

The job plug-in to the sas-viya command-line interface (CLI) includes a new command, `job flows show-history-tree`. It is useful for diagnosing problems with job flows. For more information, see [“Obtain the History of an Executed Job Request or Job Flow” in SAS Viya Platform: Jobs and Flows](#).

Updated Plug-Ins

- The new detection plug-in to the sas-viya command-line interface (CLI) provides access to the SAS Detection Engine REST interface in the SAS Viya 4 platform.
- The new detection-definition plug-in to the sas-viya command-line interface (CLI) creates and retrieves information about organizational hierarchies and organizations. For more information, see [“detection-definition” in SAS Detection Command Line Interfaces](#).
- The new detection-message-schema plug-in to the sas-viya command-line interface (CLI) enables you to create, apply, and retrieve available message schema templates. For more information, see [“detection-message-schema” in SAS Detection Command Line Interfaces](#).
- The new listdata plug-in to the sas-viya command-line interface (CLI) enables you to create, read, update, and delete an advanced list. For more information, see [“list data Plug-In” in SAS Detection Command Line Interfaces](#).

Job Plug-In to the Command-Line Interface

The job plug-in to the sas-viya command-line interface (CLI) includes the following changes:

- the `--domain-id` input option has been added to applicable `job requests` and `job flow` commands. This option enables a group-managed service account to use the command. See [“Use the Job Command-Line Interface with a Group-Managed Service Account” in SAS Viya Platform: Jobs and Flows](#).

- the `--scheduled` input option has been added to the `job requests show-status` command. For detailed information, see [“job requests show-status”](#) in *SAS Viya Platform: Jobs and Flows*.

SAS Workload Orchestrator

SAS Workload Orchestrator Included in Deployment by Default

SAS Workload Orchestrator is now deployed and enabled, by default, as part of the SAS Viya platform deployment. A license is no longer required.

For details, see [“Disabling or Enabling SAS Workload Orchestrator”](#) in *SAS Viya Platform: Workload Management*.

Integration with Kubernetes Cluster Autoscaler

SAS Workload Orchestrator can integrate with Kubernetes Cluster Autoscaler (CA) to scale your environment. The CA enables the scaling up of nodes to your cluster when the demand for workload grows and the scaling down of nodes to your cluster when workloads disappear. SAS Workload Orchestrator uses the configuration of scalable host types and non-scalable host types to trigger the use of Kubernetes Cluster Autoscaler. For more information see [“SAS Workload Orchestrator and Kubernetes Cluster Autoscaler Integration”](#) in *SAS Viya Platform: Workload Management*.

Encryption

TLS Supported between CAS Worker Nodes

CAS supports TLS-encrypted connections between the worker nodes. See [“Configure CAS Internode TLS”](#) in *SAS Viya Platform Encryption: Data in Motion*.

Support for FIPS 140-2

The SAS Viya platform supports the use of FIPS 140-2 validated cryptographic modules when executed on Kubernetes nodes running in FIPS mode. For more information, see [“FIPS 140-2 Support”](#) in *SAS Viya Platform Encryption: Data in Motion*.

Authentication

Extend Lifetime of OAuth Tokens from SAS Launcher

The lifetime of the OAuth tokens that are obtained from SAS Launcher can now be increased. You can set the Consul property `config/launcher/oauth2.client.accessTokenValidity` to an appropriate value, which represents the token lifetime in seconds.

This setting enables processes that are created by SAS Launcher to have a longer OAuth token duration by default, overriding the time limit that is defined by SAS Logon Manager.

Updated Central Authentication Service

SAS 9.4M8 includes a newer version of Central Authentication Service, the core component of SAS Logon Manager for SAS 9.4. As a result, a few changes are required when setting up SAS[®]9 authentication to the SAS Viya platform. For example, a wildcard entry is supported for `ServiceUrl.Allowed` in SAS 9.4M5–M7. With SAS 9.4M8, an additional URL must be specified because a wildcard is not sufficient. For more information, see [“Configure the SAS 9.4 Deployment” in SAS Viya Platform: Authentication](#).

The steps that are required to enable one-time passwords for authenticated SAS 9.4 users have now been documented. This integration feature enables SAS 9.4 user sessions with a launch credential to access the CAS server directly. One-time password access to CAS is supported with SAS 9.4 M5 or later. For more information, see [“Configure a One-Time Password for CAS Users” in SAS Viya Platform: Authentication](#).

Single Sign-On for Esri Services

You can configure single sign-on authentication for Esri services. Authenticated SAS Viya platform users can then connect to Esri services without having to reenter their credentials. In order to access Esri premium services, the SAS user must be a member of the Esri Users custom group. In addition, the user must have an account on the Esri server. For more information, see [“Configure Single Sign-On Access to Esri Services” in SAS Viya Platform: Authentication](#).

Single Sign-Out Parameter for OIDC Providers

SAS Logon Manager has been upgraded to a newer version of UAA. As a result, a new OIDC parameter is now supported and can be configured in SAS Environment Manager: `logoutUrl`. This parameter lets you enable single sign-out. When `logoutUrl` is enabled, users' SAS sessions are redirected to the OIDC provider's logoff endpoint when they sign out of a SAS user interface.

In order to configure single sign-out, you can specify the URL to which the SAS Viya platform sends a redirect with a request to the provider to log the user out. If it is

available in a configuration file, the URL from the `end_session_endpoint` field in the provider's OpenID Connect configuration file can be used automatically. For more information, see [“Provide the SAS Viya Platform with Information about the OIDC IdP” in SAS Viya Platform: Authentication.](#)

Identity Management

Updated Hashing Algorithm

The identities service has an updated hashing algorithm that is used to generate UID and GID values. Values that have already been generated remain the same. However, newly generated UIDs and GIDs are likely to result in different values. These new values could affect users' ability to access file system resources if permissions have been set based on the old values. Permissions issues are particularly likely to occur if multiple tenants or environments must access the same file system resources.

Contact SAS Technical Support if you need assistance adjusting file system permissions as a result of this change.

Jobs

Wait for Results

The `--wait-results` option is available as of release 2.6.44 of the job CLI plug-in. You can use this option with the `job requests execute` and `job flows execute` commands.

The option enables the job CLI plug-in to wait for the results from the program associated with the job request or job flow. The CLI polls the program until the CLI receives the program results. The results are written to stdout. For an example of using this option, see [“Capture Results from a Program or Command” in SAS Viya Platform: Jobs and Flows.](#)

Removal of the Run As Functionality Used in Job Requests

When a SAS Viya platform deployment is upgraded to release 2023.07 or later, the prior Run As function is removed and the group-managed service account function becomes available.

IMPORTANT If your organization uses the prior Run As functionality, you must update any existing scheduled job requests that use the functionality to use the group-managed service account feature instead.

Job flows do not support the Run As functionality and are not affected. Both job requests and job flows can use the group-managed service account feature.

For detailed information about how to transition the Run As function, see [“Using a Group-Managed Service Account”](#) in *SAS Viya Platform: Jobs and Flows*.

Group-Managed Service Account for Scheduling Job Requests and Job Flows

Jobs and Flows now provides a group-managed service account feature. This feature enables members of a scheduling group to execute or schedule a job request or job flow that was created by another member of that group. When executed or scheduled, the job request or job flow is initiated by the service account.

Note: The group-managed service account feature replaces the Run As function.

For detailed information, including how to configure the group-managed service account, how to transition the Run As function, and how to use Jobs and Flows with the group-managed service account feature, see [“Using a Group-Managed Service Account”](#) in *SAS Viya Platform: Jobs and Flows*.

SAS Environment Manager

Updated Interfaces

The following user interfaces in SAS Environment Manager have been updated to provide tasks and settings that the group-managed service account requires:

- On the Domains page, the **Restrict applications** check box has been added to enable a user who is a member of a group-managed service account to work with specific applications like Jobs and Flows. For more information, see [“Domains Page”](#) in *SAS Environment Manager: User’s Guide*.
- On the Jobs and Flows page, these changes have been made:
 - the **Monitor** table now provides a **View as** list. If the user is a member of a group-managed service account, they can select the service account from this list. The table displays information associated with the group-managed service account.
 - When scheduling a job request or job flow, if the user is a member of a group-managed service account, the **Run as** field offers the group-managed service account as a selection.
 - Many tasks on the Jobs and Flow page are now enabled for use by users who are members of a group-managed service account.

For more information, see [“Jobs and Flows Page” in SAS Environment Manager: User’s Guide](#) and [“Use SAS Environment Manager with a Group-Managed Service Account” in SAS Viya Platform: Jobs and Flows](#).

- On the Users page, in the **Custom groups** view, the **Service Account Users for Schedule** custom group is now available.

Remote SAS Data Agent

Deployment to Kubernetes Clusters

Remote SAS Data Agent now supports a deployment to a Kubernetes cluster. Also, the documentation was updated to better support the configuration of customer-provided servers for storing data.

Deployment with Security Enhanced Linux

Remote SAS Data Agent now supports deployments involving Security Enhanced Linux. See [“Requirement for Docker SELinux” in Remote SAS Data Agent: Deployment and Administration Guide](#).

Credentials Management

Updated Credentials CLI Plug-In

Commands have been added to the credentials CLI plug-in. The following commands can be used within a domain.

- `credentials clients`
- `credentials users`
- `credentials groups`

A domain must first be created. Then, users, groups, and client credentials can be added to that domain using the credentials CLI plug-in. Prior to 2023.09, users and groups could be added only by using the SAS Environment Manager. For examples that use these commands, see [“Examples” in SAS Viya Platform: External Credentials](#).

Store Credentials with Google Cloud Storage Service Account

You can store and use credentials for accessing Google Cloud Storage (GCS) by defining an authentication domain for use with a GCS service account or an individual user.

For more information, see [“Using Google Cloud Storage \(GCS\) with an Authentication Domain” in SAS Viya Platform: External Credentials](#).

Servers

SASCMD Sign-Ons in SAS/CONNECT Server

SASCMD sign-ons always start a server session in a new pod in the Kubernetes cluster by default.

IMPORTANT Prior to 2023.10, SASCMD sign-ons always spawned a server session in the same pod that the client process is running in.

This behavior might break your use of SASCMD sign-ons when you migrate code from SAS 9 to SAS Viya platform. To address any potential issues, see [“Code Does Not Work When Moving to SAS Viya 2023.10 or Later”](#) in *SAS Viya Platform: Programming Run-Time Servers*.

If your requirement is to continue using the old functionality of spawning a server session in the same pod where the client process is running, then the administrator can choose to re-enable. For more information, see [“Re-enable Local SASCMD Sign-On”](#) in *SAS Viya Platform: Programming Run-Time Servers*.

CAS Server

Administrators can more easily control the number of workers for a distributed (MPP) CAS server without disrupting running jobs. Changing the number of worker nodes helps you manage cloud costs by keeping the CAS server right-sized for your workloads. Starting in 2023.09, when you enable the automatic table-balancing feature, the CAS server can load-balance tables among nodes when CAS worker nodes are added to or removed from an MPP CAS configuration.

Enabling table rebalancing requires an administrator to set some environment variables. For more information, see [“Change the Number of Workers for MPP CAS”](#) in *SAS Viya Platform: Deployment Guide*.

Background information about this new feature is available in [“CAS Table Rebalancing”](#) in *SAS Viya Platform: SAS Cloud Analytic Services*.

Publishing Destinations

Container Destinations with Private Python Repositories

You can configure a container publishing destination with support for a private Python repository in a SAS Viya deployment.

This enables users to install packages from a private Python repository using a pip install when publishing SAS Viya models and decisions to a container publishing

destination. The SAS Container Runtime base image is used when publishing SAS Viya models and decisions to a container destination.

For more information, see [“Configure Support for a Private Python Repository”](#) in *SAS Viya Platform: Publishing Destinations*.

LTS 2023.03 (May 2023)

About the Release

The Long-Term Support 2023.03 release is based on the Stable 2023.03 release and includes patch updates that were released since the Stable 2023.03 release. The Long-Term Support 2023.03 release includes all features, enhancements, fixes, and security patches that are in the Long-Term Support 2022.09 release and in the subsequent Stable releases through the Stable 2023.03 release.

Auditing

Enhancements to the sas-viya CLI Plug-in

The **audit** plug-in to the sas-viya CLI has been enhanced. The `description` and `description-contains` options return audit records that include all or part of the value specified in the **Description** field. For more information see [“Audit: How to \(CLI\)”](#) in *SAS Viya: Auditing*.

Backup and Restore

Use Inventory CronJob to Generate a Comparison Report for SAS Viya 3.x to SAS Viya 4 Migration

The inventory CronJob can generate the comparison report from a SAS Viya 3.x to SAS Viya 4 migration.

README Path Changes

The following HTML paths to READMEs have been changed:

Table 1.1 HTML README Paths

| 2023.01 and Earlier Releases of the SAS Viya Platform | 2023.02 and Later Releases of the SAS Viya Platform |
|--|---|
| <code>\$deploy/sas-bases/docs/configuration_settings_for_sas_viya_backup.htm</code> | <code>\$deploy/sas-bases/docs/configuration_settings_for_sas_viya_platform_backup.htm</code> |
| <code>\$deploy/sas-bases/docs/configuration_settings_for_sas_viya_restore.htm</code> | <code>\$deploy/sas-bases/docs/configuration_settings_for_sas_viya_platform_restore.htm</code> |

Backup of the SAS Viya 3.x Multi-Tenant Environment

In a SAS Viya 3.x to SAS Viya 4 migration, a backup of a multi-tenant environment is now supported. You might want to perform a backup of your SAS Viya 3.x environment in preparation for migrating to SAS Viya 4 in a future release.

Use Inventory CronJob to Generate a Comparison Report in Disaster Recovery Situations

The inventory CronJob can now generate the comparison report in a disaster recovery or restore scenario.

Migration

Use Inventory CronJob to Generate a Comparison Report for SAS Viya 3.x to SAS Viya 4 Migration

The inventory CronJob can now generate the comparison report in a SAS Viya 3.x to SAS Viya 4 migration.

Backup of the SAS Viya 3.x Multi-Tenant Environment

In a SAS Viya 3.x to SAS Viya 4 migration, a backup of a multi-tenant environment is now supported. You might want to perform a backup of your SAS Viya 3.x environment in preparation for migrating to SAS Viya 4 in a future release.

Support for Scans and Reports

- In a SAS Viya 3.x to SAS Viya 4 migration, an inventory scan of a multi-tenant environment is now supported. You might want to perform a scan of your SAS Viya 3.x environment in preparation for migrating to SAS Viya 4 in a future release.

- The inventory CronJob can now generate the comparison report in a SAS Viya 4 to SAS Viya 4 migration.

Use Inventory CronJob to Generate a Comparison Report for SAS Viya 4 to SAS Viya 4 Migration

The inventory CronJob can now generate the comparison report in a SAS Viya 4 to SAS Viya 4 migration.

Infrastructure Servers

SAS Redis Server and SAS Redis Operator

SAS Viya now uses Redis to provide a distributed cache technology. Redis Server and the Redis Operator replace Apache Geode and SAS Cache Server. The full replacement for all SAS Viya offerings is planned for completion in 2022.11.

Not all SAS Viya offerings require the cache server functionality. With the addition of Redis, you might notice that the sas-cacheserver and sas-cachelocator stateful sets are still in your cluster but are not running. This behavior is expected. The sas-cacheserver and sas-cachelocator services are still included in deployments but are not enabled unless another service (such as services that are used by the SAS Intelligent Planning Suite) requires them.

SAS Infrastructure Data Server (platform PostgreSQL)

SAS Viya supports PostgreSQL 11–13 for an external instance of SAS Infrastructure Data Server. Previous releases of SAS Viya supported PostgreSQL 11 and 12 only.

Crunchy Data PostgreSQL supports an internal instance of SAS Infrastructure Data Server and also supports SAS Common Data Store. Crunchy Data PostgreSQL version 5 is now the supported version and offers significant improvements over version 4. Crunchy Data 5 is more declarative than version 4 and also requires fewer containers.

When SAS upgraded the version of PostgreSQL to Crunchy Data PostgreSQL 5, some aspects of cluster configuration and some default settings changed. SAS recommends that you gain a full understanding of these changes, which are described in [“Changes Related to PostgreSQL” in *What's New in SAS Viya Platform Operations*](#).

Multi-Tenancy

Activity records and audit records are created, managed, and analyzed separately and uniquely in each tenant, including the provider. Most of the audit configuration instances are also unique and separate in each tenant. SAS administrators in the provider tenant set critical audit record purge settings for all tenants.

Transformers

Deprecation Warning for Start/Stop Transformers

The option of starting and stopping your SAS Viya platform deployment using `Kustomize transformers` is deprecated as of 2023.03 Stable and Long-Term Support releases. It was removed at Stable 2023.10 and Long-Term Support 2024.03. SAS recommends that you use `sas-stop-all` and `sas-start-all` CronJobs to stop and start your SAS Viya platform deployments.

See [“Starting and Stopping a SAS Viya Platform Deployment”](#) in *SAS Viya Platform: General Management of Servers and Services*.

External Credentials

Storing Token Credentials

SAS Cloud Analytic Services supports storing token credentials. This change supports shared accounts for use in an environment configured for SCIM.

For more information, see [“CAS and Compute Services: Using a Group-Managed Service Account”](#) in *SAS Viya Platform: External Credentials*.

Authentication

Kerberos Hybrid Authentication

Additional support has been added for Kerberos hybrid authentication scenarios. This support is applicable in situations where the environment is configured for single sign-on with OIDC and SAML and also requires Kerberos access to data sources. The changes that were made also provide enhanced support for constrained delegation. In some of these situations, the SAS Kerberos proxy was unable to obtain a credential on behalf of the user. The credential could not be obtained because the user name that was specified in the OAuth token did not exist in Active Directory or in the KDC.

Following changes to the way that the SAS Kerberos proxy handles the ORIGIN claim, you have additional options for managing the User Principal Name (UPN) value in the access token that is generated. For example, if your environment specifies that the UPN format is `sAMAccountName@default_realm`, you can configure user identities so that `USER_NAME = sAMAccountName` and then define a `default_realm` in the `krb5.conf` file. The SAS Kerberos proxy appends the default realm where it is not already appended. With these changes, authenticated user

accounts in different formats are automatically transformed into formats that match those that are stored in the identities service or received from SCIM.

The changes do not affect the SAS deployment if it is configured for LDAP or Kerberos authentication. They affect only Kerberos constrained delegation environments in which OIDC or SAML is used for user authentication along with Kerberos. For more information, see [“Kerberos Hybrid Authentication” in SAS Viya Platform: Authentication](#).

Launcher Service Authentication

The OAuth tokens with the client credential “grant” type and that do not have “sasapp” authority are not allowed by the Launcher service to create Launcher processes directly. These client credentials are allowed to create processes only with the use of a stored credential.

Authentication

SAS has changed the default setting for the OAuth tokens that are issued by SAS Logon Manager. For most SAS Viya clients, these tokens now expire after one hour. Previously, they expired after four hours.

Most applications manage expiring and refreshing tokens programmatically. You can override the system-wide default for your custom applications by updating the value for the `access_token_validity` property. See [“Register a Custom Application \(OAuth Client\)” in SAS Viya Platform: Authentication](#) for information about the `access_token_validity` property and the steps for registering a client so that it can obtain tokens.

Command-Line Interface

Data Agent Plug-in

The new data agent plug-in to the `sas-viya` command-line interface (CLI) enables you to manage the connection between SAS Viya and your data sources. For more information, see [Command Line Interface: `dagentsrv`](#)

New Options for Reports Plug-in

The reports plug-in to the `sas-viya` command-line interface (CLI) has a new `format-locale` option on the `build-package` command. This new option lets you specify the locale that is used for data formatting and sorting.

Programming Runtime Servers

Launcher Service

Kubernetes volumes can be used as the mount point for user's home directories. See [Using Kubernetes Volumes for User Home Directories](#).

Batch Server

The administrator can configure the batch context to allow launched servers to run under a shared account. See “[Configure Batch Servers to Run under a Shared Account](#)” in *SAS Viya Platform: Server Contexts*.

Product Offering Names

Changes to Product Offering Names

Documentation for previous versions of SAS Viya 4 used the term *SAS Viya* to refer to the environment that supported compatible SAS product offerings. These offerings ran in, and interacted with, a deployment of the *SAS Viya platform*, which was previously referred to as *SAS Viya*. Several SAS product offerings have been renamed to emphasize their relative importance:

- SAS Visual Machine Learning was renamed as SAS Viya
- SAS Visual Data Science was renamed as SAS Viya Advanced
- SAS Visual Data Science Programming was renamed as SAS Viya Programming
- SAS Visual Data Science Decisioning was renamed as SAS Viya Enterprise

The documentation has been updated to reflect these changes.

Encryption

Encryption

Encrypted communication between SAS/ACCESS to Teradata and SAS Viya using TLS 1.2 is supported. For more information, see [Configure TLS for SAS/ACCESS Connection to Teradata](#).

Monitoring

SAS Viya Monitoring for Kubernetes

The documentation for this solution has been redesigned and is now located in the [SAS Viya Monitoring for Kubernetes Help Center](#).

Identity Management

Identities

SAS has changed the default settings that affect user UIDs and group GIDs (POSIX attributes). Previously, the default setting determined that the identities service obtained POSIX attributes from an IAM system, typically from an LDAP server. Unless you change the new default setting, the identities service now returns UIDs that it auto-generates from a hash. It does not auto-generate GIDs by default. If GIDs are present from an existing source, such as LDAP, the identities service returns them when queried. This default behavior is new with SAS Viya 2022.10 and later.

Here is a summary of the new default behavior of the identities service:

- The identities service always provides a generated UID, even if your LDAP identity provider contains valid POSIX UID attributes for user accounts.
- The identities service does not generate GID values, but it returns GID values that exist in LDAP or that were manually specified.
- The identities service allows SAS administrators to provide GID values from an LDAP identity provider or by performing a bulk-load operation through the identities endpoint.

In other words, by default, UID values are auto-generated rather than retrieved from LDAP, but GID values are not auto-generated; you are expected to provide them. You can change the default settings and provide all POSIX attributes from an identity and access management system (such as LDAP), or you can upload a file that contains the UIDs and GIDs that you want to use. This bulk-load operation involves changing the mode property for the identities service. For UIDs, the default mode is GENERATE. For GIDs, the default is CUSTOM.

No modification to these default settings is required if you are satisfied with auto-generated UIDs and if your deployment does not require group identification as part of CAS server usage. The shared service account is still used by default for these sessions.

LTS 2022.09 (November 2022)

The 2022.09 long-term support release is based on the 2022.09 stable release. It includes all features in the 2022.1 long-term support release plus all stable releases from 2021.2.6 to 2022.09.

Backup and Restore

Starting with the SAS Viya 2022.1.3 release, the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter was moved to the `sas-backup-job-parameters` configMap. In SAS Viya 2022.1.2 and prior releases, it was located in the `sas-backup-agent-parameters` configMap.

To use the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter in SAS Viya 2022.1.3 and later releases, when editing the `kustomization.yaml` file to run the restore, you must remove the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter from the `sas-backup-agent-parameters` configMap and add it to the `sas-backup-job-parameters` configMap in the `configMapGenerator` section. If the `sas-backup-job-parameters` section is not present, you must add it and include the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter. If it was the only parameter defined for the `sas-backup-agent-parameter` configMap, then you should remove the `sas-backup-agent-parameter` section.

For more information, see one of the following files:

| File Format | Path |
|-------------|---|
| Markdown | <code>\$deploy/sas-bases/examples/backup/configure/README.md</code> |
| HTML | <code>\$deploy/sas-bases/docs/configuration_settings_for_sas_viya_backup.htm</code> |

The inventory scan can now be run by creating a Kubernetes job from the CronJob. This method does support the scanning of a multi-tenancy environment.

Note: The inventory scan CronJob does not yet generate the extra data necessary to populate the comparison report.

You can use PostgreSQL database options to improve the performance of a restore. For more information, see [“Best Practices for Performing Restores” in SAS Viya Platform: Backup and Restore](#).

Migration

The inventory scan can now be run by creating a Kubernetes job from the CronJob. This method does support the scanning of a multi-tenancy environment.

Note: The inventory scan CronJob does not yet generate the extra data necessary to populate the comparison report.

Template files for using existing PVCs and the sas-common-backup-data PVC to mount migration volumes are now available in a SAS Viya 3 to 4 migration.

Importing

Libraries in an import file can be mapped to CAS and Compute servers. For more information see [Import Tab in Content Migration](#).

Infrastructure Servers

SAS Redis Server and SAS Redis Operator

SAS Viya now uses Redis to provide a distributed cache technology. Redis Server and the Redis Operator replace Apache Geode and SAS Cache Server. The full replacement for all SAS Viya offerings is planned for completion in 2022.11.

Not all SAS Viya offerings require the cache server functionality. With the addition of Redis, you might notice that the sas-cacheserver and sas-cachelocator stateful sets are still in your cluster but are not running. This behavior is expected. The sas-cacheserver and sas-cachelocator services are still included in deployments but are not enabled unless another service (such as services that are used by the SAS Intelligent Planning Suite) requires them.

SAS Infrastructure Data Server (platform PostgreSQL)

SAS Viya supports PostgreSQL 11–13 for an external instance of SAS Infrastructure Data Server. Previous releases of SAS Viya supported PostgreSQL 11 and 12 only.

Crunchy Data PostgreSQL supports an internal instance of SAS Infrastructure Data Server and also supports SAS Common Data Store. Crunchy Data PostgreSQL version 5 is now the supported version and offers significant improvements over version 4. Crunchy Data 5 is more declarative than version 4 and also requires fewer containers.

When SAS upgraded the version of PostgreSQL to Crunchy Data PostgreSQL 5, some aspects of cluster configuration and some default settings changed. SAS

recommends that you gain a full understanding of these changes, which are described in [“Changes Related to PostgreSQL”](#) in *What’s New in SAS Viya Platform Operations*.

Encryption

The Mozilla bundle of trusted CA certificates can be excluded from the truststore. For detailed information, see [“Exclude the Mozilla Trusted CA Certificates from the Truststore”](#) in *SAS Viya Platform Encryption: Data in Motion*.

Servers and Services

You can use PostgreSQL database options to improve the performance of a restore. For more information, see [“Best Practices for Performing Restores”](#) in *SAS Viya Platform: Backup and Restore*.

The name of the CAS container is changed from `cas` to `sas-cas-server`. This change is intended to make it easier to find and identify the CAS container in standard Kubernetes logging and monitoring tools.

Command-Line Interface

- The launcher plug-in to the `sas-viya` command-line interface (CLI) can now display SAS Launcher service processes. Use the `“sas-viya launcher processes - h”` option for complete information about command options and arguments.
- The new visual-forecasting plug-in to the `sas-viya` command-line interface (CLI) enables you to import projects from SAS Forecast Studio.
- The SAS Workload Orchestrator plug-in to the `sas-viya` command-line interface (CLI) can now import three types of configurations into SAS Viya. For detailed information, see [Migrating Content](#)
- The new Credentials plug-in to the `sas-viya` command-line interface (CLI) enables you to manage the operations of the credentials service for domains. For detailed information, see [“Credentials Domain: How to \(CLI\)”](#) in *SAS Viya Platform: External Credentials*.

In the launcher plug-in to the `sas-viya` command-line interface (CLI), there is a new `command-allowlist` option on the `create` command. The new option enables you to specify a list of valid commands that the context can launch.

Monitoring

The SAS Viya Monitoring for Kubernetes solution no longer deploys Elasticsearch and Kibana. Instead, OpenSearch and OpenSearch Dashboards are deployed. For more information, see [SAS Viya Platform: Log Monitoring](#).

LTS 2022.1 (May 2022)

The 2022.1 long-term support release is based on the 2021.2.5 stable release. It includes all features in the 2021.2 long-term support release plus all stable releases from 2021.2.1 to 2021.2.5.

Command-Line Interface

In the batch plug-in to the sas-viya CLI, the new `restart-job` option specifies that a job can be restarted from the beginning without using a checkpoint or label restart.

- The PLUGINS command of the sas-viya CLI has a new `all` option that enables you to download all plug-ins to the sas-viya CLI at one time. The sas-viya CLI with the new `all` option is downloadable as of January 12, 2022. It is available for all previous versions of the sas-viya CLI.
- The new mip-migration plug-in to the sas-viya CLI enables you to transfer content from SAS Model Implementation Platform 3.2 to SAS Risk Engine on SAS Viya.

The healthcheck plug-in to the sas-viya CLI is no longer available as of version Stable 2021.2.1.

Configuration Instances

A new configuration instance, `logconfig`, has been added to the configuration of SAS/CONNECT Server and SAS/CONNECT Spawner. See [“Edit Server Configuration Instances”](#) in *SAS Environment Manager: User's Guide*.

Content Assessment

A new version of SAS Content Assessment is available at [Downloads: SAS Content Assessment](#).

Features

The new **Features** function in SAS Environment Manager enables administrators to display features to users. See [“Features Page” in SAS Environment Manager: User’s Guide](#).

LTS 2021.2 (November 2021)

The 2021.2 long-term support release is based on the 2021.1.6 stable release. It includes all features in the 2021.1 long-term support release plus all stable releases from 2020.1.5 to 2021.1.6.

Authorization

- In CAS row-level permissions, support has been provided for the identity-driven substitution parameter `SAS.ExternalIdentity`. See [“Identity-Based Substitution” in SAS Viya Platform: CAS Authorization](#).
- On the **Rules** page in SAS Environment Manager, the deprecated attribute `mediaType` has been removed. It has been replaced by three attributes that are more specific: `acceptType`, `acceptItemType`, and `contentType`. See [“Media Type Attributes” in SAS Viya Platform: General Authorization](#).

Command-Line Interfaces

- In the reports plug-in to the `sas-viya` CLI, the following options are new:

| | |
|----------------------------|---|
| <code>build-package</code> | Downloads a report package as a ZIP file. |
| <code>list-elements</code> | Lists the elements in a report. |

- The new notifications plug-in to the `sas-viya` CLI manages notifications in SAS Environment Manager.
- In the `cas` plug-in to the `sas-viya` CLI, the new `shapes` option enables you to load Esri shape files into CAS as a table.
- The new `decisiongitdeploy` plug-in to the `sas-viya` CLI enables you to deploy decisions and rule sets from a local Git repository to the SAS Micro Analytic Service destination (`maslocal`) or to a SAS Cloud Analytic Services (CAS) destination.

Configuration Instances

A new configuration instance, `restricted_options`, has been added to the configuration of SAS Compute Server, SAS/CONNECT Server, and the SAS Batch Server. See [“Edit Server Configuration Instances” in SAS Environment Manager: User’s Guide](#).

Contexts

All the contexts (Launcher, Compute, Batch, and Connect) can be duplicated as a new context with a modified name. See [“Copy a Context” in SAS Environment Manager: User’s Guide](#).

Notifications

The new **Notifications** function in SAS Environment Manager enables administrators to send a message that appears in the **Notifications** area of all SAS Viya users. See [“Sending a Notification Message” in SAS Environment Manager: User’s Guide](#).

Progressive Web App Functionality

SAS Environment Manager can now be installed as a Progressive Web App (PWA), enabling you to use the product as a desktop app instead of in a web browser. Only Chromium-based browsers support PWA. For more information, see [“Installing SAS Environment Manager as a Progressive Web App”](#).

Python in Lockdown Mode

PROC PYTHON and Python code can be enabled to run in SAS in lockdown mode. See [Configuring SAS to Run the Python Language](#).

Change in Default Behavior for CAS Sessions

By default, users cannot run CAS sessions under their host identity. A request to launch a CAS session under a requesting user’s host identity fails and returns the following error message: `Host identity launches are not permitted.`

Here are examples of affected deployments:

- A deployment that uses Kerberos or PAM with SSSD.
- A deployment that assigns users to the CHAR group.
- A deployment that sets the CASALLHOSTACCOUNTS environment variable.
- A deployment that has users that run Python code (or other external languages) using MAS.
- A deployment that uses host permissions on files and directories to prevent or allow access for specific users or groups.

To enable CAS sessions to run under host identity in such deployments, apply a patch to enable the required system capabilities. For more information, see [“CAS Server Authentication” in SAS Viya Platform Identity and Access Management: Fundamentals](#).

LTS 2021.1 (May 2021)

The 2021.1 long-term support release is based on the 2020.1.4 stable release. It includes all features in the stable releases 2020.1.1 through 2020.1.4.

Configuration Properties

- In the `sas.crossdomain.proxy` configuration definition for the Cross Domain Proxy service, the new properties `outboundHttpProxyUrl` and `outboundHttpsProxyUrl` enable you to specify the proxy that is used for outgoing HTTP and HTTPS requests.
- For the SAS Logon Manager application, in order to enable support for multiple identity providers, the `sas.logon.oauth.providers` configuration definition replaces `sas.logon.oauth.providers.external_oauth`, and the `sas.logon.saml.providers` configuration definition replaces `sas.logon.saml.providers.external_saml`.
- The `sas.files.maxFileSize` property is deprecated and replaced with the `sas.files.maxFileSizeMB` property.

Command-Line Interfaces

In the fonts plug-in to the `sas-viya` CLI, the new `overwrite` option enables you to replace a previously registered version of a custom font with a new version.

Kerberos and Constrained Delegation

End-to-end support is now provided for Kerberos. In addition, you can configure Kerberos constrained delegation.

Content Migration (Import and Export)

- The conversion of the following MDX expressions to SAS Visual Analytics calculated data items is supported:
 - StrToSet
 - IFN
 - MAX
- For the SUM and SASISUM MDX functions, if missing value (.) is specified as a parameter, the returned value is displayed as a zero in SAS Visual Analytics reports.

Migration and Promotion Documentation

The migration and promotion documentation has been restructured so that both sections reside under one Migration topic. In addition, the content is now organized into the following topics based on what version of SAS you are moving from:

- Moving from SAS Viya
- Moving from SAS 3.x
- Moving from SAS 9.4

Promotion, which refers to moving resources from one environment to another environment, is now referred to as content migration. Migration, which refers to moving an entire system from one environment to another environment, is now referred to as a full-system migration.

Publishing Destinations

You can now configure publishing destinations for a Git repository, an Azure Machine Learning cloud-based provider, and container destinations (Amazon Web Services, Azure, and Private Docker) using SAS Environment Manager.

SAS/CONNECT Server

LOCKDOWN is enabled by default for all SAS/CONNECT servers that are launched or spawned.

SAS/CONNECT Spawner

The SAS Viya SAS/CONNECT spawner supports TLS 1.3. When a SAS/CONNECT client that supports TLS 1.3 connects to a SAS Viya SAS/CONNECT spawner, SAS Viya tries to encrypt the connections using TLS 1.3. Otherwise, TLS 1.2 is used.

Note: This support is added as a hot fix in 2021.1 and is part of all subsequent long-term support releases.

SAS Compute Server

LOCKDOWN is enabled by default for all SAS Compute servers that are launched.

Launcher Context

- Commands can be added to an allowlist in SAS Environment Manager when creating a new Launcher context or editing an existing Launcher context.
- The default values of SAS Locale and SAS Encoding can be overridden in SAS Environment Manager when creating a new Launcher context or editing an existing Launcher context.

Batch Context

A batch context is available as a specification that contains information that is needed to run a batch server.

Server Context

SAS Compute servers that are configured to be reusable can also be configured to have a minimum number of servers that are available. This feature enables the SAS Compute service to maintain a set of running compute servers that can be reused.

For more information, see [“Configure a Pool of Available Compute Servers”](#) in *SAS Viya Platform: Server Contexts*.

Default TLS Cipher Suites

The supported cipher suites for TLS 1.3 are as follows:

- `TLS_AES_128_GCM_SHA256`
- `TLS_AES_256_GCM_SHA384`
- `TLS_AES_128_CCM_SHA256`
- `TLS_AES_128_CCM_8_SHA256`
- `TLS_CHACHA20_POLY1305_SHA256`

The default cipher suites supported for TLS 1.2 are as follows:

- `TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256`
- `TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384`
- `TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256`
- `TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384`

LTS 2020.1 (November 2020)

Critical Changes

In SAS Viya 2020.1, Kerberos is supported for only initial authentication of users who are redirected to SAS Logon Manager from another SAS Viya application. Kerberos is not supported in any other context. There is no end-to-end support for Kerberos. See [“Kerberos Considerations”](#) in *SAS Viya Platform: Authentication*.

Fundamental Changes

- SAS Viya 2020.1 is always deployed to a Kubernetes cluster. See [“Kubernetes Cluster Requirements”](#) in *System Requirements for the SAS Viya Platform*.
- SAS Viya 2020.1 is updated frequently. You can choose either monthly updates (Stable cadence) or biannual updates (Long-Term Support cadence). Support policies for SAS Viya 2020.1 and later are cadence-based. See [“How frequently is software released?”](#) in *Getting Started with SAS Viya Platform Operations*.
- SAS Viya 4 is a term that encompasses all cadence-based releases. Most references omit the number (4) because they are for a specific version (such as

2020.1) or they are for SAS Viya in general. In some references that distinguish between generations of SAS Viya, the number (4) is retained.

Changes to Common Tasks

- To deploy software, run the `kubectl apply` command against a manifest that you create using the `kustomize` program. See “[Key Concepts – Deployment](#)” in [Getting Started with SAS Viya Platform Operations](#).
- To download software updates, additional software, or a new software license, use `my.sas.com`. See [SAS Viya Platform Operations: Updating Software Tasks](#).
- To authenticate users, you can choose to use a System for Cross-domain Identity Management (SCIM) identity provider, instead of an LDAP identity provider. See “[Identity Management: Overview](#)” in [SAS Viya Platform: Identity Management](#).
- To store user content, you can choose to use an external PostgreSQL instance, instead of an instance that SAS provides. See “[PostgreSQL Server Requirements](#)” in [System Requirements for the SAS Viya Platform](#).
- To encrypt in-transit data, use the SAS Security Certificate Framework, a collection of software applications that integrate the security requirements of your SAS applications and your Kubernetes security infrastructure. See [SAS Viya Platform Encryption: Data in Motion](#).
- To monitor SAS Viya, you can use GitHub resources and instructions that SAS provides for Prometheus and Grafana. As an alternative, you can use your own commodity services (but SAS does not provide resources and instructions for other commodity services). See “[Monitoring: Overview](#)” in [SAS Viya Platform: Metric Monitoring](#).
- To view SAS Viya logs, you can use GitHub resources and instructions that SAS provides for Elasticsearch, Fluent Bit, and Kibana. As an alternative, you can use your own commodity services (but SAS does not provide resources and instructions for other commodity services). See [Ways to View Log Messages](#).

Note: You can also use a Kubernetes command to view logs. See “[Use kubectl Commands to View Log Messages](#)” in [SAS Viya Platform: Log Monitoring](#).

- To create a backup, use a Kubernetes job that SAS provides. See [SAS Viya Platform: Backup and Restore](#).
- To start or stop a component, use a Kubernetes command. See [SAS Viya Platform Operations: Servers and Services](#).
- To promote or migrate resources from prior releases, use new tools and processes. See [System Migration and Content Migration](#).
- To implement multi-tenancy, use separate Kubernetes namespaces. See “[Multiple Deployments](#)” in [Getting Started with SAS Viya Platform Operations](#).

- To apply a new license, obtain the license from my.sas.com and use Kubernetes commands to activate the license. See [“Licensing: Overview” in SAS Viya Platform: Licensing](#).
- To expand the availability of system paths for a CAS server, add paths to the initial allowlist (or switch to using a denylist). See [“Paths List” in SAS Viya Platform: SAS Cloud Analytic Services](#).

Changes to Administrative Tools

- The administrative command-line interface (CLI), sas-admin CLI, is replaced by the sas-viya CLI, which functions as the universal parent CLI for all SAS Viya 4 CLI plug-ins. See [SAS Viya Platform: Using the Command-Line Interface](#).
- The enterprise administrative web application, SAS Environment Manager, is updated as follows:
 - The **Dashboard** page is removed.
 - Comparable functionality is provided by commodity services such as Prometheus.
 - To access any administrative reports that SAS provides, open the **Content** page, and select **SAS Content** ⇒ **Products** ⇒ **SAS Environment Manager** ⇒ **Dashboard Items**.
 - The **Tenants** page is removed. Application multi-tenancy is replaced by namespace multi-tenancy.
 - The **Backup and Restore** page is removed. To back up and restore applications and content, use Kubernetes commands.
 - The **Machines** page is removed. A new **Metrics** page can provide access to a designated commodity service.
 - The **Logs** page functionality is removed. The revised **Logs** page can provide access to a designated commodity service.
 - On the **Content** page, import functionality is removed. A new **Import** page supports promoting content to a new environment. (The **Content** page still provides export functionality.)
 - On the **Configuration** page, you can edit configuration properties (usermods files) for some SAS Viya servers.

See [SAS Environment Manager: User's Guide](#).

Changes to Administrative Documentation

- [Administrative documentation](#) is restructured as follows:
 - README files provide the complete list of customizations that are available for your order.

- A collection of documents (SAS Viya Operations) is intended for a Kubernetes administrator.
- A separate collection of documents (SAS Viya Administration) is intended for a SAS administrator.
- The following new terms are used in contexts such as mobile device management and CAS paths lists:
 - Allowlist (formerly whitelist)
 - Denylist (formerly blacklist)

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2026.05 (May 2026)

Updated Auditing Behavior

The audit service is updated to focus on user activities rather than audit records. This change of emphasis focuses the audit on actions taken by a user, rather than on computational tasks performed as a result of user requests. The outcome is a more streamlined audit that still captures the meaningful events.

Allow XCMDs in SAS Batch Server Using SAS Environment Manager

You can now enable XCMDs for the batch server using SAS Environment Manager. For details, see [“Create a Batch Context” in SAS Environment Manager: User’s Guide](#).

CAS REST API Authentication

By default, the CAS server now uses OAuth to authorize connections from external resources to the REST API. In situations where you need to enable Basic Authentication, set the `cas.ALLOWRESTBASICAUTH` to `TRUE`. For details, see [ALLOWRESTBASICAUTH configuration option](#).

Automated Management of Certificates and Signing Keys

Starting with 2026.05, the SAS Security Certificate Framework (`sas-certframe`) can generate and manage the RSA key pair and certificate that are used for signing JSON web tokens (JWTs) issued by SAS Viya. New deployments of the SAS Viya platform have this new functionality by default. Previously, the signing key and certificate used for JWTs were automatically generated and stored in SAS Configuration Server (Consul).


For deployments using SAML authentication, the same key and certificate from the SAS Security Certificate Framework can be used to sign SAML messages.

Previously, deployments using SAML configured the signing key and certificate, which were also stored in SAS Configuration Server.

Existing deployments can continue to use the signing key and certificate that are stored in SAS Configuration Server after updating to 2026.05 or later. However, *SAS Viya Platform: Authentication* provides instructions for converting your deployment to use the SAS Security Certificate Framework instead. Instructions for replacing the automatically generated signing key and certificate with your own key and certificate are also provided. For more information, see [“Additional Authentication Topics”](#) in *SAS Viya Platform: Authentication*.

New Content Pane in the Applications Menu

You can now access your recent SAS content, favorites, or shared content using the applications menu.

Click  on the application bar. Your SAS content appears in a pane beside the list of SAS applications. In the **Content** drop-down list at the top of the pane, you can select **Recent**, **My Favorites**, or **Shared with Me**. Your selection is maintained across sessions. To open an item in the **Content** pane, click the item. Your selection opens in the appropriate application. Right-click items in the **Content** pane to discover additional options. Note: If you have no recent content, favorites, or shared content, the **Content** pane in the applications menu is not displayed.

2026.04 (April 2026)

Allow XCMDs in SAS Batch Server Using Batch CLI

You can now enable XCMDs for the batch server by using Batch CLI. For details, see [“Configure Batch Server to Allow XCMDs”](#) in *SAS Viya Platform: Programming Run-Time Servers*.

New User ID to Access the RabbitMQ Management UI

To access the RabbitMQ Management UI, you must look up the new user name. For details, see [“Configure Access to RabbitMQ Management UI”](#) in *SAS Viya Platform: Infrastructure Servers*.

SAS Environment Manager Supports Azure Synapse Analytics for Publishing Destination (Base64) Domain

SAS Environment Manager supports the Azure Synapse Analytics destination type for the Base64 credentials. This credential is supported for a publishing destination (Base64) domain. For more information, see [“Domains Page” in SAS Environment Manager: User’s Guide](#).

SAS Viya Copilot Credential and Secret Update in SAS Environment Manager

SAS recently updated the secret management technology that interacts with the SAS Viya Orders API. To use SAS Viya Copilot, you must update the SAS Viya platform to 2026.04 or later or apply a patch update. For more information about updating or applying a patch update, see [SAS Viya Platform Operations: Updating Software Tasks](#).

SAS Viya Copilot uses credentials and secrets defined by the SAS Viya Orders API. If you created a credential before April 2026, it is likely deprecated. If your credential is not working, delete the credential and add a new credential. For more information about setting up the credential and secrets for SAS Viya Copilot, see [“Credential and Secrets Setup for SAS Viya Copilot” in SAS Viya Platform: Licensing](#). Your secrets expire in one year. SAS recommends that you set up a reminder to create a new secret before your current secret expires. SAS does not store the expiration date of your secret.

For more information about managing SAS Viya Copilot in SAS Environment Manager, see [“SAS Viya Copilot Page” in SAS Environment Manager: User’s Guide](#).

For more general information about SAS Viya Copilot, see [SAS Viya Copilot: Foundation Overview](#).

SAS Viya Copilot Functionality in SAS Environment Manager

SAS Viya Copilot functionality has been added to SAS Environment Manager. You can use SAS Viya Copilot to understand windows and panes within SAS Environment Manager, and to interrogate the SAS Environment Manager documentation.

For more details, see [“SAS Viya Copilot for SAS Environment Manager”](#) in *SAS Environment Manager: User’s Guide*.

Increased Adoption of Client JWT Authentication

Starting in 2026.04, most SAS Viya platform services authenticate to SAS Logon Manager using their Kubernetes Service Account (KSA) token by default. This change is part of a gradual migration from basic client authentication to JSON Web Token (JWT) authentication and enhances security within the cluster.

If your environment applies forward-proxy settings to the `sas-logon-app` container, you might need to add the Kubernetes service host to your proxy settings. For more information, see [“\(Optional\) Additional Requirements for Forward Proxy Environments”](#) in *System Requirements for the SAS Viya Platform*

Data Connections Are Not Shared between Users

Starting in 2026.04, the default value for `allowedSharedConnections` property that is included in the `sas.datasources` definition has changed from `true` to `false`. With this change, users cannot see other users’ connections to data. This affects session connections only.

To modify this setting, see [“datasources - allowSharedConnections”](#) in *SAS Viya: Configuration Dictionaries*.

2026.03 (March 2026)

External URL Access Control in SAS Programming Run-Time Servers

SAS LOCKDOWN security now supports an allowlist for external URLs that are used in `FILENAME URL` and `PROC HTTP` statements to ensure that the outbound access is explicitly approved by the administrators. This control helps to reduce data exfiltration risk and meet compliance requirements while retaining audited and intentional access to trusted endpoints. To obtain a secure environment, the SAS administrator can control which URL paths are allowed by adding at least one URL path to the URL allowlist. For more information, see [URL syntax and details](#).

The URL allowlist applies to only SAS language execution paths and does not affect third-party languages.

Change to SAML Authentication Default Settings

You might need to make a configuration change if you are using SAML for authentication to the SAS Viya platform. No action is necessary if either condition is true:

- you have defined a property for `issuer.uri` under the `sas.logon.jwt` configuration, as described in [Configure the issuer.uri](#)
- you are using the `sas.logon.saml` configuration and have defined an `entityBaseURL` property

The `AssertionConsumerService` URL in the SAML metadata will continue to use URLs that were defined using those methods. Otherwise, SAS Logon Manager defaults to use `http://localhost/SASLogon` starting in 2026.03. SAML logins might start to fail.

Refer to [“Configure the SAS Viya Platform as a SAML Service Provider”](#) in *SAS Viya Platform: Authentication* for information about setting the `issuer.uri` property with the `sas.logon.jwt` configuration.

SAS Environment Manager Supports Base64 Domain Type for Publishing Destinations

SAS Environment Manager now supports Base64 domains for Publishing Destinations.

For more information, see [“Add a Domain”](#) in *SAS Environment Manager: User’s Guide*.

2026.02 (February 2026)

Command-Line Interface

The **sas-viya** command-line interface has been enhanced to include autocompletion and suggestions for partial or incorrect commands.

For more information, see [“Auto-Completion”](#) in *SAS Viya Platform: Using the Command-Line Interface*.

Stable Releases in Limited Support

Note: For more information about Limited Support, see [Support Levels for the SAS Viya Platform](#).

2026.01 (January 2026)

Manage Credentials Using SAS Environment Manager

Using SAS Environment Manager, you can add an identity for a token domain from the **Domains** page and **Credentials view**.

For more information, see [“Manage Credentials” in SAS Environment Manager: User’s Guide](#).

NETENCRYPTALGORITHM= System Option Values RC2, RC4, DES, TRIPLEDES, and AES Are Deprecated

The NETENCRYPTALGORITHM= (alias NETENCALG=) system option values of RC2, RC4, DES, TRIPLEDES, and AES are deprecated. These values will be removed in an upcoming SAS Viya release. Change the option value to SSL to specify the use of the TLS protocol.

For more information, see [“NETENCRYPTALGORITHM= System Option” in SAS Viya Platform Encryption: Data in Motion](#).

Time-Based Minimum Node Scaling for SAS Workload Orchestrator

For any SAS Workload Orchestrator scalable host type, you can define a minimum number of nodes that must be available for that host type for the current time-based configuration.

This behavior ensures that the required compute capacity is made available and ready during peak hours, while still enabling autoscaling to expand as demand grows. The result is more predictable performance when you need it most and provides improved cost efficiency during off-peak hours.

For details, see:

- [“How SAS Workload Orchestrator Uses Kubernetes Cluster Autoscaler to Scale Up”](#) in *SAS Viya Platform: Workload Management*
- [“Enable Autoscaling for a Host Type”](#) in *SAS Environment Manager: User's Guide*

2025.12 (December 2025)

CAS Server Optional for Programming-Only Deployments

If your software order includes the SAS Viya Programming offering, you can exclude the default CAS server from your deployment. You must be able to run all of your programming use cases using only Programming Runtime servers such as SAS Compute Server. Excluding the CAS server enables your SAS programmers to access SAS Viya analytics using familiar PROC interfaces. For more information, see [“Configure CAS”](#) in *SAS Viya Platform: Deployment Guide*.

If you exclude the default CAS server in your initial deployment but decide that you want to add it after the deployment is complete, see [“Add CAS Server to SAS Viya Programming-Only Deployment”](#) in *SAS Viya Platform: SAS Cloud Analytic Services*. If you are interested in excluding the default CAS server from your deployment after the initial deployment, see [“Remove CAS Server from SAS Viya Programming-Only Deployment”](#) in *SAS Viya Platform: SAS Cloud Analytic Services*.

SAS Viya Copilot Page in SAS Environment Manager

SAS Viya Copilot is now available for use with the SAS Viya platform. The copilot is managed in SAS Environment Manager. [Read more](#)

SAS Viya Copilot is a GenAI-powered assistant built into the SAS Viya platform, designed to accelerate productivity across the analytics life cycle. It uses large language models (LLMs) stored on the SAS Azure tenant and accessed through a secure gateway, to enable conversational, AI-driven assistance.

SAS Viya Copilot is deployed as part of the SAS Viya platform. After you have deployed the SAS Viya platform, and if you have the combination of products currently supported by SAS Viya Copilot, SAS Environment Manager includes a new SAS Viya Copilot page, from which you can activate the copilot. If you do not

have the products that enable the activation of the copilot, the SAS Viya Copilot page is not available. For more information about setting up the copilot, see [“Credential and Secrets Setup for SAS Viya Copilot” in SAS Viya Platform: Licensing](#).

For more general information about SAS Viya Copilot, see [SAS Viya Copilot: Foundation Overview](#).

For more information about managing SAS Viya Copilot in SAS Environment Manager, see [“SAS Viya Copilot Page” in SAS Environment Manager: User’s Guide](#).

SAS Launcher Configuration Properties

The default and the maximum memory request limit is now 6Gi. For more information, see [“Configuration Properties: Launcher Service” in SAS Viya Platform: Programming Run-Time Servers](#).

Manage Credentials Using SAS Environment Manager

The following changes have been made to manage credentials from the **Domains** page and **Credentials view**.

- When adding a new credential, only one identity can be added. Prior to SAS Viya 2025.12, multiple identities could be added when creating a new credential. When multiple identities are needed for the same credential, [create a custom group](#). Identities can be added and removed from that custom group.
- When editing a credential, the identity can no longer be changed. To change the identity for a credential, delete the credential and add a new credential with the new identity.

For more information, see [“Manage Credentials” in SAS Environment Manager: User’s Guide](#).

2025.11 (November 2025)

New Scaling Controls for a Pool of Reusable Compute Servers

Compute contexts that are configured for reusable servers now support additional attributes that can be used to proactively control the scaling of the pool of servers to meet the current demand.

The pool of available compute servers can automatically scale up when the usage reaches a defined threshold set by `serverPoolScaleThreshold` attribute. A configured number of servers set by the `serverPoolScaleStep` attribute is added until the maximum number of servers that is set by `serverMaxAvailable` attribute is reached, which ensures faster response times for analytical workloads.

For more information, see [“Compute Context Attributes”](#) in *SAS Viya Platform: Programming Run-Time Servers* and [“Configure a Pool of Available Compute Servers”](#) in *SAS Viya Platform: Programming Run-Time Servers*.

Crunchy Postgres for Kubernetes Upgrade

Crunchy Postgres for Kubernetes, the version of Kubernetes that is included for internal instances of PostgreSQL, is being upgraded from 5.7.5 to 5.8.3. As part of the upgrade, the source base image is being upgraded from the Red Hat Universal Base Image 8 (UBI8) to the Red Hat Universal Base Image 9 (UBI9). No user intervention is required.

Change to Default Memory Allocation for the Identities Service

A default setting for the identities service has been changed in order to improve its performance. As a result of testing to derive optimal values for container memory, the minimum memory requirement for the identities service has changed in 2025.11 from 650 Mi to 1500 Mi.

Increased performance and reliability is expected for medium-sized or large deployments. In small environments where RAM resources are minimal, you can reduce the default setting. A Kubernetes administrator can change the `requests.memory` setting in the pod template.

2025.10 (October 2025)

Command Allowlist in SAS Launcher

SAS Launcher now enforces a secure-by-default policy. When the SAS Launcher's command allowlist is empty, operating system command execution is denied. To enable specific commands, add them to the allowlist. For more information, see [“Enable Security Using the Allowlist”](#) in *SAS Viya Platform: Programming Run-Time Servers*.

New Warning Messages for Crunchy Postgres for Kubernetes Can Be Ignored

Note: If you are using an external instance of PostgreSQL for your SAS Viya platform deployment, you can skip this What's New topic.

Crunchy Postgres for Kubernetes is the version of PostgreSQL that is used for internal instances of SAS Infrastructure Data Server for the SAS Viya platform. SAS is currently automating the process for updating to Crunchy Postgres for Kubernetes. As a result of some code changes, you might receive the following warning message:

```
WARNING: database "postgres" has a collation version mismatch
DETAIL:  The database was created using collation version 2.28, but the operating
system provides version 2.34.
```

If you receive this message, it can be safely ignored.

For more information, see [Warning messages occur after you apply the SAS Viya 2025.10 update with internal PostgreSQL](#).

Updates to SAS SpeedyStore Documentation: Default Collation

Documentation has been added about a default SingleStore setting that can affect string comparisons. For case-sensitive comparisons, you might need to change the server collation setting in the SingleStore deployment. For more information and instructions to change the default setting, see ["Setting or Modifying the Collation" in SAS SpeedyStore: Administration and Configuration Guide](#).

2025.09 (September 2025)

New Execution Path for Short Duration Jobs Using Compute Tasks

Compute Tasks is a new method of executing short duration jobs (typically that complete in less than a couple of seconds) that prioritizes speed over resilience. When using Compute Tasks, you can submit a program and receive its output in a single HTTP request. It is designed to be a lightweight alternative to Job Execution

Service when scheduling, result persistence, and fault tolerant retries are not required.

For more information, see [Compute Tasks Concepts](#) and “[Work with Compute Tasks](#)” in *SAS Viya Platform: Programming Run-Time Servers*.

For instructions to edit the existing job definition so that it is executed using Compute Tasks instead of Job Execution Service, see “[Executing a Job as a Compute Task](#)” in *SAS Job Execution Web Application: User's Guide*.

Share SAS Viya 3.x Inventory Results with SAS

The SAS Viya 3.x inventory scan can now be shared with SAS to help you with your migration planning. For more details see “[Sending Results to SAS for Analysis](#)” in *SAS Viya 3 Content Assessment*.

Migration Documentation

The documentation that explains how to migrate from SAS Viya 3.x to the SAS Viya platform has been restructured. Now the [common planning steps](#) are separated from the detailed migration steps. The latter are dependent on the migration method that you are using.

SAS Environment Manager Import Page

The Import user interface has been improved and enhanced.

2025.08 (August 2025)

Migration: Internal Objects

Internal objects are now listed in a new SASViyalInventory_Internal.csv file when you run the scan play of the Plan and Backup Ansible playbook. Previously, these objects were included in the SASViyalInventory.csv file.

Migration: Transfer Packages

Transfer packages are now included in the Inventory Scan. A new CSV file is created: `SASViyaInventory_TransferPkgs.csv`. The results are included in a new page in the SAS Viya Inventory report.

SAS Environment Manager Domain's Page

Changes have been made to the SAS Environment Manager Domain's page as follows:

- Domain type Authentication (token) is renamed to Authentication (OAuth2.0). Prior to 2025.08, the domain type Authentication (token) was used for OAuth 2.0. Use this domain type to configure group-managed service accounts.
- Domain type Authentication (token) provides a flexible way to specify credential properties and secrets for tokens.

2025.07 (July 2025)

Migration

The SAS Viya inventory report has been refreshed and updated.

2025.06 (June 2025)

Authentication

SAS Logon Manager has a new user interface design. As a result, when you update to 2025.06 or later, the SAS Sign in window might be displayed with misaligned fields and unexpected icons. The formatting of the Sign in window could be determined by old styling components that are saved in your browser's cache.

You can clear your browser's cache from your browser's privacy settings. On most browsers, if you press the Shift key while refreshing the page, the browser bypasses the cache and loads the page directly from the server. Doing this should display the new theme, correcting any issues with the Sign in window.

Migration

The SAS Viya inventory report has been refreshed and updated.

External Credentials Management

SAS Environment Manager provides the ability to restrict applications when using an Authentication (password) domain. When creating or modifying a password domain, you can select the **Restrict applications** check box and list the applications to restrict. For more information, see [“Manage Domains” in SAS Environment Manager: User’s Guide](#).

Changing PersistentVolumeClaim Size and the StorageClass on Redis Nodes

Redis now has a transformer file that enables you to modify the PersistentVolumeClaim size or the StorageClass for nodes. The transformer file can be applied on the deployment of your SAS Viya platform software. For details, see [“Modify PersistentVolumeClaim \(PVC\) or Storage Class” in SAS Viya Platform: Infrastructure Servers](#).

Refreshed SAS Viya Themes

The SAS Viya themes have been refreshed and include the following enhancements:

- improved focus indicator visibility for keyboard users
- the Dark theme now provides a better low-light experience, reduces eye strain, and supports extended use
- an updated graph palette, which provides a new default color scheme for graphs
- the High Contrast theme now makes reading and understanding complex graphs easier for users with visual impairments
- redesigned elements, such as buttons, input fields, and tiles now provide a more consistent experience
- a new typeface with improved legibility, a refreshed color palette, and an updated illustration style

Purge Old Notifications

A new property is available that controls the behavior of purging old notifications. Administrators can manage storage by periodically cleaning up old notification records. For more information, see [“Purge Old Notifications” in SAS Environment Manager: User’s Guide](#).

2025.05 (May 2025)

Jobs and Flows Page in SAS Environment Manager

You can now include a file-event trigger when scheduling a job flow by using the Jobs and Flows page.

See [Schedule a Job Flow](#) and [“Create a File-Event Trigger for a Job Flow” in SAS Environment Manager: User’s Guide](#).

Customer-provided Root CA Certificate Is Supported

Instructions have been included in the documentation to replace the SAS Viya platform root CA certificate with a customer-provided root CA certificate post deployment.

See [Replace the SAS Viya Platform Root CA Certificate](#).

Authentication: New SAML Option

A new option for SAML authentication is now available: entityIDAlias.

When you configure `sas.logon.saml.sp` for SAML authentication, you can now specify an alias that the entity ID can use in SAML URLs, such as the AssertionConsumerService URL. The SAML service provider metadata and SAML authentication request include the alias as part of SAML URLs. For more information, see [“Configure the SAS Viya Platform as a SAML Service Provider” in SAS Viya Platform: Authentication](#).

2025.04 (April 2025)

SAS Workload Orchestrator

SAS Workload Orchestrator is enhanced for performance, resilience, and efficiency by optimizing database interactions and improving system reliability.

The following enhancements significantly increase system resilience by improving database performance:

- optimized query updates.
- better job management.
- automated cleanup of completed jobs records. For details, see [“Deleting Job Records” in SAS Viya Platform: Workload Management](#).
- enhanced table indexing.
- reduced size of job history tables.

The improvements address issues with compute sessions and jobs that were slow to start, which were reported in earlier releases. The enhancements deliver a more reliable and responsive experience for the users and ensure smoother operations.

Jobs and Flows

Ability to Delete Obsolete Job Objects

The job plug-in to the sas-viya CLI provides new commands for deleting obsolete job instances and orphaned job definitions from the SAS Viya platform database. See [“Deleting Job Objects from the SAS Viya Platform Database” in SAS Viya Platform: Jobs and Flows](#).

New Argument for Compute Provider for Job Execution Service

A new argument is available that enables you to avoid an overly long key name for fileref results. See [“Change Key Names for Results” in SAS Viya Platform: Jobs and Flows](#).

2025.03 (March 2025)

CAS Server

The new server option `cas.MAXCORESPERWORKER` specifies the maximum number of cores per worker. Reducing the maximum number of cores per worker can help reduce contention between cores and improve performance. This is especially true when multiple users are running highly concurrent actions on the CAS server. By specifying this option, you can change the default maximum for all sessions on your CAS server. For more information, see [“cas.MAXCORESPERWORKER=’n’” in SAS Viya Platform: SAS Cloud Analytic Services](#).

SAS/CONNECT Spawner Sign-Ons

The SAS/CONNECT client can now leverage authentication domains that are maintained by the Credentials microservice in SAS Viya for Spawner sign-ons. By using an authentication domain, you do not need to hardcode or manually enter credentials in your SAS programs. This reduces the risk of exposing sensitive information. Administrators can manage and update credentials centrally in the SAS Credential Service, making it easier to maintain security and compliance. Using authentication domains ensures consistent credential usage across different applications and users.

You can continue to use AUTHDOMAIN to sign on when you migrate from SAS 9 to the SAS Viya platform.

For more information, see [“Authentication Methods” in SAS/CONNECT for the SAS Viya Platform: User’s Guide](#).

Jobs and Flows

Starting in release 2025.03, you can set job requests to include a time duration value on all job instances submitted from the job request. After a job instance completes running and the specified time duration (such as three days) has elapsed, the job instance expires and is deleted.

The Job Plug-In CLI

For information about using the job plug-in to the sas-viya CLI to set the `expiresAfter` value for a specific job request, see [“Setting Job Instances to Expire” in SAS Viya Platform: Jobs and Flows](#).

The New Configuration Property

For information about using the new global configuration property, see [“job.execution - expiresAfter”](#) in *SAS Viya: Configuration Dictionaries* and [“Edit Configuration Instances”](#) in *SAS Environment Manager: User's Guide*.

Migration

In a SAS Viya 3.x to SAS Viya 4 migration, the Plan and Backup Ansible playbook now has an evaluate play. Running the playbook with the evaluate play creates the SAS 3.x System Evaluation report that contains information about the CPU, operating systems, and the installed software. It also displays information about the eligibility of your SAS Viya 3.x deployment to migrate to SAS Viya 4 using the full-system migration method.

For more information about running the evaluate play of the Plan and Backup Ansible playbook, see [Plan for Migration](#). For more information about the report, see [“SAS Viya 3.x System Evaluation Report”](#) in *SAS Viya 3 Content Assessment*.

SAS Workload Orchestrator

Note: The new functionality described in this section has been added to this release of SAS Viya platform after the initial release. To ensure that you have received the new functionality, either perform a patch update to your current release or update to a newer release of the software.

SAS Workload Orchestrator is enhanced for performance, resilience, and efficiency by optimizing database interactions and improving system reliability.

The following enhancements significantly increase system resilience by improving database performance:

- optimized query updates.
- better job management.
- automated cleanup of completed jobs records. For details, see [“Deleting Job Records”](#) in *SAS Viya Platform: Workload Management*.
- enhanced table indexing.
- reduced size of job history tables.

The improvements address issues with compute sessions and jobs that were slow to start, which were reported in earlier releases. The enhancements deliver a more reliable and responsive experience for the users and ensure smoother operations.

2025.02 (February 2025)

Backup and Restore

- The status.json file for each backup now includes the cadence and cadence version of the deployment. See [“Best Practices for Performing Restores” in SAS Viya Platform: Backup and Restore](#) for more information.
- The backup progress feature provides real-time information about the status of an ongoing backup operation. Specifically, it provides users with the estimated time to complete the overall backup. See [“Backup Progress” in SAS Viya Platform: Backup and Restore](#) for more information.

Change in When Compute Provider Saves Results for a Job Execution Service Job

Starting in release 2025.02, if the `_omitSessionResults` argument is not present, the default behavior for the Compute provider is that it no longer saves results from the Compute job. This means that results generated by the job's code are lost unless the results are saved in another way.

The Job Plug-In CLI

For information about using the job plug-in to the `sas-viya` CLI to change how results are saved, see [“Control the Compute Provider Functionality That Saves Results from Job Requests” in SAS Viya Platform: Jobs and Flows](#).

The New Configuration Property

For information about using the new global configuration property, see [“sas.compute.service” in SAS Viya Platform: Programming Run-Time Servers](#) and [“Edit Configuration Instances” in SAS Environment Manager: User's Guide](#).

SAS Workload Orchestrator

Note: The new functionality described in this section has been added to this release of SAS Viya platform after the initial release. To ensure that you have received the new functionality, either perform a patch update to your current release or update to a newer release of the software.

SAS Workload Orchestrator is enhanced for performance, resilience, and efficiency by optimizing database interactions and improving system reliability.

The following enhancements significantly increase system resilience by improving database performance:

- optimized query updates.
- better job management.
- automated cleanup of completed jobs records. For details, see [“Deleting Job Records”](#) in *SAS Viya Platform: Workload Management*.
- enhanced table indexing.
- reduced size of job history tables.

The improvements address issues with compute sessions and jobs that were slow to start, which were reported in earlier releases. The enhancements deliver a more reliable and responsive experience for the users and ensure smoother operations.

2025.01 (January 2025)

Bug Fixes

The 2025.01 release focused on bug fixes.

Compute Provider Arguments for Use with Job Requests

When you define a job request, you can specify these arguments that are used by the Compute provider to further control how the job request is processed. These arguments can be specified by using the job plug-in to the sas-viya CLI. See [“arguments”](#) in *SAS Viya Platform: Jobs and Flows* and [“Example of a Job-Request Definition”](#) in *SAS Viya Platform: Jobs and Flows*.

SAS Workload Orchestrator

Note: The new functionality described in this section has been added to this release of SAS Viya platform after the initial release. To ensure that you have received the new functionality, either perform a patch update to your current release or update to a newer release of the software.

SAS Workload Orchestrator is enhanced for performance, resilience, and efficiency by optimizing database interactions and improving system reliability.

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- optimized query updates.
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- automated cleanup of completed jobs records. For details, see [“Deleting Job Records” in SAS Viya Platform: Workload Management](#).
- enhanced table indexing.
- reduced size of job history tables.

The improvements address issues with compute sessions and jobs that were slow to start, which were reported in earlier releases. The enhancements deliver a more reliable and responsive experience for the users and ensure smoother operations.

2024.12 (December 2024)

Backup and Restore

After a backup job is purged, storage resources such as the space available on the PVC are validated proactively by default to help ensure that there is adequate space on the PVC to store data for the next scheduled job. See [“Backup and Restore: Purge Backups” in SAS Viya Platform: Backup and Restore](#) for more information.

Command-Line Interface

The new migrationmanagement plug-in to the sas-viya command-line interface (CLI) manages data from a run of the SAS Content Assessment inventory application. For more information, see [“Using the migrationmanagement Plug-in” in SAS Viya Platform: Content Migration From SAS 9.4](#).

SAS Drive Is Now Deprecated

The SAS Drive application is deprecated and disabled by default, starting in the 2024.12 (December 2024) release. The functionality of SAS Drive is now available on the Content page in SAS Environment Manager, and administrators can re-enable SAS Drive until its official retirement in the 2025.12 release. [Read more](#)

AnnotationIndexingEnabled Configuration Property

The **AnnotationIndexingEnabled** configuration property is new for the **sas.searchindex** configuration instance. It is disabled by default to improve performance. If you want to index annotation objects, see [“Enable Annotation Object Indexing”](#) in *SAS Environment Manager: User’s Guide*.

SAS Redis Server Dependency on SAS Redis Operator Is Removed

SAS Redis Server is no longer managed by the SAS Redis Operator. Events that were handled by the operator are now performed by the SAS Redis server pods. For details, see [“SAS Redis Server”](#) in *SAS Viya Platform: Infrastructure Servers*.

Jobs and Flows CLI Now Provides an Advanced Help Command

The job plug-in to the sas-viya command-line interface (CLI) has added an `advanced-help` command. The command writes to Stdout the web address of the applicable documentation Jobs and Flows in the SAS Viya Platform Administration Help Center. The user can copy the web address from the CLI output and paste the web address into their browser to easily load the associated topic. It provides detailed syntax information as well as examples.

These are the new commands:

- [“job actions advanced-help”](#) in *SAS Viya Platform: Jobs and Flows*
- [“job definitions advanced-help”](#) in *SAS Viya Platform: Jobs and Flows*
- [“job flows advanced-help”](#) in *SAS Viya Platform: Jobs and Flows*
- [“job requests advanced-help”](#) in *SAS Viya Platform: Jobs and Flows*
- [“job schedulers advanced-help”](#) in *SAS Viya Platform: Jobs and Flows*

Authentication

Additional security has been applied to all deployments. A one-time procedure is required to create a configuration for `sas.logon.jwt`. For more information, see [“Configure the issuer.uri”](#) in *SAS Viya Platform: Deployment Guide*. Previous settings are preserved for deployments that you update to 2024.12, but SAS recommends that you perform this procedure.

SAS has also added support for federated authentication between Microsoft Entra ID and Amazon S3. When you configure this support, end users can log in to the SAS Viya platform running in a cloud environment that uses Entra ID (Microsoft Azure or another platform) and access data stored in S3 without additional authentication. SAS Viya programs can access Amazon S3 without being prompted for AWS credentials.

For more information, see [“Set Up Federated Authentication for Azure and AWS” in SAS Viya Platform: Authentication](#).

New Database Columns for Audit Service Activity Records

The SAS Viya audit service now populates two new columns in the user activity database `activity_audit_data`.

For activity events that applications send to the audit service using a REST endpoint, the new column `user_interaction` records validation information from the HTTP header of the events. For activity events that are sent to the audit service POST endpoint, the `user_interaction` column records information sent by applications or by end-users.

The second new database column, `secured`, records a value of true for events that are sent to a REST endpoint of the audit service. The value is false for events that are sent to the POST endpoint.

Values in the two new columns can be displayed using the audit service CLI. Note that these columns will be empty for all activity records that were generated prior to the deployment of the 2024.12 release.

SAS Viya applications are currently being updated to deliver the revised activity events. The SAS Viya Visual Analytics application supports this update in the 2024.12 release.

For more information about the new database columns, see [“Activity Records” in SAS Viya: Auditing](#).

2024.11 (November 2024)

SAS Environment Manager Content Page

Starting in the 2024.12 (December 2024) release, the SAS Drive application is deprecated and disabled by default.

SAS Drive content management functionality is included in the **Content** page functionality of SAS Environment Manager. For more information see [“SAS Drive Deprecation in December 2024” in SAS Environment Manager: User’s Guide](#).

Job and Flows

File-Event Trigger Support in the jobs CLI

The file-event trigger is now available to use for scheduling job flows in the jobs CLI.

For CLI information, see [“File-Event Trigger Definition”](#) in *SAS Viya Platform: Jobs and Flows*. For concepts, see [“Schedule a Job Flow with a Time-Event Trigger, File-Event Trigger, or Both”](#) in *SAS Viya Platform: Jobs and Flows*.

File-Event Trigger Support in SAS Environment Manager

SAS Environment Manager support for scheduling job flows with file-event triggers is now available on the Jobs and Flows page.

See [“Schedule Job Flows”](#) in *SAS Environment Manager: User’s Guide*.

Combination Triggers

New information is now available about how to combine file-event triggers and time-event triggers. For concepts, see [“How SAS Job Flow Scheduler Evaluates Combination Triggers”](#) in *SAS Viya Platform: Jobs and Flows*. For task guidance, see [“Combine Triggers”](#) in *SAS Viya Platform: Jobs and Flows*.

File-Status Polling Interval Configuration Property

A new configuration property is now available that is used by the file-event trigger. See [“Adjust the File-Status Polling Interval”](#) in *SAS Viya Platform: Jobs and Flows*.

Authentication

Querying group memberships in LDAP directories can be resource-intensive. The SAS Viya platform supports new configuration parameters that can reduce the overhead of LDAP directory queries.

In OIDC or SAML environments, optional group-membership information can be included in the authentication claims from the identity provider. The SAS Viya platform can now read and apply this information when users log in. If you configure the required IdP settings and set the corresponding SAS Viya platform authentication parameters, you can enable SAS Logon Manager to use the group information from the OIDC token or SAML claim for user authentication instead of querying LDAP for group information. The two parameters that must be set in order to enable this mapping are `attributeMappings.external_groups` and `groupMappingMode`. For more information, see [“Configure OAuth and OIDC”](#) in *SAS Viya Platform: Authentication*.

Change in Storage Class for PostgreSQL Server

SAS now recommends that you use a block storage device for the PostgreSQL server persistent storage. This recommendation applies equally to an internal or an external PostgreSQL server.

For an internal PostgreSQL server, to change the storage class to block storage after the initial deployment is completed, see [“Change the Storage Class of the Data Pod” in SAS Viya Platform: Infrastructure Servers](#).

2024.10 (October 2024)

New Welcome to SAS Viya Page

The new Welcome to SAS Viya page is now available. You can access demos, learn more about SAS Viya platform applications, and change your global settings. It replaces SAS Drive as the default landing page when a user logs on to a SAS Viya web application with the root URL. [Read more](#)

SAS Landing Page

The root URL for the SAS Viya platform now routes users to the Welcome to SAS Viya page (<https://prod.example.com/SASLanding/>). Previously, the root URL was routed to SAS Drive (<https://prod.example.com/SASDrive/>) by default.

This default setting can be changed.

For all SAS users

See [“Change the Initial SAS Viya Landing Page for SAS Users” in SAS Environment Manager: User’s Guide](#).

For a user

See [“Settings” in SAS Viya Platform: General Usage Help for Web Applications](#). A user’s preference takes precedence over a change that is made by an administrator that affects all SAS users who log in to the root URL.

CAS Server

Read-Only access to global tables and other state components is now enabled by default during [CAS state transfer](#). This allows actions that read data to continue to run, which provides a better user experience by minimizing disruptions.

Migration

You must move from SAS Viya 3.4 to SAS Viya 3.5 revision 24w44 (October 29, 2024) or later to use the full system migration method to migrate to SAS Viya 4.

New Logger for SAS Auditing Service

The audit service now uses the SAS_LOG_LEVEL_SERVICE_AUDIT logger.

Note: This change was implemented for the 2024.07 release and is documented as such. The repetition of the information here is to ensure that users are aware of the change.

The prior loggers are no longer supported. For details see [Loggers for Auditing](#).

SAS Viya Logging Facility Documentation

The documentation for the SAS logging facility has been updated for the SAS Viya platform.

The SAS Viya logging facility is a programming framework that enables the customization of the logging process. The logging facility supports two sets of users:

- **SAS administrators:** See [SAS Viya Logging Facility for Run-Time Servers](#).
- **SAS programmers:** See [SAS Viya Logging Facility for SAS Programs and Jobs](#).

Change in Storage Class for PostgreSQL Server

SAS now recommends that you use a block storage device for the PostgreSQL server persistent storage. This recommendation applies equally to an internal or an external PostgreSQL server.

For an internal PostgreSQL server, to change the storage class to block storage after the initial deployment is completed, see [“Change the Storage Class of the Data Pod” in SAS Viya Platform: Infrastructure Servers](#).

2024.09 (September 2024)

New Logger for SAS Auditing Service

The audit service now uses the SAS_LOG_LEVEL_SERVICE_AUDIT logger.

Note: This change was implemented for the 2024.07 release and is documented as such. The repetition of the information here is to ensure that users are aware of the change.

The prior loggers are no longer supported. For details see [Loggers for Auditing](#).

Backup and Restore

Storage resources such as the space available on the PVC are pre-validated by default to help ensure that there is adequate space on the PVC to store data for a backup job. If the pre-validation fails, the backup job fails. See [“Best Practices for Performing Backups” in SAS Viya Platform: Backup and Restore](#) for more information.

SAS/CONNECT Server and SAS/CONNECT Spawner

You can no longer spawn a SAS/CONNECT server inside a SAS/CONNECT spawner pod.

- The ability to locally spawn a SAS/CONNECT server inside the SAS/CONNECT spawner pod has been removed. It was previously deprecated in the 2024.03 Stable and Long-Term Support release.
- Starting in 2024.09, you can configure high availability (HA) for the SAS/CONNECT Spawner by applying the HA transformer: `$deploy/sas-bases/overlays/scaling/ha/enable-ha-transformer.yaml`.

CAS Server

To avoid out of memory failures, you can now set a backing store for CAS memory allocations. For a fuller explanation of the backing store and the benefits that it provides, see [“Backing Store for CAS Memory Allocations” in SAS Viya Platform:](#)

[SAS Cloud Analytic Services](#). For the steps to create the backing store, see [Configure a Backing Store for Memory Allocations](#).

Describing Your SAS Viya Platform Deployment

A new guide helps you to determine and catalog important information about your SAS Viya platform environment.

In order to successfully administer your SAS Viya platform environment it helps to have gathered and recorded important details about your deployment. You can use this information when troubleshooting issues in your deployment. See [“Describe Your SAS Viya Platform Deployment”](#) in *SAS Viya Platform: Troubleshooting*.

Change in Storage Class for PostgreSQL Server

SAS now recommends that you use a block storage device for the PostgreSQL server persistent storage. This recommendation applies equally to an internal or an external PostgreSQL server.

For an internal PostgreSQL server, to change the storage class to block storage after the initial deployment is completed, see [“Change the Storage Class of the Data Pod”](#) in *SAS Viya Platform: Infrastructure Servers*.

SAS Compute Server

SAS Compute server provides the ability to execute the SAS Refresh Token, which automatically refreshes the client token during long running operations or jobs, reducing potential failures due to token expiration. For more information, see [“Enable SAS Refresh Token”](#) in *SAS Viya Platform: Programming Run-Time Servers*.

2024.08 (August 2024)

New Logger for SAS Auditing Service

The audit service now uses the SAS_LOG_LEVEL_SERVICE_AUDIT logger.

Note: This change was implemented for the 2024.07 release and is documented as such. The repetition of the information here is to ensure that users are aware of the change.

The prior loggers are no longer supported. For details see [Loggers for Auditing](#).

Troubleshooting When SAS Compute Server Fails to Start

A new guide is now available to assist in troubleshooting SAS Compute server when it fails to start. The following components are involved in this guide:

- SAS Compute server
- SAS Compute service
- SAS Launcher service
- SAS Workload Orchestrator

See “[Troubleshoot a Failure to Start Compute Server](#)” in *SAS Viya Platform: Troubleshooting*.

CAS Server

Two new server options are available that help in minimizing the disruption during state transfer for CAS servers. For details, see [cas.MAXSESSIONTRANSFERSIZE](#) and [cas.STATETRANSFERMODEL](#) in *SAS Viya Platform: SAS Cloud Analytic Services*.

Remote SAS Data Agent

Red Hat Enterprise Linux 9 is supported when running the container with Podman. For more information, see “[Podman on Linux](#)” in *Remote SAS Data Agent: Deployment and Administration Guide*.

Also, additional environment variables are available to help manage idle sessions. For more information, see “[Configure Remote SAS Data Agent](#)” in *Remote SAS Data Agent: Deployment and Administration Guide*.

2024.07 (July 2024)

New Logger for SAS Auditing Service

The auditing service now uses the SAS_LOG_LEVEL_SERVICE_AUDIT logger.

The prior loggers are no longer supported. For details see [Loggers for Auditing](#).

Backup and Restore

Resources such as CPU and memory are now pre-validated by default to help ensure that restore jobs complete successfully. If the pre-validation fails, the restore job will fail. See [“Best Practices for Performing Restores”](#) in *SAS Viya Platform: Backup and Restore* for more information.

Job and Flows

Information that describes how to export job flows and job requests (and their components) from a SAS Viya 4 deployment and import the job flows and job requests into another SAS Viya 4 deployment is now available. See [“Promote Job Flows and Job Requests”](#) in *SAS Viya Platform: Jobs and Flows*.

Documentation for Troubleshooting

A new guide to assist in troubleshooting SAS Viya platform is now available. See [SAS Viya Platform: Troubleshooting](#) and [Troubleshooting Strategies](#).

2024.06 (June 2024)

Updated Action Codes for Audit

The Audit service receives action codes to filter and classify incoming audit events. The list of action codes now consists of analyze, append, check-in, complete, drop, export, import, load, move, pause, print, promote, release, share, start, unload, and update. The following action codes are no longer recognized by the Audit service: accept, add, lock, login, push, reallocateTable, schedule, seed, submit, and transfer. Audit events with action codes that are not recognized by the Audit service receive the action code `unknown`. To learn more, see [“Audit Records”](#) in *SAS Viya: Auditing*.

New Default Values for Audit Configuration Instances

In SAS Environment Manager, the default value of `sas.audit.archive.system > storage.local.remainingSpaceThreshold` has changed from 20 to 25. If your deployment uses the default value, then the transfer of audit records from

database to archive will now end earlier than in previous releases. The value 25 represents the percentage of free space that remains in the audit file system. At that point, the Audit service stops the transfer of audit records from the audit database to the audit archive file system. For more information, see [“sas.audit.archive.system” in SAS Viya: Auditing](#).

The default value of `sas.audit.reporting > include.app.records` has changed from Off to true. If your deployment uses the default value, then you will see an increase in audit messages moving into the audit database and the audit archive. You might also see changes in the User Activity Report. For more information, see [“sas.audit.reporting” in SAS Viya: Auditing](#).

Cross-Origin Resource Sharing

The default values and descriptions for the Cross-Origin Resource Sharing (CORS) properties have changed. The documentation for the **sas.common.web.security.cors** definition has been updated with minor changes to the descriptions of the `allowedHeaders` and `allowedMethods` configuration fields. The default values have changed for the `allowedHeaders`, `allowedMethods`, and `allowCredentials` fields.

For more information, see [“Configure Cross-Origin Resource Sharing” in SAS Viya Platform: Authentication](#).

Workload Management Documentation

The Workload Management documentation is now located in “Servers and Services.” See [SAS Viya Platform: Workload Management](#).

Access to Job Definitions in Jobs and Flows

Note: This feature was implemented for the 2023.12 release and is documented as such. The repetition of the information here is to ensure that users are aware of the change.

A new default authorization rule for job definitions is now in effect. The `jobDefinitions` rule prevents non-administrators from accessing job definitions unless the non-administrator created the job definition.

This change prevents user accounts, other than the creator of the job definition or a SAS administrator, from running job requests that use the affected job definition. Affected user accounts include group-managed service accounts.

For more information, see [Controlling Access to Job Definitions](#) and [“A Job Request Fails to Execute with 403 FORBIDDEN” in SAS Viya Platform: Jobs and Flows](#).

2024.05 (May 2024)

Access to Job Definitions in Jobs and Flows

Note: This feature was implemented for the 2023.12 release and is documented as such. The repetition of the information here is to ensure that users are aware of the change.

A new default authorization rule for job definitions is now in effect. The `jobDefinitions` rule prevents non-administrators from accessing job definitions unless the non-administrator created the job definition.

This change prevents user accounts, other than the creator of the job definition or a SAS administrator, from running job requests that use the affected job definition. Affected user accounts include group-managed service accounts.

For more information, see [Controlling Access to Job Definitions](#) and [“A Job Request Fails to Execute with 403 FORBIDDEN” in SAS Viya Platform: Jobs and Flows](#).

Authentication

A new configuration field lets you manage logout behavior when users log out of a SAS Viya user interface. The **`performRplInitiatedLogout`** configuration property instructs SAS Logon Manager to log the user out of the identity provider when the user logs out. When configuring the OIDC identity provider, you must specify a value for either the **`logoutUrl`** or the **`discoveryURL`** property. If a `logoutURL` is not provided, the OIDC identity provider configuration must include an `end_session_endpoint` field.

For more information, see the description of the new **`performRplInitiatedLogout`** field in [“Provide the SAS Viya Platform with Information about the OIDC IdP” in SAS Viya Platform: Authentication](#).

External Credentials Management

The `sas-viya` command-line interface (CLI) can be used to configure a group-managed service account for use with Jobs and Flows. When configuring the group-managed service account for Jobs and Flows, you must specify the application (client) IDs that are required for Jobs and Flows using the `--allowed-client` option.

For information, see [“Jobs and Flows: Using a Group-Managed Service Account” in SAS Viya Platform: External Credentials](#).

SAS Workload Orchestrator

Host information is no longer displayed to users who are not SAS Workload Orchestrator administrators. This change was required by a security best practice. For the affected tasks, see [“Managing Hosts” in SAS Environment Manager: User’s Guide](#).

Server Contexts

The Server Contexts documentation is merged with Programming Run-time documentation. For all the details, see [SAS Viya Platform: Programming Run-Time Servers](#).

2024.04 (April 2024)

Authentication

SAS Logon Manager now lets you include additional parameters to send to an OIDC provider in order to customize aspects of the authorization code flow. You can specify key-value pairs for the new **additionalAuthzParameters** field, enabling you to request custom behavior from the IdP.

Note: This functionality is available for OAuth and OIDC in 2024.04 and later. It does not apply to Microsoft Entra ID or to Okta.

For more information, see the description of the new `additionalAuthzParameters` field in [“Provide the SAS Viya Platform with Information about the OIDC IdP” in SAS Viya Platform: Authentication](#).

SAS Batch Server

- SAS Batch servers can be configured to be reusable when you create a batch context. For details, see [“Configure Reusable Batch Servers” in SAS Viya Platform: Server Contexts](#) and [“Create a Batch Context” in SAS Environment Manager: User’s Guide](#).
- You now have the option to store the files in a mounted file system that is accessible by the user in the pod. This option improves performance by eliminating the need to download and upload files. For more information, see

“SAS Batch: Server, Service, and Contexts” in *SAS Viya Platform: Programming Run-Time Servers*.

- The batch plug-in to the SAS Viya CLI now includes command options that enable reusable batch servers and the use of mounted file systems. For more information, see [Using the batch Plug-In for the SAS Viya Platform Command-Line Interface](#).

Jobs and Flows

Access to Job Definitions in Jobs and Flows

.....
Note: This feature was implemented for the 2023.12 release and is documented as such. The repetition of the information here is to ensure that users are aware of the change.
.....

A new default authorization rule for job definitions is now in effect. The jobDefinitions rule prevents non-administrators from accessing job definitions unless the non-administrator created the job definition.

This change prevents user accounts, other than the creator of the job definition or a SAS administrator, from running job requests that use the affected job definition. Affected user accounts include group-managed service accounts.

For more information, see [Controlling Access to Job Definitions](#) and “[A Job Request Fails to Execute with 403 FORBIDDEN](#)” in *SAS Viya Platform: Jobs and Flows*.

Job Flows and the SAS Launcher Service Allowlist

Information is now available about how the SAS Launcher Service allowlist feature can affect command-line commands in a job flow. For details, see [Job-Action Definition](#) and “[Command-Line Command Fails in a Job Flow](#)” in *SAS Viya Platform: Jobs and Flows*.

2024.03 (March 2024)

Audit

The SAS Audit CLI now consists of four commands. All four commands return information from records in the Audit database. Two of the commands return information from database searches. The other two commands return detailed information from a specified record ID.

The configuration property `sas.audit.record` has also been updated. The creation of records is determined by the configuration instances `audit.recording.level` and `activity.recording.level`. Each configuration instance now supports the `disabled` value. Also, `service.list` now forces the creation of records for all READ events that are received from the services that are named in the list.

For more information, see the How to (CLI) and Configuration Reference chapters in [SAS Viya Administration: Auditing](#).

Authentication

SAS Logon Manager now includes support for private keys using JSON web tokens (JWT). The [OAuth documentation](#) describes private key JWT as “a method of client authentication where the client creates and signs a JWT using its own private key.” When using OAuth and OIDC for client authentication, you can enable the use of JWT authentication with SAS Logon Manager instead of using basic authentication and client secrets. The OIDC standard defines `private_key_jwt` as a replacement for client secrets.

This functionality is available for OIDC with Okta and OIDC with Microsoft Entra ID.

For more information, see [Configure JWT Client Authentication for Okta](#) or [Configure JWT Client Authentication for Microsoft Entra ID](#).

Backup and Restore

A suspended CronJob, `sas-scheduled-backup-all-sources`, is now available to trigger backup jobs that use SAS Viya 4 to back up all data (including PostgreSQL) even if the `INCLUDE_POSTGRES` configMap parameter is set to false. Backups that use SAS Viya 4 processes for all data are required for disaster recovery and SAS Viya 4 to SAS Viya 4 migrations. See “[Enable Suspended CronJob to Back Up All Content with the SAS Viya Platform \(Including PostgreSQL\)](#)” in [SAS Viya Platform: Backup and Restore](#).

Command-Line Interfaces

The `sas-viya` command-line interface (CLI) is now available in a container image. The image contains the `sas-viya` CLI and related scripts to support the batch operation of the `sas-viya` CLI in SAS Viya Platform deployments or to function as a standalone container. See “[Overview](#)” in [SAS Viya Platform: Using the Command-Line Interface](#).

SAS/CONNECT Server and SAS/CONNECT Spawner

IMPORTANT Deprecation Warning

The ability to locally spawn SAS/CONNECT server inside the SAS/CONNECT spawner is deprecated as of the 2024.03 Stable and Long-Term Support release. It was removed from the 2024.09 Stable and Long-Term Support release.

For more information, see “-NOLOCALLAUNCH” in *SAS Viya Platform: Programming Run-Time Servers* and “Spawn SAS/CONNECT Servers Within the Spawner Pod” in *SAS Viya Platform: Deployment Guide*.

Jobs and Flows

Access to Job Definitions in Jobs and Flows

Note: This feature was implemented for the 2023.12 release and is documented as such. The repetition of the information here is to ensure that users are aware of the change.

A new default authorization rule for job definitions is now in effect. The `jobDefinitions` rule prevents non-administrators from accessing job definitions unless the non-administrator created the job definition.

This change prevents user accounts, other than the creator of the job definition or a SAS administrator, from running job requests that use the affected job definition. Affected user accounts include group-managed service accounts.

For more information, see [Controlling Access to Job Definitions](#) and “A Job Request Fails to Execute with 403 FORBIDDEN” in *SAS Viya Platform: Jobs and Flows*.

Visual Description of the Jobs and Flows Process

The process overview about how jobs and flows works now provides slideshows and diagrams that describe the process visually. See “[Process Overview](#)” in *SAS Viya Platform: Jobs and Flows*.

New job flows trigger Command

The `job flows trigger` command is now available in the job plug-in to the `sas-viya` command-line interface (CLI). This command enables the use of a manual

trigger, which is useful for debugging job flows. See [“job flows trigger” in SAS Viya Platform: Jobs and Flows](#).

2024.02 (February 2024)

Access to Job Definitions in Jobs and Flows

Note: This feature was implemented for the 2023.12 release and is documented as such. The repetition of the information here is to ensure that users are aware of the change.

A new default authorization rule for job definitions is now in effect. The `jobDefinitions` rule prevents non-administrators from accessing job definitions unless the non-administrator created the job definition.

This change prevents user accounts, other than the creator of the job definition or a SAS administrator, from running job requests that use the affected job definition. Affected user accounts include group-managed service accounts.

For more information, see [Controlling Access to Job Definitions](#) and [“A Job Request Fails to Execute with 403 FORBIDDEN” in SAS Viya Platform: Jobs and Flows](#).

Backup and Restore

Point-in-Time-Recovery (PITR) is now available for internal Crunchy Data PostgreSQL and valid for restore-in-place scenarios. See [“Backup and Recovery: Workflows” in SAS Viya Platform: Backup and Restore](#).

External Credentials Management

Google Cloud Storage Credentials Can Be Managed Using an Authentication Domain

Starting with 2023.10, you can store and use credentials for accessing Google Cloud Storage (GCS) by defining an authentication domain for use with a GCS service account or an individual user.

For more information, see [“Using Google Cloud Storage \(GCS\) with an Authentication Domain” in SAS Viya Platform: External Credentials](#).

Amazon Web Services Credentials Can Be Managed Using an Authentication Domain

Starting with 2024.01, you can store and use credentials for accessing Amazon Web Services (AWS) by defining an authentication domain for use with an AWS service account or an individual user.

For more information, see [“Using Amazon Web Services \(AWS\) with an Authentication Domain”](#) in *SAS Viya Platform: External Credentials*.

Using External Credentials Stored in Azure Key Vault

Administrators can now configure the SAS Viya platform to use credentials that are stored externally in Azure Key Vault. When you have configured SAS Viya for single sign-on to Microsoft Entra ID (Azure AD), integration with Azure can also incorporate special authentication domains in order to securely access external credentials in Azure Key Vault.

For more information, see [“Using Secrets Stored in Azure Key Vault”](#) in *SAS Viya Platform: External Credentials*.

2024.01 (January 2024)

Access to Job Definitions in Jobs and Flows

Note: This feature was implemented for the 2023.12 release and is documented as such. The repetition of the information here is to ensure that users are aware of the change.

A new default authorization rule for job definitions is now in effect. The jobDefinitions rule prevents non-administrators from accessing job definitions unless the non-administrator created the job definition.

This change prevents user accounts, other than the creator of the job definition or a SAS administrator, from running job requests that use the affected job definition. Affected user accounts include group-managed service accounts.

For more information, see [Controlling Access to Job Definitions](#) and [“A Job Request Fails to Execute with 403 FORBIDDEN”](#) in *SAS Viya Platform: Jobs and Flows*.

Authentication

SAS Logon Manager now includes support for private keys using JSON web tokens (JWT). The [OAuth documentation](#) describes private key JWT as “a method of client authentication where the client creates and signs a JWT using its own private key.”

When using OAuth and OIDC for client authentication, you can enable the use of JWT authentication with SAS Logon Manager instead of using basic authentication and client secrets. The OIDC standard defines `private_key_jwt` as a replacement for client secrets.

Note: This functionality is available for OIDC with Okta in 2024.01. Support for JWT authentication with Microsoft Entra ID requires an update to 2024.03.

For more information, see the description of the new `jwtclientAuthentication` parameter in [“Scenario: OIDC with Okta” in SAS Viya Platform: Authentication](#).

Backup and Restore

You can now perform an incremental backup that optimizes backup times by capturing only changed or differential data between successive backups. For more information, see [“Incremental Backups” in SAS Viya Platform: Backup and Restore](#).

Credentials Management for Amazon Web Services

You can now store and use credentials for accessing Amazon Web Services (AWS) by defining an authentication domain for use with an AWS service account or an individual user.

For more information, see [“Using Amazon Web Services \(AWS\) with an Authentication Domain” in SAS Viya Platform: External Credentials](#).

2023.12 (December 2023)

Access to Job Definitions in Jobs and Flows

A new default authorization rule for job definitions is now in effect. The `jobDefinitions` rule prevents non-administrators from accessing job definitions unless the non-administrator created the job definition.

This change prevents user accounts, other than the creator of the job definition or a SAS administrator, from running job requests that use the affected job definition. Affected user accounts include group-managed service accounts.

For more information, see [Controlling Access to Job Definitions](#) and [“A Job Request Fails to Execute with 403 FORBIDDEN” in SAS Viya Platform: Jobs and Flows](#).

SAS Workload Orchestrator

The default value for **Maximum jobs allowed** has been clarified. See [“Host-Type Definition Parameters”](#) in *SAS Viya Platform: Workload Management*.

Authentication

The SAS Viya platform is now integrated with Microsoft Entra ID by means of an enterprise app. The SAS Viya SSO app, which is available in the Microsoft Entra ID Gallery, assists you in configuring single sign-on in a SAML environment. From the gallery, the app can be securely deployed into Entra ID tenants without leaving the Azure portal.

End users can add the SAS Viya SSO app to their personal app dashboard. Microsoft provides a detailed tutorial to help the administrator with app setup. When you have configured it for your environment, users can then click the app in their dashboard to perform an immediate login with SAS Logon Manager.

The SAS Viya SSO app streamlines the process for configuring single sign-on for SAML in Azure. The creation of a non-gallery Azure enterprise app is no longer required. For more information, see [“Using the Preconfigured App for Microsoft Azure”](#) in *SAS Viya Platform: Authentication*.

Backup and Restore

Backup and restore use only SAS Viya platform processes to back up and restore all data, including all registered instances of PostgreSQL. This is the default method. Now you can use cloud-provider processes to back up external PostgreSQL, and SAS Viya platform processes to back up the remaining data. For improved performance, this is the recommended approach. See [“Backup and Recovery: Workflows”](#) in *SAS Viya Platform: Backup and Restore*.

SAS Data Explorer

The Data page in SAS Environment Manager now launches the full SAS Data Explorer product. Previously an embedded version of SAS Data Explorer was invoked.

2023.11 (November 2023)

Jobs and Flows

New Option for job flows list-history Command

The `--allExecutedInstances` option is available as of release 2.6.47 of the job CLI plug-in. You can use this option with the `job flows list-history` command. The option returns a combined history of flow instances that have been executed (either immediately or via a schedule). For details, see [“job flows list-history” in SAS Viya Platform: Jobs and Flows](#).

Adjust Jobs and Flows for Daylight Saving Time

A procedure is available to adjust scheduled job requests and job flows for Daylight Saving Time. For details, see [“Adjust for Daylight Saving Time” in SAS Viya Platform: Jobs and Flows](#).

Encryption

The files service uses ClamAV (AntiVirus) for scanning uploaded files. To provide encrypted communication between the files service and ClamAV, you need to configure a secure socket using a proxy server. The proxy server handles files service communications with ClamAV. External clients can communicate with the reverse proxy rather than communicating directly with ClamAV. For more information, see [“Encrypt Communication between the Files Service and ClamAV \(Antivirus\)” in SAS Viya Platform Encryption: Data in Motion](#).

Authentication

Starting in 2023.11, the default refresh token expiration is 14 days. A few applications and key services override this setting so that the token persists for a maximum of 90 days. These services include the credentials service, the scheduler, and the event monitor.

In addition, clients can now have their own refresh token validity. You can change the default setting using SAS Environment Manager.

Server and Service Management

Using Kustomize transformers to start or stop SAS Viya platform deployment is no longer supported. Use `sas-stop-all` and `sas-start-all` CronJobs to stop and start your SAS Viya platform deployments.

For more information, see [“Starting and Stopping a SAS Viya Platform Deployment” in SAS Viya Platform: General Management of Servers and Services](#).

SAS Workload Orchestrator

As of release 2023.11, the default value for **Maximum jobs allowed** in new installations is 250. See [“Host-Type Definition Parameters” in SAS Viya Platform: Workload Management](#).

Auditing

To increase traceability, the Audit service now creates enhanced audit records for an expanded set of user activities. To decrease network traffic and reduce storage requirements, only user activities and selected internal API activities become audit records. As needed, you can enable the creation of audit records for read-only events for a specified subset of SAS services. For more information, see [“Audit: Concepts” in SAS Viya: Auditing](#).

2023.10 (October 2023)

Deprecated Features

The [SAS Viya Release Notes](#) interface now includes the option to show only deprecated and obsolete features under the type What’s New.

SAS Workload Orchestrator Included in Deployment by Default

SAS Workload Orchestrator is now deployed and enabled, by default, as part of the SAS Viya platform deployment. A license is no longer required.

Note: For certain offerings SAS Workload Orchestrator has been included since release 2023.08. These offerings are:

- SAS Visual Statistics
- SAS Visual Machine Learning
- SAS Data Science
- SAS Data Science Decisioning
- SAS Text Analytics
- SAS Visual Forecasting
- SAS Intelligent Decisioning
- SAS Data Science Programming

For these offerings there is no change in release 2023.10.

For details, see [“Disabling or Enabling SAS Workload Orchestrator”](#) in *SAS Viya Platform: Workload Management*.

Command-Line Interface

The QKBs plug-in to the sas-viya CLI is no longer available as of version 2023.10.

SASCMD Sign-Ons in SAS/CONNECT Server

SASCMD sign-ons always start a server session in a new pod in the Kubernetes cluster by default.

IMPORTANT Prior to 2023.10, SASCMD sign-ons always spawned a server session in the same pod that the client process is running in.

This behavior might break your use of SASCMD sign-ons when you migrate code from SAS 9 to SAS Viya platform. To address any potential issues, see [“Code Does Not Work When Moving to SAS Viya 2023.10 or Later”](#) in *SAS Viya Platform: Programming Run-Time Servers*.

If your requirement is to continue using the old functionality of spawning a server session in the same pod where the client process is running, then the administrator can choose to re-enable. For more information, see [“Re-enable Local SASCMD Sign-On”](#) in *SAS Viya Platform: Programming Run-Time Servers*.

Migration

In a SAS Viya 4 to SAS Viya 4 full-system migration, a restore CronJob now performs the restore. If you want to use the restore step from the 2023.09 release of SAS Viya 4, it is temporarily supported. The restore step documentation for the 2023.09 release of SAS Viya 4 is available at [Perform a Restore](#) in *SAS Viya Platform Administration*.

- 1 When you complete the restore step using the 2023.09 documentation, return to the instructions in your release of SAS Viya 4 [here](#) to scale up the CAS deployments.
- 2 Then continue with your release of the SAS Viya 4 documentation when you have completed scaling up the CAS deployments.

Container Destinations with Private Python Repositories

You can configure a container publishing destination with support for a private Python repository in a SAS Viya deployment.

This enables users to install packages from a private Python repository using a pip install when publishing SAS Viya models and decisions to a container publishing destination. The SAS Container Runtime base image is used when publishing SAS Viya models and decisions to a container destination.

For more information, see [“Configure Support for a Private Python Repository”](#) in *SAS Viya Platform: Publishing Destinations*.

External Credentials Management

You can store and use credentials for accessing Google Cloud Storage (GCS) by defining an authentication domain for use with a GCS service account or an individual user.

For more information, see [“Using Google Cloud Storage \(GCS\) with an Authentication Domain”](#) in *SAS Viya Platform: External Credentials*.

2023.09 (September 2023)

Jobs and Flows

The `--wait-results` option is available as of release 2.6.44 of the job CLI plug-in. You can use this option with the `job requests execute` and `job flows execute` commands.

The option enables the job CLI plug-in to wait for the results from the program associated with the job request or job flow. The CLI polls the program until the CLI receives the program results. The results are written to stdout. For an example of using this option, see [“Capture Results from a Program or Command” in SAS Viya Platform: Jobs and Flows](#).

Credentials Management

Commands have been added to the credentials CLI plug-in. The following commands can be used within a domain.

- `credentials clients`
- `credentials users`
- `credentials groups`

A domain must first be created. Then, users, groups, and client credentials can be added to that domain using the credentials CLI plug-in. Prior to 2023.09, users and groups could be added only by using the SAS Environment Manager. For examples that use these commands, see [“Examples” in SAS Viya Platform: External Credentials](#).

CAS Server

Administrators can more easily control the number of workers for a distributed (MPP) CAS server without disrupting running jobs. Changing the number of worker nodes helps you manage cloud costs by keeping the CAS server right-sized for your workloads. Starting in 2023.09, when you enable the automatic table-balancing feature, the CAS server can load-balance tables among nodes when CAS worker nodes are added to or removed from an MPP CAS configuration.

Enabling table rebalancing requires an administrator to set some environment variables. For more information, see [“Change the Number of Workers for MPP CAS” in SAS Viya Platform: Deployment Guide](#).

Background information about this new feature is available in [“CAS Table Rebalancing”](#) in *SAS Viya Platform: SAS Cloud Analytic Services*.

Remote SAS Data Agent

Remote SAS Data Agent now supports a deployment to a Kubernetes cluster. Also, the documentation was updated to better support the configuration of customer-provided servers for storing data.

2023.08 (August 2023)

SAS Workload Orchestrator

SAS Workload Orchestrator is now deployed and enabled, by default, as part of many SAS Viya platform deployments.

The following offerings include SAS Workload Orchestrator by default:

- SAS Visual Statistics
- SAS Visual Machine Learning
- SAS Data Science
- SAS Data Science Decisioning
- SAS Text Analytics
- SAS Visual Forecasting
- SAS Intelligent Decisioning
- SAS Data Science Programming

For details, see [“Disabling or Enabling SAS Workload Orchestrator”](#) in *SAS Viya Platform: Workload Management*.

Authentication

The lifetime of the OAuth tokens that are obtained from SAS Launcher can now be increased. You can set the Consul property `config/launcher/oauth2.client.accessTokenValidity` to an appropriate value, which represents the token lifetime in seconds.

This setting enables processes that are created by SAS Launcher to have a longer OAuth token duration by default, overriding the time limit that is defined by SAS Logon Manager.

Identity Management

Starting in 2023.06, the hashing algorithm used by the identities service to generate UID and GID values was updated. Values that have already been generated remain the same. However, newly generated UIDs and GIDs are likely to result in different values. These new values could affect users' ability to access file system resources if permissions have been set based on the old values. Permissions issues are particularly likely to occur if multiple tenants or environments must access the same file system resources.

Contact SAS Technical Support if you need assistance adjusting file system permissions as a result of this change.

Migration

In a SAS Viya 4 to SAS Viya 4 non-multi-tenant or multi-tenant migration, you can now migrate from a source environment with internal PostgreSQL to a target environment with external PostgreSQL as long as the source and target use the same cloud provider and SAS Viya version.

Remote SAS Data Agent

Remote SAS Data Agent now supports deployments involving Security Enhanced Linux. See [“Requirement for Docker SELinux”](#) in *Remote SAS Data Agent: Deployment and Administration Guide*.

2023.07 (July 2023)

Single Sign-Out Parameter for OIDC Providers

SAS Logon Manager has been upgraded to a newer version of UAA. As a result, a new OIDC parameter is now supported and can be configured in SAS Environment Manager: `logoutUrl`. This parameter lets you enable single sign-out. When `logoutUrl` is enabled, users' SAS sessions are redirected to the OIDC provider's logoff endpoint when they sign out of a SAS user interface.

In order to configure single sign-out, you can specify the URL to which the SAS Viya platform sends a redirect with a request to the provider to log the user out. If it is available in a configuration file, the URL from the `end_session_endpoint` field in the provider's OpenID Connect configuration file can be used automatically. For more

information, see [“Provide the SAS Viya Platform with Information about the OIDC IdP”](#) in *SAS Viya Platform: Authentication*.

Removal of the Run As Functionality Used in Job Requests

When a SAS Viya platform deployment is upgraded to release 2023.07 or later, the prior Run As function is removed and the group-managed service account function becomes available.

IMPORTANT If your organization uses the prior Run As functionality, you must update any existing scheduled job requests that use the functionality to use the group-managed service account feature instead.

Job flows do not support the Run As functionality and are not affected. Both job requests and job flows can use the group-managed service account feature.

For detailed information about how to transition the Run As function, see [“Using a Group-Managed Service Account”](#) in *SAS Viya Platform: Jobs and Flows*.

Group-Managed Service Account for Scheduling Job Requests and Job Flows

Jobs and Flows now provides a group-managed service account feature. This feature enables members of a scheduling group to execute or schedule a job request or job flow that was created by another member of that group. When executed or scheduled, the job request or job flow is initiated by the service account.

Note: The group-managed service account feature replaces the Run As function.

For detailed information, including how to configure the group-managed service account, how to transition the Run As function, and how to use Jobs and Flows with the group-managed service account feature, see [“Using a Group-Managed Service Account”](#) in *SAS Viya Platform: Jobs and Flows*.

SAS Environment Manager

The following user interfaces in SAS Environment Manager have been updated to provide tasks and settings that the group-managed service account requires:

- On the Domains page, the **Restrict applications** check box has been added to enable a user who is a member of a group-managed service account to work with specific applications like Jobs and Flows. For more information, see [“Domains Page” in SAS Environment Manager: User’s Guide](#).
- On the Jobs and Flows page, these changes have been made:
 - the **Monitor** table now provides a **View as** list. If the user is a member of a group-managed service account, they can select the service account from this list. The table displays information associated with the group-managed service account.
 - When scheduling a job request or job flow, if the user is a member of a group-managed service account, the **Run as** field offers the group-managed service account as a selection.
 - Many tasks on the Jobs and Flow page are now enabled for use by users who are members of a group-managed service account.

For more information, see [“Jobs and Flows Page” in SAS Environment Manager: User’s Guide](#) and [“Use SAS Environment Manager with a Group-Managed Service Account” in SAS Viya Platform: Jobs and Flows](#).

- On the Users page, in the **Custom groups** view, the **Service Account Users for Schedule** custom group is now available.

Command-Line Interface

The job plug-in to the sas-viya command-line interface (CLI) includes the following changes:

- the `--domain-id` input option has been added to applicable `job requests` and `job flow` commands. This option enables a group-managed service account to use the command. See [“Use the Job Command-Line Interface with a Group-Managed Service Account” in SAS Viya Platform: Jobs and Flows](#).
- the `--scheduled` input option has been added to the `job requests show-status` command. For detailed information, see [“job requests show-status” in SAS Viya Platform: Jobs and Flows](#).

Encryption

CAS supports TLS-encrypted connections between the worker nodes. See [“Configure CAS Internode TLS” in SAS Viya Platform Encryption: Data in Motion](#).

Authentication

SAS 9.4M8 includes a newer version of Central Authentication Service, the core component of SAS Logon Manager for SAS 9.4. As a result, a few changes are

required when setting up SAS®9 authentication to the SAS Viya platform. For example, a wildcard entry is supported for ServiceUrl.Allowed in SAS 9.4M5–M7. With SAS 9.4M8, an additional URL must be specified because a wildcard is not sufficient. For more information, see [“Configure the SAS 9.4 Deployment” in SAS Viya Platform: Authentication](#).

The steps that are required to enable one-time passwords for authenticated SAS 9.4 users have now been documented. This integration feature enables SAS 9.4 user sessions with a launch credential to access the CAS server directly. One-time password access to CAS is supported with SAS 9.4 M5 or later. For more information, see [“Configure a One-Time Password for CAS Users” in SAS Viya Platform: Authentication](#).

Identity Management

Starting in 2023.06, the identities service has an updated hashing algorithm that is used to generate UID and GID values. Values that have already been generated remain the same. However, newly generated UIDs and GIDs are likely to result in different values. These new values could affect users' ability to access file system resources if permissions have been set based on the old values. Permissions issues are particularly likely to occur if multiple tenants or environments must access the same file system resources.

Contact SAS Technical Support if you need assistance adjusting file system permissions as a result of this change.

2023.06 (June 2023)

Command-Line Interfaces

- The new detection plug-in to the sas-viya command-line interface (CLI) provides access to the SAS Detection Engine REST interface in the SAS Viya 4 platform. For more information, see [“detection” in SAS Detection Command Line Interfaces](#).
- The new detection-definition plug-in to the sas-viya command-line interface (CLI) creates and retrieves information about organizational hierarchies and organizations. For more information, see [“detection-definition” in SAS Detection Command Line Interfaces](#).
- The new detection-message-schema plug-in to the sas-viya command-line interface (CLI) enables you to create, apply, and retrieve available message schema templates. For more information, see [“detection-message-schema” in SAS Detection Command Line Interfaces](#).

- The new listdata plug-in to the sas-viya command-line interface (CLI) enables you to create, read, update, and delete an advanced list. For more information, see [“list data Plug-In” in SAS Detection Command Line Interfaces](#).

Encryption

The SAS Viya platform supports the use of FIPS 140-2 validated cryptographic modules when executed on Kubernetes nodes running in FIPS mode. For more information, see [“FIPS 140-2 Support” in SAS Viya Platform Encryption: Data in Motion](#).

Migration

In a SAS Viya 3.x to SAS Viya 4 migration, you can now specify a list of schemas to exclude from the timestamp time zone conversion that takes place in SAS Viya 4.

Authentication

You can configure single sign-on authentication for Esri services. Authenticated SAS Viya platform users can then connect to Esri services without having to reenter their credentials. In order to access Esri premium services, the SAS user must be a member of the Esri Users custom group. In addition, the user must have an account on the Esri server. For more information, see [“Configure Single Sign-On Access to Esri Services” in SAS Viya Platform: Authentication](#).

Identity Management

The identities service has an updated hashing algorithm that is used to generate UID and GID values. Values that have already been generated remain the same. However, newly generated UIDs and GIDs are likely to result in different values. These new values could affect users' ability to access file system resources if permissions have been set based on the old values. Permissions issues are particularly likely to occur if multiple tenants or environments must access the same file system resources.

Contact SAS Technical Support if you need assistance adjusting file system permissions as a result of this change.

2023.05 (May 2023)

Command-Line Interface

The job plug-in to the sas-viya command-line interface (CLI) includes a new command, `job flows show-history-tree`. It is useful for diagnosing problems with job flows. For more information, see [“Obtain the History of an Executed Job Request or Job Flow”](#) in *SAS Viya Platform: Jobs and Flows*.

SAS Workload Orchestrator

SAS Workload Orchestrator can integrate with Kubernetes Cluster Autoscaler (CA) to scale your environment. The CA enables the scaling up of nodes to your cluster when the demand for workload grows and the scaling down of nodes to your cluster when workloads disappear. SAS Workload Orchestrator uses the configuration of scalable host types and non-scalable host types to trigger the use of Kubernetes Cluster Autoscaler. For more information see [“SAS Workload Orchestrator and Kubernetes Cluster Autoscaler Integration”](#) in *SAS Viya Platform: Workload Management*.

2023.04 (April 2023)

Command-Line Interface

The folders plug-in to the sas-viya command-line interface (CLI) includes two new commands, `folders sync` and `folders analyzeRules`. The `folders sync` command enables you to synchronize the data between the resources in folders and the folders service. The `folders analyzeRules` command enables you to examine the rules that are defined for root folders and user folders. For more information see [“Folders: How to \(CLI\)”](#) in *SAS Viya Platform: Folders*.

Migration

Tenant migration is supported. Tenant migration is the process of re-creating one or more non-provider tenants while preserving the tenant-specific configuration and content to a new or existing deployment that differs from the source environment. It is available when migrating from SAS Viya 4.

Tenant migration to SAS Viya 4 includes moving content and data from one or more non-provider tenants in a source SAS Viya 4 multi-tenancy environment to another target SAS Viya 4 multi-tenancy environment.

2023.03 (March 2023)

Deprecation Warning for Start/Stop Transformers

The option of starting and stopping your SAS Viya platform deployment using Kustomize transformers is deprecated as of 2023.03 Stable and Long-Term Support releases. It was removed at Stable 2023.10 and Long-Term Support 2024.03. SAS recommends that you use `sas-stop-all` and `sas-start-all` CronJobs to stop and start your SAS Viya platform deployments.

See [“Starting and Stopping a SAS Viya Platform Deployment”](#) in *SAS Viya Platform: General Management of Servers and Services*.

External Credentials

SAS Cloud Analytic Services supports storing token credentials. This change supports shared accounts for use in an environment configured for SCIM.

For more information, see [“CAS and Compute Services: Using a Group-Managed Service Account”](#) in *SAS Viya Platform: External Credentials*.

Kerberos Hybrid Authentication

Additional support has been added for Kerberos hybrid authentication scenarios. This support is applicable in situations where the environment is configured for single sign-on with OIDC and SAML and also requires Kerberos access to data sources. The changes that were made also provide enhanced support for constrained delegation. In some of these situations, the SAS Kerberos proxy was unable to obtain a credential on behalf of the user. The credential could not be obtained because the user name that was specified in the OAuth token did not exist in Active Directory or in the KDC.

Following changes to the way that the SAS Kerberos proxy handles the ORIGIN claim, you have additional options for managing the User Principal Name (UPN) value in the access token that is generated. For example, if your environment specifies that the UPN format is `sAMAccountName@default_realm`, you can configure user identities so that `USER_NAME = sAMAccountName` and then define a `default_realm` in the `krb5.conf` file. The SAS Kerberos proxy appends the default realm where it is not already appended. With these changes, authenticated user

accounts in different formats are automatically transformed into formats that match those that are stored in the identities service or received from SCIM.

The changes do not affect the SAS deployment if it is configured for LDAP or Kerberos authentication. They affect only Kerberos constrained delegation environments in which OIDC or SAML is used for user authentication along with Kerberos. For more information, see [“Kerberos Hybrid Authentication” in SAS Viya Platform: Authentication](#).

Command-Line Interface

The new data agent plug-in to the sas-viya command-line interface (CLI) enables you to manage the connection between SAS Viya and your data sources. For more information, see [Command Line Interface: dagentsrv](#)

Launcher Service Authentication

The OAuth tokens with the client credential “grant” type and that do not have “sasapp” authority are not allowed by the Launcher service to create Launcher processes directly. These client credentials are allowed to create processes only with the use of a stored credential.

2023.02 (February 2023)

Auditing

Enhancements to the sas-viya CLI Plug-in

The **audit** plug-in to the sas-viya CLI has been enhanced. The `description` and `description-contains` options return audit records that include all or part of the value specified in the **Description** field. For more information see [“Audit: How to \(CLI\)” in SAS Viya: Auditing](#).

Programming Run-Time Servers

Launcher Service

Kubernetes volumes can be used as the mount point for user’s home directories. See [Using Kubernetes Volumes for User Home Directories](#).

Batch Server

The administrator can configure the batch context to allow launched servers to run under a shared account. See [“Configure Batch Servers to Run under a Shared Account” in SAS Viya Platform: Server Contexts](#).

Backup and Restore

The following HTML paths to READMEs have been changed:

Table 2.1 HTML README Paths

| 2023.01 and Earlier Releases of the SAS Viya Platform | 2023.02 and Later Releases of the SAS Viya Platform |
|--|---|
| <code>\$deploy/sas-bases/docs/configuration_settings_for_sas_viya_backup.htm</code> | <code>\$deploy/sas-bases/docs/configuration_settings_for_sas_viya_platform_backup.htm</code> |
| <code>\$deploy/sas-bases/docs/configuration_settings_for_sas_viya_restore.htm</code> | <code>\$deploy/sas-bases/docs/configuration_settings_for_sas_viya_platform_restore.htm</code> |

Migration

In a SAS Viya 3.x to SAS Viya 4 migration and a SAS Viya 4 to SAS Viya 4 migration, the following HTML paths to READMEs have been changed:

Table 2.2 HTML README Paths

| 2023.01 and Earlier Releases of the SAS Viya Platform | 2023.02 and Later Releases of the SAS Viya Platform |
|--|---|
| <code>\$deploy/sas-bases/docs/configuration_settings_for_sas_viya_restore.htm</code> | <code>\$deploy/sas-bases/docs/configuration_settings_for_sas_viya_platform_restore.htm</code> |
| <code>\$deploy/sas-bases/docs/configuration_settings_for_sas_viya_migration.htm</code> | <code>\$deploy/sas-bases/docs/configuration_settings_for_sas_viya_platform_migration.htm</code> |

2023.01 (January 2023)

Backup and Restore

The inventory CronJob can generate the comparison report from a SAS Viya 3.x to SAS Viya 4 migration.

Changes to Product Offering Names

Documentation for previous versions of SAS Viya 4 used the term *SAS Viya* to refer to the environment that supported compatible SAS product offerings. These offerings ran in, and interacted with, a deployment of the *SAS Viya platform*, which was previously referred to as *SAS Viya*. Several SAS product offerings have been renamed to emphasize their relative importance:

- SAS Visual Machine Learning was renamed as SAS Viya
- SAS Visual Data Science was renamed as SAS Viya Advanced
- SAS Visual Data Science Programming was renamed as SAS Viya Programming
- SAS Visual Data Science Decisioning was renamed as SAS Viya Enterprise

The documentation has been updated to reflect these changes.

Command-Line Interface

The reports plug-in to the `sas-viya` command-line interface (CLI) has a new `format-locale` option on the `build-package` command. This new option lets you specify the locale that is used for data formatting and sorting.

Migration

The inventory CronJob can generate the comparison report from a SAS Viya 3.x to SAS Viya 4 migration.

2022.12 (December 2022)

Backup and Restore

Note: This is a duplicate of a What's New topic for the SAS Viya 2022.09 stable release. It is repeated here because it is being added to the documentation after the initial release at which the change occurred in order to make sure it is seen by users.

Starting with the SAS Viya 2022.1.3 release, the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter was moved to the `sas-backup-job-parameters` configMap. In SAS Viya 2022.1.2 and prior releases, it was located in the `sas-backup-agent-parameters` configMap.

To use the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter in SAS Viya 2022.1.3 and later releases, when editing the `kustomization.yaml` file to run the restore, you must remove the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter from the `sas-backup-agent` parameters configMap and add it to the `sas-backup-job-parameters` configMap in the `configMapGenerator` section. If the `sas-backup-job-parameters` section is not present, you must add it and include the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter. If it was the only parameter defined for the `sas-backup-agent-parameter` configMap, then you should remove the `sas-backup-agent-parameter` section.

For more information, see one of the following files:

| File Format | Path |
|-------------|---|
| Markdown | <code>\$deploy/sas-bases/examples/backup/configu/README.md</code> |
| HTML | <code>\$deploy/sas-bases/docs/configuration_settings_for_sas_viya_backup.htm</code> |

Encryption

Encrypted communication between SAS/ACCESS to Teradata and SAS Viya using TLS 1.2 is supported. For more information, see [Configure TLS for SAS/ACCESS Connection to Teradata](#).

Migration

In a SAS Viya 3.x to SAS Viya 4 migration, a backup of a multi-tenant environment is now supported. You might want to perform a backup of your SAS Viya 3.x environment in preparation for migrating to SAS Viya 4 in a future release.

SAS Viya Monitoring for Kubernetes

The documentation for this solution has been redesigned and is now located in the [SAS Viya Monitoring for Kubernetes Help Center](#).

2022.11 (November 2022)

Backup and Restore

-

Note: This is a duplicate of a What's New topic for the SAS Viya 2022.09 stable release. It is repeated here because it is being added to the documentation after the initial release at which the change occurred in order to make sure it is seen by users.

.....

Starting with the SAS Viya 2022.1.3 release, the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter was moved to the `sas-backup-job-parameters` configMap. In SAS Viya 2022.1.2 and prior releases, it was located in the `sas-backup-agent-parameters` configMap.

To use the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter in SAS Viya 2022.1.3 and later releases, when editing the `kustomization.yaml` file to run the restore, you must remove the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter from the `sas-backup-agent` parameters configMap and add it to the `sas-backup-job-parameters` configMap in the `configMapGenerator` section. If the `sas-backup-job-parameters` section is not present, you must add it and include the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter. If it was the only parameter defined for the `sas-backup-agent-parameter` configMap, then you should remove the `sas-backup-agent-parameter` section.

For more information, see one of the following files:

| File Format | Path |
|-------------|---|
| Markdown | <code>\$deploy/sas-bases/examples/backup/configure/README.md</code> |

| | |
|------|--|
| HTML | <code>\$deploy/sas-bases/docs/ configuration_settings_for_sas_viya_backup.htm</code> |
|------|--|

- The inventory CronJob can now generate the comparison report in a disaster recovery or restore scenario.

Migration

- In a SAS Viya 3.x to SAS Viya 4 migration, an inventory scan of a multi-tenant environment is now supported. You might want to perform a scan of your SAS Viya 3.x environment in preparation for migrating to SAS Viya 4 in a future release.
- The inventory CronJob can now generate the comparison report in a SAS Viya 4 to SAS Viya 4 migration.

SAS Redis Server and SAS Redis Operator

SAS Viya platform now uses Redis to provide a distributed cache technology. Apache Geode and SAS Cache Server has been completely removed from the SAS Viya offerings.

2022.10 (October 2022)

Backup and Restore

- **Note:** This is a duplicate of a What's New topic for the SAS Viya 2022.09 stable release. It is repeated here because it is being added to the documentation after the initial release at which the change occurred in order to make sure it is seen by users.

Starting with the SAS Viya 2022.1.3 release, the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter was moved to the `sas-backup-job-parameters` configMap. In SAS Viya 2022.1.2 and prior releases, it was located in the `sas-backup-agent-parameters` configMap.

To use the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter in SAS Viya 2022.1.3 and later releases, when editing the `kustomization.yaml` file to run the restore, you must remove the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter from the

sas-backup-agent parameters configMap and add it to the sas-backup-job-parameters configMap in the configMapGenerator section. If the sas-backup-job-parameters section is not present, you must add it and include the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter. If it was the only parameter defined for the sas-backup-agent-parameter configMap, then you should remove the sas-backup-agent-parameter section.

For more information, see one of the following files:

| File Format | Path |
|-------------|---|
| Markdown | <code>\$deploy/sas-bases/examples/backup/configure/README.md</code> |
| HTML | <code>\$deploy/sas-bases/docs/configuration_settings_for_sas_viya_backup.htm</code> |

- Some customers who perform a restore of a backup into a SAS Viya 2022.10 environment might notice a change in the sort order of user content that is stored in PostgreSQL. This change does not indicate that any user content has been modified or deleted. Also, this change does not immediately affect any new SAS Viya 2022.10 environments, nor does it affect any SAS Viya environments immediately after an upgrade to 2022.10 from 2022.09 or earlier. However, it might affect those environments if a restore operation is later performed in such an environment.

Migration

- The inventory CronJob can now generate the comparison report in a SAS Viya 3.x to SAS Viya 4 migration.
- Some customers who migrate to a SAS Viya 2022.10 environment might notice a change in the sort order of user content that is stored in PostgreSQL. This change does not mean that any user content has been modified or deleted. The change might affect SAS Viya 2022.10 environments that migrated from either SAS Viya 3.5 or SAS Viya 4 (2022.10) environments.

Identities

SAS has changed the default settings that affect user UIDs and group GIDs (POSIX attributes). Previously, the default setting determined that the identities service obtained POSIX attributes from an IAM system, typically from an LDAP server. Unless you change the new default setting, the identities service now returns UIDs that it auto-generates from a hash. It does not auto-generate GIDs by default. If GIDs are present from an existing source, such as LDAP, the identities service

returns them when queried. This default behavior is new with SAS Viya 2022.10 and later.

Here is a summary of the new default behavior of the identities service:

- The identities service always provides a generated UID, even if your LDAP identity provider contains valid POSIX UID attributes for user accounts.
- The identities service does not generate GID values, but it returns GID values that exist in LDAP or that were manually specified.
- The identities service allows SAS administrators to provide GID values from an LDAP identity provider or by performing a bulk-load operation through the identities endpoint.

In other words, by default, UID values are auto-generated rather than retrieved from LDAP, but GID values are not auto-generated; you are expected to provide them. You can change the default settings and provide all POSIX attributes from an identity and access management system (such as LDAP), or you can upload a file that contains the UIDs and GIDs that you want to use. This bulk-load operation involves changing the mode property for the identities service. For UIDs, the default mode is GENERATE. For GIDs, the default is CUSTOM.

No modification to these default settings is required if you are satisfied with auto-generated UIDs and if your deployment does not require group identification as part of CAS server usage. The shared service account is still used by default for these sessions.

Authentication

SAS has changed the default setting for the OAuth tokens that are issued by SAS Logon Manager. For most SAS Viya clients, these tokens now expire after one hour. Previously, they expired after four hours.

Most applications manage expiring and refreshing tokens programmatically. You can override the system-wide default for your custom applications by updating the value for the `access_token_validity` property. See [“Register a Custom Application \(OAuth Client\)” in SAS Viya Platform: Authentication](#) for information about the `access_token_validity` property and the steps for registering a client so that it can obtain tokens.

If you want to change the default expiration value for an access token in SAS Viya, see [“logon.jwt - policy.accessTokenValiditySeconds” in SAS Viya: Configuration Dictionaries](#)

Infrastructure Servers

SAS Redis Server and SAS Redis Operator

SAS Viya now uses Redis to provide a distributed cache technology. Redis Server and the Redis Operator replace Apache Geode and SAS Cache Server. The full replacement for all SAS Viya offerings is planned for completion in 2022.11.

Not all SAS Viya offerings require the cache server functionality. With the addition of Redis, you might notice that the `sas-cacheserver` and `sas-cachelocator` stateful sets are still in your cluster but are not running. This behavior is expected. The `sas-cacheserver` and `sas-cachelocator` services are still included in deployments but are not enabled unless another service (such as services that are used by the SAS Intelligent Planning Suite) requires them.

Multi-Tenancy

Activity records and audit records are created, managed, and analyzed separately and uniquely in each tenant, including the provider. Most of the audit configuration instances are also unique and separate in each tenant. SAS administrators in the provider tenant set critical audit record purge settings for all tenants.

2022.09 (September 2022)

Backup and Restore

Starting with the SAS Viya 2022.1.3 release, the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter was moved to the `sas-backup-job-parameters` configMap. In SAS Viya 2022.1.2 and prior releases, it was located in the `sas-backup-agent-parameters` configMap.

To use the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter in SAS Viya 2022.1.3 and later releases, when editing the `kustomization.yaml` file to run the restore, you must remove the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter from the `sas-backup-agent` parameters configMap and add it to the `sas-backup-job-parameters` configMap in the `configMapGenerator` section. If the `sas-backup-job-parameters` section is not present, you must add it and include the `FILESYSTEM_BACKUP_EXCLUDELIST` parameter. If it was the only parameter defined for the `sas-backup-agent-parameter` configMap, then you should remove the `sas-backup-agent-parameter` section.

For more information, see one of the following files:

| File Format | Path |
|-------------|--|
| Markdown | <code>\$deploy/sas-bases/examples/backup/configure/README.md</code> |
| HTML | <code>\$deploy/sas-bases/docs/ configuration_settings_for_sas_viya_backup.htm</code> |

Encryption

The Mozilla bundle of trusted CA certificates can be excluded from the truststore. For detailed information, see [“Exclude the Mozilla Trusted CA Certificates from the Truststore”](#) in *SAS Viya Platform Encryption: Data in Motion*.

2022.1.4 (August 2022)

Backup and Restore

The inventory scan can now be run by creating a Kubernetes job from the CronJob. This method does support the scanning of a multi-tenancy environment.

.....
Note: The inventory scan CronJob does not yet generate the extra data necessary to populate the comparison report.
.....

Command-Line Interface

- The SAS Workload Orchestrator plug-in to the sas-viya command-line interface (CLI) can now import three types of configurations into SAS Viya. For detailed information, see [Migrating Content](#)
- The new Credentials plug-in to the sas-viya command-line interface (CLI) enables you to manage the operations of the credentials service for domains. For detailed information, see [“Credentials Domain: How to \(CLI\)”](#) in *SAS Viya Platform: External Credentials*.

Migration

The inventory scan can now be run by creating a Kubernetes job from the CronJob. This method does support the scanning of a multi-tenancy environment.

.....
Note: The inventory scan CronJob does not yet generate the extra data necessary to populate the comparison report.
.....

2022.1.3 (July 2022)

Backup and Restore

You can use PostgreSQL database options to improve the performance of a restore. For more information, see [“Best Practices for Performing Restores” in SAS Viya Platform: Backup and Restore](#).

Command-Line Interfaces

- The launcher plug-in to the sas-viya command-line interface (CLI) can now display SAS Launcher service processes. Use the “sas-viya launcher processes - h” option for complete information about command options and arguments.
- The new visual-forecasting plug-in to the sas-viya command-line interface (CLI) enables you to import projects from SAS Forecast Studio.

Importing

Libraries in an import file can be mapped to CAS and Compute servers. For more information see [Import Tab in Content Migration](#).

Migration

Template files for using existing PVCs and the sas-common-backup-data PVC to mount migration volumes are now available in a SAS Viya 3 to 4 migration.

Servers and Services

The name of the CAS container is changed from `cas` to `sas-cas-server`. This change is intended to make it easier to find and identify the CAS container in standard Kubernetes logging and monitoring tools.

Identity Management

Beginning with SAS Viya 2022.1.3 and later, a new custom group named **SCIM** is automatically created. In addition, a new authorization rule is also created. This authorization rule gives members of the SCIM custom group access to the SCIM endpoints in SAS Viya. As a result, an authorization rule no longer needs to be created manually.

2022.1.2 (June 2022)

SAS Viya Monitoring for Kubernetes

The SAS Viya Monitoring for Kubernetes solution no longer deploys Elasticsearch and Kibana. Instead, OpenSearch and OpenSearch Dashboards are deployed. For more information, see [SAS Viya Platform: Log Monitoring](#).

2021.2.6 (April 2022)

Command-Line Interfaces

In the launcher plug-in to the `sas-viya` command-line interface (CLI), there is a new `command-allowlist` option on the `create` command. The new option enables you to specify a list of valid commands that the context can launch.

2021.2.5 (March 2022)

Edit Configuration Instances

A new configuration instance, `logconfig`, has been added to the configuration of SAS/CONNECT Server and SAS/CONNECT Spawner. See [“Edit Server Configuration Instances”](#) in *SAS Environment Manager: User's Guide*.

2021.2.4 (February 2022)

Command-Line Interfaces

In the batch plug-in to the `sas-viya` CLI, the new `restart-job` option specifies that a job can be restarted from the beginning without using a checkpoint or label restart.

2021.2.3 (January 2022)

Command-Line Interfaces

- The `PLUGINS` command of the `sas-viya` CLI has a new `a11` option that enables you to download all plug-ins to the `sas-viya` CLI at one time. The `sas-viya` CLI with the new `a11` option is downloadable as of January 12, 2022. It is available for all previous versions of the `sas-viya` CLI.
- The new `mip-migration` plug-in to the `sas-viya` CLI enables you to transfer content from SAS Model Implementation Platform 3.2 to SAS Risk Engine on SAS Viya.

2021.2.1 (November 2021)

SAS Content Assessment

A new version of SAS Content Assessment is available at [Downloads: SAS Content Assessment](#).

Features

The new **Features** function in SAS Environment Manager enables administrators to display features to users. See “[Features Page](#)” in *SAS Environment Manager: User's Guide*.

Command-Line Interfaces

The healthcheck plug-in to the sas-viya CLI is no longer available as of version Stable 2021.2.1.

2021.1.6 (October 2021)

Backup and Restore

Multi-tenancy functionality for backup and restore was added to version Stable 2021.1.6 on November 17, 2021. If you deployed your Stable 2021.1.6 software before this date and did not perform an update after this date, it does not include multi-tenancy functionality for backup and restore.

See “[Multi-Tenancy Support](#)” in *SAS Viya Platform: Backup and Restore* for more information.

Edit Configuration Instance

A new configuration instance, `restricted_options`, has been added to the configuration of SAS Compute Server, SAS/CONNECT Server, and the SAS Batch

Server. See [“Edit Server Configuration Instances”](#) in *SAS Environment Manager: User’s Guide*.

2021.1.5 (September 2021)

Command-Line Interfaces

In the reports plug-in to the sas-viya CLI, the following options are new:

build-package Downloads a report package as a ZIP file.

list-elements Lists the elements in a report.

Edit Configuration Instance

A new configuration instance, `restricted_options`, has been added to the configuration of SAS Compute Server, SAS/CONNECT Server, and the SAS Batch Server. See [“Edit Server Configuration Instances”](#) in *SAS Environment Manager: User’s Guide*.

2021.1.4 (August 2021)

Authorization

- In CAS row-level permissions, support has been provided for the identity-driven substitution parameter `SAS.ExternalIdentity`. See [“Identity-Based Substitution”](#) in *SAS Viya Platform: CAS Authorization*.
- On the **Rules** page in SAS Environment Manager, the deprecated attribute `mediaType` has been removed. It has been replaced by three attributes that are more specific: `acceptType`, `acceptItemType`, and `contentType`. See [“Media Type Attributes”](#) in *SAS Viya Platform: General Authorization*.

Contexts

All the contexts (Launcher, Compute, Batch, and Connect) can be duplicated as a new context with a modified name. See [“Copy a Context” in SAS Environment Manager: User’s Guide](#).

Notifications

The new **Notifications** function in SAS Environment Manager enables administrators to send a message that appears in the **Notifications** area of all SAS Viya users. See [“Sending a Notification Message” in SAS Environment Manager: User’s Guide](#).

2021.1.3 (July 2021)

Critical Change: Default Support Removed for Launching CAS under a User’s Host Identity

By default, users cannot run CAS sessions under their host identity. A request to launch a CAS session under a requesting user’s host identity fails and returns the following error message: `Host identity launches are not permitted.`

Here are examples of affected deployments:

- A deployment that uses Kerberos or PAM with SSSD.
- A deployment that assigns users to the CHAR group.
- A deployment that sets the CASALLHOSTACCOUNTS environment variable.
- A deployment that has users that run Python code (or other external languages) using MAS.
- A deployment that uses host permissions on files and directories to prevent or allow access for specific users or groups.

To enable CAS sessions to run under host identity in such deployments, apply a patch to enable the required system capabilities. For more information, see [“CAS Server Authentication” in SAS Viya Platform Identity and Access Management: Fundamentals](#).

Command-Line Interfaces

- The new notifications plug-in to the sas-viya CLI manages notifications in SAS Environment Manager.
- The new workload-orchestrator plug-in to the sas-viya CLI manages and monitors a SAS Workload Orchestrator environment.

Enabling PROC PYTHON in Lockdown Mode

PROC PYTHON and Python code can be enabled to run in SAS in lockdown mode. See [Configuring SAS to Run the Python Language](#).

2021.1.2 (June 2021)

New Progressive Web App Functionality

SAS Environment Manager can now be installed as a Progressive Web App (PWA), enabling you to use the product as a desktop app instead of in a web browser. Only Chromium-based browsers support PWA. For more information, see [“Installing SAS Environment Manager as a Progressive Web App”](#).

Command-Line Interfaces

- In the cas plug-in to the sas-viya CLI, the new **shapes** option enables you to load Esri shape files into CAS as a table.
- The new decisiongitdeploy plug-in to the sas-viya CLI enables you to deploy decisions and rule sets from a local Git repository to the SAS Micro Analytic Service destination (maslocal) or to a SAS Cloud Analytic Services (CAS) destination.

2021.1.1 (May 2021)

Command-Line Interfaces

In the fonts plug-in to the sas-viya CLI, the new **overwrite** option enables you to replace a previously registered version of a custom font with a new version.

Content Migration

The ability to use the SAS Viya transfer plug-in is extended to include non-administrators who have the required permissions.

SAS Enterprise Guide built-in tasks, referenced programs, Program node, query builder task, Data node (for tables and registered tables in your metadata), append tables task, filter and sort task, and infomap node are now supported for content migration.

SAS Data Integration Studio jobs are now supported for content migration.

2020.1.4 (March 2021)

SAS Compute Server

LOCKDOWN is enabled by default for all SAS Compute servers that are launched.

SAS/CONNECT Spawner

The SAS Viya SAS/CONNECT spawner supports TLS 1.3. When a SAS/CONNECT client that supports TLS 1.3 connects to a SAS Viya SAS/CONNECT spawner, SAS Viya tries to encrypt the connections using TLS 1.3. Otherwise, TLS 1.2 is used.

.....
Note: This support is added as a hot fix in 2020.1.4, 2021.1.3 - 2021.1.5 and is part of software version 2021.1.6.
.....

Default TLS Cipher Suites

The supported cipher suites for TLS 1.3 are as follows:

- `TLS_AES_128_GCM_SHA256`
- `TLS_AES_256_GCM_SHA384`
- `TLS_AES_128_CCM_SHA256`
- `TLS_AES_128_CCM_8_SHA256`
- `TLS_CHACHA20_POLY1305_SHA256`

The default cipher suites supported for TLS 1.2 are as follows:

- `TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256`
- `TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384`
- `TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256`
- `TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384`

Batch Context

A batch context is available as a specification that contains information that is needed to run a batch server.

Launcher Context

- Commands can be added to an allowlist in SAS Environment Manager when creating a new Launcher context or editing an existing Launcher context.
- The default values of SAS Locale and SAS Encoding can be overridden in SAS Environment Manager when creating a new Launcher context or editing an existing Launcher context.

Server Contexts

SAS Compute servers that are configured to be reusable can also be configured to have a minimum number of servers that are available. This feature enables the SAS Compute service to maintain a set of running compute servers that can be reused. For more information, see [“Configure a Pool of Available Compute Servers” in SAS Viya Platform: Server Contexts](#).

Kerberos and Constrained Delegation

End-to-end support is now provided for Kerberos. In addition, you can configure Kerberos constrained delegation.

Promotion (Import and Export)

The conversion of the following MDX expressions to SAS Visual Analytics calculated data items is supported:

- StrToSet
- IFN
- MAX

For the SUM and SAS!SUM MDX functions, if missing value (.) is specified as a parameter, the returned value is displayed as a zero in SAS Visual Analytics reports.

Migration and Promotion Documentation

The migration and promotion documentation has been restructured so that both sections reside under one Migration topic. In addition, the content is now organized into the following topics based on what version of SAS you are moving from:

- Moving from SAS Viya
- Moving from SAS 3.x
- Moving from SAS 9.4

Promotion, which refers to moving resources from one environment to another environment, is now referred to as content migration. Migration, which refers to moving an entire system from one environment to another environment, is now referred to as a full-system migration.

2020.1.3 (February 2021)

Command-Line Interfaces

In the cas plug-in to the sas-viya CLI, the new `copies` option enables you to load more than one copy of a table.

Publishing Destinations

You can now configure publishing destinations for a Git repository, an Azure Machine Learning cloud-based provider, and container destinations (Amazon Web Services, Azure, and Private Docker) using SAS Environment Manager.

2020.1.2 (January 2021)

Configuration Properties

- The `sas.files.maxFileSize` property is deprecated and replaced with the `sas.files.maxFileSizeMB` property.

2020.1.1 (December 2020)

Configuration Properties

- In the `sas.crossdomain.proxy` configuration definition for the Cross Domain Proxy service, the new properties `outboundHttpProxyUrl` and `outboundHttpsProxyUrl` enable you to specify the proxy that is used for outgoing HTTP and HTTPS requests.
- For the SAS Logon Manager application, in order to enable support for multiple identity providers, the `sas.logon.oauth.providers` configuration definition replaces `sas.logon.oauth.providers.external_oauth`, and the `sas.logon.saml.providers` configuration definition replaces `sas.logon.saml.providers.external_saml`.

SAS/CONNECT Server

LOCKDOWN is enabled by default for all SAS/CONNECT servers that are launched or spawned.

