What Is SAS Environment Manager?

SAS Environment Manager is a web application for managing a SAS Viya environment. It includes a dashboard view, which provides a quick overall look of your environment’s health and status, as well as detailed views that enable you to examine and manage your environment in detail.

You can use the application to manage these areas of your environment:

Data
   - CAS tables, caslibs, user-defined formats, and servers

User content
   - saved reports and data, favorites, and history

User information
   - users and groups from your directory service and SAS groups

License information
   - your SAS licenses and expiration dates.

System backups
   - backups and restores of system data

Configuration
   - configuration data for SAS Viya microservices

Contexts
   - settings such as environment variables and port ranges that are used when launching a compute process

Logs
   - log messages from SAS applications and services.

Machines
   - information and metric data for the machines and services

Scheduling
   - schedules for job service jobs

Domains
   - authentication domains (for storing a user ID and password), encryption domains (for storing an encryption key), and connection domains (for storing a user ID without a password)
Accessing SAS Environment Manager

To access SAS Environment Manager open SAS Home. You can click on the Manage Environment tile, or in the Applications menu (≡) under Administration, select Manage Environment.

Note: If you are using only the SAS Viya programming interface, SAS Environment Manager is not deployed. See “Deployment Types” in SAS Viya Administration: Orientation for more information.

When you log on to SAS Environment Manager, if you are a member of the SAS Administrators group, a prompt will appear asking you whether you want to opt in to your assumable groups. If you select Yes, your membership in the SAS Administrators group is in effect. See “Assumable Custom Groups” in SAS Viya Administration: Identity Management for more information.

To sign out of SAS, use the application bar. Click your name, and then click Sign out. When you click Sign out, you sign out of all SAS web applications.

Using the Dashboard

Overview

The Dashboard provides a quick view of the state of your system. It displays a set of tiles and reports, each of which summarizes an aspect of system status. The Dashboard is the default view when you first open SAS Environment Manager. You can return to the Dashboard from any page in SAS Environment Manager by clicking Dashboard from the navigation menu.

Click ‣ then Refresh to refresh the data. Some tiles are also automatically refreshed, as noted in the tile’s description on this page.

By default, the Dashboard displays these tiles:

- Availability
- CAS System Health
- Logged Issues
Mobile Devices

You can also display system performance reports on the Dashboard by clicking Show Reports.

Using the Dashboard Tiles

The Dashboard can include these tiles:

Availability

displays grids of color-coded boxes that correspond to the machines, services, and service instances in your environment. The colors reflect the status of each machine, service, and service instance. A green box indicates that the item is available, a yellow box indicates that it is partially available or in a warning state, and a red box indicates that it is unavailable.

The grids are updated every ten seconds.

Selecting a box in one of the grids highlights the corresponding boxes in the other two grids. The box that you selected is outlined with a solid line, and the associated boxes are outlined with a dashed line. These are the associations between the selected boxes:

- When you click on a box in the Machines grid, the services and service instances that are running on that machine are highlighted in the Services and Service Instance grids.
- When you click on a box in the Services grid, the machines where that service is running are highlighted in the Machines grid, and the instances of the service are highlighted in the Service instances grid.
- When you click on a box in the Service instances grid, the machines where the service instance is running are highlighted in the Machines grid, and the service is highlighted in the Services grid.

Note: To deselect a box, hold down the Ctrl key and click the box. You can also hold down the Ctrl key and press the spacebar.

Place your cursor over a box to view the name of the machine, service, or service instance.

Double-click on a box in the Machine grid to open the Services dialog box, which lists the services that are running on that machine and their availability. You can open the Machines page for the selected machine from this dialog box.

Click on a box in the Service instances grid to view the machine address and port where the instance is running.

Use the Filter field to display only certain machines, services, and service instances. As you type characters in the Filter field, the boxes displayed in the Availability area dynamically change. The boxes that are displayed either match the characters that you type, or are associated with the boxes that are displayed. For example, typing "laun" in the Filter field might cause two Services boxes to display (for the Launcher service and the Launcher server), only the Service instance boxes associated with the displayed services, and only the Machines boxes associated with the displayed services.

CAS System Health

displays graphs that give you a quick view of the state of the nodes (machines) in your SAS Viya cluster for a selected CAS server. Use the buttons at the top of the tile to select the graph that you want to view.

If your environment contains more than one CAS server, a menu above the graph enables you to select the server to view. When you log into SAS Environment Manager, this tile attempts to connect to the default CAS server. If the default server cannot be found, the tile displays information for the first server to which it can connect. If it can connect to the default server, but the server does not respond within five seconds, the tile displays a message. You can then retry the server or choose another server. See “SAS Cloud Analytic Services: Overview” in SAS Viya Administration: SAS Cloud Analytic Services for more information on CAS servers.

You define the default server in the casManagement configuration property. See “Configuration Properties: How To Configure Services” in SAS Viya Administration: Configuration Properties for more information.
The **Node Memory Usage** graph displays the memory usage for each node in your cluster. Each bar represents a separate node. Position your pointer over a bar on the graph to view the name of the node and its memory usage. The vertical scale of the graph changes to match the memory usage of the most heavily used node.

The **CPU Load** graph displays the 1-minute CPU load average over the past five minutes for the nodes in your cluster. The chart updates every ten seconds. Each node is represented by a separate line on the graph. The vertical scale of the graph changes depending on the largest value being displayed in the chart. Position your pointer on any of the lines on the graph to view the name of the node and the CPU load at the selected time.

The graphs update every ten seconds.

**Logged Issues**

Displays a time series graph of the number of ERROR and FATAL level log messages captured by SAS Viya log files in the previous 30 minutes. Only the top five sources of ERROR and FATAL messages are included. If there have been no ERROR or FATAL messages in the last 30 minutes, the message **No information is available** is displayed in place of the graph. To view details about the messages or to filter the displayed messages, click **...** and then select **Open** to display the **Logs** page.

**Custom Groups**

Displays the name and number of members for the top five custom groups (by number of members). Custom groups are created to control access to SAS Viya features. If you have a sufficient authorization level, you can use the **Users** page to manage custom groups. See “Getting Started with Identity Management” in SAS Viya Administration: Identity Management. This tile refreshes whenever the Dashboard is reloaded.

If you have the proper authorization, click on **...** and the click **Open** to display the **Users** page.

**Mobile Devices**

Displays the type of mobile device access control in use and the number of successful and unsuccessful logon attempts. You can use the **Mobile Devices** page to manage mobile device access and view detailed information about access attempts. See “Mobile: How To” in SAS Viya Administration: Mobile. This tile refreshes whenever the Dashboard is reloaded. If you do not have a sufficient authorization level, this tile does not appear.

If you have the proper authorization, click on **...** and then click **Open** to display the **Mobile Devices** page.

**Reports**

You can display two types of reports on the Dashboard.

User-selected reports are selected by right-clicking on the report in the Content page and selecting **Pin to dashboard**. References to the selected reports are stored in the folder **Users/user_name/Application Data/SAS Environment Manager/Dashboard Items**. Any user can pin reports to their dashboard.

System performance reports are provided by default in SAS Viya, and are available only to SAS administrators. These reports are available:

- **Application Activity**
  performance and usage by application

- **CAS Activity**
  CPU, memory usage, and system performance for CAS

- **Disk Space**
  disk usage history and forecast

- **Infrastructure Data Server Tables**
  size and usage for SAS Infrastructure Data Server tables

- **Message Queue Activity**
  activity and traffic on the RabbitMQ message exchanges that are used by the operations infrastructure

- **System Activity**
  memory and CPU usage and network activity
User Activity

reports based on audit records

By default, the reports are hidden. Click Show Reports to display thumbnails for the reports. If you display the reports and then log out of SAS Environment Manager, the reports will be displayed when you log back in to SAS Environment Manager.

Select ﬁ in any report tile and then click on Open to display the full report in SAS Report Viewer.

Click ▶ and ◄ to change the displayed reports.

Personalizing Your Dashboard

To add or remove a tile, at the top of the window, select your_user_name ⇒ Settings. In the Settings dialog box, select Dashboard. Select the check boxes for the tiles that you want to display on the Dashboard.

To remove a tile that is currently displayed on the Dashboard, click ﬁ and then click Unpin.

To choose which system status reports to display on the Dashboard, at the top of the window select your_user_name ⇒ Settings. In the Settings dialog box, select Public Dashboard Items. Select the check boxes for the reports that you want to display on the Dashboard. These reports are available only to administrators.

To add a system status report to those provided by default, place the report in the folder /Products/SAS Environment Manager/Dashboard Items. An administrator can then pin the report to the reports in their Dashboard.

To add a report to your dashboard, navigate to the report in the Content area of SAS Environment Manager. Right-click on the report in the folder tree and select Pin to dashboard from the pop-up menu. The report is added to the report gallery and is copied to the folder /user/Application Data/SAS Environment Manager/Dashboard Items.

To choose which of your reports to display on the Dashboard, at the top of the window select your_user_name ⇒ Settings. In the Settings dialog box, select My Dashboard Items. Select the check boxes for the reports that you want to display on the Dashboard.

SAS Environment Manager Functions

Accessing the Functions

To access a SAS Environment Manager page, select it from the navigation bar.

Depending on your organization’s environment and authorization policies, you might not have access to all pages. If you are a member of the SAS Administrators group and opt in to the group when you sign in, you can access all of these pages. If you are not a member of the SAS Administrators group, or you do not opt in to the group, you can access only the Dashboard, Data, and Content pages. Your organization might also use other groups that could restrict your ability to access certain pages. See “Getting Started with Identity Management” in SAS Viya Administration: Identity Management for more information.

Data

Select Data from the navigation menu to view and manage the tables, libraries, and servers that contain your data. You can select four views of your data from the View menu.

The Loaded Tables view displays information about all of the data tables that have been loaded into CAS memory. The window displays basic information about each table, such as the state (loaded or unloaded), server
location, size, and the dates when the table was created and modified. From this view, you can also unload or delete tables, manage authorization for each table, view table properties, and view information about a table’s columns. You can edit the path and description for path-based libraries.

The Libraries view displays information about the libraries defined for the current servers. The window displays basic information about each library, such as the associated server, path for the data source, and description. While in the Libraries view, you can also view a library’s properties, manage authorization for a library, view a list of all tables (loaded and unloaded) associated with a library, add or delete a library, view tables that are included in a library, and import data into a library. You can also change the path and description for a library.

The Servers view displays information about the SAS Viya servers. The window displays basic information about the servers, such as the status, host, and port. While in the Servers view, you can also view detailed properties for the server, including the libraries in the server and the users and groups that are superusers for the server. If you have the proper authorization, you can also assume the superuser access for the server, which enables you to edit the server properties.

The User Defined Formats view displays information about all of the user-defined formats that are available for the data. The window displays a list of available user-defined formats and enables you to add new formats, import new formats, or edit existing ones. This view is available only for administrators.

See “Data Administration: Reference” in SAS Viya Administration: Data for more information.

Content

Select Content from the navigation menu to display folders that contain items that users have saved. When you open the Content page, you have access to your own data in the My Folder folder. If you have administrative access, you can also view the folders of other users. From this page, you can create, delete, move, and rename folders, create shortcuts, and manage the authorization for any folder or item that you select (if you have sufficient authorization). You can also export the reports in a folder to a package file and import the reports from a package file into a folder.

Each user’s folder could contain several subfolders:

My Favorites
contains references to items identified as favorites, to enable quick access to often-used reports and data.

My Folder
contains saved items.

Application Data
contains items used by SAS Viya applications, such as items pinned to a user’s Dashboard in SAS Environment Manager. This folder exists only after you use an application to modify an object in an application (such as creating a folder in SAS Environment Manager). This folder is in the Users → user_id folder.

My History
contains a list of the most recent items that you have accessed. You can select entries in this folder to quickly return to items that you have worked with recently. This folder exists only after you perform an action that creates a history record (such as creating and saving a report in SAS Visual Analytics or modifying the description of a folder in SAS Environment Manager). This folder is in the Users → user_id folder.

See “Content Management: How To” in SAS Viya Administration: Content Management for more information.

Users

Select Users from the navigation menu to view information about users and groups, and to manage custom groups. The information displayed for users and groups comes from your organization’s directory service (such as LDAP or Microsoft Active Directory). Because this information is managed by your identity provider, it is displayed as read-only data in SAS Environment Manager.
You can also manage custom groups on the Users page. Custom groups enable you to manage special permissions for groups of users.


**Licensed Products**

Select Licensed Products from the navigation menu to view information about the licenses for your products. You can view a list of all your currently licensed products and see the expiration date, grace period, warning period, and maximum CPU count for each one. You can filter the list by any of the displayed criteria to make it easier to find products in the table.

See “Licensing: Overview” in SAS Viya Administration: Licensing for more information.

**Backup and Restore**

Select Backup and Restore from the navigation menu to back up and restore your environment.

**Configuration**

Select Configuration from the navigation menu to manage the configuration settings for SAS Viya services. You can select from a list of basic services, all services, or definitions. When you select a service, the service’s configuration properties are displayed on the right side of the window. Click to change any of the displayed properties.


**Contexts**

Select Contexts from the navigation menu to manage launcher contexts. A context is a collection of settings such as environment variables and port ranges that are used when launching a SAS Viya instance. You can also specify settings for a deployment, such as the deployment ID and the installation and configuration directories.

**Logs**

Select Logs from the navigation menu to view information about messages that have been written to the logs. You can view a chart of the number of log messages and a table of the detailed messages. By default, the chart and table reflect the messages logged during the previous 30 minutes, but you can select a different time range. You can also search for a specific message or filter the messages by level and source.


**Note:** This page is not available for a tenant administrator.

**Machines**

Select Machines from the navigation menu to monitor the machines in your environment and the service instances running on those machines. You can view this information:

- charts of the percent of CPU utilization and memory used for each machine
- status of predefined checks (such as disk or memory usage) for the selected machine
- service instances running on the selected machine, along with their current state
- properties for the selected server

See “Monitoring: How to (SAS Environment Manager)” in SAS Viya Administration: Monitoring for more information.

Note: This page is not available for a tenant administrator.

Scheduling

Select Scheduling from the navigation menu to schedule jobs. You can select time events to use as triggers to start jobs. You can run scheduled jobs immediately, edit schedules, and unschedule jobs. See “SAS Viya Administration: Scheduling” in SAS Viya Administration: Scheduling for more information.

Domains

Select Domains from the navigation menu to manage domains used for authentication, encryption, and connection.

See “About the Domains Page” in SAS Viya Administration: External Credentials for more information.

My Passwords

Select My Passwords from the navigation menu to manage passwords used to access domains in your system. See “Manage Personal Passwords” in SAS Viya Administration: External Credentials for more information.

Mobile Devices

Select Mobile Devices from the navigation menu to manage how mobile devices access certain reports. You can use either a blacklist or a whitelist. If you use a whitelist, all mobile devices are blocked except for those listed in the whitelist. If you use a blacklist, all mobile devices are allowed except for those listed on the blacklist. The Mobile Devices page displays a table of recent access attempts by mobile devices, the devices listed in the blacklist, and the devices listed in the whitelist. The page indicates whether the blacklist or the whitelist is being enforced, and enables you to select which list to use. You can also add devices to either list.

See “Mobile: How To” in SAS Viya Administration: Mobile for more information.

Rules

Select Rules from the navigation menu to manage access to specific locations and content.


Quality Knowledge Bases

Select Quality Knowledge Bases from the navigation menu to view and manage Quality Knowledge Bases, which are collections of files that store data and logic that define data quality operations such as parsing, standardization, and matching. This area is available only if you have licensed SAS Data Quality. See “SAS Viya Administration: QKB Management” in SAS Viya Administration: QKB Management for more information.
Tenants

If you are the provider administrator of a multi-tenant environment, select Tenants from the navigation menu to view information about tenants and tenant services.

How To

Work with Information Displayed in Tables

When viewing information that is displayed in a table in SAS Environment Manager, use these tips to control how data is displayed:

- To sort a table, right-click on a column header and select Sort. You can sort the table by the contents of the column, or add the column as a secondary sort criteria.
- To reorder the columns in a table, click on the column heading and drag the header to the new location.
- To prevent a column from being reordered, right-click on the column heading and select Freeze. The column is moved to the left of the table and cannot be reordered. To enable the column to be moved, right-click on the header and select Unfreeze.
- To select which columns are displayed, click on the Column icon on the right side of the table header. The Columns window displays a list of hidden columns and displayed columns. Select the columns that you want to display and click OK.

Note: Not all of the tables in SAS Environment Manager use all of these features.

Manage Settings

Access Settings

To access the Settings window, select your user name in the upper right of the SAS Environment Manager window. Select Settings from the pop-up menu.

Set Locale

The locale specifies the language that is used for SAS Environment Manager text. It also specifies how text is sorted and the format used for displaying numbers and dates.

To specify the locale, select Global > Region and Language. Select the locale in the field Locale for regional formats and sorting. The default value is Browser locale, which specifies that the locale setting is inherited from the web browser that you use to display SAS Environment Manager. The new locale setting takes effect after you sign out and sign back in to all of the SAS applications that are running.

Choose a Theme

The theme is the collection of colors, graphics, and fonts used in SAS Environment Manager. Use the Theme options to select the default theme (as chosen by your system administrator) or another available theme. The theme that you choose takes effect after you close the Settings window.
Reset Messages
In SAS Environment Manager, some warning and confirmation messages include an option to not see the message again in the future. Select Global ⇒ General and click Reset Messages to clear all of those settings and to view all warning and confirmation messages.

Manage Accessibility Settings
Accessibility features are part of the global settings, which are applied to all SAS web applications. Accessibility features are not specific to SAS Environment Manager.

The following accessibility features are available:
- Enable sounds
  Issue sounds for actions in the application
- Enable visual effects
  Enable visual effects such as fades and wipes.
- Rearrange column content when space is limited
  Rearrange the information in a column if there is not enough space to display all of the information. If you are using a screen reader, clear this check box. Clearing the check box prevents data from flowing into adjacent columns, and enables screen readers to navigate tables more consistently.
- Invert application colors
  Use light-colored text on a dark background, which makes the user interface easier to see.
- Customize the focus indicator settings
  Makes the focus indicator easier to see by adjusting the color, thickness, and opacity.

What is Available to a Tenant Administrator?
If you are the tenant administrator in a multi-tenant system, these functions are not available:
- Licensed Products
- Tenants
- Logs
- Machines

By default, the Dashboard for a tenant administrator contains these items:
- CAS System Health tile
- Mobile Devices tile
- Top 5 Custom Groups tile
- Personal reports that are pinned to the Dashboard

Other Dashboard items that are listed in this document are not available to tenant administrators.