About Reports in SAS Visual Analytics

Using SAS Visual Analytics, you can drag and drop table, graph, control, analytic, container, and content objects to create a well-designed report (or dashboard). You can add text, images, and page controls to reports. A report can have one or more pages. Each page can have a different layout and contain different objects. For more information about specific objects, see “About Objects” in SAS Visual Analytics: Working with Report Content.

Whether you work with text, tables, or linear regressions, all objects are added to a page in a report. Modeling objects are available if either the SAS Visual Statistics add-on or both SAS Visual Statistics and SAS Visual Data Mining and Machine Learning add-ons are licensed at your site. (The SAS Visual Data Mining and Machine Learning add-on cannot be licensed without the SAS Visual Statistics add-on.) For more information about models, see “Modeling Information” in SAS Visual Analytics: Working with SAS Visual Statistics or “Modeling Information” in SAS Visual Analytics: Working with SAS Visual Data Mining and Machine Learning.

When you design a report, keep in mind that it might look slightly different on a mobile device or in the SAS Report Viewer (the report viewer). For example, the layout of the tiles in the treemap is dependent on the size of the display area. This means that the same treemap might appear slightly different in SAS Visual Analytics than it does in the report viewer or on a mobile device. For information about using the report viewer, see SAS Report Viewer Documentation. For information about the mobile app, see documentation and videos on the SAS support site.

Understanding the SAS Visual Analytics Interface

About the Welcome Window

After you log on to SAS Visual Analytics, the Welcome to SAS Visual Analytics window is displayed. You can choose to start working with data, a new report, or an existing report.

Some users prefer to start working with data, and others want to start with designing the report. If your site already has lots of reports, you might want to start with an existing report. The Welcome to SAS Visual Analytics window gives you the flexibility to work the way that is best for you.
Your First Look at the Interface

There is one interface in which you design reports, explore data, and run interactive, predictive models in SAS Visual Analytics. Note that the models require separate licenses for SAS Visual Statistics and SAS Visual Data Mining and Machine Learning, which are add-ons to SAS Visual Analytics.

Here are the features of the interface:
The application bar at the top enables you to access other SAS applications. You can search for items, view a list of your recent items, access help, update your settings, and sign out of SAS Visual Analytics. For more information about application-specific settings, see “Modify SAS Visual Analytics Settings” on page 28. For more information about search and global settings, see General Usage Help for SAS Viya Web Applications.

The menu bar displays the report name; enables you to undo, redo, and save; and access other menu options.

The left pane enables you to work with data, add objects, and use the report outline to organize your content.

The canvas is the workspace for building a report. The appearance of the canvas is affected by the report theme.

The right pane enables you to work with details about the report, its pages, and its objects.

### About the Canvas

The canvas is the workspace for building a report. It enables you to work with pages and objects in your report. Above the canvas, there are tabs for pages. For more information, see “Adding Pages” on page 9.

The following icons are available to help you manage report content on the canvas:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🔷️</td>
<td>undo changes to your report.</td>
</tr>
</tbody>
</table>
**Icon** | **Description**
---|---
redo changes to your report. |
saves your report. |
create a new report, open an existing report, save, view a report in SAS Report Viewer (the report viewer), print, distribute, share, and reopen a report. This menu lets you enable or disable auto-refresh, object overlays, and layout guides. This menu also enables you to expand or collapse report controls and page controls and view the Actions Diagram.

---

**About the Side Panes**

In general, data-related tasks are initiated from the left pane and presentation-related tasks are initiated from the right pane.

The side panes can be pinned or unpinned. When unpinned, the pane opens automatically when you select it and it closes when you finish using it. When pinned, the pane can be collapsed and expanded, but remains displayed while you use it. By default, the left pane is unpinned, and the right pane is pinned.

Here are some key points about the side panes:

- You can move side panes to a different location on the canvas by clicking and dragging the ⌘ indicator to move the pane. (This indicator is visible when the pane is unpinned or pinned and collapsed.)
- Click ✅ to pin a pane displayed while you work on your report. A box around the pin indicates that the pane is pinned.
- You can use the Restore pane location setting to return the side panes to their default locations. For more information, see “Modify SAS Visual Analytics Settings” on page 28.

The following table lists the panes for data-related tasks:

<table>
<thead>
<tr>
<th>Name</th>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td><img src="data-icon.png" alt="Icon" /></td>
<td>enables you to select a data source (or data sources) and the data items for your report. You can add, import, remove, change, or refresh a data source using the <img src="data-icon.png" alt="Icon" /> icon beside the data source name field. This icon enables you to join data sources, add a data view, apply data source filters, and more. In addition to using the data items in the data source that you selected, you can use the <strong>New data item</strong> menu to create new data items. For example, you can define a hierarchy, create a custom category, define a calculated item, add a geography item, or add a parameter. If SAS Visual Statistics is licensed at your site, then additional data items are available. For example, you can define interaction effects, spline effects, and partitions. For more information, see “About the Data Pane” in <em>SAS Visual Analytics: Working with Report Data</em>.</td>
</tr>
</tbody>
</table>
Objects provides a list of the tables, graphs, controls, containers, and other objects that can be used in a report or dashboard. The modeling objects, which are at the bottom of the Objects pane, are available if you have licensed SAS Visual Statistics and SAS Visual Data Mining and Machine Learning.

For more information about objects, see the following:
- “Gallery of Objects” in SAS Visual Analytics: Reference
- “About Objects” in SAS Visual Analytics: Working with Report Content

Outline enables you to work with pages and objects in your report in an outline format. For more information, see “Use the Outline Pane” on page 6.

The following table lists the panes for presentation-related tasks:

<table>
<thead>
<tr>
<th>Name</th>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Options</td>
<td>🌍</td>
<td>lists the options for the currently selected report, page, or object. This pane enables you to specify styles for a selected object. The options available depend on the selected object. When the report options are displayed, the report theme can be modified. For more information, see “About SAS Report Themes” on page 7. Here are some key points about the Options pane:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- If an object is not selected on the canvas, then the options are for the page or report. - When a page is selected, its name is listed, as well as other page options, such as style and layout. - When an object is selected, its name, title, and description are listed. Information that is specific to the object type, such as the axes and legend, is listed. For more information, see “Using the Options Pane” in SAS Visual Analytics: Working with Report Content.</td>
</tr>
<tr>
<td>Roles</td>
<td>🌍</td>
<td>enables you to add or update data role assignments in a selected object that uses a data source. For more information, see “Working with Data Role Assignments” in SAS Visual Analytics: Working with Report Data.</td>
</tr>
<tr>
<td>Actions</td>
<td>🌍</td>
<td>enables you to create links, which can be filters or linked selections. You can define object, page, report, and URL links. You can access the Actions Diagram by clicking View Diagram in the Actions pane. For more information, see “Working with Report Actions and Links” in SAS Visual Analytics: Working with Report Data.</td>
</tr>
<tr>
<td>Name</td>
<td>Icon</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>Rules</td>
<td>en</td>
<td>enables you to create rules to highlight results based on specified values. There are report-level display rules and object-level display rules. You can create alert notifications for a display rule. For more information, see “Working with Display Rules” in SAS Visual Analytics: Working with Report Data.</td>
</tr>
<tr>
<td>Filters</td>
<td>en</td>
<td>enables you to add one or more filters to the selected object. For more information, see &quot;Working with Report Filters&quot; in SAS Visual Analytics: Working with Report Data.</td>
</tr>
<tr>
<td>Ranks</td>
<td>en</td>
<td>enables you to add rankings to objects. For example, you might want to see the top 10 products that sold last year. For more information, see “Ranking Values in Reports” in SAS Visual Analytics: Working with Report Data.</td>
</tr>
</tbody>
</table>

**Use the Outline Pane**

The **Outline** pane enables you to work with pages and objects in your report. You can add, rename, and hide or unhide a page. You can move objects from one page to another. When you right-click an object in the **Outline** pane, you can add a title; maximize, delete, duplicate, and move the object; or add a link. You can save an image, export data, change object types, and print and share an object.

Here is an example of the **Outline** pane:

```
Outline

Search

+ New Page

- Page 1
  - Bar Chart 1
  - Line Chart 1
  - List Table 1

- Page 2
  - Crosstab 1
```

Here are some key points about the **Outline** pane:

- The enables you to click and drag the selected page or object to a new location in the report.
- You can double-click a page name or object name in the **Outline** pane to rename it.
- You cannot maximize controls or containers using the **Outline** pane.
- You cannot access report prompts or page prompts using the **Outline** pane.
About the Report Layout

The default report layout enables you to place objects directly next to other objects. The objects cannot overlap. All objects on the page are sized to fit on the user’s screen. If you adjust the size of an object, then the other objects automatically resize to ensure that all objects continue to fill the entire screen.

If you use container objects in your report, they have additional layout options. By default, when you resize an object, the borders automatically move based on a grid. The grid is 4 x 8 for standard layout and 10 x 10 for precision layout. While resizing an object, pressing and holding the Ctrl key increases the resolution of the grid. To disable the grid (layout guide), select Disable layout guides from the main menu. For more information, see “Working with Containers” in SAS Visual Analytics: Working with Report Content.

TIP The following SAS Global Forum paper is a useful resource for learning about report layouts: Tips and Techniques for Designing the Perfect Layout with SAS® Visual Analytics. This paper pertains to the 8.2 release, but the concepts are applicable to later releases.

About SAS Application Themes

An application theme defines the overall look and feel of a SAS application. It is the collection of colors, graphics, and fonts that appear in the application. You can use an application theme to customize SAS Visual Analytics so that it conforms to the rest of your company’s software environment.

SAS provides the following application themes: Illuminate (the default), Inspire, and High Contrast. (A system administrator can change the default application theme.) Any of these application themes can be used as a basis to create an additional custom theme using SAS Theme Designer.

Note: If you have special requirements for your application theme, then contact your system administrator about using SAS Theme Designer to create custom themes. For more information, see SAS Theme Designer: User’s Guide.

An application theme is different from a report theme, which contains settings that control the color selections for different elements of a SAS report. For more information, see “About SAS Report Themes” on page 7.

About SAS Report Themes

A report theme applies a consistent look and feel to SAS reports.

SAS Visual Analytics provides the following report themes: Marine (the default), Aqua, and High Contrast. (A system administrator can change the default report theme.) Marine is the default report theme for all new reports. If you want an existing report to use the Marine report theme, you can change the report theme using the Options pane.

TIP The High Contrast report theme has a dark background with high-contrast foreground elements to meet the needs of users with low vision.

Note: Your site might have custom report themes. Custom report themes are created in SAS Theme Designer. For more information, see SAS Theme Designer: User’s Guide.
To change the report theme for a single report:

1. If the Options pane is not already displayed, click 📁.
2. Click ▼ to select the report name. The report options are displayed.
3. Expand the Style heading, and use the Report theme drop-down list to select a new report theme.

Alternatively, you can use SAS Visual Analytics settings to specify which report theme you want to use for all of your new reports. For more information, see “Modify SAS Visual Analytics Settings” on page 28.

Create a New Report

There is no single process for creating a new report in SAS Visual Analytics. For example, some users select their data source (or data sources) before they add the objects, and other users add objects to the canvas and then select their data source (or data sources). Some users choose to update the options for their reports. And, some users choose to view the detail data for their objects using maximize mode. The following list of steps is one way that you can create a new report.

Note: These steps assume that data has been brought into the SAS Cloud Analytic Services (CAS) environment and is available. For information about importing your own data, see SAS Data Explorer: User’s Guide.

1. In the Welcome to SAS Visual Analytics window, click Data.
   Using the Open Data Source window, select a data source. You can select additional data sources using the Data pane. For more information about data and reports, see SAS Visual Analytics: Working with Report Data.
2. Click 📐 to open the Objects pane. Add objects by dragging and dropping them onto the canvas. Alternatively, you can create an automatic chart by selecting data items in the Data pane, and dragging and dropping them onto the canvas. (An automatic chart can be modified.)
3. Add data items to objects by dragging data items from the Data pane and dropping them onto the object. For a definition and picture of each object, see “Gallery of Objects” in SAS Visual Analytics: Reference.
4. (Optional) Modify the report.
   - Modify data role assignments. For more information, see “Add Data Role Assignments to an Object” in SAS Visual Analytics: Working with Report Data.
   - Add more objects. For more information about objects, see SAS Visual Analytics: Working with Report Content.
   - Update the options for the objects using the Options pane. For more information, see “Using the Options Pane” in SAS Visual Analytics: Working with Report Content.
   - Create or modify advanced data items (for example, hierarchies or geographic data items). For more information, see “Working with Data Items in a Report” in SAS Visual Analytics: Working with Report Data.
   - Create or modify display rules for objects. For more information, see “Working with Display Rules” in SAS Visual Analytics: Working with Report Data.
- Switch to maximize mode to view detail data or compare objects. For more information, see “Maximizing Objects” in SAS Visual Analytics: Working with Report Content.
- Add a rank to an object. For more information, see “Ranking Values in Reports” in SAS Visual Analytics: Working with Report Data.

**Note:** If you add a graph to your report, and there is not enough space for both the graph and the legend to display, then the legend will be collapsed or hidden.

5. (Optional) Add a new page (or pages) to the report. For more information, see “Adding Pages” on page 9.
6. (Optional) View or change the report options using the Options pane.
7. Save the report. For more information, see “Save a Report” on page 12.
8. (Optional) View your report in the SAS Report Viewer (the report viewer) by clicking , and then selecting View report.

**TIP** To return to designing your report, click in the report viewer, and then select Edit report.

9. (Optional) Print your report. For more information, see “Printing Reports and Objects” on page 14.
10. (Optional) Email your report. For more information, see “Email a Report” on page 24.

---

**Adding Pages**

**Overview of Pages**

Any report in SAS Visual Analytics can have multiple pages. Multiple pages can be used to present different views of the data. Each page can have one or more data sources. You can have one or more objects on a page. There is no limit to the number of pages in a report.

A page is not required to contain any objects. For example, you might have a report that you use only as a template to create other reports if you want all reports to have a similar appearance. A template-like report might contain data sources, calculated items, global data filters, and display rules, but it might not contain objects.

You can add a link from an object to a specific page in the current report. For more information, see “Create a Manual Link to a Page, Another Report, or a URL” in SAS Visual Analytics: Working with Report Data.

Page prompts are controls that are placed in the special row area above the objects on the canvas. A page prompt enables the user to select a value to filter data on that page. For more information, see “Use a Control to Create a Page Prompt” in SAS Visual Analytics: Working with Report Content.

A report can have one or more hidden pages, which are visible only to the report designer in SAS Visual Analytics and report viewers via a link. A hidden page is identified by a shaded background on the page tab. Hidden pages can have one or more objects. You must provide a link to a hidden page from an existing object to display a hidden page in a new window in the report viewer.

**Note:** Page prompts are not allowed on hidden pages.

When a report has a hidden page, you can provide additional information to the user who is viewing the report. For example, you might want a list table to provide additional information for a bar chart, or you might want to provide additional text about what is displayed in the data for a particular object. In the SAS Report Viewer (the report viewer), a user double-clicks the data (for example, a bar, a bubble, a pie slice, a table row, and so on) in
an object that is linked to a hidden window, and then the additional information is displayed in a new window in
the report viewer.

TIP A hidden page that is not linked to from another part of the report is available only to the user who
designed the report in SAS Visual Analytics. This enables the hidden page to be used for personal notes or
other miscellaneous documentation about the report.

Add a Page to a Report

To add a new page to a report, click + to the right of the first page tab (or the last page tab that was added) in
the report. The new page appears to the right of the existing page (or pages).

Alternatively, you can click New Page in the Outline pane to add a new page to your report.

You can specify options for a new page. For example, you can specify the Padding, Automatically refresh
page, and Avoid scrollbars options, as well as other options. For more information, see “Specify Options for a

Add a Hidden Page to a Report

To add a new hidden page:

1 Click + to the right of the first page tab (or the last page that was added) in the report. The new page
appears to the right of the existing page (or pages).

2 Click the ▼ on the page tab, and then select Hide page. The background of the page tab is shaded to
indicate that the page is hidden.

Alternatively, you can change an existing page to a hidden page. Do one of the following:

- In the Options pane, expand the General heading, and then select the Hide and link to page as pop-up
  window check box. For more information, see “Specify Options for a Page” in SAS Visual Analytics: Working
  with Report Content.

- In the Outline pane, right-click the page name, and select Hide page.

Note: Links from a hidden page are not supported. If an existing page with page links or report links is changed
to a hidden page, then those links are removed.

Here is an example of four page tabs where the third page is hidden.

Specify the Size of a Hidden Page

For hidden pages, you can specify the size of the window that is displayed in the report viewer.

1 If the Options pane is not already displayed, click ☰.

2 Click ▼ to select the page name. The page options are displayed.

3 Expand the General heading, and then select the Hide and link to page as pop-up window check box.

4 (Optional) Specify the Window width (percentage) and Window height (percentage).

5 (Optional) If you want the page to refresh automatically, select Automatically refresh page.
Change a Hidden Page to a Regular Page

To change a hidden page to unhidden, do one of the following:

- Click the ☐ on the page tab, and then click **Unhide page**.
- In the **Options** pane, expand the **General** heading, and then clear the **Hide and link to page as pop-up check box**.
- In the **Outline** pane, right-click the page name, and select **Unhide page**.

Reorder Pages

To change the order in which pages are displayed, you can drag the page tab to a new position in the list of tabs. Alternatively, you can use the **Outline** pane to change the order of pages. Use the ‖ to click and drag the selected page to a new location.

Rename a Page

To rename a page, do one of the following:

- Click ☉ on the page tab, and then select **Rename page**. Edit the name when the field is displayed.
- Double-click the page name on the tab. Edit the name when the field is displayed.
- In the **Options** pane, expand the **General** heading, and then edit the **Name** field.
- In the **Outline** pane, double-click the page name, and then edit the name.

Duplicate a Page

To duplicate a page, click ☉ on the page tab, and then select **Duplicate page**. All of the objects on the page are also duplicated.

Move an Object to Another Page

To move an object from one page in a report to another page, do one of the following:

- In the **Outline** pane, select the object that you want to move, and then click and drag the || indicator to move the object to a different page in the outline.
- On the canvas, select the object that you want to move. Click and drag the ← indicator, and drop the object onto an existing page tab in the report.
  
  To add the object to a new page, on the canvas, select the object that you want to move. Click and drag the ← indicator, and drop the object onto ➕ to the right of the last page tab that was added.
- You can click ☉ on the object’s toolbar, and select **Move to**. Then, select an existing page or **New page**. If there is only one page in your report, then only **New page** is available.
- On the canvas, click ☉ on the object’s toolbar, press the Alt key, and then select **Duplicate on new page**.

For more information, see “Duplicate an Object” in SAS Visual Analytics: Working with Report Content.
**Delete a Page**

To delete a page from a report, click : on the page tab, and then select **Delete page**. Alternatively, you can delete a page using the **Outline** pane. Select the page that you want to delete, and then press the Delete key.

**Save a Report**

The default location for the first save of a report is **My Folder**. After that, the default save location is the most recently accessed folder.

Here are some key points about report names:
- Report names are limited to 100 characters and cannot include these characters: / \.
- Report names cannot have leading or trailing spaces.

Reports in SAS Visual Analytics are saved when you click the on the menu bar, or click : , and then select either **Save** or **Save As**. A saved report contains at least one page. Typically, a page uses data items from a data source to perform queries. The page displays the results with one or more objects (for example, a table, a graph, a control, and so on). For more information about pages, see “Adding Pages” on page 9.

**Note:** When you use the **Save as** option to save a copy of a report, any existing report distributions are not saved with the copy. If the original report has alert notifications for display rules, the alert conditions are copied, but the recipients are not. For more information about alert notifications and display rules, see “Working with Display Rules” in SAS Visual Analytics: Working with Report Data.

**Open a Report**

To open a report in SAS Visual Analytics:

1. Choose one of the following:
   - In the Welcome to SAS Visual Analytics window, click **Open**. The Open window is displayed.
   - If the SAS Visual Analytics canvas is displayed, click : , and then select **Open**. The Open window is displayed.

2. Select a report name, and then click **Open**.

   **Note:** When you open a saved report that has multiple data sources, SAS Visual Analytics displays the data source that was displayed in the **Data** pane when the report was saved. And, if there are multiple pages, the first page of the report is displayed.

Alternatively, you can open a report using SAS Drive.

You can use the application bar in SAS Visual Analytics to open a report that you have recently edited or viewed. Click  on the application bar. In the Recent Items window, select the report that you want to open.

**Note:** The Recent Items window can include items that you opened in other SAS applications. The list is not restricted to SAS reports unless you selected the **Current application only** check box.
Use an Autosaved Report

If your previous session was interrupted before you had a chance to save the report, SAS Visual Analytics provides you the opportunity to use an autosaved version of your report. Reports are autosaved every five seconds.

Here is an example of the message that is displayed if your session was interrupted:

```
SAS Visual Analytics

Your previous session was interrupted before your work could be saved. Do you want to use the autosaved version of your work?

Yes  No
```

In addition, if you open a report that has unsaved changes, SAS Visual Analytics provides you the opportunity to use the latest (autosaved) version.

Here is an example of the message that is displayed if a report has unsaved changes:

```
SAS Visual Analytics

This report has unsaved changes. Do you want to use the latest (autosaved) version?

Yes  No
```

Viewing a Report

Overview of Viewing Reports

You can view SAS Visual Analytics reports using either the SAS Report Viewer (the report viewer) or the SAS Visual Analytics Apps. Here are some ways to view a report:

- To view a report that you are currently editing, click  
  , and then select View report. Your report is displayed in the report viewer. For more information about the report viewer, see SAS Report Viewer Documentation.

- To open a report from SAS Drive, click  
  in a report, and then select Edit. If you prefer to open the report in the report viewer, click  
  in a report, and then select View.
To open a report on a mobile device, launch the SAS Visual Analytics App, connect to a server, navigate to the report, and open it. Instructions vary by device. See the SAS Visual Analytics Apps documentation and videos on SAS support site.

Note: The SAS Visual Analytics Apps are available from Apple App store, Google Play, and Microsoft Store.

### Accessibility for Viewing Reports

SAS provides the following report viewers:

- SAS Report Viewer (a browser-based version of the report viewer)
- SAS Visual Analytics App for Android
- SAS Visual Analytics App for iOS
- SAS Visual Analytics App for Windows 10

The type of accessibility support that is provided by each report viewer varies. Each report viewer has particular strengths. Depending on the type of support that you require, you might prefer one report viewer over the others.

For more information about the accessibility feature of the report viewers, see the following:

- SAS Report Viewer: Accessibility Features
- SAS Visual Analytics App for iOS: Accessibility Features
- SAS Visual Analytics App for Android: Accessibility Features
- SAS Visual Analytics App for Windows: Accessibility Features

**TIP** In these documents, a Version list is located above the title. Select the version of the software that you have installed.

---

### Printing Reports and Objects

#### Overview of Printing

You can create a PDF for a report, a page in a report, or an object. The PDF can then be printed. By default, an appendix is included in the PDF if the report, page, or object has descriptions, filters, warnings, errors, or display rule legends.

Here are some considerations for printing:

- Data-driven content objects and web content objects are not included in the PDF.
  
  To print web content, configure the webContentRendererLink property for the SAS Viya Report Renderer Service. For more information, see “Report Renderer Service” in SAS Viya Administration: Configuration Properties.

- Hidden pages, report prompts, page prompts, and prompt containers are not included in the PDF. However, any filters that are applied to an object are displayed in an appendix.

- By default, containers print only the currently selected object.

- If a list table or a crosstab has scroll bars, then some of the scrolled content might not be printed. However, more columns or rows might be printed than are visible in SAS Visual Analytics. The print feature attempts to fill the space available on the page in the PDF.
A list table or crosstab that is printed from SAS Visual Analytics might show more rows than when it is printed after the report has been distributed. This happens because the state of the report is taken into consideration when it is printed. The print feature attempts to match what the user sees in SAS Visual Analytics. When you print a report that has been distributed, there is no report state for the print feature to match.

If an object has a high-cardinality filter, and the Include appendix information option is selected, then the filter description might be truncated in the printed appendix.

A crosstab with more than 5,000 selected cells cannot be printed.

There can be differences in the fonts in a printed report if the fonts that are used to create a report do not match the fonts that are available on the server that generates the PDF.

If you want to print from SAS Visual Analytics using Mozilla Firefox, you must have Firefox configured to open a link in a new tab instead of in a new window. Instructions for making this change might vary between Firefox releases, so refer to the Firefox documentation. As an alternative, you can use a different supported browser, such as Microsoft Internet Explorer or Google Chrome.

Depending on your locale, a PDF might not render correctly in Microsoft Edge. Try using Adobe Reader as the PDF viewer.

An image URL that requires authentication cannot be printed.

**Print a Report, a Report Page, or an Object**

1. With the report open on the canvas, click on the menu bar, and then select **Print**. The Print to PDF window is displayed.

   **TIP** To print a page, click the on the page tab, and then select **Print page**.

   **TIP** To print an object, click the on the object toolbar, and then select **Print object**. This option is not available for objects in the report prompt control area, in the page prompt control area, or in a container.

2. In the Print to PDF window, specify the options that you want for **Document Setup**.

   **Note:** The **Document Setup** options are saved with the report and are used when you distribute it to other users.
Here are some details about the setup options:

- **Show empty rows and columns in table** applies to both list tables and crosstabs.
- **Include appendix information** is selected by default if the report, page, or object has parameters, descriptions, filters, warnings, errors, or display rule legends.

When the **Include appendix information** option is specified, and the report, page, or object has parameters, descriptions, filters, warnings, errors, or display rule legends, then an appendix is created. Each object that is selected to be included in the PDF is automatically assigned a value so that you can reference that object in the appendix. For example, suppose that you select two objects on the **Select Objects** tab. The first object is assigned the value A1.1, and the second object is assigned the value A1.2. Suppose that the first object has a description and the second object has a filter that has been applied. The first object’s description is displayed in the appendix under the A1.1 heading. The second object's filter is displayed in the appendix under the A1.2 heading.
- **Expand clipped and non-visible content** enables you to see all of the content for tables, crosstabs, gauges, and containers. This includes content that is only partially available in the layout of the page. Each object is displayed on a separate page at the end of the report.

- If you select **Include cover page**, then the cover page prints the name of the report (or the label if the report has not been saved), the date of the print request, the user name, and the number of pages. Use the **Cover page text** field to add text to the cover page.

3. (Optional) For reports and pages, you can specify which objects you want to print by using the **Select Objects** tab. You can select report pages, objects, or both.

   **Note:** The **Select Objects** options are not saved with the report.

4. Click **Print**. The PDF is displayed in a browser.
Create a Report Summary

Overview of Report Summaries
You can create a summary for your report. The summary can be displayed:
- When you preview the report in SAS Drive
- In report distribution emails
- In SAS Report Viewer and in SAS Visual Analytics Apps
Report summaries are particularly useful if your audience includes individuals with visual impairments. The report summary can easily be read by screen readers.

Create a Report Summary
To create a report summary:

1. In the Options pane, select the name of your report from the drop-down list.
2. Expand the Summary option.
3. Enter summary text. You can edit summary text by using the following methods:
   - Enter text in the text box.
   - Enter Apache Velocity syntax in the text box. The summary text is an Apache Velocity template. For more information, see the Apache Velocity User Guide at http://velocity.apache.org.
   - Click , and then select a data element or a label in an object. Here are some examples of elements or labels that you can select:
     - Cells in a list table
     - Bars in a bar chart
     - Slices in a pie chart
     - Axis labels
     - Object titles

References to data element values are dynamic and based on the structure of the object. For example, if you select the first bar of a bar chart, then the summary always displays the value of the first bar in the bar chart. The value that is displayed might be different if you change the sorting of the chart, if you change the data source, if you apply filters or ranks to the chart, and so on.

Here are some important points about using data element values in the summary:
- Data element values are displayed without any formatting. Date and datetime values are not easily understood without formatting.
- If a reference to a data element is no longer working (for example, if you remove the data item or if you change the object type), then the value is displayed as {{REFMISSING}}.
- If you select a total from a list table, the reference is to the table cell. If the number of rows in the table changes, then the reference no longer displays the total; it displays whatever is in the table cell.
- Some objects do not support selection with the point and click tool. When you move the cursor over an object that does not support selection, the cursor changes to indicate that the selection is disabled.
You cannot reference hierarchy values in a report summary.

If a data element’s value is suppressed or if it represents an “All Other” grouping, the value is not displayed in the summary. A token (~S or ~O) is displayed instead.

4 Click Preview Summary to preview the current summary.

The summary is saved when you save your report.

Distributing Reports

Overview of Distributing Reports

You can distribute reports using SAS Visual Analytics. Distributing reports automates the process of delivering updated content to report users. You can distribute reports once or at recurring intervals, such as daily, multiple times daily, weekly, monthly, or yearly. In addition, distributing reports gives you the ability to generate reports during non-peak hours.

Here are some key points about distributing reports:

- You must be an application administrator to distribute reports.
- The Document Setup options for printing that you save with a report are used when you distribute the report to other users.
- You must open a report to set up its distribution.
- You can choose to distribute a report to a set of users, groups, or both.
- By default, the email for a report distribution contains a link to the report, an attached PDF, and a summary. You can specify whether you want to include a PDF, a summary, or both.
- The distributed report is the last saved copy of the report.
- If you save a copy of a report with a report distribution, the report distribution is not saved with the copy.
- If you distribute reports to multiple locales or if you receive distributed reports, then you can specify your Region and Language settings in the global SAS settings. Report distribution uses the Locale for offline processes setting. It does not use the Locale for regional formats and sorting setting.

For more information about global settings, see General Usage Help for SAS Viya Web Applications.

The PDF that is generated by report distribution is based on the default report state, which is the state of the report when the report designer saved it. This is different from the view state of a report, which can include the results of a user making changes to controls, navigation, drill states, and so on, in SAS Report Viewer.

The Distribute Report window enables you to schedule, unschedule, run now, and delete the distributions that you are authorized to view.

Note: A distribution email is delivered at least once to any user who has ever logged on to the SAS session that contains the report distribution. If a user logs on to a new session, they will receive the next email distribution if it is run again.

Schedule a New Report Distribution

1 Open the report that you want to distribute.

2 Click ‹ ; , and then select Distribute report. The Distribute Report window is displayed.
Click [3]. The New Report Distribution window is displayed.
Specify a **Distribution name**. The default name is the report name.

- Click the **Recipients** field. The Choose Members window is displayed. Specify the **Selected members**, and then click **OK**.

- (Optional) Enter an **Email subject**. If you leave this field blank, the subject line says **This is a distributed report email**.

- (Optional) Enter an **Email message**.

- (Optional) Clear the **Include PDF attachment with email** check box if you do not want to distribute the report in PDF.

- (Optional) Clear the **Include summary with email** check box if you do not want to distribute a summary. The summary can include text and dynamic values that are derived from objects in the report. For more information, see “Create a Report Summary” on page 18.

- Click **Add** to enter the **Schedule**. The Add Schedule window is displayed.

4. Specify the **Frequency**, **Interval**, **Time**, **Time zone**, **Start date**, and **End** for your report distribution’s schedule.
Here is an example of the Add Schedule window for a report that will be distributed at 5:00 PM on the last day of every month.

![Add Schedule Window]

Click **Save** to return to the New Report Distribution window. The ![Symbol] indicates that the schedule is active. For example, suppose that your company is closed for a week to observe a national holiday. You can use the indicator to deactivate the distribution schedule during that week. When the holiday is over, you can make the schedule active again.

5 Click **OK**. The report distribution is displayed in the table in the Distribute Report window.

6 Click **Close**.

**Distribute a Report Immediately**

1 Open the report that you want to distribute immediately.

2 Click ↓, and then select **Distribute report**. The Distribute Report window is displayed.

3 Select the name of the distribution that you want to activate in the list.

4 Click ➤ in the Distribute Report window to distribute the report immediately.
5 Click OK.

Edit a Report Distribution

1 Open the report for which you want to edit the distribution.
2 Click , and then select Distribute report. The Distribute Report window is displayed.
3 Select the name of the report distribution that you want to edit in the table.
4 Click . The Edit Report Distribution window is displayed.
5 Make changes to the report distribution.
6 Click OK to save your changes.

Unschedule a Report Distribution

1 Open the report for which you want to unschedule the distribution.
2 Click , and then select Distribute report. The Distribute Report window is displayed.
3 Select the name of the distribution that you want to unschedule in the table.
4 Click . The Edit Report Distribution window is displayed.
5 Click to deactivate a schedule in the Edit Report Distribution window.
6 Click OK to save your changes.

Delete a Report Distribution

1 Open the report for which you want to delete the distribution.
2 Click , and then select Distribute report. The Distribute Report window is displayed.
3 Select the name of the distribution that you want to delete in the table.
4 Click . Then, click Yes in the confirmation message that is displayed.
5 Click Close.

Sharing Reports and Objects with Other Users

Overview of Sharing

Sharing enables you to make report content available to other users. In SAS Visual Analytics, you can share reports via email and links. You can share links to an object in a report. These types of sharing do not affect a user’s access.

The SAS Visual Analytics implementation of sharing is different from the following features:

Sharing of generic (formerly SAS Data Management) projects, which is achieved by assigning owners and members. For more information, see “Projects” in SAS Drive: Getting Started.

The implementation of sharing that is provided by the authorization service. For more information, see “Share” in SAS Drive: Getting Started.

Email a Report

You can email a link to a report using SAS Visual Analytics. Here are some key points about what happens when a recipient clicks the link to a report:

- If the recipient has already signed in to SAS, the report is displayed when the report link is clicked.
- If the recipient is not signed in to SAS and guest access is enabled, they are prompted for a user ID and password. Recipients can sign in as a guest by clicking Guest on the standard sign-in window for SAS applications.
- If the recipient opens the email message on an iOS or Android mobile device, and then clicks the link, the report is displayed using the SAS Visual Analytics App if the recipient has it installed. If the recipient opens the email message on a Windows mobile device, and then clicks the link, the report is displayed in SAS Report Viewer (the report viewer).

To email a report:

1. Save the report.
2. Click in the application bar, and then select Share report ⇒ Email. The new email message opens in your default email application.
   SAS Visual Analytics automatically adds a subject line with the report name. The URL for the report is automatically generated and appears in the email message.
3. Add recipients.
4. (Optional) Revise the subject line.
5. (Optional) Revise the email message.
6. Send the email message.

Generate a Link to a Report

You can generate a link to a report that is displayed in the report viewer. You can generate a link that can be embedded in an iFrame. In addition, you can generate a link to an SVG image of a report. Once the link is generated, you can share it with other users. A generated image of a report can be viewed directly. Or, it can be added as the source of an image tag that is embedded on an external HTML page.

Note:
SAS Visual Analytics provides other linking features. It enables you to add a link from an object to another report, to a specific page in the current report, or to an external URL. For more information about these features, see “Creating Links” in SAS Visual Analytics: Working with Report Data.

To generate a link to a report:

1. Click in the application bar, and then select Share report ⇒ Link. The Generate Link window is displayed.
2 (Optional) Using the **Interactive Report** tab, select the **Embeddable link** check box to generate a link that can be used in an iFrame. The URL that is generated in the **Link** field can be used in an iFrame.

3 Select or clear any of the following options for the report link:

**Alerts pane**
- Hides the **Alerts** pane in the report viewer.

**Comments pane**
- Hides the **Comments** pane in the report viewer so that the user cannot add comments to the report.

**Information pane**
- Hides the **Information** pane, which prevents users from seeing report metadata, including display rules.

**Printing**
- Disables the user’s ability to print the report.

**Sharing**
- Disables the user’s ability to share the report with other users.

**Guest access**
- specifies that users bypass the sign-in screen. Guest credentials are automatically used. This option is not available if guest access is not available for your deployment.
Application banner
Hides the banner at the top of the report in the report viewer. When the banner is hidden, users cannot navigate to other SAS applications, search for content, view notifications, or adjust user settings.

Menu bar
Hides the menu bar at the top of the report in the report viewer. When the menu bar is hidden, users cannot access other reports.

4 Click Copy Link. Then, paste the link wherever you need it.

5 Click Cancel to close the Generate Link window.

To share an SVG file of the report, follow these steps:

1 Click ☰ in the application bar, and then select Share report → Link. The Generate Link window is displayed.

2 Select the Report Image tab.

3 Click Copy Link. Then, paste the link wherever you need it.

4 Click Cancel to close the Generate Link window.
Generate a Link to an Object

You can generate a link to an object that is displayed in the report viewer. You can generate a link that can be embedded in an iFrame. In addition, you can generate a link to an SVG image of an object. Once the link is generated, you can share it with other users. A generated image of an object can be viewed directly. Or, it can be added as the source of an image tag that is embedded in an external HTML page.

You can specify options for the object link that control whether the object can be printed or shared.

To generate a link to an object:

1. Click on the object toolbar, and then select **Share object**. The Generate Link window is displayed.

2. (Optional) Using the **Interactive Report** tab, select the **Embeddable link** check box to generate a link that can be embedded in an iFrame. The URL that is generated in the **Link** field can be used in an iFrame.

3. Select or clear any of the following options for the object link:
   - **Printing**
     - Disables the user’s ability to print the object.
Sharing
Disables the user’s ability to share the object with other users.

4 Click Copy Link. Then, paste the link wherever you need it.

5 Click Cancel to close the Generate Link window.

To generate a link to an SVG image of an object and share it, follow these steps:

1 Click on the object toolbar, and then select Share object. The Generate Link window is displayed.

2 Select the Report Image tab.

3 Click Copy Link. Then, paste the link wherever you need it.

4 Click Cancel to close the Generate Link window.

Delete a Report

1 Click on the menu bar, and then select Open. The Open window is displayed.

2 Select the report that you want to delete, and then click . Click Delete in the confirmation window.
   
   Note: You cannot delete a report that is open in SAS Visual Analytics.

3 Click Cancel to close the Open window.

Localize Reports

The SAS Visual Analytics user interface does not provide a way for you to localize (or translate) the labels, tooltips, or other descriptive text that is part of your report. However, you can use the SAS Viya Command-Line Interface (CLI) to export translation worksheets for reports. For more information, see “CLI Examples: Reports” in SAS Viya Administration: Using the Command-Line Interfaces.

Modify SAS Visual Analytics Settings

There are local settings that are specific to SAS Visual Analytics, whereas global settings apply to all SAS web applications. For more information about global settings, see General Usage Help for SAS Viya Web Applications.

Settings for SAS Visual Analytics are saved on a per-user basis. All of your settings persist between sessions.

   TIP   When you click Reset, the settings revert to their original SAS Visual Analytics configuration.

1 In the application bar, click your name, and then click Settings.

2 Expand the SAS Visual Analytics item in the side menu, and select General. Specify any of the following settings:
Default start screen
Specify your Default start screen. The available options are Show the welcome window, Start with data, Start with a blank document, or Choose an existing report.

Report theme for new reports
Select your preferred report theme. The available options are:

- **Use the default theme**, which is set by your system administrator.
- **Choose a theme**, which enables you to select Marine, Aqua, or High Contrast. Your site might also have custom report themes. For more information, see “About SAS Report Themes” on page 7.

Note: This setting does not affect existing reports.

Action mode for new pages
Select your preference for actions. (Actions allow data to be subset to reduce the amount of data, and they enable users to understand the data within a particular context.) The available options are One-way filters, One-way filters with breadcrumb, Two-way filters, Linked selection, and Manual. For more information, see “Working with Report Actions and Links” in SAS Visual Analytics: Working with Report Data.

Note: This setting does not affect existing pages in existing reports.

Expand report controls by default
expands the report prompt area by default.

Expand page controls by default
expands the page prompt area by default.

Restore pane location
When you click this setting, any pane that you have moved is restored to its default location in SAS Visual Analytics.

Default object title settings
Specify your preference for object titles for new reports. When you select Automatic title, SAS Visual Analytics uses the data items that you add to the object to generate a title for the object. The title can change as you add or remove data items from the object. (Some data items do not affect the automatic title.) When you select Custom title, the title that you specify for the object is used. For more information, see “Work with an Object’s Title” in SAS Visual Analytics: Working with Report Content.

Note: This setting does not affect existing objects in a report.

The available title options are:

**Tables**
For tables, the available options are No title (the default) or Custom title.

**Graphs**
For graphs, the available options are Automatic title (the default), Custom title, or No title.

**Controls**
For controls, the available options are No title (the default), Custom title, or Automatic title.

**Content**
For other objects, the available options are No title (the default) or Custom title.

**Analytics**
For analytics objects, the available options are No title (the default), Custom title, or Automatic title.

Expand the SAS Visual Analytics item in the side menu. Specify any of the following settings:

**Geographic Mapping**
Specify the Default geographic map provider mode for geographic maps. The map provider creates the background map for geo maps and for network analysis objects that are displayed on a map. OpenStreetMap is selected by default.
Note: If your site has more than one map provider, you can change the map provider for an individual object by editing the Map service option.

Specify the default unit of measurement for distances in geographic selections and routes.

To enable Esri ArcGIS Online Services as a map provider, you must accept the end-user license agreement for Esri ArcGIS Online Services.

If your organization has an ArcGIS Online account and you are a member of the Esri Users group, then you can select Enable Esri premium services. Select this option, and then enter and validate your ArcGIS Online credentials to enable additional travel-time and travel-distance calculations for geo maps.

If your organization provides map services on an Esri server, then you can enter Esri Custom Services Credentials. These credentials are used when you access background maps or custom polygons from your organization’s Esri server.

Network Analysis
Specify the Default node label for hierarchical networks.

Visual Statistics
If SAS Visual Statistics is licensed at your site, you can specify the following settings:

- **Fit summary p-value precision**, which determines the minimum number of decimal places used when displaying p-values.
- **Sort categorical response levels in descending order**, which specifies your preference for sorting categorical response levels. This setting is selected by default.
- **Default statistic for Model Comparison**, which specifies your preference for Category Response and Measure Response.


4 Click Close to apply your changes.

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## Defining URL Mappings for Data-Driven Content

URL mappings store the URLs for third-party visualizations for data-driven content. URL mappings can be selected from the URL drop-down list on the Options pane.

If you have permissions for the /SASVisualAnalytics/rest/customGraphTypes URI, then you can define URL mappings for your third-party visualizations so that all users can access them.

To define a URL mapping:

1 Select Edit administration settings from the menu bar. The Administration Settings window is displayed.
2 Click + to create a new mapping, and then enter the Display Label and URL for the visualization.
3 (Optional) Define additional URL mappings.
4 Click OK.