Discover Seven Gems for Getting the Most Out of
SAS® Visual Analytics Viewers

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ABSTRACT

Go beyond a basic report-viewing experience with SAS® Visual Analytics viewers. Discover seven precious gems in the viewers that enrich your report-viewing experience. With the nifty present screen feature, conduct a live report presentation with your geographically dispersed colleagues worldwide from your Apple iOS or Android mobile devices. With the new voice assistant feature, navigate, open, and interact with reports on iOS devices. Use the report playback and screenplay feature to create a customized report presentation. Create custom summaries for report objects and use the personalized state feature to save report object selections for drilling, filtering, and other interactions. Generate web address links to reports, objects, and images that you can share or copy and paste. Refresh only the report objects that you select. This paper is suitable for users of all experience levels.

INTRODUCTION

If you interact minimally with a SAS Visual Analytics report, **you're in for a nice surpr**ise. The SAS® Report Viewer (a web-based viewer), SAS® Visual Analytics App for Windows 10 (a Windows-based app for tablets and desktop), SAS Visual Analytics App for iOS, and SAS Visual Analytics App for Android offer features that you can use to expand your viewing experience.

This instructional paper introduces you to handpicked features in the SAS Visual Analytics viewers and a couple of features that are configured when creating reports for the viewer. We call them seven gems, and each gem shines on its own. So, get on board with us to get insight into each of these features as we explain them with examples from our report – *DiscoverVisualAnalyticsGems*.

PRESENT YOUR SCREEN TO RECIPIENTS WORLDWIDE

With the Present Screen feature in the SAS® Visual Analytics app on iOS and Android mobile devices, you can share and conduct a live demo of reports on your mobile device to 10 or fewer participants who are geographically dispersed across the world.

Note: You can present and share reports with the Present Screen feature for SAS Visual Analytics reports 7.3 and later.

Let's say I am looking at a report on my mobile device, and I have questions for my colleagues Joe and Anita, both of whom are in two different cities. The three of us can see my screen from the app and I can draw their attention to specific areas of interest in the report.

Sitting in my office, or from any location where I have a Wi-Fi or cellular connection, I can use the Present Screen feature to do a live shared presentation with Joe and Anita. And I **don't have to present just one report. During the live presentation, I can close a report,** perform various interactions within the report, or move around in the app between different reports.

Neither Joe nor Anita need to have the SAS Visual Analytics app on a mobile device, or SAS Visual Analytics running on a desktop. They simply need access to their email and a Wi-Fi or

data connection to open the link in a browser. Both participants, and myself as the presenter, need to be within the same network. Participants who are located in a different **network need to switch to the presenter's network to view the screen presentation.** Their organization might have also have additional requirements such as VPN.
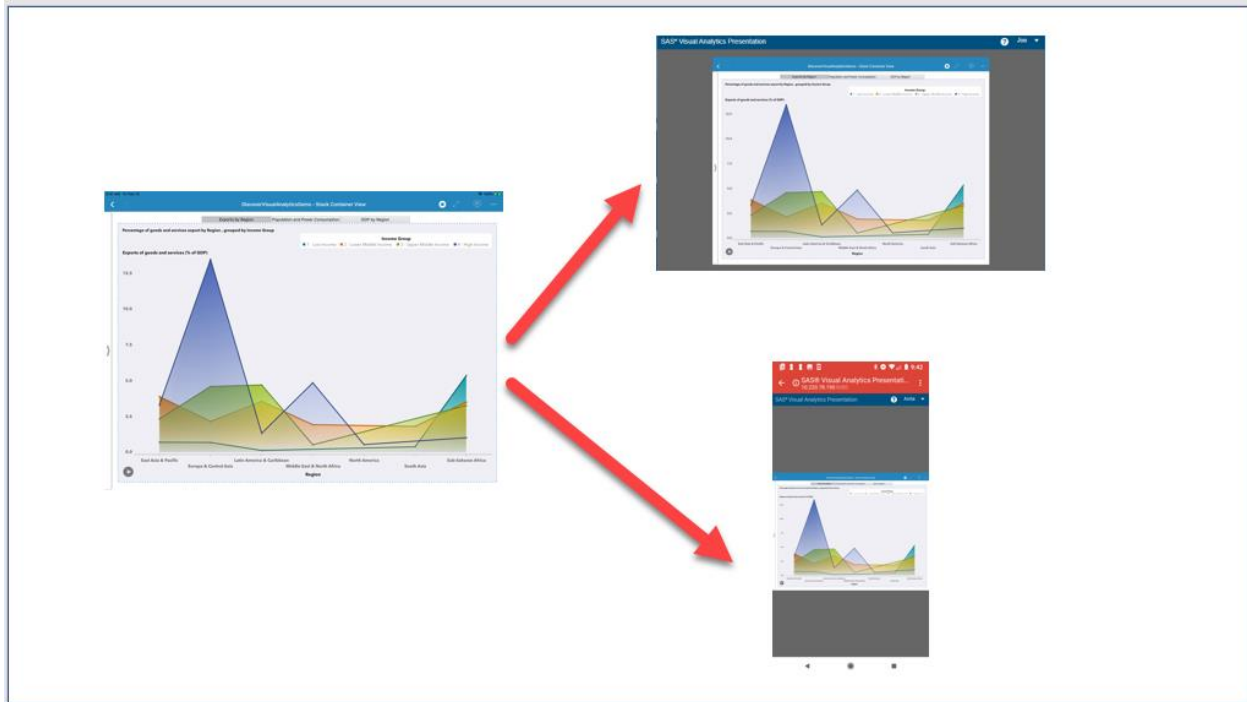

Figure 1 - Presenting a Report from the SAS Visual Analytics App on an iPad (left) to a Web Browser (top) and an Android Phone (bottom)

Before we move on, note that you can also use the iOS feature, AirDrop, on your iOS device to engage participants with the Present Screen feature. This is useful if you're in a room with a bunch of folks who have iOS devices, and you want to do live sharing of reports.

REQUIREMENTS FOR THE PRESENTER

A quick summary of what you need as a presenter to use the Present Screen feature and share your screen from the app:

- A mobile device: iPad, iPhone, Android tablet or smartphone with the SAS Visual Analytics App installed and one or more report subscriptions.
- Wi-Fi, cellular or VPN access as needed
- Email client or access on the mobile device

START THE SCREEN PRESENTATION

It's easy to understand screen presentation with an actual scenario. I have a SAS Visual Analytics report that I want to share and view with Joe and Anita. Myself, Joe, and Anita are in three different cities. Neither Joe nor Anita is a SAS Visual Analytics user, and they don't have the app installed on your devices either. However, I want to present my screen to both of them simultaneously so that I can draw their attention to some specific data elements in certain reports.

Here are the steps I followed to present the SAS Visual Analytics report:

1. I open a subscribed report in the SAS Visual Analytics App, and I select **Present Screen**.

2. The app displays a message that I can present my screen to a maximum of 10 participants. I tap **OK**.

3. The app prompts me to send email or select AirDrop to present my screen to participants. I select email.

   My email client opens on my mobile device, and the email includes text created by app. The text instructions along with the web address link that the recipients – Joe and Anita – can click to join my live screen presentation.

4. I enter the email addresses for Joe and Anita and send them the email.

5. In the email that Joe receives on his laptop, he clicks on the web address link that takes him to the web browser where my screen presentation is set to start soon. Joe enters his name and email address in the screen presented to him and notes that the presentation has not yet started.

6. Anita, who has email on her Android phone, is shown the same message on her smartphone. She enters her name and email address in the screen presented to her and waits for the presentation to begin.

7. To begin the screen presentation, I tap on the blinking cursor within the app.

   The app reminds me that now my participants can see everything on my iPad Mini screen. Next, a blue bar at the top of the report indicates that my screen presentation is live and can be seen by Anita and Joe. Now I can begin my presentation with the current report or exit the current report and open a different report in my app to share with Anita and Joe.

8. When I am finished with the presentation, I tap **Stop** to end it.

   A message displays to indicate that the presentation has ended.

USE YOUR VOICE TO INTERACT WITH THE SAS VISUAL ANALYTICS APP

The English voice assistant is an experimental feature for iOS devices that are connected to a SAS Visual Analytics 8.3 server or later. In the mobile app, you can issue voice commands in English and interact with the app and the reports.

Here are some examples of voice commands that you can issue when a subscribed report is opened in the SAS Visual Analytics App for iOS:

- List my favorite reports
- Show recently opened reports
- Go to the last page
- Print this report
- Email this report
- Add this report to my list of favorites

INTERACT WITH THE VOICE ASSISTANT

Here are the steps for using the voice assistant:

1. On your iOS device, go to **Settings**.

2. Verify that **Speech Recognition** is activated. If it isn't, tap **Speech Recognition**.

3. In the SAS Visual Analytics app, choose **Advanced Settings** from the menu.

4. Tap on **Advanced Settings**, then tap on the **Voice Assistant** button.

5. In the SAS Visual Analytics App, open a report and tap on the microphone icon for the voice assistant.

   A list of examples of the commands that you can issue with your voice is presented.
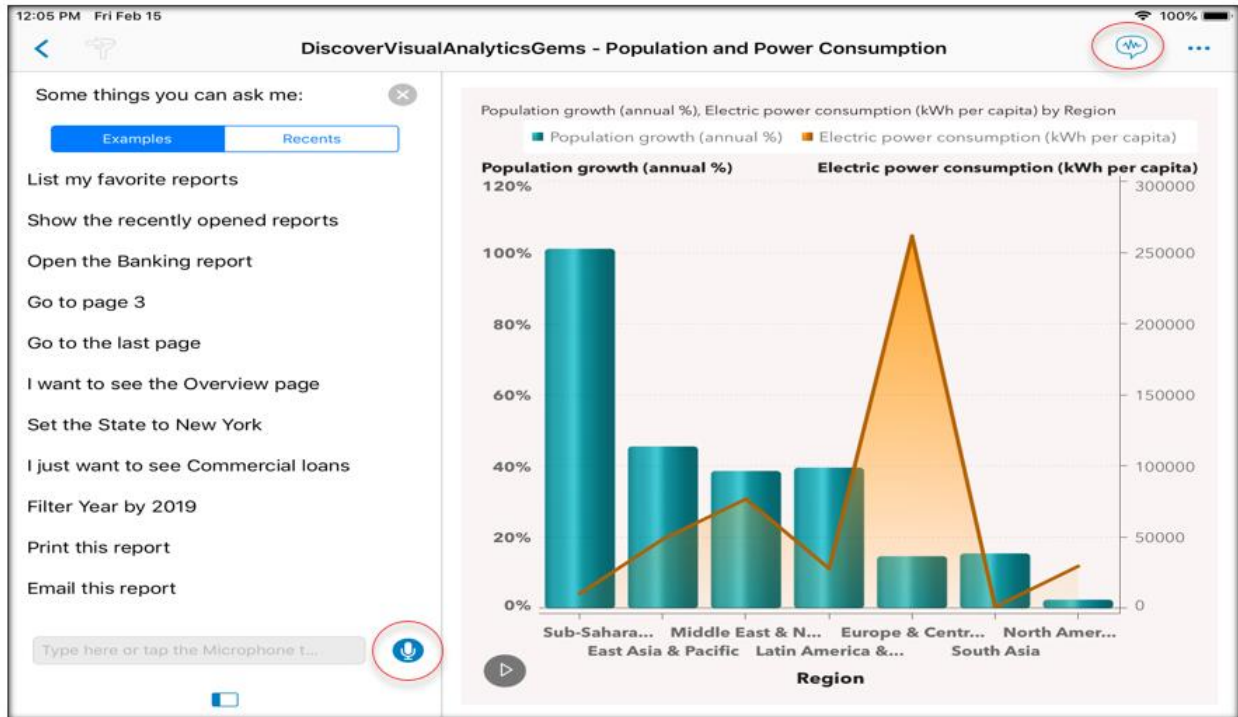
Figure 2 - iPad Display of the Report with the Microphone Activated for the Voice Assistant Feature

6. Tap the microphone icon in the app.

7. Tap **OK** when prompted with the following message:

   iOS Would Like to Access the Microphone. Enables you to attach videos to comments and to use voice commands within the app.

   You now see the microphone icon change to an active icon, indicating that the voice assistant has been activated.

8. Tap on the microphone in the voice assistant window and issue a command with your voice for a report. For example: Open the *Discover Seven Gems report*.

   The microphone field displays a text message showing the command that you just issued, then it processes your command, and executes it.

   The *Discover Seven Gems* report opens for viewing. If a voice command that you issued is not understood by the app, the voice assistant responds, "I don't understand."

USE YOUR REPORT FOR A PLAYABLE DASHBOARD

A playable dashboard is a SAS Visual Analytics report that is customized to present each report page or report object in a moving sequence for a specified number of seconds. The report runs on a loop until you stop it.

Playable dashboards can be used in a wide variety of environments. Some usage examples of playable dashboards are kiosks and booths at trade shows, lobby areas with a floating population, welcome centers or tourism spots where information is disseminated, waiting rooms in medical centers, retail showrooms, and so on. When people are in a waiting mode

in any environment, that's a great opportunity to showcase some facts and figures that are relevant to the context of their present environment!

Let's assume a report has eight pages, and you want each report page to display for five seconds, and move on to present the next report page and so on.

When you initiate the playable dashboard feature, here's what happens. For a total period of 40 seconds (that's five seconds per page), the entire report is presented in a moving **format; when the report's last page is presented, it automatically loops back to the first** page and the playable dashboard begins again. You also have the flexibility of selecting report objects (instead of report pages), and a maximized view of each report object is presented in a moving format. In this case, if a report had 15 report objects, and you select to display each report object for five seconds, the playable dashboard would run for 75 seconds and loop back to repeat the presentation from the first report object in the report.

If you enable the navigation controls, your audience can interact with the report while the playable dashboard is presenting. They can perform the following actions:

- Rewind to a previous page or previous report object.
- Fast forward to the next page or next report object.
- Pause the presentation.
- Stop the presentation.

Note: If your report has filter prompts or filter controls, they are excluded from display in the playable dashboard.

SELECT OPTIONS IN THE EDIT PLAYBACK WINDOW

In the SAS Report Viewer, we opened our report and select **Report Playback.**
This is the Edit Playback window with settings for a playable dashboard that presents each page:
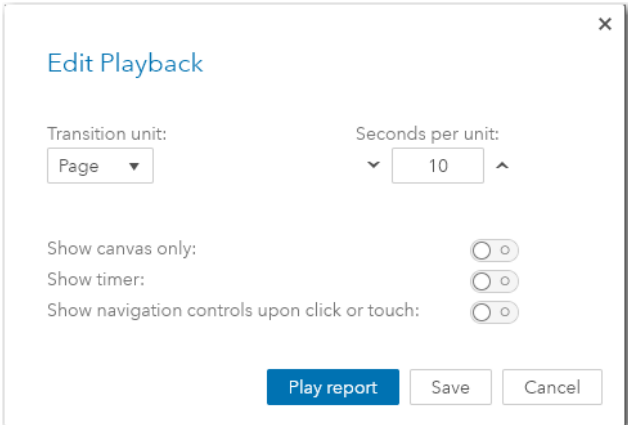

Figure 3 - Edit Playback Window Settings for Playback of Pages in a Report

This is the Edit Playback window with settings for a playable dashboard that presents each report object:
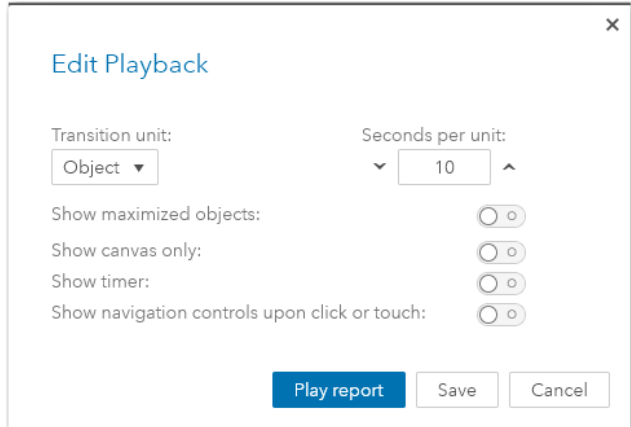

Figure 4 - Edit Playback Window Settings for Playback of Each Report Object

The Edit Playback window gives you options that you can select to create a customized playable dashboard. Here is a description of what each option can do:

Transition Unit – Determine if you want the playable dashboard to show each report page in a sequence, or if each report object should be maximized and presented in a sequence when the dashboard plays.

Seconds Per Unit – By default, the viewer displays the report page or report object for ten seconds. If the report objects are easy to comprehend within a short span of time, reduce the seconds to a smaller number.

Show canvas only – When this option is selected, the report controls for navigation are not displayed when the dashboard is playing. You select this option if you don't want your audience to rewind, fast forward, pause, or stop the report while it is playing.

Show timer – If you want a timer to display while the dashboard is playing, select this option. It displays a countdown for each page or report object. For example, if you select to display each report object for five seconds, the timer displays the countdown of time while the report object is displayed.

Show navigation controls upon click or touch – Enables navigation controls for the report playback when the playable dashboard is running.

A PLAYABLE DASHBOARD BASED ON REPORT OBJECTS

Here are the steps that I followed to create the playable dashboard:

In the web-based SAS Report Viewer, I select **Edit Playback** from the menu to customize the playable dashboard. For Transition unit, I select **Object**. If I select **Report**, each report page would display in the playable dashboard.

For seconds per unit, I select 5 (that is five seconds per object).

For a cleaner look when the dashboard plays, I select **Show canvas only** (the navigation controls for the playable dashboard will not display when this option is selected).

I did not select **Show timer**.

I click **Play report** to play the playable dashboard.

GENERATE LINKS FOR REPORTS, OBJECTS, AND IMAGES

With the Generate Link feature, you can generate a link of a complete web address, and eliminate the need to manually create text for web addresses. You can embed the generated link text in web pages, emails and so forth. You don't need to remember the exact link option parameters to include or exclude from the link – the SAS Report Viewer generates the link for you. For example, when the link is clicked, a generated image of a report can be viewed directly. Or, the link text can be added as the source for an image tag that is embedded in an external HTML page.

You can generate links for the following items:

- An interactive report
- A static image of the current report view
- An interactive object
- A static image of an object

Note

The generated URL links provided in this paper are intended to illustrate examples of link text. They are not live URL links that can be clicked to view the actual results.

LINK FOR AN INTERACTIVE REPORT

To generate a link for an interactive report, go to the menu and select Share Report > Link.
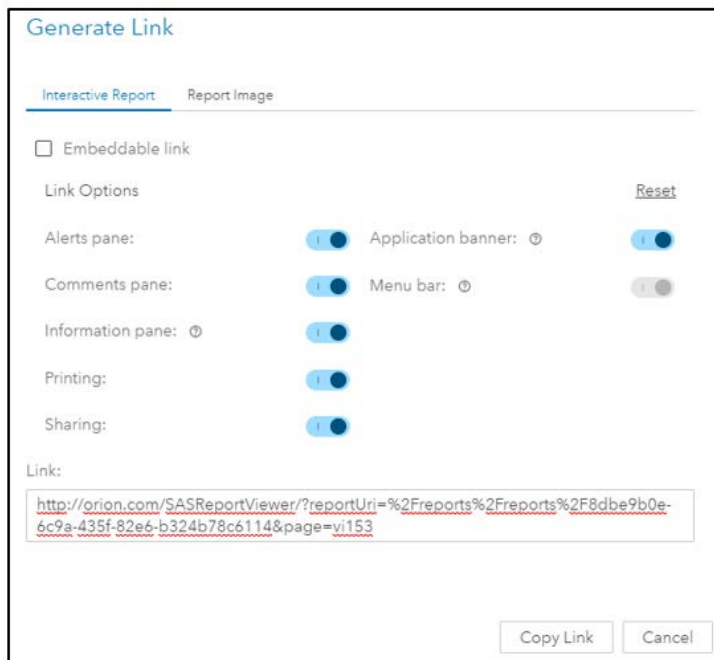

Figure 5 - Generate Link Window with All Features Enabled for the Report Information Pane

In the Generate Link – Interactive Report window, several features are enabled for the link text: Alerts pane, Comments pane, Information pane, Printing, Sharing, and Application Banner. When I click Copy Link and paste the text into a web browser, the report displays with all these features enabled. (Selecting Embeddable Link creates link text for an iFrame that can be used in web pages.)

An example of a generated link with all options enabled in the Generate Link pane:

http://orion.com/SASReportViewer/?reportUri=%2Freports%2Freports%2F8dbe9b0e-6c9a435f-82e6-b324b78c6114&page=vi592

Figure 6 - Report with All Features Enabled in the Information Pane

LINK FOR A REPORT WITHOUT THE INFORMATION PANE

To suspend certain capabilities for the users of this report, I deselect Alerts pane, Comments pane, and Information pane.
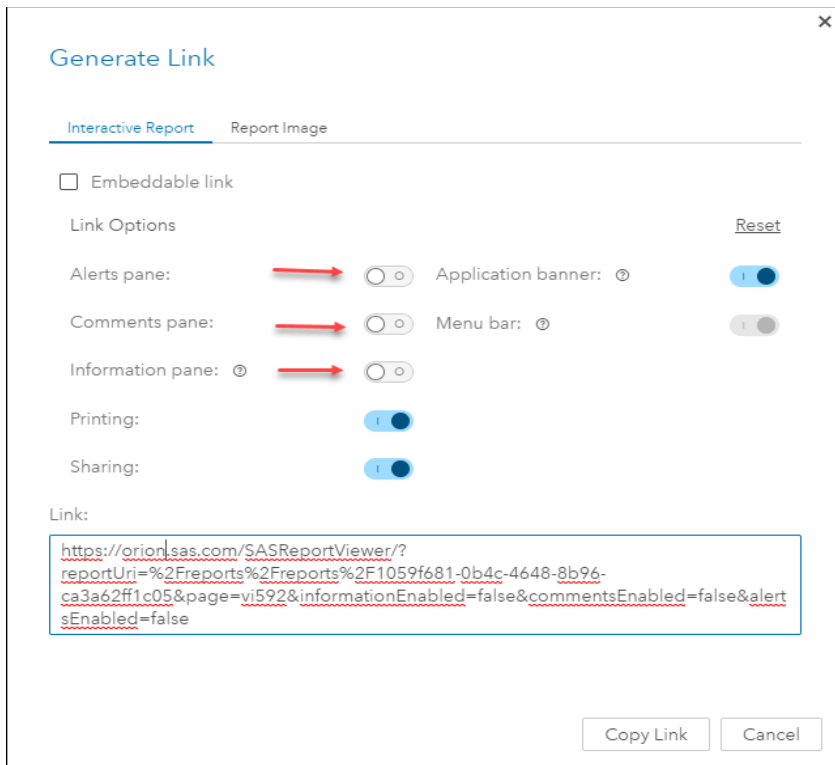

Figure 7 - Generate Link Window with Fewer Features Enabled for the Report Information Pane

An example of the generated link with fewer features enabled:

http://orion.com/SASReportViewer/?reportUri=%2Freports%2Freports%2F8dbe9b0e-6c9a-435f-82e6-b324b78c6114&page=vi592&informationEnabled=false&commentsEnabled=false&alertsEnabled=false

When I click Copy Link and paste the link text into a web browser, the deselected features are removed from the view:
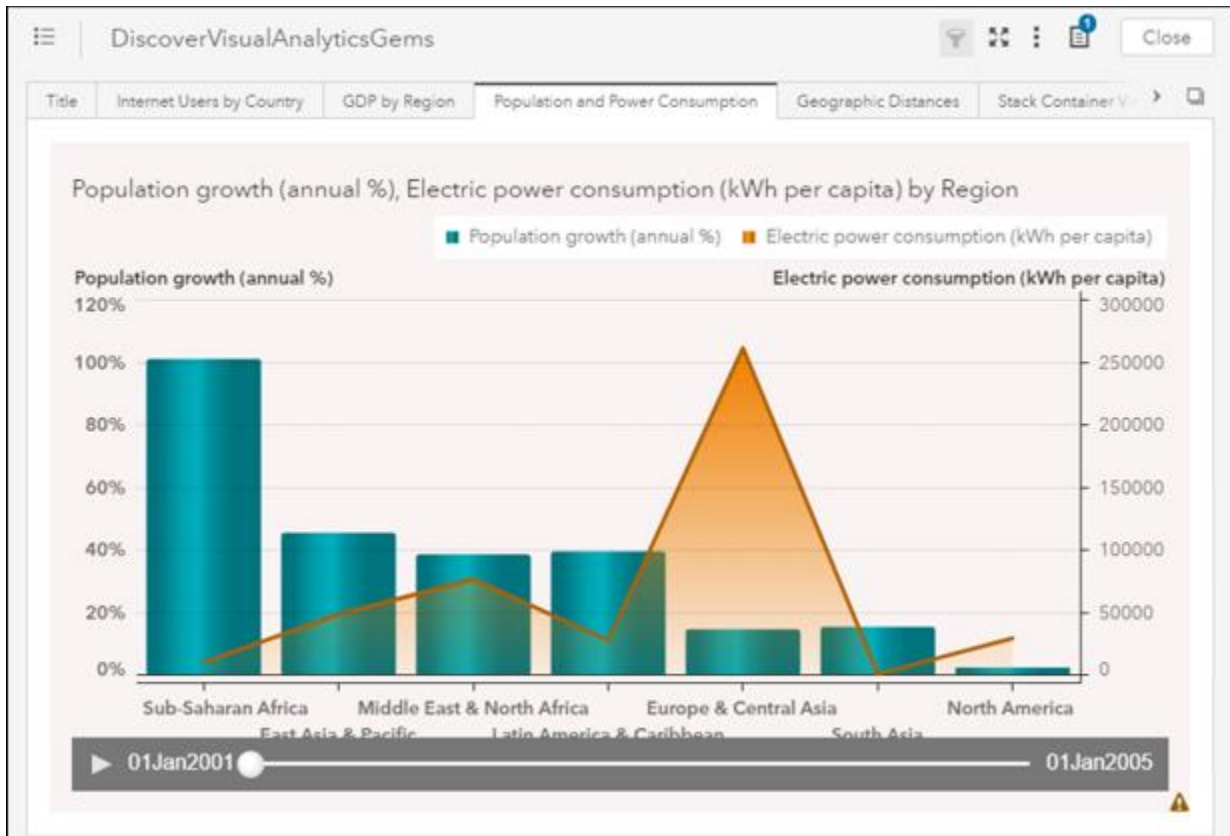

Figure 8 - Report without the Alerts Pane, Comments Pane, and Information Pane

LINK FOR AN SVG FILE OF THE CURRENT VIEW

Here is an example with options enabled in the Generate Link window for an SVG file of the current view:
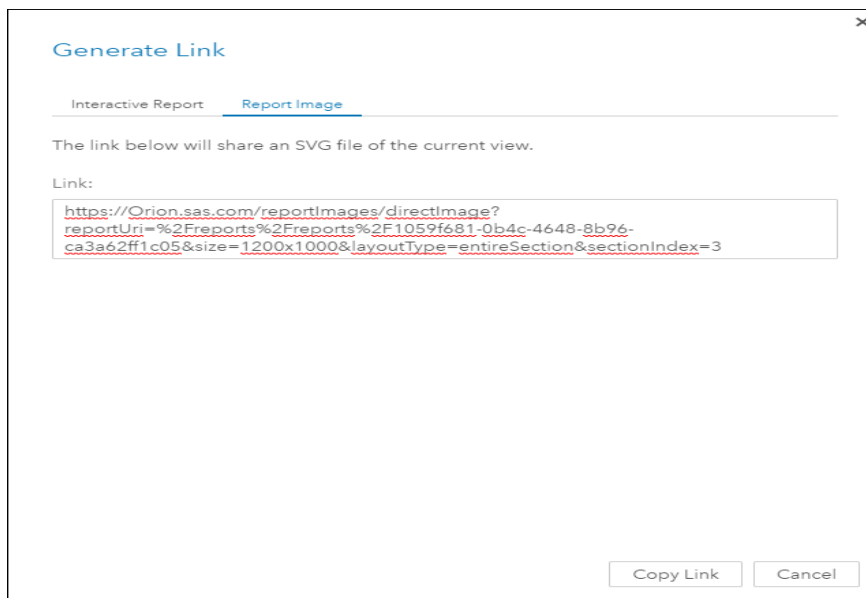

Figure 9 - Generate Link Window with Features Enabled for an SVG File of the Current View

To generate a link for a static image of the current report view, I select Share Report > Link from the menu.

In the Generate Link – Report Image window, the link for the SVG file is displayed.

http://orion.com/reportImages/directImage?reportUri=%2Freports%2Freports%2F4340e83 4-d164-4661-898c- b2a403dbd3ec&size=1200x1000&layoutType=entireSection&sectionIndex=0

Note that the *sectionIndex* parameter in the web address link references a specific section in the report.

I copy the link into my web browser and the SVG image displays in the SAS Report Viewer.

LINK FOR AN INTERACTIVE OR STATIC REPORT OBJECT

I select a specific report object in the report and share that object with users who can print or share that object. When a user clicks on a link to that object, printing and sharing are the only options available to that user. To generate a link to a report object, right-click on the object and select Share Object.
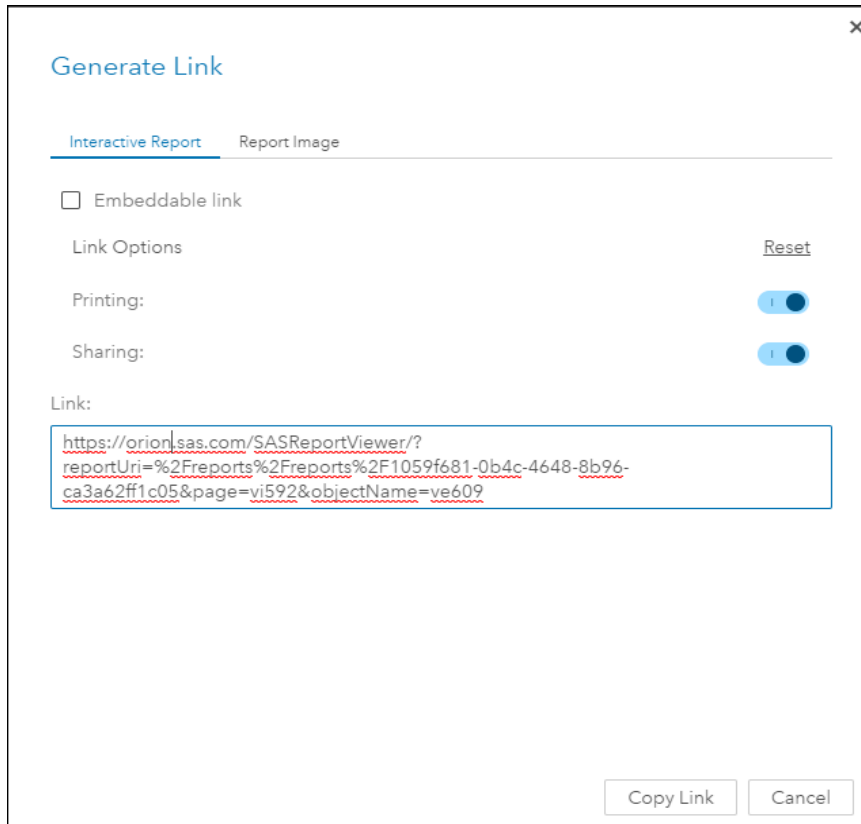
Figure 10 - Generate Link Window with Features Enabled for an Object

In the Generate Link **–** Interactive Report window, the link for the report object is displayed.

Here is an example of the link generated for the report object:

http://orion.com/SASReportViewer/?reportUri=%2Freports%2Freports%2F8dbe9b0e-6c9a435f-82e6-b324b78c6114&page=vi153&objectName=ve4553

Note that the *page* and *objectName* parameters reference the specific page and object in the report.

I copy the link into my web browser and the report object displays in the SAS Report Viewer.

REPORT SUMMARY

A report summary is useful to show a text summary of key facts and figures generated from data elements. A custom report summary is created when you edit the report, and it is viewed from different locations where the report is available.

Here is an example of a report summary displayed in the SAS Visual Analytics App for Windows 10:

Figure 11 - Report Summary Display for the Report Viewed in the SAS Visual Analytics App for Windows

When creating a report summary, you select data elements, text or labels in a report object, add some helpful descriptive text that provides some context and explanation, and save the report. This report summary is especially useful for individuals with visual impairments because it can be easily read by screen readers such as JAWS or Narrator on Windows. Users who are interested in some critical and important data elements in a report would **benefit from this feature because they don't have to open the report to view the details.** Instead, they can click or tap on the report tile and view the report summary.

When the report summary is previewed in an app or in the web-based viewer, the entire report summary is displayed – if it is lengthy, you can scroll the report summary.

The following are examples of elements or labels that you can select for creating a report summary:

- Cells in a list table
- Bars in a bar chart
- Slices in a pie chart
- Axis labels
- Object titles

LOCATIONS WHERE YOU CAN VIEW A REPORT SUMMARY

You can view a report summary from several locations:

- In SAS® Drive, right-click on the report tile for the report and select Preview.
- For an unopened report in the SAS Report Viewer, click on the report tile to view the menu and select Summary.
- In an opened report in the SAS Report Viewer, select Show Summary from the menu.
- In SAS Visual Analytics App, tap on the report tile (or right-click with the mouse for the Windows app) and select Show summary.
- In the SAS Visual Analytics App for iOS, you can also open the tray and view the report summary.

CREATE A REPORT SUMMARY

The report summary is created when designing the report. Here is an example of the window where the report summary is created.

Figure 12 - Window with Text Box for Creating and Previewing a Report Summary

In the text box you can enter the report summary text. Another method is to use the Apache Velocity syntax in the text box. The summary text is an Apache Velocity template. For details, see the *Apache Velocity User Guide* at http://velocity.apache.org.

WINDOW FOR CREATING A REPORT SUMMARY

Here's how I created a simple report summary for a bar chart in our report by entering text:

1. While editing the report, I select **Options** and make sure that I am at the report level and then scroll down until I see **Summary**.

2. I navigate to the section page where I want to create the summary, and I click the **Arrow** icon.

3. I move the **Arrow** over North America in the bar chart and click on the bar.

4. In the **Select** item window, I select GDP growth (annual %) and click **OK**.

5. The data element for this bar is added to the **Report Summary** window.

6. I continue to add the other bars in the chart that represent GDP growth in different regions of the world.

7. I click **Preview Summary** to view the completed report summary.

8. I save the report. The report summary is available when that report is viewed in the web-based viewer or in the SAS Visual Analytics Apps.

SAVED SELECTION STATE

When you subscribe to a SAS Visual Analytics 8.3 report for the first time, and open the report for viewing, what you see is how the report designer created and saved that report on the server for its users. While you are viewing the report, you might interact with the report to make some selections such as filtering a graph, drilling on a hierarchy, drawing a driving distance on a geo map and exiting the report after completing all of these actions. When you close that report and reopen it, the SAS Report Viewer remembers the state in which you closed that report and displays it exactly with the selections you had made in your previous viewing of that report. This feature is called Saved Selection State.

To remove the saved selection state and restore the report back to its original state, select Restore default report state from the menu in the web-based viewer.

Note: The saved selection state does not apply to guest accounts.

Here is a list of **users' report**-based actions that are honored for saved selection state in reports:

- Report page selection
- Graph, table, and crosstab selections
- Automatic and manual filters
- Sorting in tables and crosstabs
- Drilling in hierarchies
- Panning and zooming
- Esri Search and Drive Time
- Selections within report objects (including Esri selections)
- Zoom state
- Prompt selections (parameters and prompt visuals)
- Table column order
- Current stack in a stack layout

EXAMPLES OF SAVED SELECTION STATES

Here are three examples of tasks performed in our report to illustrate saved selection states.

EXAMPLE 1: FILTER SELECTION

In this example, I have a prompt filter in which the country Austria is selected. Notice how the bar and the table are now filtered by Austria to show the results for Internet users and by income group. Close the report and reopen the report. Austria is retained in the reopened report.
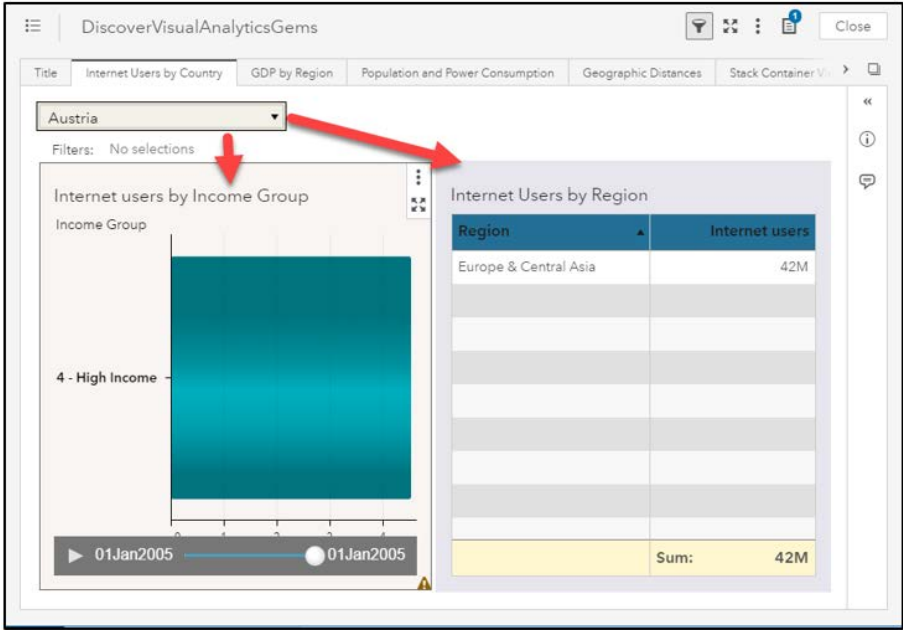
Figure 13 - Viewer State Saved for Filter Selection

EXAMPLE 2: DRILL A HIERARCHY

Here I have a bar chart showing population by geographic regions. I select the bar chart and drill down on Europe and Central Asia. Then, I drill on Albania to see the upper-middle income group for Albania. Closing and reopening the report retains the drilled hierarchy for Albania.
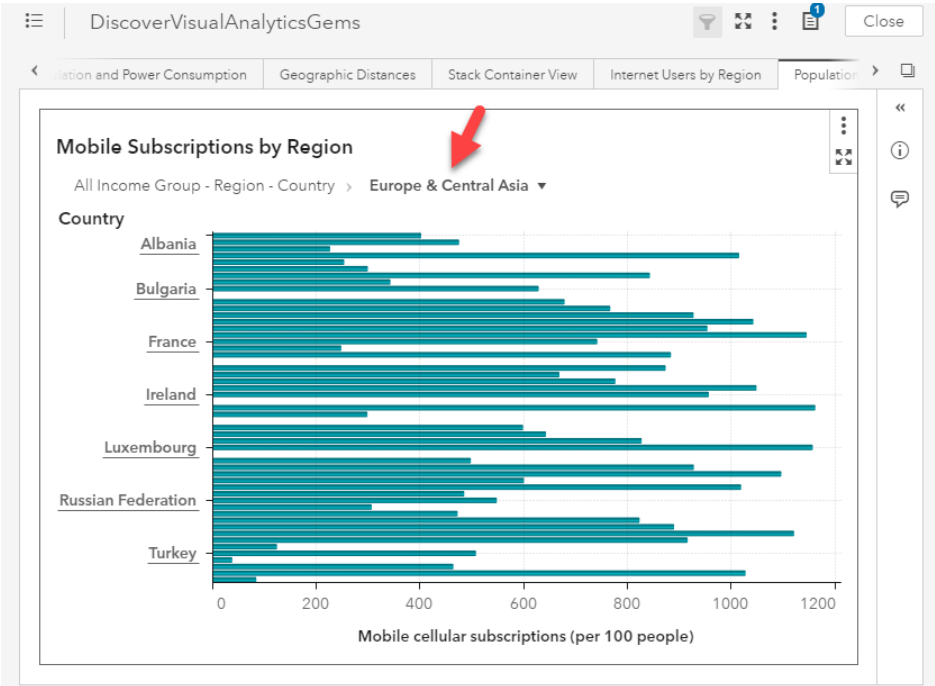

Figure 14 - Viewer State Saved for Drilled Bar Chart

EXAMPLE 3: ZOOM AND PIN A LOCATION IN A GEO MAP

In this geo map, I select Geographic Distances and zoom the United States map until Dallas is displayed. In the Pin Location window, I select New Location Pin and drop the pin on Dallas.
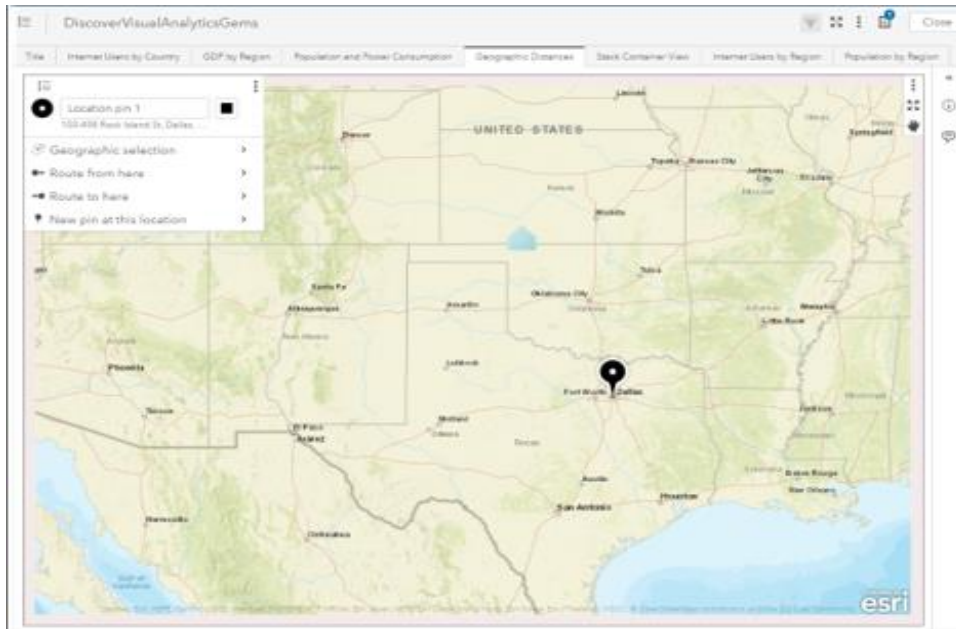

Figure 15 - Pinning a Location in the Geo Map

From the Pin Location window, I select Route from here and change Travel mode from Direct to Driving. I then drop the new pin on Phoenix. The driving distance between Dallas and Phoenix of 1,005 miles is displayed. Upon closing and reopening this report, the zoom, pin drop, and the driving distance are retained in the report.
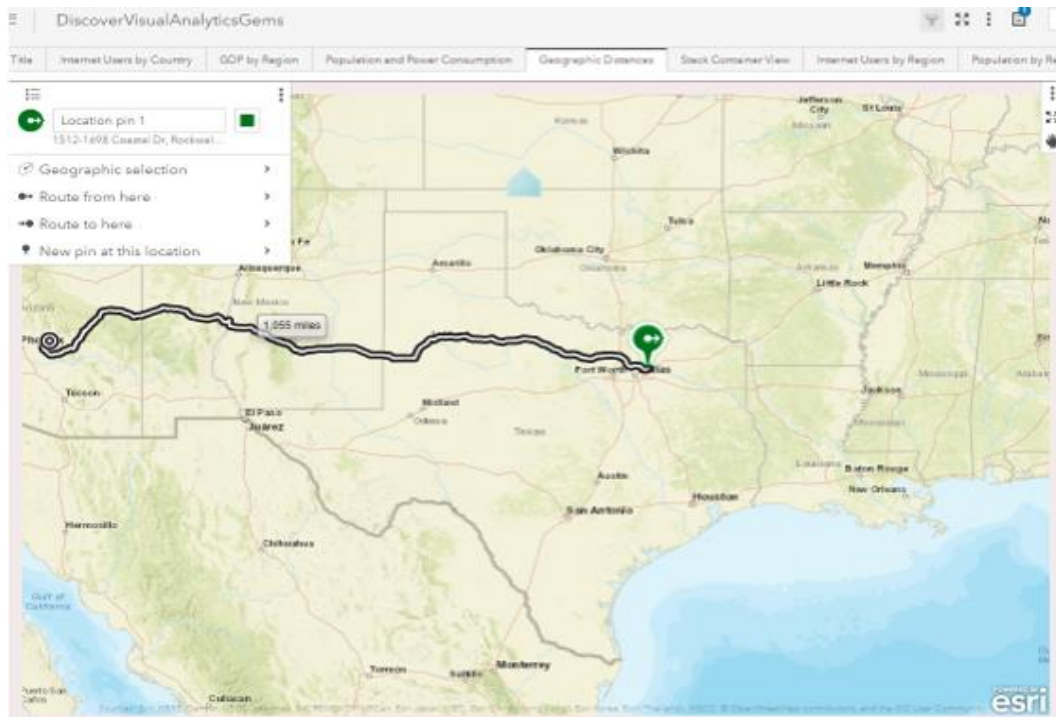
Figure 16 - Viewer State Saved for Geo Map Drive Time

REFRESH DATA USED BY REPORTS, OBJECTS, OR PAGES

SAS Visual Analytics 8.3 introduced the ability to refresh and capture data changes automatically at periodic intervals in reports viewed by users:

- Report designers can configure data changes to be automatically refreshed at periodic intervals either for the entire report, specific report objects, or specific report pages.
- Web-based viewer users can manually refresh an entire report by selecting Refresh Report from the menu.

Users of the SAS Visual Analytics Apps can update and refresh subscribed reports manually at any time.

AUTOMATIC REFRESH OF DATA

The refresh of report objects offers a highly customized approach to refreshing data in reports. For example, within the same report, a bar chart can have a refresh rate set to every five minutes, but a crosstab can have a refresh rate every ten minutes. The report designer can analyze the different data sources that are used for different report objects and customize the refresh rate differently for each report object.
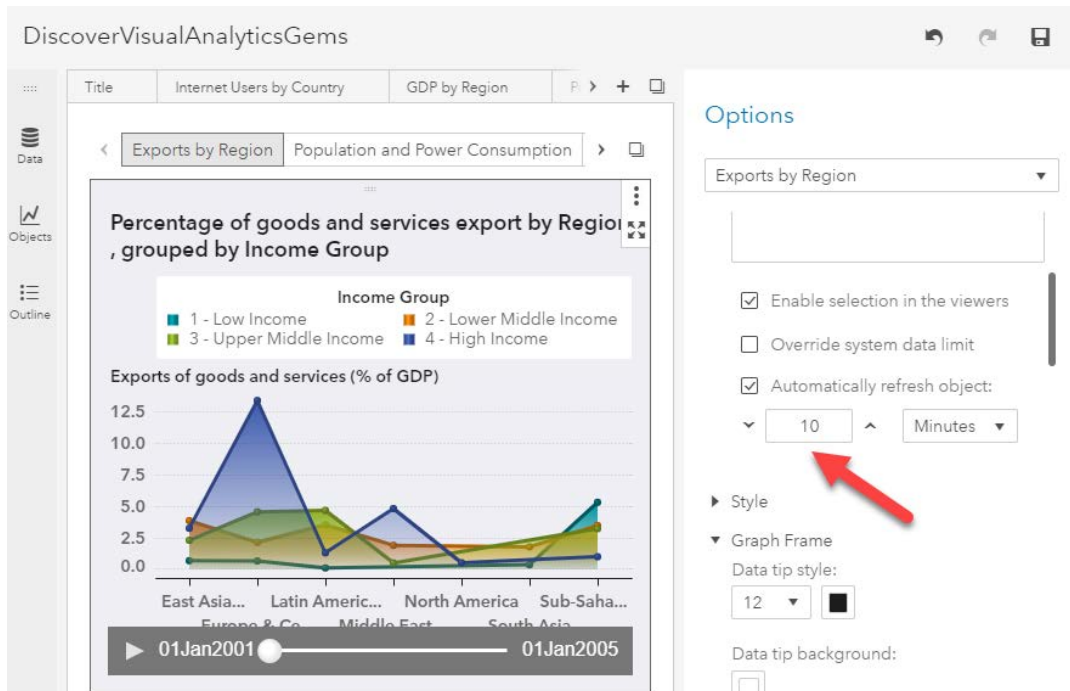
Figure 17 - Refresh Rate of Ten Minutes Set for a Report Object in the Stack Container
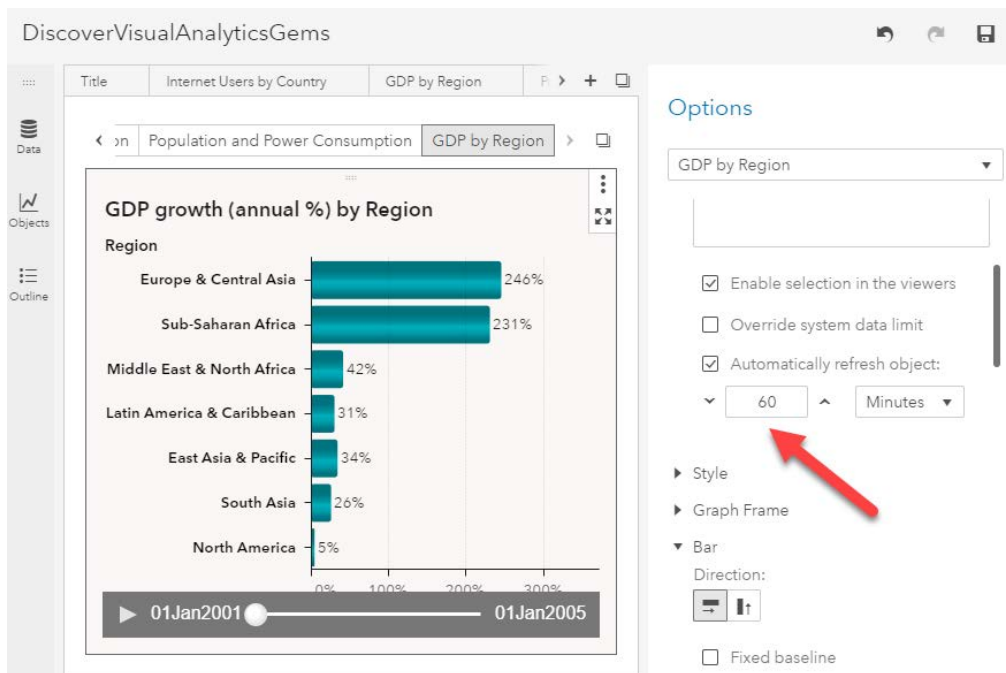

Figure 18 - Refresh Rate of 60 Minutes Set for a Report Object in the Stack Container

To configure the automatic refresh of data for an entire report, selected section pages, or selected report objects:

1. Edit the report and select Options.

2. In the field under Options:

Select the report name if you want the refresh rate to apply to the entire report. Then, select Automatically refresh report.

Select the section page, if you want the refresh rate to apply to the selected section page. Then, select Automatically refresh page.

Select the report object, if you want the refresh rate to apply to the selected report object. Then, select Automatically refresh object.

3. Select Minutes or Seconds, and the frequency of update in minutes or seconds.

4. Save the report.

CONTACT INFORMATION

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