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Extending SAS® Reports to your iPhone

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ABSTRACT

You have jumped through all of the hoops of creating the perfect dashboards for executives, marketing, human resources, finance, and the project office teams, but they hardly ever get used because, frankly, your users don't have enough time in the day to go through the reports. This is even more true if they have to be tethered to the servers in the office to do so. Luckily, a solution that suits the users with an iPad or iPhone is available. Introducing Roambi—a mobile business intelligence (BI) platform that runs on Apple's iOS platform and can be easily integrated into your existing SAS® Enterprise BI platform.

INTRODUCTION

The release of the iPad by Apple in January 2010 is seen by many as a watershed moment in computing history. The use of the device, which was initially labeled as an executive's toy for reading emails and internet browsing, has grown from strength to strength over the last 3 years. By the fourth quarter of 2012, Apple announced that it had shipped 100 million devices worldwide. Following the quick success of Apple, other device manufacturers released their own versions of the tablet but in the enterprise space, the iPad remains dominant.

According to research agencies such as IDC, Gartner and Forrester Research, the number of tablets in the enterprise space will continue to increase. It is then not a surprise that, over the last two years, the big software vendors have been customizing their software to be mobile device friendly.

Despite the inroads made over the past two years by various Business Intelligence (BI) vendors, the use of BI on mobile devices is still in its infancy. It is no surprise then that when one does a search on Google for Mobile BI a handful of products are returned. This in many ways shows the difficulty that vendors are experiencing when trying to make solutions designed for desktops available for the mobile devices. The handful of vendors that have Mobile BI offering are either designed with a specific platform in mind such as Microsoft, SAP, Oracle and so on or are simply extending a desktop experience to the mobile device by using a web browser – which mimics the desktop solution.

Traditional desktop BI induces the user to act or make a decision based on the information delivered to him/her; they are able to extract insight from the data. In the same way that it is irrelevant where you read an email, Mobile BI should not be different from traditional BI – It should continue to induce action. And in the same way that mobile email will not replace Microsoft Outlook or Novell Groupwise but will rather extend its accessibility, Mobile BI will play the same role in the BI arena.

IS THERE ANY HOPE?

There are a few Mobile BI vendors that have bucked the trend and offer solutions that are not platform specific and support multiple data sources, who appreciate the depth provided by the various reporting styles and who place security at the forefront of all data projects.

An ideal Mobile BI solution would be one that not only incorporates existing reports into its platform but one that seamlessly integrates and leverages off the time and investments that have already been made in the SAS Enterprise Business Intelligence (EBI) platform. An ideal solution would be secure, user-friendly and allows users to interact with the device using the gestures that they have grown accustomed to.

This is where Roambi Analytics comes in.

WHAT IS ROAMBI?

Roambi is a Mobile BI platform that runs on Apple's IOS devices. Apart from the beautifully designed and understandable visualization that Roambi uses, its ease of use is what makes it stand out from the growing crowd of Mobile BI tools. For SAS users, what's even nicer is that most of the reports that you have already gone through the trouble of creating in your SAS Web Report Studio need little tweaking to work in Roambi.

Roambi has two mobile apps, Roambi Analytics and Roambi Flow. Roambi analytics is the engine that shows the graphics. Please see the Roambi website for the different visuals (www.roambi.com). Roambi flow is an iPad only app that allows you to take your static PDF reports and publish them to users. The app has a magazine style feel to it and is integrated with Roambi analytics to bring static PDFs to life using the interactive components in Roambi App. An example of Roambi Flow can be downloaded here: [Statistics South Africa app](#)



Figure 1. Roambi Analytics example.

Image source <http://www.tabtimes.com>



Figure 2. Stats SA Roambi Flow example

Source: [Statistics South Africa App](#)

For enterprise that have invested in the SAS Enterprise Business Intelligence (EBI) suite, a simple configuration of the Roambi services and you will be up and running – ready to serve your first Roambi report based on existing reports in SAS Web Report Studio.

CONFIGURING THE ROAMBI SERVER

The configuration of Roambi goes beyond the scope of this paper but basic configuration steps are as follows:

1. Install the pre-requisite software
 - a. Install an application server eg: Tomcat
 - b. Install MySQL
 - c. Install OpenOffice (only if you plan to allow users to use Excel files as input files)
2. Install and configure Roambi
 - a. Install Roambi ES application
 - b. Copy the Roambi .war file to the application server
 - c. Add the Roambi license
 - d. Create a MySQL database
 - e. Setup the Administrator account
3. Configure your SAS Portal – this point will be explored further in the next section.

For more on how to configure Roambi, please see the Roambi configuration guide which is available here: <http://support.sas.com/documentation/cdl/en/citmbclcg/64709/PDF/default/citmbclcg.pdf>

CONFIGURING A CONNECTION TO SAS

The following configuration is based on SAS 9.2.

1. Before you can add SAS Web Report Studio to Roambi, two hotfixes need to be applied to your SAS environment to enable the configuration:
 - a. Web Report Studio hotfix D26005. Available here:
<http://ftp.sas.com/techsup/download/hotfix/HF2/D26.html>
 - b. BI Report Services hotfix D28005. Available here:
http://ftp.sas.com/techsup/download/hotfix/HF2/D26_w64.html
2. Redeploy SAS Web Services using the SAS Deployment Manager
3. Restart your mid-tier server after applying the hotfixes.
4. Add SAS Web Report Studio details to the Roambi Publisher
 1. Under the Portals tab, select Add Portal
 2. Select SAS Business Intelligence from the Portal Source dropdown list. *If SAS Business Intelligence is not listed on the list then you are not licensed for it.*

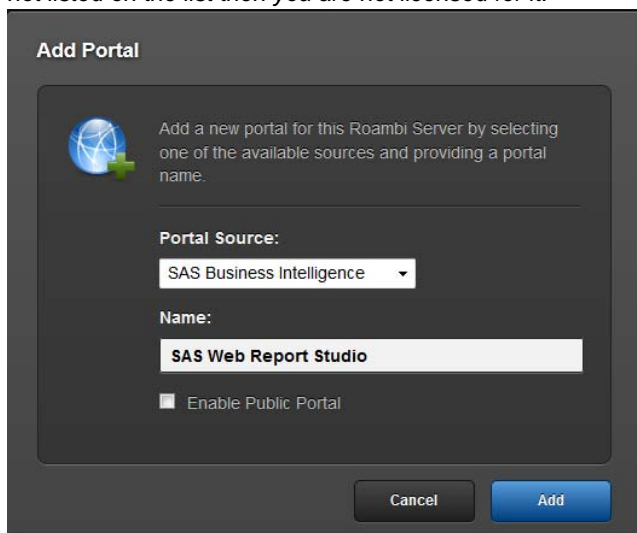
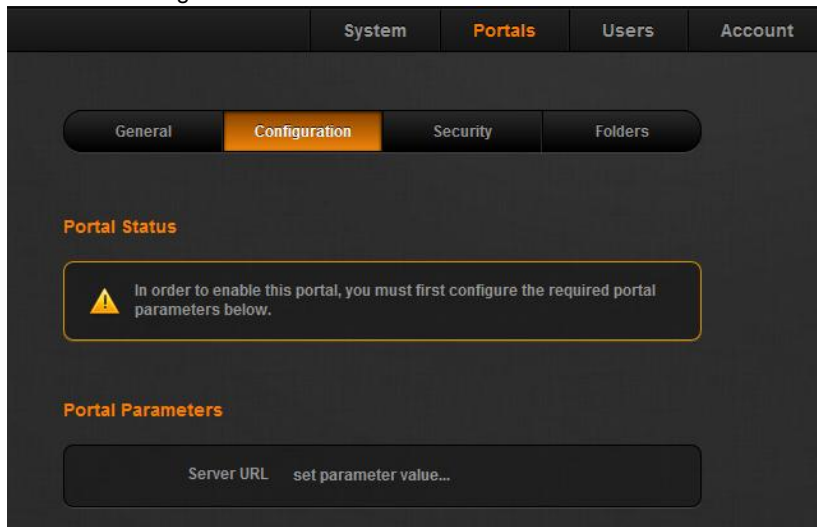


Figure 3. Add a portal

3. Select the Configurations tab



4. Figure 4. Portal configuration

5. In the Server URL text box, enter your SAS Web Reports Studio. Ensure that you use the Fully qualified domain name of the server eg:
http://myservname.mydomain:myport/SASWebReportStudio/
6. The server will then ask you to verify your configuration, you can do this by simply supplying it with credentials that have access to SAS Web Report Studio
7. Under the Security tab, enable the "Enable Primary Login" option. This will allow users (report creators) and devices (report consumers) to login to this Roambi server, using this portal as a primary login option. Roambi will leverage off the existing security architecture that is used by your SAS EBI servers.
8. Under the Folders tab, supply Roambi with the paths where its Home/Root directory is located.

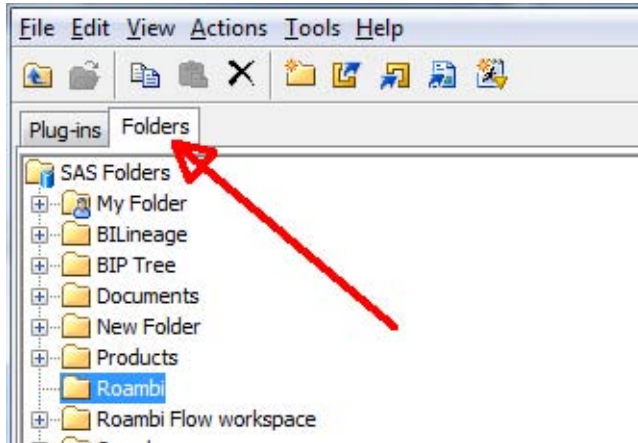


Figure 5. SAS Management Console folders

This is a folder that you create in SAS Management Console under the Folders Tab. Ensure that the users who will be using Roambi have access to this folder.

That concludes the SAS configuration.

CREATING YOUR FIRST ROAMBI REPORT

1. Identify the report that you would like to use in Roambi.

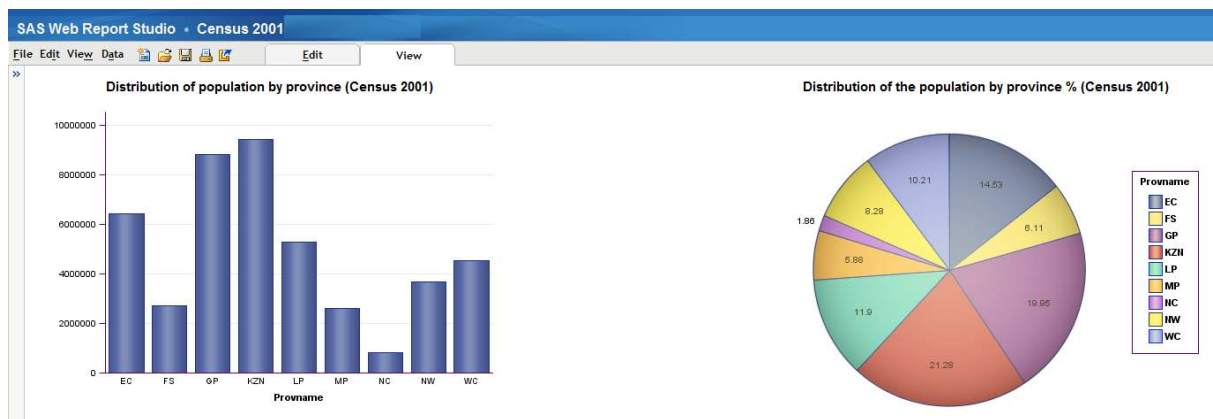


Figure 6. SAS Web Report Studio report

2. Ensure that when you save the report, you have enabled either automatic or manual refresh of the report as seen below.

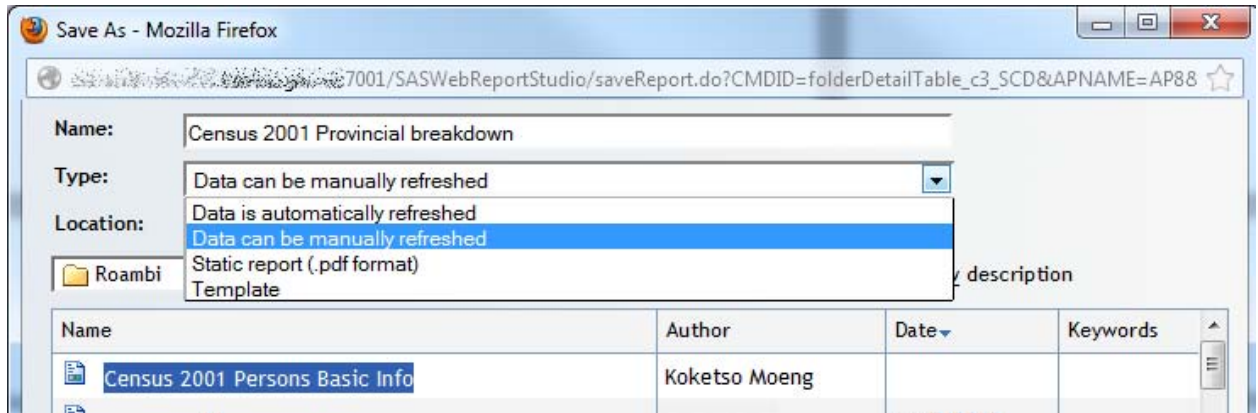


Figure 7. Refresh options in SAS Web Report Studio

- Log into Roambi and select the Roambi publisher tab. You will be presented with a carousel style menu of reporting styles. Select the report style that you want to use. In this example I use Elements because of its ease of use and flexibility. There are limitations for each of the views, see the following guide:

<http://support.sas.com/documentation/cdl/en/citmblog/64712/PDF/default/citmblog.pdf>

- After selecting Elements, it will give you the option to choose your data source, select the SAS Web Report Studio configuration that was created in the last section. Navigate to where your SAS Web Report Studio reports are saved. Select your report then select Import.

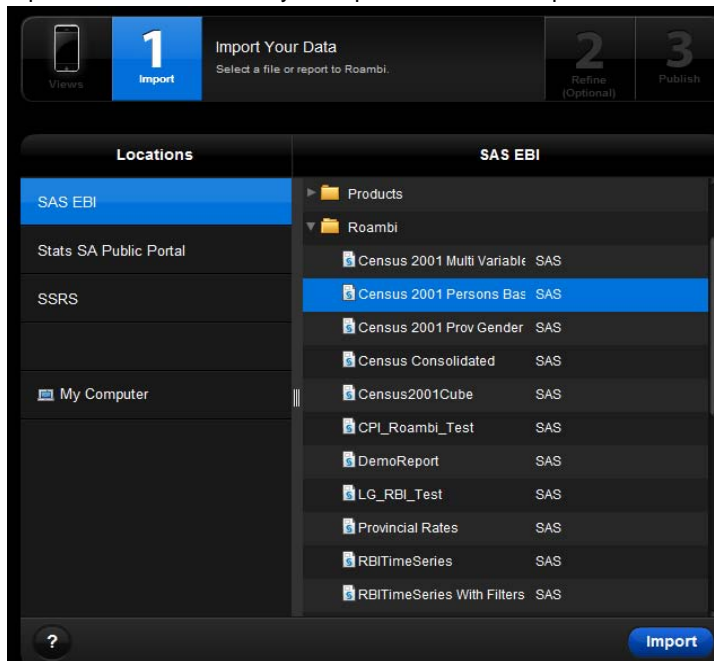


Figure 8. Select your SAS Web Report Studio report

- After importing your report, the publisher interface will walk you through the various customization options that are available depending on your report structure.

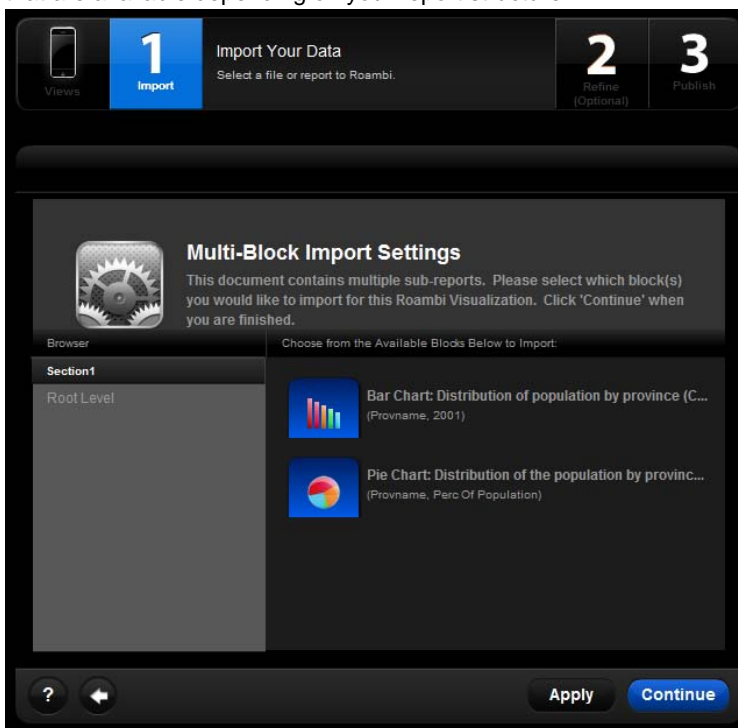


Figure 9. Roambi customization options

- After customizing your report, you can publish it. Before publish, the publisher will prompt you for a location to save the new Roambi report, select a folder where the end users have access to.

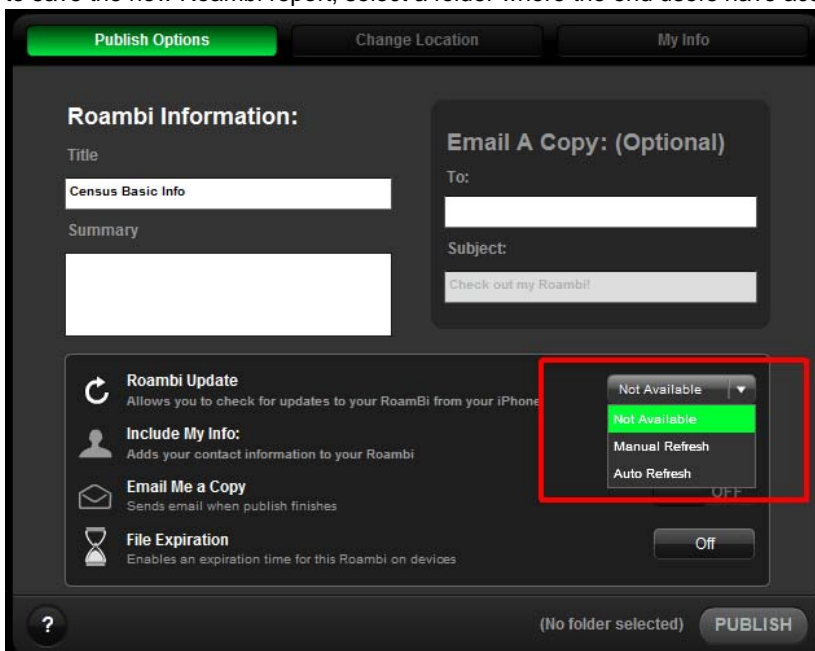


Figure 10. Roambi update options

7. If you have enabled the Refresh options in SAS Web Report Studio, Roambi can extend the data refresh option to the end users (on their devices). To do this, in the Publish Options window, choose from the Roambi Update dropdown list. Available choices are:
 - None: The end user will not be able to refresh the data in the report
 - Manual Refresh: When the user downloads the report, SAS Web Report Studio will update the data and supply the device with the latest available data. The user will be able to manually refresh data after it has been downloaded to their device.
 - Auto Refresh: This option will update the data and supply the device with the latest available data when the user downloads the data. It will then subsequently automatically update the report whenever the user opens the report from their device.
8. After saving your report, you can now access it from your device. How to connect to your server from your device will be discussed in the next section.

SUPPORTED SAS FEATURES¹

Supported Features

- List tables
- Cross-tabulation tables
- Graphs
- Multiple report objects (tables, graphs)
- Filters
- Prompts (not cascaded, not shared)
- Data formatting sections (only one at a time per Roambi view)
- Group breaks
- Security, row-level security
- 999 Columns and 400 data points

Features That Are Not Supported

- Images
- SAS Stored Processes
- Text objects
- Geographical maps
- Externally created reports (created by SAS Enterprise Guide or the Output Delivery System)

ACCESSING YOUR REPORTS FROM YOUR DEVICE

Currently, Roambi is compatible with the following Apple devices:

1. iPad and iPad Mini
2. iPhone
3. iPod Touch

To connect to your Roambi server,

1. Download the Roambi app from the app store to your device.
2. On the top left corner, tap the connect button which will bring up the Roambi Connect menu
3. On the left, tap the "+" sign to create a new connection to your server
4. Under the "Add Account" menu, tap the Roambi ES option
5. Enter the address to your Roambi server
eg: *Http://myservername:port/*
6. Select the name of the SAS Web Report Studio portal that you set up earlier
7. Enter your log in credentials
8. After the server verifies your credentials, it will show you a list of portals you have access to.
9. Under Roambi Connect, you will now see your Roambi server account
10. If you tap that account, it will show you the portals you have access to, select the SAS Web Report Studio portal that you set up earlier

11. You will see your SAS Web Report Studio folder structure
12. Navigate to the folder when you saved your report and select the report you saved.
13. After downloading it, you can now interact with the report

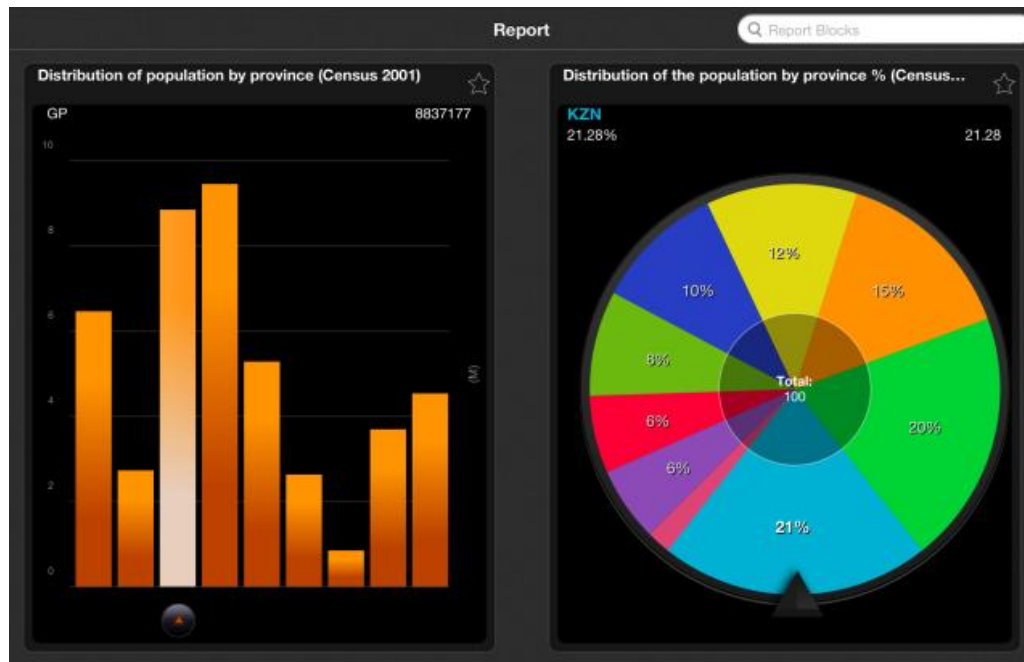


Figure 11. Downloaded Roambi created in SAS web Report Studio

ROAMBI CAST

Roambi has a feature called *Roambi-Cast* which allows users to share their Roambi reports with other licensed users via email.

The people who receive Roambi-casts need to be authorized by the Roambi servers before they can consume the Roambi reports they have received.

SECURITY

In the context of SAS, Roambi inherits and leverages off the security architecture that your SAS environment uses. Users who have access to SAS Web Reports Studio will be able to access the Roambi interface through their web browsers and access the reports that they created in SAS Web Reports Studio.

The row and column security settings defined in SAS will be inherited by Roambi based on the credentials that are used to download the report from the Roambi server. The following security features are also available:

1. HTTPS encryption during data transmission
2. Roambi App specific PIN
3. Roambi App lockout
4. Remote Roambi data wipe for lost or missing devices

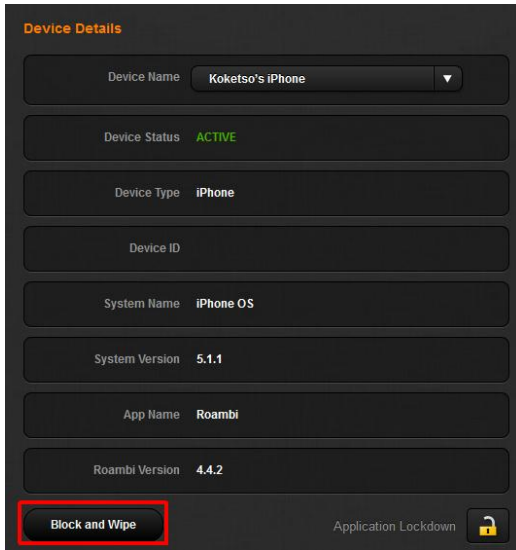


Figure 12. Remote block and wipe option

- File expiration date for a report on Roambi. This is done at creation when you save the Roambi.

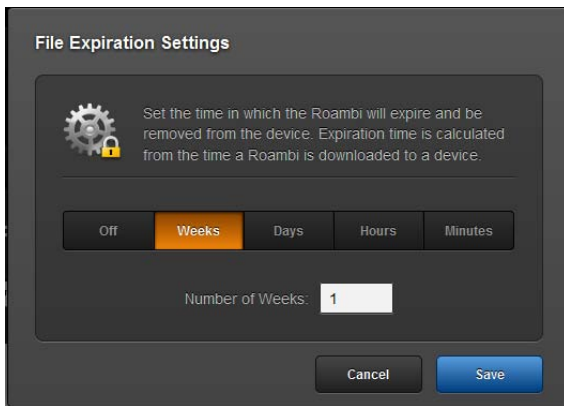


Figure 13. Roambi file expiration settings

- In the event that you would like to retract a Roambi that was already downloaded by users, you can use the “recall” option which is available under the “Open Existing Roambi”, select the report you’d like to retract. At the bottom left side, select the recall option.

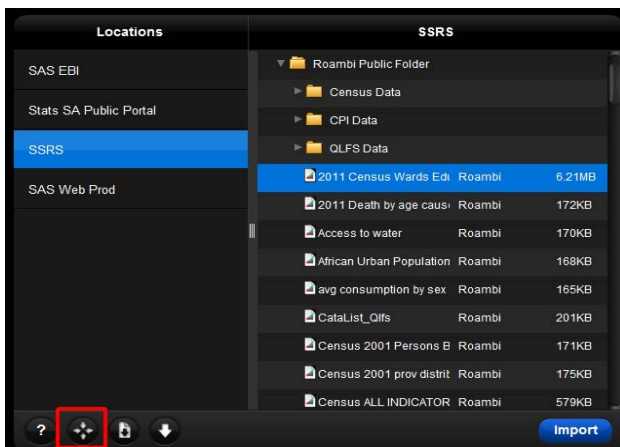


Figure 14. Roambi file recall

LICENSING

Roambi Analytics and Flow iOS apps are licensed on per user basis. All per user licenses are renewed annually. Business can publish an unlimited number of reports to licensed Roambi Analytics and Flow users.

Additional licensing options are available. For more information please contact your SAS account executive or Roambi. More information can be found at <http://www.roambi.com>.

CONCLUSION

In Data Integration (DI), processes usually involve Extracting, Transforming and Loading (ETL) the data into data warehouses. In Mobile BI, ETL has a different meaning: Extend, Transform and Load.

Extend: Extend and leverage off the functionality available in your BI suite. **Transform:** Transform the data you have through an interface like SAS Web Report Studio. **Load:** Load into destination devices.

ACKNOWLEDGEMENTS

¹ Supported and Unsupported features list was sources from the *Roambi ES for SAS® 9.2 and 9.3 User's Guide*.

RECOMMENDED READING

There is additional functionality and options which were not explored because they fall outside the scope of the paper. Options such as deployment options, data transmission security options and Public Portals can be explored further by downloading the various documents that are available. Please visit the SAS and Roambi websites for more documents.

CONTACT INFORMATION

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