

# SIRQUL<sup>TM</sup>

Sirqul Services  
(84 out 96 Service Endpoints)  
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## Table of Contents

<b>Accounts Service</b> .....	5
<b>Achievements Service</b> .....	6
<b>Advertising Platform Service</b> .....	7
<b>Albums Service</b> .....	8
<b>AMQP Services</b> .....	9
<b>Analytics Service</b> .....	10
<b>AppData Service</b> .....	11
<b>Application Configuration Service</b> .....	12
<b>Application Management Service</b> .....	13
<b>Asset Service</b> .....	14
<b>Assignments Service</b> .....	15
<b>Audience Service</b> .....	16
<b>Availability Service</b> .....	17
<b>Billable Entity Service</b> .....	18
<b>Billing Services</b> .....	19
<b>Cargo Type Service</b> .....	20
<b>Carrier Service</b> .....	21
<b>Category Services</b> .....	22
<b>Charges Service</b> .....	23
<b>Connection Services</b> .....	24
<b>Contests Service</b> .....	25
<b>Creative Service</b> .....	26
<b>CSVImport Service</b> .....	27
<b>Disbursements Service</b> .....	28
<b>Employee Service</b> .....	29
<b>Event Service</b> .....	30
<b>Facebook Service</b> .....	31
<b>Favorite Service</b> .....	32
<b>Filter Services</b> .....	33
<b>Flag Service (Community Policing)</b> .....	34
<b>Game Level Service</b> .....	35
<b>Geographic Locations (Trilateration) Service</b> .....	36
<b>Import Service</b> .....	37
<b>Invite Service</b> .....	38
<b>Keystore Service</b> .....	39
<b>Like Service</b> .....	40
<b>Listing Service</b> .....	41
<b>Locations Service</b> .....	42
<b>Locations (RnR) Service</b> .....	43
<b>Media Service</b> .....	44
<b>Mesh Network (Playfield) Service</b> .....	45
<b>Mission Invites Service</b> .....	46
<b>Missions Service</b> .....	47
<b>Notes Service</b> .....	48
<b>Notifications Service</b> .....	49
<b>Object Store</b> .....	50

<b>Offer Status Service</b> .....	<b>51</b>
<b>Offers Service</b> .....	<b>52</b>
<b>On Demand Service</b> .....	<b>53</b>
<b>Optimize Service</b> .....	<b>54</b>
<b>Packs Service</b> .....	<b>55</b>
<b>Participants Service</b> .....	<b>56</b>
<b>Passenger Service</b> .....	<b>57</b>
<b>Pathing (Turn-by-Turn) Service</b> .....	<b>58</b>
<b>Preview Personas Service</b> .....	<b>59</b>
<b>PostalCode Service</b> .....	<b>60</b>
<b>Programs Service</b> .....	<b>61</b>
<b>Promo Code Service</b> .....	<b>62</b>
<b>Purchase Items Service</b> .....	<b>63</b>
<b>Purchase Order Service</b> .....	<b>64</b>
<b>Questions Service</b> .....	<b>65</b>
<b>Ranking (Leaderboards) Service</b> .....	<b>66</b>
<b>Rating Service</b> .....	<b>67</b>
<b>Real Time Bidding Service</b> .....	<b>68</b>
<b>Refunds Service</b> .....	<b>69</b>
<b>Region Service</b> .....	<b>70</b>
<b>Reports Service</b> .....	<b>71</b>
<b>Reservations Description:</b> .....	<b>72</b>
<b>Resource Service</b> .....	<b>73</b>
<b>Retailers Service</b> .....	<b>74</b>
<b>Ride Bundles Service</b> .....	<b>75</b>
<b>Route Service</b> .....	<b>76</b>
<b>Route Settings Service</b> .....	<b>77</b>
<b>Routing Service</b> .....	<b>78</b>
<b>Routing Simulation Description:</b> .....	<b>79</b>
<b>Scheduled Notifications Service</b> .....	<b>80</b>
<b>Scheduled Tasks Service</b> .....	<b>81</b>
<b>Score Service</b> .....	<b>82</b>
<b>SecureApp Service</b> .....	<b>83</b>
<b>Service Type Service</b> .....	<b>84</b>
<b>Subscriptions Service</b> .....	<b>85</b>
<b>Third Party Credentials Service</b> .....	<b>86</b>
<b>Territories Service</b> .....	<b>87</b>
<b>Theme Service</b> .....	<b>88</b>
<b>Tickets Service</b> .....	<b>89</b>
<b>Tournaments Service</b> .....	<b>90</b>
<b>Tracking Service</b> .....	<b>91</b>
<b>Triggers Service</b> .....	<b>92</b>
<b>Twilio Service</b> .....	<b>93</b>
<b>Twitter Service</b> .....	<b>94</b>
<b>User Permissions Service</b> .....	<b>95</b>
<b>Vehicle Type Service</b> .....	<b>96</b>
<b>Wallet Service</b> .....	<b>97</b>
<b>Weather Service</b> .....	<b>98</b>

**Word Service ..... 99**  
**Workflows Service ..... 100**  
**WSSL Service ..... 101**

## Accounts Service

The Accounts service enables your users to establish an identity in your application, in addition to allowing your users to interact & engage with other users in a community. The identify of your user is critical in understanding who they are, why they're using your application, and how you can further personalize and enhance their experience. Think of any service that you have used either currently or in the past (e.g. shopping app, personal banking web portal, home security system, etc.). Each of these services more likely than not will require you to establish an account or identify in order to continue using their service.

Below are some example scenarios as to how these services can be used:

- Retail: Customers inside of a retail store who have the shopping app installed should be able to receive personalized notifications about sales that they would be interested in.
- Medical: Patients, doctors, and nurses should each be a different account type so that they have their own specified roles & permissions.
- Real Estate: The garage door of a smart home should automatically open for the owner of the home as they approach the driveway.
- Automotive: The driver's side door should only unlock when the registered owner approaches the vehicle.
- Robotics: The drone should deliver a package only to the customer account that requested and paid for the product.

The Accounts service is important so that personalized data & content can only be accessed by a particular individual. In addition, identifying & understanding your user accounts behavior will help you decide in making the right feature updates for your product or service. User accounts are also important in the aspect of collecting data in order to make good business decisions. For instance, learning more about the frequency of logins, average usage time per day, user behavior, and much more. All of these are critical pieces for a successful product or service.

Below are great example services that could be combined with the Accounts service:

- Wallets Service: User accounts that have purchased offers that are saved
- Notifications Service: Personalized push notifications that are targeted to user accounts that fit in a particular audience
- Connections Service: User accounts can become friends with other user accounts
- User Permissions Service: User account can access their friend's photo album, but cannot make any edits or upload new photos

## Achievements Service

An achievement can be any thing or object that is highly compelling to users and can be rewarded to them after completing something. There are users who spend hours of time throughout the day on a single application just to earn these achievements. Going even further, users who go after these achievements want to earn them so that they can show off to their friends or community.

Below are some example scenarios as to how these services can be used:

- Retail: Customer purchases clothes at a retail store. Retailer rewards the customer with an achievement that touts them as 'Customer of the month!' for purchasing the most clothes during the month.
- Medical: Patient goes to their dentist for teeth to be cleaned. If patient returns next time with healthier teeth, they can be rewarded with an achievement and earn a discount on their next check-up.
- Real Estate: A sports fan is rewarded with the 'Friendliest fan of the game!' achievement for connecting with the most fans during the game.
- Automotive: Driver receives 'Safest driver of the year!' achievement from his insurance company for not getting into any accidents or disputes during the year.

Achievements are critical to keep your users engaged & interacting with your product offering. It's important to understand what drives your users and what motivates them when using your product. Achievements can be used to analytically track the usage & time spent on your product and their progress on attempting to earn an achievement. By being able to quantify the progress and behavior of your users, it helps you to push out the content that really matters and what users find interesting. With doing so, substantially increasing the amount of time users spend on your application.

Below are services that could be combined with this service:

- Assets Service: Achievements can be in the form of a compelling graphical asset, such as a 'badge'. Users can collect these badges based upon their actions in an application.
- Offer Service: Users who are rewarded with an achievement may also be granted with an offer as part of the accomplishment. Such as a coupon or voucher.
- Tickets Service: When an achievement is unlocked, the user may be granted with 'tickets', which is digital currency that can be used to purchase products in your application such as gift cards, in-app purchases, and even redeemable for cash.

## Advertising Platform Service

Sirqul's Advertisement Platform enables you to target your users with compelling and personalized ads. These can be in the form of banner ads inside of your application or push notifications of a particular deal that is nearby the user's location. These are just two basic examples out of many other ad types that we can support.

Below are some example scenarios as to how these services can be used:

- Retail: Customer is browsing through their shopping app and sees an ad about a sale on a particular item.
- Medical: As patient is walking inside of the hospital, they receive a push notification about a discount at the gift shop.
- Real Estate: User sees an ad on a Smart Booth while they are walking by. The advertisement is personalized to the user's interests based upon what they had purchased at their favorite retail stores.

Sirqul's advertising platform allows you to reach the right people at scale while driving viral growth and adoption. It provides the ability to customize campaigns and eliminate unnecessary costs by targeting customers by interests, location, and social interactions. You want to maximize your investment, and only guide promotional messaging to customers most likely to respond. One compelling reason to utilize the advertising platform is the ability to dynamically update content on the fly and immediately deploy seamlessly. A differentiating feature with our platform is the ability to inject these ads into content that looks and feels integrated and does not distract the user in a negative way. An example of this could be when you replace the keyboard buttons with ad-based iconography. This is important because a user may not think much of the ad placements, but since they are interacting with it constantly, they will unconsciously have it visualized in their mind.

Below are services that could be combined with this service:

- Assets Service: An ad will require assets to be used to create a visually compelling content placement
- Audience Service: An ad will be targeted to an audience that fits a particular persona, in a certain location, and with specific interests.
- Creative Service: The creative service allows for ad placement or content to be dynamically updated on the fly
- Reporting Service: You should be able to generate reports based upon ad clicks, ad views, and all other data that is related. This allows you to make data driven decisions to help steer your product in the right direction.

## Albums Service

An album is simply a collection of items including words, photos, videos, audio, tasks, and other various objects that are presented to the user of an application. For each of these files that are uploaded into an album, users have the ability to comment, like, and dislike each of these assets. Albums can be shared with friends & other people that you have assigned in a group. Users can upload as many photos, videos, and audio files as they choose, assign each with its own name & description.

Below are some example scenarios as to how these services can be used:

- Retail: Customer opens up their shopping app and is invited to view a collection of clothes with images that are on sale for the weekend.
- Medical: Patient documents can be stored as a collection for the hospital staff members to pull up when they are needed.
- Real Estate: Home owner has a collection of automated tasks that should be triggered during the day, including automating the air conditioning, coffee being brewed, the TV turning on at a specific time of day, etc.
- Automotive: Car owner has a collection of automated tasks that should be triggered, such as the car unlocking as he approaches, air conditioning turning on if it's above a certain temperature, etc.
- Robotics: Assembly factory robots have a plan of automated tasks that they must complete.

Albums are essential in any application that involves having to keep a collection of items for the user. For example, imagine a powerful tool that enables users to share their photos and audio securely, with the people they care about the most. Now, give users the ability to create groups, leave text and voice comments, tag their location, narrate an image, and chat in real-time. These are all compelling features that motivate users to stay active and involved inside of your application.

Below are great example services that could be combined with the Accounts service:

- Assets Service: User has the ability to store all of their images on a trip they took inside of a collection.
- Like Service: Users can 'like' an image or file that a user has uploaded inside of a collection shared to the community.
- Note Service: Users can leave notes to an image or file that a user has uploaded inside of a collection shared to the community.
- User Permissions Service: Owner of a collection of assets can share the collection so that other users can access it and upload files themselves.



## AMQP Services

The Advanced Message Queuing Protocol (AMQP) is an open standard for transferring data between systems. Queues can be setup for applications so that analytic data that is sent in or generated can be published to 3rd parties. Queues can also be configured to consume data from 3rd party queues and then make a service call to take action on the payload.

Below are some example scenarios as to how these services can be used:

- Retail: publish customer location information as they are moving around the store
- Smart Home: receive door entry logs from a 3rd party IoT system

This service is important because it your system to not have to poll another system to check if there are updates such as analytic data that needs to be pulled in. This avoids unnecessary service calls to be made to perform these kinds of checks. Instead, it allows the other system to push data into your system whenever there are new updates to be made.

The Scheduled notification service works well with the AMQP service. For example, a system can have an AMQP stack deployed, take a payload format, parse, and say to perform a scheduled notification. So if there was a Smart Door system and the doorbell alarm puts a message on the queue, your system can consume the message and send an alert to the home owner that there's someone at the door.

## Analytics Service

Analytics is a tool to help you understand how people interact with your application, what they do when they are using your application, and why they abandon the application. All of these elements are crucial to having a successful understanding of your users, customers, and target demographics. Analytics present a simple view of your application's performance without having to study lines and lines of log data.

Let's take the basics such as usage and bounce rate. Just because you built an application does not mean that people are downloading and installing it. And just because they run the application, does not mean they use it. Recording and understanding Visits and the behaviors of unique visitors can let you know if people are getting the benefits of your services, which features are popular, and inform you as to whether you are capturing new audiences. The bounce rate will tell you if users launch your application and quickly leave it, identifying areas that you could improve on such as content or navigation.

Going even deeper, analytics can tell you who the people are that are interacting with your application. Storing behavior tied to a Social Media account is a vital component to understanding your users because these accounts usually have valuable meta-data associated with them that can later be combined with your own analytics to provide mineable, predictive visualizations that are attractive to partners, clients, and drive adoption and engagement by making sure you are focusing on the most important services vs. what you "think" will be popular. If you are running an ad campaign or what we call "missions" and "challenges", you and your client partners are going to want to know if it is working? Having a customizable way for application owners to embed analytics that are important to their own business and understanding of the customer is important and Sirqul provides the tools necessary for centrally distributed, searchable, minable, cross device, cross application analysis to occur within a simple-to-use web dashboard.

Companies "know" that they need mobile and desktop/laptop applications, and so they build them, but how many actually know how effective those apps are? How many thousands of dollars are spent on flashy graphics, layouts that display countless products or features, and enumerable services without knowing if they are influencing the customer in a positive way? Which features are actually bringing people to the application? Do your users share the app with friends? If so, which method is better: SMS, FB, Twitter, or URL sharing? Who are these users and how can you see aggregate behaviors? Is your application keeping the users engaged long enough and often enough to make a purchase? Sirqul's analytics engine can help answer all those questions and more.

Developers use the following endpoints as a means of "instrumenting" their code. In context of computer programming, instrumentation refers to an ability to monitor or measure the level of a product's performance, to diagnose errors and to write trace information. This endpoint is used to send in custom analytic "Tags" that can be used for this purpose. For example, when an application user leaves your application and it gets put into the "background", a developer can add a call to the Sirqul servers that record that event. Please review the following code snippet, paying attention to the following parameter: "tag=EnteredBackground". Once received by the Sirqul server, the custom analytic tag "EnteredBackground" that can be queried in the database by device, in aggregate, by application, by time, by operating system, by device type, by account, by location, by version, etc.

## AppData Service

The AppData service allows you to build out the JSON of large amounts of data and put it into cache, so that when a user needs to load content on an app or website, the data is already pre-loaded. This service should be used when you have a lot of data that needs to be loaded and you want to minimize the amount of time the user has to wait before being able to access content. This works great for game applications, where it may contain hundreds to thousands of game levels that need to appear on one single view.

Below are some example scenarios as to how these services can be used:

- You have a game application where game levels are split into different groups called 'Packs'. A pack could have hundreds of game levels. In order to allow the user to open the pack without having to wait minutes to be able to select a game level, cache the game levels via the AppData service so that the next time the user loads the pack again, they will not need to wait at all
- You have a photo sharing application where an 'album' can contain hundreds of your photos. In order to allow the user to open the album without having to wait minutes to be able to view a photo or video, cache the items in the album via the AppData service so that the next time the user loads the album again, they will not need to wait at all

The AppData service is important because it prevents frustrating experiences for the user to occur. When a user has to wait an unreasonable amount of time before viewing their desired content inside of an app, there's a high possibility that the user may never return to the app again. The AppData service will reduce and possibly eliminate wait time for users so that they have a seamless experience inside of an application.

Below are example services that could be combined with the AppData service:

- The Albums, Assets, and Notes service works well together with the AppData because when combining assets and notes into an Album, the data could get quite large. The AppData service should be used to cache data from assets and notes so that the user does not have to load this information every single time they open up an album inside of a photo sharing application.
- The Packs, Game Levels, Missions, and Offers services work well together because the data in combination of these services could also get quite large. The AppData service should be used to cache data from offers, game levels, and packs, so that when the user loads their mission, they will not have to wait long for the content to appear

## Application Configuration Service

The application configuration service allows you to dynamically update files, themes, and the look & feel inside of your application through the server and not by client-side updates. This allows you to customize your applications without having to require any client-side changes. This is extremely important when you need to make updates on-the-fly in order to meet certain deadlines or seamlessly push out seasonal promotions or content updates.

Below are some example scenarios as to how these services can be used:

- Retail: Push out promotional content or ads inside of the customer's shopping app without a client update
- Medical: Patient sees an ad on their Dentist application about a summer promotional discount on teeth cleaning
- Real Estate: Home owner sees a holiday theme update on their smart TV menu UI
- Automotive: Car owner sees an ad pop up on their phone for a free car wash at the nearby gas station.

It's absolutely critical that you have the ability to generate and push out content on-the-fly without any sort of client side update. Otherwise, you will be forced to submit application updates to the various app stores, and this will cost time and resources. Instead, utilize our application configuration service to apply all of these updates dynamically, saving you all the hassle of submitting your application.

One compelling example that can make a huge impact to your application is by being able to update the theme and look & feel of your application. You can easily customize the menu interface to make it appear as the theme fits with the user's personal interests. This is important to get your users on-board and talking about it with their friends and community. To go even further, we can support the ability to schedule these dynamic content deployments based upon the date & time that you need them to apply in your applications. Simply schedule the time and day you need the content to be pushed out. The application will then receive the update once the day & time is triggered.

Below are great example services that could be combined with this service:

- Applications Service: Enable your application to dynamically push out content on-the-fly without client updates
- Assets Service: Combine your ad message with visually compelling assets and schedule the deployment to the application
- Creative Service: Utilize the banner ad type and schedule the deployment to the application

## Application Management Service

In order to start using the Sirqul suite of APIs and web interfaces, developers must first create an application. You can create, publish, and manage your application(s) within the Sirqul ecosystem. Our APIs and web interfaces provide the flexibility you need to make real-time changes and be up-and-running in a matter of minutes.

Below are some example scenarios as to how these services can be used:

- Retail: Retail store releases a shopping application for customers to install so that they can view all of the latest news and sales updates.
- Medical: Patient downloads a hospital application to setup doctor appointments and to also communicate with the hospital staff members remotely via video chat.
- Real Estate: Home owner installs an application to manage all of his smart home devices through his phone device
- Automotive: Car owner installs an application on his phone to manage the climate control and start the engine remotely.
- Robotics: User installs an application on his device to be able to control his drone's movements and actions

If you want to utilize any of Sirqul's 60+ services, you must have an application created and configured properly. Once an application is created, developers can start to utilize the various APIs and functionality that enable you to manage your applications. For instance, enable push notifications for your application to send personalized messages to your users. In addition, create ads through our advertising platform and push content that is relevant to your users interests. Once you have an application established in our ecosystem, you can really start creating compelling and differentiating features and functionality by utilizing the various services that we have available. Each of our services are like building blocks that can be taken and integrated inside of your application.

Below are great example services that could be combined with this service:

- Application Configuration Service: Create compelling content or ads and deploy them onto your application on the fly, without a server or client update.
- Notifications Service: Enable your application to support push notifications. Push notifications can then be sent to your users with custom and tailored messaging.
- Ads Service: Create and deploy ads that make sense to your users that are compelling and relevant to their interests.
- Analytics Service: Track the type of usage your users have in your application. Use this data to drive your business decisions to enhance the overall experience of your application.

## Asset Service

Assets are a list that can be made up of photos, videos, audio, text, and many other various object types. Assets can be used for scenarios such as an image used for an ad banner, a large HD image used for the application menu background, visually appealing iconography injected inside of your application, and so much more. If you want to create a visually compelling experience for your users, then utilizing the Assets for your product or application is a must.

Below are some example scenarios as to how these services can be used:

- Retail: When a customer opens up their shopping app, they can see images associated with each of the clothes in the catalog. These images can be considered assets.
- Medical: Patient sees a list of medicine that they have been prescribed to take each day. Each of these medicines has an image associated with it so that they can visually associate the name of the medicine to the capsule itself.
- Real Estate: Sports fan sees a smart booth at the stadium. The booth shows an image on the display about \$5 beer at the beer garden. The graphic used is be a high quality image asset.

The Assets service allows you to create a visually compelling experience for your users. Use the Assets service if your application requires the use of HD media content, and you need to be able to display a list of these items to your users. For example, if your application contains a catalog of retail products, and each product requires a high quality photo or media content to appeal to your users, utilize the Assets service to upload the content for each of these items in the list. If the application contains a list of patients that require a photograph of each patient for verification purposes, the Assets service allows you to upload the photographs in the appropriate resolution. In addition, iconography should consist of utilizing appropriate assets so that your users understand what they mean. The Assets service will help you build a visually compelling application in order to appropriately communicate to your users.

Below are great example services that could be combined with the Accounts service:

- Accounts Service: Each user account requires a profile image in order to verify their identification. Use the Assets Service to allow users to upload an image.
- Albums Service: Your application may have a list of albums. Each album can contain assets. Use the albums service to allow users to upload assets to each of these albums.
- Creative Service: You can create an ad banner to be pushed out to your application. The ad banner is associated with an image.

## Assignments Service

Assignments are like tasks that can be given to your internal employees or management team. For example, your retail store employees may have a sales quota that they must meet by the end of the month. You can use assignments to keep track of the status on your customer leads. Whether or not they have been contacted, if they seem interested, if you need to schedule another meeting, and so forth. For example, keep track of the status if a potential patient has been contacted for a follow-up visit. The Assignments service is essential to enable your business to meet its goals.

Below are some example scenarios as to how these services can be used:

- Retail: Sales person has products that they need to sell, and has a quota that they need to meet by the end of the month. Use the Assignments service to track the performance of this employee.
- Medical: Hospital staff has reached out to patients that need a follow-up appointment. Keep track if whether or not the patients have responded.
- Real Estate: Keep track if the food vendor at a sports stadium has sold enough beer to meet the quota for the day.

Assignments are important to make sure that your business is meeting its goals. Whether it is the number of calls that they have to make to hospital patients in need of a primary doctor, or if it's the homes around particular neighborhoods in a region that would be interested in a smart home solution. Think of any scenario where you need to reach out to your customers and be able to manage the communication and potential leads. To grow your user base of your business or service, you need to be able to measure your performance and have the ability to make adjustments based upon the data that is collected. The assignments service is capable in helping you make these decisions.

Below are services that could be combined with this service:

- Analytics Service: Use the Analytics service to keep track of your sales quotas, phone calls, communications, etc. Set it up on a web dashboard so that you can review performance in real-time.
- Employee Service: Employees of your business or service should always have goals such as increasing sales numbers, getting more customers in the door, more revenue, etc. Utilize the Assignments service to help create these goals.
- Reporting Service: Generate performance reports so that your team can review if whether or not the employees are meeting their goals for the day, week, month, year, etc.

## Audience Service

The Audience service allows you to create, define, and manage the target users for your product or service. Being able to define your audience is essential when trying to target items to users that have their own personal interests that may be different than others. In general, you want to maximize your investment on marketing and promoting content to your users, and only guide the right messaging to customers most likely to respond.

Below are some example scenarios as to how these services can be used:

- Retail: Customers who use the retail app should be segmented into specific target groups based upon their browsing and purchasing patterns.
- Medical: The hospital may have a list of patients that they want to promote special discounts for various types of check-ups. The hospital should be able to segment these patients based upon their past/current diagnosis, family history, etc.
- Real Estate: The grocery store may want to promote homes that have grocery deliveries. Segment these homeowners based upon their grocery purchase patterns and what they might be interested in purchasing.

Being able to segment your user into audiences is important so that you can send the appropriate messaging and content. You can segment your audience by age, gender, operating system, device, application, interests, location, pathing, and more. With these various categories, you have the freedom to configure how these messages and content should be delivered to your users. Customize these messaging so that they are tailored and personalized so that your users do not lose interest and increasing the likelihood of a response.

Below are great example services that could be combined with the Accounts service:

- Creative Service: Ads should be tailored with the appropriate graphics and targeted to a specific audience most likely to respond
- Offer Service: Offers should be pushed out to specific audiences that would be interested based upon their buying habits.
- Preview Persona Service: Be able to send an ad or content to an application, and be able to preview what it would look like from the user's perspective. This is a great way to validate your campaigns and promotion efforts.
- Pathing Service: Based upon your user's pathing trends (ex. Driving patterns, walking patterns, etc.) push out content based upon where you predict they will be and also where they are going to be at a particular time in the day.



## **Availability Service**

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirqul.com](mailto:info-routenroll@sirqul.com)

## Billable Entity Service

The Billable Entity of an account is assumed responsible to receive all billing inquiries that require a payment to be made. An example scenario to utilize the billing entity service is when a customer owes your business or entity a payment under a monthly billing model. If you are invoicing the customer on a monthly billing cycle, the inquiry must be sent to the billable entity of the account that you are charging. As it is critical to ensure safe and secure transactions to be made, only one billable entity is allowed per account.

Below are some example scenarios as to how these services can be used:

- Retail: Retailer sends invoice to a customer for an online purchase that they made. The customer has a billable entity established and sends payment that is owed to the retailer.
- Medical: Patient is billed for their medication subscription. The hospital sends the invoice to the billable entity of the patient's account.
- Real Estate: Homeowner has a monthly subscription for delivery of groceries made to his apartment. The customer is invoiced on a monthly basis based upon all items that were purchased during each billing cycle.
- Automotive: Car owner passes a toll bridge every weekday morning each month in order to get to work. As the car owner is the billable entity of his account, he is invoiced at the end of the month.
- Robotics: Smart vending machine uses a monthly billing model to invoice employees in an office. The employees are invoiced monthly based upon all goods that were purchased during the month.

It is important that the billable entity of the customer is established so that the invoices are sent to the appropriate destination. For example, if your product or service allows customers to make purchases, and if you bill them based upon a monthly cycle, each transaction must be recorded in an invoice and then sent to the correct individual. As there can be multiple individuals under a single account, the billable entity is important to get right to ensure payments come in on time.

Below are great example services that could be combined with the Billable Entity service:

- Accounts Service: There can only be a single billable entity that is associated with the account that owes a payment.
- Subscriptions Service: The billable entity can be invoiced based upon a monthly subscription model.
- Billing Service: The billing service is the method of transaction used, and will be recorded as so in the invoice that is sent to the assigned billable entity on the account.

## Billing Services

The billing services allows customer accounts to save and manage a credit card on file. The customer account can then use that credit card to purchase virtual currency or valid offers in the system. The virtual currency is just like a gift card that can then be used at a later time to purchase valid offer types, those offer types include products, coupons, vouchers, event entry, media downloads, and tickets. Any solution that would like to generate revenue using Sirqul Offers needs to implement these services. These services work in conjunction with the Authorize.net payment gateway for secure online payments. All funds are transacted using the payment gateway in real time and then disbursements are made to the offer owner at a later date determined by the solution you define.

Below are some example scenarios as to how these services can be used:

- Retail: Customers are presented a list of products to purchase. After reviewing the product the customer decides to purchase the product which is added to the customer's order list and then shipped.
- Medical: A patient is granted a \$30 meal credit per day during inpatient hospital stay. Using that credit the patient can order from the cafeteria and have it deducted from their current balance.
- Real Estate: Customers are presented with in home apps to enhance the smart home experience such as light dimmers based on time of day. The customer can purchase the app and then download it for use.
- Automotive: Customer is warned of an imminent service requirement, say an oil change. Using the in car display they can schedule and pay for the service appointment.

Online security is critical when dealing with customer credit cards and payment transactions. Sirqul takes the worry out of the equation with secure services and a gateway partner with extensive experience protecting your assets. The billing service provide a simple, easy yet secure way to store credit card and virtual credits. Once stored it then provides one-click purchasing of offers within the system, making the customer experience the best possible.

Below are services that could be combined with this service:

- Account: a customer account is required.
- Wallet: list of purchased items and means of tracking the status of each transaction.
- Offers: list of offers available; offer types include: products, vouchers, coupons, events, media, and tickets.
- Reports: view the purchase history of customers

## **Cargo Type Service**

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirgul.com](mailto:info-routenroll@sirgul.com)

## Carrier Service

The Carrier service returns a list of emails that the particular phone carrier supports. For example, if the user's phone carrier is AT&T, then the format would be "[1231231234@txt.att.net](mailto:1231231234@txt.att.net)". This is a way so that if you want to send SMS messages to your users, but don't want to use a service like Twilio that costs money, you could use email-to-text method. As long as the user of the account chooses which phone carrier they are assigned to in addition to their mobile number, this will be possible.

Below are some example scenarios as to how these services can be used:

- If user wants to receive alerts whenever there are changes to their upcoming trip itinerary, they must enter their phone number and phone carrier (e.g. AT&T, T-Mobile, Verizon, etc.). They should then receive SMS alerts via email

The Carrier service is important because some businesses that want to run a pilot don't want to incur costs of using services like Twilio, as it could get expensive depending on how many SMS messages are sent each day. This is an alternative service/method that allows you to send scheduled or manual SMS alerts to your users without having to incur these costs.

Below are example services that could be combined with the Carrier service:

- Scheduled Notifications, Triggers, and Notes work well together with the Carrier service because users will be able to receive scheduled SMS alerts whenever there are updates being made to their service, receive an SMS alert via Trigger when they enter a geofence, and also Notes that are added into the SMS message

## Category Services

A category is a classification or grouping that can be applied to many of the Sirqul services. Categories are defined as a tree structure with parent-child relationships, each item can only have 1 parent. Using the category services application/solution owners can manage the available categories unique to that solution and how they are related to each other. If authorized categories can be globally available to all solutions.

Categorization is important whenever searching a large database of items, otherwise you have no way to delineate the individual items and to find what you are looking for. The classification allows the customer to better self select the kind of information they would like returned. This becomes even more critical for personalization and targeting information to the appropriate audience of customers.

Below are some example scenarios as to how these services can be used:

- Retail: A restaurant application may define a set of categories by cuisine with sub-genres of those under each cuisine.
- Medical: Doctors and nurses can be categorized by specialty.
- Real Estate: Rooms might be designated by use so that lighting by default is dimmer for entertainment places versus brighter for work spaces or kitchens.
- Robotics: Parts could be categorized to indicate the sorting, fragility, or include/exclude.

There are several services in the system that utilize the categories to facilitate searching and matching, they are: Applications, Accounts, Audiences, Rating, Listings, Offers, Retailer Locations, and Retailers. It is recommended if you are generating data for these services then you should think about using categories to better classify the items for your customers. The more data present the more critical this meta-data information becomes.

Below are services that may be combined with this service:

- Accounts Service: each person can be assigned any number of categories which can then be used to match audiences, offers, and other items to them.
- Audience Service: categories defined for an audience will match to the account categories so you can match interests.
- Rating: rate categories so that you can rate on any number of factors.
- Offers, Retailer Locations, and Retailers Services: classify offers, business, and locations for searching.

## Charges Service

The Charges service allows a business to charge the credit card, bank account, tickets, bucks, and so forth, of a user in our system. This is helpful when you are running a business where users can purchase items, and you need to charge them because of penalties or fees that need to be assessed. For example, if a user makes a late payment on their subscription of a service, you can charge their credit card saved on file x amount per the agreed terms and conditions. Charges can be done both manually and automatically, giving business owners the flexibility on how they want to handle each customer use case.

Below are some example scenarios as to how these services can be used:

- Retail: Customers are charged money on their credit cards because of a late subscription payment
- Healthcare: Hospital can charge patients their credit card if they do not cancel their appointment in a timely manner
- Smart Vehicle: For speeding infractions applied to a driver, charges on their credit card or credit balance can happen

The Charges service is important because it prevents users from being able to violate the terms and conditions of your product. For example, if a user signs up and subscribes for a service offered by your product, but does not pay on-time per the agreed upon terms, this allows you to charge them for the amount owed to them. This is also important so that you are not liable for users that are trying to game a system. There are malicious people that could intentionally try to hurt your business by registering hundreds or thousands of accounts, making many purchases, and then canceling their subscription right before it's time to pay at the end of the month.

Below are example services that could be combined with the Charges service:

- Wallets Service: The wallet can track the items that a user has added
- Notifications Service: Users receive notifications when they have not yet paid their monthly subscription on time
- Billable Entity: The billable entity is the user that will be charged
- Billing: The payment method that the user saved
  
- Reports: Generate reports for ip addresses that have unusually large amount of account creations

## Connection Services

The connection services allows for the creation of social graphs by relating accounts to one another, forming custom groups, and facilitating friend/follow requests. Using the standard accept friend request model users can build up a list of friends within the Sirqul system; then they can form groups, share content, and many other social features critical to engaging solutions. Using a list of friends your solutions could show the recent content submissions such as comments, tasks, or event accepts to name just a few.

Below are some example scenarios as to how these services can be used:

- Retail: A loyalty group can be contacted with early-bird specials and other VIP announcements,
- Medical: Create support groups for segments of patients to interact.
- Real Estate: Connect with friends and family so the home system can greet guests as they enter the home.
- Automotive: By following the service center manager the owner can get updates and changes to the service center hours and provided services.
- Robotics: A cohort of automatons can notify the group of tasks being completed.

Use this service to empower users to create relationships and grow your community. Creating engagement and social communities will take your solutions to the next level.

Below are great example services that could be combined with this service:

- Account Service: get the profiles of follows and see their latest actions or comments; a doctor can see what actions the nurses have been taking with a patient.
- Ranking Service: see how family members rank against each other for chores completed this week.
- Favorites Service: retrieve a list of favorite offers (products, events, media, etc), locations, or album.
- Album Service: invite all members of a group to an album to discuss a book, movie, or upcoming medical procedure.



## Contests Service

The contests service allows you to push out content and gain feedback from your users via comments, ratings, likes, and much more. A contest itself can be in the form of a question that allows your users to choose between options or choices. The options or choices themselves can be in the form of text or media assets for users to then select. As an example, a contest can be a poll to allow your users to choose between the types of deals or products they would like to see when they enter your retail store location. Based upon the selections, you can make better business decisions to help improve customer satisfaction and expectations.

Below are some example scenarios as to how these services can be used:

- Retail: Retailer sends a poll to their customers about the product line they may want to see for the next season.
- Medical: Patients can be given two time choices for appointments that are available for next week. The patient can respond by choosing which time they prefer.
- Real Estate: Grocery delivery service asks the homeowner if they want the delivery of their goods to be done over the weekend or during a weekday. The homeowner can choose their preference.
- Automotive: The smart car may ask the user which gas station suggestions they prefer when running low on fuel. After the user chooses their preference, the smart car will only provide options to the gas stations that were selected.

Learning more about your users and their preferences is important for being able to improve the experience for each individual. The content that is shown to each user should be personalized and appealing. This will increase the likelihood that they spend more time on your product.

Below are great example services that could be combined with the Accounts service:

- Assets Service: Contests can utilize art assets so that the messaging is compelling for users to participate and interact with.
- Likes Service: The options that a user can choose from in a Contest can be 'liked', which can also be delegated as the user's selection.
- Analytics Service: Based upon the user's selections for your contest campaign, you should be able to dynamically review the activity and results that are coming in.
- Reports Service: Based upon a collection of information for all contests that have been completed for the campaign, generate reports that will help you make the right business decisions.

## Creative Service

The creative services enable you to create and manage advertisements or editorials that appear in various solutions. The creative services support a set of standard advertisement sizes as well as custom sizes to fit specific solution needs. Unlike standard advertisement services creatives support custom actions for clicks; allowing deep linking to other parts of applications, replacing the application style, or standard web link loading. The custom sizing and actions enables a variety of solutions such as how-to information (for learning the application), advertising of in-app purchases, showing the top ranking account, or a branded application overlay. All of the content for these solutions can be easily managed from the advertisement dashboard without a new application release.

Below are some example scenarios as to how these services can be used:

- Retail: use Sirqul's asset morphing service to convert offers into advertisements for greater reach into applications that only support advertisements, clicking the advert can direct the customer to the purchasing flow either in-application or online.
- Medical: remind employees of best practices and procedures they should be following during long loading screens or in just after logging in.
- Real Estate: Build a chore list that can be clicked to mark it as complete.
- Automotive: using the car's GPS get geolocated advertisements targeted to the owner of the vehicle allowing the manufacture to provide satellite radio as a free service.

The creative services need to be used in conjunction with the account, mission and audience services to be a fully featured solution. The mission services allows you to build a campaign that sets a time frame, audience targeting, and limit the total spend. The audience service allows you to specify the location, device types, and customer demographics. The account service associated demographics with customers to allow for targets matching.

Below are examples of how the services work together:

- Account Service: the customer may provide their gender, age, interests (categories), and other demographics.
- Audience Service: the advertisement owner will specify the type of customers they wish to target, the kinds of devices (IOS or Android for example), and the location + radius of the targeting.
- Mission Service: Joins the audience, creatives, and timeframe together to produce a targeted, time bound campaign.

## CSVImport Service

The CSVImport service allows you to import specific data into tables inside of a database. This is useful when you need to seed large amounts of data such as businesses and products. For example, if you have an application that contains all of the businesses in the United States, and you have a CSV file that contains all of the businesses that includes their name, contact information, store hours, images, etc. you can use this service to import all of this information into your application by a click of a button.

Below are some example scenarios as to how these services can be used:

- You run a business and want to upload all of your products into a digital POS so that customers can find these items inside of an application. Up until now, everything had been a manual process and your products were never exposed on any website or application. Use the CSVImport service by having a CSV of all your cataloged products, vouchers, and coupons, and import this data so that your store's products can now be advertised onto applications for customers to view, add items to their wallet, and even make purchases before picking up the item at your store.

The CSVImport service is important because it saves you a lot of time and effort when trying to seed or onboarding businesses and products inside of your database or application. Also, not only can you import new businesses and products with the CSVImport service, you can also update existing businesses and products to keep this information as up-to-date as possible. Businesses are constantly changing and products change even faster. Use this service to update this information periodically

Below are example services that could be combined with the CSVImport service:

- Scheduled Tasks service works great with the CSVImport service, because you could dynamically feed new businesses or products into your application using a nightly update. This allows your application or service to always up-to-date with new data as well as updates to existing data
- Categories Service is also recommended to use with the CSVImport, so that you can categorize the types of businesses that you need to import such as Restaurants, Entertainment, Grocery, etc.

## Disbursements Service

The Disbursements service allows you to pay third-party users or vendors electronically and scheduled as opposed to by doing manual hand-written checks. For example, you have a marketplace business where there are vendors signed up that offer delivery services for customers that need shipments delivered. You will accept payments from the shippers, take a % processing fee, and need to schedule payments to your vendors what is owed to them with the remaining amount. The disbursements API will connect to an existing payments processing system like Bill.com or Authorize.net, which will then distribute money from your bank account to each of the vendor's bank accounts like a direct deposit. This can be scheduled on a weekly, monthly, or even on a per transaction basis.

Below are some example scenarios as to how these services can be used:

- Retail: Merchant disburses money to their employees through a direct deposit into their bank accounts
- Stadiums: The retail shops in a stadium will disbursement money to their employees through a direct deposit into their bank accounts
- Buildings & Spaces: Leverage the disbursements service to deposit money owed to each of the commercial owners of a building

The Disbursements service is important so that businesses can deposit money owed automatically to employees and vendors in a safe and secure manner. When there are hundreds or thousands of entities that need to be paid, having it scheduled and automated is the only way your business can scale. In addition, the disbursements service reduces the chances of errors or mistakes of incorrect funds being distributed. Since disbursements deals with real money, it's important that it is done in a secure way, meaning, if it is done automatically and scheduled, there is less of a chance for someone to tamper or making errors since they will not be handing and writing checks manually.

Below are example services that could be combined with the Accounts service:

- Wallets Service: Wallets can store the amount of money that is owed to them
- Notifications Service: Vendors can be alerted with notifications once the money from the disbursements service is been deposited
- Billable Entity Service: The information for the billable entity is what the disbursements service will use to deposit money to
- Employees: Disbursements can distribute money directly to the bank accounts of the employees of a retailer location

## Employee Service

Manage a hierarchical account structure for employees, organizational structures, and other taxonomies. Employee records can be assigned a roll and to a location they are associated with. A manager can be assigned and if no manager is provided this is the root of that tree (many roots all allowed). Retail businesses, volunteer organizations, paramilitary groups, amongst other can all benefit from services that organize their membership roles. A command and control system may use this to determine how to appropriately traverse the command structure for an answer to a question.

Below are some example scenarios as to how these services can be used:

- Retail: a retailer with several locations and employee roles could register each employee and restrict access to parts of the system based on the assigned role.
- Medical: when a nurse needs a prescription authorized their doctor (manager) can be contacted and if they are busy their supervisor can be contacted.
- Real Estate: each family member could have a role and a content approver, when the teenager wants to watch a rated R show a push notification is sent to the dad (approver) so that he can accept or decline the request.

Organizing resources and authorization structures is useful across a spectrum of professional and recreational fields. The use of roles a simple way of blocking access to whole features of applications. Getting authorization from a superior is a good options when you want to limit but not block access entirely to certain features or content.

Below are great example services that could be combined with this service:

- Notification Service: contact a superior for temporary access to content.
- Offer Service: limit which statuses an account can set for offers, require a manager for refunds for example.
- Dashboards: show or hide features based on the current account's role.

## Event Service

The event services supplement the offer event and listing services to make attending and searching easier and more feature rich. Once a customer finds a listing they like and a location showing the listing they can create an event that they, their friends, and anyone else can attend. A listing is a broadcast or occasion that can be viewed in many places; such as the super bowl. Once a customer finds a business, home, or other location where it is being aired they can create an event at that location to view the listing. Enhanced searching is also provided so customers can find events for their favorite teams, genres, and interests. Location owners or patrons can rate the location as a good place for team/participant so that other customers can search for locations supporting their interests. A similar search can be done to find attendees with similar interests.

Below are some example scenarios as to how these services can be used:

- Retail: a location that shows sports events can host events for teams participating in a match; customer can indicate they are going and exchange messages leading up to the event to generate buzz.
- Medical: a lecture series or employee training is sent out to many locations and employees can self-select where a majority wish to attend the training.
- Real Estate: a group of friends can collaborate on whose house to watch the local team's upcoming event and send message about what to bring.

This is an easy way to crowd source events at businesses or other locations. There are a multitude of possible showings or happenings to present and this allows owners to poll their customers for feedback on which to promote. Used with the rating service location owners can begin to understand the interests of their client base and target promotions that better satisfy their needs.

Below are the services that should be combined with this service:

- Listing Service: list upcoming soccer games for Real Madrid and use the event search to find locations that rate as supporter spots.
- Rating Service: by rating locations by category affiliations are formed to the listing participants (teams or groups).

## Facebook Service

Authenticate users in Sirqul by leveraging Facebook. Sirqul makes authentication via the third party social network seamlessly. It allows you to pull information from their Facebook account such as likes, profile information, friends, and so forth, as long as the user grants permission to do so. The service is secure so that this information cannot be accessed by other users unless they are granted permission by both the user and also through the application.

Below are some example scenarios as to how these services can be used:

- Retail: Allow users to login through their Facebook account so that all of their favorites and likes data can be leveraged to match them with products in your store
- Smart Home: Allow your user to login via Facebook to a custom music application installed in your home, which can then pull information from your Facebook account to recommend music based upon their likes and interests

The Facebook service is important because it allows your app to leverage additional information about your user that may already be available through their Facebook account. This means that you don't have to do anything within your application to build features in order to obtain information such as interests, likes, page follows, and so forth. This is an extremely easy and seamless way for your application to ask permission to the user to obtain this information.

## Favorite Service

Favorites are a list of items that a customer has selected as important or memorable. Currently offers, retailer locations, albums, and categories can be favorited so the customer can easily return to that item later or share it with their friends. You can also retrieve a list of who has favorited an item to see who thinks it is important or popular. Favoriting is a great way to make a wish list of things to purchase, a list of places to visit on a trip, or a list of song collections posted by others.

Below are some example scenarios as to how these services can be used:

- Retail: a shopping app shows a product the customer wants but not right away, just favorite it and think on the purchase.
- Real Estate: the family builds many playlist of music but the father selects a few as favorites; when the house "wakes up" in the evening the entertainment center turns on a selects one of the favorite playlists as ambient sounds.
- Automotive: the HuD detects that refueling has occurred and can prompt the driver to indicate if this is a favorite spot; when low on gas and hear a favorite location a notification can be sent suggesting a stop to fill up.

The favorite service is a quick and easy way to maintain a list of things of interest per account. Many applications utilize this as a core construct; pinterest, instagram, email (star or important), facebook (saved post), and many more. Information retrieval for customer is vital for applications with ever changing content.

Below are services that could be combined with this service:

- Album Services: using the album service you can create an instagram-like application where customers can then favorite posts for later viewing.
- Offer Services: any sort of purchasing solution that needs a way to save a potential purchase can use favorites to achieve this.
- Category Services: a set of categories could be a list of soccer teams, by favoriting a team then a personalized experience can be built around that team (or teams).



## Filter Services

A filter is a classification or grouping that can be applied to many of the Sirqul services. Filters are defined as a tree structure with parent-child relationships, each item can only have 1 parent. Using the filter services application/solution owners can manage the available filters unique to that solution and how they are related to each other. If authorized, filters can be globally available to all solutions.

Categorization is important whenever searching a large database of items, otherwise you have no way to delineate the individual items and to find what you are looking for. The classification allows the customer to better self select the kind of information they would like returned. This becomes even more critical for personalization and targeting information to the appropriate audience of customers.

Below are some example scenarios as to how these services can be used:

- Retail: A restaurant application may define a set of filters for price range, valet/parking options, and supported cards.
- Medical: Equipment can have filters for power requirements, size, or operation certificates.
- Real Estate: Rooms might be designated by bed type, view, and maximum occupancy.
- Robotics: Assembly Parts could be filtered to indicate the type and what facing it should have before being worked on.

There are several services in the system that utilize the filters to facilitate searching and matching, they are: Offers, Retailer Locations, and Retailers. It is recommended if you are generating data for these services then you should think about using filters to better classify the items for your customers. The more data present the more critical this meta-data information becomes.

Below are services that may be combined with this service:

- Offer Services: products (offer type) can be classified by pickup/delivery options, sizes, or colors so customers can see a variety of choices for the item.
- Retailer Locations: for a restaurant listing app, businesses can set a price range, parking options, or atmosphere from a list of filter choices when setting up their business.
- Retailers Services: filters defined for a business automatically applied those filters to the locations and offers.

## Flag Service (Community Policing)

The flag service allows a customer to flag an object that a customer deems inappropriate or offensive. Flagable objects include accounts, albums, album contests, assets, game levels, and theme descriptors. Once an object has been flagged it will no longer be included in content searches for the customer doing the flagging. Each flagable object has a threshold which can be set, once that threshold has been exceeded then the object will no longer be included in all content searches.

Below are some example scenarios as to how these services can be used:

- Retail: products being sold have a album associated with it so customers can post pictures of themselves with it; if an inappropriate image is posted it can be flagged and eliminated by the community.
- Medical: multiple x-rays are taken of a fracture; with a threshold of 1 the technician can easily discard poor quality images.
- Robotics: cleaning bots are tasked with an area and there are issues accessing the area, it is flagged and eventually removed from the task list as an invalid location.

Whenever community sourced content is used a level of moderation is necessary so that the community can self police the content. Moderation of content is important for community based solutions but can be used by self contained systems when you don't want to delete or inactivate the content. Empowering the customers and community creates a strong user base which can help promote and vitalize the solution.

Below are services that are combined with this service:

- Album Service: the content search of albums will restrict items based on the account making the request and the flags applied to each item.
- Account Service: once an account is flagged then all album, game level, and other content is restricted.
- Game Level Service: game level/tasks can be customer submitted and then self moderated by the community using flagging.

## Game Level Service

Manage task-based content that can be sourced internally by developers or externally via the community. The game level object accepts whatever content format the solution desires: csv, json, xml, binary, text, etc and wraps that with relevant metadata focused on task completion. Metadata includes, but is not limited to: the name, a Service, the skill level suggested, tutorials on how to complete, and image assets. An easy example of tasks are levels for a game; other examples are photo upload challenges, posting invites to facebook, content voting, etc. Any solution that wants to task or challenge it's customers can use these services to build a set of these or ask the community to generate their own.

Below are some example scenarios as to how these services can be used:

- Retail: a coffee chain sets up a photo challenge to take pictures in front of as many locations a possible.
- Real Estate: a level contains the thermostat schedule for a particular day and can be altered by the homeowner as needed.
- Automotive: a student driver program could lead a parent and student through a series of lessons in preparation for a driver's test.
- Robotics: each level is a series of commands the automated robot should perform.

Because the game level accepts any format of data it can be used for literally anything as long as the solution can encode and decode the data. Combined with the pack and mission services you can begin to build up a sequential series of tasks that once completed gives rewards to the customer for their participation.

Below are great example services that could be combined with this service:

- Pack Service: group a set of level together into a pack; the set can then be sold as DLC, unlocked through level completion, and even level the progression order can be defined.
- Mission Service: by adding a set of levels to a mission the solution can then reward the customer once all levels have been complete; this could be offers or in game currency (tickets).
- Score Service: levels are completed by sending a score and a time to complete; if enabled the score can be used to automatically allocate application currency (tickets) which can be used to enhance the customer's experience.

## Geographic Locations (Trilateration) Service

The Geographic Locations service allows an object or multiple objects to be located and tracked within an indoor or outdoor environment. Trilateration is a technique that the service uses to determine the location of these objects. This is created for being able to track residents or customers inside of a building that carry a smartphone device or wearables. We can identify information such as dwell time, directional traffic flow, ingress/egress of entrances and exits, and much more. We can track objects that are up to 40 feet away from an Edysen device via bluetooth with less than 1 foot accuracy of a object's position. After gathering this information, create reports that informs you about your customer behavior to help improve their experience. For example, understand where the main traffic flow is in your retail store so that you can place your products in the most optimal areas where they will be seen.

Below are some example scenarios as to how these services can be used:

- Retail: Add Edysen devices in the floorplan of the retail store. Using trilateration and passive WiFi tracking, determine the average dwell time of your customers, in addition to where your customers spend the most time/least amount of time
- Hospitals: Allow hospital administrators to see a dashboard of all patients inside of the hospital that are wearing a wearable device.
- Commercial Office Spaces: Use Trilateration to determine where devices are in your space. Track supplies, where they are moved, and identify employees that used them last
- Robotics: Use trilateration to determine the paths that your robotics/drones are taking, and determine if their paths need to be further optimized

The Geographic Locations service is important because it will provide you with information that will help increase revenue opportunities for your business. For example, use the trilateration to determine the footpaths that your customers take within your retail store. Determine if products you have placed within the store get as much attention as possible based upon the footpaths of your customers. The geographic locations service is also important because it can help track devices that may have been misplaced. When you add a BLE tag onto a device, use trilateration to determine where the device has been placed within the space, in addition, understand where the device has been moved around in the past N hours, days, weeks, etc.

Below are example services that could be combined with the Geographic Locations service:

- Mesh Networks Service: Place Edysen devices within a floorplan, which uses Mesh Network to directly connect device-to-device together so that data can be transmitted and passed along with one another vs. all reporting directly to a single server. This alleviates the network load by leveraging each device as its own server.
- Reporting Service: Generate reports for information gather through trilateration such as dwell time, foot traffic, average distance travelled, and so forth.
- Pathing Service: Generate visual lines/paths for each user's journey using the trilateration data captured on foot traffic

## **Import Service**

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirqul.com](mailto:info-routenroll@sirqul.com)

## Invite Service

The invite service provides an easy way for a customer to share and invite their friends to experience events, albums, contests, game levels, missions, offers, and locations. The invitation is a web URL that can be shared out from the application by whatever means desired; email, sms, facebook post, etc. By clicking on the URL the invitee can be deep linked within the app (if installed) or directed to a website to login or register and download the application. Once the invitee's account is determined the item is shown and is associated with the account as is appropriate. Using the invite service is an easy way for customer to attract their friends to the application creating a viral buzz about it.

Below are some example scenarios as to how these services can be used:

- Retail: use the offer invite to send a coupon to all of a customer's friends; for each coupon added to a wallet reward 1 ticket. Tickets can be used to get discounts or get access to specialty coupons.
- Medical: when a set of x-rays is ready for review send a message to the doctor and once clicked it is added to their patient list.
- Real Estate: a parent can create a chore (game level) and then invite the children to complete it.
- Automotive: a web based road trip planner could send an invite to the customer that when accessed in the car save the location as a destination.

Attracting new customers to an application is critical to it's success. When friends engage in the same activities usage is re-enforced and the application can gain momentum and keep existing customers.

Below are great example services that could be combined with this service:

- Game Level Service: share tasks with friends or a cohort to either distribute the work or to encourage peer participation.
- Album Service: let people know about an artist or fashion collect you like.
- Offers Service: find a great deal on hotels, share it so that others can cash in on the special while it lasts.

## Keystore Service

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirgul.com](mailto:info-routenroll@sirgul.com)

## Like Service

The like service allows customers to like or dislike objects similar to a Facebook like. Customers may like or dislike accounts, albums, album contests, assets, game levels, notes, and theme descriptors. The service will only count a single like or dislike per customer and one will replace the current status. The current like/dislike status can be reset back to neutral if desired. The like/dislike can also be used for other concepts like approve/disapprove or affirmation by a community of customers.

Below are some example scenarios as to how these services can be used:

- Retail: allowing customer to like menu items or restaurants can allow users to quickly see what is trending as popular.
- Medical: a doctor can use a like to approve or disapprove a procedure or prescription.
- Real Estate: as items are depleted from the refrigerator they can be liked or disliked to build a grocery list that is automatically ordered and delivered at the end of the week.
- Automotive: a car application could have a traffic alert system where once an accident alert is added by one driver it can be confirmed by multiple drivers using a like.

One of the defining features of Facebook, Instagram, and other social applications is the ability to like items and the feature should be included any time a solution wants to drive customer engagement and social awareness.

Below are great example services that could be combined with this service:

- Album Service: a customer would like a collection of music or a physician could dislike a set of x-rays so they are retaken.
- Game Level Service: after completing the task the customer can like or dislike it so that others can be aware of its appeal.
- Note Service: just like Facebook, customers can like a comment.
- Asset Service: similar to Instagram a customer would like an asset (image) which would then send a notification to their friends.



## Listing Service

A Listing is defined as a searchable, timed, and locatable event that would appear on a calendar. Listings could be used to provide details associated with an event so that it is human-readable, organized, and categorized either by event type or by whom would attend or participate in that event. Using the Listing Service, application/solution owners can manage calendar events such as tasks that need to be done at a particular time, at a particular location, categorized in such a way that devices, resources, employees, and/or customers can find, discover, and search for them based upon pre-defined criteria and a set of rights/rules.

Below are some example scenarios as to how these services can be used:

- Retail: A shift management application can use Listings to deliver tasks to employees who are starting their shifts or who need to be notified during the day that there are new requirements needed to satisfy business goals.
- Medical: Patients that have wearable devices could be instructed that it is time to take their medicine so that it reduces the likelihood of missed dosages.
- Real Estate: Hotel rooms and homes could become smarter by querying the preferences of their guests and owners at specific times during the day, week, month, or year so that temperatures can change based upon their schedules.
- Robotics: Having each device query a list of tasks to be completed in order of time, location, and other metadata is quite compelling for these autonomous systems. Think autonomous vehicles that can use this information for routing and deliveries.

The Listing Service should be used for items that appear in a Calendar and should involve retrieval of time-based metadata to be acted upon.

Below are services that may be combined with this service:

- Events Service: Combine Listings with the Event Service to assign people, resources, and other physical events happening in different locations that are related to the Listing. For instance, cleanup times for robots at different building locations or floors.
- Audience Service: use the audience service to create demographic and cohort data associated with the listing to help with matchmaking tasks.
- Rating: Listings + Events + Ratings allow you to segment participants into cohorts.
- Offers, Retailer Locations, and Retailers Services: Events happen at specific locations. By tying a Listing to a Location in our system, one can provide searchable, categorized, and purchasable offerings that enable multiple businesses, owners, and entrepreneurs to monetize a listing.

## Locations Service

The Locations service enables your business or entity to identify and manage physical locations that you own or operate. For example, if you have multiple medical clinics under a single parent entity, then you have the ability to establish each of these clinics as a 'location'. With this, you have the ability to modify your locations information such as the name, address, employees & roles, operating hours, and much more.

Below are some example scenarios as to how these services can be used:

- Retail: The mobile application presents information about your store location such as the operating hours or address. The administrator who manages the location can update this information through the internal retailer web dashboard.
- Medical: The hospital is operating multiple mobile health check vehicles throughout the city. Each of the vehicles can be configured as a mobile 'location', and the administrators can push out content and messaging to patients that are nearby based upon using a geo-fence trigger.
- Real Estate: As part of a 'smart school' initiative, each elementary school within a county district can be established as a location. Through the county district web dashboard, administrators can manage all configurations of the smart devices that are used at each school location.

The locations service is important when being able to customize the configurations and information for each individual location, as one may not have the same characteristics as the other. For example, your retail locations may have the ability to support in-door positioning of products for customers to more easily locate through the mobile app shopping experience. Since each store location may have different floor plans, it's important to identify the discrepancies and apply the adjustments that must be made to each location. In this case, the administrator must set the correct coordinates of each beacon in accordance to the floor plan of the particular location.

Below are great example services that could be combined with the Locations service:

- Retailers Service: There can be one or many locations, but they must all be created or assigned under one parent location called a retailer.
- Offers Service: Each location can have unique offers (coupons, vouchers, products, etc.) assigned to it. These same offers may not be available at another location.
- Employees Service: Employees are employed by a single parent retailer, but they may be assigned to specific locations that they work at.

## **Locations (RnR) Service**

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirqul.com](mailto:info-routenroll@sirqul.com)

## Media Service

The Media service allows you to upload files like images, videos, files, and more to a media type offer for your business. These can be used to promote your business and brand identity by uploading images of your product and services on a website or application. For example, if you have an application that requires a lot of visuals like images, videos, graphics, etc. this service will be used frequently.

Below are some example scenarios as to how these services can be used:

- Retail: If you are a retailer and have an application, use the media service as a way to upload images and videos to help promote the store
- Healthcare: Use the media service to upload an image of an injury so that the doctor can see it and diagnose the issue
- Smart Home/Communities: Upload an image to other community members in your apartment if you are looking to sell some of your furniture
- Smart Vehicle: Take a photo or video of an incident and it can be uploaded and saved so that it can be submitted to your insurance company
- Robotics: Drones can take pictures and videos which can then be uploaded onto your website or application

The Media service is important because it allows owners of websites and applications to upload and display static or dynamic content. A media offer could be scheduled to display dynamically for advertisements on your website and application. This is important if your website or application has content that needs to be dynamically updated each day. Using the media service to promote items for sale using high quality images and videos for sale during the holidays is important because it can be scheduled to only appear for a specified period of time, and can also be targeted to specific audiences. In addition, a Media like a movie may require many metadata information to be associated with it such as the title, description, run time, genre, ratings, comments, and much more. The Media service offers the ability to associate many different metadata information to it.

Below are example services that could be combined with the Media service:

- Asset Service: You can upload one or many assets to a media
- Album Service: You can upload one or many albums to a media, where an album can contain multiple assets
- Retailer Location: Retailer locations can have a media associated with it that can be used for advertising

## Mesh Network (Playfield) Service

The Playfield SDKs enable communications between devices without requiring an Internet connection. Apps that leverage the Playfield SDK can "daisy-chain", creating local adhoc networks that work across multiple protocols (Bluetooth, Wifi, Internet, cellular, etc.) that is not dependent on a separate hosted cloud server or solution.

Playfield turns any device into a "Server" (Host) that is capable of interacting with a plethora of connected devices enabling it to work in concert to sync information across devices, meaning "relay" & "broadcast" is supported.

Playfield empowers devices to communicate with each other directly regardless of their connection protocol.

For example:

1. Device A (Host) and Device B are connected to each other over Wifi.
2. Device C is connected to Device B over bluetooth but does not have wifi or a connection to the Internet.
3. Device A can communicate with Device C by passing information back and forth through Device B. This concept is called daisy-chaining.

In addition to this, Playfield supports host migration/network healing as well:

1. If Device A (Host) loses a connection or fails for some reason, it will then migrate the host capabilities to the next best device. In this case it is Device B.
2. Device B is still connected to Device C via bluetooth.
3. If Device A comes back online, it will automatically connect back into the mesh to Device B.

Playfield can be used for many different scenarios. For example:

- Retail: Can be used to detect users in a physical store to see what kind of shopping habits that they exhibit.
- Automotive: Have your smartphone receive notifications and maintenance reminders for oil changes and other necessary appointments.
- Smart Home: Use your smartphone to communicate with other smart devices from within the home locally, as well as over the Internet when you are out of the house.
- Healthcare: Use indoor positioning with beacons to determine where equipment is located from within the hospital building to reduce equipment loss.

## Mission Invites Service

The Mission Invite (Challenges) service serves as a challenges to be issued to users. Users can accept these challenges (similar to tasks) and complete them in order to earn a reward or prize in return. Mission Invites can also be thought of as a way to assign tasks that are executed by users or automated devices and machines.

Below are some example scenarios as to how these services can be used:

- Retail: Mission Invites can be available to employees to meet sales quotas. Upon reaching sales quotas, bonuses could be rewarded upon completion.
- Medical: Mission Invites can be available to employees as daily tasks that need to be completed based upon scheduled appointments. Medical equipment can also have a Mission Invite to be returned back to its original location when it is done being used.
- Real Estate: Mission Invites can be available to household members to complete chores on time.
- Automotive: Mission invites can be used to set safe driving milestones for the users.
- Robotics: Mission invites can be considered tasks that are used to be executed on a daily basis. Completion of mission invites could dictate whether or not production is on track or not.

Mission Invites are a great way of tracking progress of a particular item. You can also incentivize users to encourage them to complete their challenges/tasks with rewards.

Below are great example services that could be combined with this service:

- Offers Service: Create an offer that provides some level of incentive for users to complete their Mission Invite.
- Scheduled Tasks Service: Once a Mission Invite is complete, trigger another Mission Invite to be worked on next. Continue this chain to create a task list that is to be completed by a user or via an automated process.

## Missions Service

The Missions service enables you to create tasks that can be completed by users that reward users for their accomplishment. It can be used in such a way to motivate users to accomplish what they are assigned to and to be kept engaged with the service.

Managers and admins can create custom missions from a developer portal that can be generated on the fly and shown within an application or service immediately. Missions are not always required to have a reward.

Below are some example scenarios as to how these services can be used:

- Retail: Management sets up a mission for their employees to see if they can meet their quota. If the quota is reached, the employee gets a bonus.
- Medical:
- Real Estate: Parents can create missions for their kids to see how well they can conserve energy for a reward. Once a certain threshold is met, the goal is attained and the mission is complete.
- Automotive: Missions can be created by insurance providers that empower users to drive safe in order to earn rewards and incentives to their insurance policy.
- Robotics: Once a mission has been complete, it will trigger the next set of missions that need to be completed by a particular machine and continue down this path until the required actions are finished.

The essence of Missions is to incentivize users to accomplish a set of goals and reward them for their accomplishment. While the reward is not required, it can also be used as a tool to give users a task list that can be completed at some point in time.

Below are great example services that could be combined with this service:

- Game Levels: Game Levels are contained within missions and contain many of the rules and tasks that are associated with the mission. Multiple game levels can be contained in the same mission.
- Offers: You can use offers as a rewards mechanism that can be given to users upon completing a mission.
- Notifications: You can send users notifications that new missions are available to complete.

## Notes Service

The Notes service enables users to leave comments and messages on content that can be viewable by other users who have the correct permissions to view it. Notes can be used in a variety of ways such as a comment on a photo, or used as a way to message users back and forth in a messaging app.

Notes can be left on a variety of objects such as albums, assets, game levels, and much more. The idea is to give users the ability to interact with the object itself as well as other users to foster engagement overall usage.

Below are some example scenarios as to how these services can be used:

- Retail: Notes can be used as a form of communication between customers and employees when it comes to product information and sales.
- Medical: Practitioners, nurses, and their patients can communicate with each other based upon x rays, diagnosis, and other medical information in a secure manner.
- Real Estate: Families who have a 'smart home' can set and schedule events and make sure that everyone is on the same page in terms of what is going on in the household.
- Automotive: Can be used to communicate with maintenance vendors and service providers for quotes and rates.
- Robotics: Can be used when a status is updated and recorded to an album or some other service to indicate what happened and when (e.g. hardware malfunction would be timestamped and noted for Robotic Arm 1, which can be reviewed later by the owner of this particular piece of hardware).

This service is simply used to inform users of what is going on by facilitating a way to communicate with one another.

Below are great example services that could be combined with this service:

- Albums Service: Use albums to contain photos of defective products that are produced from manufacturing with the comments + timestamps of when they occur.
- Game Levels Service: A list of tasks that must be complete, users can make a note on the game level in order to communicate with each other about the requirements of the game level or the their results of completing the task.



## Notifications Service

The Notifications service enables you to contact your users through different methods of communication: Email, SMS/MMS, Apple Push Notifications, and Google Cloud messaging. You can send all of your users custom and scheduled notifications or you can target a specific group of users.

Automated notifications that are triggered based upon actions within an app can also be customized and sent (E.g. someone liked a photo) to the appropriate users who have access to the content.

Below are some example scenarios as to how these services can be used:

- Retail: Set scheduled notifications to customers for ongoing sales and discounts and/or send notifications to team managers when sales quotas are met for employees.
- Medical: Set scheduled notifications for nurses, doctors, and other practitioners to make sure that they arrive on to their appointments on time. Get notified when medical devices need scheduled maintenance services.
- Real Estate: Schedule notifications when you detect movement or sound in your house for security purposes.
- Automotive: Get notifications for maintenance reminders, scheduling, and overall health of your vehicle.
- Robotics: Get notifications for when a device is malfunctioning, underperforming, or goes offline.

Reminders and notifications are an integral part of letting users know of what and when things are happening.

Below are great example services that could be combined with this service:

- Scheduled Tasks Service: Based upon the rules and triggers that you set up using Scheduled Tasks, you can have custom notifications be triggered based upon these actions.
- Offers Service: Push relevant content to your users based upon their demographics and preferences. Offers can be coupons, vouchers, products, people, and much more.
- Albums Service: Similar to offers, Albums and their contents can also be pushed to other users based upon their demographics and preferences.

## Object Store

Storing data on the cloud is simple and easy with Sirqul's Object Store. Specify any key-value pairs you wish to define and add the record to the Object Store. You can then retrieve, update, or delete the record using the returned identifier. There is robust search system to find a list of records given a defined set of search criteria. The Object Store can be used to define custom objects, extend the features of existing Sirqul objects, or create relationships between Sirqul objects. Each application can define its own Object Store records allowing for whatever custom solution you can think of.

Below are some example scenarios as to how these services can be used:

- Retail: when an item is returned an Object Store record can be created to track the reason, date, amount refunded, condition, employee, and other data currently not available with the Offer Product record.
- Medical: a mobile scanning machine is defined using an object store record, using the geopoint extension it can be given a location and indexed; this makes searching for it fast and highly efficient.
- Real Estate: create a keyless pin code object that can be assigned to various family members, the dog walker, and a house cleaner. Whenever a pin is used log the activity in another object or to the analytics service.
- Robotics: each robot has a unique configuration record entered in the object store, these can be managed online via a dashboard.

Ideally Sirqul's building blocks will provide the services and content holders necessary to create a successful solution. However, we know we cannot create everything for every situation and the Object Store allows solutions to define and create whatever items need to be stored in the cloud.

Below are great example services that could be combined with this service:

- Offer Service: each product has building instructions, warranty information, and other documents. These extended features can be associated with each Offer Product to enhance the current Sirqul metadata.
- Account Service: as the solution begins to determine user behaviors entries can be added to the Object Store which can then be used to set light and heating schedules in the home.
- Game Level Service: the Object Store specifies the templates available for the tasks the solution supports. When a task is generated a template is selected to help guide the author so that valid tasks are generated.

## Offer Status Service

The Offer Status API allows you to manage offer status codes to for your business to ensure that offers are correctly purchased, added to the consumer's wallet, and redeemed appropriately. There are custom status codes that represent each status and what they do: 0: offer purchased or added to the wallet. 1: consumer has indicated they want to redeem the offer. 2: merchant has accepted the offer and marked it as redeemed. 3: consumer has archived the offer. 4: consumer has been awarded the offer (can be purchased if desired).

With Offer Status, you can track each and every transaction that occurs for your offers from when the user views it to when a purchase is made. Detailed reports can then be viewed on via a web dashboard.

Below are some example scenarios as to how the Offer Status service can be used:

- Retail: Create and track multiple offers in an A/B test then view reporting to know what types of offers are redeemed most.
- Medical: Create seasonal offers for your patients and track the engagement. For example, “Discount on Flu Shots” or “Save 10% on Spring Allergy Medicine” can all be tracked and measured so you can know what kinds of offers resonate with your patients.
- Smart Home: Use Offer Status to track different types of offers that can be purchased through your smart home device such as “weather based” or “holiday focused” so you can analyze results and drive more revenue.
- Automotive: Use Offer Status to compare different offers types, such as “maintenance” or “roadside attractions.” Use the metrics to continually improve the types of offers that are most effective to increase user satisfaction.
- Robotics: Use Offer Status to reveal what types of promotions increase drone deliveries. For example, “10% off printer ink” might outperform “20% on grocery delivery.”

The Offer Status API is important because it gives you clear insights regarding your users’ engagement along the offer path from viewing to redeeming an offer.

Below are great example services that could be combined with the Offer Status service:

- Audience: Test various offers within different Audiences to optimize types of offers to send in the future.
- Events: Use Offer Status in combination with Events to know the most profitable kinds of Events to promote to your users in the future.
- Game Levels: Test and measure offers at different Game Levels for effectiveness.

## Offers Service

The Offers API allows you to create compelling offers such as coupons, vouchers or products to attract more users and gain more engagement from your existing user base. Offers are a key component in any business and can be used to initiate a free trial, drive repeat business, and increase overall sales and revenues.

Below are some example scenarios as to how the Offers service can be used:

- Retail: Create coupons to drive users to visit your physical locations and increase the chance of impulse purchases in-store.
- Medical: Reward Employees by creating vouchers to such as “\$10 Starbucks Gift Cards.” Reward your employees for various activities to increase productivity, improve customer service, and more.
- Smart Home: Use Offers to drive the purchase of add-on products, special content, and more to increase revenues.
- Automotive: Use geo-targeted and timed Offers to add more customer value to your connected vehicle. For example, “Save 5% on gas in 1 mile” or “Save 10% on an Oil Change.”
- Robotics: Use Offers to get your users to try out drone delivery. For example, “Free First Delivery”

The Offers API is important because it gives you the main business tool every business uses to attract new customers, increase repeat business and compete in the market.

Below are great example services that could be combined with the Offers service:

- Audience: Test various offers within different Audiences to optimize types of offers to send in the future.
- Territories: Use Offers in different Territories to be able to grow your business in a new market.
- Game Levels: Combine Offers with Game Levels to keep users playing your game in order to earn discounts and savings on future purchases.
- Tournaments: Combine Offers with Tournaments to get users into your contest and drive more engagement within your game with an offer incentive.

## On Demand Service

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirgul.com](mailto:info-routenroll@sirgul.com)

## Optimize Service

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirgul.com](mailto:info-routenroll@sirgul.com)

## Packs Service

The Packs API lets you create a collection of Game Levels that are viewable within your application. The most obvious example is creating various groups of game levels that are can be built-in, downloadable, or purchasable with digital currency. Packs are great for adding more content and playable levels within your game on an ongoing basis.

Below are some example scenarios as to how the Rating service can be used:

- Retail: Create Packs based on Audiences to highlight downloadable content that is targeted to specific types of customers such as “moms” or “diy’rs” or “sports fanatics”.
- Medical: Use Packs to deliver specific educational content to specific groups of employees via your internal learning application, such as “ER staff” or “Reception Desk staff” so they have the latest quizzes related to their particular job tasks.
- Smart Home: Use Packs to create content that is delivered to specific devices within the home based on Audience. For example, “children” or “movie geeks” can receive different entertainment based on who is listening or watching.
- Automotive: Use Packs to deliver educational content to different types of fleet drivers in your enterprise. For example, “fork lift drivers” or “delivery trucks” can each have targeted information for learning how to do a better job via your internal education application
- Robotics: Use Packs to deliver specific content to your application users based on items that will be delivered by drone, such as “how to use” videos or “great add-on accessories” videos.

The Packs API is important because it allows you to package up specific groups of content in creative ways for your application users to consume.

Below are great example services that could be combined with the Packs service:

- Coupons or Offers: Use Coupons or Offers to be awarded to your application users when they download certain Packs.
- Groups: Use Packs in combination with Groups to deliver specific content targeted at various groups.
- Retailers: Deliver region specific Packs to various groups that have visited particular physical retail locations for your business.
- Missions: Reward your application users by unlocking Packs when they complete certain Missions.

## Participants Service

The Participants API shows the one or more actors (players, team, etc.) that are in a listing. Think of a listing as a game that is being played on TV. Your application can then display the two teams for that particular listing. By displaying Participants, your application users are more likely to be engaged relative to a particular listing that will occur or is occurring.

Below are some example scenarios as to how the Participants service can be used:

- Retail: Create listings for monthly “live online demos” for new products. Use Participants to let your customers see who the “hosts” are for each listing throughout the year.
- Medical: Create weekly educational listings for online Q&A sessions for your employee education application. Use Participants to display who will be online answering questions for each session. For example, “Dr. Oz hosts the Friday lunchtime Q&A Session”.
- Smart Home: Use Participants to let your application users create automated alerts and schedule tasks around various sporting events. For example, flash the lights on and off in the house when the Manchester United game is about to start.
- Automotive: Use Participants to deliver educational content into different types of vehicles in your operation. For example, “fork lift drivers” or “delivery trucks” can each have targeted information from your COO or VP of Ops for learning how to do a better job via your internal education application. By knowing the Participant of a scheduled listing, your employees will know it’s important to tune in.
- Robotics: Use Participants to denote various assembly lines (teams) within your operation’s analytics and reporting.

The Participants API is important because it allows you to define and display individuals or participants within content listings within your application.

Below are great example services that could be combined with the Participants service:

- Listing: Include Participants in Listings on your application such as sports teams, golf tournaments, or bands playing in online concerts.
- Audience: Use Participants in combination with Audience to deliver content from specific Participants that is created especially for individual Audiences. For example, Football fans or Music Fans.
- Rating: Combine Rating information in combination with Participants so your application users will know the popularity of the Participants.



## Passenger Service

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirgul.com](mailto:info-routenroll@sirgul.com)

## Pathing (Turn-by-Turn) Service

The Pathing API used in combination with Location computes the shortest “path” from point to point on a grid. The grid can be authored to include “exclusion points” such as walls, displays, or other solid objects. These objects are automatically taken into account when calculating the shortest path. Pathing allows your users to easily get from one area of your business to another in the most efficient way.

Below are some example scenarios as to how the Pathing service can be used:

- Retail: Use Pathing so that customers can easily find certain departments or even products in your store such as “Men’s Department” or “Shoes”
- Medical: Use Pathing to help your patients navigate your facility. For example, “Waiting Area” or “Coffee Shop” or “Restrooms” or “X-ray Room.”
- Smart Home: Use Pathing with object beacons in order to find certain items in the home such as “keys” or “wallet.”
- Automotive: Use Pathing to identify and give directions to loading docks or empty parking spaces on your premises to help your fleet drivers be more time efficient.
- Robotics: Use Pathing to program robots on a warehouse floor to take the most efficient routes to increase productivity when traveling from point to point.

The Pathing API is important because it is an excellent way to bring the power of “route mapping” into an indoor space or a previously non-mapped space within large facilities.

Below are great example services that could be combined with the Pathing service:

- Audiences: Use different Pathing routes for different Audiences to create better flow within your venue. For example, ticket holders at a Sports Stadium going to different levels can be shown the best routes.
- Missions: Use Pathing in combination with Missions to guide your users from point to point as quickly as possible. This can also be used in a business environment to guide employees through your facilities.
- Offers: Combine Pathing with Offers and beacons so that users get rewarded as they go from point to point through your store or business.
- Packs: Combine Pathing with Packs so customers can unlock area-specific content as needed along the route they are taking within your store or business. For example, unlock “Gardening Tips” videos when customers reach the Gardening section of your store.

## Preview Personas Service

The Preview Personas API allows for setting up and running tests on various Personas on a live server without actually being “live”. For example, you could set up an ad campaign and run it to all “test accounts” to see the results as if you were an actual user. Only your test accounts would see the ad campaign. This is a great tool to use for previewing ad campaigns or other data before fully launching it within an application. The Preview Personas API can perform the following functions: delete, search, get, and update.

Below are some example scenarios as to how the Preview Personas service can be used:

- Retail: Test push notifications targeted at a specific geo-fence to your Test Personas to make sure they send when entering a geo-fenced area.
- Medical: Test wearable device notification to a certain population such as “Doctors” “Nurses” or “Patients” before setting it live.
- Smart Home: Test IoT device automation using a mobile app interface to a Test Persona before releasing a feature to every device.
- Automotive: Run updated features and diagnostics on Test Persona vehicles before pushing a new feature live to every vehicle in a fleet.
- Robotics: Run various automated functions to test machines to see results before deploying to every machine in a factory setting.

The Preview Personas API is important because it shows you see live data in a test group or population before it is set live to make sure that everything is operating properly within your application. Preview Personas is particularly important because it runs as a test using your live application as data to gain insights.

Below are great example services that could be combined with the Preview Persona service:

- Notifications Service: Send push notifications only to Test users within a specific geo-fence, region, or within a specific class of device.
- Offers: See real-time offer information to check pricing, offer text, and test purchasing before setting it live.
- Offer Status: Ensure that your offer status is valid before setting it live.
- Application Configurations: See updates to your applications targeted at a specific user set, such as “Nurses” or “Doctors” before setting the update live.

## PostalCode Service

The Postal Code API allows for various actions on (or to) Postal Codes within an application. These actions include create, delete, get, update, and search. Postal Codes are also the basis for creating “Regions” or “Territories” within your application. Your application users can enter or update their Postal Code for their address. Blocks of Postal Codes can be identified as active service areas for particular businesses such as package or food delivery, or, home services. Think of typical applications that you have used such as banking apps to find an ATM, or Retailer apps to locate nearby stores.

Below are some example scenarios as to how the Postal Code service can be used:

- Retail: Customers can search for retail locations within a specific Postal Code, or, find retail locations within their current Postal Code.
- Medical: Doctors or Nurses can be assigned to make house calls to patients within certain Postal Codes. Or, various medical facilities can be recommended to patients based on Postal Codes.
- Real Estate: See groupings of properties within specific Postal Codes.
- Automotive: Display maps by Postal Code where ride-sharing services are available.
- Robotics: Drone services can be set to operate or deliver only within specific Postal Codes.

The Postal Code API is important because it operates off of a known geographic parameter. It’s also important because it can be used to generate Regions or Territories within your application. Postal Codes can be used both as information to end users of your application, or, used as data to gain insights as to the general locations of your end users.

Below are great example services that could be combined with the PostalCode service:

- Notifications Service: Send push notifications only to users within a specific Postal Code(s), Region or Territory.
- Retailer Service: Display Retail locations within a specific Postal Code, Region or Territory.
- Analytics Service: See Postal Code data relative to time spent by end users within certain Postal Code, Region or Territory.
- Employee Service: Show location of Employees for assigning work or deliveries geographically closer to their current location in a specific Postal Code, Region or Territory.

## Programs Service

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirqul.com](mailto:info-routenroll@sirqul.com)

## Promo Code Service

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirqul.com](mailto:info-routenroll@sirqul.com)

## Purchase Items Service

The Purchase Item API allows for setting up “digital goods” for sale within your application. App users can purchase these items using various digital currencies. Setup your Purchase Item API using points or real digital currencies that can be mapped to via iOS, Google Play, Amazon and Mac in-App purchases. Detailed information regarding Purchases can be tracked, reported and analyzed.

Below are some example scenarios as to how the Purchase Item service can be used:

- Retail: Setup extended warranties for electronic goods or other hard items purchased within your mobile application.
- Medical: Setup digital gift cards that can be purchased for patients for items such as flowers, balloons, and other gift-shop type goods.
- Smart Home: Setup digital goods for services such as snow shoveling, chimney cleaning, yard work, and more when various time and date or weather triggers occur.
- Automotive: Setup digital goods for recurring services items such as oil changes, maintenance checks, detailing, and more.
- Robotics: Setup digital goods that can be purchased and delivered by drone to the end-user.

The Purchase Item API is important because it allows you to monetize your application by giving your app users a convenient method for making purchases.

Below are great example services that could be combined with the Purchase Item service:

- Digital Currency: Use digital currency services for monetizing your application and creating ease of use and convenience for your app users.
- Offers: Create offers and allow for the purchase of digital goods at a discount.
- Push Notifications: Trigger push notifications when a user is within a geo-fence to notify them of certain digital goods for sale.
- Packs: Create Game Packs that can be purchased by users such as “extra lives” or “boosters” so that they continue to play your games.

## Purchase Order Service

The Purchase Order service allows users to group multiple purchasable items in a single transaction. This is especially helpful for retailers that want to offer a 'Shopping Cart' type feature in their product offering. This is beneficial because each transaction will cost the merchant money, since all payment processing systems like Authorize.net, Chase Paymentech, etc. all charge on a per transaction basis. If your product allows users to make purchases, you will want to think about incorporating the Purchase Order service, since it will reduce your costs per transaction, allow users to group their items into a shopping cart for single purchase, and lastly be able to track all of the items that were purchased from a single transaction ID reference.

Below are some example scenarios as to how these services can be used:

- Retail: Customers inside of a retail store who have the shopping app installed should be able to find items they want to purchase, add them to a 'shopping cart', and then making a single transaction
- Healthcare: If a patient needs to purchase multiple medications, and doctors want to group all of the items under a single purchase order, this can be possible with the Purchase Order service
- Stadiums: Fans that are attending a game will likely visit one of the retail shops at the stadium. The retail shop will have purchasable items where the fan can group multiple items to a single purchase
- Buildings & Spaces: If the refrigerator of your home can make purchases at Amazon, use the Purchase Order service to group multiple items in a single transaction

The Purchase Order service is important as it is a way to reduce costs by reducing the number of transactions that have to occur for users to purchase their items. In addition, it is a secure way of assigning items purchased to a single transaction record. This allows you to track invoices in case users have to make a return on one of the items purchased for the entire order. You can then identify which of the items on a purchase order was refunded or subtracted from the total cost of the order.

Below are example services that could be combined with the Purchase Order service:

- Wallets Service: Wallets can be used to group all of the items in a purchase order
- Notifications Service: Merchants receive notification alert when users purchase items from their retail location
- Billable Entity: The information needed for a user to make a purchase of an order
- Billing: The payment method (e.g. credit card, digital currency, eCheck) that is used to purchase items



## Questions Service

The Question API allows you to setup Questions or Quizzes within your application. These can be setup as packets to create levels within Trivia Game applications, or, as lesson categories for educational applications. Questions can be setup and managed in real time by your administrators through an online dashboard.

Below are some example scenarios as to how the Question service can be used:

- Retail: Setup employee training programs to educate and improve the knowledge base of your workforce.
- Medical: Create various categories for online education to nurses and doctors so they are always up to date with the latest information.
- Smart Home: Create quizzes about how to “reduce, reuse, & recycle” goods within the home to educate people using Smart Devices to be more energy efficient.
- Automotive: Train employees on various aspects of services vehicles or a fleet. Create questions that disseminate important information in a Q&A format for greater retention.
- Colleges/Universities: Setup quizzes and exams across a multitude of subjects to help students learn better, faster, and easier online.

The Question API is important because it allows you get creative with Trivia Game style content and/or Educational Information within your application.

Below are great example services that could be combined with the Question service:

- Score: Use Score so users earn points for questions they answer correctly and or within a certain amount of time.
- Ticket: Create tickets that application users can win and redeem for Digital Goods at various point levels. This is especially useful as an employee incentive tool.
- Push Notifications: Use push notifications to alert users of new Questions and content within your application. User push notifications as a reminder to finish certain levels before a certain deadline in educational settings.
- Tournaments: Create Tournaments to allow users to compete against each other for added incentives and rewards such as “Smartest Employee”, “World Trivia Champion” and more.

## Ranking (Leaderboards) Service

The Ranking API allows you to setup various “Leaderboards” within your application. Some examples of Ranking can be “highest score” or “most shares” or “most games played”. Ranking allows your users to compete against each other which drives more usage of your application. The Ranking(s) can be displayed across various time ranges such as “daily, weekly, or monthly.”

Below are some example scenarios as to how the Rating service can be used:

- Retail: Setup Ranking so your customers can compete against each other to win various prizes or recognition such as “most store visits” on a monthly business.
- Medical: Create an internal Leaderboard to show leading employees in various categories such as “patients served”.
- Smart Home: Use Ranking to get feedback on power usage peak times during the week, month or year. Use the data to adjust settings on devices to maximize energy efficiencies.
- Automotive: Use Ranking to track miles driven by drivers in a fleet to show most miles driven per week, per month, etc.
- Robotics: Use Ranking to keep track of uptime or number of products produced by various assembly lines.

The Ranking API is important because it allows you to see and share scoring standings across time ranges.

Below are great example services that could be combined with the Ranking service:

- Missions: Use Missions in combination with Ranking to create a Leaderboard for most Missions accomplished by application users.
- Invites: Create a Leaderboard using Ranking to display a listing of users who successfully invite the most other users to download and use your application.
- Favorites: Use Ranking with Favorites to display the rank of the favorite items in your application.
- Retailers: Use Ranking in combination with Retailers to show a list of the most visited Retail for your business locations.
- Purchase Item: Use Rankings in combination with Purchase Item to create a list of most purchased items within your application.

## Rating Service

The Rating API allows you to setup Ratings on a custom defined scale within your application. Some examples of Ratings can be “five stars” or a scale of “1 to 5” or “not likely, somewhat likely, very likely” or even “bad” “neutral” and “great”. Rating allows your users to give you feedback on assets, content or even other users within your application. This is valuable information that you can use to improve your application and user experience resulting in increased user interaction and overall application usage.

Below are some example scenarios as to how the Rating service can be used:

- Retail: Setup Ratings for various products and services in your application, similar to Amazon.com or Yelp.
- Medical: Create a rating system to collect feedback from Patients regarding services received.
- Smart Home: Use Rating to get
- Automotive: Use a real-time rating service to get feedback on traffic such as “light, medium, and heavy.”
- Robotics: Use a rating system in tandem with temperature gauges to keep track of temperature ranges, “cold, warm, hot” or to monitor other performance levels in a category “empty, half-full, full”.

The Rating API is important because it allows you get user feedback about various content, assets, and users within your application.

Below are great example services that could be combined with the Ratings service:

- Albums: Use Albums so users give Ratings for collections of certain content such as “autos” or “landscapes.”
- Creatives: Creatives (Advertisements) can be presented to users in specific geographies or user groups – use Ratings to get feedback on certain Ads seen by your users.
- Retailers: Use Ratings in combination with Retailers locations so users can give you valuable feedback about various business locations you operate.
- Purchase Item: Use Ratings in combination with Purchase Items so that customers can give ratings about various products in your digital catalog.
- Events: Use Ratings in combination with Events (concerts, giveaways, VIP Only Sales) to gather user feedback on what types of events are most liked.

## Real Time Bidding Service

The real time bidding system allows content providers to bid against other content providers for prioritizing delivering their content to customers. Content providers will allocate a maximum bid and total spend for a period. Whenever the content provider's bid is the highest the content is delivered to the customer and the provider is charged the bid amount. Currently Sirqul supports bidding on advertisements but this could easily be applied to Offer (Coupons, Products, Events, etc), Location, Album, and many other content searches.

Below are some example scenarios as to how these services can be used:

- Retail: a retailer or business can create ads for products and specials that are then available to applications and websites to display to their customers. The asset morph service can create ads from offers as well.
- Medical: a medical practice can assign a value to an open slot and then for each doctor add up the total. When searching for a new doctor the total for each doctor sets the bid price so that the one with the least patients is listed first. When a doctor is selected the bid price will then go down.
- Real Estate: seller agents can get their listings first vs. others if they are willing to a higher price per listing. Clicking the ads will take the user to the seller's listing.
- Automotive: the car senses it needs new tires and then gets a list of tire dealers ordered by the bid price each dealership is willing to pay.
- Robotics: using each robot's battery percentage a bid price is created where the higher the charge the greater the bid. When requesting which robot to use the one with the biggest charge would be listed first.

Applications that have large data sets submitted by competing providers would benefit from this advanced way of deciding which content to provide. Once the full set of content is determined based on targeting this system presents a way to prioritize the content while also monetizing the solution.

Below are great example services that could be combined with this service:

- Offers Service: using the asset morphing service offer and product listings can be converted to ads to increase the campaign's reach.
- Album Service: by building an ad for each album brands can then compete for listing their product line albums.
- Object Store Service: whatever custom solution is designed within the object store can be referenced in the custom data field of the ads and then bid on normally. The custom data field can also specify what to do when a customer clicks the ad.

## Refunds Service

The Refunds service allows a business to refund money back to the credit card, bank account, tickets, bucks, and so forth, of a user in our system. This is helpful when you are running a business where users can purchase items, and you need to refund them money because they either were not satisfied with their purchased item or need to make a return. For example, if a user purchased multiple items in a single transaction, but decides they want to return one of the items, they can do so and will be refunded money for that specific item. Refunds can be done both manually and automatically, giving business owners the flexibility on how they want to handle each customer use case.

Below are some example scenarios as to how these services can be used:

- Retail: Customers can get a refund for money if they return an item they purchased
- Healthcare: Patients can get refunded money or credits if they were overcharged
- Stadiums: Fans get refunded money if they return an item they purchased during a game
- Commercial Spaces: Property owners can refund money to their tenants if they are overcharged on their monthly lease

The Refunds service is important because it allows users to be refunded money if they are either unhappy with their service received or need to return an item. This service is necessary to ensure that your users continue using your products. Without the ability to refund money back to users, users could write negative reviews that will prevent other users from potentially signing up and/or continuing to use your product. In addition, refunds can be used to track money that goes in and out of your system. This is important so that there is accountability for where money is moving. Lastly, refunds are important so that users can get a chance to use your service and are guaranteed their money back if they don't feel like using your service any more. This allows users to try your service without feeling locked in.

Below are example services that could be combined with the Refunds service:

- Purchase Order: The item that was purchased together in a Purchase Order can be tracked and refunded specifically
- Notifications Service: Personalized push notifications that are targeted to user accounts that fit in a particular audience
- Billable Entity: The user that will be refunded the money
- Billing: The payment method that the user will be refunded money onto, whether it's back to their credit card or bank account

## Region Service

The Region API allows you to group Postal Codes to create a geographic area for any business purposes such as service areas, or sales areas. Additionally, Region can be used along with Push Notifications or for setting up areas to serve specific advertisements within your application. Regions are hierarchical and custom taxonomies can be created, for example by most important to least important.

Below are some example scenarios as to how the Rating service can be used:

- Retail: Setup Region so you can track store visits, sales and more through your application by users located within various geographic regions.
- Medical: Create a Region in order to see number of users of your application within various geographic area around your multiple locations within that region. Or, use analytics to track billable services by Region.
- Smart Home: Use Region to track usage of certain devices within groups of Postal Codes to gain insights into marketing more devices to new potential users within popular Regions.
- Automotive: Use Region to track vehicles driven within Regions and setup notifications if any vehicles travel outside of assigned regions.
- Robotics: Use Region to keep track of numbers of trips made by drones flying within a group of postal codes in order to determine usage and adjustments to numbers of drones used in each Region.

The Region API is important because it allows you to more easily manage a larger geographic area by combining multiple Postal Codes. For example, a Region can be large groups of Postal Codes such as “Pacific”, “Midwest” and “Atlantic”.

Below are great example services that could be combined with the Region service:

- Ranking: Use Ranking in combination with Region to see a listed ranking of application usage, sales and more by region.
- Push Notifications: Create and deploy Push Notifications to certain regions to promote sales and offers.
- Audience: Use Region with Audience to create promotions, offers, missions and more to particular user groups within a particular Region
- Retailers: Use Region in combination with Retailers to show a list of the most visited Retail locations for your business locations inside of a Region.
- Purchase Item: Use Regions in combination with Purchase Item to create specific items for sale within your application by geographical Region.

## Reports Service

The Reports API helps you understand your user behavior as well as trends within your application. Reports allow for the creation of custom ad hoc reports or you can use a set of predefined reports to see important data about your application quickly. The Reports API includes information on data such as time spent in your application as well as time spent per page. You can also see abandonment rates on various pages to gain a better understanding of how users interact with your application so that you can make improvements and increase usage.

Below are some example scenarios as to how the Rating service can be used:

- Retail: Setup Reports so you can view the time of day in app while in-store or, nearby your stores to help drive sales and revenue in combination with Push Notifications.
- Medical: Use Reports to see most visited pages and time spent on those pages within your application in order to make adjustments to your content by highlighting most viewed content or Medical services.
- Smart Home: Use Reporting to track the time spent using certain devices, the most used services or actions on those devices, and more.
- Automotive: Use Reports to track vehicle usage and time spent in transit. This is important for things such as scheduled vehicle maintenance or for tracking hours spent driving by your fleets drivers.
- Robotics: Use Reports to keep track of numbers of hours spent in production by various machines in order to optimize assembly lines and more.

The Reports API is important because it allows you know detailed information about the overall usage of your application and get details about various aspects for making improvements for your applications users.

Below are great example services that could be combined with the Reporting service:

- Region: Use Region in combination with Reports to get detailed information on the usage of your application by Region.
- Audience: Use Reports with Audience to quickly learn and make informed decisions about the types of people using your application in order to target and market to future potential users.
- Push Notifications: Use Reports to determine the best time of day to send Push Notifications to your users.
- Packs: Use Packs with Reporting in order to see which game levels are most popular with your audience, or, to see where your users fall-off in terms of playing your game.

## Reservations Description:

The Reservations service allows your users to make reservations for an object or a space, where the user has a specified period of time where they can occupy it before it is available again to be reserved by another user. For example, allow your residents of a highrise building to reserve an amenity like the communal kitchen. The resident can reserve the space for 4 hours on a specific day, and when the reservation is completed, the resident no longer has exclusive access to the space and other residents can now reserve the space.

Below are some example scenarios as to how these services can be used:

- Restaurants: Allow customers to reserve a table in advance
- Commercial Building: Use the Reservations service to allow tenants to reserve a space temporarily inside of your commercial building
- Hospital: Allow patients to make an appointment by reserving a time/day to see the doctor
- High Rise Residential Building: Allow residents to reserve an amenity
- Routing & Logistics: Allow customers to reserve a moving truck for a specified period of time

The Reservations service is important because it gives your business the opportunity to rent your products or services to customers for a specified period of time and through agreed upon payment. For example, if your business is about renting vehicles for moving services, the reservations service will be the core service used. Allow customers to reserve the vehicle for a specified period of time, and charge them a flat fee, in addition, per mile and fuel costs. In addition, the customer may also need to rent equipment such as dollies or tarps, which can also be reserved for a specified period of time and through agreed upon payment.

Below are example services that could be combined with the Reservations service:

- Billable Entity Service: The billable entity will be the user that is charged the amount of money based upon their reservation, for example if they're reserving a rental truck for \$x amount of money
- Billing Service: This is the payment method that the user will be charged on when they're confirming their reservation of an object or space
- Events Service: User can make a reservation for an event that they're attending. This will notify the event planner and identify the user that is attending
- Offers Service: An offer could be a product, where the user is reserving that product for a specified period of time



## Resource Service

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirqul.com](mailto:info-routenroll@sirqul.com)

## Retailers Service

The Retailers API allows for the defining of business and locations of those businesses within your application. This can be used in two ways. First, it can be used for the input of physical retail or service locations into the application owned by the company. Second, an application owner can allow other businesses to input their Retail locations into the database. For example, an application offering city-wide coupons for goods and services purchased at physical location can allow any business in a specific city or region to input their information for users to discover and buy.

Below are some example scenarios as to how the Rating service can be used:

- Retail: Setup Retailers for every store location owned by your company. These can be displayed on a map and include information such as store hours and phone number. Include Coupons to help drive customers to your Retail locations.
- Medical: Use Retailers to display all the Hospital or Medical Center locations owned by your company then list services plus include the ability to schedule appointments.
- Smart Home: Use Retailers to allow other businesses to list their goods and services in your application for the purchase of goods, maintenance or service items needed in the home that are supplied by third parties.
- Automotive: Use Retailers to show fueling stations, service centers, parking lots and more within your application .
- Robotics: Use Retailers to input all the potential pickup locations for drones to pickup Purchased Item packages for delivery to customers.

The Retailers API is important because it allows you specifically input the information and data for physical locations, or for third parties to input their locations into your application.

Below are great example services that could be combined with the Reporting service:

- Location: Use Location in combination with Retailers to allow users to search and find various businesses close to their current position.
- Audience: Use Retailers with Audience to recommend certain businesses and services to a particular Audience.
- Push Notifications: Allow Retailers to purchase Push Notifications that can be sent to your applications users. This lets you monetize your user base in a unique way.
- Missions: Create Missions for your application users to visit specific Retailers and get various rewards for Missions completed to increase customer value and application usage.

## **Ride Bundles Service**

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirgul.com](mailto:info-routenroll@sirgul.com)

## Route Service

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirqul.com](mailto:info-routenroll@sirqul.com)

The Route service allows routes to be generated programmatically through imports, scheduled reservations, or can be manually created by an administrator. Routes are associated with shipments or passengers, and are ordered by priority of pickups and dropoffs that can be manipulated through an automated optimization process or by manual edits. Routes are assigned to drivers and vehicles once they have been confirmed by the administrators. When routes are assigned to drivers/vehicles, they can be updated dynamically as the driver is running the route for on-demand based deliveries or transportation. For example, if there is a driver supposed to be driving across multiple states to get to their dropoff destination, during this process the driver may be assigned multiple shipments for pickup/dropoff along the way. These are dynamic injections that the Route service supports.

Below are some example scenarios as to how these services can be used:

- Routing & Logistics: When a driver/vehicle is assigned a route, the driver will need to follow the pickup and dropoff order of the items that need to be delivered
- Robotics: If a robot needs to fulfill multiple tasks during its operations, you can use the routing service to determine the most optimal path that the robot needs to take in order to complete its tasks
- Multi-building Community: For residents of a building that want to be picked up from their home and dropped off at the grocery store, routes will be pre-created so that residents have a time schedule for all the stops the vehicle will be stopping at

The Route service is important so that drivers are informed of the priority order to pickup and dropoff each item or person assigned to the route. Routes are universally understood as a way to identify the schedule a driver will follow, and this information is shared across all users including passengers, dispatchers, drivers, shippers, and recipients. If a route gets modified or updated, all users associated with that route need to be informed of the changes, otherwise it could misinform expectations for example a shipment being delivered late due to vehicle breaking down, or a vehicle detouring due to closed roads.

Below are example services that could be combined with the Route service:

- Route Settings service goes well with the Route service because settings can determine how a route gets generated. For example, if you have a product that offers an Uber like service, you can have settings where routes can only be assigned to a driver within 5 miles of the requested ride. Or if you have a product pre-scheduled ride in advance, another setting could be that routes can only be assigned to drivers with a valid time schedule
- Simulation service goes well with the Route service because the simulator allows you to generate routes and determine how many drivers and vehicles you need in order to fulfill these routes. This allows you to plan how you will scale your business.

## Route Settings Service

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The Route Settings service allows you to manipulate the way a route will get created. For example, you have a service that takes in a list of shipments and assigns them to routes. A setting could be where a route can only accept shipments that are a specific cargo types because a vehicle can only support Pallets. Therefore when importing a list of shipments that are of different cargo types, it will reject all shipments that are not the Pallet cargo type and assign the Pallet-type shipments to the appropriate routes.

Below are some example scenarios as to how these services can be used:

- **Urban Mobility:** Users who are requesting a ride need to join another passenger in a vehicle because they have enabled the feature to carpool with others for a lower fare. The route setting is set so that drivers nearby can pickup multiple people and drop each passenger off at their respective destinations
- **Routing & Logistics:** If a shipment needs to be delivered next day, it will get assigned to routes that are categorized for next day deliveries. The setting assigned is configured so that shipments get split up between routes that are same-day delivery and routes that are next-day delivery.

The Route Settings service is important because it allows you to manipulate how routes are created so that they align with business needs to maximize revenue. For example, if you want to maximize the utilization of your vehicles to pack as many shipments as possible for each vehicle, then you will want to configure your route settings so that it prioritizes capacity. In doing so, it may arrange shipments assignments so that they will no longer arrive at the earliest desired time at their destinations. So the trade-off is you will be able to fulfill more customer requests but at the cost of shipments being delivered later than the expected ETA.

Below are example services that could be combined with the Route Settings service:

- Route Settings service goes well with the Route service because settings can determine how a route gets generated. For example, if you have a product that offers an Uber like service, you can have settings where routes can only be assigned to a driver within 5 miles of the requested ride. Or if you have a product pre-scheduled ride in advance, another setting could be that routes can only be assigned to drivers with a valid time schedule

## Routing Service

The Routing service enables you to find the most optimal and efficient routes for delivering items between locations. Items can be considered packages, people, or anything else that can be moved from one location to another. This service can take in any number of vehicles, items with desired pickup and drop off times, as well as pickup and drop off locations to return the most “optimal” route. But, the more information there is to process, the longer it can take to process.

Below are some example scenarios as to how these services can be used:

- Retail: Inventory tracking of goods that need to be delivered from various retail locations based upon supply and demand.
- Medical: Supply delivery and management to ensure successful and on-time delivery of prescriptions, equipment, and other medical needs.
- Automotive: Optimal route generation for fleets to save time, fuel consumption, and reduce maintenance costs over time.

The Routing service is also configurable such that you can modify it to fit your business needs. There are different ways to configure the Routing service that enable you to prioritize what types of information is returned:

1. Use fewer vehicles
2. Reduce transit time and fuel
3. Reduce the average passenger time on vehicles

You can also modify the pathing algorithm such that you can specify to pickup the furthest item first, or closest first.

Below are great example services that could be combined with this service:

- Accounts service: Know exactly which driver is transporting which goods in their designated vehicle.
- Tracking service: Track the location of each vehicle and/or item to ensure that a successful delivery is made and that drivers aren't wasting resources.
- Preferred locations service: Provide recommendations of locations based upon time spent in a particular area/location. This can also be applied to offers as well.
- Analytics service: Know exactly when pickups and drop offs are made and whether or not they are within the desired times or completely off.
- Reports service: Use the reporting services to generate customized reports to improve business operations.

## Routing Simulation Description:

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirqul.com](mailto:info-routenroll@sirqul.com)

The Routing Simulation service takes a set of resources like vehicles, drivers, and passengers, and uses the Sirqul routing algorithm to generate the most optimal recommendations on how passengers or objects should be delivered or fulfilled. The best scenario to use this tool is when you are running a business that involves hundreds or thousands of shipments that need to be delivered the same day they're requested. The simulation can be used to determine which shipments should be assigned to available drivers and vehicles. You can generate hundreds to thousands of vehicles from a single hub, to a city, to even the entire United States. The simulator makes it easy to learn how you plan to scale your business and understanding the risks and costs involved before actually committing to shipment deliveries.

Below are some example scenarios as to how these services can be used:

- There is a 1,000 shipment order that is requested, and each shipment has a different time window delivery requirement, different drop off location, and there are mixed cargo types. The routing simulator allows you to upload the shipments and the algorithm will take the required time windows, different drop off locations, and mixed cargo types, and generate suggestions on how the shipments should be added onto routes, and assigned to the appropriate drivers and vehicles
- Use the Routing simulator when you are trying to optimize the floorplan of your warehouse. If you have machine that is used to help move around cargo inside of a building, you can use the simulator to determine how shipments should be moved based upon their delivery requirement, weight, size, shape, driver/vehicle assigned, and more.

The Routing Simulation service is important as it allows your businesses to plan and scale your business without having to do any guess work. It allows you to load up many vehicles, drivers, and passengers/objects needing to be picked up/dropped off into a simulator, and will be able to get suggestions on how the passengers/objects should be routed.

Other services that work great with the simulator is Audience (Geofence) service, which allows you to designate specific locations to determine a clustered drop off area for one to many passengers/objects. We typically call these 'Zones'. Another great service to pair with the routing simulator is the Assignments (Tasks) service, as a route suggested by the simulator could be assigned to a driver as a 'task' that needs to be completed.

## Scheduled Notifications Service

The Scheduled Notifications API allows for you to easily create a single or set of Push Notifications to be sent through your application. Scheduled Notifications can be sent to a single user, a group, or your entire user base. This feature helps you create set days and times for your Push Notifications to automatically be sent. This eliminates the tedious work of having to manually send each Push Notification. With this service, you can set up all the Push Notifications for your application for the week, month, quarter or the year.

Below are some example scenarios as to how the Rating service can be used:

- Retail: Setup Scheduled Notifications to send out a Push Notification every Friday of the year at 3 p.m. with a Coupon for extra savings to drive customers to your stores.
- Medical: Use Scheduled Notifications to automatically send Push Notifications to specific users for follow up doctor visits.
- Smart Home: Use Scheduled Notifications to automatically alert users of important dates and times such as National Holidays or Daylight Savings Time.
- Automotive: Use Scheduled Notifications to automatically alert drivers of scheduled road closures, or timed service schedule alerts such as “Monthly Service Inspection”.
- Robotics: Use Scheduled Notifications to alert specific service personnel of maintenance checks that need to be performed on specific days and times on certain robotics.

The Scheduled Notifications API is important because it allows you automate specific messaging to your application users on the days and times needed.

Below are great example services that could be combined with the Reporting service:

- Coupons or Offers: Use Coupons or Offers scheduled at the end of each month to drive sales of Purchase Items within your application for added revenues.
- Groups: Use Scheduled Notifications to automatically notify a specific Group of an event particular to that Group, such as an upcoming game for a team.
- Events: Combine Scheduled Notifications with Events such as concerts, sporting events, and more to alert users to purchase tickets in advance.
- Missions: Send Scheduled Notification to your application users to notify of them of new Missions as they are released each month.



## Scheduled Tasks Service

The scheduled tasks service is a service that enables to you set specific actions and trigger them based upon certain times and actions. It allows you to create 'recipes' that can automate workflows and processes. You can even create and customize recipes to occur every N timeframe that you desire (e.g. minutes, days, weeks, months, etc.). This service is great for people who are looking increase overall efficiency and effectiveness of their day to day activities.

Below are some example scenarios as to how these services can be used:

- Retail: Schedule a notification to be sent every morning of daily tasks and assignments for the day.
- Automotive: Schedule a notification when the 30k, 60k, and 90k milestones are coming up so that the driver can schedule and budget their finances appropriately for the upcoming maintenance cost.
- Smart Home: Have the coffee pot brew every morning at 7am and configure this from your smart device.
- Healthcare: Schedule autonomous delivery carts that can delivery prescriptions to patients rooms at specific times in the day.

This service is primarily used to make manual processes more efficient and effective. Once the recipes are set, there is no need to change anything unless an adjustment needs to be made. The recipes are managed via web dashboard that and can be saved and managed at any point in time.

Below are great example services that could be combined with this service:

- Notifications service: Set up the task to send yourself a push notification when some specific action happens (e.g. reminders).
- Album service: Set up a security camera to snap a video when it detects motion and save it to an album that can be reviewed later.
- Offers service: Set up a scheduled task to generate an offer when someone who matches an Audience enters the geofence.
- Missions (tasks) service: Once a user starts and completes a mission, queue up the next mission that is on the list for the user and automatically notify the mission creator that they are moving on to the next mission.

## Score Service

The Score API lets you assign points for certain actions that users take within your application. The most obvious example is creating a game and awarding points to users for finishing each level of the game. Score can be combined with Ranking (Leaderboards) to show overall rank of players in a game or application. Score can also be used as an indicator of digital currency earned by an application user. For example, for every store visit or level completed, a user can earn 10 points that can eventually be redeemed for savings on Purchase Items.

Below are some example scenarios as to how the Rating service can be used:

- Retail: Setup Score to reward your customers for each physical visit to your locations. Add a Ranking (Leaderboard) so your customers compete with each other for Badges.
- Medical: Use Score to keep track of employee work days and display a Leaderboard (or Badges) for high-performing employees.
- Smart Home: Use Score to keep track of the number of times a device is used. Keep track of specific users in your database to reward heavy users of your Smart Home device with free upgrades or special offers.
- Automotive: Use Score to keep track of miles driven and display a Leaderboard of top drivers in your fleet.
- Robotics: Use Score to keep track of hours of uptime, or units produced for a specific assembly line.

The Score API is important because it allows you to creatively track various interactions and events on a user by user basis within your application and then display results in a Ranking (Leaderboard).

Below are great example services that could be combined with the Reporting service:

- Coupons or Offers: Use Coupons or Offers to be awarded to your application users when they reach certain Scores.
- Groups: Use Score to let teams compete against each other and see their Ranking against other teams to foster productivity or increase usage of your application.
- Retailers: Award points to your application users when they visit your physical locations. Award extra points for visiting new locations or Bonus Points for visiting a specific location more than a certain number of times.
- Missions: Reward your application users with various amounts of points for completing Missions. Easier Missions get lower points, more difficult Missions result in a higher amount of points earned.

## SecureApp Service

The SecureApp service enables your application, website, or service to enable users to identify or authenticate themselves using facial or fingerprinting technology. Facial and fingerprint authentication is increasingly becoming a feature that many users desire when they want to have a quick way to authenticate themselves either when they are on the go and don't want to have to enter information. A great use case for this is using fingerprinting or facial technology when making a purchase transaction. Because facial and fingerprinting is unique per person, there is an extremely low likelihood that your information will ever get compromised, which is why this type of authentication is becoming increasingly in demand.

Below are some example scenarios as to how these services can be used:

- There is a long line to get into a football stadium and fans are frustrated with having to wait. Setup kiosks at the stadium and use either fingerprinting or facial recognition technology to help expedite the process so that fans can enter into the stadium without ever having to stop walking. We would be able to verify that the user can enter the stadium because they have scanned their face and/or fingerprint when they setup their account
- Implement fingerprinting or facial recognition scanning for residents who live in a high-rise building. They can authenticate themselves when using the elevator, access the front entrance after hours, and even access their own home unit, without ever having to use a card or dongle to scan.

The SecureApp service is important because it is much more accurate and secure than traditional methods of authenticating like entering a username and password, and in addition, can also reduce costs by not requiring items such as ID cards, dongles, etc. Facial and fingerprinting technology is already being applied in major industries like ticketing systems, security gates at airports, and even accessing a laptop. It's increasingly becoming the next method of authenticating users because it provides convenience, reduces costs by replacing/reducing papertrail and ID cards, and is a much more secure way of providing users with access.

Below are example services that could be combined with the SecureApp service:

- The Accounts, Categories, Events, and Locations service works well with the SecureApp service because you need an account that is associated with the valid face or fingerprint of the user, your system could categorize the user into a certain category based upon their identity, associate the identity of the user to specific events that they can attend, and then only grant this user so that they have access to a specific location

## Service Type Service

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirqul.com](mailto:info-routenroll@sirqul.com)

The Service Type service allows your business to identify the various types of services that carriers do. For example, some carrier companies offer LTL shipping, but do not offer Moving & Storage services. Each service type has different requirements, for example, LTL shipping typically involves delivering palletized shipments, where as Moving & Storage based services involve moving items like furniture and small, medium, or large-sized boxes. Depending upon the carrier, the shipper will need to determine which service they require for their shipment to be delivered.

Below are some example scenarios as to how these services can be used:

- A shipper has a shipment that needs to be delivered in the same day. The shipper doesn't have any carriers available that time and needs to find another carrier that they typically don't work with to deliver the shipment. The shipper finds another carrier through a website and sees that they offer same day deliveries as a Service Type. The cost is a little higher for same day deliveries, but it's important enough for the shipper to pay the extra cost
- Typically, a Warehouse or a Hub is a location where trucks stop for either receiving shipments or delivering shipments. There are warehouse workers that use equipment to load and unload shipments onto each vehicle, depending on the cargo size, shape, and weight. The driver will indicate their service type upon arrival so that the warehouse workers know what equipment they need to load or unload the shipments

The Service Type service is important because it determines how much money a carrier should charge for their delivery. If the service type is same day delivery, the carrier will typically charge a premium since the turnaround must be very fast. For service types that are LTL, these are sometimes priced based on weight class and also distance travelled, and tend to be delivering items in bulk. Service types are typically universal in that carriers must abide by the same regulations and rules that other carriers also follow.

Below are example services that could be combined with the Service Type service:

- The carrier must know the cargo type of a shipment, the availability of their drivers and vehicles, as well as the service type needed so that the carrier knows how much money to charge the shipper
- The drivers of a carrier company must be disbursed money based upon the services that they have provided for each shipment delivery. In addition, the disbursement will only send money to the specific billable entity through the payment method that they saved through the billing service.

## Subscriptions Service

The Subscriptions service allows you to manage and customize recurring billable events to fit your business needs. Whether it is managing subscriptions for monthly charges or yearly memberships, use our services in conjunction with our billing services to ensure that recurring payments are made on time.

Below are some example scenarios as to how these services can be used:

- Retail: Setup and manage yearly memberships for added discounts, expedited shipping bonuses, and other incentives for shoppers that use the mobile app.
- Medical: Setup a recurring billing plan for medical expenses that give users the ability to make reasonable payments on time.
- Real Estate: Setup a recurring billing plan for utilities and other monthly expenses to plan out a budget. Have the budget be automatically modified based upon trends and overall usage.
- Automotive: Setup and manage yearly memberships for recurring, routine maintenance for vehicles. Offer discounts and other perks to get users to subscribe.

The benefit of using Sirqul's subscription services is so that you can seamlessly integrate it into the rest of Sirqul's platform and services. Have everything work hand-in-hand with no speed bumps or needs to work with other third parties.

Below are great example services that could be combined with this service:

- Offer services: Setup subscription plans via offers. Use this as a gateway of what services are offered for the subscription plan.
- Billing services: The other have of subscription management where charges are made.
- Tickets services: Instead of using a credit card on file, use digital currency equivalents to pay for the subscription.

## Third Party Credentials Service

Authenticate users in Sirqul by leveraging a variety of third party credentials. Whether it is through Facebook, Twitter, or even your own social network, Sirqul makes authentication via a third party seamless.

This service is great for those who want to support users who authenticate through popular social networks like Facebook and Twitter. But it is also great for those want to integrate their own social network into Sirqul authentication.

Below are some example scenarios as to how these services can be used:

- Retail: Existing retail stores have their own corporate authentication system and want to leverage this information to create an account on the stack running Sirqul
- Medical: Have a custom healthcare authentication system that is specific to surgeons, nurses, etc.
- Automotive: Integrate a custom authentication system that is unique to the user who owns the vehicle. Only allow certain actions and events occur only if the driver's profile matches what was originally set in the beginning.

This service is great if you want users to authenticate via an existing popular social network, or if you have your own authentication system that can be used on the Sirqul stack.

## Territories Service

Territories are defined by a list of postal codes without a hierarchy. They are considered “areas” that are managed by an account. The account could manage the territories for any purpose.

Applications and organizations use this service to manage teams or resources spread across large physical locations. For example, think of a delivery service that has a fleet of vehicles that need to delivery packages that meet their ETA's and quotas. One vehicle is not going to service all areas, this would be inefficient and costly. Imagine multiple vehicles covering multiple territories. This would get the job done more efficiently and may even allow the business to grow and expand more than anticipated.

Below are some example scenarios as to how these services can be used:

- Retail: Sales representatives could be managing specific retail outlets in a defined territory.
- Medical: Medical delivery services manage and deliver supplies to specific hospitals.
- Real Estate: Agents and brokers could cover specific territories and be considered “recommended” agents or brokers to customers.
- Automotive: Automated delivery cars could be managed to delivery and service specific territories in an area.

This service is simply used to manage areas that are comprised of postal codes.

Below are great example services that could be combined with this service:

- Routing service: Use the routing service to factor in the most efficient route to deliver items to and from N locations.
- Tracking service: Use the tracking service to ensure that deliveries are made appropriately to and from N locations. Send an alert if ETA's are missed by alot or if driers are veering off course.

## Theme Service

The Theme service allows you to make periodic updates to your application without any software changes or server deployments. This is extremely useful for doing promotions and advertisements during events or holidays. For example, if you have a game application and you want to make graphical changes to match the holiday season, you can schedule an update using the Theme service by uploading graphics, messages, and different icons that will get applied to your main menu. You can also schedule different themes within game levels that changes the look and feel for objects, character designs, and rewards as the user progresses through the story.

Below are some example scenarios as to how these services can be used:

- There is a Kiosk on display inside of a mall. The content, images, and graphics on the display screen will change periodically. These have been pre-scheduled to update dynamically without an admin having to manually configure the updates
- For the on-screen dash inside of a vehicle, if the dash is connected to the internet, it can periodically update the menu graphics view to improve the user experience

The Theme Service is important because it allows you to update images, text, media files, etc. without any need for software changes or server deployments. These updates can be scheduled in advance so that the user does not have to manually make these modifications at the time they need these changes deployed. This type of service helps retain users by providing a pleasing experience and reminds users to revisit an application if they have not used the application for a while.

Below are example services that could be combined with the Theme Service:

- Scheduled Tasks and Assets services are great to use with the Theme service because an admin can schedule every single theme update for the entire year in advance so that they don't have to make the updates manually, and upload the images and videos using Assets that will be the graphical changes for the theme



## Tickets Service

The Tickets service is a way to represent digital currency in the Sirqul ecosystem. Tickets can be called whatever you wish for it to be called such as coins, bucks, etc. Tickets are used to purchase offers (products, vouchers, and packs) which can be redeemed and used at a later point in time.

Tickets can be earned via in-app purchases or rewarded for completing tasks. You get to define the real world dollar to tickets ratio in your ecosystem.

All transactions that occur with tickets are recorded so that you can build reports on everything that happens in your ecosystem to determine the next steps in improving your business needs.

Below are some example scenarios as to how these services can be used:

- Retail: Can be used as a form of digital currency that is used to purchase a digital offer that can be redeemed for a physical product at a retail location.
- Medical: Can be used as a form of credits that are used when billed for medical services.
- Automotive: Can be used as a form of credits that are used when parking at a smart garage. Automated deposits, etc.
- Robotics: Can be used as a form of credits that are used when needing to rent or use robotics services.

Use tickets to generate your own organic ecosystem of value for your users. Whether they are used as credits for services or used as a way of means to purchase products, think of tickets as your own digital currency.

Below are great example services that could be combined with this service:

- Offers service: Tickets can be used to purchase Offers (products and vouchers), which could translate to be a digital or physical good that can be redeemed at a later point in time.
- Missions service (Tasks): Reward users with credits based upon completion of missions (e.g. chores around the house, meeting a daily quota, etc.).

## Tournaments Service

The Tournament service enables you to create scheduled tournaments that allow users to join together and compete against each other. The tournament creator can specify the start times, the times between the matches and the times between each round. Tournaments can span from 1 day to multiple weeks. Tournaments are one user versus another user. The user who scores higher moves to the next round until there is one person left standing. Tournaments can also be applied to non-user based systems to score the best performing tasks, routes, or anything else that requires measurement based upon results.

Below are some example scenarios as to how these services can be used:

- Retail: Employees can compete against each other to see who can meet and exceed their quota for the week.
- Automotive: Autonomous delivery vehicles can compete against each other to determine the most optimal route for efficiency.
- Robotics: A fleet of autonomous machinery can be paired against each other for the week. The machinery that performs the best will earn the highest score and will move on. This information can be used as a way to measure overall performance of various setups to determine which setup is the most optimal.

Use tournaments as a way to measure overall performance and filter out inefficient processes and methods. Use it also as an engagement tool amongst your team to foster competition and productivity.

Below are great example services that could be combined with this service:

- Notifications service: Get notified each time a match starts, ends, and when the tournament is complete.
- Scheduled tasks service: Each time a winner is determined for a tournament round, this can trigger an analytic to be sent to record the results.

## Tracking Service

The Tracking service allows you to get the predicted location for a customer based on previous behavior. If a customer resides in a place for a period of time this is marked as a preferred location. We look back over the previous few days and the previous days of the week from the day specified. If for instance the day was a Wednesday then the would check the days before Tuesday, Monday, Sunday, etc. It will also check some number of previous Wednesdays. Using that information we then determine location matches for each hour of the day. These are ordered by the number of matches and the location with the most matches is returned for that hour as the most like location the customer will be.

Below are some example scenarios as to how these services can be used:

- Retail: Track employees and their whereabouts in the retail location to ensure that everyone is utilizing their time correctly. Send a notification if they are spending time in a spot that they are not assigned to.
- Medical: Track medical equipment in the hospital to ensure correct delivery, placement, and location of each device. Send a notification to the administrator if a piece of medical equipment is not where it should be.
- Automotive: Integrate location tracking in fleet vehicles as a standard option for manned and/or autonomous vehicles. Send a notification if a vehicle has been parked in an area where it should not be.
- Robotics: Track the location and whereabouts of autonomous robots in a warehouse. Send a notification to the administrator if the robot is not in a location where it should be.

The Tracking service can be used by dispatchers and administrators alike to ensure that employees and/or objects are on track for their intended destination. Alternatively, the tracking service can be used to gather data to provide recommendations for users based upon where they are located at any given time.

Below are great example services that could be combined with this service:

- Routing service: In addition to tracking the path of a user or object, associate pick-up and drop off times as well as ETA's to ensure a successful delivery.
- Retailer service: Depending on where users have been and what their demographic information is, a retailer can be recommended to the user.
- Offers service: Depending on where users have been and what their demographic information is, an offer (product, voucher, coupon, person, etc.) can be recommended to the user to be interacted with, etc.

## Triggers Service

The Triggers service is similar to IFTTT. Applying conditional logic where when a certain action occurs (e.g. user lands on a specific screen, user clicks on a specific button, etc.) this will cause an event (e.g. send an SMS alert to the user, add credits to an account, etc.). For example, if you are running an uber-like business, and you need to send an alert to the passenger when the driver is nearing their pickup location, there needs to be an event to trigger the notification alert to be sent to the user. By setting up a geofence on the pickup location, once the driver enters within proximity of the location's geofence, it should trigger an action to send an SMS alert to the passenger indicating that the driver is nearing their location. This is just one of many ways a trigger can be used to enhance communication to your users.

Below are some example scenarios as to how these services can be used:

- Retail: Merchant is notified on their device via trigger when a customer adds an offer to their wallet
- Healthcare: When a patient arrives at the hospital, trigger an alert to the doctor that their next appointment is starting shortly
- Smart Home/Communities: When a package is accepted by the concierge of a high-rise apartment building, this will trigger an SMS alert to the resident
- Smart Vehicle: Passenger being picked up by an uber-like service is triggered with an alert on their phone when the driver is arriving at their location

The Triggers service is important because it can be used to communicate when there are problems that arise without intervention of manual human investigation. For example, if you have a CO2 sensor inside of your building and it detects high readings of CO2, when it hits a certain threshold it will trigger an alarm or notification to be sent to the resident/owner's device, building owner's device, and even the fire department system. The Triggers service is also important because it can reduce costs. For example, you have a sprinkler system on your front lawn and it's scheduled to water the grass every day at a specific time. Implement sensors so that when it rains, it will prevent the scheduled system to not enable the sprinkler to turn on.

Below are example services that could be combined with the Triggers service:

- Locations Service: Setup a geofence at a hospital location, and when patients enter the proximity of this location through the geofence, trigger an alert to the doctors who have an appointment scheduled with that patient
- Notifications Service: Triggers can enable notifications to be sent via email, SMS, push notifications, etc.
- Weather Service: If the weather service detects that rain will occur during the day, turn off the automated scheduled sprinkler system

## Twilio Service

Already a Twilio user? Integrate it into the Sirqul platform to enhance and augment your existing notification system. Leverage the power of Twilio with Sirqul's scheduled notifications and scheduled tasks to create notification campaigns that can be easily managed via a robust web dashboard.

Even if you aren't an existing Twilio subscriber, you can easily integrate Twilio into Sirqul using our easy to use integration tools.

Below are some example scenarios as to how these services can be used:

- Retail: Notify existing subscribers of deals and events happening at the mall.
- Medical: Notify Doctors, Nurses, and other important people in relation to a patient's current stay at the hospital.
- Real Estate: Notify customers of new interest rate updates, property changes, and anything to help the customer be kept up to date with the latest information.
- Automotive: Send and receive ETA notifications for deliveries, pick ups, and drop offs that are based upon proximity and location.
- Robotics: Receive notifications in real-time for status updates, failures, and any other things that you set to send as a notification for various devices and machinery.

Use Twilio to ensure successful delivery of SMS/MMS to registered phone numbers.

Below are great example services that could be combined with this service:

- Scheduled Notifications service: Define and set when the SMS/MMS messages are sent to the specified phone numbers.
- Scheduled Tasks service: Set specific triggers that send notifications when a particular action happens.
- Offers service: Send users product information, deals, and other digital goods that can be redeemed at a later point in time.

## Twitter Service

Authenticate users in Sirqul by leveraging Twitter. Sirqul makes authentication via the third party social network seamlessly. It allows you to pull information from their Twitter account such as page follows, hashtags, and their public posts, as long as the user grants permission to do so. The service is secure so that this information cannot be accessed by other users unless they are granted permission by both the user and also through the application.

Below are some example scenarios as to how these services can be used:

- Retail: Allow users to login through their Twitter account so that all of their follows data can be leveraged to match them with products in your store
- Smart Home: Allow your user to login via Twitter to a custom music application installed in your home, which can then pull information from your Twitter account to recommend music based upon their page follows and hashtags

The Twitter service is important because it allows your app to leverage additional information about your user that may already be available through their Twitter account. This means that you don't have to do anything within your application to build features in order to obtain information such as page follows, keywords from public posts, hashtags, and so forth. This is an extremely easy and seamless way for your application to ask permission to the user to obtain this information.

## User Permissions Service

Define user and group permissions for various Sirqul services. Choose who has access to read, write, update, and/or delete content to the items they have access to:

1. Accounts
2. Game levels
3. Collection
4. Album Contests
5. Theme descriptors
6. Albums

Below are some example scenarios as to how these services can be used:

- Retail: Internal employee dashboard that grant access to various parts of the dashboard depending on the employee's role type.
- Medical: Different levels of access to a patient's x-ray files. Only the approved practitioners and their patients have access to access and comment on the files.
- Real Estate: Agents and their clients accessing the same home information when looking to buy and/or sell a home.
- Automotive: Family members will have a different profile for the vehicle to personalize their experience.
- Robotics: Certain smart devices (e.g. Rumba) can be controlled by specific users in the home.

User permissions are key a key service to ensure that you can share and interact with content that are authorized to. It's important to maintain privacy among users and to respect the information that is exchanged between them.

Below are great example services that could be combined with this service:

- Albums service: Pick and choose which person or group of people can see the content that you upload to an album (collection of assets). Define if the users can simply view content versus adding their own content.
- Game levels service: Pick and choose which smart devices can participate in a set of rules and commands that are defined by you. For example, a Rumba will execute the commands defined in the game level, but the Air Conditioner will not have access to these commands.
- Theme descriptors: As an application owner, choose who can content that is distributed in your mobile application or website experience. For example, the look and feel of the dashboard.

## Vehicle Type Service

This service is available via our RouteNRoll vs. our EaaS instance.

For more information, please send an email to [info-routenroll@sirqul.com](mailto:info-routenroll@sirqul.com)

The Vehicle Type service allows your business to create and diversify the different types of vehicles that your business needs to support. For example if you run a marketplace of matching carriers and shipments together, the vehicle type service can allow you to create and manage many different types of vehicles in order to support the various types of cargo. There could be hundreds of different types of cargo that needs to be shipped and this will require that you fleet has the appropriate vehicle types to ensure delivery. Some cargo types are also custom, not standard sized/shaped, and needs to have specific vehicles that can carry these items.

Below are some example scenarios as to how these services can be used:

- **Routing & Logistics:** When a shipper needs multiple types of cargo delivered on a single route, the carrier needs to be able to view and identify the different cargo types so that they can determine what equipment is necessary to load/unload onto the truck
- **Warehouse:** The warehouse operators need to know the cargo types so that they can use the correct equipment to load onto the appropriate vehicle type

The Vehicle Type service is important because it will be necessary in order for your business to support various cargo types that shippers need shipping. You cannot run a transportation service without understanding the requirements and information for each unique type of cargo in order to assign it to the correct vehicles. Some cargo types need to be palletized, while other cargo types need to be placed into refrigerated vehicles. Without this level of information and details for each cargo type, you cannot ensure that the shipment will be delivered appropriately and on-time.

Below are example services that could be combined with the Vehicle Type service:

- **Cargo Type:** Based upon the cargo type of the shipment, the vehicle type must be known so that the appropriate vehicle is utilized
- **Availability:** The schedule for each driver and carrier needs to be known so that they have the necessary time to deliver a specific cargo, as some cargos require days vs. hours to be delivered depending on where it's going and the vehicle that is being used to transport
- **Import:** If you are running a business that allows carriers to import all of their scheduled shipments for next day delivery, use the Import service to identify automatically which cargo should fit onto what type of vehicle



## Wallet Service

The Wallet service acts as a container to store various digital items such as offers, products, coupons, vouchers, etc. that have been purchased or otherwise obtained by the user. Items in the wallet can be used whenever the user wishes to use them given that it has not expired yet.

The Wallet service is primarily for consumers who are collecting items or objects by using some form of a consumer facing application.

Below are some example scenarios as to how these services can be used:

- Retail: Macy's creates an offer that is discoverable by consumers using the Macy's shopping app. Consumers add the deal to their Wallet that can be redeemed at a later point in time.
- Medical: A hospital bill can be considered an item that can be added to the Wallet to be paid at a later point in time.
- Real Estate: Users can add buyer bonuses and other incentives that help in the final cost of a home purchase.
- Automotive: Users can add offers for routine maintenance and gas rewards to be used at some point in time.
- Robotics: Work orders can be put into the Wallet for robotics to perform on a daily, weekly, or monthly basis.

This service is specifically used as a container for objects that can be used at some point in the future. Without it, you will have to build your own custom solution to interact with these objects.

Below are great example services that could be combined with this service:

- Billing service: Many items need to be purchased in order to be put into the wallet. Some can be purchased after the fact. But, users will need a valid card on file to properly transact the purchase.
- Analytics service: When money is involved, analytics are very important. Purchase success and failure rates are very important to know. You don't want to be losing money without knowing it.
- User transaction service: Items from the wallet all have a status. These are statuses that represent if the item is in a redeemable, unredeemable, valid, or invalid state.
- Offers service: The key item or object that goes into the wallet. An offer can be considered a coupon, voucher, product, event, person, etc.

## Weather Service

The Weather service is used to get the most up to date weather information for your Sirqul powered experience. This service is also cacheable so that in the case of an outage, you still have the information that you need.

In a world of home automation and smart devices, the Weather service can act as a gauge of when to perform certain actions. For example, if the the forecast calls for rain today, you can be pushed a notification to bring a raincoat. While many services can do this already, integrating it with Sirqul can bring much more depth to the experience. The system will also take into consideration any events or locations that you are going to today and analyze the information even further for more suggestions.

Below are some example scenarios as to how these services can be used:

- Retail: If the outdoor temperature reaches over 80 degrees fahrenheit (26.67 celsius), automatically generate an offer for a buy one, get one free ice cream treat at Baskin Robbins.
- Medical: In a temperature controlled environment
- Real Estate: If the temperature is going to be greater than 60 degrees fahrenheit (15.56 celsius) and it is not going to rain, push notifications out to users for an open house.
- Automotive: If the outdoor temperature reaches a certain threshold, begin adjusting the climate inside of the car to a setting that the user has used often.

The Weather service should be used in conjunction with the Sirqul Scheduled Task service to ensure that you can leverage the most benefit out of automated triggers and actions.

Below are great example services that could be combined with this service:

- Scheduled Tasks service: When certain temperature and weather conditions are met, trigger some action from that.
- Analytics service: Track overall trend of weather data and how it impacts the Scheduled Tasks assigned to it.

## Word Service

The Words service enables you to create custom words with definitions that can be thought of like a dictionary. This service would be used in conjunction with other services to realize its full potential. Using Words with our Scheduled Tasks service would empower users to set “Words” (commands) that can be triggered based upon voice recognition cues. For example, I could set up the Words “Open” and “Garage” as triggers and then create a Scheduled Task to then communicate with a central gateway that would trigger the appropriate action. In this case, opening the garage.

This service is not limited to voice recognition, it could also be text based such that applications and scripts can execute the desired commands based upon values that are returned from this service.

Below are some example scenarios as to how these services can be used:

- Retail: If a status report indicates that there has been a sharp increase in sales of a particular item, it could detect the Word that is specified and suggest to the user to put in an order for more inventory or have it automatically done.
- Medical: Keywords specified in medical reports could trigger instantaneous recommendations for patients in regards to prescriptions and other such needs.
- Robotics: Use custom work orders with commands that smart machines can understand and execute.

Use Words as a way to trigger specific actions and automate process you would otherwise do manually. Manage them remotely via a web dashboard or mobile app and make updates on the fly.

Below are great example services that could be combined with this service:

- Scheduled Task service: When certain words are called, trigger some action.
- Game level service: Build a custom set of ‘rules’ that are defined by the words that are added to a game level. This could be an order of operations based upon the triggers that are defined.
- Pack service: Group multiple game levels to create a more complex automation system defined by each game level.
- Analytic service: Every time an action occurs, record an analytic so that you know how often something happens and if there are any failure points along the way.

## Workflows Service

The Workflows service allows you to combine multiple services together to create an entire user flow for a website or application. For example, you have a retail store and you want to create an experience for your customer that will engage them by personalizing their experience. You can create a workflow where when the customer first enters the store, they receive a push notification alert on their device that greets them with a message, shares that there is a promotion on some products that they have purchased in the past. The user then can open up the app, and can use turn-by-turn directions to get to that specific product. In addition, the user adds the offer to their wallet, which also sends an alert to an employee that a customer inside of the store has added an offer to their wallet. The merchant sends a message to the customer, asking if they need any help finding their product or if they have any additional questions. This workflow involves using the Notifications service (Push notification), Employees Service (Notifying the employee that is nearest to the customer), Triggers Service (The trigger mechanism to send the greeting message to the customer when they first walked into the store), Offers Service (when the customer saw the offer), and Wallet Service (When the customer added the offer to their wallet). Combining all of these services created has created a seamless and engaging experience for the customer.

The Workflows service is important because it allows you to configure and customize the best experience for your users. Not all services work best together, so it's recommended that you use our workflows dashboard called Magellan to adjust and optimize the user experience and features you want to define for your product. The dashboard is a 'drag and drop' tool that allows you to visually map each API together to create the desired experience. It's very easy to add, remove, and modify and feel this is important because it allows you to plan out the types of features that you may want to build into your application or website without yet making any code changes. Another benefit of using the Workflow service is that it will provide you with generated code examples that you can insert directly into your programming environment, rather than having to write the code from scratch. We have setup example workflows on our website to help you get started. Please visit our Developer site to learn more.

## WSSL Service

Developers can define WSSL services, aggregators (combination of services), and stylesheets (used to modify the HTTP responses) to generate their own custom response for their application. For example, there could be a news application that aggregates multiple news sources and returns the results in the way that you define, creating a single cohesive response that is simpler to use in your application.

A WSSL service is in essence, a proxy for making HTTP requests. It can be used to make HTTP requests to Sirqul services as well as any open REST API. The response is parsed and can be manipulated via a graphical user interface (GUI). Note: The WSSL GUI works with XML, but json responses are automatically converted into XML format. WSSL Services are composed of a HTTP URL, parameters (which are used in making HTTP requests), and output variables. Values in the HTTP response can be referenced and saved as “output variables”, which can then be used in WSSL Aggregators for referencing response values.

A WSSL aggregator allows the ability to combine multiple services (as well other aggregators) together to form one cohesive response. Asynchronous service requests are made when applicable, but it is also possible to conditionally run services based on the response values from another. For example, there could be a WSSL service that sends in an error analytic only if another service failed to return a valid response.

WSSL stylesheets can then be used to customize WSSL Aggregator responses even further by completely changing the structure or even the response format. For example, the XML responses generated from the WSSL Aggregators can be converted to JSON, or to simple HTML pages that can be viewed by consumers.