# Reversed Billed Mobile Data: RBURL

The Reverse Billed Mobile Data RBURL Solution's purpose is to allow you to easily take an existing web-service and make it Reverse Billed, which enables mobile users to access specific online content and data services without impacting their own mobile data bundle.

The data usage charge is reverse billed to you, the sponsoring company (whether you're a M2M service provider, content provider, an advertiser, employer, information agency or healthcare provider, etc.)

Available on: Vodacom, MTN, Cellc and Telkom

vodacom
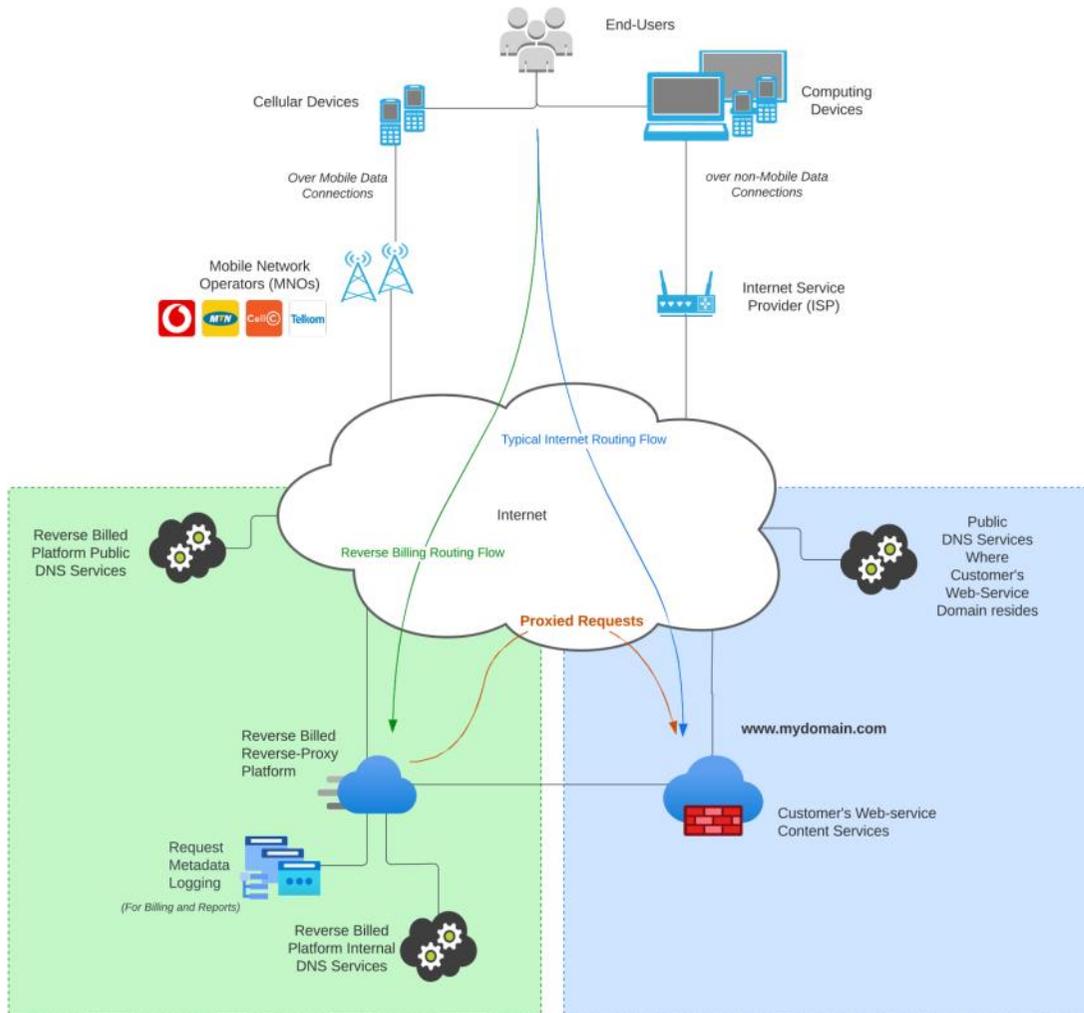
RBURL Process Flow:

When a End-User visits the customer's (your) web-service, the handset resolves the domain portion of the web-service using Public DNS to an IP Address, and sends the data requests via the End-User's active ISP towards the resolved IP address endpoint.

For standard web-services: The resolved IP address points to the customer's content services to fulfil the End-User's requests.

The design of the RBURL product offers customers various options for controlling the flow of onboarded web-service domains through the RBURL Platform. Onboarded web-service domains are hooked to a unique DNS record which allows the RBURL platform the ability to manipulate the flow of the web-service routing:

1. **REVERSE-BILLED:** For active RBURL web-services, the resolved IP points to the RBURL Platform, where the request is Reverse Proxied towards the customer's content services to fulfil the End-User's requests.
   The RBURL Platform logs the metadata of the End-User requests, and aligns them to an associated customer's profile.
   Soft-cap limits are set, and participating MNO originated data usage requests attract a RB usage cost, and are deducted against the set soft-cap limit, triggering alert emails at various milestones. Customer confirmation for switching away from the Reverse Billing flow is expected.

2. **DIRECT MODE:** The associated Unique DNS record is updated to follow the original "standard" web-service flow, bypassing the RBURL Platform, and avoiding any additional Reverse-Billing on the customer's web-service domain.

DIRECT MODE

Reversed Billed web-services are disabled or have reached their monthly credit limit. DNS points to the Customers content server without going via the RBURL Platform.

REVERSE-BILLED MODE

Active Customer account with customer's web-service domain routing via the RBURL Platform to retrieve content from the customer's server, over Reverse Billed IPs, attracting a Reverse billed cost for MNO originated requests.

INTERNET

A CLIENT DNS

DIRECT

CLIENT URL

B OUR DNS

REVERSE BILLED

C SITE SETUP ON ARR

D HTTPS CERT

OUR RB SERVER
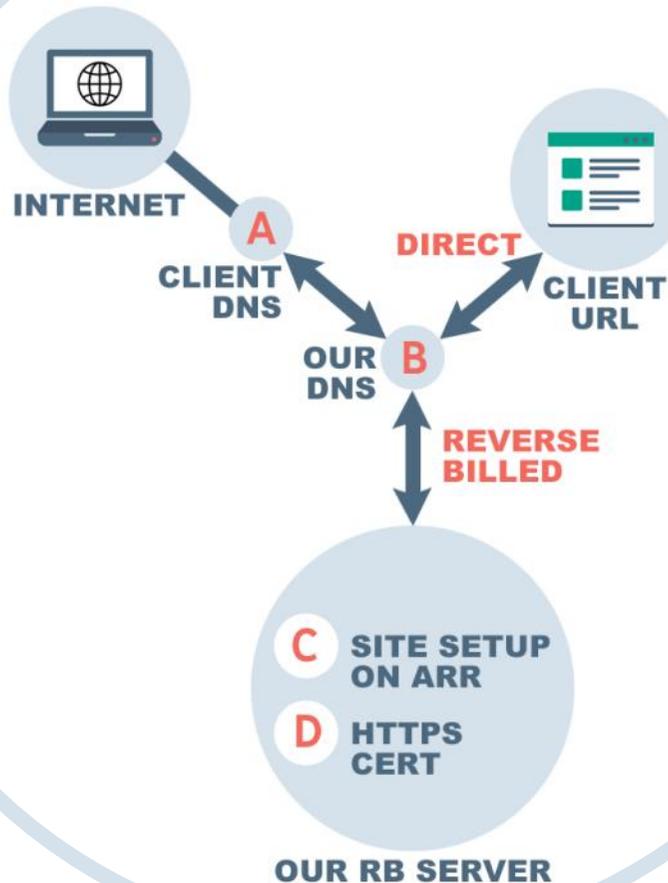
A **Customer's Domain's DNS Entry**

(e.g. www.mydomain.com)
The customer sets their DNS to point to our unique "Follow-Me" DNS record per web-service domain.

B **Our "Follow-Me" DNS entry**

(e.g. wwwmydomaincom.rb01.rbmd.co.za)
We maintain this, and it acts as a "switch" to direct traffic straight to the customer's web-service, or via our RBURL Platform.

C **Our Server Side Site Setup**

We set up the customer's web-service domain in RBURL Platform's Application Request Routing engine to act as Reverse Proxy and pull content from the customer's content server and serve that to the End-user.

D **HTTPS Certificate**

We generate trusted certificates on the RBURL Platform for the customer's web-service domain, and offer HTTPS endpoints to the End-user.

RBURL TECHNICAL SETUP

Mobile Data Reverse Billing is based at an IP address level for the participating MNOs.

The RBURL Platform enhances on this to allow Reverse Billing at a Customer web-service domain level. *(i.e. www.mydomain.com or rb-api.example.com)*

The RBURL Platform cannot isolate to a URI-Stem or URI Query String.
(i.e. www.example.com/reversebill/me.php?somequery=true).

The RBURL Platform cannot Reverse Bill customer web-services where the web-service content domain is not controlled by the customer, as there is no way to hook into the RBURL product at a DNS level. *(i.e. YouTube / Google)*

DNS setup

For the above reasons, a dedicated customer web-service domain is recommended to isolate the intended Reverse Billed content traffic from non-Reverse Billed content.
(i.e. rbapp.mydomain.com)

Upon onboarding the customer's web-service onto the RBURL Platform, a unique "Follow-Me" (CNAME) record is generated per web-service domain that will be used to control the routing flow of the customer's web-service between End-User and the customer's Content service. The customer updates their web-service's domain's DNS record to use the "Follow-ME" CNAME record.

- To prevent disruption to customer's web-service during onboarding, the "Follow-Me" record is generated to mimic the original DNS structure of the customer's web-service domain, allowing the flow to remain intact while updating to use the "Follow-Me" record.

- The original DNS Structure is stored at the time of on-boarding; enabling the RBURL platform to quickly switch the flow between "Reverse-Billing" / "Direct" Modes. It is also used in the RBURL Platforms Internal DNS system to route the requests to the reach the Customers content service.

RBURL TECHNICAL SECURITY

TLS/SSL certificates

The Platform makes use of the ACME protocol to generate short-lived *(max 60-90days)* publicly trusted CA signed certificates per customer web-service domain.

These certificates are EC-256 bits based and comply with Certificate Transparency with OCSP stapling (but not enforced).

If the customers content service makes use of HTTPS, the RBURL Platform requires that these are publicly trusted CA signed certificates.

TLS security

The End-User exposed customer web-service endpoint via the RBURL platform receives an "A or A+" rating from SSLLabs (Depending on additional items managed on the customers content service side. i.e. *HSTS headers, DNS CAA records, etc.)*

The RBURL Platform supports encrypted connections via TLSv1.2 protocol to comply with standards, with TLSv1.3 on the roadmap.

Cipher Suites offering includes forward secrecy options for modern browsers.

We do not cache or store any content and do not inject anything into the content proxied *(except a benign header so that the customers content service can also record when requests are relayed via the RBURL Platform).*
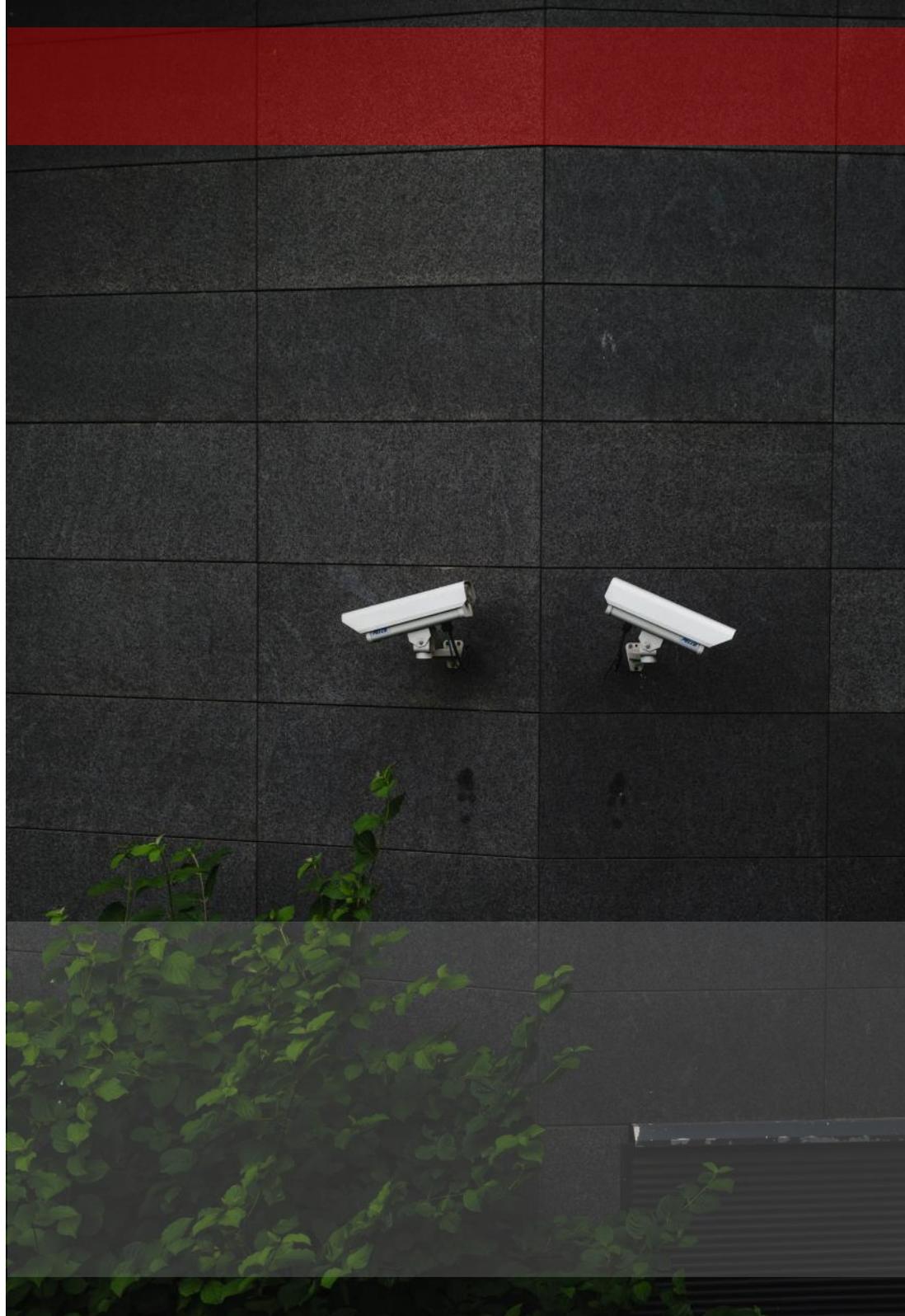
TECHNICAL Implementation Considerations

3rd party Public Content services *(i.e. YouTube, Google Services, or shared-content services, etc.)* where the domain namespace is not controlled by the customer **cannot** be onboarded into the RBURL Platform.

3rd partly Public Content services, where the domain namespace can be controlled by the customer, could pose a risk to the customer for unintended End-Users consuming these services on mobile-data mediums, and would result in an unexpected uptake in usage and billing.

MVNO's (i.e. FNB Mobile / MRP Mobile / Standard Bank Mobile, etc) may NOT offer Reverse Billed Data Services that conform to the Underlying MNOs models. Currently the RBURL Platform has no agreement with these MVNOs, and only supports Reverse Billing Mobile Data usage on the four main South African MNOs (CellC, MTN, Telkom, Vodacom)

Custom APNs may NOT support Reverse Billed Mobile Data services.
The RBURL Platform has no say in this process, as this would be an agreement between the APN Owner and the underlying MNO.

CAPPING

During the on-boarding process the RBURL Platform sets a defined soft-cap usage limit, and email notifications would be sent when the following iterations are reached: 50%, 80% 90% and 100% on this usage limit.

The usage limit is based on **ALL** customer domain's configured on the user account.

Hard-Cap: Prior to reaches 100% of the set limit, the RBURL Support team will endeavour to make contact with the customer to determine the next steps. If the customer is uncontactable and the soft-cap limit is exceeded extensively, the RBURL Platform will switch the customer domains to "Direct" mode.

Switching to "Direct" mode triggers the DNS "follow-me" to change routing to flow to the customer's content service directly. The End-User experience remains uninterrupted but would no longer be "free".

We recommend that the customer put up a notice on the web-service when nearing the limit, to inform End-Users that the service is no longer free to use.

RBURL BACK END

The RBURL Platform uses a custom-built RB Data Service, which is the heart of the Product. It performs the following functions:

- Ingesting Traffic Logs
- Classifying Data (mobile / non-mobile)
- Maintaining billing records for our customers
- Sending Reports
- Sending Alerts

RBURL FRONT END

The RBURL Platform boasts a Customer Portal has been developed to allow customers to:

- Setup Alerts
- Schedule automated reporting
- View Reports
- Toggles Reverse-Billing On and Off per Web-service Domain

REPORTING

Reporting is available on the RBURL Platform's Front-end portal and includes:

## Summary - Showing results for ALL Customer Web-Services for the last 7 days -

Total RB Data by MNO
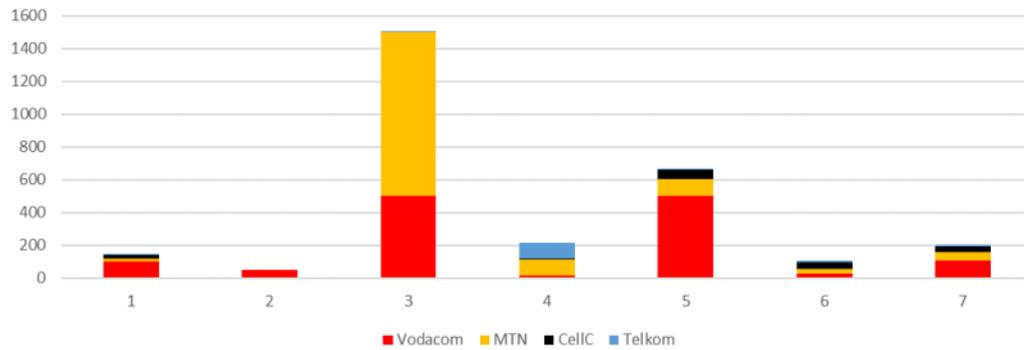
Total Billing by Day
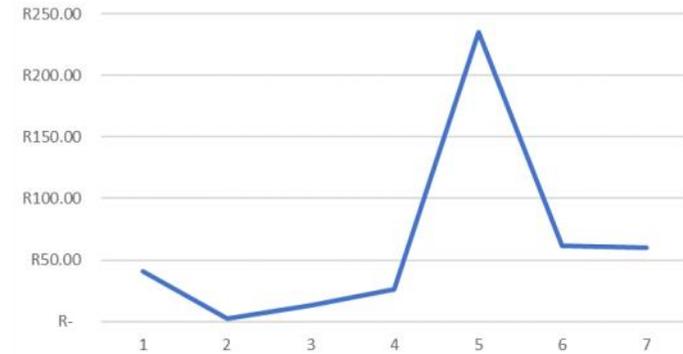
Total URL visits by Day
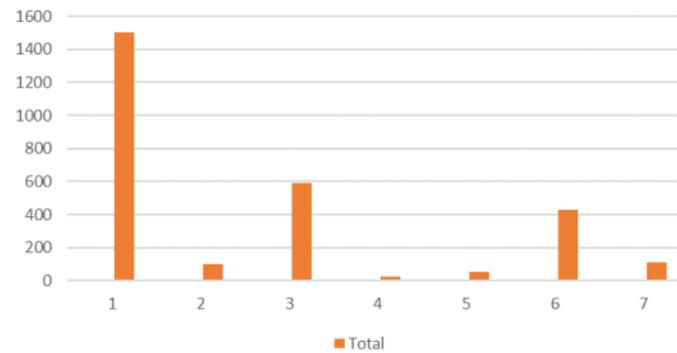
REPORTING

Reporting is available on the RBURL Platform's Front-end portal and includes:

Data - **This displays data used by day.**
It allows you to select a Date Range, and will display data for an individual web-service or ALL web –services.
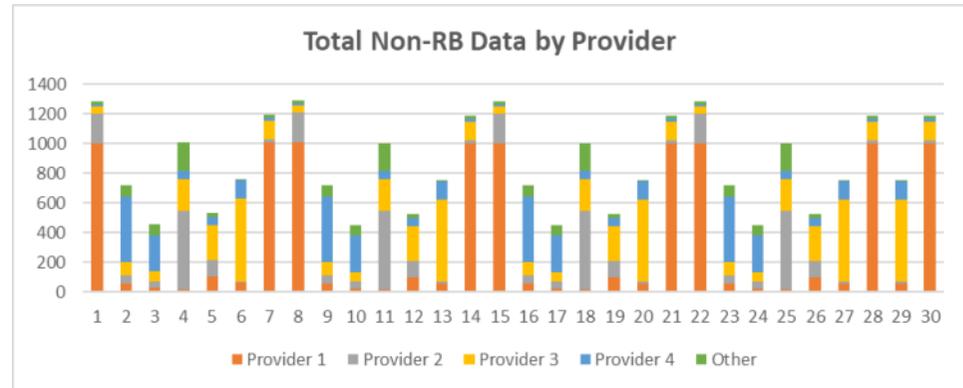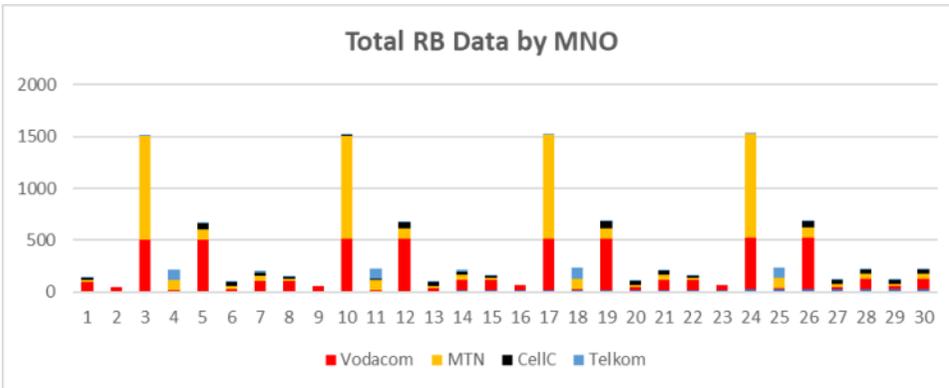
Data is also exportable to Excel:

Day	Mobile					Non-Mobile			
	Vodacom	MTN	CellC	Telkom	Total	Provider 1	Provider 2	Other	Total
1	100	20	20	2	142	1000	200	22	1222
2	50	0	0	0	50	55	56	77	188
3	500	1000	2	2	1504	25	44	75	144
4	10	100	5	100	215	13	533	190	736
5	500	100	60	6	666	100	111	26	237
6	25	25	40	10	100	56	11	11	78
7	100	50	35	15	200	1000	25	22	1047

REPORTING

Reporting is available on the RBURL Platform's Front-end portal and includes:

Billing - This displays Billing by day.
It allows you to select a Date Range, and will display data for an individual web-service or ALL web-services.


Data is also exportable to Excel:

Day	Site 1	Site 2	Site 3	Total
1	R 2.00	R 5.00	R 34.00	R 41.00
2	R 0.20	R 2.00	R 0.45	R 2.65
3	R 1.00	R 0.50	R 12.00	R 13.50
4	R 4.00	R 2.00	R 20.00	R 26.00
5	R 150.00	R 75.00	R 10.00	R 235.00
6	R 25.00	R 1.23	R 35.00	R 61.23
7	R 25.00	R 2.00	R 33.00	R 60.00

REPORTING

Reporting is available on the RBURL Platform's Front-end portal and includes:

URL Visits - **This displays web-service visits by day to the specific configured web-service.**
It allows you to select a Date Range, and will display data for an individual web-service or ALL web-services.
Note: Additional enhancements can be made to these reports to include web-service's clients have displayed on their actual site and can record stats on these as well.

URL Visits by Day

1500	
1000	
500	
0	
	1 2 3 4 5 6 7
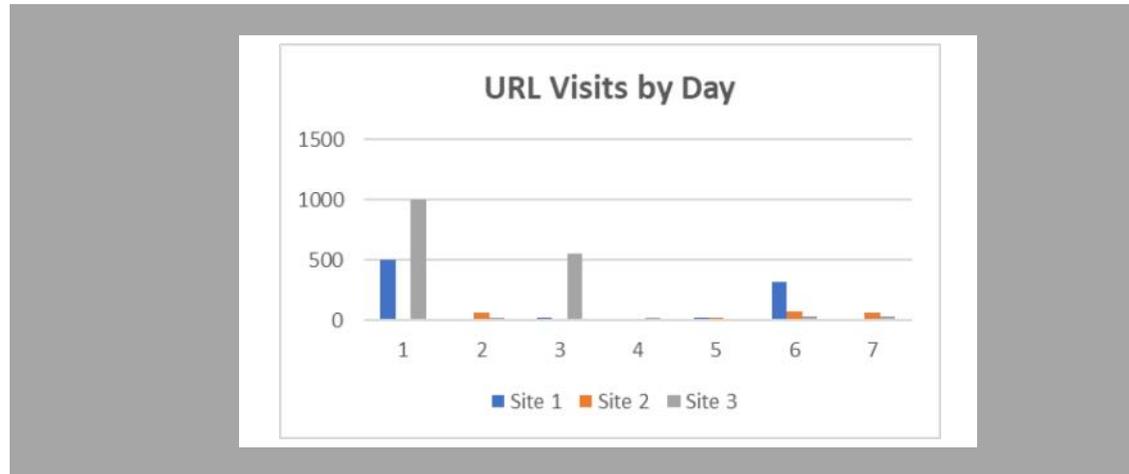
■ Site 1 ■ Site 2 ■ Site 3

Data is also exportable to Excel:

Day	Site 1	Site 2	Site 3	Total
1	500	5	1000	1505
2	12	66	24	102
3	22	12	555	589
4	1	1	20	22
5	22	21	10	53
6	322	74	35	431
7	10	67	33	110

Sales:

Monday - Friday 8am - 5pm

📞 **082 178 66**

✉️ **sales@vodacommessaging.co.za**

Support

📞 **087 55 00 200**

✉️ **support@vodacommessaging.co.za**

🌐 **www.vodacommessaging.co.za**
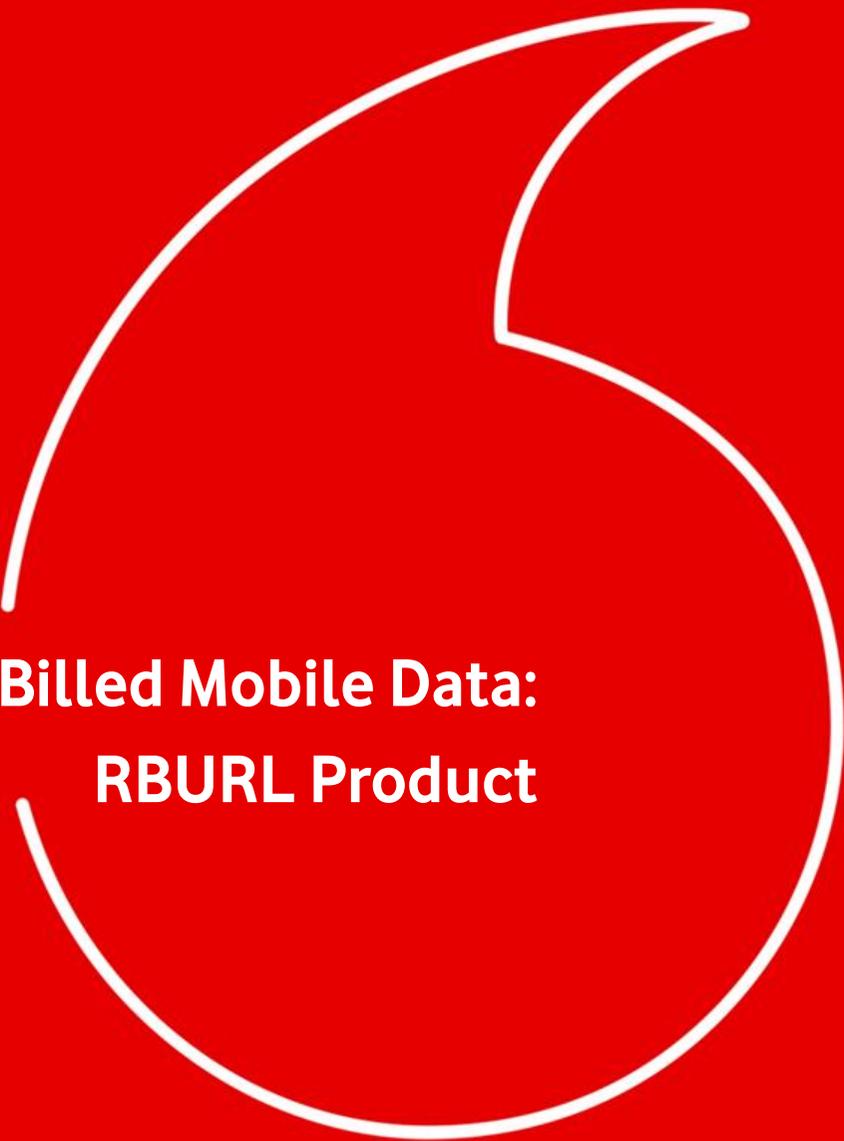
Reverse Billed Mobile Data:

RBURL Product

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