

Paystack

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Chapter 1

Brief Introduction

This book is the official documentation for the Paystack R Package

The Package can be found at <https://github.com/ebinabo/paystack>

It contains

- wrappers for the official Paystack API
- a few helper functions and a lot more coming soon ...

To use this you would need to open a Paystack account and have developer option set to true while signing up.

You would need your own API Keys to use this package and they can be found [here](#)

This book is still under development, functions would be added over time as updates are made. A very quick intro could be found [here](#)

If you have any issues using this package, you could submit your issue [here](#)

Chapter 2

Installation

I'll put this up on CRAN sometime soon so it's easier to install but before then, you could get it any of the ways listed below

2.1 From GitHub

To install this package run

```
devtools::install_github("ebinabo/paystack")
```

2.2 Manual Installation

I understand newer versions of RStudio don't handle downloading from github properly so I've included a `manual_installation` script as well.

Instructions on installing it are included there

Please unzip the file to your downloads or anywhere but the reserved folder in `~Documents/R/win-lib/version` folder, took me some time to figure that out

Chapter 3

Basics

3.1 General Function Structure

The API wrappers have the same general function structure

```
_function_name(authoriaztion, path_param, ...)
```

- **authorization** : Header tag containing your secret or public keys
- **path_param** : A slug that's added to the url to return a specific response
- **...** : Body parameters that also return a specific response

You could see a list of them at the Available Objects chapter

3.2 Getting Help

The functions are properly documented and you can view them from within RStudio by running `?_function_name`

An example of this would be

```
?request_reauthorization
```

which would display

```
request_reauthorization {paystack}
```

R Docum

Request Reauthorization

Description

Request Reauthorization

Usage

```
request_reauthorization(authorization, ...)
```

Arguments

<code>authorization</code>	<code>set_keys("", "SECRET_KEY")\$secret</code> , equivalent of <code>"-H Authorization: Bearer SECRET_KEY"</code>
<code>...</code>	Body Params
<code>amount</code>	<code>int32</code> . REQUIRED Amount in kobo
<code>authorization_code</code>	<code>string</code> . REQUIRED Authorization code representing card you want charged
<code>email</code>	<code>string</code> . REQUIRED Customer's email address
<code>reference</code>	<code>string</code> . Unique transaction reference. Only <code>-</code> , <code>.</code> , <code>=</code> and alphanumeric characters allowed. Ensure that this is stored in your database not a session so that you can use it to verify the transaction
<code>currency</code>	<code>string</code> . Currency in which amount should be charged
<code>metadata</code>	<code>object</code> . JSON object. Add a <code>custom_fields</code> attribute which has an array of objects if you would like the fields to be added to your transaction when displayed on the dashboard. Sample: <code>"custom_fields":["display_name":"Cart ID","variable_name":"cart_id","value":"8393"]</code>

Details

Do a redirect to the reauthorization URL received from calling this endpoint. This URL is valid for one time use and expires in 2 hours, so ensure that your client is on standby to conclude the transaction. When the payment is successful, we will send an event to your webhook url. If you use a test secret key, we will call your test webhook url, otherwise, we'll call your live webhook url.

[Package *paystack* version 1.0.0 [Index](#)]

The body params could be found at this reference page.

ps: I'm still updating the documentation for the help pages in the package so you might need to check the main reference page linked above for the mean time.

Chapter 4

Set Keys

From the API reference page, we would notice that the curl commands contain header tags

- -H “Authorization: Bearer SECRET_KEY”
- -H “Content-Type: application/json”

This package uses http verbs from the httr package and by default, “Content-Type: application/json” is added to the headers of all the functions already.

The following sections describe how you could use this function

```
# load required libraries
library(paystack)
library(magrittr)
```

4.1 Basic Usage

Running `set_keys(public_key, secret_key)` returns a list of two `<request>` objects

```
auth <- set_keys("pk_mode_public3y", "sk_mode_s3cr3tk3y")
auth
```

```
## $secret
## <request>
## Headers:
## * Authorization: Bearer sk_mode_s3cr3tk3y
##
## $public
## <request>
## Headers:
## * Authorization: Bearer pk_mode_public3y
```

To use with any function in the package which takes in an arg authorization, run

```
_function_name(authorization = auth$secret, other_args)
```

4.2 Using RDS files

RDS stands for R Data Structure, these files let you store R objects in a file to access them or share them.

It is not recommended you share these files with anyone outside your company because they hold your authorization details from paystack.

However, putting them in your project directory would make it easier for you to reuse the keys.

In a case where you would want to put your project on a public repo on github, you might want to leave out this file as well as your .RData workspace image and your .Rhistory files which might contain traces of your keys.

These files have a file ext of .rda, don't forget to include.

To save the object,

```
set_keys("pk_mode_public3y", "sk_mode_s3cr3tk3y") %>%  
  saveRDS("path_to_file.rda")
```

To read it,

```
readRDS("path_to_file.rda")
```

Chapter 5

Available Objects

5.1 Functions

```
# get all the function names from paystack package
function_names <- unclass(lsf.str(envir = asNamespace("paystack"), all = T))
# for every element in function_names, get the args the function accepts
function_args <- map(function_names, formalArgs)
# set names of function_args accordingly
names(function_args) <- function_names
```

```
function_args
```

```
## $archive_invoice
## [1] "authorization" "invoice_id"
##
## $charge_authorization
## [1] "authorization" "..."
##
## $check_authorization
## [1] "authorization" "..."
##
## $check_balance
## [1] "authorization"
##
## $check_pending_charge
## [1] "authorization" "reference"
##
## $check_slug_availability
## [1] "authorization" "slug"
##
## $create_customer
## [1] "authorization" "..."
##
## $create_invoice
## [1] "authorization" "..."
##
## $create_page
## [1] "authorization" "..."
```

```

##
## $create_plan
## [1] "authorization" "..."
##
## $create_refund
## [1] "authorization" "..."
##
## $create_subaccount
## [1] "authorization" "..."
##
## $create_subscription
## [1] "authorization" "..."
##
## $create_transfer_recipient
## [1] "authorization" "..."
##
## $deactivate_authorization
## [1] "authorization" "..."
##
## $delete_transfer_recipients
## [1] "authorization" "recipient_id"
##
## $disable_otp
## [1] "authorization"
##
## $disable_subscription
## [1] "authorization" "..."
##
## $enable_otp
## [1] "authorization"
##
## $enable_subscription
## [1] "authorization" "..."
##
## $exchange_rate
## [1] "amount"          "base_currency" "quote_currency"
##
## $export_transactions
## [1] "authorization" "..."
##
## $fetch_bulk_charge_batch
## [1] "authorization" "batch_id"
##
## $fetch_charges_in_batch
## [1] "authorization" "batch_id"      "..."
##
## $fetch_customer
## [1] "authorization" "customer_code" "..."
##
## $fetch_page
## [1] "authorization" "page_id"
##
## $fetch_payment_session_timeout
## [1] "authorization"

```

```

##
## $fetch_plan
## [1] "authorization" "plan_id"
##
## $fetch_refund
## [1] "authorization" "trans_id"
##
## $fetch_settlements
## [1] "authorization" "..."
##
## $fetch_subaccount
## [1] "authorization" "subacct_id"
##
## $fetch_subscription
## [1] "authorization" "id"
##
## $fetch_transaction
## [1] "authorization" "id"
##
## $fetch_transfer
## [1] "authorization" "..."
##
## $finalize_disable_otp
## [1] "authorization" "..."
##
## $finalize_invoices
## [1] "authorization" "invoice_id"      "..."
##
## $get_invoice_metrics
## [1] "authorization"
##
## $initialize_transaction
## [1] "authorization" "..."
##
## $initiate_bulk_charge
## [1] "authorization" "reference"      "..."
##
## $initiate_bulk_transfer
## [1] "authorization" "..."
##
## $initiate_transfer
## [1] "authorization" "..."
##
## $list_banks
## [1] "authorization" "..."
##
## $list_bulk_charge_batches
## [1] "authorization" "..."
##
## $list_customers
## [1] "authorization" "..."
##
## $list_invoices
## [1] "authorization" "..."

```

```
##
## $list_pages
## [1] "authorization" "..."
##
## $list_plans
## [1] "authorization" "..."
##
## $list_refunds
## [1] "authorization" "..."
##
## $list_subaccount
## [1] "authorization" "..."
##
## $list_subscriptions
## [1] "authorization" "..."
##
## $list_transactions
## [1] "authorization" "..."
##
## $list_transfer_recipients
## [1] "authorization" "..."
##
## $mark_as_paid
## [1] "authorization" "invoice_id" "..."
##
## $parse_response
## [1] "response"
##
## $pause_bulk_charge_batch
## [1] "authorization" "batch_code"
##
## $request_reauthorization
## [1] "authorization" "..."
##
## $resend_otp
## [1] "authorization" "..."
##
## $resolve_account_number
## [1] "authorization" "..."
##
## $resolve_bvn
## [1] "authorization" "bvn"
##
## $resolve_card_bin
## [1] "card_bin"
##
## $resolve_phone_number
## [1] "authorization" "..."
##
## $resume_bulk_charge_batch
## [1] "authorization" "batch_code"
##
## $send_notification
## [1] "authorization" "invoice_id" "..."
```



```

##
## $set_keys
## [1] "public_key" "secret_key"
##
## $set_risk_action
## [1] "authorization" "..."
##
## $submit_birthday
## [1] "authorization" "..."
##
## $submit_otp
## [1] "authorization" "..."
##
## $submit_phone
## [1] "authorization" "..."
##
## $submit_pin
## [1] "authorization" "..."
##
## $transaction_totals
## [1] "authorization" "..."
##
## $update_customer
## [1] "authorization" "id" "..."
##
## $update_invoice
## [1] "authorization" "invoice_id" "..."
##
## $update_page
## [1] "authorization" "page_id" "..."
##
## $update_payment_session_timeout
## [1] "authorization"
##
## $update_plan
## [1] "authorization" "plan_id" "..."
##
## $update_subaccount
## [1] "authorization" "subacct_id" "..."
##
## $update_transfer_recipients
## [1] "authorization" "recipient_id" "..."
##
## $verify_invoice
## [1] "authorization" "invoice_id"
##
## $verify_transaction
## [1] "authorization" "reference"
##
## $view_invoice
## [1] "authorization" "invoice_id"
##
## $view_transaction_timeline
## [1] "authorization" "id"

```

5.2 Other Objects

```
# remove function_names from all available objects in the package
setdiff(ls("package:paystack"), function_names)
```

```
## [1] "available_urls" "banks"           "pay_with_banks" "test_cards"
## [5] "urls"
```

5.2.1 available_urls

```
available_urls
```

```
## [1] "https://api.paystack.co/bank"
## [2] "https://api.paystack.co/bank/resolve"
## [3] "https://api.paystack.co/bank/resolve_bvn"
## [4] "https://api.paystack.co/bulkcharge"
## [5] "https://api.paystack.co/bulkcharge/pause"
## [6] "https://api.paystack.co/bulkcharge/resume"
## [7] "https://api.paystack.co/charge"
## [8] "https://api.paystack.co/charge/submit_birthday"
## [9] "https://api.paystack.co/charge/submit_otp"
## [10] "https://api.paystack.co/charge/submit_phone"
## [11] "https://api.paystack.co/charge/submit_pin"
## [12] "https://api.paystack.co/customer"
## [13] "https://api.paystack.co/customer/deactivate_authorization"
## [14] "https://api.paystack.co/customer/set_risk_action"
## [15] "https://api.paystack.co/decision/bin"
## [16] "https://api.paystack.co/page"
## [17] "https://api.paystack.co/page/check_slug_availability"
## [18] "https://api.paystack.co/paymentrequest"
## [19] "https://api.paystack.co/paymentrequest/archive"
## [20] "https://api.paystack.co/paymentrequest/finalize"
## [21] "https://api.paystack.co/paymentrequest/notify"
## [22] "https://api.paystack.co/paymentrequest/totals"
## [23] "https://api.paystack.co/paymentrequest/verify"
## [24] "https://api.paystack.co/plan"
## [25] "https://api.paystack.co/refund"
## [26] "https://api.paystack.co/settlement"
## [27] "https://api.paystack.co/subaccount"
## [28] "https://api.paystack.co/subscription"
## [29] "https://api.paystack.co/subscription/disable"
## [30] "https://api.paystack.co/subscription/enable"
## [31] "https://api.paystack.co/transaction"
## [32] "https://api.paystack.co/transaction/charge_authorization"
## [33] "https://api.paystack.co/transaction/check_authorization"
## [34] "https://api.paystack.co/transaction/export"
## [35] "https://api.paystack.co/transaction/initialize"
## [36] "https://api.paystack.co/transaction/request_reauthorization"
## [37] "https://api.paystack.co/transaction/timeline"
## [38] "https://api.paystack.co/transaction/totals"
## [39] "https://api.paystack.co/transaction/verify"
## [40] "https://api.paystack.co/transfer"
## [41] "https://api.paystack.co/transfer/disable_otp"
## [42] "https://api.paystack.co/transfer/disable_otp_finalize"
```

```
## [43] "https://api.paystack.co/transfer/enable_otp"
## [44] "https://api.paystack.co/transfer/finalize_transfer"
## [45] "https://api.paystack.co/transfer/resend_otp"
## [46] "https://api.paystack.co/transferreceipient"
## [47] "https://api.paystack.co/verifications"
```

5.2.2 banks

banks

##	name	slug	code	payable
## 1	Access Bank	access-bank	044	TRUE
## 2	ALAT by WEMA	alat-by-wema	035A	TRUE
## 3	ASO Savings and Loans	asosavings	401	FALSE
## 4	Citibank Nigeria	citibank-nigeria	023	FALSE
## 5	Diamond Bank	diamond-bank	063	FALSE
## 6	Ecobank Nigeria	ecobank-nigeria	050	FALSE
## 7	Ekondo Microfinance Bank	ekondo-microfinance-bank	562	FALSE
## 8	Enterprise Bank	enterprise-bank	084	FALSE
## 9	Fidelity Bank	fidelity-bank	070	TRUE
## 10	First Bank of Nigeria	first-bank-of-nigeria	011	FALSE
## 11	First City Monument Bank	first-city-monument-bank	214	TRUE
## 12	Guaranty Trust Bank	guaranty-trust-bank	058	TRUE
## 13	Heritage Bank	heritage-bank	030	FALSE
## 14	Jaiz Bank	jaiz-bank	301	FALSE
## 15	Keystone Bank	keystone-bank	082	FALSE
## 16	MainStreet Bank	mainstreet-bank	014	FALSE
## 17	Parallex Bank	parallex-bank	526	FALSE
## 18	Polaris Bank	polaris-bank	076	FALSE
## 19	Providus Bank	providus-bank	101	FALSE
## 20	Stanbic IBTC Bank	stanbic-ibtc-bank	221	FALSE
## 21	Standard Chartered Bank	standard-chartered-bank	068	FALSE
## 22	Sterling Bank	sterling-bank	232	TRUE
## 23	Suntrust Bank	suntrust-bank	100	FALSE
## 24	Union Bank of Nigeria	union-bank-of-nigeria	032	TRUE
## 25	United Bank For Africa	united-bank-for-africa	033	FALSE
## 26	Unity Bank	unity-bank	215	TRUE
## 27	Wema Bank	wema-bank	035	FALSE
## 28	Zenith Bank	zenith-bank	057	TRUE

5.2.3 pay_with_banks

pay_with_banks

##	name	code
## 1	Access Bank	044
## 2	ALAT by WEMA	035A
## 3	Fidelity Bank	070
## 4	First City Monument Bank	214
## 5	Guaranty Trust Bank	058
## 6	Sterling Bank	232
## 7	Union Bank of Nigeria	032
## 8	Unity Bank	215
## 9	Zenith Bank	057

5.3.4. test_cards

test_cards

```

## $no_validation
## $no_validation$card_number
## [1] 4.084084e+15
##
## $no_validation$exp_date
## [1] "03/21"
##
## $no_validation$cvv
## [1] 408
##
##
## $pin_only_validation
## $pin_only_validation$card_number
## [1] 5.078508e+17
##
## $pin_only_validation$exp_date
## [1] "03/21"
##
## $pin_only_validation$cvv
## [1] 81
##
## $pin_only_validation$pin
## [1] 1111
##
##
## $simulated_error_msg
## $simulated_error_msg$error_001
## $simulated_error_msg$error_001$error_message
## [1] "Declined"
##
## $simulated_error_msg$error_001$card_number
## [1] 4.08408e+15
##
## $simulated_error_msg$error_001$exp_date
## [1] "03/21"
##
## $simulated_error_msg$error_001$CVV
## [1] 1
##
##
## $simulated_error_msg$error_002
## $simulated_error_msg$error_002$error_message
## [1] "Token Not Generated. Customer Not Registered on Token Platform"
##
## $simulated_error_msg$error_002$card_number
## [1] 5.078508e+17
##
## $simulated_error_msg$error_002$exp_date
## [1] "03/21"
##

```

```
## $simulated_error_msg$error_002$cvv
## [1] 82
##
## $simulated_error_msg$error_002$pin
## [1] 6503
##
##
##
## $simulated_issues
## $simulated_issues$issue_003
## $simulated_issues$issue_003$issue
## [1] "Timeout error"
##
## $simulated_issues$issue_003$card_number
## [1] 5.06066e+15
##
## $simulated_issues$issue_003$exp_date
## [1] "03/21"
##
## $simulated_issues$issue_003$CVV
## [1] 606
##
##
## $simulated_issues$issue_004
## $simulated_issues$issue_004$issue
## [1] "500 error"
##
## $simulated_issues$issue_004$card_number
## [1] 5.060665e+17
##
## $simulated_issues$issue_004$exp_date
## [1] "03/21"
##
## $simulated_issues$issue_004$cvv
## [1] 60
```

5.2.5 urls

```
urls
```

```
## $balance
## [1] "https://api.paystack.co/balance"
##
## $bank
## $bank$base
## [1] "https://api.paystack.co/bank"
##
## $bank$resolve_acc_no
## [1] "https://api.paystack.co/bank/resolve"
##
## $bank$resolve_bvn
## [1] "https://api.paystack.co/bank/resolve_bvn"
##
##
```

```
## $bulkcharge
## $bulkcharge$base
## [1] "https://api.paystack.co/bulkcharge"
##
## $bulkcharge$pause
## [1] "https://api.paystack.co/bulkcharge/pause"
##
## $bulkcharge$resume
## [1] "https://api.paystack.co/bulkcharge/resume"
##
##
## $charge
## $charge$base
## [1] "https://api.paystack.co/charge"
##
## $charge$pin
## [1] "https://api.paystack.co/charge/submit_pin"
##
## $charge$otp
## [1] "https://api.paystack.co/charge/submit_otp"
##
## $charge$phone
## [1] "https://api.paystack.co/charge/submit_phone"
##
## $charge$birthday
## [1] "https://api.paystack.co/charge/submit_birthday"
##
##
## $customer
## $customer$base
## [1] "https://api.paystack.co/customer"
##
## $customer$set_risk_action
## [1] "https://api.paystack.co/customer/set_risk_action"
##
## $customer$del_auth
## [1] "https://api.paystack.co/customer/deactivate_authorization"
##
##
## $integration
## $integration$payment_session_timeout
## [1] "https://api.paystack.co/integration/payment_session_timeout"
##
##
## $invoices
## $invoices$base
## [1] "https://api.paystack.co/paymentrequest"
##
## $invoices$notify
## [1] "https://api.paystack.co/paymentrequest/notify"
##
## $invoices$verify
## [1] "https://api.paystack.co/paymentrequest/verify"
##
```

```
## $invoices$totals
## [1] "https://api.paystack.co/paymentrequest/totals"
##
## $invoices$finalize
## [1] "https://api.paystack.co/paymentrequest/finalize"
##
## $invoices$archive
## [1] "https://api.paystack.co/paymentrequest/archive"
##
## $invoices$paid
## [1] "https://api.paystack.co/paymentrequest/mark_as_paid"
##
##
## $page
## $page$base
## [1] "https://api.paystack.co/page"
##
## $page$check
## [1] "https://api.paystack.co/page/check_slug_availability"
##
##
## $plan
## [1] "https://api.paystack.co/plan"
##
## $refund
## [1] "https://api.paystack.co/refund"
##
## $resolve_card
## [1] "https://api.paystack.co/decision/bin"
##
## $resolve_phone
## [1] "https://api.paystack.co/verifications"
##
## $settlement
## [1] "https://api.paystack.co/settlement"
##
## $subaccount
## [1] "https://api.paystack.co/subaccount"
##
## $subscription
## $subscription$base
## [1] "https://api.paystack.co/subscription"
##
## $subscription$enable
## [1] "https://api.paystack.co/subscription/enable"
##
## $subscription$disable
## [1] "https://api.paystack.co/subscription/disable"
##
##
## $transaction
## $transaction$base
## [1] "https://api.paystack.co/transaction"
##
```

```
## $transaction$verify
## [1] "https://api.paystack.co/transaction/verify"
##
## $transaction$totals
## [1] "https://api.paystack.co/transaction/totals"
##
## $transaction$export
## [1] "https://api.paystack.co/transaction/export"
##
## $transaction$init
## [1] "https://api.paystack.co/transaction/initialize"
##
## $transaction$timeline
## [1] "https://api.paystack.co/transaction/timeline"
##
## $transaction$check_auth
## [1] "https://api.paystack.co/transaction/check_authorization"
##
## $transaction$charge_auth
## [1] "https://api.paystack.co/transaction/charge_authorization"
##
## $transaction$req_reauth
## [1] "https://api.paystack.co/transaction/request_reauthorization"
##
##
## $transfer
## $transfer$base
## [1] "https://api.paystack.co/transfer"
##
## $transfer$finalize
## [1] "https://api.paystack.co/transfer/finalize_transfer"
##
## $transfer$resend_otp
## [1] "https://api.paystack.co/transfer/resend_otp"
##
## $transfer$disable_otp_req
## [1] "https://api.paystack.co/transfer/disable_otp"
##
## $transfer$enable_otp_req
## [1] "https://api.paystack.co/transfer/enable_otp"
##
## $transfer$finalize_disable_otp_req
## [1] "https://api.paystack.co/transfer/disable_otp_finalize"
##
## $transfer$recipient
## [1] "https://api.paystack.co/transferrecipient"
```