mpesa-py Documentation

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CHAPTER 1

api

1.1 api package

1.1.1 Submodules

1.1.2 api.auth module

class `api.auth.`**`MpesaBase`**(*env='sandbox'*, *app_key=None*, *app_secret=None*, *sandbox_url='https://sandbox.safaricom.co.ke'*, *live_url='https://safaricom.co.ke'*)

`authenticate`()

To make Mpesa API calls, you will need to authenticate your app. This method is used to fetch the access token required by Mpesa. Mpesa supports client_credentials grant type. To authorize your API calls to Mpesa, you will need a Basic Auth over HTTPS authorization token. The Basic Auth string is a base64 encoded string of your app's client key and client secret.

Args:

- env (str): Current app environment. Options: sandbox, live.
- app_key (str): The app key obtained from the developer portal.
- app_secret (str): The app key obtained from the developer portal.
- sandbox_url (str): Base Safaricom sandbox url.
- live_url (str): Base Safaricom live url.

Returns:

- access_token (str): This token is to be used with the Bearer header for further API calls to Mpesa.

1.1.3 api.b2b module

class `api.b2b.B2B`(*env='sandbox', app_key=None, app_secret=None, sandbox_url='https://sandbox.safaricom.co.ke', live_url='https://safaricom.co.ke'*)

Bases: `api.auth.MpesaBase`

transact(*initiator=None, security_credential=None, command_id=None, sender_identifier_type=None, receiver_identifier_type=None, amount=None, party_a=None, party_b=None, remarks=None, account_reference=None, queue_timeout_url=None, result_url=None*)

This method uses Mpesa's B2B API to transact from one company to another.

Args:

- initiator (str): Username used to authenticate the transaction.
- security_credential (str): Generate from developer portal
- command_id (str): Options: BusinessPayBill, BusinessBuyGoods, DisburseFundsToBusiness, BusinessToBusinessTransfer ,BusinessTransferFromMMFToUtility, BusinessTransferFromUtilityToMMF, MerchantToMerchantTransfer, MerchantTransferFromMerchantToWorking, MerchantServicesMMFAccountTransfer, AgencyFloatAdvance
- sender_identifier_type (str): 2 for Till Number, 4 for organization shortcode
- receiver_identifier_type (str): # 2 for Till Number, 4 for organization shortcode
- amount(str): Amount.
- party_a (int): Sender shortcode.
- party_b (int): Receiver shortcode.
- remarks (str): Comments that are sent along with the transaction(maximum 100 characters).
- account_reference (str): Use if doing paybill to banks etc.
- queue_timeout_url (str): The url that handles information of timed out transactions.
- result_url (str): The url that receives results from M-Pesa api call.

Returns:

- OriginatorConverstionID (str): The unique request ID for tracking a transaction.
- ConversationID (str): The unique request ID returned by mpesa for each request made
- ResponseDescription (str): Response Description message

1.1.4 api.b2c module

class `api.b2c.B2C`(*env='sandbox', app_key=None, app_secret=None, sandbox_url='https://sandbox.safaricom.co.ke', live_url='https://safaricom.co.ke'*)

Bases: `api.auth.MpesaBase`

transact(*initiator_name=None, security_credential=None, command_id=None, amount=None, party_a=None, party_b=None, remarks=None, queue_timeout_url=None, result_url=None, occassion=None*)

This method uses Mpesa's B2C API to transact between an M-Pesa short code to a phone number registered on M-Pesa..

Args:

- initiator_name (str): Username used to authenticate the transaction.

- security_credential (str): Generate from developer portal
- command_id (str): Options: SalaryPayment, BusinessPayment, PromotionPayment
- amount(str): Amount.
- party_a (int): Organization/MSISDN making the transaction - Shortcode (6 digits) - MSISDN (12 digits).
- party_b (int): MSISDN receiving the transaction (12 digits).
- remarks (str): Comments that are sent along with the transaction(maximum 100 characters).
- account_reference (str): Use if doing paybill to banks etc.
- queue_timeout_url (str): The url that handles information of timed out transactions.
- result_url (str): The url that receives results from M-Pesa api call.
- ocassion (str):

Returns:

- OriginatorConverstionID (str): The unique request ID for tracking a transaction.
- ConversationID (str): The unique request ID returned by mpesa for each request made
- ResponseDescription (str): Response Description message

1.1.5 api.balance module

class `api.balance.`**`Balance`**(*env='sandbox'*, *app_key=None*, *app_secret=None*, *sandbox_url='https://sandbox.safaricom.co.ke'*, *live_url='https://safaricom.co.ke'*)

Bases: `api.auth.MpesaBase`

`get_balance`(*initiator=None*, *security_credential=None*, *command_id=None*, *party_a=None*, *identifier_type=None*, *remarks=None*, *queue_timeout_url=None*, *result_url=None*)

This method uses Mpesa's Account Balance API to to enquire the balance on an M-Pesa BuyGoods (Till Number).

Args:

- initiator (str): Username used to authenticate the transaction.
- security_credential (str): Generate from developer portal.
- command_id (str): AccountBalance.
- party_a (int): Till number being queried.
- identifier_type (int): Type of organization receiving the transaction. Options: 1 - MSISDN 2 - Till Number 4 - Organization short code
- remarks (str): Comments that are sent along with the transaction(maximum 100 characters).
- queue_timeout_url (str): The url that handles information of timed out transactions.
- result_url (str): The url that receives results from M-Pesa api call.

Returns:

- OriginatorConverstionID (str): The unique request ID for tracking a transaction.
- ConversationID (str): The unique request ID returned by mpesa for each request made
- ResponseDescription (str): Response Description message

1.1.6 api.c2b module

class `api.c2b.C2B`(*env='sandbox'*, *app_key=None*, *app_secret=None*, *sandbox_url=None*, *live_url=None*)

Bases: `api.auth.MpesaBase`

register(*shortcode=None*, *response_type=None*, *confirmation_url=None*, *validation_url=None*)

This method uses Mpesa's C2B API to register validation and confirmation URLs on M-Pesa.

Args:

- shortcode (int): The short code of the organization.
- response_type (str): Default response type for timeout. Incase a tranaction times out, Mpesa will by default Complete or Cancel the transaction.
- confirmation_url (str): Confirmation URL for the client.
- validation_url (str): Validation URL for the client.

Returns:

- OriginatorConversationID (str): The unique request ID for tracking a transaction.
- ConversationID (str): The unique request ID returned by mpesa for each request made
- ResponseDescription (str): Response Description message

simulate(*shortcode=None*, *command_id=None*, *amount=None*, *msisdn=None*, *bill_ref_number=None*)

This method uses Mpesa's C2B API to simulate a C2B transaction.

Args:

- shortcode (int): The short code of the organization.
- command_id (str): Unique command for each transaction type. - CustomerPayBillOnline - CustomerBuyGoodsOnline.
- amount (int): The amount being transacted
- msisdn (int): Phone number (msisdn) initiating the transaction MSISDN(12 digits)
- bill_ref_number: Optional

Returns:

- OriginatorConverstionID (str): The unique request ID for tracking a transaction.
- ConversationID (str): The unique request ID returned by mpesa for each request made
- ResponseDescription (str): Response Description message

1.1.7 api.mpesa_express module

class `api.mpesa_express.MpesaExpress`(*env='sandbox'*, *app_key=None*, *app_secret=None*, *sandbox_url=None*, *live_url=None*)

Bases: `api.auth.MpesaBase`

query(*business_shortcode=None*, *checkout_request_id=None*, *passcode=None*)

This method uses Mpesa's Express API to check the status of a Lipa Na M-Pesa Online Payment..

Args:

- business_shortcode (int): This is organizations shortcode (Paybill or Buygoods - A 5 to 6 digit account number) used to identify an organization and receive the transaction.

- checkout_request_id (str): This is a global unique identifier of the processed checkout transaction request.
- passcode (str): Get from developer portal

Returns:

- CustomerMessage (str):
- CheckoutRequestID (str):
- ResponseDescription (str):
- MerchantRequestID (str):
- ResponseCode (str):

stk_push(*business_shortcode=None*, *passcode=None*, *amount=None*, *callback_url=None*, *reference_code=None*, *phone_number=None*, *description=None*)

This method uses Mpesa's Express API to initiate online payment on behalf of a customer..

Args:

- business_shortcode (int): The short code of the organization.
- passcode (str): Get from developer portal
- amount (int): The amount being transacted
- callback_url (str): A CallBack URL is a valid secure URL that is used to receive notifications from M-Pesa API.
- reference_code: Account Reference: This is an Alpha-Numeric parameter that is defined by your system as an Identifier of the transaction for CustomerPayBillOnline transaction type.
- phone_number: The Mobile Number to receive the STK Pin Prompt.
- description: This is any additional information/comment that can be sent along with the request from your system. MAX 13 characters

Returns:

- CustomerMessage (str):
- CheckoutRequestID (str):
- ResponseDescription (str):
- MerchantRequestID (str):
- ResponseCode (str):

1.1.8 api.reversal module

class `api.reversal.`**Reversal**(*env='sandbox'*, *app_key=None*, *app_secret=None*, *sandbox_url=None*, *live_url=None*)

Bases: `api.auth.MpesaBase`

reverse(*initiator=None*, *security_credential=None*, *command_id='TransactionReversal'*, *transaction_id=None*, *amount=None*, *receiver_party=None*, *receiver_identifier_type=None*, *queue_timeout_url=None*, *result_url=None*, *remarks=None*, *occassion=None*)

This method uses Mpesa's Transaction Reversal API to reverse a M-Pesa transaction.

Args:

- initiator (str): Username used to authenticate the transaction.

- security_credential (str): Generate from developer portal
- command_id (str): TransactionReversal
- transaction_id (str): Unique identifier to identify a transaction on M-Pesa.
- amount (int): The amount being transacted
- receiver_party (int): Organization/MSISDN making the transaction - Shortcode (6 digits) - MSISDN (12 digits).
- receiver_identifier_type (int): MSISDN receiving the transaction (12 digits).
- queue_timeout_url (str): The url that handles information of timed out transactions.
- result_url (str): The url that receives results from M-Pesa api call.
- remarks (str): Comments that are sent along with the transaction(maximum 100 characters)
- occassion (str):

Returns:

- OriginatorConverstionID (str): The unique request ID for tracking a transaction.
- ConversationID (str): The unique request ID returned by mpesa for each request made
- ResponseDescription (str): Response Description message

1.1.9 api.transaction_status module

class `api.transaction_status.`**`TransactionStatus`**(*env='sandbox', app_key=None, app_secret=None, sandbox_url=None, live_url=None*)

Bases: `api.auth.MpesaBase`

`check_transaction_status`(*party_a=None, identifier_type=None, remarks=None, initiator=None, passcode=None, result_url=None, queue_timeout_url=None, transaction_id=None, occassion=None, shortcode=None*)

This method uses Mpesa's Transaction Status API to check the status of a transaction.

Args:

- party_a (str): Organization/MSISDN receiving the transaction - MSISDN or shortcode.
- identifier_type (str): Type of organization receiving the transaction 1-MSISDN. 2-Till Number, 3-Shortcode.
- remarks (str): Comments that are sent along with the transaction(maximum 100 characters).
- initiator (str): This is the credential/username used to authenticate the transaction request.
- passcode (str): Get from developer portal
- result_url (str): The url that handles information from the mpesa API call.
- transaction_id (str): Unique identifier to identify a transaction on M-Pesa.
- queue_timeout_url (str): The url that stores information of timed out transactions.
- result_url (str): The url that receives results from M-Pesa api call.
- shortcode (int): The short code of the organization.
- occassion (str):

Returns:

- ResultDesc': ,
- CheckoutRequestID': ,
- ResponseDescription': ,
- MerchantRequestID': ,
- ResponseCode': ,
- ResultCode':

1.1.10 Module contents

CHAPTER 2

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