

Online Checkout (Rest API) Documentation

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Online Checkout

M-PESA online checkout API also known as NI push is a Merchant/Business initiated C2B (Customer to Business) Payment.

Once you integrate with the API, you will be able to send payment promptly on the customer's phone (USSD push prompt) to the customer's M-PESA registered phone number requesting them to enter their M-PESA pin to authorize and complete payment.

This eliminates the challenge of having to remember business pay bill numbers and account numbers and allows customers to simply confirm the transaction by entering their M-PESA PIN on their mobile phones. This API enables the business to preset all the correct info in the payment request and reduce the chances of wrong payments being performed to their systems. It is a customer-to-business payment, but with the initiator being the organization instead of the customer. Since the organization can preset all required variables in the request before sending the request, this API has no Validation-Confirmation process like the standard Customer to Business (C2B) API.

The online checkout API process is explained below.

1. The Merchant (Partner) captures and sets the API required parameters and sends the API request.
2. The API receives the request and validates it internally first, then sends you an acknowledgement response.
3. Through API Proxy an USSD Push trigger request is sent to the M-PESA registered phone number of the customer's making the payment.
4. The customer confirms by entering their M-PESA PIN.
5. The response is sent back to M-PESA and is processed as below:
 - a) M-PESA validates the customer's PIN
 - b) M-PESA debits the customer's Mobile Wallet.
 - c) M-PESA credits the Merchant (Partner) account.
6. Once the request is processed send the RESULTS back to the API Management system which is then forwarded to the merchant via the callback URL specified in the REQUEST.
7. The customer receives an SMS confirmation message of the payment.

NB: You will first generate an access token to allow you to make the API call.

Request Body

```
{
  "BusinessShortCode": "174379",
  "Password": "MTc0Mzc5YmZiMjc5ZjlhYTliZGJjZjE0GU5N2RkNzFhNDY3Y2QyZTBjODkzMDU5YjEwZjc4ZTZiNzJhZGExZWQyYzIxOTIwMTYwMjE2MTYINjI3",
  "Timestamp": "20160216165627",
  "TransactionType": "CustomerPayBillOnline",
  "Amount": "1",
  "PartyA": "251708374149",
  "PartyB": "174379",
  "PhoneNumber": "251708374149",
  "CallBackURL": "https://mydomain.com/pat",
  "AccountReference": "Test",
  "TransactionDesc": "Test"
}
```

Request Parameter Description

Name	Description	Parameter Type	Sample Values
BusinessShort Code	This is the organization's short code (Paybill or Buygoods - A 4 to 7-digit account number) used to identify an organization and receive the transaction.	Numeric	Short code (5 to 6 digits) e.g. 654321
Password	This is the password used for encrypting the request sent: A base64 encoded string. (The base64 string is a combination of Shortcode+Passkey+Timestamp)	String	base64.encode(Shortcode+Passkey+Timestamp)

Timestamp	This is the Timestamp of the transaction, normally in the format of YEAR+MONTH+DATE+HOUR+MINUTE+SECOND (YYYYMMDDHHMMSS) Each part should be at least two digits apart from the year which takes four digits.	Timestamp	YYYYMMDDHHmmss
TransactionType	This is the transaction type that is used to identify the transaction when sending the request to M-PESA. The transaction type for M-PESA Express is " CustomerPayBillOnline " for PayBill Numbers and " CustomerBuyGoodsOnline " for Till Numbers.	String	CustomerPayBillOnline CustomerBuyGoodsOnline
Amount	This is the Amount transacted normally a numeric value. Money that the customer pays to the Shortcode. Only whole numbers are supported.	Numeric	10
PartyA	The phone number sending money. The parameter expected is a Valid Safaricom Mobile Number that is M-PESA registered in the format 2547XXXXXXXX	Numeric	MSISDN (12 digits Mobile Number) e.g. 2517XXXXXXXX
PartyB	The organization that receives the funds. The parameter expected is a 4 to 7-digit as defined in the Shortcode description above. This can be the same as the BusinessShortCode value above.	Numeric	Shortcode (4-7 digits)

PhoneNumber	The Mobile Number to receive the USSD Pin Prompt. This number can be the same as PartyA value above.	Numeric	MSISDN (12 digits Mobile Number) e.g. 2517XXXXXXX
CallBackURL	A CallBack URL is a valid secure URL that is used to receive notifications from M-Pesa API. It is the endpoint to which the results will be sent by M-Pesa API.	URL	https://ip or domain:port/path e.g: https://mydomain.com/path https://0.0.0.0:9090/path
AccountReference	Account Reference: This is an Alpha-Numeric parameter that is defined by your system as an Identifier of the transaction for the CustomerPayBillOnline transaction type. Along with the business name, this value is also displayed to the customer in the USSD Pin Prompt message. Maximum of 12 characters.	Alpha-Numeric	Any combination of letters and numbers
TransactionDesc	This is any additional information/comment that can be sent along with the request from your system. Maximum of 13 Characters.	String	Any string between 1 and 13 characters.

Response Body

```
{
  "MerchantRequestID": "29115-34620561-1",
  "CheckoutRequestID": "ws_CO_191220191020363925",
  "ResponseCode": "0",
  "ResponseDescription": "Success. Request accepted for processing",
  "CustomerMessage": "Success. Request accepted for processing"
}
```

Response Parameter Description

Name	Description	Type	Sample Values
MerchantRequestID	This is a global unique Identifier for any submitted payment request.	String	16813-1590513-1
CheckoutRequestID	This is a global unique identifier of the processed checkout transaction request.	String	ws_CO_DMZ_12321_23423476
ResponseDescription	Response description is an acknowledgment message from the API that gives the status of the request submission. It usually maps to a specific ResponseCode value. It can be a Success submission message or an error description.	String	-The service request has failed -The service request has been accepted successfully. - Invalid Access Token
ResponseCode	This is a Numeric status code that indicates the status of the transaction submission. 0 means successful submission and any other code means an error occurred.	Numeric	0 or 404.001.03
CustomerMessage	This is a message that your system can display to the customer as an acknowledgment of the payment request submission.	String	E.g.: Success. Request accepted for processing.

Result Body

```
{
  "Body": {
    "USSDCallback": {
      "MerchantRequestID": "29115-34620561-1",
```


MerchantRequestID	This is a global unique Identifier for any submitted payment request. This is the same value returned in the acknowledgment message of the initial request.	String	29115-34620561-1
CheckoutRequestID	This is a globally unique identifier of the processed checkout transaction request. This is the same value returned in the acknowledgment message of the initial request.	String	ws_CO_191220191020363925
ResultCode	This is a numeric status code that indicates the status of the transaction processing. 0 means successful processing and any other code means an error occurred or the transaction failed.	Numeric	0 1032
ResultDesc	The result description is a message from the API that gives the status of the request processing. It usually maps to a specific ResultCode value. It can be a Success processing message or an error description message.	String	E.g: 0: The service request is processed successfully. 1032: Request canceled by the user
CallbackMetadata	This is the JSON object that holds more details for the transaction. It is only returned for successful transactions.	JSON Object	
Item	This is a JSON Array, within the CallbackMetadata, that holds additional transaction details in JSON objects. Since this array is returned under the	JSON Array	

	CallbackMetadata, it is only returned for successful transactions.		
Amount	This is the Amount that was transacted	Decimal	10500.5
MpesaReceiptNumber	This is the unique M-PESA transaction ID for the payment request. The same value is sent to the customer by SMS upon successful processing.	String	LHG31AA5TX
Balance	This is the Balance of the account for the shortcode used as partyB.	Decimal	32009.9
TransactionDate	This is a timestamp that represents the date and time that the transaction was completed in the format YYYYMMDDHHmmss	TimeStamp	20170827163400
PhoneNumber	This is the number of the customer who made the payment.	PhoneNumber	0722000000

Unsuccessful results body structure

Whenever you receive an error in your callback URL, the unsuccessful transaction will have a body result as below and, the error details will be captured under the Items **ResultCode** and **ResultDesc**;

```
{
  "Body": {
    "USSDCallback": {
      "MerchantRequestID": "29115-34620561-1",
      "CheckoutRequestID": "ws_CO_191220191020363925",
      "ResultCode": 1032,
      "ResultDesc": "Request canceled by user."
    }
  }
}
```

```

}
}
}

```

Errors

Error	Description	Possible cause and Solution
1037	DS timeout user cannot be reached	It means that the USSD Push Prompt never got to the user. Causes include:
1025	An error occurred while sending a push request	Cause <ul style="list-style-type: none"> System error Solution <ul style="list-style-type: none"> Retry the request, and make sure your system is working as expected.
9999	An error occurred while sending a push request.	
1025	An error occurred while sending a push request	Cause <ul style="list-style-type: none"> USSD message from M-PESA is too long ie more than 182 characters Solution <ul style="list-style-type: none"> Make sure the messaging is less than 182 characters
1037	No response from the user	Cause <p>It means that the USSD Push Prompt got to the customer but the response by the customer was not sent back on time. This is a backend API issue, not a user issue.</p> Solution <p>Simply retry again after receiving the callback. Make sure to notify the user that the request failed.</p>

1032	The request was canceled by the user	<p>Cause</p> <p>This means that USSD Push Prompt was canceled from the user end. Causes are:</p> <ul style="list-style-type: none"> • USSD Prompt timed out waiting for user input (takes between 1-3 minutes depending on phone model). • The user canceled the request on their phone. <p>Solution</p> <p>Depending on the scenario, either inform the user that they did not respond or just cancel the transaction, then try again.</p>
1	The balance is insufficient for the transaction.	<p>Cause</p> <ul style="list-style-type: none"> • The subscriber has insufficient funds on M-PESA. <p>Solution</p> <p>Advise customer to deposit funds on their M-PESA Account</p>
2001	The initiator information is invalid.	<p>Cause</p> <ul style="list-style-type: none"> • The user initiating the push has given invalid password input. • The user has entered the wrong pin to validate the USSDPUSH request. <p>Solution</p> <p>Use correct user credentials Subscriber to key in the correct M-PESA pin</p>
1019	Transaction has expired	<p>Cause</p> <p>The transaction has taken a long before being processed within the allowable time</p>
1001	Unable to lock subscriber, a transaction is already in process for the current subscriber	<p>Cause</p> <ul style="list-style-type: none"> • Duplicated MSISDN, MSISDN has an existing USSD session.

		<ul style="list-style-type: none"> • Conflicting of sessions. • The user has an ongoing USSD Session. • Supplementary services barred for user. <p>Solution</p> <ul style="list-style-type: none"> • Close the session before initiating another push. • User to try again between 2-3 minutes. • Make sure you send one push request to a user at a time. • User to contact Safaricom for unbarring
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