Integration Guide

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Version History

Date	Ver.	Description
1 October 2014	1.0	• Initial version
21 July 2015	1.1	• Limit bank reference field length and update description to define allowed characters
1 August 2015	1.2	• Added abandoned transaction status
11 August 2015	2.0	• Added new post variables (18 - 21) • Added new API method PostPaymentRequest
13 April 2016	2.1	• Added new API method GetTransactionReport
21 December 2016	2.2	• Added variable amount post parameters and moved uncommon parameters to new section • Added PendingInvesitigation status • Added hash check example
18 January 2017	2.3	• Added Pending status • Added Investec Bank Id
11 October 2017	2.4	• Added GenerateShortUrl variable to API method PostPaymentRequest
07 March 2019	2.5	• Implemented Ozow styling
25 March 2019	2.6	• Added tokenisation section

Introduction

Integrating Ozow as a payment option into your website can be achieved in 3 easy steps:
1. Post payment information to Ozow
2. Process response received by Ozow
3. Verify transaction status using Ozow's API (Optional but recommended)

Test Account Details

SiteCode:	TSTSTE0001
CountryCode:	ZA
CurrencyCode:	ZAR
Private Key:	215114531AFF7134A94C88CEEA48E
API Key	EB5758F2C3B4DF3FF4F2669D5FF5B

Step 1 – Post from merchant website

After the user confirms his purchase and has chosen Ozow as his preferred payment method, you will need to post the following variables to https://pay.ozow.com/

Please note variables 18 – 26 are not commonly used and can be ignored unless you specifically require that functionality.

Post Variables

Property	Type	Req.	Description
1. SiteCode	String (50)	Yes	A unique code for the site currently in use. A site code is generated when adding a site in the Ozow Merchant Admin section.
2. CountryCode	String (2)	Yes	The ISO 3166-1 alpha-2 code for the user's country. The country code will determine which banks will be displayed to the customer. Please note only South African (ZA) banks are currently supported by Ozow.
3. CurrencyCode	String (3)	Yes	The ISO 4217 3 letter code for the transaction currency. Please note only South African Rand (ZAR) is currently supported by Ozow, so any currency conversion would have to take place before posting to the Ozow site.
4. Amount	Decimal (9,2)	Yes	The transaction amount. The amount is in the currency specified by the currency code posted.
5. TransactionReference	String (50)	Yes	The merchant's reference for the transaction
6. BankReference	String (20)	Yes	The reference that will be prepopulated in the "their reference" field in the customers online banking site. *This will be the payment reference that appears on the merchant's bank statement and can be used for recon purposes.* *Only alphanumeric characters, spaces and dashes are allowed.*

7. Optional1 8. Optional2 9. Optional3 10. Optional4 11. Optional5	String (50)	No	Optional fields the merchant can post for additional information they would need passed back in the response. These are also stored with the transaction details by Ozow and can be useful for filtering transactions in the merchant admin section.
12. Customer	String (100)	No	The customer's name or identifier.
13. CancelUrl	String (150)	No	The URL that we should post the redirect result to if the customer cancels the payment, this will also be the page the customer gets redirect back to. This URL can also be set for the applicable merchant site in the merchant admin section. If a value is set in the merchant admin and sent in the post, the posted value will be redirected to if the payment is cancelled.
14. ErrorUrl	String (150)	No	The URL that we should post the redirect result to if an error occurred while trying to process the payment, this will also be the page the customer gets redirect back to. This URL can also be set for the applicable merchant site in the merchant admin section. . If a value is set in the merchant admin and sent in the post, the posted value will be redirected to if an error occurred while processing the payment.
15. SuccessUrl	String (150)	No	The URL that we should post the redirect result to if the payment was successful, this will also be the page the customer gets redirect back to. This URL can also be set for the applicable merchant site in the merchant admin section. . If a value is set in the merchant admin and sent in the post, the posted value will be redirected to if the payment was successful. Please note that it would not be sufficient to assume the payment was successful just because the customer was redirected back to this page, it highly recommended that you check the response fields and as well as check the transaction status using our check transaction status API call.
16. NotifyUrl	String (150)	No	The URL that we should post the notification result to. The result will posted regardless of the outcome of the transaction. This URL can also be set for the applicable merchant site in the merchant admin section. If a value is set in the merchant admin and sent in the post, the notification result will be sent to the posted value. Find out more in the notification response section in step 2.
17. IsTest	bool	Yes	Send true to test your request posting and response handling. If set to true you will be redirected to a page where you can select whether you would like a successful or unsuccessful redirect response sent back. Please note that notification responses are not sent for test transactions and the online banking payment is skipped. Accepted values are true or false.

18. BankId	Guid	No	The bank that the payment should be made to. Merchant needs to be enabled to send through banking details (18 - 21) in the post, for most merchants this is setup when creating the merchant account. Allowed values are: • ABSA – 3284A0AD-BA78-4838-8C2B-102981286A2B • Capitec - 913999FA-3A32-4E3D-82F0-A1DF7E9E4F7B • FNB - 4816019C-3314-4C80-8B6B-B2CD16DCC4EC • Nedbank - BF0561FD-4203-4A0C-9174-CB26FCD87A60 • Standard Bank - AD7D8DA4-1723-4066-94BB-6662D845E483 • Investec - 4B45BE85-B616-4BD1-9027-F8FCF8F9AF7B
19. BankAccountNumber	String(20)	No	The bank account number the payment should be made to.
20. BranchCode	String(10)	No	The branch code for the bank account (19).
21. BankAccountName	String(50)	No	The name of to be used for the bank account. Only alphanumeric characters and spaces allowed.
22. PayeeDisplayName	String(50)	No	Name shown on the site as the entity being paid (not in banking screens)
23. ExpiryDateUtc	String(19)	No	Payment will not be allowed to be made after this date. Date should be UTC and value should be formatted as yyyy-MM-dd HH:mm e.g. 2015-08-11 16:02
24. AllowVariableAmount	bool	No	Allow user to change the amount passed through before paying. This option needs to also be enabled for the site in the merchant admin portal to be used. Accepted values are true or false. DO NOT include false in the hash check string, just ignore instead.
25. VariableAmountMin	Decimal (9,2)	No	If AllowVariableAmount is passed through as true, this will dictate the lowest acceptable amount the user can enter
26. VariableAmountMax	Decimal (9,2)	No	If AllowVariableAmount is passed through as true, this will dictate the highest acceptable amount the user can enter
27. HashCheck	String (250)	Yes	SHA512 hash used to ensure that certain fields in the message have not been altered after the hash was generated. Check the generate hash section below for more details on how to generate the hash.

Generate Post Hash Check

Follow these steps to generate the hash check:
1. Concatenate the post variables (excluding HashCheck and Token) in the order they appear in the post variables table.
2. Append your private key to the concatenated string. Your private key can be found in merchant details section of the merchant admin site.
3. Convert the concatenated string to lowercase.
4. Generate a SHA512 hash of the lowercase concatenated string.

Hash Check Example

SiteCode: TSTSTE0001
CountryCode: ZA
CurrencyCode: ZAR
Amount: 25.00
TransactionReference: 123
BankReference: ABC123
CancelUrl: http://demo.ozow.com/cancel.aspx
ErrorUrl: http://demo.ozow.com/error.aspx
SuccessUrl: http://demo.ozow.com/success.aspx
NotifyUrl: http://demo.ozow.com/notify.aspx
IsTest: false

1. TSTSTE0001ZAZAR25.00123ABC123http://demo.ozow.com/cancel.aspxhttp://demo.ozow.com/cancel.aspxhttp://demo.ozow.com/success.aspxhttp://demo.ozow.com/notify.aspxfalse

2. TSTSTE0001ZAZAR25.00123ABC123http://demo.ozow.com/cancel.aspxhttp://demo.ozow.com/cancel.aspxhttp://demo.ozow.com/success.aspxhttp://demo.ozow.com/notify.aspxfalse215114531AFF7134A94C88CEEA48E

3. tstste0001zazar25.00123abc123http://demo.ozow.com/cancel.aspxhttp://demo.ozow.com/cancel.aspxhttp://demo.ozow.com/success.aspxhttp://demo.ozow.com/notify.aspxfalse215114531aff7134a94c88ceea48e

4. eedcba106cd8fef3ba6cec5ec80de7d7d7fc90343028bf95b908718c671d0fe885ca08b206d788de009d237a93c18e66edf6ede3f5ca7057e23474106465dcc6

Generate Payment URL Using API

https://api.ozow.com/PostPaymentRequest

This method is called when you want to generate a payment URL that will be included in an email or SMS.

Parameters

Property	Type	Req.	Description
ApiKey (Http request header value)	String (50)	Yes	Merchant's API key, this value is available in the Ozow Merchant Admin section.
Content-Type (Http request header value)	String (50)	Yes	Format of your post data object, available values: • *application/json* – post data object is a JSON string • *application/xml* - post data object is a XML string
Accept (Http request header value)	String (50)	Yes	Determines the format the response is returned in, available values: • *application/json* - Response is returned as JSON • *application/xml* - Response is returned as XML
Post data object	String (JSON / XML)	Yes	Applicable post variables found in post variables table above as either a serialised json object or XML element e.g. { "SiteCode": "TSTSTE0001", ..., "HashCheck": "6b46c27agfd4656fg3534gfd435"} *If you are using this to generate a link that will get used in SMSes, emails or for QR codes you need to pass an extra Boolean variable in the post data object i.e. **GenerateShortUrl** with a value of true. This extra field should not be used to generate the hash. e.g. { ..., " GenerateShortUrl ": true }*

Response

PaymentRequestResult - A successful call will return a PaymentRequestResult obect. The PaymentRequestResult object is described below.

Property	Type	Description
PaymentRequestId	String (50)	Ozow's unique identifier for the payment request.
URL	String (50)	Generated URL that allows payment for the posted variables used to create the payment request.
ErrorMessage	String (50)	Error message generated when validating the request.

Step 2 – Process Ozow response

Ozow will send the following two posts back to the merchant:
- Redirect Response
- Notification Response

Redirect Response

Depending on the status of completing the payment using Ozow, we will post the response variables while redirect the user to the applicable page. Please note that if the applicable URL was not sent in the post variables or set for the merchant site in the merchant admin site, the user will not be redirected back to the merchant site along with the post containing the response variables.
The URL used will be determined as follows:
- Error URL - An error occurred during the payment process and payment was NOT successful
- Cancelled URL - The user opted to cancel during the payment process and payment was NOT successful
- Success URL - The payment was successful

Use the Hash response variable to verify the validity of the response, this process is further described in the response hash check section below. It is recommended that you also use the notification response to verify the outcome of the transaction.

Notification Response

We will post the response variables to the designated notification URL. Please note that if the notification URL (NotifyUrl) was not sent in the post variables or set for the merchant site in the merchant admin site, we will not be able to send the notification post containing the response variables.

Use the Hash response variable to verify the validity of the response, this process is further described in the response hash check section below.

Please note: While we do our utmost best to ensure that duplicate notifications are not sent to the notification URL, at times there might be instances where multiple notifications are sent for the same transaction. As such, it is of the utmost importance that your system is built in a manner that caters for this scenario, i.e. if you receive multiple notifications for the same transaction your client / payer is not credited multiple times for the payment.

Response Variables

Property	Type	Description
1. SiteCode	String (50)	The site code sent to Ozow in the request post.
2. TransactionId	String (50)	The transaction identifier generated by Ozow
3. TransactionReference	String (50)	The merchant's transaction reference sent in the request post's TransactionReference variable.
4. Amount	Decimal (9,2)	The transaction amount. The amount is in the currency specified by the currency code posted.
5. Status	String (50)	The transaction status. Possible values are: • *Complete* - The payment was successful • *Cancelled* - The payment was cancelled • *Error* - An error occurred while processing the payment • *Abandoned* – The payment was abandoned

		• *PendingInvestigation* – An inconclusive result was received by the bank and the payment needs to be verified manually. • *Pending* – The status cannot be determined as yet but will be reposted to the notification URL as soon as it has been determined. Merchants not using the notification URL will receive a PendingInvestigation status.
6. Optional1 7. Optional2 8. Optional3 9. Optional4 10. Optional5	String (50)	Optional fields sent in the request post.
11. CurrencyCode	String (3)	The transaction currency code sent in the request post.
12. IsTest	bool	Whether or not the original request was a test request. Possible values are true or false.
13. StatusMessage	String (150)	Message regarding the status of the transaction. This field will not always have a value. This is a user friendly message that can be displayed to the user e.g. User cancelled transaction.
14. Hash	String (100)	SHA512 hash used to ensure that certain fields in the message have not been altered after the hash was generated. Check the generate hash section below for more details on how to validate the response variables using the hash.

Response Hash Check

Follow these steps to validate the response:
1. Concatenate the response variables (excluding Hash) in the order they appear in the response variables table
2. Append your private key to the concatenated string. Your private key can be found in merchant details section of the merchant admin site.
3. Convert the concatenated string to lowercase.
4. Generate a SHA512 hash of the lowercase concatenated string.
5. Compare generated hash to the Hash value in the response variables.

Step 3 – Check transaction status using API

Even though this step is optional, we highly recommend it to ensure that responses received reflect the correct transaction status. This will eradicate any chance of anyone spoofing the Ozow response to update a transaction status on the merchant site.
Each API call needs an http header value with the merchant's API Key
There are two API methods you can use to check the transaction status currently:
- GetTransactionByReference
- GetTransaction

GetTransactionByReference

https://api.ozow.com/GetTransactionByReference?siteCode={siteCode}&transactionReference={transactionReference}

This method is called when you want to query transactions using the merchant's reference. This method can return multiple results as Ozow does not restrict the merchant from sending duplicate merchant references even though we do advise that a unique reference is sent per transaction. The number of results returned are limited to 10.

Parameters

Property	Type	Req.	Description
ApiKey (Http request header value)	String (50)	Yes	Merchant's API key, this value is available in the Ozow Merchant Admin section.
Accept (Http request header value)	String (50)	Yes	Determines the format the response is returned in, available values: • *application/json* - Response is returned as json • *application/xml* - Response is returned as xml
SiteCode	String (50)	Yes	A unique code for the each of the merchant's sites. A site code is generated when adding a site in the Ozow Merchant Admin section.
TransactionReference	String (50)	Yes	The merchant's reference for the transaction
IsTest	bool	No	Defaults to false. Use true only to get results for test requests.

Response

Transaction[] - A successful call will return an array of the transaction object. The transaction object is described further down

GetTransaction

https://api.ozow.com/GetTransaction?siteCode={siteCode}&transactionId={transactionId}

This method is called when you want to query transactions using Ozow's reference.

Parameters

Property	Type	Req.	Description
ApiKey (Http request header value)	String (50)	Yes	Merchant's API key, this value is available in the Ozow Merchant Admin section.
Accept (Http request header value)	String (50)	Yes	Determines the format the response is returned in, available values: • *application/json* - Response is returned as JSON • *application/xml* - Response is returned as XML
SiteCode	String (50)	Yes	A unique code for the each of the merchant's sites. A site code is generated when adding a site in the Ozow Merchant Admin section.
TransactionId	String (50)	Yes	Ozow's reference for the transaction. This would be passed back to the merchant in the redirect and notification responses.
IsTest	bool	No	Defaults to false. Use true only to get results for test requests.

Response

Transaction[] - A successful call will return an array of the transaction object. The transaction object is described further down.

Transaction Object

This is the object referred to in the response of the 2 API calls above.

Property	Type	Description
TransactionId	String (50)	Ozow's unique reference for the transaction.
MerchantCode	String (50)	Unique code assigned to each merchant.
SiteCode	String (50)	Unique code assigned to each merchant site.
TransactionReference	String (50)	Merchant's transaction reference.
CurrencyCode	String (3)	The transaction currency code.
Amount	Decimal (9,2)	The transaction amount.
Status	String (50)	The transaction status. Possible values are: • *Complete* - The payment was successful • *Cancelled* - The payment was cancelled • *Error* - An error occurred while processing the payment • *Abandoned* – The payment was abandoned • *PendingInvestigation* – An inconclusive result was received by the bank and the payment needs to be verified manually. • *Pending* – The status cannot be determined as yet but will be reposted to the notification URL as soon as it has been determined. Merchants not using the notification URL will receive a PendingInvestigation status.

StatusMessage	String (150)	Message regarding the status of the transaction. This field will not always have a value. This is a user friendly message that can be displayed to the user e.g. User cancelled transaction.
CreatedDate	DateTime	Transaction created date and time
PaymentDate	DateTime	Transaction payment date and time

Extract Transaction Report Using API

GetTransactionReport

https://api.ozow.com/GetTransactionReport?siteCode={siteCode}&startDate={startDate}&endDate={endDate}

This method can be called to get all transactions for a merchant site in a particular date range.

Parameters

Property	Type	Req.	Description
ApiKey (Http request header value)	String (50)	Yes	Merchant's API key, this value is available in the Ozow Merchant Admin section.
Accept (Http request header value)	String (50)	Yes	Determines the format the response is returned in, available values: • *application/json* - Response is returned as json • *application/xml* - Response is returned as xml
SiteCode	String (50)	Yes	A unique code for the each of the merchant's sites. A site code is generated when adding a site in the Ozow Merchant Admin section.
StartDate	Date	Yes	The filter start date. Use format YYYY-MM-DD
EndDate	Date	Yes	The filter end date. Use format YYYY-MM-DD

TransactionModel[] - A successful call will return an array of the transaction model object. The transaction model object is described below.

TransactionModel Object

This is the object referred to in the response of the calls above.

Property	Type	Description
Id	String (50)	Ozow's unique reference for the transaction.
CreatedDateUtc	DateTime	Date the transaction was created.
SiteCode	String (50)	Unique code assigned to each merchant site.
SiteName	String (50)	Merchant site name.
BankFromName	String (50)	The bank the payment has been made from.
BankToName	String (50)	The bank the payment has been made to.
Amount	Decimal (9,2)	The transaction amount.

Status	String (50)	The transaction status. Possible values are: • *Complete* - The payment was successful • *Cancelled* - The payment was cancelled • *Error* - An error occurred while processing the payment • *Abandoned* – The payment was abandoned • *PendingInvestigation* – An inconclusive result was received by the bank and the payment needs to be verified manually. • *Pending* – The status cannot be determined as yet but will be reposted to the notification URL as soon as it has been determined. Merchants not using the notification URL will receive a PendingInvestigation status.
ToAccount	String (50)	The account number.
ToReference	String (20)	The bank reference that was used to make the payment.
PaymentDate	DateTime	Date the payment was successfully completed.
PaymentDateUtc	DateTime	UTC date the payment was successfully completed.
TransactionReference	String (50)	The merchant's reference for the transaction.
Customer	String (50)	Customer's name
Optional1	String (50)	Optional 1 value received in the original transaction request.
Optional2	String (50)	Optional 2 value received in the original transaction request.
Optional3	String (50)	Optional 3 value received in the original transaction request.
Optional4	String (50)	Optional 4 value received in the original transaction request.
Optional5	String (50)	Optional 5 value received in the original transaction request.
LastEvent	String (50)	Used for administration purposes, will be empty for most merchants.
LastEventStatus	String (50)	Used for administration purposes, will be empty for most merchants.

Tokenisation

In order to reduce the number of steps it takes to make payments, Ozow will offer the user an opportunity to securely store their online banking login details as well as their preferred account they use to make payments from. The process used to store and retrieve the login details has been vetted by a top independent cyber security consultancy.

Once the user completes the registration, the merchant will be sent a token profile ID and a token that can be used for future payments for this particular user. The user will only need to login using their Ozow PIN they created during registration and confirm the payment using their banks second factor authentication method for future payments.

Token Registration

If you would like the user to be registered for tokenisation you would need to pass the following fields along with the post variables in Step 1. If you pass through these fields you will need to append them to the concatenated post variables to calculate the post hash check.

These fields are only required if you want the user to register for tokenisation after the payment has been completed.

Property	Type	Req.	Description

1.	RegisterTokenProfile	bool	Yes	If you would like your user to have an opportunity to register for tokenisation, pass this through as true.
2.	TokenNotificationUrl	String (150)	Yes	The URL you would like Ozow to send the token response to after successful payment and token registration. This is different to the payment notification result.
3.	TokenDeletedNotificationUrl	String (150)	Yes	The URL you would like Ozow to notify if we deactivate the token and it can no longer be used.

Token Notification Response

After payment is completed and you have been sent the payment notification response in Step 2, the user will be offered the opportunity to create an Ozow PIN to make future payments easier and faster.

If the user successfully creates their Ozow PIN we will post the token response containing the fields below to the TokenNotificationUrl you passed to us in the post variables.

Property	Type	Description
TokenProfileId	Guid	The token profile ID required for future payments for this user.
TransactionId	Guid	The Ozow transaction ID for the payment that was completed.
TransactionReference	String (50)	Merchant's transaction reference for the payment that was completed. This is the same as the value that was passed through in the post variables.
Token	String (Max)	The token required for future payments for this user. This should be treated as a sensitive field and should be encrypted and stored securely.
Error	String (250)	The error if we could not successfully register the user. No notification will be sent if the user opted out of the process.

Token Deleted Notification Response

If the user enters the incorrect Ozow PIN 3 consecutive times, the token profile will be deleted and we will send a token deleted notification to the merchant so they can delete the token they have stored for this user.

The deleted token response will contain the following fields and will be posted to the TokenDeletedNotificationUrl passed to us in the post variables originally used to create the profile.

Property	Type	Description
TokenProfileId	Guid	The token profile ID required for future payments for this user.
Message	String (250)	A message explaining why the token profile has been deleted.

Token Payment

If you have previously received a token for the user you only need to pass the fields below along with the post variables in Step 1 to initiate a tokenised payment. Only the TokenProfileId will need to appended to the concatenated post variables to calculate the post hash check. The token field is not used in the hash check calculation.

These fields are only required if you want the user to use the token you have saved for them to complete the payment.

Property	Type	Req.	Description
1. TokenProfileId	Guid	Yes	The token profile identifier returned in the token response sent to the TokenNotificationUrl.
2. Token	String (Max)	Yes	The token returned in the token response sent to the TokenNotificationUrl.