



SID Instant EFT **Integration Guide**

Celebrating **10 years** of Secure Payments

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Summary of Revisions

Version	Date	Changes Made
1.0.0	30 Nov 2008	Original document created
1.0.1	30 Dec 2008	Added SID Logo and Style Guide
1.0.2	09 Jan 2009	Added Order Query Web Services
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Overview

SID Instant EFT makes it possible for customers without credit cards to pay merchants using their internet banking.

The merchant implementation explained in this guide is very simple and requires a developer that can:

1. Build an HTML form, also known as the buy button.
2. Receive and parse URL and FORM variables back from SID.

Payment Flow

The steps below outline the payment flow when the customer uses SID:

1. The customer populates the shopping cart on the merchant's website and clicks on the Checkout button.
2. On the Checkout Page, they're presented with SID as a payment option, which they select.
3. The customer is directed to the SID Bank Selection Page where they need to select the bank they bank with.
4. Next, they're prompted to log into their internet banking by entering their usual login details (No login details are stored by SID).
5. He/she then selects the bank account they wish to pay from (If they have more than one account linked to their internet banking profile).
6. They then complete the payment by entering a One-time PIN received from their bank, or responding to a push message received from their bank.
7. After the payment is successfully processed, SID prompts the customer to print/download the receipt and once done, they're logged out of their internet banking.
8. The customer is automatically navigated back to the merchant's website where their order can be filled immediately, as SID issues an instant, guaranteed payment confirmation to the merchant.

Submitting a Transaction to SID

There are two integration options to submit a transaction to SID:

1. SID Redirect Solution
2. SID Embedded Solution

SID Redirect Solution

The SID Redirect Solution is simply an HTML buy button which will redirect your customer to the SID Instant EFT secure payment page. It needs to contain the following fields posting to the below URL:

<https://www.sidpayment.com/paySID/>

SID Buy Button Fields

Field Name	Required	Description
SID_MERCHANT	Yes	Set this field to the Merchant Identifier as issued to you by SID when your account was created.
SID_CURRENCY	Yes	ZAR
SID_COUNTRY	Yes	ZA
SID_REFERENCE	Yes	Set this field to the merchant pass-through reference. This field should ideally be unique per transaction. This field will appear on all reports and will be passed back to the merchant when the customer is redirected back to the merchant's website. Use this field to reconcile to your system. Only Alphanumeric values and – (dash) and / (single slash) can be used. Max 12 characters.
SID_BUYER_REFERENCE	No	This field will populate the buyer statement reference field on the bank beneficiary pages and will appear on the buyer's statement as their own reference for the payment. If not passed, SID will populate this value with the SID_REFERENCE value. Only Alphanumeric values and – (dash) and / (single slash) can be used. Max 12 characters.
SID_AMOUNT	Yes	Transaction amount is decimal format, excluding any currency symbols or decimal commas, e.g.: 1955.60 or 12.00

<p>SID_DEFAULT_REFERENCE</p>	<p>No</p>	<p>Certain banks require a new beneficiary to be added before allowing a once-off payment to be done to the new beneficiary. This field will be used as a reference when adding a new beneficiary.</p> <p>If the buyer later uses this beneficiary manually (without using SID), then this field will be used as the default payment reference. We suggest setting this field to the customer's account number on your system, or any other value that can be used to easily identify the buyer later. This field supports a maximum 12 Characters.</p> <ul style="list-style-type: none"> ▪ Numbers 0-9 ▪ Characters A-Z and a-z ▪ The character -(dash) ▪ The character / (slash)
<p>SID_CUSTOM_01</p>	<p>No</p>	<p>Can contain any custom data the merchant wants to pass through with the transaction. This field will appear on all reports and will be passed back to the merchant on the redirect and HTTP Notification Post. Only Alphanumeric values, - (hyphen), / (forward slash), _ (underscore), . (period) and @ (at) can be used. Spaces are not permitted and all requests should be URL encoded.</p>
<p>SID_CUSTOM_02</p>	<p>No</p>	<p>Can contain any custom data the merchant wants to pass through with the transaction. This field will appear on all reports and will be passed back to the merchant on the redirect and HTTP Notification Post. Only Alphanumeric values, - (hyphen), / (forward slash), _ (underscore), . (period) and @ (at) can be used. Spaces are not permitted and all requests should be URL encoded.</p>
<p>SID_CUSTOM_03</p>	<p>No</p>	<p>Can contain any custom data the merchant wants to pass through with the transaction. This field will appear on all reports and will be passed back to the merchant on the redirect and HTTP Notification Post. Only Alphanumeric values, - (hyphen), / (forward slash), _ (underscore), . (period) and @ (at) can be used. Spaces are not permitted and all requests should be URL encoded.</p>
<p>SID_CUSTOM_04</p>	<p>No</p>	<p>Can contain any custom data the merchant wants to pass through with the transaction. This field will appear on all reports and will be passed back to the merchant on the redirect and HTTP Notification Post. Only Alphanumeric</p>

		values, - (hyphen), / (forward slash), _ (underscore), . (period) and @ (at) can be used. Spaces are not permitted and all requests should be URL encoded.
SID_CUSTOM_05	No	Can contain any custom data the merchant wants to pass through with the transaction. This field will appear on all reports and will be passed back to the merchant on the redirect and HTTP Notification Post. Only Alphanumeric values, - (hyphen), / (forward slash), _ (underscore), . (period) and @ (at) can be used. Spaces are not permitted and all requests should be URL encoded.
SID_CONSISTENT	Yes	The merchant can use this field to prevent tampering of the buy button values. Please see the section entitled SID Buy Button Consistent Field for guidelines to generating this field.

This is code for a sample buy button:

```
<FORM METHOD="POST" ACTION="https://www.sidpayment.com/paySID/">
  <INPUT TYPE="HIDDEN" NAME="SID_MERCHANT" VALUE="PHONEWAREHOUSE" />
  <INPUT TYPE="HIDDEN" NAME="SID_CURRENCY" VALUE="ZAR" />
  <INPUT TYPE="HIDDEN" NAME="SID_COUNTRY" VALUE="ZA" />
  <INPUT TYPE="HIDDEN" NAME="SID_REFERENCE" VALUE="REE384DJ" />
  <INPUT TYPE="HIDDEN" NAME="SID_AMOUNT" VALUE="129.00" />
  <INPUT TYPE="HIDDEN" NAME="SID_CONSISTENT" VALUE="DFIHFRTGOSTERG" />
  <INPUT TYPE="submit" NAME="PaySID" VALUE=" Pay using your internet
banking" />
</FORM>
```

Note: It is strongly advised to URL encode all requests.

SID Embedded (Iframe) Solution

The SID Embedded Solution allows merchants the ability to call the SID payment window as a popup on their website. The benefits of this integration allow the merchant to leverage on the same level of security SID provides with the Redirect method of integration while providing the customer with a seamless payment experience.

The below steps specify how to submit a payment using the SID Embedded Solution. To receive the transaction response after the payment has been completed, please refer to the "Receiving The Transaction Result" section from this document.

Adding the SID Instant EFT Popup to Your Webpage

In order to add the popup, there are three basic steps required:

1. Reference the required files in the <HEAD> or scripts section of your page.
2. Add an HTML button and give it a specific **id**.
3. Call the **SidEft** function when the button is clicked.

Referencing Required Files

The SID Instant EFT popup requires:

- jQuery ^3.2.1
- sidPopup.js
- sidPopupStyle.css

Bower

If you are using Bower, you can download the SID Instant EFT popup package with the following command:

```
$ Bower install sid-instant-eft-popup --save
```

Example of head / scripts section:

```
<head>
  <script src="bower_components/jquery/dist/jquery.min.js"></script>
  <link rel="stylesheet" type="text/css" href="bower_components/sid-
  instant-eft-popup/sidPopupStyle.min.css">
  <script src="bower_components/sid-instant-eft-popup/sidPopup.min.js">
  </script>
</head>
```

Direct Download

The required files are also available for download directly from the below repository:

<https://bitbucket.org/sidinstanteft/sid-instant-eft-popup.git>

Generating the SID HTML Buy Button

The following is required for your SID Buy Button in order to implement the SID Instant EFT Popup integration:

1. An `id` of `sidButton`
2. A call to the function `SidEft` or `SidEftJson` via the `onclick` event

There are two options when calling the SID Instant EFT popup:

1. Utilising the `SidEftJson` function, you are able to pass in a JSON object containing all parameters
2. Utilising the `SidEft` function you can pass in the individual parameters to the function

SidEftJson Function

```
function SidEftJson(JsonParams);
```

NOTE: You are able to pass in the Json as a string or object.

Sample JSON Code

```
{
  "SID_MERCHANT": "YOURMERCHANTCODE",
  "SID_CURRENCY": "ZAR",
  "SID_COUNTRY": "ZA",
  "SID_REFERENCE": "SELLER-REF",
  "SID_BUYER_REFERENCE": "BUYER-REF",
  "SID_AMOUNT": "10.53",
  "SID_DEFAULT_REFERENCE": "BEN-REF",
  "SID_CUSTOM_01": "438393",
  "SID_CUSTOM_02": "782142",
  "SID_CUSTOM_03": "519263",
  "SID_CUSTOM_04": "233335",
  "SID_CUSTOM_05": "282234",
  "SID_CONSISTENT": "SAMPLE08540D361BA5979858756C1A1E4A906E5CDA7C53D
  ABCB49E19D680B70ABC4370661648CCF996FF8212F36CB7FA3CC8F63AA42C71FA
  2ED95E0FE459144B"
};
<button id="sidButton" OnClick="SidEftJson(JSON)">Pay by Instant EFT</button>
```

Please refer to [Buy Button Consistent Field](#) section for guidelines to generating the SID_CONSISTENT value.

SidEft Function

Please ensure the parameters are passed in with the correct order as specified in the [SID Buy Button Fields](#) section.

```
function SidEft(sid_merchant, sid_currency, sid_country, sid_reference,
  sid_buyer_reference, sid_amount, sid_default_reference, sid_custom_01,
  sid_custom_02, sid_custom_03, sid_custom_04, sid_custom_05, sid_consistent)
```

Sample Code

```
<button id="sidButton" OnClick="SidEft('YOURMERCHANTCODE','ZAR','ZA','SELLER-
REF','BUYER-REF','10.53','BEN-
REF','438393','782142','519263','233335','282234','SAMPLE08540D361BA5979858756C1A
1E4A906E5CDA7C53DABCB49E19D680B70ABC4370661648CCF996FF8212F36CB7FA3CC8F63AA42C71F
A2ED95E0FE459144B')">Pay by Instant EFT</button>
```

Buy Button Consistent Field

By using the SID consistent field, the merchant can include a data validation field to stop tampering of the buy button variables.

After signup, SID will issue the merchant with a secret key. This secret key should be kept protected at all times and should never be exposed in the clear in the button or on the website.

To generate the consistent field, concatenate all the buy buttons values along with the secret key into a new string applying the SHA512 hash function. The resulting hash value is then passed in the buy button as the value for the SID_CONSISTENT field.

Once SID receives the request, SID will follow the same procedure and use the values in the buy button and the agreed secret key to generate their own version of the consistent field. We will compare our version of the consistent field with that received in the buy button and only allow the transaction to continue should the two values match.

The order in which the fields need to be concatenated are:

1. SID_MERCHANT
2. SID_CURRENCY
3. SID_COUNTRY
4. SID_REFERENCE
5. SID_BUYER_REFERENCE (if applicable)
6. SID_AMOUNT
7. SID_DEFAULT_REFERENCE (if applicable)
8. SID_CUSTOM_01 (if applicable)
9. SID_CUSTOM_02 (if applicable)
10. SID_CUSTOM_03 (if applicable)
11. SID_CUSTOM_04 (if applicable)
12. SID_CUSTOM_05 (if applicable)
13. SID_SECRET_KEY

Always remember to hash the values in the same case as that you sent them in the buy button to SID, as this will make a difference to the outcome. SID uses UTF-8 encoding on the SID_CONSISTENT field. The SID_CONSISTENT field will always be an uppercase value.

SID Logo and Style Guide

The SID Payment Method should be presented on the merchant's checkout/payment page. The following graphic illustrates how SID is to be displayed on the page where the user can select SID as their payment method.

Example 1: Button Display



Example 2: Displayed in a Drop-down List

Payment Options:

Pay by Internet Banking (SID)	▼	PAY NOW
Pay by Internet Banking (SID)		
Pay by Credit Card		
Pay by Direct Deposit		

Example 3: Display in Tick Boxes




Pay with SID Instant EFT (Internet Banking)




Pay with Credit Card



The merchant will need to display the following elements when the page loads:

Elements	Description	Style
<p>SID logo:</p> 	<p>Options:</p> <ol style="list-style-type: none"> 1. Pay Instantly via internet banking 2. SA's most trusted alternative payment method to credit card 3. Pay via your trusted internet banking facility 	<p>Format: png</p> <p>Size: 128 x 69 pixels</p> <p>Alt Text: SID Instant EFT</p> <p>The logo can be downloaded from: http://sidpayment.com/merchant-resources/</p>
<p>SID payment button:</p> 	<p>Options:</p> <ol style="list-style-type: none"> 1. Pay Instantly via internet banking 2. SA's most trusted alternative payment method to credit card 3. Pay via your trusted internet banking facility 	<p>Format: png</p> <p>Size: 222 x 40 pixels</p> <p>Alt Text: SID Instant EFT</p> <p>The button can be downloaded from: http://sidpayment.com/merchant-resources/</p>
<p>Own Image (design of your choice)</p>	<p>Pay Now button or graphic button.</p>	<p>Merchants may also use their own pay button or graphic.</p>
<p>SID badge:</p> 	<p>Options:</p> <ol style="list-style-type: none"> 1. Pay Instantly via internet banking 2. SA's most trusted alternative payment method to credit card 3. Pay via your trusted internet banking facility 	<p>Format: png</p> <p>Size: 222 x 40 pixels</p> <p>Alt Text: SID Instant EFT</p> <p>Hyperlink: The badge should be hyperlinked to: http://sidpayment.com/make-sid-payment/</p> <p>The badge can be downloaded from: http://sidpayment.com/merchant-resources/</p>

<p>SID Info Button:</p> 	<p>Options:</p> <ol style="list-style-type: none"> 1. What is SID? 2. What is SID Instant EFT? 3. What is SID Payment? 4. How do I pay through SID? 	<p>Format: png</p> <p>Size: 228 x 40 pixels</p> <p>Alt Text: SID Instant EFT</p> <p>Hyperlink: The button should be hyperlinked to:</p> <p>http://sidpayment.com/make-sid-payment/</p> <p>The button can be downloaded from:</p> <p>http://sidpayment.com/merchant-resources/</p>
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Merchants may wish to display more/educational information about SID on other pages within their website. In this case the following information should be used:

Full Description
<p>What is SID Instant EFT?</p> <p>SID Instant EFT (electronic funds transfer) has been one of South Africa's most trusted online payment methods since 2007. SID allows you to pay {Merchant name here} directly from your bank account via your existing internet banking facility.</p> <p>Don't panic if you've never used SID before. It's easy! You don't require any banking or payment information from {Merchant name here} prior to completing your payment as SID automatically populates the payment details for you. There's no shopper registration required and you can complete your payment in 5 easy steps!</p> <ol style="list-style-type: none"> 1. Select the SID payment method at checkout. 2. Select your bank. 3. Next, please enter your login details for your internet banking account. Rest assured, you are logging directly into your internet banking account and your bank security will remain in place. 4. Select the bank account you wish to pay from (If you have more than one account linked to your internet banking profile). 5. Complete the payment by entering a One-time PIN received from your bank, or responding to a message received from your bank (You will be directed back to the {Merchant name here} website once payment has been completed). <p>{Merchant name here} will receive instant payment confirmation, so you don't have to fax or email your proof of payment, and your order can be filled immediately. SID's smooth, automated payment process makes online payment quick, convenient and secure! For more information, visit www.sidpayment.com.</p>

Receiving the Transaction Result

All transactions should be considered as CANCELLED / DECLINED until such time that you receive the COMPLETED notification

The following 3 methods are provided for receiving both Completed and Cancelled transaction results from SID. We strongly recommend that all 3 methods be implemented:

1. Redirect Notification
2. HTTP Notification
3. Order Query Web Service

Please note: All the return variables in the URL are URL encoded. Please decode the variables before generating the Notification consistent key.

Method 1: Redirect Notification

Once the payment has been completed or cancelled, the customer will be redirected back to the merchant's website. A receipt/confirmation page should be displayed that is consistent with their existing website's look and feel.

The URL where the customer is redirected to is locked in the SID system for security reasons and can only be changed by authorised SID staff. To change this, please get the account holder to send the request in writing to support@sidpayment.com.

The following variables are sent to the merchant when the customer is redirected back to the merchant's website.

Field Name	Description
SID_STATUS	The result of the transaction. Possible returned values are: COMPLETED CANCELLED CREATED READY See the section titled 'Status Code Explained' for a detailed explanation on this field.
SID_MERCHANT	Contains the merchant code as assigned to the merchant by SID when the account was created.

SID_COUNTRY	ZA
SID_CURRENCY	ZAR
SID_REFERENCE	Contains the reference number as passed to SID in the buy button.
SID_AMOUNT	The amount of the transaction as captured on the internet banking receipt page.
SID_BANK	The bank name of the bank that the customer paid from.
SID_DATE	The date and time when the transaction was completed. All dates are given in GMT +02:00.
SID_RECEIPTNO	The bank receipt number as issued and appearing on the internet banking receipt page.
SID_TNXID	Contains the unique SID System Transaction ID for this transaction.
SID_CUSTOM_01	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_01 field.
SID_CUSTOM_02	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_02 field.
SID_CUSTOM_03	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_03 field.
SID_CUSTOM_04	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_04 field.
SID_CUSTOM_05	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_05 field.
SID_CONSISTENT	Security field that should be used by the merchant to determine the authenticity of this message. To generate the consistent field concatenate all the above fields in the same order with the secret key and SHA512 hash the data (Note this is not the same as the Buy Button Consistent Field).

Method 2: HTTP Notification

Once the payment has been completed or cancelled, SID can post a HTTP notification to a pre-defined URL on the merchant's server.

This service will try to run for a maximum of 3 times with a waiting period between each retry.

We strongly recommend that the HTTP Notification be implemented in addition to the Redirect Notification. This will reduce the number of client queries when the Redirect Notification fails. Another nicety would be to confirm that the status and transactional information is identical between the HTTP Notification and the Redirect Notification for extra security.

The URL where the notification is posted to is locked in the SID system for security reasons and can only be changed by authorised SID staff. To change this, please get the account holder to send the request in writing to support@sidpayment.com.

The following variables are sent to the merchant as a Post in the HTTP Notification.

Field Name	Description
SID_STATUS	The result of the transaction. Possible returned values are: COMPLETED CANCELLED CREATED READY See the section titled 'Status Code Explained' for a detailed explanation on this field.
SID_MERCHANT	Contains the merchant code as assigned to the merchant by SID when the account was created.
SID_COUNTRY	ZA
SID_CURRENCY	ZAR
SID_REFERENCE	Contains the reference number as passed to SID in the buy button.
SID_AMOUNT	The amount of the transaction as captured on the internet banking receipt page.
SID_BANK	The bank name of the bank that the customer paid from.

SID_DATE	The date and time when the transaction was completed. All dates are given in GMT +02:00.
SID_RECEIPTNO	The bank receipt number as issued and appearing on the internet banking receipt page.
SID_TNXID	Contains the unique SID System Transaction ID for this transaction.
SID_CUSTOM_01	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_01 field.
SID_CUSTOM_02	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_02 field.
SID_CUSTOM_03	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_03 field.
SID_CUSTOM_04	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_04 field.
SID_CUSTOM_05	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_05 field.
SID_CONSISTENT	Security field that should be used by the merchant to determine the authenticity of this message. To generate the consistent field concatenate all the above fields in the same order with the secret key and SHA512 hash the data (Note this is not the same as the Buy Button Consistent Field).

Method 3: Order Query Web Service

The Order Query Web Service allows you to query the status of any transaction during or after the transaction. This is useful to keep the merchant's system in sync with SID.

Implementation can be done in 2 ways, you can check for individual transaction's status and information or you can query numerous transactions in a single call.

We strongly recommend that the Order Query Web Service be implemented in addition to the Redirect and HTTP Notification methods. This will reduce the number of client queries if the Redirect and/or the HTTP Notification methods fail. Another benefit would be to confirm that the status and transactional information is identical between the Order Query Web Service and the Redirect and HTTP Notification for extra security.

To retrieve the information, the merchant would have to connect to the SID Web Service interface. The Web Service and method details are shown below.

Web Service WSDL File: <https://www.sidpayment.com/api/?wsdl>

Method Name: **sid_order_query**

The method accepts one XML string as argument, named "**sid_order_query_request**". The method returns a XML string as output.

Please refer to the XML examples below for sample request and response strings.

The XSD (XML Schema Definition) files for the request and response data can be found at the below URLs.

https://www.sidpayment.com/api/schemas/sid_order_query_request.xsd

https://www.sidpayment.com/api/schemas/sid_order_query_response.xsd

Web Service Fields Explained

sid_order_query_request:

The **sid_order_query_request** XML string contains the merchant information (and login details). The string also needs to contain the order information of the transaction (or transactions) being queried. The merchant would have to supply the same data as used in the buy button when the transaction was initially created.

Field Name	Description
<code>../merchant/code</code>	The SID_MERCHANT Code, provide by SID Support
<code>../merchant/uname</code>	SID Order Query Web Service username, provided by SID Support.
<code>../merchant/pword</code>	SID Order Query Web Service password, provided by SID Support.
<code>../ orders/transaction/country</code>	The country code the transaction is taking place in.
<code>../ orders/transaction/currency</code>	The currency code the transaction is taking place in.
<code>../ orders/transaction/amount</code>	The amount that the transaction will be processed for.
<code>../ orders/transaction/reference</code>	The reference for the transaction.

sid_order_query_response:

The **sid_order_query_response** string contains the request outcome. Only responses where the error code is equal to 0 (zero) can be seen as successful responses.

Field Name	Description
<code>../data/outcome/errorcode</code>	This element contains the request outcome in the XML element. Only responses where the error code is equal to 0 (zero) can be seen as successful responses.
<code>../data/outcome/errordescription</code> <code>../data/outcome/errorsolution</code>	Where the error_code field is not equal to zero, these two fields will have values which will explain to the merchant what has gone wrong.
<code>../data/merchant/code</code>	The Merchants Code
<code>../data/orders/transaction/status</code>	<p>COMPLETED</p> <p>Orders with a status of COMPLETED was successfully paid and the merchant will receive the funds in their bank account within 1 to 2 business days, depending on the bank. This is the ONLY transaction status that a merchant should use to credit a customer.</p> <p>CANCELLED</p> <p>The order was cancelled. The merchant should NOT credit the customer.</p> <p>CREATED</p> <p>Customer has selected their bank but has not logged into their internet banking account as yet to begin their transaction.</p> <p>READY</p> <p>Customer has selected their bank and has logged into their bank account to commence with their payment.</p>
<code>../data/orders/transaction/country/code</code> <code>../data/orders/transaction/country/name</code>	This will contain the country code and country name that the transaction took place in.
<code>../data/orders/transaction/currency/code</code> <code>../data/orders/transaction/currency/name</code>	This will contain the currency code, currency name and currency symbol for the transaction.

<code>../data/orders/transaction/currency/symbol</code>	
<code>../data/orders/transaction/bank/name</code>	This will be the Bank that the transaction took place from.
<code>../data/orders/transaction/amount</code>	The amount of the transaction.
<code>../data/orders/transaction/reference</code>	The reference of the transaction.
<code>../data/orders/transaction/receiptno</code>	The receipt number that was generated by the Bank.
<code>../data/orders/transaction/tnxid</code>	The Transaction ID.
<code>../data/orders/transaction/date_created</code>	This is the date and time when the SID transaction was created. The customer has selected their preferred bank but has not logged into their internet banking account as yet.
<code>../data/orders/transaction/date_ready</code>	This is the date and time when the customer has logged into their internet banking account to commence with their payment.
<code>../data/orders/transaction/date_completed</code>	<p>This is the date and time when the transaction was either "completed" for successful transactions or "cancelled" for cancelled transactions.</p> <p>For example:</p> <p>If the customer clicked on the cancel button to opt-out of the transaction, this field will contain the date and time we received the cancellation request.</p> <p>If the customer turns off the power to his PC, this field will be blank. We never received any request confirming or cancelling this transaction.</p> <p>If the customer completes the transaction, this field will contain the date and time the SID database received the request to complete the transaction.</p>

Sample request string

```
<?xml version="1.0" encoding="UTF-8"?>
<sid_order_query_request>
  <merchant>
    <code>PHONE</code>
    <uname>sid@phonewarehouse.co.za</uname>
    <pword>112233</pword>
  </merchant>
  <orders>
    <transaction>
      <country>ZA</country>
      <currency>ZAR</currency>
      <amount>106.00</amount>
      <reference>8</reference>
    </transaction>
    <transaction>
      <country>ZA</country>
      <currency>ZAR</currency>
      <amount>106.00</amount>
      <reference>7</reference>
    </transaction>
  </orders>
</sid_order_query_request>
```

Sample ERROR response string

```
<?xml version="1.0" encoding="UTF-8"?>
<sid_order_queryResponse xmlns="http://tempuri.org/">
  <sid_order_queryResult>
    <sid_order_query_response>
      <data signature="jaHL4CL8Xbmtk968NjztNGDDfAWIkzh+11c=">
        <outcome                               errorcode="SIDAPI0001"
        errordescription="Login Failed." errorsolution="Please correct details." />
        FAILED
      </data>
    </sid_order_query_response>
  </sid_order_queryResult>
</sid_order_queryResponse>
```


Sample SUCCESSFUL response string

```
<?xml version="1.0" encoding="UTF-8"?>
<sid_order_query_response>
  <data>
    <outcome errorcode="0" errordescription="" errorsolution="" />
    <merchant>
      <code>PHONE</code>
    </merchant>
    <orders>
      <transaction>
        <status>CANCELLED</status>
        <country>
          <code>ZA</code>
          <name>South Africa</name>
        </country>
        <currency>
          <code>ZAR</code>
          <name>South Africa</name>
          <symbol>R</symbol>
        </currency>
        <bank>
          <name>ABSA</name>
        </bank>
        <amount>106.00</amount>
        <reference>8</reference>
        <receiptno>0001</receiptno>
        <tnxid>e73a3d6c-46b5-42cf-j3c3-a33c95b0d864</tnxid>
        <date_created>2014/04/25 10:45:35 AM</date_created>
        <date_ready />
        <date_completed />
      </transaction>
      <transaction>
        <status>COMPLETED</status>
        <country>
          <code>ZA</code>
          <name>South Africa</name>
        </country>
        <currency>
          <code>ZAR</code>
          <name>South Africa</name>
          <symbol>R</symbol>
        </currency>
      </transaction>
    </orders>
  </data>
</sid_order_query_response>
```

```
        </currency>
        <bank>
            <name>ABSA</name>
        </bank>
        <amount>106.00</amount>
        <reference>9</reference>
        <receiptno>0002</receiptno>
        <tnxid>b5e28622-dbf9-415a-9625-0dc4239d1c04</tnxid>
        <date_created>2014/04/25 10:44:09 AM</date_created>
        <date_ready />
        <date_completed />
    </transaction>
</orders>
</data>
<signature>VeKRu60x6krPnH5d2ubqTG9QvoE0tBePPphmfq4r0=</signature>
</sid_order_query_response>
```

Notes Regarding Security

1. With regards to the Return and Notification URLs, it is crucial to also validate the SID_CONSISTENT field in the Return and Notification URL response. This field is designed to stop tampering of any of the response fields.
2. There cannot be a COMPLETED transaction without the receipt number being populated (passed back as SID_RECEIPTNO).
3. All information passed back that was initially sent through to us, such as the merchant code, country and currency should be validated to make sure nothing has changed.
4. Between the different notifications methods, validate that the status field (passed back as SID_STATUS) are all the same.

SID Payment Link

SID Payment Link offers a service which allows merchants to generate a short-link which they can then place on their invoices, or embed into emails which allow for a SID payment to take place without the need for a website. SID offers this service through the use of a Web Service.

Payment Link Web Service

To retrieve the Payment Link, the merchant would have to connect to the SID Web Service interface. The Web Service and method details are explained below.

Web Service WSDL File: <https://www.sidpayment.com/webservices/?wsdl>

Method Name: `sid_biller_link`

The method accepts one XML string as argument, named "`sid_biller_link_request`". The method returns an XML string as output.

Please refer to the XML examples below for sample request and response strings.

The XSD (XML Schema Definition) files for the request and response data can be found at the below URLs.

https://www.sidpayment.com/webservices/schemas/sid_biller_link_request.xsd

https://www.sidpayment.com/webservices/schemas/sid_biller_link_response.xsd

Web Service Fields Explained

`sid_biller_link_request`:

The `sid_biller_link_request` XML string contains the merchant information and login details. The string also needs to contain the order information of the transaction (or transactions) which the merchant is wanting to process.

Field Name	Description
<code>../merchant/code</code>	The SID_MERCHANT Code, provide by SID Support
<code>../merchant/username</code>	SID Order Query Web Service username, provided by SID Support.
<code>../merchant/password</code>	SID Order Query Web Service password, provided by SID Support.
<code>../transaction/amount</code>	The amount that the transaction will be processed for.

<code>../transaction/custom01 - custom05</code>	Contains any custom data the merchant sent through.
<code>../transaction/country/code</code>	The country code the transaction is taking place in.
<code>../transaction/currency/code</code>	The currency code the transaction is taking place in.
<code>../transaction/reference/merchant</code>	Contains the reference number for the merchant.
<code>../transaction/reference/buyer</code>	Contains the reference number for the buyer.

sid_biller_link_response:

The `sid_order_query_response` string contains the request outcome. Only responses where the error code is equal to 0 (zero) can be seen as successful responses.

Field Name	Description
<code>../data/transaction/link</code>	This is the unique link which when accessed will enable a transaction to be processed.
<code>../data/outcome/errorCode</code>	This element contains the request outcome in the XML element. Only responses where the error code is equal to 0 (zero) can be seen as successful responses.
<code>../data/outcome/errorDesc</code> <code>../data/outcome/errorSolution</code>	Where the errorCode field is not equal to zero, these two fields will have values which will explain to the merchant what has gone wrong.

Sample request string

```
<?xml version="1.0" encoding="UTF-8"?>
<sid_biller_link_request>
  <merchant code="PHONE" username="sid@phonewarehouse.co.za" password="112233"
  />
  <transaction amount="1.77" custom01="cust-1" custom02="cust-2" custom03="cust-
  3"
  custom04="cust-4" custom05="cust_5">
    <country code="ZA" />
    <currency code="ZAR" />
    <reference merchant="INV-001-001" buyer="INV-002-001" />
  </transaction>
</sid_biller_link_request>
```

Sample ERROR response string

```
<?xml version="1.0" encoding="UTF-8"?>
<sid_biller_link_response>
  <data>
    <outcome errorCode="BILLER002" errorDesc="" errorSolution="Please
    ensure that your xml string is structured correctly" />
  </data>
</sid_biller_link_response>
```

Sample SUCCESSFUL response string

```
<?xml version="1.0" encoding="UTF-8"?>
<sid_biller_link_response>
  <data>
    <outcome errorCode="0" errorDesc="" errorSolution="" />
    <transaction link="http://sidpay.to?000000" />
  </data>
</sid_biller_link_response>
```

Appendix A: Timeout & Failure Scenarios and Solutions

	Possible Failures	Solution
1	Notification timed out between SID's server and the Merchant's server	<p>Payment was successful but SID failed to notify the merchant.</p> <p>Causes that result in these timeouts are:</p> <ul style="list-style-type: none"> SID's internet connection or bandwidth dropped The merchant's internet connection or bandwidth dropped SID's website or server encounters problems The merchant's website or server encounters problems <p>Solution: Merchant should query SID using the Order Query Web Service for any timeout transactions. We recommend every 15 minutes for 4 times.</p>
2	Browser/Client timed out <u>without</u> the funds being debited from the client's bank account	<p>The client's payment was unsuccessful.</p> <p>Causes that result in these timeouts are:</p> <ul style="list-style-type: none"> Client's internet connection or bandwidth dropped Client's internet bandwidth is too slow to complete the transaction The bank's internet connection or bandwidth dropped The bank's website or server encounters problems <p>Solution: The client should retry the payment.</p>
3	Browser/Client timed out <u>with</u> the funds being debited from the client's bank account	<p>The client's payment was successfully debited from their bank account.</p> <p>Causes that result in these timeouts are:</p>

		<p>Client's internet connection or bandwidth dropped after the payment was submitted to the bank</p> <p>The bank's website or server encountered a problem generating the receipt</p> <p>SID's website or server encounters problems</p> <p>Solution: The merchant will receive extra payment in their bank account which is not listed in the SID report. The merchant should credit the client and deliver on the order.</p>
4	<p>Client manually completes a payment using a previous reference number (without using SID)</p>	<p>We've noticed that ABSA bank stores the beneficiary details and reference number used in once-off payments. If the client manually logs into their internet banking, and make a second payment to the same merchant, after first using SID. The first reference number is used in the second payment. The result is that you will receive 2 payments with the same reference number.</p> <p>Solution: We recommend the merchant search for duplicated transactions from the same client and advice the client of the corrective action.</p>

Appendix B: Additional Integration Resources

Sample code and additional integration resources are available from:

<http://sidpayment.com/getting-started/>

Appendix C: Implementation Error Code

These could be common errors whilst implementing SID.

Error Code	Cause	Solution
PAYSID0001	SID_MERCHANT is blank or invalid.	Ensure this field has a value and it is correct.
PAYSID0002	SID_COUNTRY is blank or invalid.	Ensure this field has a value and it is correct.
PAYSID0003	SID_CURRENCY is blank or invalid.	Ensure this field has a value and it is correct.
PAYSID0004	SID_AMOUNT is blank or invalid.	Ensure this field has a legitimate value.
PAYSID0005	Transaction amount too low.	Confirm seller limits with customer support.
PAYSID0006	Transaction amount too high.	Confirm seller limits with customer support.
PAYSID0007	SID_REFERENCE is invalid	The SID_REFERENCE field may not be left blank and may only be a maximum of 12 characters long.
PAYSID0008	Merchant has no terminals loaded.	Confirm that your merchant has terminals loaded with customer support.
PAYSID0009	SID_CONSISTENT does not match.	Ensure that the required fields are concatenated in the correct order. Do not HTML/URL encode any fields before concatenating the fields. Ensure you include your secret key before hashing the string. Ensure you are using the SHA512 hash function.

		If required, ensure that all characters in the hash are upper case before sending the consistent field.
PAYSID0025	Conversion to number failed on SID_AMOUNT.	Ensure that the amount does not contain any currency symbols or decimal commas. A decimal point is allowed to indicate cents.
PAYSID0030	A security violation occurred.	Ensure that the Consistent key passed in is properly generated as per error PAYSID0009.



Contact Details

Feel free to contact our Support Centre if you have any questions. We're available 365 days a year, from 7am to 9pm Mon – Fri & 9am to 9pm Sat, Sun & public holidays.

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