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BillDesk Payment Gateway

-- Technical Interface Document v1.0

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1. Background

This note briefly describes the mode/manner of technical integration between BillDesk Payment Gateway and the Merchant website in respect of powering online transactions.

2. BillDesk Payment Gateway Service

BillDesk offers electronic payment gateway services to merchant organizations through its partnerships with various banks and card companies. BillDesk would facilitate the payment gateway integration at www.merchantdomain.com to enable electronic commerce transactions.

3. Process Flow

This section briefly details the overall customer transaction flow, and the related reconciliation and reporting processes.

Transaction Process

- Customer logs-in at the Merchant Name ('Merchant') website.
- Customer then decides to pay; clicks on 'Pay'.
- Merchant website will log the order by generating a unique Order Number; and establish a connection with the BillDesk Payment Gateway Interface [refer the section on Payment Request].
- At the BillDesk Payment Gateway; the customer is displayed various 'payment options' that the customer can use for e.g. Credit Cards / Debit Cards / Online Netbanking / Cash Cards.
- Customer chooses the payment option at BillDesk Payment Gateway, and is taken to the page of that specific bank. Customer then enters the relevant authentication details [i.e. User ID/ Card Number/ Password] at the bank's website; and then is requested to confirm the payment amount.
- Customer's account is debited and the Customer is then directed back to the designated Return URL [RU] at Merchant website.
- The BillDesk Payment Gateway will provide the return response to the designated Merchant return URL received in the initial transaction request. Merchant can use this response to update its system and display to the customer that the payment process was successful.
- BillDesk payment gateway also generates a **unique Transaction ID** against each order number that is received – this could be displayed to the customer; and used for any queries relating to the transaction.

Reconciliation Process [at BillDesk]

- On the next day, BillDesk will reconcile the online transactions with the credits received based on the batch files received from the bank(s).
- After reconciling, BillDesk will generate an MIS report – that will include the Order Number; and the Transaction ID generated by BillDesk.
- This report will contain the successful transactions; and the refunds that would have been initiated by Merchant for specific transactions.
- Net amount [of BillDesk Charges] will be provided to Merchant with an MIS Report [‘**Merchant TID Report’**].

4. Technical Integration with BillDesk

Key aspects of the integration between the merchant website and BillDesk are described in the paragraphs below.

Payment Request

- Merchant website constructs a pipe separated message [refer below] containing some key inputs such as:
  - Order Number – is unique reference generated by Merchant for each transaction initiated by Merchant
  - Amount – is the transaction amount
  - Unique Customer Reference Number
  - Payment Option
  - Return Response URL
- For the constructed pipe separated message, Merchant website computes a checksum and appends it as the last value of the pipe separated string.
- Merchant website then redirects the payment request to the payment gateway at a specified URL with the parameter ‘msg’ containing the pipe separated string.

After the customer clicks on PAY [within Merchant website], a request needs to be generated by Merchant to a designated BillDesk URL for each payment:

For Net Banking and Debit card with ATM pin Billdesk URL:
https://www.billdesk.com/pgidsk/PGIMerchantRequestHandler?hidRequestId=PGIME1000&hidOperation=ME100

For Debit Card Transaction Billdesk URL:
https://www.billdesk.com/pgidsk/PGICommonGateway

[The above URL is for illustration purpose only –the actual URL to be provided after integration development is completed at BillDesk]

Parameter	Field Heading	Field Type	Sample Value
MerchantID	MerchantID	Alphanumeric	LIBORDBPL
CustomerID	(Order Number) This should be unique per transaction request	Alphanumeric	
Investor Bank Account No	Investor Bank Account No	Alphanumeric	123456
txn_amount	Transaction Amount	Numeric	700.00 (Should not start '0" and always Rs.Ps Format)
txtBankID	Bank Name	Alphanumeric	IDB
NA	NA		NA
NA	NA		NA
CurrencyType	CurrencyType		INR
ProductID	ProductID		DIRECT
TypeField1	TypeField1		R
SecurityID	SecurityID		libordbpl
NA	NA		NA
NA	NA		NA
TypeField2	TypeField2		F
additional_info1		Alphanumeric	NA
additional_info2		Alphanumeric	NA
additional_info3		Alphanumeric	NA
additional_info4		Alphanumeric	NA
additional_info5		Alphanumeric	NA
additional_info6		Alphanumeric	NA
additional_info7		Alphanumeric	NA
RU	Return URL	Alphanumeric	Please Define

Note: The pipe separate message to be constructed must be in line with the message description provided below. Only the key fields have been described in the table above. For some fields which are fixed as NA refer the 'Message description' below in the Payment Request section.

Payment Request

Message description for Net Banking Billdesk URL:

https://www.billdesk.com/pgidsk/PGIMerchantRequestHandler?hidRequestId=PGIME1000&hidOperation=ME100

MerchantID|CustomerID|NA|TxnAmount|txtBankID|NA|NA|CurrencyType|
ProductID|TypeField1|SecurityID|NA|NA|TypeField2|txtadditional1|txtadditional2|txtadditional3| txtadditional4| txtadditional5| txtadditional6| txtadditional7|RU

Sample message for checksum value generation

"msg"value="LIBORDBPL|CustomerID|NA|txn_amount|txtBankID|NA|NA|INR|DIRECT|R|libordbpl|NA|NA|F|additional_info1|additional_info2|additional_info3|additional_info4|additional_info5|additional_info6|additional_info7|RU|Checksum

Assume the checksum value generated was
4F73A52965588032F045C49D46EEAD45BEA6DDDC35621B95D4847D928BC054CF

Sample Txn Initiation Message to be sent to BillDesk URL as parameter 'msg'

LIBORDBPL|ARP10234|NA|94.00|NA|NA|NA|INR|HDF|R|libordbpl|NA|NA|F|NA|NA|NA|NA|NA|NA|NA|http://www.domain.com/response.jsp|4F73A52965588032F045C49D46EEAD45BEA6DDDC35621B95D4847D928BC054CF

Message description for Debit Card
For Debit Card Transaction Billdesk URL:
https://www.billdesk.com/pgidsk/PGICommonGateway

MerchantID|CustomerID|NA|TxnAmount|NA|NA|NA|CurrencyType|DIRECT|TypeField1|SecurityID|NA|NA|TypeField2|txtadditional1|txtadditional2|txtadditional3|txtadditional4|txtadditional5|txtadditional6|txtadditional7|RU

Sample message for checksum value generation

"msg"value="LIBORDBPL|CustomerID|NA|txn_amount|NA|NA|NA|INR|DIRECT|R|libordbpl|NA|NA|F|additional_info1|additional_info2|additional_info3|additional_info4|additional_info5|additional_info6|additional_info7 |RU|Checksum

Assume the checksum value generated was
4F73A52965588032F045C49D46EEAD45BEA6DDDC35621B95D4847D928BC054CF

Sample Txn Initiation Message to be sent to BillDesk URL as parameter 'msg'

LIBORDBPL|ARP10234|NA|94.00|NA|NA|NA|INR|DIRECT|R|libordbpl|NA|NA|F|NA|NA|NA|NA|NA|NA|NA|http://www.domain.com/response.jsp|4F73A52965588032F045C49D46EEAD45BEA6DDDC35621B95D4847D928BC054CF

Payment Response

The payment response is sent to the Return URL [RU] specified dynamically by Merchant for each transaction.

This response is a **browser** response and the message will be posted to the Merchant's Return URL as a parameter - **msg**

Response Message description:

MerchantID|CustomerID|TxnReferenceNo|BankReferenceNo|TxnAmount|BankID|BankMerchantID|TxnType|CurrencyName|ItemCode|SecurityType|SecurityID|SecurityPassword|TxnDate|AuthStatus|SettlementType|AdditionalInfo1|AdditionalInfo2|AdditionalInfo3|AdditionalInfo4|AdditionalInfo5|AdditionalInfo6|AdditionalInfo7|ErrorStatus|ErrorDescription|CheckSum

Sample Response Message

MERCHANTID|ARP10234|MSBI0412001668|NA|00000094.00|SBI|22270726|NA|INR|NA|NA|NA|NA|12-12-2004 16:08:56|0300|NA|NA|NA|NA|NA|NA|NA|NA|NA|NA|
29827456897ABCMDFOP9WE5680PLJ

- Please note – MERCHANTID and the CHECKSUM KEY would be provided at the time of integration. Refer ANNEXURE I for a detailed description of the Checksum Key and related process.

Server to Server Direct Response

Browser based transaction status response porting to Merchant has a dependency on the user's internet connectivity for if there is an internet connectivity drop at the user's end or if the user browser shuts before the status has been posted to Merchant through the browser, it will cause the transaction status to not reach Merchant for updating their systems in real time.

In an effort to ensure that once the user is redirected from the bank to the BillDesk Payment Gateway the transaction status is not dependent on the user's browser, the 'Server to Server' direct response mode would be setup between BillDesk and Merchant.

Thus, in addition to the browser response, BillDesk will also send a 'Server to Server' response to Merchant in the same format ('msg' as a parameter) as is being sent in the browser response mode.

Payment Updation process at Merchant end

The following process should be followed at Merchant end for receiving and processing the payment response:

(a) Receive and Read the Payment Response message – msg at the Return URL
(b) Generate the 'checksum value' for the Payment Response and validate it with the 'checksum value' received in the Payment Response. If they match; proceed to step (c) below; else display a Payment Rejection message to the customer.
(c) Update the original record in the merchant system based on the 'AuthStatus' field received in the Payment Response. Refer the table below for various values that are received in the AuthStatus field, and the related Transaction Status. The updation to the original record must be done as follows:

Successful transaction [AuthStatus – 0300]
Update <record> set STATUS = 'SUCCESS' where ORIGINALSTATUS='PENDING' and ORDERNUMBER='1073234' and TRANSACTIONAMOUNT='100.00'

Failure transaction [AuthStatus – other than 0300]
Update <record> set STATUS = 'FAILURE' where ORIGINALSTATUS='PENDING' and ORDERNUMBER=' 1073234' and TRANSACTIONAMOUNT='100.00'

(d) The above updation process ensures the following:
- ☐ Only the original record is updated [through the Unique Order Number]
- ☐ The record is updated only once [for original status=PENDING]
- ☐ The record is updated for the same 'Transaction Amount' that was initiated by the merchant.

Authorization status

AuthStatus	Status Reason	Proposed Transaction Status
"0300"	Success	Successful Transaction
"0399"	Invalid Authentication at Bank	Cancel Transaction
"NA"	Invalid Input in the Request Message	Cancel Transaction
"0002"	BillDesk is waiting for Response from Bank	Cancel Transaction
"0001"	Error at BillDesk	Cancel Transaction

For all AuthStatus that is not a Success, an ErrorDescription would be provided in the Payment Response.

5. Merchant TID Report

The merchant will be able to login to the Merchant Interface and download a daily Merchant TID Report. This report provides a summary of:

- ☐ Settled Transactions
- ☐ Refund Transactions
- ☐ Chargeback Transactions

In addition to providing details as mentioned above, the Merchant TID Report gives an overall summary with respect to the 'Net Credit' amount.

6. Refund Processing

The merchant administrator can initiate a refund for a transaction through the BillDesk Merchant Interface. The Transaction Refund requests can be initiated through the upload of a Refund File into the BillDesk Merchant Interface.

Refund process workflow

The following process should be followed at the merchant end for processing refunds:

(a) Create a file in the standard format [refer format below] and upload into the 'Upload Refund/Cancellation File' option in the BillDesk Merchant Interface
(b) BillDesk Payment Gateway processes the uploaded refund file on a batch basis; and provides a Validation Report that can be downloaded by the merchant through the 'Download Validation Report' option.

(c) Refunds that are successfully received are then processed with each of the banks as per the workflow defined with the banks.

Refund – a transaction that is already settled for the merchant. Part of the transaction amount can also be refunded by the merchant.

Cancellation – a transaction that is not settled for the merchant. Only the entire transaction amount can be cancelled by the merchant.

(d) Refunds made by the merchant can be viewed through the 'Refund Report' option.
(e) Refunds successfully processed will be displayed as a deduction in the next 'Merchant TID Report' that is generated for the merchant.

Format of the refund file will be as follows:

txn_id,txn_date,customer_id,txn_amount(Paise format),refund_amount(Paise format)

Field Name	Notes
txn_id	BillDesk Transaction ID received in the Payment Response
txn_date	Transaction Date in YYYYMMDD format
customer_id	Will be the value set in 'txtCustomerID' in the Payment Request
txn_amount	Transaction Amount; in paise format [for e.g. 100.00 will be 10000]
refund_amount	Amount to be refunded; in paise format

For example:

MUTI0803612345,20080731,6012345,100000,100000

Sample Refund File Naming Convention: MerchantID_Refund_yyyymmddhhmmss.txt

Notes:
- File is to be uploaded as a .txt file
- Values should be separated with 'comma' delimiter
- The refund file must **not** contain any column headers
- All fields are mandatory in the refund file
- Refund File Name can take maximum of 50 characters without spaces

7. Key Points for a Successful Integration

Payment Request

No	Area	Description
1.	Secure BillDesk URL	Always use "https" for the BillDesk URL where the request will be posted.
2.	POST method	* Always Use "POST" method * Variables must be sent as HIDDEN values
3.	Referral URL	Always call the BillDesk production URL from the Referral URL only; which needs be shared at the time of integration.

4.	Length of parameters	Each parameter field should not be more than 120 characters. A 'NULL' value will not be accepted for any parameter.
5.	Disallowed characters	The following characters are disallowed in the parameters that are sent to BillDesk: < > % ; ' " ^ ` & ? = \ If any special characters are required for a parameter, they have to be specifically requested for to be enabled.
6.	Transaction Amount	In the test phase of your integration, only Rs. 2 can be used as a transaction amount.

Payment Response

No	Area	Description
1.	Checksum Validation	Always validate the checksum before updating the transaction response
2.	Verify whether the updation is as per the process specified in the interface document	☐ Only the original record is updated [through the Unique Order Number] ☐ The record is updated only once [for original status=PENDING] ☐ The record is updated for the same 'Transaction Amount' that was initiated by the merchant.

8. Next Steps

In order to get the service live, the following next steps are required:

- Merchant to confirm the integration process and discuss any clarifications required.
- Merchant to confirm their tech platform; parameters for the integration along with validation information.
- Merchant to confirm the Referral URL to be used for the test phase.
- Merchant to provide Nodal Bank Letter for payout related setup.
- BillDesk to initiate the technical integration development at its end.
- BillDesk to share the URL for testing/UAT post completion of the development.
- Merchant to provide a UAT signoff.
- Merchant to confirm their Referral URL to be setup for production phase.
- Merchant to provide Operations Contact Matrix for the process.
- BillDesk to complete the go-live related setup.
- BillDesk to confirm go-live readiness to merchant.
- Go live.

9. Contact Persons

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ANNEXURE I – Checksum calculation

The checksum is an important part while receiving messages from BillDesk. When the merchant receives the response from BillDesk, a new checksum is generated at the merchant site to verify the received one. Any differences in the checksum imply that the messages have been modified or received erroneously.

BillDesk will provide a checksum component to the merchant to generate the checksum. The Checksum component will require a message string and common string, i.e. password (BillDesk and the merchant would share a common password to generate the checksum) to generate checksum.

msg – Checksum will be required for this message and has to be validated by the merchant.

Payment Response string

MerchantID|CustomerID|TxnReferenceNo|BankReferenceNo|TxnAmount|BankID|BankMerchantID|TxnType|CurrencyName|ItemCode|SecurityType|SecurityID|SecurityPassword|TxnDate|AuthStatus|SettlementType|AdditionalInfo1|AdditionalInfo2|AdditionalInfo3|AdditionalInfo4|AdditionalInfo5|AdditionalInfo6|AdditionalInfo7|ErrorStatus|ErrorDescription|CheckSum

Checksum will be calculated for the string -

MerchantID|CustomerID|TxnReferenceNo|BankReferenceNo|TxnAmount|BankID|BankMerchantID|TxnType|CurrencyName|ItemCode|SecurityType|SecurityID|SecurityPassword|TxnDate|AuthStatus|SettlementType|AdditionalInfo1|AdditionalInfo2|AdditionalInfo3|AdditionalInfo4|AdditionalInfo5|AdditionalInfo6|AdditionalInfo7|ErrorStatus|ErrorDescription

For example, suppose the Response message for a particular transaction is as follows:

MERCHANTID|1073234|MSBI0412001234|NA|00002400.30|SBI|22230123|NA|INR|NA|NA|NA|NA|12-12-200416:08:56|0300|abcd123|NA|NA|NA|NA|NA|NA|NA|NA|3734835005

Following checksum string will be passed to checksum component with checksum key

MERCHANTID|1073234|MSBI0412001234|NA|00002400.30|SBI|22230123|NA|INR|NA|NA|NA|NA|12-12-200416:08:56|0300|abcd123|NA|NA|NA|NA|NA|NA|NA|NA|checksumkey

Calculated checksum value at the merchant end should be 3734835005 as in response message. This should be matched and then the transaction should be taken for further processing at the merchant's end.