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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 **Cluster University, Srinagar** [herein after referred to as 'Merchant'] for enabling 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 for Merchant.

3. Process Flow

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

Transaction Process

- User logs-in at the Merchant website for Online payment
- User 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; User is displayed various 'payment options' that he can use, for e.g. Online Net Banking.
- User chooses the payment option at BillDesk Payment Gateway, and is taken to the page of that specific bank. User then enters the relevant authentication details [i.e. User ID/ Card Number/ Password] at the bank's website
- User's account is debited and the User is then directed back to the designated Return URL [RU] at Merchant website
- BillDesk Payment Gateway will provide the return response to the designated Merchant website return URL received in the initial transaction request. Merchant can use this response to update its system and display to the User 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 User; 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
  - 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 User clicks on PAY [within Merchant website], a request needs to be generated by Merchant to a designated BillDesk URL for each payment:

REQUEST		
Parameter	**Sample Value**	**Description**
MerchantID	ABCD	Will be provided by Billdesk
CustomerID	123456789	Merchant's Unique Order / Txn Reference Number
Filler1	NA	Fixed Value 'NA'
TxnAmount	94.00	Transaction Amount (Rs.Ps format)
BankID	NA	Fixed Value 'NA'
Filler2	NA	Fixed Value 'NA'
Filler3	NA	Fixed Value 'NA'
CurrencyType	INR	Fixed Value INR (max length 3)
ItemCode	NA	Fixed Value 'NA'

TypeField1	R	Fixed Value (max length 1)
SecurityID	abcd	As provided by BillDesk during integration
Filler4	NA	Fixed Value NA
Filler5	NA	Fixed Value NA
TypeField2	F	Fixed Value (max length 1)
AdditionalInfo1	9999955555	Customer's Mobile Number
AdditionalInfo2	test@test.com	Customer's Email ID
AdditionalInfo3	NA	Additional Information, if required
AdditionalInfo4	NA	Additional Information, if required
AdditionalInfo5	NA	Additional Information, if required
AdditionalInfo6	NA	Additional Information, if required
AdditionalInfo7	NA	Additional Information, if required
RU	http://www.domain.com/response.jsp	Return URL where the payment gateway response is to be received by merchant. Note: 1. No parameters should be appended to the RU value. 2. Should not contain the following words (cAsE InSensiTivE): ▪ script ▪ javascript
Checksum	AB6VN3245B66FE9511DB2A854AAA32ADC563E789CF213CA19E274F18F330G547	Computed checksum hash by merchant

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

MerchantID|CustomerID|NA|TxnAmount|NA|NA|NA|CurrencyType|NA|TypeField1|SecurityID|NA|NA|TypeField2|AdditionalInfo1|AdditionalInfo2|AdditionalInfo3|AdditionalInfo4|AdditionalInfo5|AdditionalInfo6|AdditionalInfo7|RU|Checksum

Sample message for checksum value generation

ABCD|123456789|NA|94.00|NA|NA|NA|INR|NA|R|abcd|NA|NA|F|9999955555|test@test.com|NA|NA|NA|NA|NA|http://www.domain.com/response.jsp

Assume the checksum value generated was
AB6VN3245B66FE9511DB2A854AAA32ADC563E789CF213CA19E274F18F330G547

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

ABCD|123456789|NA|94.00|NA|NA|NA|INR|NA|R|abcd|NA|NA|F|9999955555|test@test.com|NA|NA|NA|NA|NA|http://www.domain.com/response.jsp|AB6VN3245B66FE9511DB2A854AAA32ADC563E789CF213CA19E274F18F330G547

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

ABCD|123456789|MSBI0412001668|NA|00000094.00|SBI|22270726|NA|INR|NA|NA|NA|NA|29-05-2013 16:08:56|0300|NA|9999955555|test@test.com|NA|NA|NA|NA|NA|NA|NA|AJ38RH3845B66FE9511DB2A854AAA32ADC563E789CF213CA19EHWR34049F34J

- Please note – MERCHANTID and the CHECKSUM KEY would be provided at the time of integration.

5. Server to Server Direct Response

The payment response is sent to a designated URL specified upfront by Merchant at the time of the integration.

The way this works is, in addition to the browser based response BillDesk will also send a 'Server to Server' response to Merchant in the same format (i.e. as of the 'msg' parameter) as is being currently sent in the browser response mode.

However it is important to note:

(1) The Server to Server response handling must be agnostic of the HTTP GET/POST method at Merchant's end.

(2) There should be no prefixed parameter appended to this URL that Merchant will provide BillDesk for setting up for the server to server direct response

The message will be sent to the Merchant designated 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

ABCD|123456789|MSBI0412001668|NA|00000094.00|SBI|22270726|NA|INR|NA|NA|NA|NA|29-05-2013
16:08:56|0300|NA|9999955555|test@test.com|NA|NA|NA|NA|NA|NA|NA|AJ38RH3845B66FE9511DB2A854AAA32ADC563E789CF213CA19EHWR34049F34J

- Please note – **CHECKSUM KEY** will exactly same as the web integration.

To be able to setup the Server to Server direct response mechanism BillDesk would require the following information from Merchant:

1. Merchant's Server to Server Direct Response URL
2. Underlying static Public IP address [based on the direct response URL] for setting up of network/ firewall rule at BillDesk's end.

If need be, Merchant may allow the following BillDesk IP address at its end so that the Server to Server direct response sent by BillDesk could be accepted.

BillDesk IP Address: 210.210.24.74

It is highly recommended that the server to server responses sent by BillDesk are logged for about a week and are checked against the transaction status updated in the Merchant system.

Payment Updation process at Merchant's end

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

(a) Receive and Read the Payment Response message

(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 log it as a FAILURE.

(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
Update <record> set STATUS = 'SUCCESS' where ORIGINALSTATUS='PENDING' and ORDERNUMBER=' 123456789' and TRANSACTIONAMOUNT='94.00'

Failure transaction
Update <record> set STATUS = 'FAILURE' where ORIGINALSTATUS='PENDING' and ORDERNUMBER=' 123456789' and TRANSACTIONAMOUNT='94.00'

(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	**Description**
0300	Success
0399	Failure
NA	Error Condition [e.g. Txn not found/ Invalid checksum/ Invalid Request IP etc]
0002	Pending/Abandoned
0001	Error at BillDesk

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

6. Auto Cancellation

This is for transactions where BillDesk did not receive an online transaction status from the bank [referred to as a broken transaction] essentially means Merchant would not have received an online transaction 'success' status response.

As a process, the banks provide BillDesk with reconciliation handoff data the next day. In case a broken transaction has been provided as a SUCCESS in the bank recon file such cases when reconciled at BillDesk will be processed for auto-cancellation at the BillDesk Payment Gateway i.e. such broken transactions are not to be settled with Merchant but instead refund it back to the customer.

7. Merchant TID Report

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.

8. 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's 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

9. 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.	Special characters	Not allowed
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.

10. Next Steps

In order to get the service live, the following 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

11. Contact Persons

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