Strictly Confidential

BillDesk Payment Gateway

-- API Specifications

BillDesk Checkout v1.1

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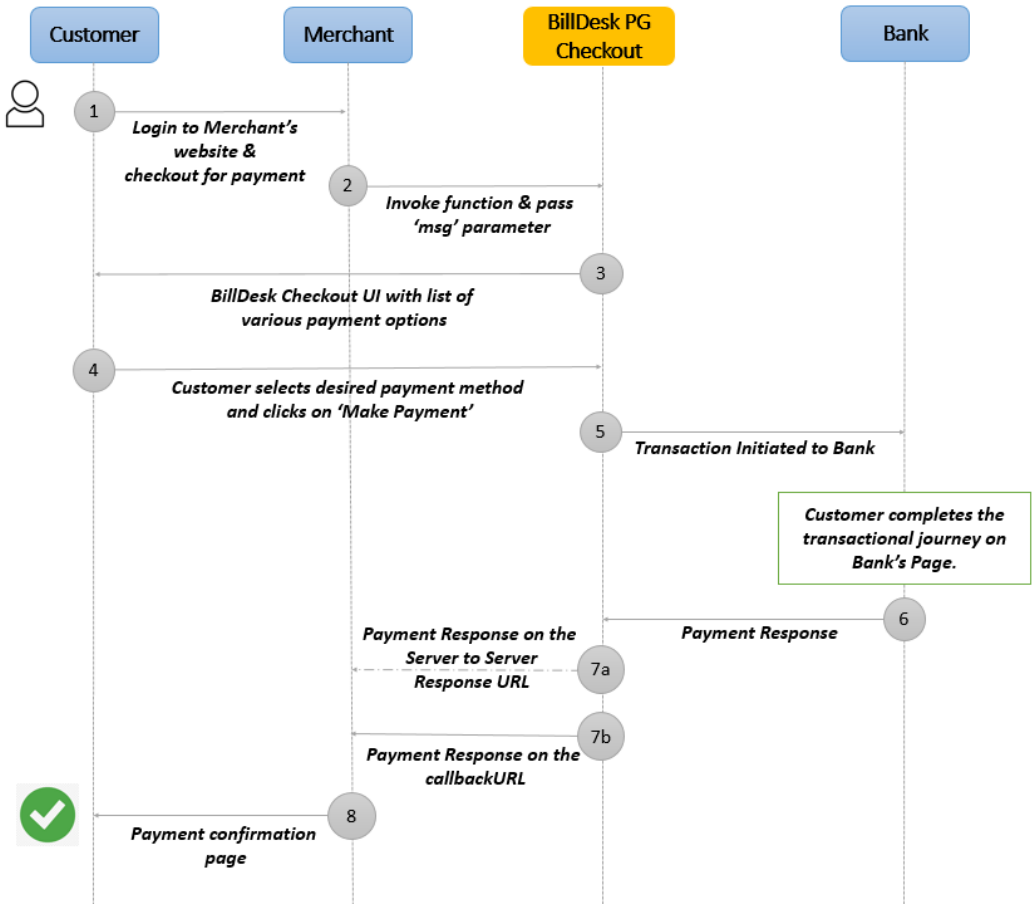
1. Background

- BillDesk is a leading provider of electronic payment collections services to merchants in India and has implemented a robust technology platform that is integrated with networks, card issuers, banks, wallet providers and other payment partners.
- The BillDesk platform is implemented as a secure PCI DSS 3.2 and ISO 27001 compliant infrastructure and is hosted in India data centers.
- This note briefly describes the mode/manner of technical integration between the merchant and BillDesk Payment Gateway for enabling online transactions.

2. Process Flow

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

Transaction Process



End of Day Process [T+1]

- BillDesk will generate a net settlement report – that will include the Order Number; and the Transaction ID generated by BillDesk, in addition to other details such as transaction date, transaction amount, "Additional Info" fields (if any sent by merchant in the online transaction request), charges etc.

- This report will contain the successful transactions; and any refund/ chargeback adjustments.

3. Technical Integration with BillDesk

Key aspects of the integration between the Merchant website and BillDesk is as described below.

a. Payment Request

A. SETUP

Merchant should include the below code in their checkout page as part of the BillDesk payment gateway integration.

<script src="https://pgi.billdesk.com/payments-checkout-widget/src/app.bundle.js"></script>

B. PREPARE

When customer clicks on the 'Pay Now' button on the merchant's checkout page, Merchant should prepare the 'msg', 'callbackUrl' & other parameters as per the BillDesk specifications (details below).

For security reasons, the value of the "msg" parameter should be created on the merchant's server as it involves computing a unique checksum hash that requires a secret checksum key.

C. INITIATE

Once the request parameters have been prepared (as per the previous step), Merchant invokes the `bdPayment.initialize` function and passes to it the required parameters – at the minimum, required ones being 'msg' and 'callbackUrl'. The other parameters are optional.

Parameter details:

Parameter	Required/ Optional	Sample Value	Description
msg	**Required**	Refer below section	Refer below section
enableChildWindowPosting	Optional	true	If you intend passing this parameter it is recommended to set it to 'true', should you choose to set it to 'false' the bank site will open in the parent window itself instead of a child window.
enablePaymentRetry	Optional	true	Set this to 'true' if you would like the User to get a chance to try again, if the initial payment transaction failed.
retry_attempt_count	Conditional	2	If enablePaymentRetry is set to true then use this parameter as well. Set the count here to the number of times you would like the user to retry.
txtPayCategory	Optional	NETBANKING	In case you have a specific requirement wherein you would like the user be shown only a certain set of payment categories, send the appropriate value for this field. Refer Annexure for details.
callbackUrl	**Required**	https://www.merchant-domain.com/payment_response.jsp	Merchant's Return URL where the customer will be redirected back on the browser, with the payment response.

Sample Code:

```
bdPayment.initialize ({
"msg":"
ABCD|123456|NA|100.00|XYZ|NA|NA|INR|DIRECT|R|abcd|NA|NA|F|john@doe1.com|9820
198201|NA|NA|NA|NA|NA|NA|AB6VN3245B66FE9511DB2A854AAA32ADC563E789CF213CA1
9E274F18F330G547",
        "options": {
            "enableChildWindowPosting": true,
            "enablePaymentRetry": true,
            "retry_attempt_count": 2,
            "txtPayCategory": "NETBANKING"
          },
          "callbackUrl": "https://www.merchant-domain.com/payment_response.jsp"
        });
```

Details of the 'msg' parameter:

Parameter	Sample Value	Description
MerchantID	ABCD	Will be provided by BillDesk as part of the integration process
CustomerID	123456789	Merchant's Unique Txn ID
Filler1	NA	Fixed Value 'NA'
TxnAmount	100.00	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	john@doe1.com	Customer's Email ID
AdditionalInfo2	9820198201	Customer's Mobile Number
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
TypeField3	NA	Fixed Value 'NA'
Checksum	AB6VN3245B66FE9511DB2A854AAA32ADC563E789CF213CA19E274F18F330G547	Checksum hash computed by the merchant

How to compute checksum

1. **ARRANGE** the values in a pipe delimited format in the exact sequence below:

MerchantID|CustomerID|NA|TxnAmount|NA|NA|NA|CurrencyType|NA|TypeField1|SecurityID|NA|NA|TypeField2|AdditionalInfo1|AdditionalInfo2|AdditionalInfo3|AdditionalInfo4|AdditionalInfo5|AdditionalInfo6|AdditionalInfo7|TypeField3

2. **COMPUTE** the checksum by passing the string and the key to the checksum function

Sample string for computing the checksum

ABCD|123456789|NA|100.00|NA|NA|NA|INR|NA|R|abcd|NA|NA|F|john@doe1.com|9820198201|NA|NA|NA|NA|NA|NA

Assume the checksum value generated was:

AB6VN3245B66FE9511DB2A854AAA32ADC563E789CF213CA19E274F18F330G547

You final 'msg' parameter value would look like this:

ABCD|123456789|NA|100.00|NA|NA|NA|INR|NA|R|abcd|NA|NA|F|john@doe1.com|9820198201|NA|NA|NA|NA|NA|NA|AB6VN3245B66FE9511DB2A854AAA32ADC563E789CF213CA19E274F18F330G547

b. Payment Response

A. Browser Response

The payment response is provided to the Merchant's callbackUrl specified by Merchant when the transaction was initiated.

This response is a **browser** response and is provided as a parameter **"msg"**

Tokens	Sample Value	Description
MerchantID	ABCD	As per setup
CustomerID	123456789	Merchant's Unique Order / Txn Reference Number
TxnReferenceNo	MXYZ0412001668	BillDesk PG Txn Ref Number
BankReferenceNo	8576304	Reference number provided by bank
TxnAmount	100.00	Transaction Amount
BankID	XYZ	Internal Value for processor; merchant can ignore
Filler1	A1232124	Internal Value for processor; merchant can ignore
TxnType	NA	Internal Value for processor; merchant can ignore
CurrencyType	INR	Internal Value for processor; merchant can ignore
ItemCode	DIRECT	Internal Value for processor; merchant can ignore
Filler2	NA	Internal Value for processor; merchant can ignore
Filler3	NA	Internal Value for processor; merchant can ignore
Filler4	NA	Internal Value for processor; merchant can ignore
TxnDate	22-12-2019 11:07:56	Transaction date time as per BillDesk platform. Merchant must store this transaction date/time, as it is required for supplementary processes such as Refund API.
AuthStatus	0300	Refer table below for possible AuthStatus values
Filler5	NA	Internal Value for processor; merchant can ignore

AdditionalInfo1	john@doe1.com	Value that was passed in the payment request is returned.
AdditionalInfo2	9820198201	Value that was passed in the payment request is returned.
AdditionalInfo3	NA	Value that was passed in the payment request is returned.
AdditionalInfo4	NA	Value that was passed in the payment request is returned.
AdditionalInfo5	NA	Value that was passed in the payment request is returned.
AdditionalInfo6	NA	Value that was passed in the payment request is returned.
AdditionalInfo7	NA	Value that was passed in the payment request is returned.
ErrorStatus	NA	Error Status provided here
ErrorDescription	NA	Error/ transaction failure description provided here – this failure reason can be displayed to customer.
Checksum	HG4VN3245B66FE9511DB2A854DFG32ADC563E789CF213MH19E274F18F330G934	Computed checksum by BillDesk *Merchant must always validate this checksum before updating the payment status in its platform.*

Response "msg" parameter:

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|MXYZ0412001668|8576304|00000100.00|XYZ|NA|NA|INR|NA|NA|NA|NA|22-12-2019 11:07:56|0300|NA|john@doe1.com|9820198201|NA|NA|NA|NA|NA|NA|NA|HG4VN3245B66FE9511DB2A854DFG32ADC563E789CF213MH19E274F18F330G934

B. Server to Server 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 "msg" parameter:

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|MXYZ0412001668|8576304|00000100.00|XYZ|NA|NA|INR|NA|NA|NA|NA|22-12-2019 11:07:56|0300|NA|john@doe1.com|9820198201|NA|NA|NA|NA|NA|NA|NA|HG4VN3245B66FE9511DB2A854DFG32ADC563E789CF213MH19E274F18F330G934

- 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 "msg"

(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 status of 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='100.00'

Failure transaction
Update <record> set STATUS = 'FAILURE' where ORIGINALSTATUS='PENDING' and ORDERNUMBER='123456789' 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	Description
0300	Success
0399	Failure

NA	Error Condition [E.g. Txn not found/ Invalid checksum etc.]
0002	Pending/Abandoned
0001	Technical Error

4. 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.

5. Online Query API

Merchant can use the Online Query API to check the transaction status available on the BillDesk Payment Gateway platform. The Query is based on the Merchant Transaction ID that is unique in the BillDesk platform.

REQUEST

Initiate a request with the parameter "msg" that contains the following fields in a pipe delimited format:

https://www.billdesk.com/pgidsk/PGIQueryController

Parameter	Sample Value	Description
RequestType	0122	Fixed value
Merchant ID	ABCD	As per Merchant ID provided for your integration
Customer ID	123456789	The Merchant Transaction ID that that was sent in 'CustomerID' in the Transaction Initiation Request

Current Date/ Time stamp	20191225171512	Current Date/Time stamp at the time of initiating the query request [yyyymmdd24hhmmss]
Checksum	GH9HJ3215B99FE9324DB2X153AQA32FDC883E739CF235RA19X204F19F110D456	Checksum computed by Merchant

For example – the 'msg' parameter would contain the following value:

0122|ABCD|123456789|20191225171512|GH9HJ3215B99FE9324DB2X153AQA32FDC883E739CF235RA19X204F19F110D456

RESPONSE

Following are values that provided as a pipe delimited output:

Tokens	Sample Value	Description
RequestType	0130	Fixed value
MerchantID	ABCD	As per Merchant ID provided for your integration
CustomerID	123456789	Merchant's Unique Order / Txn Reference Number
TxnReferenceNo	MXYZ0412001668	BillDesk PG Transaction Reference Number
BankReferenceNo	8576304	Reference number provided by bank
TxnAmount	100.00	Transaction Amount
BankID	XYZ	Internal Value for processor; merchant can ignore
Filler1	A1232124	Internal Value for processor; merchant can ignore
TxnType	NA	Internal Value for processor; merchant can ignore
CurrencyType	INR	Internal Value for processor; merchant can ignore
ItemCode	DIRECT	Internal Value for processor; merchant can ignore
Filler2	NA	Internal Value for processor; merchant can ignore
Filler3	NA	Internal Value for processor; merchant can ignore
Filler4	NA	Internal Value for processor; merchant can ignore

TxnDate	22-12-2019 11:07:56	Transaction date time as per BillDesk platform, which must be saved by the merchant as part of the transaction details.
AuthStatus	0300	Refer table below for possible AuthStatus values
Filler5	NA	Internal Value for processor; merchant can ignore
AdditionalInfo1	john@doe1.com	Value that was passed in the payment request is passed back here.
AdditionalInfo2	9820198201	Value that was passed in the payment request is passed back here.
AdditionalInfo3	NA	Value that was passed in the payment request is passed back here.
AdditionalInfo4	NA	Value that was passed in the payment request is passed back here.
AdditionalInfo5	NA	Value that was passed in the payment request is passed back here.
AdditionalInfo6	NA	Value that was passed in the payment request is passed back here.
AdditionalInfo7	NA	Value that was passed in the payment request is passed back here.
ErrorStatus	NA	Error Status provided here
ErrorDescription	NA	Error/ transaction failure description provided here
Filler6	NA	Fixed value NA
Refund Status	0799	0699 – Cancellation 0799 – Refund NA – Refund Not Available for this request
TotalRefundAmount	50.00	Total Refund Amount for this transaction
LastRefundDate	20191223	Last Refund Date in YYYYMMDD format
LastRefundRefNo	MXYZ04120016681	BillDesk Payment Gateway Refund ID
QueryStatus	Y	Y – Request Successfully Processed N- Invalid Request / Parameters
Checksum	AB6VN3245B66FE9 511DB2A854AAA32 ADC563E789CF213 CA19E274F18F330 G547	Computed checksum by BillDesk. *Merchant must always validate this checksum before updating the payment status in its platform.*

For example:

0130|ABCD|123456789|MXYZ0412001668|NA|100.00|XYZ|NA|NA|INR|NA|NA|NA|DIRECT|22-12-2019 11:07:56|0300|NA|

john@doe1.com|9820198201|NA|NA|NA|NA|NA|NA|NA|NA|0699|50.00|20191223|MXYZ0
4120016681|Y|AB6VN3245B66FE9511DB2A854AAA32ADC563E789CF213CA19E274F18F330G
547

Merchant must verify the checksum before consuming the response.

Notes:

1. Refer combination of "Auth Status" and "Refund Status" [from the Query API response message] to determine whether the transaction is
   - Successful
   - It has been cancelled / refunded [i.e. processed for a refund back to the customer].
   - Failure

2. Merchant must ensure their public IP address is white listed at BillDesk in order to be able to initiate the Query API call.

The following Status Map to be referred for understanding the status of a transaction:

Sr. No	Auth Status	Refund Status	Description
1	0300	0699	Payment status (0300) is success but it has been processed for cancellation (0699) i.e. refunded back to customer
2	0300	0799	Payment status (0300) is success and a refund [either partial/full] was processed for this transaction
3	0300	NA	Payment status (0300) is success and is currently not refunded or cancelled.
4	0002	NA	This transaction is not yet completed or was abandoned by the user.
5	0399	NA	This is a failure transaction.
6	0001	NA	Failed transaction. Do not retry Query API
7	NA	NA	Merchant team should log such errors and review the same to find out if any parameters etc were incorrectly

			sent in the Request. If required, reach out to BillDesk team for any assistance for such cases.

6. Refund API

Refunds can be processed either in multiple parts or in full until the entire amount of the transaction is refunded.

REQUEST

Initiate a request with the parameter "msg" that contains the following fields in a pipe delimited format:

https://www.billdesk.com/pgidsk/PGIRefundController

Parameter	Sample Value	Description
RequestType	0400	Fixed value
MerchantID	ABCD	Fixed Value (as provided by BillDesk)
TxnReferenceNo	MXYZ0412001668	BillDesk Payment Gateway Transaction Reference Number
TxnDate	20191222	Transaction Date in YYYYMMDD format. This value must be as per the transaction date recorded in the BillDesk Payment Gateway
CustomerID	123456789	Merchant's Unique Txn Reference Number/ Order Number of the original transaction
TxnCurrency	INR	Currency Type
TxnAmount	100.00	Original TxnAmount (Rs.Ps format)
RefAmount	50.00	Refund Amount (Rs.Ps format) -In case of cancellation RefAmount should be equal to TxnAmount
RefDateTime	20191223017425	System Date Time (yyyymmdd24hhmmss)
MerchantRefNo	12121212	Merchant's Unique Refund Reference Number (Can be alphanumeric; max 20 characters; with no special characters)
Filler1	NA	Fixed value; for future use
Filler2	NA	Fixed value; for future use
Filler3	NA	Fixed value; for future use

Checksum	FY8HJ3215B66FE951 1DB2A254AWA32AD C523E789CF215CA19 X274F18F220F887	Checksum value

For example – the 'msg' parameter would contain the following value:

0400|ABCD|MXYZ0412001668|20191222|123456789|INR|100.00|50.00|20191223017425|12121212|NA|NA|NA|FY8HJ3215B66FE9511DB2A254AWA32ADC523E789CF215CA19X274F18F220F887

RESPONSE

Following is the synchronous response received:

Parameter	Sample Value	Description
RequestType	0410	Fixed value
MerchantID	ABCD	Fixed Value
TxnReferenceNo	MXYZ0412001668	BillDesk Payment Gateway Transaction Reference Number
TxnDate	20191222	Transaction Date in YYYYMMDD format
CustomerID	123456789	Merchant's Unique Txn Reference Number/ Order Number of the original transaction
TxnAmount	100.00	Original TxnAmount
RefAmount	50.00	Refund Amount - In case of cancellation RefAmount should be equal to TxnAmount
RefDateTime	20191223017425	System Date Time
RefStatus	0799	0699 – Cancellation 0799 – Refund
RefundId	MXYZ04120016681	BillDesk Payment Gateway Refund ID
ErrorCode	NA	Error code in case of error
ErrorReason	NA	Error reason in case of error
ProcessStatus	Y	Y – Process success N – Error in process
Checksum	TH5HJ3215B55FE9511 DB2A254AWD12ADC52 3E834CF215CA19X274 F18F220X996	Checksum value computed by BillDesk

For example:

0410|ABCD|MXYZ0412001668|20191222|123456789|100.00|50.00|20191223017425|0799|MXYZ04120016681|NA|NA|Y|TH5HJ3215B55FE9511DB2A254AWD12ADC523E834CF215CA19X274F18F220X996

Merchant must verify the checksum before consuming the response.

Notes:

1. A refund request can be rejected for various reasons e.g. Refund Amount greater than Transaction Amount, some data point is invalid etc. Also, failed requests like these will not be registered in the BillDesk platform. Hence, if it is a valid refund request the response will have ProcessStatus as 'Y' else 'N'.

Initiated a Refund API but did not get a response due to, say a timeout?

Trigger the same request again but to this Refund Query URL

https://www.billdesk.com/pgidsk/PGIRefundQueryController

- The request and response parameters / specifications for this API are same as the Refund API specifications.

ANNEXURE

1. txtPayCategory

FEATURE 1: Merchant would like the user to have only selected payment categories

Payment Category	"txtPayCategory" value
Credit Cards with SI pre-selected and un-editable	PRESI
Credit Cards	CREDIT
Debit Cards	DEBIT
Net Banking	NETBANKING
Network Wallets (for e.g. MasterPass)	CASHCARD
EMI options	EMI

Merchant should concatenate the corresponding values and pass the final concatenated string as value of parameter 'txtPayCategory'.

Few examples:

Example 1.

Merchant has a specific requirement that EMI and Netbanking should be displayed to the customer.

txtPayCategory = NETBANKINGEMI

Example 2.

Merchant has a specific requirement that Netbanking, Credit Cards, Debit Cards and needs to be displayed to the customer.

txtPayCategory = CREDITDEBITNETBANKING

FEATURE 2: Merchant would like to choose a default payment category that the user should see when the payment options screen is loaded.

- Merchant should pass the txtPayCategory value with a prefix as MCATG. For example MCATGNETBANKING.

- Only one payment category must be specified when MCATG method is required in the workflow.

- The payment category value *immediately* after MCATG will be considered to be the default ACTIVE one on the payment options user interface.

- The default order of the payment category options will remain AS-IS and will not change due to the usage of MCATG indicator.

- *IMPORTANT TO NOTE:* When the MCATG method is used, ALL the other payment categories will ALSO be displayed to the user, just that the default ACTIVE one will be the one that has been specified via the MCATG indicator.