eazypay

Payment Gateway Integration Document

For

Offline and Online Modes

1. Introduction

Eazypay is a first of its kind secure payment service by ICICI Bank in India. It enables institutions to collect money from their customers through multiple payment modes. ICICI Bank is the first and only bank to offer such a payment service in India. The service offers multiple payment modes, both offline and online- like cash, Cheque, NEFT/RTGS, cards and Net Banking. It enables the institution to collect money from any bank customer in India.

The Integration doc helps the Payment Gateway Merchants on understanding the payment gateway Integration. This enables the Merchant with Payment option for Offline Payment Modes CASH, Cheque and RTGS/NEFT and Online Modes (Net Banking, Credit Card and Debit Card)

2. Process Flow

2.1 Merchant Enrollment Flow

- Merchant Should be enrolled in eazypay as Category "PG"

- Merchant should be registered with Payment Modes opted by their Customers, on enrollment eazypay generates the merchant unique KEY for transactions.

- Merchant should share the URL on which the redirection will done for the transaction initiated from eazypay.

- Enablement of required data fields beside Mandatory fields.

- Unique eazypay Merchant ID will be generated after Checker Approval.

- Payments through eazypay will be enabled only for Approved Merchants.

- Any Modification to Merchant in the enrollment after Approval, New Unique Key will be Generated

2.2 Merchant Integration Flow

- Merchant Eazypay ID and 16 digit Unique Key for Encryption.

- Confirmation of the Return URL configured while Enrollment.

- JAVA/.NET/PHP Source code (functions) based on the technology.

- Corporate Internet Banking Credentials for MIS reports.

- MIS Reports will be enabled only for Last 90 days transactions for PAID and Cheque Return.

2.3 Request Packet Format

Parameter	Description	Type	Min	Max	Mandatory
Merchant ID	Merchant eazypay id	Numeric	6	6	Yes

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Mandatory fields	Reference no| sub merchant id|pgamount and other mandatory fields as enrolled in eazypay
Optional fields	Option 1| option 2| option 3 and other fields as enrolled in eazypay
Reference no	As enrolled in eazypay against merchant eazypay id
Submerchantid	As enrolled in eazypay against merchant eazypay id
Transaction amount	Numeric to max limit of 9 digits and decimal two places
Pay mode	9

Note :

- Pls append the above parameters with prefix https://eazypay.icicibank.com/eazypg?

- No Communication like SMS and Email will be shared on the Payment Gateway Transactions.

- Only "transaction amount" in the packet will be consider for the Payment Process.

- "transaction amount " will be appended with convenience fee and service tax as per agreement between Merchant and ICICI Bank.

2.4   Example of Encryption and Decryption

2.4.1   Merchant Configuration

Parameter	Description	Mandatory	Unique
Eazypay Merchant ID	100011	Yes	
Reference No	8001	Yes	Yes (Merchant Reference No)
Sub Merchant Id	1234	Yes	
Transaction Amount	80	Yes	
Mobile No	9000000001	Yes	
Amount 1	20		
Amount 2	20		
Amount 3	20		
Amount 4	20		
Return URL	Merchant should share the URL where the eazypay Response should be read and post the action on Merchant Site for the payment transaction.		

2.4.2   Dummy AES Key for Encryption

Key : 1234567891234567

2.4.3   Before Encryption

https://eazypay.icicibank.com/EazyPG?merchantid=100011&mandatoryfields=8001|1234|80|9000000001&optional fields=20|20|20|20&returnurl= http://abc.com/cbc/action.aspx&Reference No=8001&submerchantid=1234&transaction amount=80&paymode=9

2.4.4   After Encryption

https://eazypay.icicibank.com/EazyPG?merchantid=100011&mandatory fields=u65A+ywICIypfrJVQp9ED2VlkBzkIimiHhLXPyo2P14=&optional fields=faJ6BJUlOqjoV/AEbw5X4g==&returnurl=6WvzNalyXvqOX+aY9ee5oKm8FT+YUF5sz940o6QZvx0=&ReferenceNo=X7VX+1ZnKq+o6K2QWCTERQ==&submerchantid=QVZkBomDLSbitS4C9lGaUA==&transaction amount=aTRTaIdS0sLyzGCxL3Y5dQ==&paymode=nFRjDWSCg0m80aUYivDlqw==

Note: Before merchant boarding on production for real time transactions make sure the following are in synchronized

- Encrypt the RAW data with AES Key matches shared in the section 2.4.2

- After Encryption the data matches with the said section 2.4.4

- If above data is correct but on production challenges, Pls confirm with ICICI Bank that the Production AES key is mapped to your Merchant ID

2.5   Eazypay Enroll Parameters beside Merchant Specific Parameters

Parameter	Description	Type	Min	Max	Mandatory
Merchant Id	Merchant eazypay ID	Number	6	6	Yes
Reference No	Unique reference number	Char	1	10	Yes
Sub merchant Id		Number	1	10	Yes
Pgamount	Transaction Amount	Number	1	9	Yes
Other Fields	As enrolled in eazypay				

2.6 Error Code and Description

Error Code	Description
E000	Success
E001	Unauthorized Payment Mode
E002	Unauthorized Key
E003	Unauthorized Packet
E004	Unauthorized Merchant
E005	Unauthorized Return URL
E006	Transaction Already Paid
E007	Transaction Failed
E008	Failure from Third Party due to Technical Error or Funds Shortage
E0031	Mandatory fields coming from merchant are empty
E0032	Mandatory fields coming from database are empty
E0033	Payment mode coming from merchant is empty
E0034	PG Reference number coming from merchant is empty
E0035	Sub merchant id coming from merchant is empty
E0036	Transaction amount coming from merchant is empty
E0037	Payment mode coming from merchant is other than 0 to 9
E0038	Transaction amount coming from merchant is more than 9 digit length
E0039	Mandatory value Email in wrong format
E00310	Mandatory value mobile number in wrong format
E00311	Mandatory value amount in wrong format
E00312	Mandatory value Pan card in wrong format
E00313	Mandatory value Date in wrong format
E00314	Mandatory value String in wrong format
E00315	Optional value Email in wrong format
E00316	Optional value mobile number in wrong format
E00317	Optional value amount in wrong format
E00318	Optional value pan card number in wrong format
E00319	Optional value date in wrong format
E00320	Optional value string in wrong format
E00321	Request packet mandatory columns is not equal to mandatory columns set in enrolment or optional columns are not equal to optional columns length set in

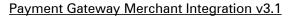| Error Code	Description
	enrolment
E00324	Merchant Reference Number and Mandatory Columns are Null
E00325	Merchant Reference Number Duplicate
E00326	Sub merchant id coming from merchant is non numeric
E00327	Cash Challan Generated
E00328	Cheque Challan Generated
E00329	NEFT Challan Generated
E00330	Transaction Amount and Mandatory Transaction Amount mismatch in Request URL

2.7 Response Packet Format

#	Parameters	Description	Type	Min	Max	Deci-mals	Manda tory	e.g Data
1	Response Code	Section 2.4	Char	3	6		Yes	As per error code e.g E000
2	Unique Ref Number	A Unique Transac-tion ID generated by eazypay	Numeric	16	16		Yes	Eazypay tran id e.g 1234567891234
3	Service Tax Amount	Service Tax amount on the transaction amount	Numeric	1	6	2	Yes	1.00
4	Processing Fee Amount	Convenience amount on the transaction amount	Numeric	1	6	2	Yes	1.00
5	Total Amount	Transaction Amount with convenience fee and service Tax	Numeric	1	9	2	Yes	10.00
6	Transaction Amount	Transaction Amount as received from the PG Merchant	Numeric	1	9	2	Yes	8.00
7	Transaction Date	Transaction Date and Time in Re-sponse from eazy-pay	Date				Yes	03-05-2016 17:18:32
8	Interchange Value	Interchange Value	Numeric	1	3	0	Yes	Blank
9	TDR	TDR	Numeric	1	3	0	Yes	Blank
10	Payment Mode	Opted by the Payer for a Transaction	Char	4	20		Yes	<Opted payment mode> e.g. NET_BANKING
11	Submer-chantid	Sub Merchant ID as shared in Request Packet	Char	1	30		Yes	1234

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#	Parameters	Description	Type	Min	Max	Deci-mals	Manda-tory	e.g Data
12	Reference no	Reference No shared by the Merchant in Request Packet	Char	1	30		Yes	8001
13	TPS	Third Party Status	Char	1	30		Yes	Null for CASH, CHEQUE, NEFT/RTGS 0 (zero) for Net Banking Credit Card, Debit Card
14	ID	Merchant eazypay ID	Numeric	6	6		Yes	100011
15	RS	SHA1 512Signature	ID|Response Code|Unique Ref Number|Service Tax Amount|Processing Fee Amount|Total Amount|Transaction Amount|Transaction Date|Interchange Value|TDR|Payment Mode|submerchantid|referenceno|TPS|aes_key				Yes	100011|E000|1234567891234|1.00|1.00|10.00|8.0|03-05-2016 17:18:32|||NET_BANKING|1234|8001|null|1234567891234567

Note:

- All above parameters will be in Plain text

- Amount and Merchant reference_no should be validated before the transaction considered as Success at Merchant Site

- On receipt of response from eazypay to Merchant Site.

- Append the aes_key Shared by Eazypay for Encryption along with response as said example, Generate the SHA512 Signature after receipt of response and match SHA512 Signature received in the response in parameter "RS".

- TPS parameter would contain text or Number. Hence consider parameter value from the response shared by eazypay on return URL.

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- For Successful transaction at merchant site both signature matches, else Reject (the data is tampered or key invalid),

- E.g response:

100011|E000|1234567891234|1.00|1.00|10.00|8.0|03-05-2016 17:18:32|||NET_BANKING|1234|8001|null|1234567891234567

2.8 Reports for Reconciliation

- The reports can be downloaded from the Corporate Internet Banking with eazypay Option for last 90 days transactions in CSV format.

2.9   Source Code Encryption Functions for Java / .net and PHP

2.9.1   Java Source Code

```
public encryptFile(String key, String inputParam)

{

byte[] abyte2 = (byte[])null;

byte[] abyte1 = key.getBytes();

SecretKeySpec secretkeyspec = new SecretKeySpec(abyte1, "AES");

SecretKeySpec secretkeyspec1 = secretkeyspec;

Cipher cipher = Cipher.getInstance("AES/ECB/PKCS5Padding");

cipher.init(1, secretkeyspec1);

abyte2 = cipher.doFinal(inputParam.getBytes());

BASE64Encoder encoder = new BASE64Encoder();

String ur_enc_str = encoder.encode(abyte2);

}
```

2.9.2   .net Source Code

```
Public static string encryptFile(string textToEncrypt, string key)
{
        RijndaelManaged rijndaelCipher = new RijndaelManaged();
        rijndaelCipher.Mode = CipherMode.ECB;
        rijndaelCipher.Padding = PaddingMode.PKCS7;
        rijndaelCipher.KeySize = 0x80;
        rijndaelCipher.BlockSize = 0x80;
        byte[] pwdBytes = Encoding.UTF8.GetBytes(key);
        byte[] keyBytes = new byte[0x10];
        int len = pwdBytes.Length;
        if (len > keyBytes.Length)
        {
                len = keyBytes.Length;
        }
        Array.Copy(pwdBytes, keyBytes, len);
        rijndaelCipher.Key = keyBytes;
        rijndaelCipher.IV = keyBytes;
        ICryptoTransform transform = rijndaelCipher.CreateEncryptor();
        byte[] plainText = Encoding.UTF8.GetBytes(textToEncrypt);
        return Convert.ToBase64String(transform.TransformFinalBlock(plainText,
        0, plainText.Length));
}
```

2.9.3   PHP Source Code

```
function aes128Encrypt($str,$key){
```

```
$block = mcrypt_get_block_size('rijndael_128', 'ecb');

$pad = $block - (strlen($str) % $block);

$str .= str_repeat(chr($pad), $pad);

return base64_encode(mcrypt_encrypt(MCRYPT_RIJNDAEL_128, $key, $str, MCRYPT_MODE_ECB));

}
```

2.10 SHA 512Signature

2.10.1 .Net C#

```
Imports System.Text

Imports System.Security.Cryptography

Namespace CodeShare.Cryptography

Public Class SHA

Public Shared Function GenerateSHA512String(ByVal inputString) As String

      Dim sha512 As SHA512 = SHA512Managed.Create()

      Dim bytes As Byte() = Encoding.UTF8.GetBytes(inputString)

      Dim hash As Byte() = sha512.ComputeHash(bytes)

      Dim stringBuilder As New StringBuilder()

      For i As Integer = 0 To hash.Length - 1

        stringBuilder.Append(hash(i).ToString("x2"))

      Next

      Return stringBuilder.ToString()

   End Function

 End Class

End Namespace
```

2.10.2 .Net VB

```
Imports System.Text

Imports System.Security.Cryptography

Namespace CodeShare.Cryptography

Public Class SHA

Public Shared Function GenerateSHA512String(ByVal inputString) As String

      Dim sha512 As SHA512 = SHA512Managed.Create()

      Dim bytes As Byte() = Encoding.UTF8.GetBytes(inputString)

      Dim hash As Byte() = sha512.ComputeHash(bytes)

      Dim stringBuilder As New StringBuilder()

      For i As Integer = 0 To hash.Length - 1
```

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```
            stringBuilder.Append(hash(i).ToString("x2"))

        Next

        Return stringBuilder.ToString()

    End Function

 End Class

End Namespace
```

2.10.3 JAVA Code

```
import java.security.MessageDigest;

import java.security.NoSuchAlgorithmException;

public class SHA512Signature {

    public static void main(String[] args) {

        String hashString1="100011|E000|1234567891234|1.00|1.00|10.00|8.0|03-05-2016 17:18:32|||
NET_BANKING|1234|8001|null|1234567891234567";

        String hashSignature = new SHA512Signature().hashCal("SHA-512",hashString1);

    }

    public String hashCal(String type,String str){

        byte[] hashseq=str.getBytes();

        StringBuffer hexString = new StringBuffer();

        try{

        MessageDigest algorithm = MessageDigest.getInstance(type);

        algorithm.reset();

        algorithm.update(hashseq);

        byte messageDigest[] = algorithm.digest();

        for (int i=0;i<messageDigest.length;i++) {

            String hex=Integer.toHexString(0xFF & messageDigest[i]);

            if(hex.length()==1) hexString.append("0");

            hexString.append(hex);

        }


        }catch(NoSuchAlgorithmException nsae){ }

        return hexString.toString();

    }

}
```

2.11 Assumptions and Dependencies

- All request parameters should be encrypted, AES Key will be shared by the sales team to respective Merchant after successful enrollment for encryption, Any Modification in the Merchant Parameters the AES key will be changed, Further transaction should be encrypted with modified AES KEY

- Pay mode Modes will be displayed on the eazypay Landing Page with Payment Modes Registered in eazypay

- MIS Report will be CSV format

- Customer will re-initiate the transaction from Payment Gateway, In case of any error.

- Merchant registered in Enrolment Module should be in Approved state.

- Once Merchant is registered as PG, then he cannot be allowed to change the other category

2.12 Verify URL for Verifying the transaction through eazypay ID or PG Reference No

The Merchant can confirm the transaction status through online mode by passing following Parameters

2.12.1 Option 1

Parameters : Eazypay Tran ID, Amount, Payment Mode, Merchant ID, Tran Date and Reference No

Request Packet

https://eazypay.icicibank.com/EazyPGVerify?
ezpaytranid=1507171019414&amount=1&paymentmode=NET_BANKING_ICICI&merchantid=100
001&trandate=20151106&pgreferenceno=123456

Response Packet

Status=Challan Generated&ezpaytranid=1507171019414&amount=15&trandate=2015-11-06
16:44:00.0&pgreferenceno=123456&sdt=

2.12.2 Option 2

Parameters: Amount, Payment Mode, Merchant ID, Tran Date and Reference No

Request Packet

https://eazypay.icicibank.com/EazyPGVerify?
ezpaytranid=&amount=1&paymentmode=NET_BANKING_ICICI&merchantid=100001&trandate=2
0151106&pgreferenceno=123456

Response Packet

Status=Challan Generated&ezpaytranid=1507171019414&amount=15&trandate=2015-11-06
16:44:00.0&pgreferenceno=123456&sdt=

Note: In case of any error encountered while response from above options, only in this case the following URL should be used for transaction status

Request Packet

https://eazypay.icicibank.com/EazyPGVerify?
ezpaytranid=&amount=&paymentmode=&merchantid=108714&trandate=&pgreferenceno=1605103046395

2.12.3 Option 3

Parameters: Merchant ID and Reference No

Request Packet

https://eazypay.icicibank.com/EazyPGVerify?
ezpaytranid=&amount=&paymentmode=&merchantid=100001&trandate=&pgreferenceno=1234
56

Response Packet

Status=Challan Generated&ezpaytranid=1507171019414&amount=15&trandate=2015-11-06
16:44:00.0&pgreferenceno=123456&sdt=

2.12.4   Verify URL Request Parameter Details

Ezpaytranid   : eazypay Transaction ID for the transaction initiated in eazypay.

Amount   : Transaction Total Amount

Paymentmode : CASH/CHEQUE/NET_BANKING/etc

Merchant ID   : EazyPay Merchant ID allocated to the Merchant

Trandate   : Transaction Date format in YYYYMMDD

Pgreferenceno: Reference no mapped to the eazypay Transaction ID

2.12.5   Verify URL Response Parameter Details

Status   : Transaction Status in Eazypay

On Success of Transaction, Payment Successful at eazypay and Reconciliation is in Progress

Status=RIP (Recon in Progress)

On Success of Transaction, Payment and Reconciliation successful at eazypay and Settlement in Progress

Status=SIP (Settlement in Progress)

On Success of Transaction Settlement

Status=Success.

Ezpaytranid   : eazypay Transaction ID for the transaction initiated in eazypay.

Amount   : Transaction Total Amount

Trandate   : Transaction Date format in YYYYMMDD

Pgreferenceno: Reference no mapped to the eazypay Transaction ID

Sdt   : Settlement Date