Use the following steps to integrate merchant through rest API services.

Step 1: Generate JSON String

```
{
   "resultURL":"http://www.test.fdconnect.com/FirstPayL2Services/mer
chantSuccessPage.jsp",
   "transactionDetails":{
      "amount":"1.50",
      "currencyCode":"INR",
      "clientTransactionId":"XAM87788",
      "transactionType":"SALE"

},
   "customerDetails":{
      "customerId":"ABC1234",
      "hostedId":"KRS1220ESFFTR8490",
      "name":{
         "firstName":"Prashanth",
         "lastName":"Mandarapu",
         "middleName":"Kumar",
         "suffix":"Mr"

},
      "mobileNo":"1234567890",
      "emailId":"prashanth@gmail.com",
      "billingAddress":{
         "street1":"Ghodbandar Rode",
         "stree2":"Sai Nagar",
         "city":"Mumbai",
         "state":"Maharashtra",
         "country":"India",
         "zipcode":"400000"

},
      "shippingAddress":{
         "street1":"Ghodbandar Rode",
         "stree2":"Sai nagar",
         "city":"Mumbai",
         "state":"Maharashtra",
         "country":"India",
         "zipcode":"400000"

}

}
}
```

Integration Types: FDConnect offers various integration types. Please follow the JSON structure as per the below samples.

1. Card Details Capturing by merchant web site

```
{
   "resultURL":"${pageContext.request.contextPath}/merchantSuccessPa
ge.jsp",
   "transactionDetails":{
      "amount":"1.5",
      "currencyCode":"INR",
      "clientTransactionId":"CU12345",
      "transactionType":"SALE"

},
   "customerDetails":{
      "customerId":"ABC1234",
      "hostedIds":[
         "KRS1220ESFFTR8490"

],
      "name":{
         "firstName":"ABC",
         "lastName":"XYZ",
         "middleName":"DEF",
         "suffix":"ADX"

},
      "mobileNo":"1234567890",
      "emailId":"abc@gmail.com",
      "billingAddress":{
         "street1":"Ghodbandar Rode",
         "stree2":"Sai Nagar",
         "city":"Mumbai",
         "state":"Maharashtra",
         "country":"India",
         "zipcode":"400000"

},
      "shippingAddress":{
         "street1":"Ghodbandar Rode",
         "stree2":"Sai nagar",
         "city":"Mumbai",
         "state":"Maharashtra",
         "country":"India",
         "zipcode":"400000"
}

},
   "productData":{
      "productId":"P123",
      "productDescription":"Water Bottle",
      "quantity":1,
      "price":"100",
      "txnAmount":"120",
      "shippingFee":"20",
      "discountPrice":"0"

},
"cardData":{
      "cardNumber":"4035874000424977",
      "expMonth":"12",
      "expYear":"24",
      "cVV":"123",
      "nameOnCard":"Prashanth",
      "vaultCard":false

},
   "paymentMethodType":"CREDITCARD",
   "integrationType":"MERCHANT_PAYMENT_MODE_CARD_INTEGRATION"
}
```

2. Bank Selection By merchant web site

```
{
   "resultURL":"${pageContext.request.contextPath}/merchantSuccessPa
ge.jsp",
   "transactionDetails":{
      "amount":"1.5",
      "currencyCode":"INR",
      "clientTransactionId":"CU12345",
      "transactionType":"SALE"

},
   "customerDetails":{
      "customerId":"ABC1234",
      "hostedIds":[
         "KRS1220ESFFTR8490"

],
      "name":{
         "firstName":"ABC",
         "lastName":"XYZ",
         "middleName":"DEF",
         "suffix":"ADX"

},
      "mobileNo":"1234567890",
      "emailId":"abc@gmail.com",
      "billingAddress":{
         "street1":"Ghodbandar Rode",
         "stree2":"Sai Nagar",
         "city":"Mumbai",
         "state":"Maharashtra",
         "country":"India",
         "zipcode":"400000"

},
      "shippingAddress":{
         "street1":"Ghodbandar Rode",
         "stree2":"Sai nagar",
         "city":"Mumbai",
         "state":"Maharashtra",
         "country":"India",
         "zipcode":"400000"

}

},
   "productData":{
      "productId":"P123",
      "productDescription":"Water Bottle",
      "quantity":1,
      "price":"100",
      "txnAmount":"120",
      "shippingFee":"20",
      "discountPrice":"0"

},
"bankData":{
      "firstPayBankCode":"SBOINB",
      "bankName":"StateBankofIndia"

},
"paymentMethodType":"NETBANKING",
"integrationType":"MERCHANT_PAYMENT_MODE_BANKORWALLET_INTEGRATION"
}
```

3. Payment Mode selection by Merchant website

```
{
   "resultURL":"${pageContext.request.contextPath}/merchantSuccessPage.jsp",
   "transactionDetails":{
      "amount":"1.5",
      "currencyCode":"INR",
      "clientTransactionId":"CU12345",
      "transactionType":"SALE"

},
   "customerDetails":{
      "customerId":"ABC1234",
      "hostedIds":[
         "KRS1220ESFFTR8490"

],
      "name":{
         "firstName":"ABC",
         "lastName":"XYZ",
         "middleName":"DEF",
         "suffix":"ADX"

},
      "mobileNo":"1234567890",
      "emailId":"abc@gmail.com",
      "billingAddress":{
         "street1":"Ghodbandar Rode",
         "stree2":"Sai Nagar",
         "city":"Mumbai",
         "state":"Maharashtra",
         "country":"India",
         "zipcode":"400000"

},
      "shippingAddress":{
         "street1":"Ghodbandar Rode",
         "stree2":"Sai nagar",
         "city":"Mumbai",
         "state":"Maharashtra",
         "country":"India",
         "zipcode":"400000"

}

},
   "productData":{
      "productId":"P123",
      "productDescription":"Water Bottle",
      "quantity":1,
      "price":"100",
      "txnAmount":"120",
      "shippingFee":"20",
      "discountPrice":"0"
```

```
},
   "paymentMethodType":"NETBANKING",
   "integrationType":"MERCHANT_PAYMENT_MODE_INTEGRATION"
}
```

4. Link Pay integration

```
{
   "resultURL":"${pageContext.request.contextPath}/merchantSuccessPa
ge.jsp",
   "transactionDetails":{
      "amount":"1.5",
      "currencyCode":"INR",
      "clientTransactionId":"CU12345",
      "transactionType":"SALE"

},
   "customerDetails":{
      "customerId":"ABC1234",
      "hostedIds":[
         "KRS1220ESFFTR8490"

],
      "name":{
         "firstName":"ABC",
         "lastName":"XYZ",
         "middleName":"DEF",
         "suffix":"ADX"

},
      "mobileNo":"1234567890",
      "emailId":"abc@gmail.com",
      "billingAddress":{
         "street1":"Ghodbandar Rode",
         "stree2":"Sai Nagar",
         "city":"Mumbai",
         "state":"Maharashtra",
         "country":"India",
         "zipcode":"400000"

},
      "shippingAddress":{
         "street1":"Ghodbandar Rode",
         "stree2":"Sai nagar",
         "city":"Mumbai",
         "state":"Maharashtra",
         "country":"India",
         "zipcode":"400000"

}

},
   "productData":{
      "productId":"P123",
      "productDescription":"Water Bottle",
      "quantity":1,
      "price":"100",
      "txnAmount":"120",
      "shippingFee":"20",
      "discountPrice":"0"

},
"linkPaymentData":{
      "sessionTokenExpireDate":"10-02-2020",
      "configId":"PageId2019080820099"
},
   "integrationType":"MERCHANT_LINK_PAYMENT_MODE_INTEGRATION"
}
```

Step 2: Calculating HMAC

HMAC Logic -

String hmacCalcString = MerchantId+MerchantTxnId+Amount+CurrencyCode+Key

Use calculateHMAC() method to get hmac value. Use hmac value in header/

```
public static String calculateHMAC(String hmacCalcString, String key)
                              throws SignatureException, NoSuchAlgorithmException, InvalidKeyException
{
                    SecretKeySpec secretKeySpec = new SecretKeySpec(key.getBytes(), "HmacSHA512");
                    Mac mac = Mac.getInstance("HmacSHA512");
                    mac.init(secretKeySpec);
                    return toHexString(mac.doFinal(hmacCalcString.getBytes()));

          }

          public static String toHexString(byte[] bytes) {
                    @SuppressWarnings("resource")
                    Formatter formatter = new Formatter();
                    if (bytes != null) {
                              for (byte b : bytes) {
                                        formatter = formatter.format("%02x", b);
                              }
```

```
        }
        return formatter.toString();

    }
```

Step 3: Encrypt JSON string

Use the following function to get the encrypted string from json string.

```
public static String encrypt(String plainStr, String keyValue, String ivValue) throws Exception     {
        byte[] plaintext = plainStr.getBytes();
        byte[] IV = Base64.getDecoder().decode(ivValue);
        SecretKey key = generateKeyToSecretKey(keyValue);
        Cipher cipher = Cipher.getInstance("AES/CBC/PKCS5Padding");
        SecretKeySpec keySpec = new SecretKeySpec(key.getEncoded(), "AES");
        IvParameterSpec ivSpec = new IvParameterSpec(IV);
        cipher.init(Cipher.ENCRYPT_MODE, keySpec, ivSpec);
        byte[] cipherText = cipher.doFinal(plaintext);
        return Base64.getEncoder().encodeToString(cipherText);
    }

    public static SecretKey generateKeyToSecretKey(String key) {

        byte[] decodedKey = Base64.getDecoder().decode(key);
        SecretKey secretKey = new SecretKeySpec(decodedKey, 0, decodedKey.length,
"AES");
        return secretKey;
    }
```

Step 4: Send request to FDConnect getToken API

API URL: https://www.test.fdmerchantservices.com/FirstPayL2Services/getToken

API Header:

Content-Type - application/json

HMAC - hmac string received in Step 2

merchantId - shared by fiserv

API Body:

```
{

    "encryptData" : "encrypted string generated in Step 3"

}
```

Step 5: Receive session token as response

If request is valid then SessionToken received in response otherwise errorCode and errorDescription

If Successful:

```
{
  "response": {
    "sessionTokenId": "LTRUSW3WWWKIX3MU"
  }
}
```

If Any Failure:

```
{
  "response": {
    "errorCode": "FPDR4023",
    "errorMessage": "Merchant_txn_id already exist"
  }
}
```

Step 6: Generate URL using pageid and session token and do the browser redirection

https://www.test.fdmerchantservices.com/Pay/?sessionToken=LTRUSW3WWWKIX3MU&configId=PageId2019080820099