API Specification for Japan Cards and Alternate Payment Methods

Version: 1.3

Description

This document introduces the **OpenAPI specification** describing the REST APIs of HSBC's ASP Omni Collection for Japan Cards and Alternate Payment Methods.

The target audience of this document are Developers, Business Analysts and other Project Team Members.

Update Log

- [Dec 24, 2021] **v1.3** Revised several content sections
- [Mar 19, 2021] **v1.2** Updated API Use Case of Content Section Credit Card
- [Jan 25, 2021] **v1.1** Content Section Revised
- [Now 31, 2020] **v1.0** Initial Version

How to Read this Document

This document walks through the API listing the key functions by section: API Usage Flow, API Connectivity, and API Operation. There is also a FAQ and a list of Schema Definitions used by API operations.

This document has links to subsequent sections. For example, when you visit the section API Operation, it has links to the data model or schemas containing the data and status codes definitions.

Use Cases for this API

HSBC's Omni Collect offers a wide range of online payment solutions which enables online merchants to process Credit / Debit Card and Code Payments (see the table below). The payment platform supports implementations with websites or mobile applications.

Credit Card / Debit Card Payments

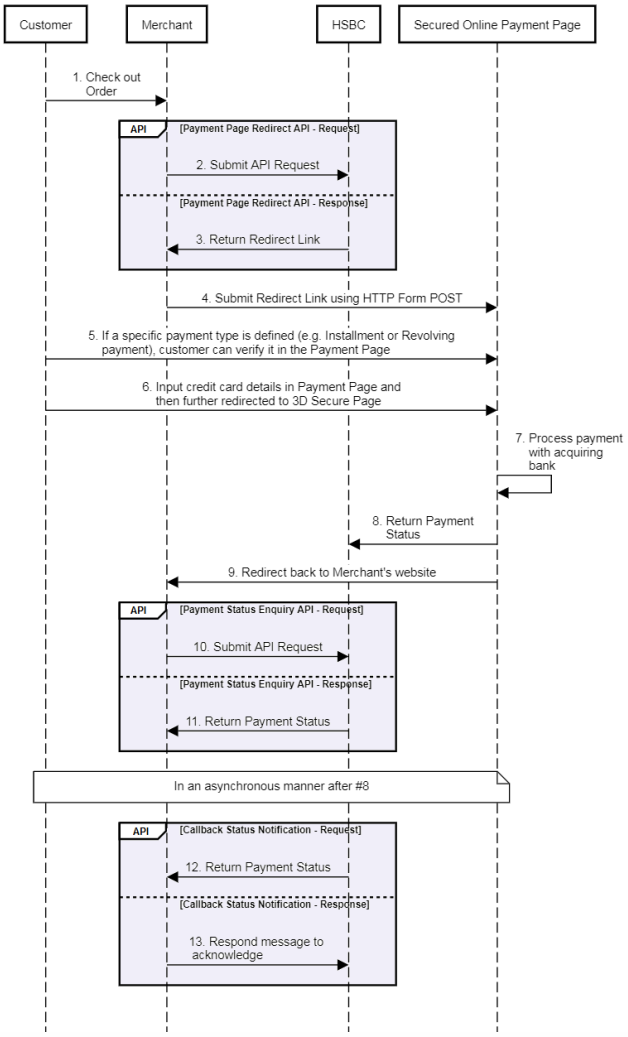
HSBC's Omni Collect for Japan currently supports the following card companies:

List of supported Card Brands / Companies		
AEON	NC日商連	ポケットカード
American Express	SAISON	三井住友
APLUS	UC	三菱UFJニコス (DC)
Cedyna (CF)	UCS	三菱UFJニコス (NICOS)
Cedyna (OMC)	Visa	三菱UFJニコス (UFJ)
DINERS	エポス	京王パスポート
JACCS	オリコ	日専連
JCB	すみしんLIFE	東急TOP
LIFE	トヨタファイナンス	楽天カード
Mastercard		

For Credit card transactions in Japan, the online Merchant is advised to implement additional security from the issuer Bank, called 3D Secure. This process asks the credit card holder to authenticate by entering an Internet PIN or One Time PIN(OTP).

API Use Case

Credit Card Payment



1. The Customer conducts a checkout process in merchant's website.
2. The Merchant submits a Payment Page Redirect API request to HSBC.
3. HSBC returns a JSON response which embeds the redirect link of the Secured Online Payment Page with an access token inside the field `redirectLink`. The redirect link is in a `HTML FORM POST` format. More details are covered in Payment Page Redirect API.
4. The Merchant submits the redirect link using `HTML FORM POST`. It redirects the Merchant website to the Secure Online Payment Page.
5. The Customer can verify the payment type (a one-time instalment, or a revolving payment) on the payment page. The Merchant can also associate an instalment or a revolving plan in step #2. See more details in here.
6. The Customer Credit Card details in the Payment Page are redirected to a 3D Secure (3DS) Page to input a One-Time password.
7. The payment page securely connects to the bank's backend systems to process the payment.
8. HSBC receives payment status once it's updated from the backend system.
9. The browser Redirects back to the merchant website as soon as the payment process is completed in the Payment Gateway.

> **NOTE:**
> The Merchant can specify the redirect back URL in the request field `redirectUrl` in the Payment Page Redirect API.

10. The Merchant submits a Payment Status Enquiry API directly after the Payment Page is redirected back to the Merchant's website.
11. HSBC returns the latest payment status. The Merchant utilizes this information to construct an Order Confirmation Page.
12. HSBC triggers a Callback Status Notification and ***asynchronously*** sends the payment status back to the Merchant.

> **NOTE:**
> This server-to-server Notification is only sent out for a successful payment case. In the Payment Page Redirect API, the Merchant can define their URL endpoint in the request field `notificationUrl`.

13. To acknowledge, the Merchant sends a response to the Callback API. Failure to return a correct response triggers a Notification resend mechanism.

Installment and Revolving Payments

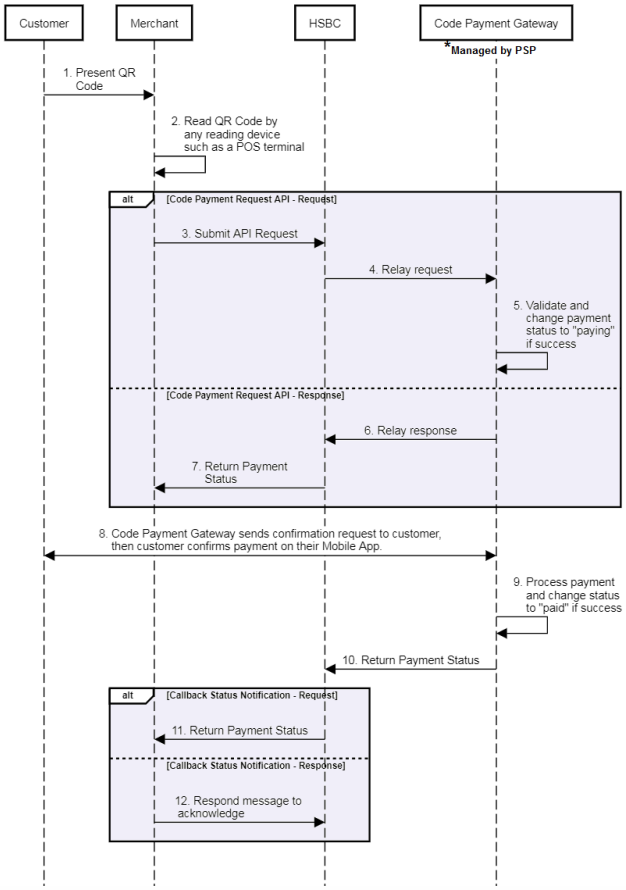
To enable a customer to pay in instalments, the Pay in Instalment option and its corresponding plans are available inside the online payment page. To pay with recurring payment, the merchant can either create a new Plan through API or reuse an existing plan and put the corresponding `plan_id` into the Payment Page Redirect API and follow the same API flow as mentioned in the previous section.

> **NOTE:**
> A full refund is supported for both Instalment and Revolving payment. A refund request for a revolving payment also terminates the subscription.
>
> A Callback Status Notification is sent for the first revolving payment submission only.

Code Payment

To see a list of Code Brands / Companies currently supported by the HSBC Omni Collect for Japan, please refer to the API field `type` of API Schema code_Obj.

API Use Case



1. The Customer presents a QR code to the Merchant.
2. The Merchant reads QR code with any reading device such as POS terminal.
3. The Merchant decodes the QR code image into a string and submits a Code Payment request to HSBC
4. HSBC relays a request to the Code Payment Gateway.
5. The Code Payment Gateway processes a validation and changes the payment status to `paying`.
6. HSBC relays the response from the Code Payment Gateway.
7. The API returns the corresponding payment status.
8. The Code Payment Gateway sends a confirmation request to the customer. The customer confirms payment on their Mobile App.
9. The Code Payment Gateway processes the payment and if successful, changes the status to `paid`.
10. HSBC relays a response from the Code Payment Gateway.
11. HSBC pushes the payment result to the Merchant.
12. To acknowledge, the Merchant sends a response to the API. Failure to return a correct response triggers a Notification resend mechanism.

Check Status Feature

The Omni Collect API provides features for the merchant to check the status of every payment transaction. To implement a Check Status, please refer to the Status Enquiry API.

Cancel & Refund

To refund a settled transaction (Card Company recorded), the Merchant requests a Refund API . HSBC currently accepts Full Refund only.

Order Confirmation

Regarding the previous API use case flow, the final step is to redirect the Payment Page back to the Merchant website. The Merchant can build a dynamic Order Confirmation Page with payment status (e.g. successful or failed), where the details can be retrieved from the immediate Payment Status Enquiry API or the asynchronous Callback Status Notification.

How to Connect

API Connectivity refers to all measures and their components that establishes connection between HSBC - the API Provider, and the Merchant - the API Consumer.

	Definition	Components
API Authentication	HTTP BASIC Authentication	• Username • Password
	Locate API Gateway Policy of the corresponding user	• Client ID • Client Secret
User Identification	A Merchant Profile	• Merchant ID • Merchant Profile
Connection Security	HTTPS Connection (TLS 1.2) and Network Whitelisting	• SSL Certificate • Network Whitelist
Message Security	Digital Signing and Data Encryption	• A pair of Private Key & Public Key Certificate (PKI Model) • JWS Key ID • JWE Key ID

API Gateway URL

You need to include this before each API endpoint to make API calls.

Production
https://cmb-api.hsbc.com.hk/glcm-mobilecoll-mcjp-ea-merchantservices-prod-proxy/v1

Sandbox
https://devclustercmb.api.p2g.netd2.hsbc.com.hk/glcm-mobilecoll-mcjp-ea-merchantservices-cert-proxy/v1

API Authentication

Username & Password		
Purpose	All APIs are authorized using `Basic Authorization`	
Components	• Username	• Password
Where to get it?	Delivered by HSBC via secure email during onboarding procedure	
Implementation	In HTTP header: `Authorization: Basic [Base64-encoded Credential]`	

Client ID & Client Secret		
Purpose	API Gateway locates the corresponding policy of the specific API consumer	
Components	• Client ID	• Client Secret
Where to get it?	Delivered by HSBC via secure email during onboarding procedure	
Implementation	In HTTP header: `x-hsbc-client-id: [Client ID]`	In HTTP header: `x-hsbc-client-secret: [Client Secret]`

User Identification

Merchant Profile & Merchant ID		
Purpose	• Merchant Profile contains all necessary information from a Merchant in order to enable payment service.	• Merchant ID is used for Merchant identification in each API call.
Components	• Merchant Profile	• Merchant ID
Where to get it?	• Set up by HSBC team after collect information from Merchant	• Delivered by HSBC via secure email during onboarding procedure
Implementation	*nil*	In HTTP header: `x-hsbc-msg-encrypt-id: [Merchant ID]+[JWS ID]+[JWE ID]`

Connection Security

SSL Certificate & Network Whitelist			
Purpose	• Request HSBC API over HTTPS connection (TLS 1.2)	• Accept Callback API request over HTTPS connection (TLS 1.2)	
Components	• Public SSL Certificate issued by HSBC	• Merchant's web server or domain whose HTTPS connection is enabled	• Network Whitelist on HSBC system
Where to get it?	• Downloaded automatically by Browsers or API Tools, if any problem found, please contact HSBC	*nil*	*nil*
Implementation	*nil*	*nil*	• Merchant's domain URL will be configured in HSBC's network whitelist by HSBC team

Message Security - Data Encryption and Signing

In addition to the Transport Layer Security, HSBC adopts additional security - Data Encryption on the message being passed across the session. This serves as a type of locked briefcase containing the data (the API message) within the HTTPS "tunnel". In other words, the communication has double protection.

> **DID YOU KNOW?**
> Javascript Object Signing and Encryption (**JOSE™**), is a framework that secures information transferred between parties. To achieve this, the JOSE framework provides a collection of specifications, including JSON Web Signature (**JWS™**) and JSON Web Encryption (**JWE™**).

HSBC uses JWS to sign message payloads, and JWE to encrypt the signed message. These are created by using the Private Key & Public Key Certificate (PKI Model).

Private Key & Public Key Certificate (PKI Model)		
Purpose	• Digitally sign a API request message • Decrypt a API response message	• Encrypt the signed API request message • Verify a signed API response message
Components	• Private Key issued by Merchant	• Public Key Certificate issued by HSBC
Where to get it?	• Created by any Public Key Infrastructure (PKI) toolkits, such as Keytool™ and OpenSSL™. Technical detail is in here	• Exchanged with HSBC with the Public Key Certificate issued by Merchant
Implementation	Please see the technical detail in here	

> **NOTE:**
> Technically, an X.509 certificate can serve as a SSL Certificate as well as a Public Key Certificate for Data Encryption. However, for segregation of certificate usage, HSBC recommends that the Merchant uses a different X.509 Certificate for Data Encryption. Moreover, the Public Key Certificate does not have to be CA-signed. However, if the Merchant decides to enhance security, a CA-Signed Certificate is acceptable.

keyID of JWS™ & JWE™		
Purpose	• The unique identifier to bind Merchant's Private Key in order to create a JWS object - a signed Message Payload	• The unique identifier to bind HSBC's Public Key Certificate in order to create a JWE object - an encrypted JWS object

keyID of JWS™ & JWE™		
Components	• keyID of JWS™	• keyID of JWE™
Where to get it?	• Mutual agreed between Merchant and HSBC	• Mutual agreed between Merchant and HSBC
Implementation	Define in program coding, see demo in here	

> **NOTE:**
> For security purposes, `HSBC's Public Key Certificate` and its associated `keyID` is renewed **every** year and a Certificate Renewal process is triggered. More detail is covered in the section Key Renewal

How to Sign and Encrypt Outgoing Message

Every message sent to HSBC must be signed and encrypted. From the Merchant's perspective, an **Outgoing Message** means:

- the Request Message of a Service API, or
- the Respond Message of a Callback API.

To help you understand how to construct a Signed and Encrypted Message, let's take the Java program below as an example. Don't worry if you are not familiar with Java, the idea is to let you know the steps and the required components:

> **NOTE:** These Java codes are for demonstration only - it's not *plug and play*.

```
private JWSObject signMessage(String messagePayload, KeyStore ks, String keyAlias, String keyPw)
  throws UnrecoverableKeyException, KeyStoreException, NoSuchAlgorithmException, JOSEException {
#1  Payload payload = new Payload(messagePayload);

#2  JWSHeader header = new JWSHeader
                .Builder(JWSAlgorithm.RS256)
                .keyID("0001")
                .customParam("iat", Instant.now().getEpochSecond()).build();
#3  JWSObject jwsObject = new JWSObject(header, payload);

#4  PrivateKey privateKey = (PrivateKey) ks.getKey(keyAlias, keyPw.toCharArray());
    JWSSigner signer = new RSASSASigner(privateKey);
#5  jwsObject.sign(signer);

    return jwsObject;
}
```

1. Prepare your **Message Payload**, that is, the plain `json` request message.
2. Create a **JWS Header** where the parameters are as follows:

```
{
  "alg": "RS256",      //Signing Algorithm is RS256
  "kid": "0001",       //Put your own Key ID value, "0001" is just an example
  "iat": "1625587913"  //Issued At - the time this request is sent, in Unix Time format
}
```

3. Create a **JWS Object** by combining JWS Header and Message Payload.
4. Retrieve your **Private Key** as the signer.
5. Create a **Signed JWS Object** by signing it with the Private Key.

Next, **Encrypt** the Signed JWS Object:

```
private JWEObject getEncryptedJWEObject(JWSObject jwsObject, RSAPublicKey key)
  throws JOSEException {
#1  Payload jwepayload = new Payload(jwsObject.serialize());

#2  JWEHeader jweheader = new JWEHeader.Builder(JWEAlgorithm.RSA_OAEP_256, EncryptionMethod.A128GCM).
#3  JWEObject jweObject = new JWEObject(jweheader, jwepayload);

#4  JWEEncrypter encrypter = new RSAEncrypter(key);
#5  jweObject.encrypt(encrypter);

    return jweObject;
}
```

1. Prepare your **JWE Payload**, that is, the `Signed JWS Object`.
2. Create the **JWE Header**. The algorithm used to encrypt the message body is `A128GCM` while the algorithm used to encrypt the encryption key is `RSA_OAEP_256`. **JWE keyID** is `0002`.
3. Create the **JWE Object** by combining JWE Header and JWE Payload.
4. Retrieve the **HSBC's Public Key** as the encrypter.
5. Create the **Encrypted JWE Object** by encrypting it with HSBC's Public Key.

You are now ready to put the Encrypted JWE Object in the message body *(you may need to first serialize it into String format, depends on your program code design)* of any API call.

How to Decrypt Message and Verify Signature of an Incoming Message

Every message sent from HSBC must be decrypted and verified. From the Merchant's perspective, an **Incoming Message** means:

- the Respond Message of a Service API, or
- the Request Message of a Callback API.

Let's look into the following example to see how to decrypt a response message from HSBC:

```
private String decryptMessage(String respMsgPayload, KeyStoreFactory keyStore)
  throws KeyStoreException, NoSuchAlgorithmException, CertificateException, IOException,
         java.text.ParseException, UnrecoverableKeyException, JOSEException {
#1  JWEObject jweObject = JWEObject.parse(respMsgPayload);

#2  PrivateKey privateKey = (PrivateKey) keyStore.getPrivateKey("merchant_private_key_alias");

    JWEDecrypter decrypter = new RSADecrypter(privateKey);
#3  jweObject.decrypt(decrypter);

#4  String signedMessage = jweObject.getPayload().toString();
    return signedMessage;
}
```

1. Create an **Encrypted JWE Object** by parsing the encrypted response message payload.
2. Retrieve the **Private Key** as the decrypter.
3. Decrypt the JWE Object using your Private Key.
4. Get the **Signed Message** from the decrypted JWE Object.

You are now able to extract the plain `json` message, but first you **must** verify the signature to guarantee data integrity.

```
private String verifySignature(String signedMessage, KeyStore ks, String keyAlias)
  throws KeyStoreException, JOSEException, ParseException {
#1  JWSObject jwsObject = JWSObject.parse(signedMessage);

    Certificate certificate = ks.getCertificate(keyAlias);
#2  JWSVerifier verifier = new RSASSAVerifier((RSAPublicKey) certificate.getPublicKey());

#3  if (!jwsObject.verify(verifier)) {
      throw new ValidationException("Invalid Signature");
    }
#4  return jwsObject.getPayload().toString();
}
```

1. Create a **JWS Object** by parsing the `Signed Message`.
2. Retrieve the **HSBC's Public Key** as the verifier.
3. Verify the signed JWS Object. Invoke error handling if an invalid signature is found *(depends on your code design)*.

4. Get the plain `json` message for further actions.

Summary

Components \ Steps	Message Signing	Message Encryption	Message Decryption	Verify Signature
JWS Object	Signing Algorithm: `RS256`			
JWE Object		JWE Algorithm: `RSA_OAEP_256` Encryption Method: `A128GCM`		
KeyID	`0002`	`0002`		
Merchant's Private Key	Used as `Signer`		Used as `Decrypter`	
HSBC's Public Key		Used as `Encrypter`		Used as `Verifier`

How to Make an API Request

An API request can be submitted without Message Encryption, in case you want to:

- learn about the basic API Call;
- test API connectivity before spending substantial development effort on Message Encryption.

Data encryption is a required data security imposed by HSBC standards. The Merchant has to invoke the encryption logic before moving to Production and must be fully tested during the testing phase.

Make Your API Request with Plain Messages

> **NOTE:**
> In the Sandbox Environment you can skip message encryption. However, this is for testing purpose only.

Submit an example API request using cURL™
cURL™ is a simple command-line tool that enables you to make any HTTP request. Merchant can choose any other GUI tool such as Postman™ and SoapUI™.

Step 1. Run this command on your platform:

POST GET

```
#1 curl -X POST "https://devclustercmb.api.p2g.netd2.hsbc.com.hk/glcm-mobilecoll-mcjp-ea-merchant
#2  -H "message_encrypt: false"
#3  -H "Authorization: Basic eW91cl91c2VybmFtZTp5b3VyX3Bhc3N3b3Jk"
#4  -H "x-HSBC-client-id: 8b915a4f5b5047f091f210e2232b5ced"
#5  -H "x-HSBC-client-secret: 1bb456a541dc416dB6016B5F9583C606"
#6  -H "x-HSBC-msg-encrypt-id: 42298549900001+0001+0002"
#7  -H "Content-Type: application/json"
#8  -d "{ \"txnRef\": \"PAY-QJZV956664\", \"merId\": \"42298549900001\"}"
```

1. Submit the `POST` request to the API URL endpoint.
2. Set the secret header `message_encrypt: false` to indicate this API request is without message encryption. This header is only applicable in Sandbox environment.
3. Put the Basic Authorization in HTTP header `Authorization`.
4. Put the Client ID in HTTP header `x-HSBC-client-id`.
5. Put the Client Secret in HTTP header `x-HSBC-client-secret`.
6. Put the Merchant ID, the JWS ID and the JWE ID in HTTP header `x-HSBC-msg-encrypt-id` respectively.
7. Set the `Content-Type` to JSON format.
8. Plain `json` message payload.

Step 2. Receive the response message in plain `json` format.

Making API Request with Message Encryption

Step 1. Run this cURL™ command on your platform:

POST GET

```
#1 curl -X POST "https://devclustercmb.api.p2g.netd2.hsbc.com.hk/glcm-mobilecoll-mcjp-ea-merchant
#2  -H "Authorization: Basic eW91cl91c2VybmFtZTp5b3VyX3Bhc3N3b3Jk"
#3  -H "x-HSBC-client-id: 8b915a4f5b5047f091f210e2232b5ced"
#4  -H "x-HSBC-client-secret: 1bb456a541dc416dB6016B5F9583C606"
#5  -H "x-HSBC-msg-encrypt-id: 42298549900001+0001+0002"
#6  -H "Content-Type: application/json"
#7  -d "eyJraWQiOiIwMDAxIiwiZW5jIjoiQTEyOEdDTSIsImFsZyI6IlJTQS1PQUVQLTI1NiJ9.W4nobHoVXUMOXGM5I-WG
```

1. Submit the `POST` request to the API URL endpoint. Any `{id}` adhered in the URL must be encrypted.
2. Put the Basic Authorization in HTTP header `Authorization`.
3. Put the Client ID in HTTP header `x-HSBC-client-id`.
4. Put the Client Secret in HTTP header `x-HSBC-client-secret`.
5. Put the Merchant ID, the JWS ID and the JWE ID in HTTP header `x-HSBC-msg-encrypt-id` respectively.
6. Set the `Content-Type` to JSON format.
7. The Encrypted Message Payload.

> **NOTE:**
> Data Encryption invokes compulsory prerequisites, such as JOSE library and program coding, please make sure the section on Message Security has been gone through thoroughly.

Step 2. For a successful request (HTTP Status Code 200), an encrypted response message is returned, otherwise, a plain `json` with failure message is returned.

Data Type Overview

Data Type Control:

Data Type	Allowed Characters	Definition & Important Notice
String *(For general field)*	Alphanumeric and Symbols	General field means field which is **NOT** a critical field. HSBC system will execute characters checking upon all string fields we received in order to tackle security vulnerability, such as Cross-site Scripting. Yet, we recommend you to try use Alphanumeric only for most cases.

Data Type	Allowed Characters	Definition & Important Notice

String *(For critical field)*	`0-9` `a-z` `A-Z` `-` `_` `.`	Critical field is used to be either a key or search criteria in HSBC backend system and hence tight restriction is applied to the allowed characters.
		
		Moreover, the starting and ending space of the string value will be trimmed before stored in HSBC system. For example, string `" example 12 34 "` will be trimmed to `"example 12 34"`.
		
		List of Critical Fields:
		`txnRef`
		`merId`
		`product_id`

Integer	`0-9`	Instead of having Max Length check for String, integer range will be checked, e.g. `0 ≤ x ≤ 9999`

Field Mandatory Control:

Field Mandatory Type	Definition & Important Notice
Mandatory	Annotated with `required` tag in field definition section. Field & value must be present in the request with valid `JSON` format.
Optional	Annotated with `optional` tag in field definition section. If you don't want to pass fields that are optional, your handler should not pass neither empty strings `{"example":""}` nor blank value `{"example":" "}`.
Conditional	Annotated with `conditional` tag in field definition section. Required under a specific condition whose logic is always provided in the field definition if it is a Conditional Field.

Time Zone Control:

Aspect	Format	Definition & Important Notice
In Request Message	`yyyy-MM-dd'T'HH:mm:ssZ`	Time zone is expected to be `GMT+10` (Australia local time) or `GMT+8` (Singapore local time). Merchant is required to perform any necessary time zone conversion before submit request if needed.
In Response Message	`yyyy-MM-dd'T'HH:mm:ss±hh:mm`	Timezone returned in `api_gw` object is generated from HSBC API Gateway which located in Cloud and hence is calculated in `GMT+0`. On the other hand, time field in `response` object will be returned together with timezone information. For more details, please read each field definition carefully.

FAQ

SSL Connection Questions

Where can I find the HSBC SSL server certificates?

The Merchant developer can export SSL server certificates installed in your browser. To achieve this, visit the domain of the corresponding API endpoint in your browser. For example, to get the SSL certificate of sandbox environment, use the domain name **https://devcluster.api.p2g.netd2.HSBC.com.hk/**

However, in production, we provide a certificate and require TLS 1.2 implementation.

Message Encryption Questions

What certificates do I need to work with Message Encryption in HSBC's sandbox and production environments?

A self-sign certificate is acceptable. However, if the Merchant decides to enhance security, a CA-Signed Certificate is also acceptable.

Javascript Object Signing and Encryption (JOSE) Framework Questions

Where can I get more information about JOSE Framework?

If you want to fully understand the framework, you can read here for more details.

Please note these urls or websites do not belong to HSBC, use them at your own discretion. By clicking these urls or websites signifies you accept these terms and conditions.

Where can I download JOSE libraries for development?

For your reference, you may find the following JOSE libraries of different programming languages.

- Ruby
- Python
- PHP
- Java
- Node
- .NET

Please note these urls or websites do not belong to HSBC, use them at your own discretion. By clicking these urls or websites signifies you accept these terms and conditions.

Payments

Contains resource collections for Credit card and Code payments, enquiry, notification, etc.

Payments

Payment Page Redirect for Credit Card Payment

`POST` `/payment/pageRedirect`

DESCRIPTION

This API returns a redirect link of the Secured Online Payment Page that aims to redirect Merchant's browser to the payment page. Customer then input all other necessary information (such as Credit Card details) in that page to complete the payment.

How to do Redirection

Merchant is required to use HTTP Form POST to submit the redirect link which is presented in a `HTML Form` format. Below is a sample, please be noticed any data modification inside the form is not allowed. Otherwise, the data integrity checking will block the connection from accessing the online payment page.

```
<script language="javascript">window.onload=function(){document.pay_form.submit();}</script>
<form id="pay_form" name="pay_form" action="https://www.e-scott.jp/euser/snp/SSNPxxxx.do" method="pos
<input name="MerchantId" type="hidden" id="MerchantId" value="000xxxxx" />
<input name="EncryptValue" type="hidden" id="EncryptValue" value="dcbQvu8ged6udFbAzo1xIGat6GmWYOoslsU
</form>
```

REQUEST PARAMETERS

Authorization required in header	BASIC [Base64-encoded Credential]
x-hsbc-client-id required in header	[Client ID]
x-hsbc-client-secret required in header	[Client Secret]
x-hsbc-msg-encrypt-id required in header	[Merchant ID]+[JWS ID]+[JWE ID]
Content-Type required in header	application/json

REQUEST BODY

payLinkReqtModel

Data Encryption is enforced. API Schema intends to demonstrate the skeleton of the message payload only.

Request Content-Types: application/json

Request Example

```
{
  "transaction": {
    "txnRef": "PAY-QJZV956664",
    "tenant_id": "0001",
    "plan_id": "PLN-123e4567-e89b-12d3-a456-426614174000"
  },
  "system": {
    "redirectUrl": "https://www.example.com/redirect",
    "notificationUrl": "https://www.example.com/notification"
  },
  "payment": {
    "country": "JP",
    "amount": 10000,
    "description": "Payment Order of #PAY-QJZV956664"
  },
  "items": [
    {
      "product_name": "Product Item 1",
      "product_id": "A",
      "unitAmt": 9000,
      "unit": 1,
      "vat": 1000,
      "subAmt": 10000
    }
  ],
  "udfs": [
    {
      "definition": "Product Image in Base64 format",
      "value": "iVBORw0KGgoAAAANSUhEU..."
    },
    {
      "definition": "Special Notes from Customer",
      "value": "Customer is a non-smoker"
    }
  ]
}
```

RESPONSES

200 OK payLinkRespModel	Successful operation. *Data Encryption is enforced. API Schema intends to demonstrate the skeleton of the message payload only.*
400 Bad Request commonRespObj	Missing or invalid Parameters.
403 Forbidden	Authorization credentials are missing or invalid.
404 Not Found	Empty resource/resource not found.
500 Internal Server Error	The request failed due to an internal error.

Response Content-Types: application/json

Response Example (200 OK)

```
{
  "api_gw": {
    "messageId": "89817674-daOO-4883",
    "returnCode": "200",
    "returnReason": "Successful operation",
    "sentTime": "2016-11-15T10:00:00.000Z",
    "responseTime": "2016-11-15T10:00:00.000Z"
  },
  "response": {
    "transaction": {
      "txnRef": "PAY-QJZV956664"
    },
    "system": {
      "sysCode": "000000",
      "sysMsg": "Request Successful",
      "sysDatetime": "2020-01-01T13:00:00+09:00",
      "redirectLink": "<Encoded_Redirect_Submit_Form>"
    }
  }
}
```

Response Example (400 Bad Request)

```
{
  "messageId": "89817674-daOO-4883",
  "returnCode": "400",
  "returnReason": "Error Message Here",
  "sentTime": "2016-11-15T10:00:00.000Z",
  "responseTime": "2016-11-15T10:00:00.000Z"
}
```

Payments

Code Payment

POST /payment/code

DESCRIPTION

Unlike making credit card payment via an Online Payment Page, this endpoint makes a direct Code payment request.

REQUEST PARAMETERS

Authorization required in header	BASIC [Base64-encoded Credential]
x-hsbc-client-id required in header	[Client ID]
x-hsbc-client-secret required in header	[Client Secret]
x-hsbc-msg-encrypt-id required in header	[Merchant ID]+[JWS ID]+[JWE ID]
Content-Type required in header	application/json

REQUEST BODY

codeReqtModel

Data Encryption is enforced. API Schema intends to demonstrate the skeleton of the message payload only.

Request Content-Types: application/json

Request Example

```
{
  "transaction": {
    "txnRef": "PAY-QJZV956664",
    "tenant_id": "0001"
  },
  "system": {
    "notificationUrl": "https://www.example.com/notification",
    "qr_str": "<QR_Code_String>"
  },
  "payment": {
    "country": "JP",
    "amount": 10000,
    "description": "Payment Order of #PAY-QJZV956664"
  },
  "items": [
    {
      "product_name": "Product Item 1",
      "product_id": "A",
      "unitAmt": 9000,
      "unit": 1,
      "vat": 1000,
      "subAmt": 10000
    }
  ],
  "udfs": [
    {
      "definition": "Product Image in Base64 format",
      "value": "iVBORw0KGgoAAAANSUhEU..."
    },
    {
      "definition": "Special Notes from Customer",
      "value": "Customer is a non-smoker"
    }
  ]
}
```

RESPONSES

200 OK codeRespModel	Successful operation. *Data Encryption is enforced. API Schema intends to demonstrate the skeleton of the message payload only.*
400 Bad Request commonRespObj	Missing or invalid Parameters.

Response Content-Types: application/json

Response Example (200 OK)

```
{
  "api_gw": {
    "messageId": "89817674-daOO-4883",
    "returnCode": "200",
    "returnReason": "Successful operation",
    "sentTime": "2016-11-15T10:00:00.000Z",
    "responseTime": "2016-11-15T10:00:00.000Z"
  },
  "response": {
```

403 Forbidden	Authorization credentials are missing or invalid.
404 Not Found	Empty resource/resource not found.
500 Internal Server Error	The request failed due to an internal error.

```
    "system": {
      "sysCode": "000000",
      "sysMsg": "Request Successful"
    },
    "transaction": {
      "txnRef": "PAY-QJZV956664",
      "tenant_id": "0001",
      "process_id": "ee5b902a153f104281f4b81c5ce8216b",
      "process_pass": "f1973eef815a6e1541b356ab06e2478c",
      "error_code": "BARCODE_ERROR",
      "error_msg": "正しいバーコードをスキャンしてください。"
    },
    "payment": {
      "id": "000014640567",
      "resp_code": "OK",
      "amount": 650000,
      "description": "Payment Order of #PAY-QJZV956664",
      "datetime": "2020-01-01T13:02:00+09:00"
    },
    "code": {
      "id": "000000002563",
      "type": "3",
      "status": "1",
      "currency": "JPY",
      "amount": 650000
    }
  }
}
```

Response Example (400 Bad Request)

```
{
  "messageId": "89817674-daO0-4883",
  "returnCode": "400",
  "returnReason": "Error Message Here",
  "sentTime": "2016-11-15T10:00:00.000Z",
  "responseTime": "2016-11-15T10:00:00.000Z"
}
```

Payments

Payment Status Enquiry

GET `/payment/transaction/{txnRef}`

DESCRIPTION

HSBC Omni Collect will return the latest transaction status according to the transaction reference number Merchant provides.

REQUEST PARAMETERS

Authorization required in header	BASIC [Base64-encoded Credential]
x-hsbc-client-id required in header	[Client ID]
x-hsbc-client-secret required in header	[Client Secret]
x-hsbc-msg-encrypt-id required in header	[Merchant ID]+[JWS ID]+[JWE ID]
Content-Type required in header	application/json
txnRef: string required in path	*Data Encryption is enforced. API Schema intends to demonstrate the skeleton of the message payload only.*

RESPONSES

200 OK enquiryRespModel	Successful operation. *Data Encryption is enforced. API Schema intends to demonstrate the skeleton of the message payload only.*
400 Bad Request commonRespObj	Missing or invalid Parameters.
403 Forbidden	Authorization credentials are missing or invalid.
404 Not Found	Empty resource/resource not found.
500 Internal Server Error	The request failed due to an internal error.

Response Content-Types: application/json

Response Example (200 OK)

```
{
  "api_gw": {
    "messageId": "89817674-daO0-4883",
    "returnCode": "200",
    "returnReason": "Successful operation",
    "sentTime": "2016-11-15T10:00:00.000Z",
    "responseTime": "2016-11-15T10:00:00.000Z"
  },
  "response": {
    "system": {
      "sysCode": "000000",
      "sysMsg": "Request Successful"
    },
    "transaction": {
      "txnRef": "PAY-QJZV956664",
      "tenant_id": "0001",
      "process_id": "ee5b902a153f104281f4b81c5ce8216b",
      "process_pass": "f1973eef815a6e1541b356ab06e2478c",
      "plan_id": "PLN-123e4567-e89b-12d3-a456-426614174000"
    },
    "payments": [
      {
        "id": "000014640567",
        "resp_code": "OK",
        "approvalNo": "0003000",
        "amount": 100000,
        "description": "Payment Order of #PAY-QJZV956664"
      }
    ],
    "refunds": [
      {
        "id": "RFD-DFCV112233",
        "resp_code": "OK",
        "approvalNo": "0003000",
        "amount": 100000,
        "create_datetime": "2020-01-01T13:02:00+09:00"
      }
    ],
    "code": {
      "id": "000000002563",
      "type": "3",
      "status": "1",
      "currency": "JPY",
      "amount": 650000
    },
    "links": [
      {
        "href": "/plan/@id",
        "id": "PLN-123e4567-e89b-12d3-a456-426614174000",
        "rel": "plan",
        "method": "GET"
      }
    ]
  }
}
```

Response Example (400 Bad Request)

```
{
  "messageId": "89817674-daO0-4883",
  "returnCode": "400",
  "returnReason": "Error Message Here",
  "sentTime": "2016-11-15T10:00:00.000Z",
  "responseTime": "2016-11-15T10:00:00.000Z"
}
```

Payments

Refund

POST `/payment/refund`

DESCRIPTION

This API is used to send a refund request for a previously settled transaction. It supports both credit card and code payment.

REQUEST PARAMETERS

Authorization required in header	BASIC [Base64-encoded Credential]
x-hsbc-client-id required in header	[Client ID]
x-hsbc-client-secret required in header	[Client Secret]
x-hsbc-msg-encrypt-id required in header	[Merchant ID]+[JWS ID]+[JWE ID]
Content-Type required in header	application/json

REQUEST BODY

refundReqtModel	*Data Encryption is enforced. API Schema intends to demonstrate the skeleton of the message payload only.*

RESPONSES

200 OK refundRespModel	Successful operation. *Data Encryption is enforced. API Schema intends to demonstrate the skeleton of the message payload only.*
400 Bad Request commonRespObj	Missing or invalid Parameters.
403 Forbidden	Authorization credentials are missing or invalid.
404 Not Found	Empty resource/resource not found.
500 Internal Server Error	The request failed due to an internal error.

Request Content-Types: application/json

Request Example

```
{
  "txnRef": "PAY-QJZV956664",
  "refund_id": "RFD-DFCV112233"
}
```

Response Content-Types: application/json

Response Example (200 OK)

```
{
  "api_gw": {
    "messageId": "89817674-daO0-4883",
    "returnCode": "200",
    "returnReason": "Successful operation",
    "sentTime": "2016-11-15T10:00:00.000Z",
    "responseTime": "2016-11-15T10:00:00.000Z"
  },
  "response": {
    "system": {
      "sysCode": "000000",
      "sysMsg": "Request Successful"
    },
    "transaction": {
      "txnRef": "PAY-QJZV956664"
    },
    "refund": {
      "id": "RFD-DFCV112233",
      "resp_code": "OK",
      "approvalNo": "0003000",
      "amount": 100000,
      "create_datetime": "2020-01-01T13:02:00+09:00"
    },
    "code": {
      "id": "000000002563",
      "type": "3",
      "status": "1",
      "currency": "JPY",
      "amount": 650000
    }
  }
}
```

Response Example (400 Bad Request)

```
{
  "messageId": "89817674-daO0-4883",
  "returnCode": "400",
  "returnReason": "Error Message Here",
  "sentTime": "2016-11-15T10:00:00.000Z",
  "responseTime": "2016-11-15T10:00:00.000Z"
}
```

Payments

Callback Status Notification

POST `/<Callback_URL_1>`

DESCRIPTION

Once Omni Collect receives a payment or refund request, subsequent payment status change or update will be returned to Merchant by asynchronous callback until the status is reached to its final state.

Operation	Intermediate State	Final State
Credit Card Payment	n/a	`"payment": {"resp_code": "OK"}`
Credit Card Refund	n/a	`"refund": {"resp_code": "OK"}`
Code Payment	`"code": {"status": "1"}` = Paying	`"code": {"status": "2"}` = Paid
Code Refund	`"code": {"status": "3"}` = Refunding	`"code": {"status": "4"}` = Refunded

> **Implementation**
> This is a Callback API. HSBC will trigger this API call and defines the interface with OpenAPI standard. Merchant is required to provide implementation.

> **Retry Mechanism**
> If no success response is received, up to 4 retries will be triggered in every 2 minutes. Maximum 5 calls including the 1st attempt.

> **Endpoint Definition**
> Field `notificationUrl` from Payment Page Redirect API will be used as URL endpoint of the corresponding transaction.

> **Exception Handling**
> Only success case will be returned. Merchant can submit a Payment Status Enquiry API request if found no acknowledge message returned after a certain period of time.

REQUEST PARAMETERS

Content-Type: string required in header	text/plain

Request Content-Types: text/plain

Request Example

REQUEST BODY

statusRtnReqtModel	*Data Encryption is enforced. API Schema intends to demonstrate the skeleton of the message payload only.*

RESPONSES

200 OK statusRtnRespModel	Successful operation.

Response Content-Types: application/json

Response Example (200 OK)

```
{
  "status": "SUCCESS"
}
```

Plans

Create an Instalment or Recurring Payment through a Plan. It acts as a reusable template and contains details of the billing cycle. Depending upon your business, you can create multiple plans with different billing cycles.

Once a plan is created, submit the `Plan ID` in Payment Page Redirect API.

Plans

Create Plan

POST `/plan`

DESCRIPTION

Create an instalment or recurring payment plan.

REQUEST PARAMETERS

Authorization required in header	BASIC [Base64-encoded Credential]
x-hsbc-client-id required in header	[Client ID]
x-hsbc-client-secret required in header	[Client Secret]
x-hsbc-msg-encrypt-id required in header	[Merchant ID]+[JWS ID]+[JWE ID]
Content-Type required in header	application/json

REQUEST BODY

createPlanReqtModel	*Data Encryption is enforced. API Schema intends to demonstrate the skeleton of the message payload only.*

RESPONSES

200 OK createPlanRespModel	Successful operation. *Data Encryption is enforced. API Schema intends to demonstrate the skeleton of the message payload only.*
400 Bad Request commonRespObj	Missing or invalid Parameters.
403 Forbidden	Authorization credentials are missing or invalid.
404 Not Found	Empty resource/resource not found.
500 Internal Server Error	The request failed due to an internal error.

Request Content-Types: application/json

Request Example

```
{
  "type": "I",
  "description": "Monthly Installment Plan #1",
  "total_count": 12
}
```

Response Content-Types: application/json

Response Example (200 OK)

```
{
  "api_gw": {
    "messageId": "89817674-daOO-4883",
    "returnCode": "200",
    "returnReason": "Successful operation",
    "sentTime": "2016-11-15T10:00:00.000Z",
    "responseTime": "2016-11-15T10:00:00.000Z"
  },
  "response": {
    "system": {
      "sysCode": "000000",
      "sysMsg": "Request Successful"
    },
    "plan": {
      "id": "PLN-123e4567-e89b-12d3-a456-426614174000",
      "type": "I",
      "description": "Monthly Installment Plan #1",
      "total_count": 12,
      "create_date": "2020-01-01T13:02:00+09:00"
    },
    "links": [
      {
        "href": "/plan/@id",
        "id": "PLN-123e4567-e89b-12d3-a456-426614174000",
        "rel": "self",
        "method": "GET"
      }
    ]
  }
}
```

Response Example (400 Bad Request)

```
{
  "messageId": "89817674-daOO-4883",
  "returnCode": "400",
  "returnReason": "Error Message Here",
  "sentTime": "2016-11-15T10:00:00.000Z",
  "responseTime": "2016-11-15T10:00:00.000Z"
}
```

```
{
  "transaction": {
    "txnRef": "PAY-QJZV956664",
    "tenant_id": "0001",
    "process_id": "ee5b902a153f104281f4b81c5ce8216b",
    "process_pass": "f1973eef815a6e1541b356ab06e2478c",
    "plan_id": "PLN-123e4567-e89b-12d3-a456-426614174000"
  },
  "merchant": {
    "merId": "4229854990001"
  },
  "payment": {
    "id": "000014640567",
    "resp_code": "OK",
    "approvalNo": "0003000",
    "amount": 100000,
    "description": "Payment Order of #PAY-QJZV956664"
  },
  "refund": {
    "id": "RFD-DFCV112233",
    "resp_code": "OK",
    "approvalNo": "0003000",
    "amount": 100000,
    "create_datetime": "2020-01-01T13:02:00+09:00"
  },
  "code": {
    "id": "00000002563",
    "type": "3",
    "status": "1",
    "currency": "JPY",
    "amount": 650000
  },
  "udfs": [
    {
      "definition": "Product Image in Base64 format",
      "value": "iVBORw0KGgoAAAANSUhEU..."
    },
    {
      "definition": "Special Notes from Customer",
      "value": "Customer is a non-smoker"
    }
  ]
}
```

Plans

Retrieve All Plans

GET /plan

DESCRIPTION

Use this endpoint to fetch all plans.

REQUEST PARAMETERS

Authorization required in header	BASIC [Base64-encoded Credential]
x-hsbc-client-id required in header	[Client ID]
x-hsbc-client-secret required in header	[Client Secret]
x-hsbc-msg-encrypt-id required in header	[Merchant ID]+[JWS ID]+[JWE ID]
Content-Type required in header	application/json

RESPONSES

200 OK getPlanRespModel	Successful operation. *Data Encryption is enforced. API Schema intends to demonstrate the skeleton of the message payload only.*
400 Bad Request commonRespObj	Missing or invalid Parameters.
403 Forbidden	Authorization credentials are missing or invalid.
404 Not Found	Empty resource/resource not found.
500 Internal Server Error	The request failed due to an internal error.

Response Content-Types: application/json

Response Example (200 OK)


```
{
  "api_gw": {
    "messageId": "89817674-da00-4883",
    "returnCode": "200",
    "returnReason": "Successful operation",
    "sentTime": "2016-11-15T10:00:00.000Z",
    "responseTime": "2016-11-15T10:00:00.000Z"
  },
  "response": {
    "system": {
      "sysCode": "000000",
      "sysMsg": "Request Successful",
      "no_of_record": 99,
      "no_of_page": 1
    },
    "plans": [
      {
        "id": "PLN-123e4567-e89b-12d3-a456-426614174000",
        "type": "I",
        "description": "Monthly Installment Plan #1",
        "total_count": 12,
        "create_date": "2020-01-01T13:02:00+09:00"
      }
    ]
  }
}
```


Response Example (400 Bad Request)


```
{
  "messageId": "89817674-da00-4883",
  "returnCode": "400",
  "returnReason": "Error Message Here",
  "sentTime": "2016-11-15T10:00:00.000Z",
  "responseTime": "2016-11-15T10:00:00.000Z"
}
```


Plans

Retrieve Plan by Plan ID

GET /plan/{plan_id}

DESCRIPTION

Use this endpoint to fetch details of a plan by its ID.

REQUEST PARAMETERS

Authorization required in header	BASIC [Base64-encoded Credential]
x-hsbc-client-id required in header	[Client ID]
x-hsbc-client-secret required in header	[Client Secret]
x-hsbc-msg-encrypt-id required in header	[Merchant ID]+[JWS ID]+[JWE ID]
Content-Type required in header	application/json
plan_id: string required in path	*Data Encryption is enforced.*

RESPONSES

200 OK getPlanRespModel	Successful operation. *Data Encryption is enforced. API Schema intends to demonstrate the skeleton of the message payload only.*
400 Bad Request commonRespObj	Missing or invalid Parameters.
403 Forbidden	Authorization credentials are missing or invalid.
404 Not Found	Empty resource/resource not found.
500 Internal Server Error	The request failed due to an internal error.

Response Content-Types: application/json

Response Example (200 OK)


```
{
  "api_gw": {
    "messageId": "89817674-da00-4883",
    "returnCode": "200",
    "returnReason": "Successful operation",
    "sentTime": "2016-11-15T10:00:00.000Z",
    "responseTime": "2016-11-15T10:00:00.000Z"
  },
  "response": {
    "system": {
      "sysCode": "000000",
      "sysMsg": "Request Successful",
      "no_of_record": 99,
      "no_of_page": 1
    },
    "plans": [
      {
        "id": "PLN-123e4567-e89b-12d3-a456-426614174000",
        "type": "I",
        "description": "Monthly Installment Plan #1",
        "total_count": 12,
        "create_date": "2020-01-01T13:02:00+09:00"
      }
```

```
    ]
  }
}
```

Response Example (400 Bad Request)

```
{
  "messageId": "89817674-daOO-4883",
  "returnCode": "400",
  "returnReason": "Error Message Here",
  "sentTime": "2016-11-15T10:00:00.000Z",
  "responseTime": "2016-11-15T10:00:00.000Z"
}
```

Schema Definitions

commonRespObj: object

PROPERTIES

messageId: string range: (up to 36 chars) required
System generated unique message ID only for HSBC internal reference use

returnCode: string range: (up to 3 chars) required
System Return Code.

- This checking is on API Operational level, in other words, it checks upon Authorization, Connectivity and JSON Message Structure.

Possible Value	Definition
200	Successful operation
400	Bad Request (With detail message in field `returnReason`)
500	Internal Error. **Important Notices:** If any tier comes before the API Cloud Foundry is unavailable, such as the API Gateway, there will be no json respond message returned. Furthermore, the respond message of 500 will be ignored by some common HTTP libraries, in such case, the respond message body can be considered as a hint for troubleshooting during development and testing phase.

returnReason: string range: (up to 200 chars) required
Corresponding Text message of returnCode

Corr. Return Code	Return Message Sample	Definition
200	Successful operation	A successful API operation in terms of Authorization, Connectivity and valid JSON Message Structure. Any checking failure on Business Logic level will be still considered a successful API operation yet the Business Logic checking result will be returned in `response` object.
400	Client ID - Merchant ID mapping is not correct/updated!	The binding of Client ID, Merchant ID and Merchant Public Certificate is incorrect or not up-to-date.
400	object has missing required properties `field name`	Fail to pass JSON Field Mandatory Check.
400	instance type `data type` does not match any allowed primitive type	Fail to pass JSON Field Type Check.
400	string `field value` is too long	Fail to pass JSON Field Max Length Check
400	instance failed to match at least one required schema among `no. of conditional field`	Fail to pass JSON Conditional Field Check.
500	java.net.ConnectException: Connection refused: connect	**Notices:** Message can be varied depended on the downstream systems which return this message. Yet, all reasons can be concluded into Internal Error or System Unavailable.

sentTime: string range: (up to 27 chars) required
Time of request received by HSBC system from client, only for HSBC internal reference use

responseTime: string range: (up to 27 chars) required
Time of HSBC system provides response to client, only for HSBC internal reference use

Example

```
{
  "messageId": "89817674-daOO-4883",
  "returnCode": "200",
  "returnReason": "Successful operation",
  "sentTime": "2016-11-15T10:00:00.000Z",
  "responseTime": "2016-11-15T10:00:00.000Z"
}
```

itemsObj: object

PROPERTIES

product_name: string range: (up to 200 chars) required
Product Item Name / Description

product_id: string range: (up to 50 chars) required
Product Number / ID

unitAmt: integer range: 100 ≤ x ≤ 999999999 required
Unit Amount of each item

> ! NOTICE: Do not use comma or dot. For example, value `1250000` means `12,500.00`

unit: integer range: 1 ≤ x ≤ 9999 required
No. of Unit

vat: integer range: 0 ≤ x ≤ 999999999 required
Total VAT Tax Amount for all units

> ! NOTICE: Do not use comma or dot. For example, value `1250000` means `12,500.00`

subAmt: integer range: 100 ≤ x ≤ 999999999 required
The Sum of one particular item with mulitple orders plus VAT. For example: `unitAmt x unit + vat = subAmt`

> ! NOTICE: Do not use comma or dot. For example, value `1250000` means `12,500.00`

Example

```
{
  "product_name": "Product Item 1",
  "product_id": "A",
  "unitAmt": 9000,
  "unit": 1,
  "vat": 1000,
  "subAmt": 10000
}
```

udfsObj: object

PROPERTIES

definition: string range: (up to 1024 chars) optional
Merchant Defined Definition

value: string range: (up to 2048 chars) optional

Example

```
{
  "definition": "Special Notes from Customer",
  "value": "Customer is a non-smoker"
}
```

Merchant Defined Value

> **NOTICE:** The sequence of this field inside the `udfs` array object you define in the request message of one particular transaction will be maintained the same as it is returned in the response message of other APIs.

payLinkReqtModel: object

PROPERTIES

transaction: pay_rqt_txn_Obj required

system: pay_rqt_system_Obj required

payment: pay_rqt_payment_Obj required

items: Array< itemsObj > range: (up to 100 objects) required
Array of Product Descriptions in the basket

udfs: Array< udfsObj > range: (up to 50 objects) optional
Array of User Defined Fields

Example

```
{
  "transaction": {
    "txnRef": "PAY-QJZV956664",
    "tenant_id": "0001",
    "plan_id": "PLN-123e4567-e89b-12d3-a456-426614174000"
  },
  "system": {
    "redirectUrl": "https://www.example.com/redirect",
    "notificationUrl": "https://www.example.com/notification"
  },
  "payment": {
    "country": "JP",
    "amount": 10000,
    "description": "Payment Order of #PAY-QJZV956664"
  },
  "items": [
    {
      "product_name": "Product Item 1",
      "product_id": "A",
      "unitAmt": 9000,
      "unit": 1,
      "vat": 1000,
      "subAmt": 10000
    }
  ],
  "udfs": [
    {
      "definition": "Product Image in Base64 format",
      "value": "iVBORw0KGgoAAAANSUhEU..."
    },
    {
      "definition": "Special Notes from Customer",
      "value": "Customer is a non-smoker"
    }
  ]
}
```

pay_rqt_txn_Obj: object

PROPERTIES

txnRef: string range: (up to 100 chars) required
Unique ID referred to a specific transaction

- Merchant is required to generate a unique ID for each transaction in alphanumeric format, duplicated ID will be rejected.

tenant_id: object required
Tenant ID. Given by HSBC during Merchant Profile creation.

plan_id: string range: (up to 100 chars) optional
Input Corresponding Plan ID to associate a installment/recurring payment

Example

```
{
  "txnRef": "PAY-QJZV956664",
  "tenant_id": "0001",
  "plan_id": "PLN-123e4567-e89b-12d3-a456-426614174000"
}
```

pay_rqt_system_Obj: object

PROPERTIES

redirectUrl: string range: (up to 500 chars) required
Define URL endpoint for redirecting back to merchant's site after payment

notificationUrl: string range: (up to 500 chars) required
Define URL endpoint for receiving status update notification (server-to-server) from HSBC after payment/refund request is completed.

Example

```
{
  "redirectUrl": "https://www.example.com/redirect",
  "notificationUrl": "https://www.example.com/notification"
}
```

pay_rqt_payment_Obj: object

PROPERTIES

country: string enum: [JP] range: (up to 2 chars) required
Country Code (Format: `ISO alpha-2`)

Possible Value	Definition
JP	Japan

amount: integer range: 100 ≤ x ≤ 999999999 required
Payment Amount

> NOTICE: Amount value must include 2 decimal places due to the system default setting for all currencies. Furthermore, do not use any comma or dot. For instance, value `150000` means `1,500.00` yen.

description: string range: (up to 200 chars) optional
Payment Description

Example

```
{
  "country": "JP",
  "amount": 10000,
  "description": "Payment Order of #PAY-QJZV956664"
}
```

payLinkRespModel: object

PROPERTIES

api_gw: commonRespObj required

response: object required

PROPERTIES

transaction: pay_rpn_txn_Obj required

system: pay_rpn_system_Obj required

Example

```
{
  "api_gw": {
    "messageId": "89817674-daOO-4883",
    "returnCode": "200",
    "returnReason": "Successful operation",
    "sentTime": "2016-11-15T10:00:00.000Z",
    "responseTime": "2016-11-15T10:00:00.000Z"
  },
  "response": {
    "transaction": {
      "txnRef": "PAY-QJZV956664"
    },
    "system": {
      "sysCode": "000000",
      "sysMsg": "Request Successful",
      "sysDatetime": "2020-01-01T13:00:00+09:00",
      "redirectLink": "<Encoded_Redirect_Submit_Form>"
    }
  }
}
```

pay_rpn_txn_Obj: object

PROPERTIES

txnRef: string range: (up to 100 chars) required
Returning back Transaction Reference

Example

```
{
  "txnRef": "PAY-QJZV956664"
}
```

pay_rpn_system_Obj: object

PROPERTIES

sysCode: string range: (up to 6 chars) required
System Return Code

Possible Value	Definition
000000	Request Successful
800110	Invalid Calculation Found in Product Sub-Amount
800120	Invalid Calculation Found in Order Total Amount
900030	Duplicate Transaction Reference
999999	System Error

sysMsg: string range: (up to 128 chars) required
Corresponding Text Message of System Return Code

sysDatetime: string range: (up to 25 chars) required
Time of sending out this request / response

- Server system time. A `GMT+9` timezone information is appended to the end of the timestamp to indicate this time is a Japan local time. Format: `yyyy-MM-dd'T'HH:mm:ss±hh:mm`

redirectLink: string range: (up to 5120 chars) optional
Encoded Redirect Link with all form submit parameters. Return only for successful request.

Example

```
{
  "sysCode": "000000",
  "sysMsg": "Request Successful",
  "sysDatetime": "2020-01-01T13:00:00+09:00",
  "redirectLink": "<Encoded_Redirect_Submit_Form>"
}
```

codeReqtModel: object

PROPERTIES

transaction: code_rqt_txn_Obj required
system: code_rqt_system_Obj required
payment: code_rqt_payment_Obj required
items: Array< itemsObj > required
Array of Product Descriptions in the basket

udfs: Array< udfsObj > optional
Array of User Defined Fields

Example

```
{
  "transaction": {
    "txnRef": "PAY-QJZV956664",
    "tenant_id": "0001"
  },
  "system": {
    "notificationUrl": "https://www.example.com/notification",
    "qr_str": "<QR_Code_String>"
  },
  "payment": {
    "country": "JP",
    "amount": 10000,
    "description": "Payment Order of #PAY-QJZV956664"
  },
  "items": [
    {
      "product_name": "Product Item 1",
      "product_id": "A",
      "unitAmt": 9000,
      "unit": 1,
      "vat": 1000,
      "subAmt": 10000
    }
  ],
  "udfs": [
    {
      "definition": "Product Image in Base64 format",
      "value": "iVBORw0KGgoAAAANSUhEU..."
    },
    {
      "definition": "Special Notes from Customer",
      "value": "Customer is a non-smoker"
    }
  ]
}
```

code_rqt_txn_Obj: object

PROPERTIES

txnRef: string range: (up to 100 chars) required
Unique ID referred to a specific transaction

- Merchant is required to generate a unique ID for each transaction in alphanumeric format, duplicated ID will be rejected.

tenant_id: string range: (up to 4 chars) required
Tenant ID. Given by HSBC during Merchant Profile creation.

Example

```
{
  "txnRef": "PAY-QJZV956664",
  "tenant_id": "0001"
}
```

code_rqt_system_Obj: object

PROPERTIES

notificationUrl: string range: (up to 500 chars) required
Define URL endpoint for receiving status update notification (server-to-server) from HSBC after payment/refund request is completed.

qr_str: string range: (up to 128 chars) required
Decode the QR Code image into a string

Example

```
{
  "notificationUrl": "https://www.example.com/notification",
  "qr_str": "<QR_Code_String>"
}
```

code_rqt_payment_Obj: object

PROPERTIES

country: string enum: [JP] range: (up to 2 chars) required
Country Code (Format: `ISO alpha-2`)

Possible Value	Definition
JP	Japan

amount: integer range: 100 ≤ x ≤ 999999999 required

Example

```
{
  "country": "JP",
  "amount": 10000,
  "description": "Payment Order of #PAY-QJZV956664"
}
```

Payment Amount

> ! NOTICE: Amount value must include 2 decimal places due to the system default setting for all currencies. Furthermore, do not use any comma or dot. For instance, value `150000` means `1,500.00` yen.

description: string range: (up to 200 chars) optional
Payment Description

codeRespModel: object

PROPERTIES

api_gw: commonRespObj required

response: object required

PROPERTIES

system: code_rpn_system_Obj required

transaction: code_rpn_txn_Obj required

payment: code_rpn_pay_Obj optional

Related information of Payment Request (with Payment Gateway). Return only for successful payment request.

code: code_Obj optional

Related information of Code Transaction (with Code Companies). Return only for successful payment request

Example


```
{
  "api_gw": {
    "messageId": "89817674-daOO-4883",
    "returnCode": "200",
    "returnReason": "Successful operation",
    "sentTime": "2016-11-15T10:00:00.000Z",
    "responseTime": "2016-11-15T10:00:00.000Z"
  },
  "response": {
    "system": {
      "sysCode": "000000",
      "sysMsg": "Request Successful"
    },
    "transaction": {
      "txnRef": "PAY-QJZV956664",
      "tenant_id": "0001",
      "process_id": "ee5b902a153f104281f4b81c5ce8216b",
      "process_pass": "f1973eef815a6e1541b356ab06e2478c",
      "error_code": "BARCODE_ERROR",
      "error_msg": "正しいバーコードをスキャンしてください。"
    },
    "payment": {
      "id": "000014640567",
      "resp_code": "OK",
      "amount": 650000,
      "description": "Payment Order of #PAY-QJZV956664",
      "datetime": "2020-01-01T13:02:00+09:00"
    },
    "code": {
      "id": "000000002563",
      "type": "3",
      "status": "1",
      "currency": "JPY",
      "amount": 650000
    }
  }
}
```


code_rpn_system_Obj: object

PROPERTIES

sysCode: string range: (up to 6 chars) required
System Return Code

Possible Value	Definition
000000	Request Successful
800110	Invalid Calculation Found in Product Sub-Amount
800120	Invalid Calculation Found in Order Total Amount
900030	Duplicate Transaction Reference
900000	Transaction is Failed
999999	System Error

sysMsg: string range: (up to 128 chars) required
Corresponding Text Message of System Return Code

Example


```
{
  "sysCode": "000000",
  "sysMsg": "Request Successful"
}
```


code_rpn_txn_Obj: object

PROPERTIES

txnRef: string range: (up to 100 chars) required
Returning Transaction Reference

tenant_id: string range: (up to 4 chars) required
Returning Tenant ID

process_id: string range: (up to 32 chars) optional
Returning Process ID for a successful request. For checking transactions in Merchant Portal.

process_pass: string range: (up to 32 chars) optional
Returning Process Password for a successful request. For checking transactions in Merchant Portal.

error_code: string range: (up to 32 chars) optional
Error Code. Return only if any issue happens

error_msg: string range: (up to 128 chars) optional
Error Message. Return only if any issue happens

Example


```
{
  "txnRef": "PAY-QJZV956664",
  "tenant_id": "0001",
  "process_id": "ee5b902a153f104281f4b81c5ce8216b",
  "process_pass": "f1973eef815a6e1541b356ab06e2478c",
  "error_code": "BARCODE_ERROR",
  "error_msg": "正しいバーコードをスキャンしてください。"
}
```


code_rpn_pay_Obj: object

PROPERTIES

id: string range: (up to 12 chars) required
The identifier of the corresponding Code Payment Request made via the payment gateway.

resp_code: string range: (up to 5 chars) required
Respond Code of the corresponding Code Payment Request.

> ! **NOTICE:**
> Respond Code is an operational status of the request returned by the Payment Gateway. `OK` means the request is accepted and will be processed by Payment Gateway, other then `OK` means fail and please contact HSBC support.

amount: integer range: 100 ≤ x ≤ 999999999 required
Payment Amount

> ! NOTICE: Amount value must include 2 decimal places due to the system default setting for all currencies. Furthermore, do not use any comma or dot. For instance, value `150000` means `1,500.00` yen.

description: string range: (up to 200 chars) optional
Payment Description. Return if it has been defined in the request.

datetime: string range: (up to 25 chars) required
Returning Transaction time for the successful Code Payment Request

Example


```
{
  "id": "000014640567",
  "resp_code": "OK",
  "amount": 650000,
  "description": "Payment Order of #PAY-QJZV956664",
  "datetime": "2020-01-01T13:02:00+09:00"
}
```

- Bank system local time. A `GMT+9` timezone information is appended to the end of the timestamp to indicate this time is a Japan local time. Format: `yyyy-MM-dd'T'HH:mm:ss±hh:mm`

code_Obj: object

PROPERTIES

id: string range: (up to 32 chars) required
The identifier of the corresponding Code Transaction made via the Code Payment Gateway.

type: string range: (up to 2 chars) required
Types of Code

Possible Value	Definition *(Code Brands / Companies)*	Refund Deadline *(counting from the day after the payment completion date)*
0	WeChat Pay	89 days
1	Alipay	89 days
3	楽天ペイ	9 days
5	PayPay	14 days
6	メルペイ	365 days
7	d 払い	90 days
8	LINE Pay	30 days
9	au PAY	90 days
E	J-Coin Pay	365 days
Z	銀聯	30 days

status: string range: (up to 2 chars) required
Code Transaction Status

Possible Value	Definition
1	Paying
2	Paid
3	Refunding
4	Refunded
6	Cancelled
99	System Error

currency: string enum: [JPY] range: (up to 10 chars) required
Code Payment Currency

amount: integer range: 100 ≤ x ≤ 999999999 required
Code Payment Amount

> ! NOTICE: Amount value must include 2 decimal places due to the system default setting for all currencies. Furthermore, do not use any comma or dot. For instance, value `150000` means `1,500.00` yen.

Example


```
{
  "id": "000000002563",
  "type": "3",
  "status": "1",
  "currency": "JPY",
  "amount": 650000
}
```


enquiryRespModel: object

PROPERTIES

api_gw: commonRespObj required
response: object required

PROPERTIES

system: enq_rpn_sys_Obj required
transaction: enq_rpn_txn_Obj required
payments: Array< payment_rpn_Obj > optional
Return if the request is successful
refunds: Array< refund_rpn_Obj > optional
Return if refund has been requested to the corresponding payment
code: code_Obj optional
Return if it is a code payment
links: Array< halLinkObj > optional
Collection of related resources

Example


```
{
  "api_gw": {
    "messageId": "89817674-daOO-4883",
    "returnCode": "200",
    "returnReason": "Successful operation",
    "sentTime": "2016-11-15T10:00:00.000Z",
    "responseTime": "2016-11-15T10:00:00.000Z"
  },
  "response": {
    "system": {
      "sysCode": "000000",
      "sysMsg": "Request Successful"
    },
    "transaction": {
      "txnRef": "PAY-QJZV956664",
      "tenant_id": "0001",
      "process_id": "e65b02a153f104281f4b81c5ce8216b",
      "process_pass": "f1973eef815a6e1541b356ab06e2478c",
      "plan_id": "PLN-123e4567-e89b-12d3-a456-426614174000"
    },
    "payments": [
      {
        "id": "000014640567",
        "resp_code": "OK",
        "approvalNo": "0003000",
        "amount": 100000,
        "description": "Payment Order of #PAY-QJZV956664"
      }
    ],
    "refunds": [
      {
        "id": "RFD-DFCV112233",
        "resp_code": "OK",
        "approvalNo": "0003000",
        "amount": 100000,
        "create_datetime": "2020-01-01T13:02:00+09:00"
      }
    ],
    "code": {
      "id": "000000002563",
      "type": "3",
      "status": "1",
      "currency": "JPY",
      "amount": 650000
    },
    "links": [
      {
        "href": "/plan/@id",
        "id": "PLN-123e4567-e89b-12d3-a456-426614174000",
        "rel": "plan",
        "method": "GET"
      }
    ]
  }
}
```


enq_rpn_sys_Obj: object

PROPERTIES

sysCode: string range: (up to 6 chars) required
System Return Code

Possible Value	Definition

Example


```
{
  "sysCode": "000000",
  "sysMsg": "Request Successful"
}
```

Possible Value	Definition
000000	Request Successful
100010	Transaction is Pending
900010	Transaction Record Not Found
900000	Transaction is Failed
999999	System Error

sysMsg: string range: (up to 128 chars) required
System Return Status. This is the corresponding message of System Return Code.

enq_rpn_txn_Obj: object

PROPERTIES

txnRef: string range: (up to 100 chars) required
Returning Transaction Reference

tenant_id: string range: (up to 4 chars) optional
Returning Tenant ID for a successful request

process_id: string range: (up to 32 chars) optional
Returning Process ID for a successful request. For checking transactions in Merchant Portal.

process_pass: string range: (up to 32 chars) optional
Returning Process Password for a successful request. For checking transactions in Merchant Portal.

plan_id: string range: (up to 100 chars) optional
Returning Plan ID if the request associates a plan

Example

```
{
  "txnRef": "PAY-QJZV956664",
  "tenant_id": "0001",
  "process_id": "ee5b902a153f104281f4b81c5ce8216b",
  "process_pass": "f1973eef815a6e1541b356ab06e2478c",
  "plan_id": "PLN-123e4567-e89b-12d3-a456-426614174000"
}
```

payment_rpn_Obj: object

PROPERTIES

id: string range: (up to 20 chars) required
The identifier of the corresponding Payment Request made via the payment gateway.

resp_code: string range: (up to 5 chars) required
Respond Code of the corresponding Payment Request.

> **NOTICE:**
> Respond Code is an operational status of the request returned by the Payment Gateway. `OK` means the request is accepted and will be processed by Payment Gateway, other then `OK` means fail and please contact HSBC support.

approvalNo: string range: (up to 7 chars) optional
Returning Transaction Approval Number, only for Credit Card Payment

amount: integer range: 100 ≤ x ≤ 999999999 required
Payment Amount

> NOTICE: Amount value must include 2 decimal places due to the system default setting for all currencies. Furthermore, do not use any comma or dot. For instance, value `150000` means `1,500.00` yen.

description: string range: (up to 200 chars) optional
Payment Description. Return if it has been defined in the request.

Example

```
{
  "id": "000014640567",
  "resp_code": "OK",
  "approvalNo": "0003000",
  "amount": 100000,
  "description": "Payment Order of #PAY-QJZV956664"
}
```

refund_rpn_Obj: object

PROPERTIES

id: string range: (up to 100 chars) required
The identifier of the corresponding Refund Request made via the payment gateway.

resp_code: string range: (up to 5 chars) required
Respond Code of the corresponding Refund Request.

> **NOTICE:**
> Respond Code is an operational status of the request returned by the Payment Gateway. `OK` means the request is accepted and will be processed by Payment Gateway, other then `OK` means fail and please contact HSBC support.

approvalNo: string range: (up to 7 chars) optional
Returning Refund Approval Number, only for Credit Card Payment

amount: integer range: 100 ≤ x ≤ 999999999 required
Refund Amount

> NOTICE: Amount value must include 2 decimal places due to the system default setting for all currencies. Furthermore, do not use any comma or dot. For instance, value `150000` means `1,500.00` yen.

create_datetime: string range: (up to 25 chars) optional
Returning Transaction time for the successful Refund Request

- Bank system local time. A `GMT+9` timezone information is appended to the end of the timestamp to indicate this time is a Japan local time. Format: `yyyy-MM-dd'T'HH:mm:ss±hh:mm`

Example

```
{
  "id": "RFD-DFCV112233",
  "resp_code": "OK",
  "approvalNo": "0003000",
  "amount": 100000,
  "create_datetime": "2020-01-01T13:02:00+09:00"
}
```

refundReqtModel: object

PROPERTIES

txnRef: string range: (up to 100 chars) required
Merchant to pass the original Transaction Reference

refund_id: string range: (up to 100 chars) optional
Merchant can optionally assign an unique Refund Reference Number for every refund transaction. The number will then be returned in response message `"refund": {"id": ""}`, otherwise the `id` will be assigned by payment gateway.

Example

```
{
  "txnRef": "PAY-QJZV956664",
  "refund_id": "RFD-DFCV112233"
}
```

refundRespModel: object

PROPERTIES

api_gw: commonRespObj required
response: object required
PROPERTIES

Example

```
{
  "api_gw": {
    "messageId": "89817674-da00-4883",
    "returnCode": "200",
```

system: refund_rpn_sys_Obj required
transaction: refund_rpn_txn_Obj required
refund: refund_rpn_Obj required
code: code_Obj optional
Return if it is a code payment

```
    "returnReason": "Successful operation",
    "sentTime": "2016-11-15T10:00:00.000Z",
    "responseTime": "2016-11-15T10:00:00.000Z"
  },
  "response": {
    "system": {
      "sysCode": "000000",
      "sysMsg": "Request Successful"
    },
    "transaction": {
      "txnRef": "PAY-QJZV956664"
    },
    "refund": {
      "id": "RFD-DFCV112233",
      "resp_code": "OK",
      "approvalNo": "0003000",
      "amount": 100000,
      "create_datetime": "2020-01-01T13:02:00+09:00"
    },
    "code": {
      "id": "000000002563",
      "type": "3",
      "status": "1",
      "currency": "JPY",
      "amount": 650000
    }
  }
}
```

refund_rpn_sys_Obj: object

PROPERTIES

sysCode: string range: (up to 6 chars) required
System Return Code

Possible Value	Definition
000000	Request Successful
900000	Transaction is Failed
900010	Transaction Record Not Found
900030	Duplicate Refund Transaction Reference
999999	System Error

sysMsg: string range: (up to 128 chars) required
System Return Status

Example

```
{
  "sysCode": "000000",
  "sysMsg": "Request Successful"
}
```

refund_rpn_txn_Obj: object

PROPERTIES

txnRef: string range: (up to 100 chars) required
Return Transaction Reference

Example

```
{
  "txnRef": "PAY-QJZV956664"
}
```

statusRtnReqtModel: object

PROPERTIES

transaction: enq_rpn_txn_Obj required
merchant: merchant_Obj required
payment: payment_rpn_Obj required
refund: refund_rpn_Obj optional
Return if it is a refund request
code: code_Obj optional
Return if it is a code payment
udfs: Array< udfsObj > range: (up to 50 objects) optional
Array of User Defined Fields

Example

```
{
  "transaction": {
    "txnRef": "PAY-QJZV956664",
    "tenant_id": "0001",
    "process_id": "ee5b902a153f104281f4b81c5ce8216b",
    "process_pass": "f1973eef815a6e1541b356ab06e2478c",
    "plan_id": "PLN-123e4567-e89b-12d3-a456-426614174000"
  },
  "merchant": {
    "merId": "42298549900001"
  },
  "payment": {
    "id": "000014640567",
    "resp_code": "OK",
    "approvalNo": "0003000",
    "amount": 100000,
    "description": "Payment Order of #PAY-QJZV956664"
  },
  "refund": {
    "id": "RFD-DFCV112233",
    "resp_code": "OK",
    "approvalNo": "0003000",
    "amount": 100000,
    "create_datetime": "2020-01-01T13:02:00+09:00"
  },
  "code": {
    "id": "000000002563",
    "type": "3",
    "status": "1",
    "currency": "JPY",
    "amount": 650000
  },
  "udfs": [
    {
      "definition": "Product Image in Base64 format",
      "value": "iVBORw0KGgoAAAANSUhEU..."
    },
    {
      "definition": "Special Notes from Customer",
      "value": "Customer is a non-smoker"
    }
  ]
}
```

merchant_Obj: object

PROPERTIES

merId: string range: (up to 10 chars) required
Returning Merchant ID

Example

```
{
  "merId": "42298549900001"
}
```

statusRtnRespModel: object

PROPERTIES

status: string range: (up to 30 chars) required
Return Message

Example

```
{
  "status": "SUCCESS"
}
```

createPlanReqtModel: object

PROPERTIES

type: string enum: [R, I] range: (up to 1 chars) required
Plan type

Possible Value	Definition	Remark
R	Revolving	Once a Revolving Payment is initiated, the payment will keep rolling until a Cancel/Refund Operation is submitted.
I	Installment	The total number of installment must be defined.

description: string range: (up to 100 chars) required
Description

total_count: integer range: 2 ≤ x ≤ 84 conditional
Installment Total Count. Required if `{"type": "I"}`

Example

```
{
  "type": "I",
  "description": "Monthly Installment Plan #1",
  "total_count": 12
}
```

createPlanRespModel: object

PROPERTIES

api_gw: commonRespObj required

response: object required

PROPERTIES

system: systemPostObj required

plan: planObj optional
Return if the request is successful

links: Array< halLinkObj > optional
Collection of related resources

Example

```
{
  "api_gw": {
    "messageId": "89817674-daOO-4883",
    "returnCode": "200",
    "returnReason": "Successful operation",
    "sentTime": "2016-11-15T10:00:00.000Z",
    "responseTime": "2016-11-15T10:00:00.000Z"
  },
  "response": {
    "system": {
      "sysCode": "000000",
      "sysMsg": "Request Successful"
    },
    "plan": {
      "id": "PLN-123e4567-e89b-12d3-a456-426614174000",
      "type": "I",
      "description": "Monthly Installment Plan #1",
      "total_count": 12,
      "create_date": "2020-01-01T13:02:00+09:00"
    },
    "links": [
      {
        "href": "/plan/@id",
        "id": "PLN-123e4567-e89b-12d3-a456-426614174000",
        "rel": "self",
        "method": "GET"
      }
    ]
  }
}
```

systemPostObj: object

PROPERTIES

sysCode: string range: (up to 6 chars) required
System Return Code

Possible Value	Definition
000000	Request Successful
900000	Request Failed
999999	System Error

sysMsg: string range: (up to 128 chars) required
Corresponding Text Message of System Return Code

Example

```
{
  "sysCode": "000000",
  "sysMsg": "Request Successful"
}
```

systemGetObj: object

PROPERTIES

sysCode: string range: (up to 6 chars) required
System Return Code

Possible Value	Definition
000000	Request Successful
900000	Request Failed
900010	Record Not Found
999999	System Error

sysMsg: string range: (up to 128 chars) required
Corresponding Text Message of System Return Code

no_of_record: integer range: 1 ≤ x ≤ 999 required
Total No. of Record(s)

no_of_page: integer range: 1 ≤ x ≤ 999 required
Total No. of Page(s)

Example

```
{
  "sysCode": "000000",
  "sysMsg": "Request Successful",
  "no_of_record": 99,
  "no_of_page": 1
}
```

halLinkObj: object

PROPERTIES

href: string range: (up to 100 chars) required
Hypertext Application Language (HAL) - URL Endpoint of the related resource

id: string range: (up to 100 chars) required
Hypertext Application Language (HAL) - Entity ID of the related resource where it replaces the `@id` in the URI.

rel: string range: (up to 100 chars) required
Hypertext Application Language (HAL) - Related entity name

method: string range: (up to 100 chars) required
Hypertext Application Language (HAL) - HTTP Method of the related resource

Example

```
{
  "href": "XXXX",
  "id": "XXXX",
  "rel": "XXXX",
  "method": "XXXX"
}
```

planObj: object

PROPERTIES

id: string range: (up to 100 chars) required
Plan ID

type: string enum: [R, I] range: (up to 1 chars) required
Plan type

Possible Value	Definition	Remark
R	Revolving	Once a Revolving Payment is initiated, the payment will keep rolling until a Cancel/Refund Operation is submitted.
I	Installment	The total number of installment must be defined.

description: string range: (up to 100 chars) required
Description

total_count: integer range: 2 ≤ x ≤ 84 conditional
Installment Total Count. Required if `{"type": "I"}`

create_date: string range: (up to 25 chars) required
Creation date of this Plan

Example

```
{
  "id": "PLN-123e4567-e89b-12d3-a456-426614174000",
  "type": "I",
  "description": "Monthly Installment Plan #1",
  "total_count": 12,
  "create_date": "2020-01-01T13:02:00+09:00"
}
```

getPlanRespModel: object

PROPERTIES

api_gw: commonRespObj required
response: object required

PROPERTIES

system: systemGetObj required

plans: Array< planObj > optional
Array of all Plan(s) previously created

Example

```
{
  "api_gw": {
    "messageId": "89817674-daOO-4883",
    "returnCode": "200",
    "returnReason": "Successful operation",
    "sentTime": "2016-11-15T10:00:00.000Z",
    "responseTime": "2016-11-15T10:00:00.000Z"
  },
  "response": {
    "system": {
      "sysCode": "000000",
      "sysMsg": "Request Successful",
      "no_of_record": 99,
      "no_of_page": 1
    },
    "plans": [
      {
        "id": "PLN-123e4567-e89b-12d3-a456-426614174000",
        "type": "I",
        "description": "Monthly Installment Plan #1",
        "total_count": 12,
        "create_date": "2020-01-01T13:02:00+09:00"
      }
    ]
  }
}
```

Lifecycle of Cryptographic Keys

This section highlights the Lifecycle of cryptographic keys in the following stages:

1. Generate keys pair (Private Key and Public Key Certificate)
2. ***Optional:*** *Export CSR (Certificate Signing Request) and sign using a CA (Certificate Authority)*

> **DID YOU KNOW?**
> In public key infrastructure (PKI) systems, a certificate signing request is a message sent from an applicant to a certificate authority in order to apply for a digital identity certificate. It usually contains the public key for which the certificate should be issued.

3. Exchange Certificate with HSBC
4. Certificate and Keys Maintenance
5. Certificate and Keys Renewal Process

The Key Renewal Process Command line tool **Java Keytool™** is used in the demonstration. The tool can generate public key / private key pairs and store them into a Java KeyStore. The Keytool executable is distributed with the **Java SDK (or JRE)™**, so if you have an SDK installed you will also have the Keytool executable. The Merchant is free to choose any other tool to generate and manage keys, such as **OpenSSL™**.

Key Generation and Certificate Exchange with HSBC

1. Create a new keys pair (Private Key and Public Key Certificate) with a new or existing Keystore.

```
keytool -genkey
    -alias merchant_key_pair
    -keyalg RSA
    -keystore merchant_keystore.jks
    -keysize 2048
    -validity 3650
    -storepass <your keystore password>
```

- **-genkey** - command to generate keys pair.
- **-alias** - define the alias name (or unique identifier) of the keys pair stored inside the keystore.
- **-keyalg** - key algorithm, it must be `RSA` regarding to HSBC standard. If `RSA` is taken, the default hashing algorithm will be `SHA-256`.
- **-keystore** - file name of the keystore. If the file already exists in your system location, the key will be created inside your existing keystore, otherwise, a new keystore with the defined name will be created.

> **DID YOU KNOW?**
> Keystore is a password-protected repository of keys and certificates. A file with extension `jks` means it is a Java Keystore which is originally supported and executable with Java™.
>
> There are several keystore formats in the industry like `PKCS12` with file extension `p12` which is executable with Microsoft Windows™, merchant can always pick the one most fit their application.

- **-keysize** - key size, it must be `2048` regarding to HSBC standard.
- **-validity** - the validity period of the private key and its associated certificate. The unit is `day`, 3650 means 10 years.
- **-storepass** - password of the keystore.

1.1. Provide the `Distinguished Name` information after running the command:

```
Information required for CSR generation
-----------------------------------------------------------
What is your first and last name?
  [Unknown]:  MERCHANT INFO
What is the name of your organizational unit?
  [Unknown]:  MERCHANT INFO
What is the name of your organization?
  [Unknown]:  MERCHANT INFO
What is the name of your City or Locality?
  [Unknown]:  HK
What is the name of your State or Province?
  [Unknown]:  HK
What is the two-letter country code for this unit?
  [Unknown]:  HK
Is CN=XXX, OU=XXX, O=XXX, L=HK, ST=HK, C=HK correct? (type "yes" or "no")
  [no]:  yes
```

```
Enter key password for <merchant_key_pair>
        (RETURN if same as keystore password):
Re-enter new password:
```

> **NOTE:**
> The Private Key password and Keystore password can be identical, however to be more secure, the Merchant should set them differently.

2. **Optional:** Export CSR and get signed with CA. This step can be skipped if the Merchant decides to work with a Self-Signed Certificate.

```
keytool -certreq
    -alias merchant_key_pair
    -keyalg RSA
    -file merchant_csr.csr
    -keystore merchant_keystore.jks
```

- **-certreq** - command to generate and export CSR.
- **-alias** - the name of the associated keys pair.
- **-keyalg** - key algorithm, it must be `RSA` regarding to HSBC standard.
- **-file** - file name of the CSR. This will be generated at the location where the command is run.
- **-keystore** - specify the keystore which you are working on.

2.1. Select and purchase a plan at Certificate Authority and then submit the CSR accordingly. After a signed Certificate is issued by CA, import the Certificate back to the Merchant's keystore.

```
keytool -import
    -alias merchant_signed_cert_0001
    -trustcacerts -file CA_signed_cert.p7b
    -keystore merchant_keystore.jks
```

- **-import** - command to import object into a specific keystore.
- **-alias** - define the alias name (or unique identifier) of the signed Certificate.
- **-trustcacerts -file** - specify the file name of the signed Certificate in Merchant's local file system.

> **NOTE:**
> `PKCS#7` is one of the common formats that contains certificates and has a file extension of `.p7b` or `.p7c`. The certificate format may be varied depending on the policy of the issuing CA.

- **-keystore** - specify the keystore which you are working on.

3. Export the Certificate and send it to HSBC for key exchange.

> **DID YOU KNOW:**
> A Certificate or Public Key Certificate is an electronic document that contains a public key and additional information that prove the ownership and maintains integrity of the public key. It is essential for the sender to ensure the key is not altered by any chance during delivery.

```
keytool -export
    -alias merchant_key_pair
    -file merchant_cert_0001.cer
    -keystore merchant_keystore.jks
```

- **-export** - command to export object from a specific keystore.
- **-alias** - the name of the associated keys pair.

> **NOTE:**
> If the Merchant associates the original keys pair `merchant_key_pair`, the exported Certificate is without CA-signed, and hence, Self-Signed. However, if the Merchant associates the imported Certificate `merchant_signed_cert_0001` mentioned in step #2, the exported Certificate is CA-signed.

- **-file** - specify the file name of the Certificate where the file will be exported to Merchant's local file system.

> **NOTE:**
> The default Certificate file encoding is binary. HSBC accepts both binary and base64 encoding. To export a printable base64 encoding file, please attach an extra parameter `-rfc` in the command.
> e.g. `-file merchant_cert_0001.crt -rfc`.

- **-keystore** - specify the keystore which you are working on.

4. Import HSBC's Certificate into the merchant's Keystore.

```
keytool -import
    -alias hsbc_cert_0002
    -file hsbc_cert_0002.cer
    -keystore merchant_keystore.jks
```

- **-import** - command to import object into a specific keystore.
- **-alias** - define the alias name of HSBC's Certificate in your keystore.
- **-file** - specify the file name of HSBC's Certificate in Merchant's local file system.
- **-keystore** - specify the keystore which you are working on.

5. **Optional:** List keystore objects. Merchant is suggested to verify that all required objects are properly maintained. 2 - 3 entries should be found in your Java Keystore: *(Entries may be varied if other key repository format is used)*

Alias name	Corresponding Object	Remark
merchant_key_pair	• Merchant's Private Key • Merchant's Public Certificate (Self-Signed)	These two objects appear to be one entry in a JAVA Keystore. Merchant can still export them separately into two objects (files) on your local file system depending on your application design.
merchant_signed_cert_0001	• Merchant's Public Certificate (CA-Signed)	Not exist if Merchant skips step #2
hsbc_cert_0002	• HSBC's Public Certificate	

```
keytool -list -v -keystore merchant_keystore.jks

Keystore type: JKS
Keystore provider: SUN

Your keystore contains 3 entries

Alias name: merchant_key_pair
Creation date: Jan 1, 2020
Entry type: PrivateKeyEntry

<Other Information>

*******************************************
*******************************************

Alias name: merchant_signed_cert_0001
Creation date: Jan 1, 2020
Entry type: trustedCertEntry

<Other Information>

*******************************************
*******************************************

Alias name: hsbc_cert_0002
Creation date: Jan 1, 2020
Entry type: trustedCertEntry

<Other Information>

*******************************************
*******************************************
```

Certificates and Keys Maintenance

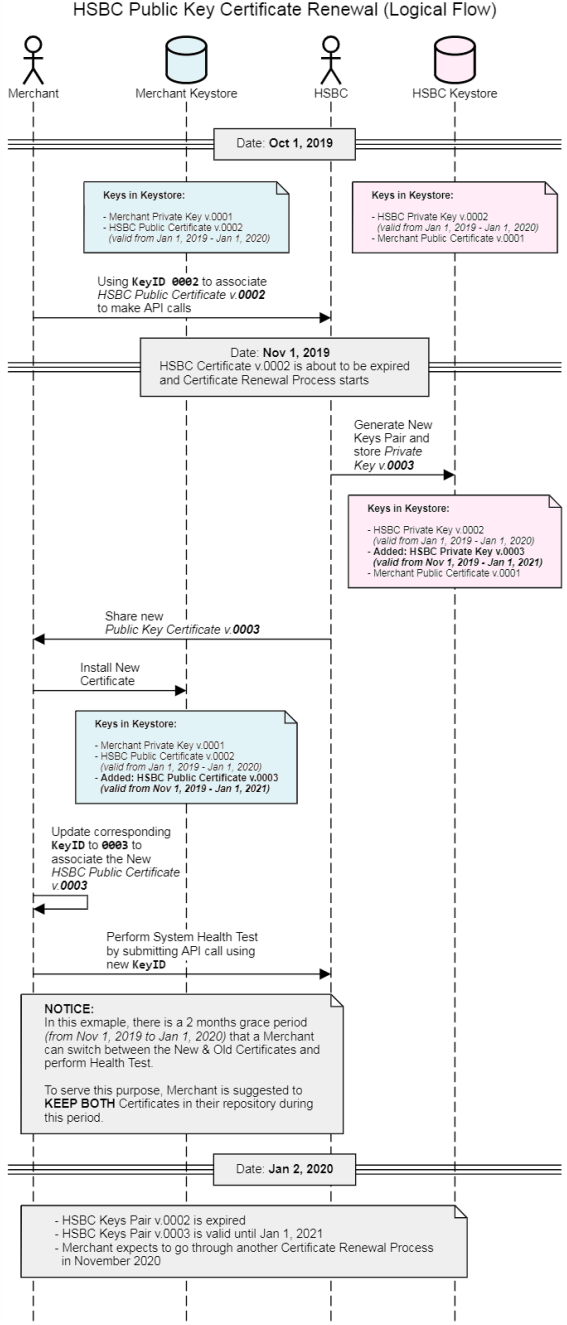
Here are some recommendations to Merchant of how to properly maintain certificates and keys:

Component	Storage	Validity
Merchant's Private Key	Private Key should be maintained and handled with the most secure approach that a Merchant can apply. The most common and yet secure enough approach is: • **key password** - Do not save the password in plain text or hard-coded in application. Recommend to encrypt it by any Password Encryption Tools • **key storage** - Store inside password-protected key repository, such as `JKS` or `PKCS12` keystore. Keystore password should also be encrypted.	No restriction on the Validity Period. However, if Merchant suspects there is any chance that the key is leaked or for any other security reason, a new Private Key and its associated Public Key Certificate should be generated.
Merchant's Public Key Certificate	Since Public Key Certificate is publicly distributed, a comparative moderate secure storage approach is acceptable. Merchant can store the physical file in any system's file system or store all keys and certificates in one single key repository for a centralised key management.	For a self-signed Certificate, the same condition has been mentioned as above. However, the validity period of a CA-signed Certificate is depended on the purchase plan of the issuing CA. The most common standard is 1 to 2 years.
HSBC's Public Key Certificate	Same as the above	1 Year **NOTE:** Technically, the validity period is usually 1 Year plus 1 to 2 months more. The spare period is a buffer for a merchant to switch a "to-be-expired" Certificate to the new one during the Certificate Renewal Process. More technical detail will be covered in later section.

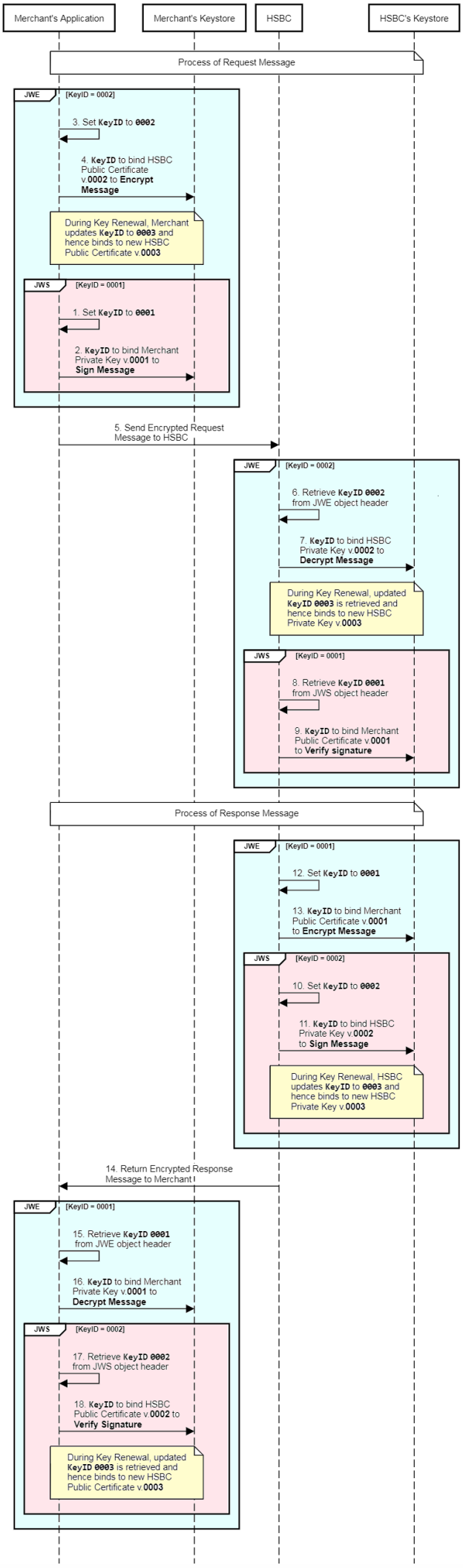
Certificates and Keys Renewal

Every Public Key Certificate has an expiration date. When either the Merchant's or HSBC's Certificate is about to expire, a key renewal process takes place. Please see the Key Renewal Process Flow below:

> **SOME RULES YOU SHOULD KNOW:**
> - **Keys Repository:** This is a mock-up for demonstration purpose only.
> - **Keys Name:** Using a `Key Name` `KeyID` naming convention makes for a simpler demonstration. The suggested identifier of one key should be the alias name inside a key repository.
> - **KeyID Value:** HSBC uses the naming convention `0001`, `0002`, `0003`...`n + 1`, each time the HSBC certificate is renewed, the `KeyID` value is `n + 1`.
> - **KeyID Binding:** The binding between the `KeyID` and the corresponding `Keys Pair` in the merchant's system can make use of any key/value logic, such as a Database table. In our example below, KeyID `000X` binds to `Private Key v.000X` and `Public Certificate v.000X`, etc.
> - **Validity Date:** All dates are made-up for demonstration purposes only.



Below is the technical flow showing how `Certificates`, `Alias Names` and `KeyIDs` work together during a normal process or a key renewal process:



NOTE:
All examples above concern the HSBC Certificate Renewal. Whenever the Merchant needs to renew their Certificate, they need to switch role and steps to follow those of HSBC's.

Download Swagger

Click here to download Swagger 2.0 file in YAML format.

Disclaimer

IMPORTANT NOTICE

This document is issued by The Hongkong and Shanghai Banking Corporation Limited, Hong Kong ("HSBC"). HSBC does not warrant that the contents of this document are accurate, sufficient or relevant for the recipient's purposes and HSBC gives no undertaking and is under no obligation to provide the recipient with access to any additional information or to update all or any part of the contents of this document or to correct any inaccuracies in it which may become apparent. Receipt of this document in whole or in part shall not constitute an offer, invitation or inducement to contract. The recipient is solely responsible for making its own independent appraisal of the products, services and other content referred to in this document. This document should be read in its entirety and should not be photocopied, reproduced, distributed or disclosed in whole or in part to any other person without the prior written consent of the relevant HSBC group member.