ApigateHub API Specification [Northbound] – Mobile Payment

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Contents

Mobile Payment API Specification

NOTE:

All APIs discussed under this section are RESTful APIs with a JSON payload where applicable.

The MPAY API allows Service Provider to charge wallet account of mobile subscribers for purchasing product or consuming content or services. The MPAY Service allows the Service Provider to directly charge a User based on the User's consent given to that Service Provider.

The MPAY Service API supports the following functions:

- Make Payment
- Refund
- List Charge Operations

API End Point Name	URI
MPAY	
Make Payment URL	Please Request
Refund URL	Please Request
List Charge Operations URL	Please Request

1 Make Payment

HTTP Method	POST
Operation	Charge a subscriber's wallet account for a service provided by a Service Provider.

1.1 Request

```
POST <Make Payment URL>/transaction/{endUserId}/payment
HTTP/1.1
Content-Type: application/json
Content-Length: nnnn
Authorization: Bearer <access token for the api store application>
Accept: application/json

{"makePayment": {
    "clientCorrelator": "54321",
    "endUserId": "tel:+9412345678",
    "paymentAmount": {
        "chargingInformation": {
            "amount": "200",
            "currency": "LKR",
```

```
        "description": "Alien Invaders Game"
      },
     "chargingMetaData" : {
        "onBehalfOf" : "Example Games Inc",
        "purchaseCategoryCode" : "Game",
        "channel" : "Mobile"
      }
   },
  "referenceCode": "REF-12345",
   "notifyURL": "http://myapplication/mynotifyurl"
}}
```

1.1.1   Request Parameters

Parameter name	Description	Usage
endUserId	Any URI. The endUserId does not need URL encoding If sent in the POST body for application/json requests, but does need encoding when used in the URL or form encoded post. In this case the endUserId is the user's MSISDN including the 'tel:' protocol identifier and the country code preceded by '+', e.g. tel:+9412345678.	Mandatory
referenceCode	String. This is unique per charge event. It is your reference for reconciliation purposes. The ApigateHub Exchange will include this in reports so that you can match the ApigateHub Exchange reference of what has been sold with your own reference	Mandatory
clientCorrelator	String. This uniquely identifies the create charge request. If there is a communication failure during the charge request, using the same clientCorrelator when retrying the request allows the ApigateHub Exchange to avoid applying the same charge twice.	Optional
notifyURL	Any URI. Make payment APIs can be asynchornous. The status of the transaction will be posted to this URL	Optional

1.1.1.1   chargingInformation

Parameter name	Description	Usage
description	xsd:string. This is the text to appear on the user's bill to allow them to easily identify what they have bought	Mandatory

currency	xsd:string. This is the 3 figure code as per ISO 4217	Mandatory
Amount	xsd:decimal. This is the actual amount being charged. It can be a whole number or two digit decimal	Mandatory

1.1.1.2   chargingMetaData type

Parameter name	Description	Usage
onBehalfOf	xsd:string. Allows aggregators/partners to specify the actual payee.	Mandatory
purchaseCategoryCode	xsd:string. A category defining the type of service, product or media being purchased.	Optional
channel	xsd:string. Indicates the source of user interaction	Optional

chargingInformation and optional chargingMetaData objects are held within the paymentAmount object.

1.2   Response

```
HTTP/1.1 201 Created
Content-Type: application/json
Content-Length: 12345
Date: Thu, 04 Dec 2012 02:51:59 GMT
Location: <Charge User URL>

{"makePayment": {
   "clientCorrelator": "54321",
   "endUserId": "tel:+9412345678",
   "paymentAmount": {
      "chargingInformation": {
         "amount": "200",
         "currency": "LKR",
         "description": "Alien Invaders Game"
      },
      "chargingMetaData" : {
         "onBehalfOf" : "Example Games Inc",
         "purchaseCategoryCode" : "Game",
         "channel" : "Mobile"
      }
   },
   "referenceCode": "REF-12345",
```

"serverReferenceCode": "WALLET_REF_XX67675XX",

"notifyURL": "http://myapplication/mynotifyurl",

"transactionOperationStatus": "Charged"

1.2.1 Response Parameters

In addition to the original request parameters the following Mandatory response parameters are returned

Parameter name	Description		Usage
transactionOperationStatus	**2 String. "Charged" confirms that the resource state is 'Charged' (Refer section 4 List Charge Operations**		Mandatory

2 String. "Charged" confirms that the resource state is 'Charged' (Refer section 4 List Charge Operations

HTTP Method	GET
Operation	Should return all the transactions of the end user for the calling application

2.1 Request

```
GET        <List      Charge      Ops      URL>
tel%3A%2B12345678/transactions HTTP/1.1
Accept: application/json
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

2.1.1 Request Parameters

Parameter name	Description	Usage
endUserId	Any URI. The endUserId does not need URL encoding. If sent in the POST body for application/json requests, but does need encoding when used in the URL or form encoded	Mandatory

post. In this case the endUserId is the user's MSISDN including the 'tel:' protocol identifier and the country code preceded by '+', e.g. tel:+94773330001.

2.1.2   Response Parameters

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: 12345
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"paymentTransactionList": {
"amountTransaction": [
   "endUserId": "tel:+00123456789",
   "paymentAmount": {
      "chargingInformation": {
         "amount": "9",
         "currency": "USD",
         "description": "Alien Invaders"
      }
   },
   "referenceCode": "REF-ASM600-239238",
   "serverReferenceCode":"tx-
a3x0e4006da40a8a5b5-045972478cc3",
   "resourceURL":
      "<List Charge Operations URL)
      Tel#3A2B12345678/transactions/amount/
      tx-a3x0e4006da40a8a5b5-045972478cc3",
   "transactionOperationStatus": "Charged"
},
{
   "endUserId": "tel:+9412345678",
   "paymentAmount": {
      "chargingInformation": {
         "amount": "6",
         "currency": "USD",
```

```
                          "description": "Snakes Alive"
                        }
                    },
                    "referenceCode": "REF-ASM600-239238",
                    "serverReferenceCode":                    "tx-
               a3x0e4006da40a8a5b5-044972478cc3",
                    "resourceURL":
                        "<List Charge Operations URL)
                      Tel#3A2B12345678/transactions/amount/
                        tx-a3x0e4006da40a8a5b5-044972478cc3",
                    "transactionOperationStatus": "Charged"
                  }
               ],
               "resourceURL":
                    "<List Charge Operations URL>
                        Tel%3A%2B12345678/transactions/amount/"
               }}
```

2.1.3   Response Parameters

Parameter name	Description	Usage
paymentTransactionList	Array of amountTransaction objects	Optional
endUserId	Any URI. The endUserId does not need URL encoding. If sent in the POST body for application/json requests, but does need encoding when used in the URL or form encoded post. In this case the endUserId is the	Mandatory

		user's MSISDN including the 'tel:' protocol identifier and the country code preceded by '+', e.g. tel:+94773330001.		
	paymentAmount	chargingInformation Object, contains amount, currency and description of transaction.	Mandatory	
	referenceCode	String. Unique reference generated by client.	Mandatory	
	serverReferenceCode	String. Unique reference generated by server.	Mandatory	
	transactionOperationStatus	String. "Charged" confirms that the resource state is 'Charged' (see Resource states below) – the end user's account has been charged	Mandatory	
	Resource States) – the end user's account has been charged. – the end user's account has been charged.			
amount		Decimal. Indicates the amount that the developer asked to charge in the request. Amount should contain two decimal places.		Mandatory
serverReferenceCode		String. Is a reference to the charge or refund, provided by the ApigateHub Exchange, and meaningful to the ApigateHub Exchange's backend system for the purpose of reconciliation.		Mandatory

Charge against an account may return the following transaction status:

    "Denied" – the policy exception in the response will explain the reason

    "Refused" – the reservation was refused, or not explicitly accepted, by the end user.

    "Charged" – success, the reservation has been charged against

3 Refund

HTTP Method	POST
Operation	Refund an end user

3.1 Request

```
POST <Refund User URL>/transaction/{endUserId}/refund
HTTP/1.1
Accept: application/json
Host: example.com:80
Content-Type: application/json
Content-Length: 12345
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"refundTransaction": {
   "clientCorrelator": "54321",
   "endUserId": "tel:+9412345678",
    "originalReferenceCode":"ABC-12345"
   "originalServerReferenceCode": " WALLET_REF_XX67675XX",
   "paymentAmount": {
     "chargingInformation": {
        "amount": "100",
        "currency": "LKR",
        "description": "Alien Invaders Game"
     },
     "chargingMetaData" : {
        "onBehalfOf" : "Example Games Inc",
        "purchaseCategoryCode" : "Game",
        "channel" : "WAP"
     }
   },
   "referenceCode": "REF-12345"
}}
```

3.1.1 Request Parameters

Parameter name	Description	Usage
clientCorrelator	(string) uniquely identifies this refund request. If there is a communication failure during the charge request,	Optional

	using the same clientCorrelator when retrying the request allows the ApigateHub Exchange to avoid applying the same charge twice. This field SHOULD be present.	
endUserId	Unique identifier for the end user's account (e.g. 'tel' URI for user's MSISDN, 'acr' URI). endUserId is part of the request URL and the post body, these MUST have the same value.	Mandatory
originalReferenceCode	(string) The reference code sent with the original payment request.	Mandatory
originalServerReferenceCode	(string) if provided by the ApigateHub Exchange when a charge transaction was created the originalServerReferenceCode MUST be used in the refund API	Mandatory
referenceCode	String. This is unique per charge event. It is your reference for this request. The ApigateHub Exchange will include this in reports so that you can match the ApigateHub Exchange reference of what has been sold with your own reference	Mandatory

3.1.1.1 chargingInformation

Parameter name	Description	Usage
Description	xsd:string. This is the text to appear on the user's bill to allow them to easily identify what they have bought	Mandatory
Currency	xsd:string. This is the 3 figure code as per ISO 4217	Mandatory
Amount	xsd:decimal. This is the actual amount being charged. It can be a whole number or two digit decimal	Mandatory

3.1.1.2 chargingMetaData type

Parameter name	Description	Usage
onBehalfOf	xsd:string. Allows aggregators/partners to specify the actual payee.	Mandatory
purchaseCategoryCode	xsd:string. A category defining the type of service, product or media being purchased.	Optional
Channel	xsd:string. Indicates the source of user interaction	Optional

chargingInformation and optional chargingMetaData objects are held within the paymentAmount object.

3.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/json
Content-Length: 12345
Date: Thu, 04 Jun 2009 02:51:59 GMT
Location: <Refund User URL>

{"refundTransaction": {
   "clientCorrelator": "54321",
   "endUserId": "tel:+00123456789",
    "originalReferenceCode":"ABC-12345"
   "originalServerReferenceCode": " WALLET_REF_XX67675XX",
   "paymentAmount": {
      "chargingInformation": {
         "amount": "100",
         "currency": "LKR",
         "description": "Alien Invaders Game"
      },
      "chargingMetaData" : {
         "onBehalfOf" : "Example Games Inc",
         "purchaseCategoryCode" : "Game",
         "channel" : "WAP"
      }
   },
   "referenceCode": "REF-12345",
    "serverReferenceCode":"ABC-123",
   "resourceURL": "<Resource URL>",
   "transactionOperationStatus": "Refunded"
}}
```

3.2.1 Response Parameters

In addition to the original request parameters the following Mandatory response parameters are returned

Parameter name	Description	Usage

String. "Charged" confirms that the resource state is 'Charged' (Refer section 4 List Charge Operations

HTTP Method	GET
Operation	Should return all the transactions of the end user for the calling application

3.3   Request

GET   <List   Charge   Ops   URL> tel%3A%2B12345678/transactions HTTP/1.1
Accept: application/json
Date: Thu, 04 Jun 2009 02:51:59 GMT

3.3.1   Request Parameters

Parameter name	Description	Usage
endUserId	Any URI. The endUserId does not need URL encoding. If sent in the POST body for application/json requests, but does need encoding when used in the URL or form encoded post. In this case the endUserId is the user's MSISDN including the 'tel:' protocol identifier and the country code preceded by '+', e.g. tel:+94773330001.	Mandatory

transactionOperationStatus ... Mandatory

3.3.2   Response Parameters

HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: 12345
Date: Thu, 04 Jun 2009 02:51:59 GMT

```
{"paymentTransactionList": {
"amountTransaction": [
  "endUserId": "tel:+00123456789",
  "paymentAmount": {
    "chargingInformation": {
      "amount": "9",
      "currency": "USD",
      "description": "Alien Invaders"
    }
  },
  "referenceCode": "REF-ASM600-239238",
  "serverReferenceCode":"tx-
a3x0e4006da40a8a5b5-045972478cc3",
  "resourceURL":
    "<List Charge Operations URL)
    Tel#3A2B12345678/transactions/amount/
    tx-a3x0e4006da40a8a5b5-045972478cc3",
  "transactionOperationStatus": "Charged"
},
{
  "endUserId": "tel:+9412345678",
  "paymentAmount": {
    "chargingInformation": {
      "amount": "6",
      "currency": "USD",
      "description": "Snakes Alive"
    }
  },
  "referenceCode": "REF-ASM600-239238",
  "serverReferenceCode":                    "tx-
a3x0e4006da40a8a5b5-044972478cc3",
  "resourceURL":
    "<List Charge Operations URL)
    Tel#3A2B12345678/transactions/amount/
    tx-a3x0e4006da40a8a5b5-044972478cc3",
  "transactionOperationStatus": "Charged"
}
],
"resourceURL":
```

"<List Charge Operations URL>
    Tel%3A%2B12345678/transactions/amount/"
}}

3.3.3   Response Parameters

Parameter name	Description	Usage
paymentTransactionList	Array of amountTransaction objects	Optional
endUserId	Any URI. The endUserId does not need URL encoding. If sent in the POST body for application/json requests, but does need encoding when used in the URL or form encoded post. In this case the endUserId is the user's MSISDN including the 'tel:' protocol identifier and the country code preceded by '+', e.g. tel:+94773330001.	Mandatory
paymentAmount	chargingInformation Object, contains amount, currency and description of transaction.	Mandatory
referenceCode	String. Unique reference generated by client.	Mandatory

	serverReferenceCode	String. Unique reference generated by server.	Mandatory	
	transactionOperationStatus	String. "Charged" confirms that the resource state is 'Charged' (see Resource states below) – the end user's account has been charged	Mandatory	
		Resource States) – the end user's account has been charged.		
resourceURL	This is URI for this transaction. The service provider can invoke this URI to recall this transaction at a later time.			Mandatory
serverReferenceCode	String. Is a reference to the charge or refund, provided by the ApigateHub Exchange, and meaningful to the ApigateHub Exchange's backend system for the purpose of reconciliation.			Mandatory

4 List Charge Operations

HTTP Method	GET
Operation	Should return all the transactions of the end user for the calling application

4.1 Request

```
GET <List Charge Ops URL> tel%3A%2B12345678/transactions HTTP/1.1
Accept: application/json
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

4.1.1 Request Parameters

Parameter name	Description	Usage
endUserId	Any URI. The endUserId does not need URL encoding. If sent in the POST body for application/json requests, but does need encoding when used in the URL or form encoded post. In this case the endUserId is the user's	Mandatory

	MSISDN including the 'tel:' protocol identifier and the country code preceded by '+', e.g. tel:+94773330001.	

4.1.2   Response Parameters

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: 12345
Date: Thu, 04 Jun 2009 02:51:59 GMT


{"paymentTransactionList": {
"amountTransaction": [
   "endUserId": "tel:+00123456789",
   "paymentAmount": {
      "chargingInformation": {
         "amount": "9",
         "currency": "USD",
         "description": "Alien Invaders"
      }
   },
   "referenceCode": "REF-ASM600-239238",
   "serverReferenceCode":"tx-a3x0e4006da40a8a5b5-045972478cc3",
   "resourceURL":
      "<List Charge Operations URL)
     Tel#3A2B12345678/transactions/amount/
      tx-a3x0e4006da40a8a5b5-045972478cc3",
   "transactionOperationStatus": "Charged"
},
{
"endUserId": "tel:+9412345678",
   "paymentAmount": {
      "chargingInformation": {
         "amount": "6",
         "currency": "USD",
         "description": "Snakes Alive"
      }
   },
   "referenceCode": "REF-ASM600-239238",
   "serverReferenceCode": "tx-a3x0e4006da40a8a5b5-044972478cc3",
```

```
    "resourceURL":

       "<List Charge Operations URL)

      Tel#3A2B12345678/transactions/amount/

       tx-a3x0e4006da40a8a5b5-044972478cc3",

     "transactionOperationStatus": "Charged"

   }

],

"resourceURL":

   "<List Charge Operations URL>

       Tel%3A%2B12345678/transactions/amount/"

}}
```

4.1.3   Response Parameters

Parameter name	Description	Usage
paymentTransactionList	Array of amountTransaction objects	Optional
endUserId	Any URI. The endUserId does not need URL encoding. If sent in the POST body for application/json requests, but does need encoding when used in the URL or form encoded post. In this case the endUserId is the user's MSISDN including the 'tel:' protocol identifier and the country code preceded by '+', e.g. tel:+94773330001.	Mandatory
paymentAmount	chargingInformation Object, contains amount, currency and description of transaction.	Mandatory
referenceCode	String. Unique reference generated by client.	Mandatory
serverReferenceCode	String. Unique reference generated by server.	Mandatory
transactionOperationStatus	String. "Charged" confirms that the resource state is 'Charged' (see Resource states below) – the end user's account has been charged	Mandatory

5 Resource States

The client passes the transactionOperationStatus in the request body so that the resource can be placed into a desired state. The ApigateHub Exchange either confirms this desired state in the transactionStatus response field, or instead shows a failure state as listed below.

Charged	A successful charge was made
Processing	The request to charge has been received and a transaction ID generated. The ApigateHub Exchange will attempt to callback when the transaction state changes, or you can GET the URI including the transactrion ID to poll for changes.
Refunded	A successful refund was made.
Denied	The policy exception in the response will explain the reason (insufficient balance, security issue etc.)
Refused	The charge or refund was refused, or not explicitly accepted, by the end user.

6 Response Codes & Exceptions

6.1 Response Codes

HTTP response codes are used to indicate:

200 – Success!

400 – Bad request; check the error message for details

401 – Authentication failure, check your authentication details

403 – Forbidden; please provide authentication credentials

404 – Not found: mistake in the host or path of the service URI

405 – Method not allowed: for example you mistakenly used a HTTP GET instead of a POST

500 – The server encountered an unexpected condition. This could be wrong authentication details or limited user permission

503 – Server busy and service unavailable. Please retry the request.

6.2 Exceptions

If the transaction is immediately confirmed, the response is displayed as follows:

This section lists the available error codes, the possible reasons why the exception may have occurred, and possible solutions.

6.2.1 Service Exceptions

If the transaction is immediately confirmed, the response is displayed as follows,

```
HTTP/1.1 400 Bad Request
Accept: application/json
{"requestError": {
  "serviceException": {
    "messageId": "SVC0002",
    "text": " Invalid input value for message part %1",
```

```
      "variables": " clientCorrelator Value 12345"

  }

}}
```

The following service exceptions may be thrown:

6.2.2   Policy Exceptions

A policy exception means that the request syntax is valid; however an ApigateHub Exchange policy has been broken.

POL0001 - Policy error occurred

The above exception may be thrown to indicate a fault relating to a policy associated with the service.