# Gateway Requirements

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# ChangeLog

# Introduction

## Purpose

This document is a description of the API Functions that BananaPay hope PeraHub can provide.

## Target Audience

PeraHub developers And BananaPay Developers.

# Overview

## Communication Protocal

All api functions uses standard protocols and data structure.

The data should be submitted to EndPost using POST method through HTTPS in XML FORMAT.

Response to the request are returned synchronously on the same connection from which the request originated

# Definitions

## PeraHub

## BananaPay(BNNP)

## Message

# Message Overview

## Message List

### Message Number

Message Number must follow the rule as “XXXX.YYY.ZZZ.NN”,

* XXXX represents the system id, e.g. ‘bnnp’ or ‘pera’
* YYY represents Message name, e.g. ‘101’, this will diff message type.
* ZZZ is reserved, now should be filled as ‘001’
* NN represents the version no, now should be filled as ‘01’

### Message List

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SeqNo | Message Number | Message  Name | Message  Direction | Need Signature | Need statement check |
| 1 | Bnnp.101.001.01 | Authentication and sign-up application request | BNNP -> pera hub | Y | N |
| 2 | Bnnp.102.001.01 | Authentication and sign-up application response | Pera hub -> bnnp | Y | N |
| 3 | Bnnp.103.001.01 | Termination request | BNNP -> pera hub | Y | N |
| 4 | Bnnp.104.001.01 | Termination response | Pera hub -> bnnp | Y | N |
| 5 | Epcc.201.001.01 | Sign-up payment request | Bnnp->pera hub | Y | Y |
| ~~6~~ | ~~Epcc.231.001.01~~ |  |  |  |  |
| ~~7~~ | ~~Epcc.233.001.01~~ |  |  |  |  |
| ~~8~~ | ~~Epcc.241.001.01~~ |  |  |  |  |
| 9 | Epcc.205.00.01 | Refund request | Bnnp->pera hub | Y | Y |
| 10 | Epcc.211.001.01 | Payment-to-bank request | Bnnp->pera hub | Y | Y |
| 11 | Epcc.206.001.01 | Payment receipt message | Pera hub -> bnnp | Y | Y |
| 12 | Epcc.242.001.01 |  |  |  |  |
| 13 | Epcc.243.001.01 |  |  |  |  |
| 14 | Epcc.207.001.01 | Sign-up payment result message | Prea hub -> bnnp | Y | Y |
| 15 | epcc.244.001.01 |  |  |  |  |
| 16 | Epcc.208.001.01 | Refund result message | Pera hub -> bnnp | Y | Y |
| 17 | Epcc.213.001.01 | Payment-to-bank result message | Pera hub -> bnnp | Y | Y |
| 18 | Epcc.251.001.01 |  |  |  |  |
| 19 |  |  |  |  |  |
| 20 |  |  |  |  |  |
| 21 |  |  |  |  |  |
| 22 |  |  |  |  |  |
| 23 |  |  |  |  |  |
| 24 |  |  |  |  |  |
| 25 | Epcc.301.001.01 | Transaction query request | Bnnp->pera hub | Y | N |
| 26 | Epcc.302.001.01 | Transaction query response | Pera hub -> bnnp | Y | N |
| 27 |  |  |  |  |  |
| 28 |  |  |  |  |  |
| 29 |  |  |  |  |  |
| 30 |  |  |  |  |  |
| 31 |  |  |  |  |  |
|  |  |  |  |  |  |

## Data Type

Data type will be described like: MAX[MIN]<Size><Type>

* Min: Optional, if this word shows, that this means this field’s length must be EXACTLY equal to Size.
* Size: Must, this part defines the maximum length of this field value.
* Type: MUST, this part defines the type of this field’s value. And the enumerations are shown in Figure

|  |  |  |
| --- | --- | --- |
| SeqNo | Type | Meaning |
| 1 | Code |  |
| 2 | Text | Number, characters |
| 3 | NumericText | only numbers |
| 4 | AmountText | Amount, the format is “Currency Code” +” Integer” +”.” +” Integer”  e.g. PHP12345.67  e.g. CNY12345.67 |
| 5 | ISODateTime | yyyy-mm-ddThh:mm:ss  e.g. 2017-10-26T14:24:29 |

## Data Requirements

In Column “Requirements” , we use *[m..n]* to describe data requirements.

* When *m* is greater than *0*, that means this field **MUST** exist, and at least show *m* times.
* When *m* equals to *0*, and *n* is greater than *0*, that means this field is **OPTIONAL**, and maximum times is *n*.

## Encoding

UTF-8

## Reserved

# Message Syntax

## Overview

This chapter describe the details of XML structure.

## XML Structure

Data will be transferred from endpoint to endpoint. XML Structure show in Figure 1.

|  |  |  |
| --- | --- | --- |
| root (XML document root element) | | Signature |
| MsgHeader | MsgBody |

Figure

The example of this XML structure is shown in Figure 2.

|  |
| --- |
| <? xml version=”1.0” encoding=”UTF-8”>  <root xmlns=”namespace\_string”>  <MsgHeader>  ...  </MsgHeader>  <MsgBody>  ...  </MsgBody>  </root>\r\n  {Signature} |

Figure

* *namespace\_string* is a xml namespace ,helping to validate file format.

## MsgHeader

MsgHeader format is “<MsgHeader>MsgHeaderContent</MsgHeader>”, the fields are listed in Figure .

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field Name | Meaning | Type | Requirements | Memo |
| SndDt | Send Date | IOSDataTime | [1..1] | E.g.  2017-10-26T13:03:21 |
| MsgTp | Message No | Max15Text | [1..1] | See in “*Chapter 4.1*”. |
| IssrId | Issuer ID | Max14Text | [1..1] | See in “*Chapter 5.6*”. |
| Drctn | Message Direction | DrctnCd | [1..1] | See in “*Append A.14 CrctnCd*”. |
| SignCN | The Certification Number used to generate signature | Max10Text | [1..1] |  |
| NcrptSN | The certification Number used to decrypt. | Max10Text | [0..1] |  |
| DgtlEnvlp | Digital Envelop | Max512Text | [0..1] | If some request exchange a “symmetric key”, this key will be encrypted ,and the encrypted-message will be base64encode, filled in this filed.  Receiver should base64decode this filed,and use “NcrptSN” to decrypt . |

## MsgBody

MsgBody is used to transfer business details message.

## Signature

## Organization ID(Issuer ID)

## Sequence Number Rules

Sequence Number AS ***SeqNo*** can be classified to types as shown below:

* Authentication
* Sign-up
* Terminate a sign-up
* Sign-up payment
* Refund
* Payment-to-bank

SeqNo now is designed as string having length of 31,and formatted as “date” + ”increment\_no” + ”reserved” + ”optional\_code”

* “*Date*”means the system date ,format “yyyymmdd”
* “*increment\_no*”having length of 16, MUST be unique in “*Date*”
* “*reserved*” length of 1, to differ scenes, shown in “AppendA.1”
* “optional\_code”

### Transaction Seqno

### Bank-Website-Gate Seqno

### Exception seqno

## Nation Code

## Region Code

## ID Card Number

## Mechant Number

## Mechant type ID

## BatchNo Rules

### Transaction batchno rules

### Exception batchno rules

### Makeup-Statement batchno rules

## Transaction State and Retcode

## Device Information

## Terminal Number

## Sign-up Number

## Sensitive information safety

## Statement file safety

## Transfer protocol

HTTPS POST.

## File download

SFTP.

## Transaction details

## Transaction validity

## How to deal with exceptions

# API Functions

## Authentication and Sign-Up Request(epcc.101.001.01)

### Features

This API includes two parts: Authentication and sign-up.

User who has a pera-hub visa card can initiate an application in BNNP and fill required information, and BNNP post message to pera-hub.

Pera-hub check information is correct or not.

If information is correct, BNNP will request again and pera-hub complete the Sign-up operation.

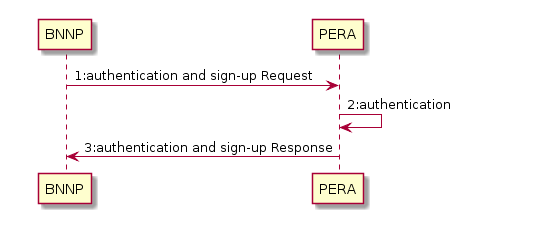
### Sequence diagram

#### Authentication

At first, user fills up his information in BNNP APP, and post to bnnp.

BNNP post user’s form to pera.

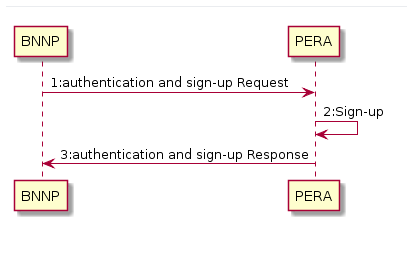
Pera check this form is correct or not.



|  |  |  |
| --- | --- | --- |
| operation no | message name | message number |
| 1 | authentication and sign-up request | epcc.101.001.01 |
| 2 |  |  |
| 3 | authentication and sign-up response | epcc.102.001.01 |

#### Sign-up

Based on step 6.1.2.1, BNNP continue operation and post data to pera to Sign-Up.



|  |  |  |
| --- | --- | --- |
| operation no | message name | message number |
| 1 | authentication and sign-up request | epcc.101.001.01 |
| 2 |  |  |
| 3 | authentication and sign-up response | epcc.102.001.01 |

### Message Fields

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SeqNo | Information | <XML tag> | Requirement | Type | Memo |
|  | MsgBody | <MsgBody> | [1..1] |  |  |
|  | User’s Information | <SgnInf> | [1..1] |  |  |
|  | --User’s Bank Issuer ID | <SgnAcctIssrId> | [1..1] | Max14Text |  |
|  | --User’s Bank Account Type | <SgnAcctTp> | [1..1] | AcctTpCd | Encrypted  and base64 encoded |
|  | --User’s Bank Account NO | <SgnAcctNum> | [1..1] | Max240Text | Encrypted and base64 encoded |
|  | --User’s ID Type | <IDTp> | [1..1] | IDTpCd | Check in A.9 |
|  | --User’s ID No | <IDNo> | [1..1] | Max44Text | Encrypted and base64 encoded |
|  | --Users’ Mobile NO | <MobNo> | [1..1] | Max24Text | Encrypted and base64 encoded |
|  | Sign-up Detail | <TrxInf> | [1..1] |  |  |
|  | --Transaction category code | <TrxCtgy> | [1..1] | TrxCtgyCd |  |
|  | --Transaction ID | <TrxId> | [1..1] | MaxMin31Text | check in 5.7 |
|  | --Transaction Time stamp | <TrxDtTm> | [1..1] | IOSDataTime |  |
|  | --Authentication Token | <AuthMsg> | [0..1] | Max20Text |  |
|  | Payment Account details | <InstgInf> | [1..1] |  |  |
|  | -- Payment Account Issuer ID | <InstgId> | [1..1] | Max14Text | Check In 5.6 |
|  | -- User’s Issuer ID | <InstgAcct> | [0..1] | Max64Text | Encrypted and base64 encoded |

### Message Fields Explanation

1. *SgnAcctTp* enum:
   * 00 : Debit Card
   * 01 : Credit Card
   * 02 : Semi Credit Card
2. *IDNo* must Meet the requirements identified by *IDTp*.
3. *TrxCtgy* enum
   * in *6.1.2.1 Authentication*, this field will be assigned as “0201”
   * in *6.1.2.2 Sign-up*, this field will be assigned as “0202”
4. *TrxDtTm* and *TrxId* MUST have the same date.
5. *AuthMsg* must be filled-up in  *6.1.2.2 Sign-up*, and the value may be SMS code sent by pera-hub.

## Authentication and sign-up response(epcc.102.001.01)

### Features

The Response message to *6.1* .

### Sequence Diagram

Check In *6.1.2*.

### Message Fields

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SeqNo | Information | <XML tag> | Requirement | Type | Memo |
|  |  | <MsgBody> |  |  |  |
|  | System Return Information | <SysRtnInf> |  |  |  |
|  | --System Return Code | <SysRtnCd> |  | SysRtnCd |  |
|  | --System Return Description | <SysRtnDesc> |  | Max64Text |  |
|  | --System Return Time | <SysRtnTm> |  | IOSDateTime |  |
|  | Business Information | <BizInf> |  |  |  |
|  | --Sign-up contract number | <SgnNo> |  | Max34Text |  |
|  | --Business Result Status Code | < BizStsCd> |  | BizStsCd |  |
|  | --Business Result description | <BizStsDesc> |  | Max64Text |  |
|  | Sign-up’er Information | <SgnInf> |  |  |  |
|  | --Sign-up’er Bank Issuer ID | <SgnAcctIssrId> |  | Max14Text | See In 5.6 |
|  | --Sign-up’er Bank Account Type | <SgnAcctTp> |  | AcctTpCd | See in 6.1.4 |
|  | --Sign-up’er BankAccount Number | <SignAcctId> |  | Max64Text | Encrypted and base64 encoded |
|  | --Sign-up’er BankName | <SgnAcctNm> |  | Max64Text | Encrypted and base64 encoded |
|  | --Sign-up’er Bank Level | <BgnAcctLvl> | [0..1] | AcctLvlCd | See In A.5 |
|  | Sender Account Information | <InstgInf> |  |  |  |
|  | -- | <InstgId> |  |  |  |
|  |  | <InstgAcct> |  |  |  |
|  | Information copied from the request | <OriTrxInf> |  |  |  |
|  | --transaction category | <TrxCtgy> |  | TrxCtgyCd |  |
|  | --transaction id | <TrxId> |  | MaxMin31Text |  |
|  | --transaction date timestamp | <TrxDtTm> |  | IOSDataTime |  |

### Message Fields Explanation

## Terminate sign-up request(epcc.103.001.01)

## Terminate sign-up response(epcc.104.001.01)

## Sign-up Payment Request(epcc.201.001.01)

## (Epcc.231.001.01)

## (epcc.233.001.01)

## (epcc.241.001.01)

## Refund Request(epcc.205.001.01)

## Payment-to-bank request(epcc.211.001.01)

## Payment response(epcc.206.001.01)

## Bank-website-gate jump url(Epcc.242.001.01)

## Bank-website-gate result(epcc.243.001.01)

## Sign-up payment response(epcc.207.001.01)

## Bank-website-gate result(epcc.241.001.01)

## Refund response(epcc.208.001.01)

## Payment-to-bank result(epcc.213.001.01)

## Epcc.251.001.01

## Epcc.252.001.01

## Epcc.253.001.01

## Epcc.254.001.01

## Epcc.255.001.01

## Epcc.256.001.01

## Epcc.258.001.01

## Epcc.301.001.01

## Epcc.302.001.01

## Epcc.311.001.01

## Epcc.312.001.01

## Epcc.323.001.01

## Epcc.324.001.01

## Epcc.303.001.01

# Exceptions

# Statement File

# Append A

## SeqNo Reserved

## TrxCtgyCd

## BizTpCd

## AcctTpCd

## AcctLvlCd

## TrxStatusCd

## TrxTrmTpCd

## MrchntTpCd

## IdTpCd

## TrxCcyCd

## AcctInTpCd

## RPFlgCd

## DCFlgCd

## CrctnCd

## TrxPrpsCd

## BankTrxStsCd

## CBFlgCd

## LmtAcctTpCd

## GwChnnlTpCd

## DeptRsnCd

## DsptRspCd

## ClrStsCd

# Append B

## SysRtnCd

## BizStsCd

# Append C

## Reserved Words