ALEPAY TOKENIZATION INTEGRATION

version 1.2

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TABLES OF DOCUMENTARY CHANGES

*A – Creat, M – edit, D – Delete

Date	Position	A* M, D	Old version	Description	Phiên bản mới	Thực hiện
2/2017	total	M	Version 1.1	Standardizing information connection	Version 1.1	Nguyễn Cẩm Huế
4/2017	Request payment	M	Version 1.1	Add request parameters to checkout API	Version 1.2	Đào Đức Huy
4/2017	Response data of create tokenization	M	Version 1.1	Add response parameters to Create tokenization API	Version 1.2	Đào Đức Huy
4/2017	Error code	M	Version 1.1	Add more error code	Version 1.2	Đào Đức Huy

CONCEPTS, TERMINOLOGIES

Terms	define	Note

TABLE OF CONTENTS

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I.   Introduction

When Card holders request link their card (via Merchant), Alepay returns to Merchant's Web/App a meaningless character string (called Token code – this code can not be reversely translated), this Token is linked mapped 1-1 to card holder's card which is stored at his/her bank or international card organization.

When needed, Merchant's Website/ App will call Alepay with Token code to deduct money from Card holder's coresponding card or bank with strictly confidential payment information.

II.   Proccess

1. Create token process
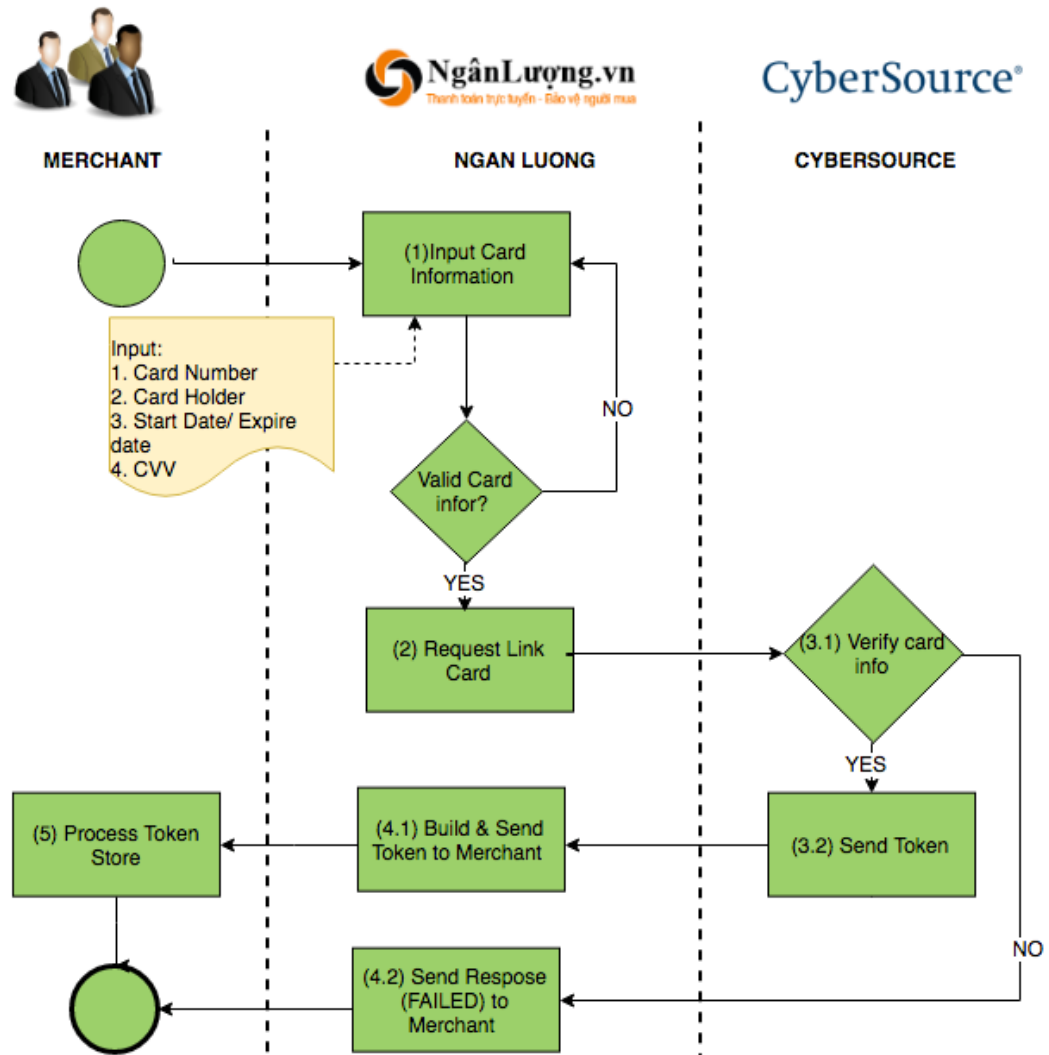
(1) : Customer enter card information on Alepay site

(2) : If card informarion is correct, Alepay will send request of link card to Cyber

(3) : Cyber check card information, if correct Cyber will send Tokenization to Alepay

(4.1)   : Alepay create a Token and returns to Merchant

(4.2)   : If the result Cyber sent is failed, Alepay will receive and return corresponding results
        to Merchant

(5) : Merchant save Token in their DB

2. Payment process with token
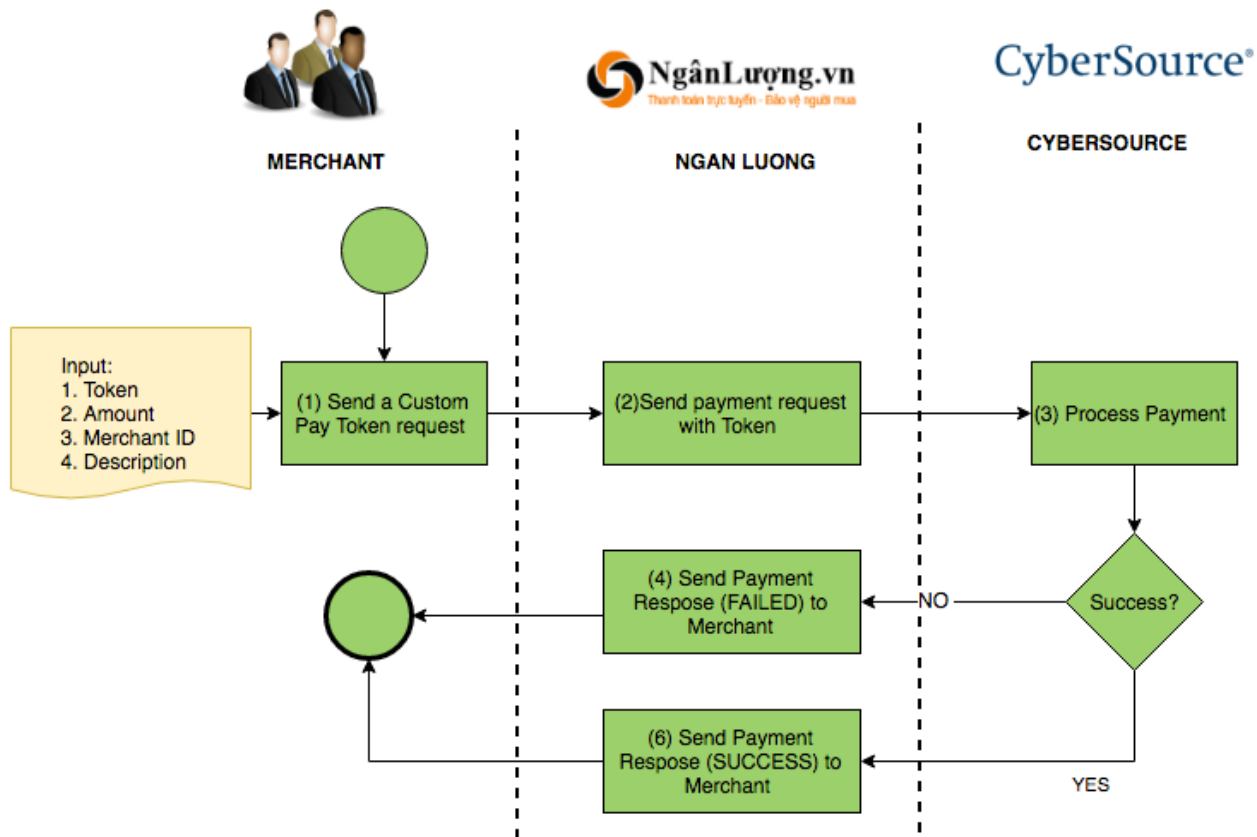
(1): Merchant send 1 payment request by Token of Customer

(2): Alepay decode Token and send payment request to Cyber

(3): Cyber review

(4): Alepay receive and send payment result: failed to Merchant (including detailed error code)

(5): Alepay receive and send payment result: successful to Merchant, recorded the increasing of money in Alepay account of Merchant)

III. Enviorment

Using RESTFul service with Post Method to request/ respone data.

1. Live envirorment

- **Registry account site:** https://alepay.vn
- **Alepay api:** https://alepay.vn

- **Registry merchant**: To get Token key, Encrypt key and Checksum key

  https://alepay.vn/alepay#/user/view/manager

- **Get Token key, Encrypt key and Checksum key**: https://alepay.vn/alepay#/user/view/api

2. **Sandbox Envirorment**

- **Địa chỉ đăng ký tài khoản:** https://alepay-sandbox.nganluong.vn
- **Địa chỉ api kết nối:** https://alepay-sandbox.nganluong.vn

- **Registry merchant:** To get Token key, Encrypt key and Checksum key

  https://alepay-sandbox.nganluong.vn/alepay#/user/view/manager

- **Get Token key, Encrypt key and Checksum key**:

  https://alepay-sandbox.nganluong.vn/alepay#/user/view/api

- Notice:

  + Card test information:

Card type	Card number	Expire month (mm/yy)	CVV (3 digits)
Visa	4111111111111111	12/20	123
Visa 3D	4444000000004404	12/20	123
MasterCard	5555555555554444	12/20	123
JCB	3566111111111113	12/20	123

  + OTP Code: **123456**

3. **Key API**

Alepay provides 3 types of key to connect :

Key	Description
Token key	To determine which account is used
Encrypt key	To encrypt data and send to Alepay.

Checksum key	To create checksum data.

Alepay keyswill be generated automatically when an account is registered on Alepay.vn.

IV. Data Structure

A. General data structure

Request data		
Parameter	**Data type**	**Description**
token	String	Token Key provided by Alepay
data	String	Encrypted data (using Encrypt key). ● Encrypt data : ○ Encode data to Json type ○ Encrypt JSON stringusing RSA algorithm with *encrypt key* from Alepay.
checksum	String	Encrypted data checksum (using Checksum key). ● Checksum data : ○ Checksum = MD5(encryptedData + ChecksumKey)

Response data		
Parameter	**Data type**	**Description**
errorCode	String	Error code (See V.1 index)
data	String	Encrypted data (using Encrypt key)
checksum	String	Encrypted data checksum (using Checksum key)
errorDescription	String	Error Description. (See V.1 index)

- **Note :**
  - *Request data* : value of **"data"** parameter **sent to Alepay** is an encrypted data (using Encrypt key) of request data parameters of each API.
  - *Response data* : value of **"data"** parameter when **Merchant receive from Alepay** is encrypted data (using Encrypt key) of response data parameters of each API.

B. *Checkout Payment*

1. **API create payment**

   This API allows Merchant to send payment request to Alepay.

   - Http Request

   POST <BASE_URL>/checkout/v1/request-order

   - Request / Respone data

Request data				
Parameter	**Data type**	**Require**	**Default value**	**Description**
orderCode	String(255)	T	-	Order code of Merchant
amount	Double	T	-	Order amount
currency	String	T	-	Currency
orderDescription	String	T	-	Order Description
totalItem	Integer	T	-	Total item of order
checkoutType	Integer	F	0	0 : Both payment type 1 : Normal payment only 2 : Installment payment only
installment	Boolean	F	FALSE	- True : Installment only - False : Installment or Normal payment
month	Integer	F	-	Installment period : 3,6, 9,12,24 months
bankCode	String	F	-	Code of bank which user using to payment

Request data				
paymentMethod	String	F	-	Card type that allow installment payment
returnUrl	String	T	-	URL Alepay will callback to Merchant when payment is successful.
cancelUrl	String	T	-	URL Alepay will callback to Merchant when user cancel the payment.
buyerName	String	T	-	Buyer's name
buyerEmail	String	T	-	Buyer's email
buyerPhone	String	T	-	Buyer's phone number
buyerAddress	String	T	-	Buyer's address
buyerCity	String	T	-	Buyer's city
buyerCountry	String	T	-	Buyer's country
paymentHours	String	T	-	Time for payment checkout (hours)
merchantSideUserId	String	F	-	ID của người dùng bên phía Merchant
buyerPostalCode	String	F	-	Mã bưu chính của người dùng
buyerState	String	F	-	Tỉnh
isCardLink	Boolean	F	FALSE	True : Thanh toán kèm liên kết thẻ. False : Chỉ thanh toán mà không liên kết thẻ

Respone data		
Parameter	Data type	Description
token	String	Transaction codeof Alepay
checkoutUrl	String	URL for user to checkout.

Note :

- The blue parameters allow Merchant fixed the installment information sent to Alepay. Then user will not be allowed to change the installment information.

- The brown parameters allow Merchant to both request payment and perform a card link. Then Alepay will return the tokenization of the customer's card.

2. Respone data

When user finishes payment on Alepay, Alepay will calback to "returnUrl" which Merchant provided when calling *Payment request* API. Then, Merchant has to call *Get transaction info* API to get transaction's detail. Below is the description of responseparameters from Alepay when performing callback.

- Http Request

GET <MERCHANT_RETURN_URL>

- Respone data

Checkout only :

Parameter	Data type	Description
errorCode	String	Error code (See V.1 index)
data	String	Transaction code of Alepay
cancel	String	True : Payment cancelled

False : Payment wassuccessful |

Checkout and link card :

Parameter	Data type	Description		
errorCode	String	Mã lỗi (được mô tả trong Phụ lục V.1)		
data	String	**Parameter**	**Data type**	**Description**

		alepayToken	String	Alepay token for 1-Click payment
		transactionCode	String	Transaction code
		cardLinkCode	String	Card link status code
cancel	String	True : Customer not choose link card False : Customer's card linked success		

- These parameters will be converted to JSON String, **encrypted & base64encoded,** and returnas **"data"** parameter of callback URL, belong with it's checksum:
<MERCHANT_RETURN_URL>?data=XXXX&checksum=XXXX

3. **API check and get Transaction Detail info**

 API API get transaction info by transaction code

- Http Request

 POST <BASE_URL>/checkout/v1/get-transaction-info

- Request / Respone data

Request Data				
Parameter	**Data type**	**Require**	**Default value**	**Description**
transactionCode	String(255)	True	-	Transaction code of Alepay.

Respone data		
Parameter	**Data type**	**Description**
transactionCode	String	Transaction code of Alepay
orderCode	String	Order code of Merchant
amount	double	Order amount
currency	String	Currency

buyerEmail	String	Buyer's email
buyerPhone	String	Buyer's phone number
cardNumber	String	Card number (First 6 digits and last 4digits)
buyerName	String	Buyer's name
status	String	Transaction status
message	String	Status's description
installment	boolean	True : Installment payment False: Normal payment
is3D	boolean	True : 3D secure Card False: 2D secure Card
month	Integer	Installment period
bankCode	String	Installment bank's code
bankName	String	Installment bank's name
method	String	Card type
transactionTime	Long	Transaction time (millisecond)
successTime	Long	Success time (millisecond)
bankHotline	String	Installment bank's hotline
merchantFee	double	Merchant Fee
payerFee	double	Payer Fee

C. *Payment using tokenization*

1. API create tokenization

To use 1-Click payment, customer needs to link payment card to Alepay. In the next payments, merchant just uses token that Alepay returns to make the payment. The customer doesn't need to re-enter the card info.

- a. *Creat linked card*
- Http Request

  POST <BASE_URL>/checkout/v1/request-profile

- Request / Respone data

Request Data		
Parameter	**Data type**	**Description**
id	String	Customer's ID of Merchant
firstName	String	Customer's first name
lastName	String	Customer's last name
street	String	Customer's address
city	String	Customer's city
state	String	Customer's state
postalCode	String	Customer's postal code
country	String	Customer's country
email	String	Customer's email
phoneNumber	String	Customer's phone number
callback	String	Callback URL

Respone data		
Parameter	**Data type**	**Description**
url	String	URL for customer link their card

b. *Respone linked card data*

When user finishes link their card to Alepay, Alepay will calback to "callback" URL which Merchant provided when calling *linked Card* API. Below is the description of responseparameters from Alepay when performing callback.

- Http Request

<mark>GET <MERCHANT_CALLBACK_URL></mark>

- Respone data

Respone Data					
Parameter	**Data type**	**Description**			
errorCode	String	Error code (see V.1 index)			
data	String	**Parameter**	**Data type**	**Description**	
		cardLinkStatus	String	Error Code (See V.1 index)	
		email	String	Customer's email	
		customerId	String	Customer's ID	
		cardHolderName	String	Cardholder's name	
		cardNumber	String	Card number (First 6 digits and last 4 digits)	
		cardExpireMonth	String	expired Card month	
		cardExpireYear	String	expired Card year	

		token	String	Token for 1-Click payment
cancel	String	True : Cancelled False : Successful		

- These parameters will be converted to JSON String, **encrypted & base 64 encoded,** and return **"data"** parameter of callback URL, belong with it's checksum:

<MERCHANT_CALLBACK_URL>?data=XXXX&checksum=XXXX

2. 1- click Payment (payment using tokenization api)

After the customer links card successfully, merchant just uses token that Alepay returns to make the payment for that customer. Process of 1-Click payment is described as below

- Http Request

POST <BASE_URL>/checkout/v1/request-tokenization-payment

a. Creat payment

- **Request Data**

Request Data		
Parameter	**Data type**	**Description**
customerToken	String	Customer's card-linked token when they link their card to Alepay.
orderCode	String	Order's code
amount	String	Order's amount
currency	String	Currency
orderDescription	String	Order's description
returnUrl	String	URL callback when success
cancelUrl	String	URL callback when fail

- **Respone Data**

Alepay provide 2 levels of security for 1-Click payment, including :
+ *Instant payment*: Transaction will be performed as soon as the Merchant sends the payment request to Alpay without confirmation from the cardholder.

Respone data		
Parameter	**Data type**	**Description**
errorCode	String	Error code (See V.1 index)
data	String	Transaction code of Alepay
cancel	String	True : Payment cancelled False : Payment wassuccessful

+ *Authentication from cardholder*: Alepay will return authentication URL and card holder will authenticate the payment (by OTP or 3D-Secure). After authentication, Alepay will perform payment transactions that Merchant had submitted earlier.

Respone data		
Parameter	**Data type**	**Description**
checkoutUrl	String	Authentication URL

Notice: Depending on the contract concluded between Merchant and Alepay, Alepay be configured according to the corresponding level of security.

b. *Respone data when payment sucess*

When end user finished the authentication, Alepay will callback to "returnUrl" which Merchant sent to Alepay when call 1-Click payment API. Response parameters received from Alepay as follow.

- *HTTP Request*
  GET <MERCHANT_CALLBACK_URL>

- *Respone Data*

<table>
<tr><td colspan="3">Respone data</td></tr>
<tr><td>Parameter</td><td>Data type</td><td>Description</td></tr>
<tr><td>errorCode</td><td>String</td><td>Error code (See V.1 index)</td></tr>
<tr><td>data</td><td>String</td><td>Transaction code of Alepay</td></tr>
<tr><td>cancel</td><td>String</td><td>True : Payment cancelled

False : Payment wassuccessful</td></tr>
</table>

- These parameters will be converted to JSON String, **encrypted & base64encoded,** and return **"data"** parameter of callback URL, belong with it's checksum :
<MERCHANT_CALLBACK_URL>?data=XXXX&checksum=XXXX

3. API get list of linked cards

API to retrieve the list of linked cards of the customer.

- HTTP Request :

  POST <BASE_URL>/checkout/v1/get-customer-info

- Request / response data:

<table>
<tr><td colspan="3">Request Data</td></tr>
<tr><td>Parameters</td><td>Data type</td><td>Description</td></tr>
<tr><td>customerId</td><td>String</td><td>Customer's ID on merchant</td></tr>
</table>

Respone data		
Parameters	**Data type**	**Description**
firstName	String	Customer's first name
lastName	String	Customer's last name
email	String	Customer's email
phone	String	Customer's phone
listCardTokens	Array	List of linked cards

Parameters	**Data type**	**Description**
token	String	Card's payment token
cardNumber	String	Card number (First 6 digits and last 4 digits)
cardHolderName	String	Card's holder name
cardExpireMonth	String	Expire month
cardExpireYear	String	Expire year (Last 2 digits)
paymentMethod	String	Payment method
bankCode	String	Issue Bank's code

4. Cancel tokenization

Using to cancel linked card (tokenization) .

- Http Request:

POST <BASE_URL>/checkout/v1/cancel-profile

- Request/ Respone Data:

Request Data		
Parameter	**Data type**	**Description**
alepayToken	String	Tokenization that want to cancel

Respone data		
Parameter	**Data type**	**Description**
Id	String	Cancel card transaction ID

D. *API search transaction*

- Http Request

POST <BASE_URL>/checkout/v1/get-transaction-history

- Request / response data

Request Data				
Parameter	**Data type**	**Require**	**Default value**	**Description**
orderCode	String	F	-	Order code
fromDate	long	F	-	Get transactions in *fromDate - toDate*
toDate	long	F	-	

Request Data				
customerName	String	F	-	Customer's name
customerEmail	String	F	-	Customer's email
customerPhone	String	F	-	Customer's phone
paymentMethod	String	F	-	Payment method
page	Integer	F	0	Page index
pageSize	Integer	F	20	Number of results per page (1-50)

Respone data		
Parameter	**Data type**	**Description**
pageIndex	Integer	Current page index
pageSize	Integer	Number of results per page
pageCount	Long	Total page number
dataCount	Long	Total result number
data	Array	List transaction (The transaction information is described as in the Response Data of Get transaction detail API - Section B.3)

E. *API refund*

API allow refund money when payment had been successful

- Http Request

POST <BASE_URL>/checkout/v1/request-refund

- Gửi / nhận dữ liệu

Request Data

Request Data				
Param	**Type**	**Require**	**Default**	**Description**
transactionCode	String(255)	T	-	Transaction code had been paid.
reason	String(255)	F	-	Reason of refund money.

Respone data		
Param	**Type**	**Description**
refundCode	String	Alepay refund code
transactionCode	String	Alepay's transaction code
orderCode	double	Order code
refundAmount	String	Refund amount
totalRefundToPayer	String	Total amount refund to payer
refundFee	String	Refund fee
reason	String	Refund reason
refundStatus	String	Refund status

F. *API get detail refund transaction*

API allow get detail refund transaction after creating refund transaction successful

- Http Request

  POST <BASE_URL>/checkout/v1/get-refund-info

- Gửi / nhận dữ liệu

Request Data				
Param	**Type**	**Require**	**Default**	**Description**

Request Data				
transactionCode	String(255)	T	-	Refund Transaction code had been refund.

Respone data		
Param	**Type**	**Description**
refundCode	String	Alepay refund code
transactionCode	String	Alepay's transaction code
orderCode	double	Order code
refundAmount	String	Refund amount
totalRefundToPayer	String	Total amount refund to payer
refundFee	String	Refund fee
reason	String	Refund reason
refundStatus	String	Refund status
refundTime	long	Refund time (milisecond)

G. Callback transaction info to webhook

After a successful payment or a change in the status of a transaction (approve / not approve installment, approve / not approve Card review) or a successful card link, Alepay will return transaction info and/or card linked info via the URL callback that Merchant has declared on Alepay.

- Http Request

POST <MERCHANT_CALL_BACK_URL>

- Response data

Respone "transactionInfo"

Parameter	Data type	Description
transactionCode	String	Alepay's transaction code
orderCode	String	Merchant's order code
amount	double	Order's amount
currency	String	Currency
buyerEmail	String	Buyer's email
buyerPhone	String	Buyer's phone
cardNumber	String	Card number (First 6 digits and last 4digits)
buyerName	String	Buyer's name
status	String	Transaction status (See V.1 index)
message	String	Status's description
installment	boolean	True : Installment payment False: Normal payment
is3D	boolean	True : 3D secure Card False: 2D secure Card
month	Integer	Installment period
bankCode	String	Installment bank's code
bankName	String	Installment bank's name
method	String	Card type
transactionTime	Long	Transaction time (millisecond)
successTime	Long	Success time (millisecond)
bankHotline	String	Installment bank's hotline
merchantFee	double	Merchant Fee

payerFee	double	Payer Fee

Respone "cardTokenInfo"		
Parameter	**Data type**	**Description**
cardLinkStatus	String	Error Code (See V.1 index)
email	String	Customer's email
customerId	String	Customer's ID
token	String	Alepay Token for 1-Click payment
cardNumber	String	Card number (First 6 digits and last 4 digits)
cardHolderName	String	Cardholder's name
cardExpireMonth	String	expired Card month
cardExpireYear	String	expired Card year
paymentMethod	String	Card type
bankCode	String	Issue bank's code

- Example:

```
{
    "transactionInfo": {
        "transactionCode": "ALE1501130624199",
        "orderCode": "1501130574",
        "amount": 1.374E7,
        "currency": "VND",
        "buyerEmail": "nva@gmail.com",
        "buyerPhone": "0987654321",
```

```
            "cardNumber": "411111-XXXX-1111",

            "buyerName": "Nguyen Van A",

            "status": "000",

            "message": "Thành công",

            "installment": false,

            "is3D": false,

            "month": 0,

            "bankCode": "SACOMBANK",

            "bankName": "Sacombank",

            "bankHotline": "1900100",

            "method": "VISA",

            "transactionTime": 1501130648119,

            "successTime": 1501130650759,

            "merchantFee": 0.0,

            "payerFee": 398460.0
        },

        "cardTokenInfo": {

            "cardLinkStatus": "000",

            "email": "nva@gmail.com",

            "customerId": "156",

            "token": "e72d9eb3e9b1091131aa31238ea7c4ea",

            "cardNumber": "411111-XXXX-1111",

            "cardHolderName": "NGUYEN VAN A",

            "cardExpireMonth": "12",

            "cardExpireYear": "2020",

            "paymentMethod": "VISA",
```

```
                        "bankCode": "SACOMBANK"

                }

        }
```

V.   Appendix

1.   errorCode

Error code	Description
000	Success
101	Invalid checksum
102	Invalid encryption
103	IP don't have access permission
104	Invalid data
105	Invalid Token key
106	Token alepay not exists or cancelled
107	Transaction being processed
108	Data not found
109	Order code not found
110	Must have email or buyer phone number
111	Failure
120	Order amount must be greater than 0
121	Invalid currency

122	Order description not found
123	Total item must be greater than 0
124	Invalid URL format (http://, https://)
125	Invalid buyer's name
126	Invalid buyer's email
127	Invalid buyer's phone number
128	Invalid buyer's address
129	Invalid buyer's city
130	Invalid buyer's country
131	Payment hours must be greater than 0
132	Invalid email address
133	Invalid card information
134	Card payment limit reached
135	Transaction was declined by bank issues
136	Transaction code not exists
137	Invalid transaction
138	Merchant account not exists
139	Merchant account not active
140	Invalid Merchant account
142	Bank not support Installment
143	Card is not issued by selected bank

144	Invalid installment period
145	Invalid installment amount
146	Bank issued your card is not support installment
147	Invalid phone number
148	Invalid installment information
149	Invalid card type
150	Card is reviewing
151	Bank not support payment
152	Card number not match with selected card type
153	Transaction not exists
154	Amount limit exceeded
155	Waiting buyer's confirm installment to issued bank
156	Invalid payment amount
157	Email not match with existed profile
158	Phone number not match with existed profile
159	ID must not be empty
160	First name must not be empty
161	Last name must not be empty
162	Email must not be empty
163	City must not be empty
164	Country must not be empty

165	Phone number must not be empty
166	State must not be empty
167	Street must not be empty
168	Postal code must not be empty
169	URL callback must not be empty
170	OTP entered incorrectly more than 3 times
171	Customer's card has been linked on Merchant
172	Link card temporarily banned (exceeded number of times authentication)
173	Incorrect card linked status
174	Cardlink session not found
175	Payment amount of unauthenticated 2D-card exceeds the limit.
176	2D card authentication pending
177	The customer press the cancel button
178	Subscription payment success
179	Payment subscription failed
180	Register subscription success
181	Register subscription failed
182	Alepay token is invalid
183	Plan code is empty
184	URL callback is empty
185	Subscription Plan not existed

186	Subscription plan is inactive
187	Subscription plan expired
188	Subscription Record existed
189	Subscription Record not existed
190	Subscription Record status is invalid
191	Exceeded OTP authentication times
192	Wrong OTP
193	Registration subscription for customer success
194	Customers need to confirm subscription
195	Alepay token status is invalid
196	Send OTP failed
197	End date or maximum payment times invalid
198	Alepay token can not be empty
199	Alepay token is not active
200	Invalid Subscription Plan
201	The start time is invalid
202	The merchant's IP request has not been configured or allowed
203	The subscription file was not found
204	Alepay token is not authenticated
205	Invalid cardholder name
206	Merchant is not allowed to use this service

207	Domestic banks invalid
208	Verify token is invalid
209	Verify amount is invalid
210	Exeeded verify amount times
211	Buyer's name must contains first name and last name
212	Merchant is not allowed to link card
213	Customer not choosen to link card
214	Transaction is not process
215	Not approve card review
216	Card not support
217	Customer's profile is not exists
999	Unknown error. Please contact with Alepay's admin

2. **Currency**

Code	Currency
VND	Vietnam Dong
USD	US Dollar

3. **Card type**

Code	Card type
VISA	Visa Card

MASTERCARD	Master Card
JCB	JCB Card