



NAPAS Payment Gateway Merchant Integration Specification

Version 2.2

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I. Overview

i. Document purpose

This document describe how to integrate new Internet merchant website to NAPAS payment gateway and transaction processing flow which provided by NAPAS gateway.

Based on this, merchant can do cost analysis, what type of transaction supported.

ii. System overview

NAPAS gateway (NAPAS Payment Gateway) solution is a multi-function gateway for card products. System is designed for requirement from customer that they want to do online payment with International Card/ATM domestic debit cards through internet. NAPAS Payment Gateway will help to perform almost payment process when customer doing transaction like receive payment order, card information authorization, routing transaction, view and report transaction.

NAPAS Payment Gateway designed and followed all international financial standards; provide monitor function to control transaction and user in system.

iii. System glossary

Glossary	Description
NAPAS Payment Gateway	Payment Gateway solution provided by NAPAS
Merchant shopping cart	Web site where customer can access to select, order product or service before going to do payment.
Bank system	System which manage customer debit card account and support processing fund transfer amount from customer card account to merchant account
SSL	Secure Socket layer, encryption protocol for web connection
OTP	One time password generated by bank system and sent to customer mobile under SMS, customer will open SMS and get OTP code
VCB	Joint Stock Foreign Trade Bank of Vietnam

II. Solution Feature

i. Connection model

With purpose to support receiving order payment from merchant website, processing transaction and return back result to initialize web site, system designed interface to communicate through form submit and URL redirect. This help to simply connect and integration in between with high secure feature.

Below is general connection graphic in between Service providers, bank system and NAPAS Payment Gateway.



In this diagram, we can see that NAPAS will be the middle to communicate with all merchant integrated, and there are some connections as list below:

- **Customer-Merchant:** customer access merchant website through web browser to initial product/service selection for order.
- **Merchant-NAPAS:** merchant web site after integrate will send payment request to NAPAS through URL redirect with parameters appended. This also includes redirect transaction result back from NAPAS to merchant web site and display for customer.
- **NAPAS to Bank (Issuer bank):** this connection helps NAPAS to communicate with Bank system for payment order processing.
- **Bank to OTP System:** when customer required to enter OTP, this connection will help to request OTP server to generate OTP code for each customer when transact.
- **OTP System to Mobile network:** when OTP generated, this unique code will be transfer to customer hand phone through mobile network. Then customer can receive and enter to OTP authorization web page.
- **Vietcombank:** as settlement bank for merchant.

ii. Connection prototype

The current connection between merchant website and NAPAS web server gateway implement under URL redirection.

With this implementation, connection will not be depended on web page language (ASP, PHP, JSP, .NET...) code and business model. To prepare for URL redirect connection, NAPAS gateway will public order URL for merchant web site with list of required parameters and checksum value (show the consistent of parameter values), merchant website also public URL for NAPAS gateway to return back result.

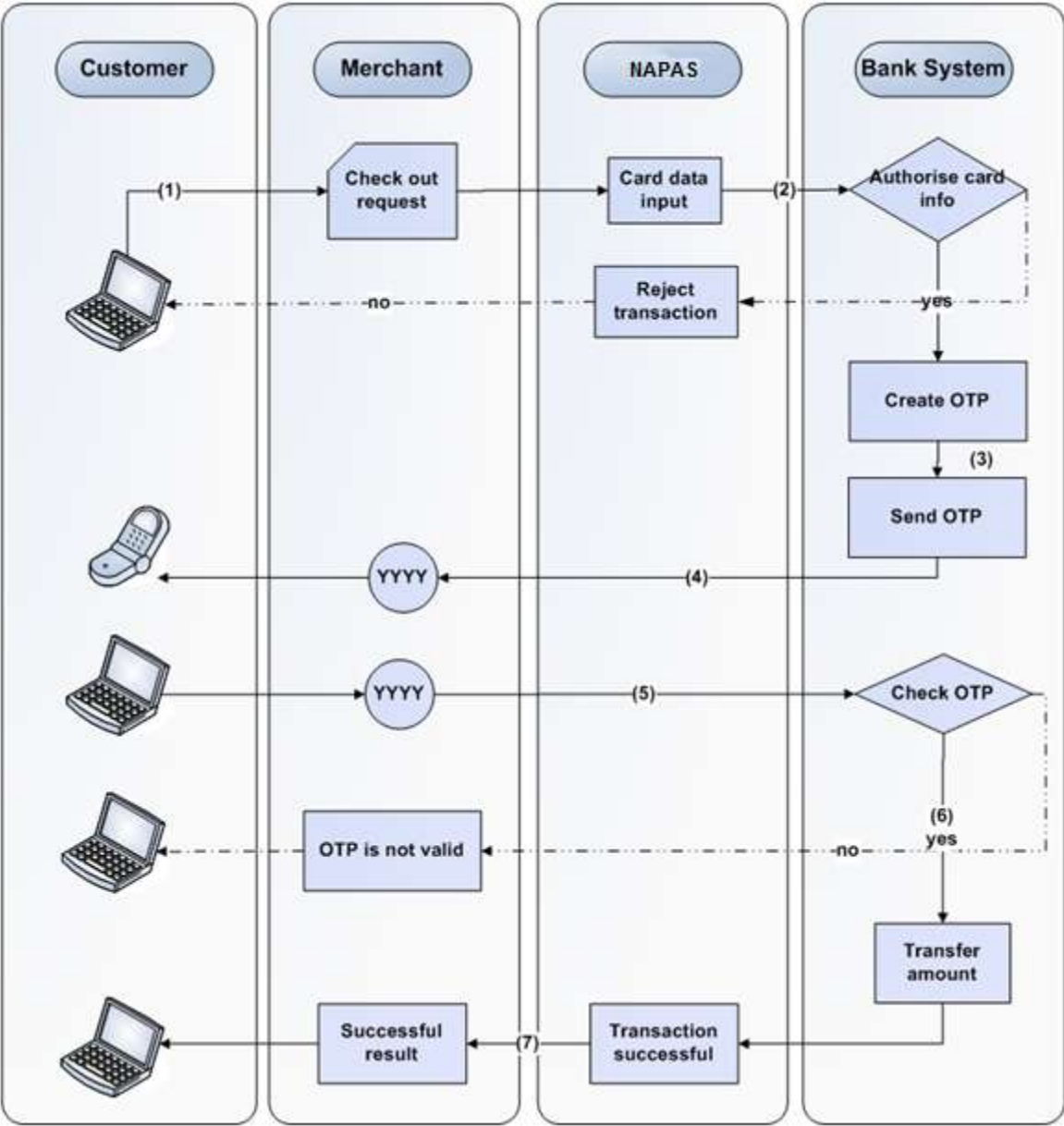
iii. Function support

With the purpose designing payment gateway solution, below are standard functions will be implement:

- Purchase function: This will perform order payment request from merchant website. This function will be performed online through merchant and NAPAS URL redirection.
- Refund function: this will help to refund partial amount of money based on purchase transaction. At the current, merchant staff need to access transaction management web site provided by NAPAS to do refund customer transaction.
- Void Purchase function: allows a purchase merchant to void a purchase transaction that has not been processed by the acquiring institution.
- Transaction query: to check status of purchase transaction successful or not.
- Authorization: system did not support authorization function at the current.
- Capture: system did not support capture function at the current.

III. Transaction flow

i. Transaction flow



Step 1: Buying product on web

- Customer access to shopping cart of merchant on internet.
- Merchant check the validity of customer order then send payment request to NAPAS to process transaction.

- Webpage will be redirect to NAPAS card data entry webpage to support customer enter card information (Card no, card holder name, issue/expire date).

Step 2: Check customer information

- NAPAS will send card info to Bank host to check card and account in Bank system.
- Bank host will require customer double check payment amount, term and condition displayed on screen when do online payment to accept payment.

Step 3, 4: Generate OTP code

- Bank host will check the valid of card account, balance, limit. If all conditions are passed, Issuer Bank will generate and send OTP to the customer over SMS gateway (SMS format and gateway number also displayed on web page).

Step 5: Valid customer

- Once received OTP from bank, customer will enter OTP (YYYY) to web page of bank host to confirm transaction.
- Bank host will certify OTP. If valid, then Bank host will authorize transaction.

Step 6: Inform transaction result and settlement

- Bank host send transaction result (Accept or reject) to NAPAS. NAPAS system will redirect result back to merchant website.
- If transaction authorized, Bank host will debit customer card account and credit merchant account after calculate fee.

Step 7: Deliver service/product

- When received redirect result on successful transaction from NAPAS, merchant will display result on web page and start service deliver process to customer.

IV. Transferred Data Definition

Through URL redirect, there are certain data append to help NAPAS gateway receive and conform payment request to bank, and vice versa, NAPAS gateway can transfer transaction result back to merchant web site.

There are two directions which URL redirect initializes:

- Redirect from Merchant website to NAPAS gateway web site
- Redirect from NAPAS web site back to merchant website with transaction result.

i. Redirect Request from Merchant to NAPAS

To request payment transaction from merchant web site to NAPAS gateway website, redirect process will happen along with transaction data.

At merchant web site, after select product or service and click check out button to start payment process, merchant website will get customer transaction information and redirect to NAPAS gateway URL address with data as below:

- `https://sandbox.napas.com.vn/gateway/vpcpay.do ? + parameter string`
- Parameter string format: `[parameter name]=[parameter value]&[parameter name]=[parameter value]&[parameter name]=[parameter value]&...`
- The order of parameter can be exchanged, because we trace by parameter name.

Parameters definition:

Parameter	Required Optional	Field type	Length	Example Value
vpc_Version	The version of the Virtual Payment Client being used. The current version is 2.0			
	Required	Alphanumeric	1,8	2.0
vpc_Command	Indicates the transaction type. This must be equal to pay			
	Required	Alphanumeric	1,16	pay
vpc_AccessCode	The access code authenticates you on the Payment Server so that a merchant cannot access another merchant's MerchantId. The access code is provided to you when you registered your merchant profile with your Payment Provider.			
	Required	Alphanumeric	1,32	d03due3
vpc_MerchTxnRef	A unique value created by the merchant to identify the DO. It is used to track the progress of a transaction and allows it to be identified on the Payment Server should a communication's failure occur and the DR is not received.			
	It may be in part an order number or invoice number,			

	<p>but it should also reflect the transaction attempt. For example, if a cardholder has insufficient funds on their card and you allow them to repeat the transaction with another credit card. The value may be test1234/1 on the first attempt, test1234/2 on the second attempt and test1234/3 on the third attempt.</p> <p>It can use text made up of any of the base US ASCII characters in the range, hexadecimal20 to 126.</p>				
	<table border="1"> <tr> <td>Required</td> <td>Alphanumeric</td> <td>1,34</td> <td>Test1234/1</td> </tr> </table>	Required	Alphanumeric	1,34	Test1234/1
Required	Alphanumeric	1,34	Test1234/1		
vpc_Merchant	<p>The unique merchant Id assigned to you by your Payment Provider.</p>				
	<table border="1"> <tr> <td>Required</td> <td>Alphanumeric</td> <td>1,16</td> <td>TESTMERCH ANT01</td> </tr> </table>	Required	Alphanumeric	1,16	TESTMERCH ANT01
Required	Alphanumeric	1,16	TESTMERCH ANT01		
vpc_OrderInfo	<p>The merchant's identifier used to identify the order on the Payment Server. For example, a shopping cart number, an order number, or an invoice number.</p>				
	<table border="1"> <tr> <td>Optional</td> <td>Alphanumeric</td> <td>1,34</td> <td>Test1234</td> </tr> </table>	Optional	Alphanumeric	1,34	Test1234
Optional	Alphanumeric	1,34	Test1234		
vpc_Amount	<p>The amount of the transaction in the smallest currency unit expressed as an integer. For example, if the transaction amount is VND 599.54 then the vpc_Amount is 59954.</p>				
	<table border="1"> <tr> <td>Required</td> <td>Alphanumeric</td> <td>1,10</td> <td>59954</td> </tr> </table>	Required	Alphanumeric	1,10	59954
Required	Alphanumeric	1,10	59954		
vpc_ReturnURL	<p>The URL that is displayed to the cardholder's browser when the Payment Server sends the redirect response. It must be a complete URL. The Return URL must start with either http:// or https:// and may be up to 255 characters. If the return URL is not supplied, your default vpc_ReturnURL that you nominated when you registered your merchant profile with your Payment Provider is used.</p>				
	<table border="1"> <tr> <td>Required</td> <td>Alphanumeric</td> <td>1,255</td> <td>http://retur nurl/Receipt .asp</td> </tr> </table>	Required	Alphanumeric	1,255	http://retur nurl/Receipt .asp
Required	Alphanumeric	1,255	http://retur nurl/Receipt .asp		
vpc_BackURL	<p>The Back URL must start with either http:// or https:// and may be up to 255 characters.</p>				
	<table border="1"> <tr> <td>Required</td> <td>AlphaNumeric - Special Characters</td> <td>1, 256</td> <td>http://www. domain.com /shopping.as p</td> </tr> </table>	Required	AlphaNumeric - Special Characters	1, 256	http://www. domain.com /shopping.as p
Required	AlphaNumeric - Special Characters	1, 256	http://www. domain.com /shopping.as p		
vpc_Locale	Used in SSL type transactions for specifying the				

	language that is used on the Payment Server pages that are displayed to the cardholder. If the locale is not supplied the Payment Server defined default of 'vn' is used.			
	Required	Alphanumeric	2,5	vn
vpc_CurrencyCode	The currency of the amount. The currency is VND			
	Required	Alphanumeric	1,3	VND
vpc_TicketNo	Ticket No is IP address of the computer of the cardholder.			
	Required	Alphanumeric	1,45	210.245.0.1 1
vpc_PaymentGateway	Indicates the payment gateway type. Be equal <i>ATM - identified transactions made on the domestic card gateway.</i> <i>INT - identified transactions made on the international card gateway.</i>			
	Optional	Alphanumeric	1,10	ATM
vpc_CardType	A code issued by the Payment Server for the card type used by the cardholder in the transaction. For a list of card type codes, see Card Type Code (see "Card Type Code") .			
	Optional	Alphanumeric	1,10	Visa
vpc_SecureHash	A secure hash which allows the Virtual Payment Client to authenticate the merchant and check the integrity of the Transaction Request. Secure hash provides better security to merchants than Access Code. See Checksum Calculation for detail			
	Required	Alphanumeric	32	

Note: Parameter name can be changed following merchant advice during integration.

Once NAPAS receive URL redirect process from merchant website, gateway will parsing parameter and calculate checksum (refer to check sum value calculation) value based on those. If both check sum values are match, then gateway web server will continue to get data from URL then form a payment order, encrypt and send to bank system.

To get those data and redirect to NAPAS web server gateway, merchant web site should have ability to create and get value from product selection process of customer then convert to according value of each parameter. Those will be store into merchant transaction database for cross-check later, customer support, and customer order processing later.

For detail of field values in certain case, just refer to below Field values description.

ii. Redirect Response from NAPAS to Merchant

To response transaction result back to merchant web site, NAPAS web server will redirect transaction data back to predefine URL (attached in request redirect from merchant to NAPAS or from merchant profile in NAPAS gateway database).

At NAPAS web site, after sending payment request to Bank web server, this system will ask customer to enter OTP value before going to authorize transaction. Authorize transaction process is limit, velocity, card, account status checking before transferring amount of money from customer card account to merchant account with fee included. Once authorize process complete, NAPAS gateway will receive response and redirect back to merchant URL with attached parameter string:

- `http://merchant-shopping.com/response.asp? + parameter string`
- Parameter string format: `[parameter name]=[parameter value]&[parameter name]=[parameter value]&[parameter name]=[parameter value]&...`
- The order of parameter can be exchanged, because we trace by parameter name.

Parameters definition:

Parameter	Required Optional	Field type	Length	Example Value
vpc_Version	The version of the Virtual Payment Client being used. The current version is 2.0			
	Required	Alphanumeric	1,8	2.0
vpc_Locale	Used in SSL type transactions for specifying the language that is used on the Payment Server pages that are displayed to the cardholder. If the locale is not supplied the Payment Server defined default of 'vn' is used.			
	Required	Alphanumeric	2,5	vn
vpc_Command	The value of the vpc_Command DO input field that is returned in the DR			
	Required	Alphanumeric	1,16	pay
vpc_Merchant	The unique merchant Id assigned to you by your Payment Provider.			
	Required	Alphanumeric	1,16	TESTMERCH ANT01
vpc_MerchTxnRef	A unique value created by the merchant to identify			

	<p>the DO. It is used to track the progress of a transaction and allows it to be identified on the Payment Server should a communication's failure occur and the DR is not received.</p> <p>It may be in part an order number or invoice number, but it should also reflect the transaction attempt. For example, if a cardholder has insufficient funds on their card and you allow them to repeat the transaction with another credit card. The value may be test1234/1 on the first attempt, test1234/2 on the second attempt and test1234/3 on the third attempt.</p> <p>It can use text made up of any of the base US ASCII characters in the range, hexadecimal20 to 126.</p>				
	<table border="1"> <tr> <td data-bbox="633 661 836 724">Required</td> <td data-bbox="836 661 1047 724">Alphanumeric</td> <td data-bbox="1047 661 1185 724">1,34</td> <td data-bbox="1185 661 1385 724">Test1234/1</td> </tr> </table>	Required	Alphanumeric	1,34	Test1234/1
Required	Alphanumeric	1,34	Test1234/1		
vpc_Amount	<p>The amount of the transaction in the smallest currency unit expressed as an integer. For example, if the transaction amount is VND 599.54 then the amount is 59954.</p>				
	<table border="1"> <tr> <td data-bbox="633 934 836 997">Required</td> <td data-bbox="836 934 1047 997">Alphanumeric</td> <td data-bbox="1047 934 1185 997">1,10</td> <td data-bbox="1185 934 1385 997">59954</td> </tr> </table>	Required	Alphanumeric	1,10	59954
Required	Alphanumeric	1,10	59954		
vpc_CurrencyCode	<p>The currency of the order expressed as an ISO 4217 alphanumeric code. This field is case-sensitive and must include uppercase characters only.</p> <p>The merchant must be configured to accept the currency used in this field. To obtain a list of supported currencies and codes, please contact your Payment Provider.</p>				
	<table border="1"> <tr> <td data-bbox="633 1260 836 1323">Required</td> <td data-bbox="836 1260 1047 1323">Alphanumeric</td> <td data-bbox="1047 1260 1185 1323">1,3</td> <td data-bbox="1185 1260 1385 1323">VND</td> </tr> </table>	Required	Alphanumeric	1,3	VND
Required	Alphanumeric	1,3	VND		
vpc_CardType	<p>A code issued by the Payment Server for the card type used by the cardholder in the transaction. For a list of card type codes, see Card Type Code (see "Card Type Code") .</p>				
	<table border="1"> <tr> <td data-bbox="633 1480 836 1543">Optional</td> <td data-bbox="836 1480 1047 1543">Alphanumeric</td> <td data-bbox="1047 1480 1185 1543">1,10</td> <td data-bbox="1185 1480 1385 1543">Visa</td> </tr> </table>	Optional	Alphanumeric	1,10	Visa
Optional	Alphanumeric	1,10	Visa		
vpc_OrderInfo	<p>The merchant's identifier used to identify the order on the Payment Server. For example, a shopping cart number, an order number, or an invoice number.</p>				
	<table border="1"> <tr> <td data-bbox="633 1680 836 1743">Optional</td> <td data-bbox="836 1680 1047 1743">Alphanumeric</td> <td data-bbox="1047 1680 1185 1743">1,34</td> <td data-bbox="1185 1680 1385 1743">Test1234</td> </tr> </table>	Optional	Alphanumeric	1,34	Test1234
Optional	Alphanumeric	1,34	Test1234		
vpc_ResponseCode	<p>A response code that is generated by the Payment Server to indicate the status of the transaction.</p> <p>A vpc_ResponseCode of "0" (zero) indicates that the</p>				

	<p>transaction was processed successfully and approved by the acquiring bank. Any other value indicates that the transaction was declined (it went through to the banking network) or the transaction failed (it never made it to the banking network).</p> <p>For a list of values, see Returned Response Codes table</p>	Required	Alphanumeric	1,2	0				
vpc_TransactionNo	<p>Payment Server transaction ID (or Shopping Transaction Number) is a unique number generated by the Payment Server for every transaction.</p> <p>It is important to ensure that the TransactionNo is stored for later retrieval. It is used in Merchant Administration as a reference to perform refund transactions.</p> <p>This field is not returned for transactions that result in an error condition.</p>	Required	Numeric	1,20	20090213				
vpc_BatchNo	<p>A value supplied by an acquirer which indicates the batch of transactions that the specific transaction has been grouped with for settlement. It is typically a date in the format YYYYMMDD.</p> <p>This field will not be returned if the transaction fails due to an error condition.</p>	Optional	Numeric	0,8	20100809				
vpc_AcqResponseCode	<p>Generated by the financial institution to indicate the status of the transaction. The results can vary between institutions so it is advisable to use the vpc_ResponseCode as it is consistent across all acquirers. It is only included for fault finding purposes.</p>	Optional	Alphanumeric	1,3	0				
vpc_Message	<p>This is a message to indicate what sort of errors the transaction encountered. This field is not provided if vpc_ResponseCode has a value of zero.</p>	Optional	Alphanumeric	1,255	Success				
vpc_AdditionalData	Additional Data					Optional	Alphanumeric	1,255	

vpc_SecureHash	A secure hash which allows the Virtual Payment Client to authenticate the merchant and check the integrity of the Transaction Request. Secure hash provides better security to merchants than Access Code. See Checksum Calculation for detail			
	Required	Alphanumeric	32	

Note: Parameter name can be changed following merchant advice during integration.

iii. Field values description

List of value for vpc_ResponseCode field

vpc_ResponseCode meaning	Value
Transaction success	0
Bank system reject (card closed, account closed)	1
Card expire	3
Limit exceeded (Wrong OTP, amount / time per day)	4
No reply from Bank	5
Bank Communication failure	6
Insufficient fund	7
Invalid checksum	8
Transaction type not support	9
Other error	10
Verify card is successful	11
Your payment is unsuccessful. Transaction exceeds amount limit.	12
You have been not registered online payment services. Please contact your bank.	13
Invalid OTP (One time password)	14
Invalid static password	15
Incorrect Cardholder's name	16
Incorrect card number	17
Date of validity is incorrect (issue date)	18
Date of validity is incorrect (expiration date)	19
Unsuccessful transaction	20
OTP (One time password) time out	21

Unsuccessful transaction	22
Your payment is not approved. Your card/account is ineligible for payment	23
Your payment is unsuccessful. Transaction exceeds amount limit	24
Transaction exceeds amount limit.	25
Transactions awaiting confirmation from the bank	26
You have entered wrong authentication information	27
Your payment is unsuccessful. Transaction exceeds time limit	28
Transaction failed. Please contact your bank for information.	29
Your payment is unsuccessful. Amount is less than minimum limit.	30
Orders not found. Support for query api.	31
Orders not to make payments. Support for query api.	32
Duplicate orders. Support for query api.	33

iv. Checksum Calculation

To check the integrity of data transferring through URL redirect, there are required below items:

- Method to calculate checksum data: can using 3DES or MD5 hashing function, most merchant using MD5 Hashing.
- Input data for 3DES or hashing function include string which concatenate all parameter and checksum key provided by NAPAS for each merchant profile.
- If using 3DES function, input data string will be separated every 8 characters and run through 3DES by 32 length hexa check sum key.
- If using MD5 function to make check sum value, just concatenate input data string plus 32 length check sum key provided by NAPAS.
- The length of check sum value is the first 32 character after running above function.
- Check sum key should be secure store by merchant website locally.

Before merchant website redirect data to NAPAS gateway server, it will calculate checksum data and plus to URL string. NAPAS web server, once, received URL string will parsing all data field and re calculate checksum value again, the matching process will be perform to check the integrity of data in URL redirection. If any unmatched result, the payment request will be rejected.

The checksum calculation and checking will be applied same process when NAPAS web server redirects back response to merchant website.

All data field list in URL string will be calculated checksum exclusive checksum field.

V. Data Security

i. Security channel

All redirect URL will begin with https://, this mean that data transfer in SSL channel, so whole data string under encryption or in secure channel.

Only merchant registered and having right checksum key can pass request to NAPAS gateway.

Checksum value will do merchant authorization and integrity of data transferred.

ii. One time Password authorization

With customer, to make more security and reduce lost and fraud, system support One time Password verification. When purchase or do online shopping, mobile phone or other devices (token...) to get unique code to enter and confirm transaction.

iii. Transaction rules

Each customer using bank card for online payment will be bank system monitored limit with certain rules like;

- number of transaction per day
- total transaction amount per day
- number time of enter wrong OTP

Those rules can help to reduce risk incase card lost or stolen.

VI. Integrate and Implementation

i. Preparation

Before going to do system integration, NAPAS team will work with merchant to do system review to make sure it compatible or qualityable for integration with NAPAS payment gateway like:

- Merchant have shopping cart web
- Product delivery term and condition are list on web for customer clearly

ii. Integration

NAPAS will spend 01 engineer to support to merchant technical team during integration.

During integration, merchant_id and key will be provided for testing purpose only.

Estimated time for integration last around 5 day working.

iii. System Integration Test

After system integration complete, merchant will be provided testing account, card, and using merchant tester mobile to receive OTP. At this step, Merchant still in testing mode and transaction amount is not applicable to convert to actual cash.

The Testing will help system run smoothly before going to user acceptance test phase.

iv. User Acceptance Test

To make sure system running well and can cover both good and exceptional case, NAPAS will provide test script (preferred if merchant can add more case).

The UAT time for run through take around 1 week. After that merchant need to sign to UAT minute and confirm that they accept working flow and confirm to move to production later.

During UAT, merchant will be provided user and password to access to Merchant Transaction Monitoring web site to check transaction.

v. Production Mode

Before moving merchant to production mode, NAPAS need to receive official letter from merchant writing to request on production mode activate.

At this point in time, new merchant_id and checksum key will be generate and send to merchant in two separated packages.

In production mode, merchant will be provided web interface to control their customer transaction. Fraud report will be sent every hour if any.

During production mode, if any charge back or support request, it will be followed by appendix in contract.

VII. QueryDR Transaction

QueryDR command allows a merchant to search for the current or the most recent transaction receipt. It also queries for unknown transactions (a transaction request for which a response was never received) and failed transactions.

The search is performed on the key - vpc_MerchTxnRef, so the vpc_MerchTxnRef field must be a unique value.

If more than one Transaction Response exists with the same vpc_MerchTxnRef, the most recent Transaction Response is returned.

Request Input Fields are:

Parameter	Required Optional	Field type	Length	Example Value
vpc_Version	The version of the API being used. The current version is 2.2			
	Required	Alphanumeric	1,8	2.2
vpc_Command	Indicates the transaction type. This must be equal to queryDR			
	Required	Alphanumeric	1,16	queryDR

vpc_AccessCode	The access code authenticates you on the Payment Server so that a merchant cannot access another merchant's MerchantId. The access code is provided to you when you registered your merchant profile with your Payment Provider.			
	Required	Alphanumeric	8	d03due3
vpc_Merchant	The unique merchant Id assigned to you by your Payment Provider.			
	Required	Alphanumeric	1,16	TESTMERCHANT01
vpc_MerchTxnRef	It is the primary key used to search the progress of a transaction in the event of a communication's failure where no DR is received.			
	Required	Alphanumeric - Special characters	1,34	est1234/1
vpc_User	This field is a special user created to use this function.			
	Required	Alphanumeric	1,20	usertest
vpc_Password	The password used to authorize the AMA user access to this function.			
	Required	Alphanumeric	1,16	passtest
vpc_SecureHash	Used to check the integrity of the request.			
	Required	Alphanumeric	32	68798ab0259eb01be7bbe2a807171f83

Transaction Response Fields are:

Note: vpc_TxnResponseCode and VPC_Message will always appear in the DR. Other fields may not be returned if the transaction was unsuccessful. The fields returned in the DR are the same as the original transaction, but includes two additional DR fields. The fields that are included in a DR when using QueryDR are:

Parameter	Required Optional	Field type	Length	Example Value
vpc_Version	The version of the Virtual Payment Client being used.			
	Required	Alphanumeric	1,8	2.0
vpc_Locale	Used in SSL type transactions for specifying the language that is used on the Payment Server pages that are displayed to the cardholder. If the locale is not supplied the Payment Server defined default of 'vn' is used.			

	Optional	Alphanumeric	2,5	vn
vpc_Command	The value of the vpc_Command DO input field that is returned in the DR			
	Required	Alphanumeric	1,16	queryDR
vpc_Merchant	The unique merchant Id assigned to you by your Payment Provider.			
	Required	Alphanumeric	1,16	TESTMERCH ANT01
vpc_MerchTxnRef	<p>A unique value created by the merchant to identify the DO. It is used to track the progress of a transaction and allows it to be identified on the Payment Server should a communication's failure occur and the DR is not received.</p> <p>It may be in part an order number or invoice number, but it should also reflect the transaction attempt. For example, if a cardholder has insufficient funds on their card and you allow them to repeat the transaction with another credit card. The value may be test1234/1 on the first attempt, test1234/2 on the second attempt and test1234/3 on the third attempt.</p> <p>It can use text made up of any of the base US ASCII characters in the range, hexadecimal20 to 126.</p>			
	Required	Alphanumeric	1,34	Test1234/1
vpc_Amount	The amount of the transaction in the smallest currency unit expressed as an integer. For example, if the transaction amount is VND 599.54 then the amount is 59954.			
	Optional	Alphanumeric	1,10	59954
vpc_CurrencyCode	<p>The currency of the order expressed as an ISO 4217 alphanumeric code. This field is case-sensitive and must include uppercase characters only.</p> <p>The merchant must be configured to accept the currency used in this field. To obtain a list of supported currencies and codes, please contact your Payment Provider.</p>			
	Optional	Alphanumeric	1,3	VND
vpc_CardType	A code issued by the Payment Server for the card type used by the cardholder in the transaction. For a list of card type codes, see Card Type Code (see			

	"Card Type Code") .			
	Optional	Alphanumeric	1,10	Visa
vpc_OrderInfo	The merchant's identifier used to identify the order on the Payment Server. For example, a shopping cart number, an order number, or an invoice number.			
	Optional	Alphanumeric	1,34	Test1234
vpc_TxnResponseCode	<p>A response code that is generated by the Payment Server to indicate the status of the transaction.</p> <p>A vpc_TxnResponseCode of "0" (zero) indicates that the transaction was processed successfully and approved by the acquiring bank. Any other value indicates that the transaction was declined (it went through to the banking network) or the transaction failed (it never made it to the banking network).</p> <p>For a list of values, see Returned Response Codes table</p>			
	Required	Alphanumeric	1,2	0
vpc_TransactionNo	<p>Payment Server transaction ID (or Shopping Transaction Number) is a unique number generated by the Payment Server for every transaction.</p> <p>It is important to ensure that the TransactionNo is stored for later retrieval. It is used in Merchant Administration as a reference to perform refund transactions.</p> <p>This field is not returned for transactions that result in an error condition.</p>			
	Optional	Numeric	1,20	20090213
vpc_BatchNo	<p>A value supplied by an acquirer which indicates the batch of transactions that the specific transaction has been grouped with for settlement. It is typically a date in the format YYYYMMDD.</p> <p>This field will not be returned if the transaction fails due to an error condition.</p>			
	Optional	Numeric	0,8	20100809
vpc_AcqResponseCode	Generated by the financial institution to indicate the status of the transaction. The results can vary between institutions so it is advisable to use the vpc_ResponseCode as it is consistent across all acquirers. It is only included for fault finding			

	purposes.			
	Optional	Alphanumeric	1,3	0
vpc_Message	This is a message to indicate what sort of errors the transaction encountered. This field is not provided if vpc_ResponseCode has a value of zero.			
	Optional	Alphanumeric	1,255	Success
vpc_AdditionalData	Additional Data			
	Optional	Alphanumeric	1,255	
vpc_CardNumber	The number of the card to be used for processing the payment. It can only be a long integer value with no white space or formatting characters.			
	Optional	Numeric	15,32	9704360000 000000028
vpc_CardHolderName	The name of the holder card to be used for processing the payment.			
	Optional	Alphanumeric	4,64	Nguyen Van Nam
vpc_ExpiredDate	The expiry date of the card to be processed for payment. The format for this is MMY, for example, for an expiry date of May 2009, the value would be 0509. The value must be expressed as a 4-digit number (integer) with no white space or formatting characters.			
	Optional	Numeric	4	0216
vpc_3DSXID	It is a unique transaction identifier that is generated by the merchant to identify the 3DS transaction. It is a 20-byte field that is Base64 encoded to produce a 28-character value.			
	Optional	Alphanumeric	28	uyPFGIgoF QhklkIsto+I FWs92s=
vpc_3DSECI	The 3-D Secure Electronic Commerce Indicator, which is set to '05' when the cardholder authenticates OK, and '08' when the cardholder is not enrolled. (These values may change depending on the locale or issuer).			
	Optional	Numeric	2	08

vpc_VerType	Either '3DS' or 'SPA'.			
	Optional	Alphanumeric	3,20	3DS
vpc_VerStatus	The status codes used by the Payment Server			
	Optional	Alphanumeric	1	N
vpc_SecureHash	Used to check the integrity of the response.			
	Required	Alphanumeric	32	68798ab0259eb01be7bbe2a807171f83

VIII. Refund

Refund allows you to refund funds for a previous purchase or capture transaction from the merchant's account back to the cardholder's account.

Refunds can only be performed for a previously completed a purchase or capture transaction for the particular order. The merchant can run any number of refund transactions on the original transaction, but cannot refund more than has been obtained via a purchase or capture transaction.

There are two ways to refund the funds:

1. Manually using Merchant Administration. This is the simplest method if the merchant does not have many refund transactions.
2. Using the Refund command via the directly perform refunds from the merchant's application.

Request Fields

Parameter	Required Optional	Field type	Length	Example Value
vpc_Version	The version of the API being used. The current version is 2.1			
	Required	Alphanumeric	1,8	2.1
vpc_Command	Indicates the transaction type. This must be equal to refund			
	Required	Alphanumeric	1,16	refund
vpc_AccessCode	The access code authenticates you on the Payment Server so that a merchant cannot access another merchant's MerchantId. The access code is provided to you when you registered your merchant profile with your Payment Provider.			
	Required	Alphanumeric	8	d03due3
vpc_Merchant	The unique merchant Id assigned to you by your Payment Provider.			
	Required	Alphanumeric	1,16	SMLTEST

vpc_MerchTxnRef	It is the primary key used to search the progress of a transaction in the event of a communication's failure where no DR is received.			
	Required	Alphanumeric - Special characters	1,34	est1234/1
vpc_User	This field is a special user created to use this function.			
	Required	Alphanumeric	1,20	usertest
vpc_Password	The password used to authorize the AMA user access to this function.			
	Required	Alphanumeric	1,16	passtest
vpc_TransactionNo	A unique number generated by the Payment Server. It is the reference value of the transaction in the Payment Server. This is the value that must be used for a Refund.			
	Required	Numeric	1,19	123456789
vpc_Amount	The amount of the refund transaction in the smallest currency unit expressed as an integer. For example, if the transaction amount is \$49.95 then the amount in cents is 4995.			
	Required	Alphanumeric	1,15	
vpc_CurrencyCode	The currency of the order expressed as an ISO 4217 alphanumeric code. This field is case-sensitive and must include uppercase characters only. The merchant must be configured to accept the currency used in this field. To obtain a list of supported currencies and codes, please contact your Payment Provider.			
	Optional	Alpha	3	VND
vpc_SecureHash	Used to check the integrity of the request.			
	Required	Alphanumeric	32	68798ab025 9eb01be7bb e2a80 7171f83

Transaction Response Fields are:

Note : vpc_TxnResponseCode and VPC_Message will always appear in the DR. Other fields may not be returned if the transaction was unsuccessful.

Parameter	Required Optional	Field type	Length	Example Value
vpc_Version	The version of the API being used. The current version is 2.1			
	Required	Alphanumeric	1,8	2.1
vpc_Command	Indicates the transaction type. This must be equal to			

refund				
	Required	Alphanumeric	1,16	refund
vpc_Merchant	The unique merchant Id assigned to you by your Payment Provider.			
	Required	Alphanumeric	1,16	SMLTEST
vpc_MerchTxnRef	It is the primary key used to search the progress of a transaction in the event of a communication's failure where no DR is received.			
	Required	Alphanumeric - Special characters	1,34	est1234/1
vpc_OrgTransactionNo	The transaction reference number of the original purchase transaction.			
	Required	Numeric	1,19	123456789
vpc_RefundTransactionNo	A unique number generated by the Payment Server. It is the reference value of the transaction in the Payment Server. This is the value that must be used for a Refund.			
	Required	Numeric	1,19	123456789
vpc_Amount	The amount of the refund transaction in the smallest currency unit expressed as an integer. For example, if the transaction amount is \$49.95 then the amount in cents is 4995.			
	Required	Alphanumeric	1,15	
vpc_CurrencyCode	The currency of the order expressed as an ISO 4217 alphanumeric code. This field is case-sensitive and must include uppercase characters only. The merchant must be configured to accept the currency used in this field. To obtain a list of supported currencies and codes, please contact your Payment Provider.			
	Optional	Alpha	3	VND
vpc_TxnResponseCode	A response code that is generated by the Payment Server to indicate the status of the transaction. A vpc_TxnResponseCode of "0" (zero) indicates that the transaction was processed successfully and approved by the acquiring bank. Any other value indicates the transaction was declined. See Response Code.			
	Required	Alphanumeric	1,2	0
vpc_AcqResponseCode	Acquirer's Response Code is generated by the financial institution to indicate the status of the transaction. The results can vary between institutions so it is advisable to use the vpc_TxnResponseCode as it is consistent across all acquirers. It is only included for fault finding purposes.			
	Optional	Alphanumeric	2,3	00
vpc_ReceiptNo	This is also known as the Reference Retrieval Number (RRN), which is a unique identifier. This value is			

	passed back to the cardholder for their records if the merchant application does not generate its own receipt number.	Optional	Alphanumeric	1,18	RP12345
vpc_BatchNo	A date supplied by an acquirer to indicate when this transaction will be settled. If the batch has today's date then it will be settled the next day. When the acquirer closes the batch at the end of the day, the date will roll over to the next processing day's date.	Optional	Alphanumeric	1,8	20131021
vpc_AuthorizeId	Authorization Identification Code issued by the Issuer/Acquirer to approve or deny a transaction. This field is 6-digits maximum and is not returned for transactions that are declined or fail due to an error condition.	Optional	Numeric	0,6	123456
vpc_CardType	A code issued by the Payment Server for the card type used by the cardholder in the transaction. For a list of card type codes, see Card Type Code table	Optional	Alphanumeric	2,10	Mastercard
vpc_AuthorisedAmount	The total amount of the original transaction.	Optional	Numeric	1,15	
vpc_RefundedAmount	The amount of the refund transaction request	Optional	Numeric	1,15	
vpc_TicketNo	Allows you to include a ticket number, such as an airline ticket number in the transaction request. The ticket number is stored on the Payment Server	Optional	Alphanumeric	1,32	ABC123
vpc_SecureHash	Used to check the integrity of the request.	Required	Alphanumeric	32	68798ab025 9eb01be7bb e2a80 7171f83

IX. Void Purchase

Void Purchase allows a purchase merchant to void a purchase transaction that has not been processed by the acquiring institution. It is not available for Auth/Capture mode merchants. This transaction is not possible for Debit and EBT transactions.

The merchant can only run one 'Void Purchase' transaction on the original 'Purchase' transaction as it completely removes the purchase transaction as though it never occurred.

The Admin Void Purchase must be run before the acquiring institution processes the batch containing the original purchase transaction.

Your Payment Provider must enable this function on your Merchant Profile for you to use either of these methods

+ Using the voidPurchase command via the directly perform refunds from the merchant's application.

Request Fields

Parameter	Required Optional	Field type	Length	Example Value
vpc_Version	The version of the API being used. The current version is 2.1			
	Required	Alphanumeric	1,8	2.1
vpc_Command	Indicates the transaction type. This must be equal to voidPurchase			
	Required	Alphanumeric	1,16	refund
vpc_AccessCode	The access code authenticates you on the Payment Server so that a merchant cannot access another merchant's MerchantId. The access code is provided to you when you registered your merchant profile with your Payment Provider.			
	Required	Alphanumeric	8	d03due3
vpc_Merchant	The unique merchant Id assigned to you by your Payment Provider.			
	Required	Alphanumeric	1,16	SMLTEST
vpc_MerchTxnRef	It is the primary key used to search the progress of a transaction in the event of a communication's failure where no DR is received.			
	Required	Alphanumeric - Special characters	1,34	est1234/1
vpc_User	This field is a special user created to use this function.			
	Required	Alphanumeric	1,20	usertest
vpc_Password	The password used to authorize the AMA user access to this function.			
	Required	Alphanumeric	1,16	passtest
vpc_TransactionNo	The transaction reference number of the original Purchase transaction.			
	Required	Numeric	1,19	123456789
vpc_SecureHash	Used to check the integrity of the request.			
	Required	Alphanumeric	32	68798ab025 9eb01be7bb e2a80 7171f83

Transaction Response Fields are:

Note : vpc_TxnResponseCode and VPC_Message will always appear in the DR. Other fields may not be returned if the transaction was unsuccessful.

The fields included in a DR from the Virtual Payment Client when using voids are:

Parameter	Required Optional	Field type	Length	Example Value
vpc_Version	The version of the API being used. The current version is 2.1			
	Required	Alphanumeric	1,8	2.1
vpc_Command	Indicates the transaction type. This must be equal to voidPurchase			
	Required	Alphanumeric	1,16	voidPurchase
vpc_Merchant	The value of the vpc_Merchant input field returned in the DR.			
	Required	Alphanumeric	1,16	SMLTEST
vpc_MerchTxnRef	The value of the vpc_MerchTxnRef field returned in the DR.			
	Required	Alphanumeric - Special characters	1,34	est1234/1
vpc_OrgTransactionNo	The transaction reference number of the original purchase transaction.			
	Required	Numeric	1,19	123456789
vpc_VoidTransactionNo	A unique number generated by the Payment Server. It is the reference value of the transaction in the Payment Server. This is the value that must be used for a Void Purchase.			
	Required	Numeric	1,19	123456789
vpc_Message	A message to indicate any errors the transaction may have encountered.			
	Optional	Alphanumeric	10,200	
vpc_TxnResponseCode	A response code that is generated by the Payment Server to indicate the status of the transaction. A vpc_ResponseCode of "0" (zero) indicates that the transaction was processed successfully and approved by the acquiring bank. Any other value indicates the transaction was declined. See Response Code.			
	Required	Alphanumeric	1,2	0
vpc_AcqResponseCode	Acquirer's Response Code is generated by the financial institution to indicate the status of the transaction. The results can vary between institutions so it is advisable to use the vpc_TxnResponseCode as it is consistent across all acquirers. It is only included for fault finding purposes.			
	Optional	Alphanumeric	2,3	00

vpc_ReceiptNo	This is also known as the Reference Retrieval Number (RRN), which is a unique identifier. This value is passed back to the cardholder for their records if the merchant application does not generate its own receipt number.			
	Optional	Alphanumeric	1,18	RP12345
vpc_BatchNo	A date supplied by an acquirer to indicate when this transaction will be settled. If the batch has today's date then it will be settled the next day. When the acquirer closes the batch at the end of the day, the date will roll over to the next processing day's date.			
	Optional	Alphanumeric	1,8	20131021
vpc_AuthorizeId	A code issued by the acquiring bank to approve or deny the transaction. This may not always be applied by all acquirers.			
	Optional	Numeric	1,12	ABC12345
vpc_CardType	A code issued by the Payment Server for the card type used by the cardholder in the transaction. For a list of card type codes, see Card Type Code table			
	Optional	Alphanumeric	2,10	Mastercard
vpc_AuthorisedAmount	The net amount of the original purchase transaction. If successful, this should be 0.			
	Optional	Numeric	1,12	4996
vpc_RefundedAmount	The net refunded amount in the smallest currency unit expressed as an integer			
	Optional	Numeric	1,15	4996
vpc_TicketNo	Use to include a ticket number, such as an airline ticket number in the DO. The ticket number is stored on the Payment Server database for that transaction. The ticket number is stored on the Payment Server database for that transaction and returned in the DR for refunds.			
	Optional	Alphanumeric	1,32	ABC123
vpc_CapturedAmount	The net captured amount. In a successful void purchase, this should be 0			
	Optional	Alpha	3	VND
vpc_SecureHash	Used to check the integrity of the request.			
	Required	Alphanumeric	32	68798ab025 9eb01be7bb e2a80 7171f83

X. Bypass Card Selection Page on the Payment Server

This is used in 3-Party Payments to bypass the Payment Server payments page that displays the logos of all the cards the payment processor will accept.

DO Fields - Bypass Card Selection Page

The fields that are included in a DO when using Bypass Card Selection are:

Parameter	Required Optional	Field type	Length	Example Value
vpc_PaymentGateway	Indicates the payment gateway type. Be equal <i>ATM - identified transactions made on the domestic card gateway.</i> <i>INT - identified transactions made on the international card gateway.</i>			
	Optional	Alphanumeric	1,10	ATM
vpc_CardType	A code issued by the Payment Server for the card type used by the cardholder in the transaction. For a list of card type codes, see Card Type Code (see "Card Type Code") .			
	Optional	Alphanumeric	1,10	Visa

Card Type Code

Code - International card	Name
Visa	Visa Card
Mastercard	Master Card
Amex	American Express
JCB	JCB

Code - Domestic card	Name
VCB	Vietcombank
TCB	Techcombank
VIB	VIB Bank
ABB	ABBank
STB	Sacombank
MSB	Maritime Bank

NVB	Navibank
CTG	Vietinbank
DAB	DongABank
HDB	HDBank
VAB	VietABank
VPB	VPBank
ACB	ACB
MB	MBBank
GPB	GPBank
EIB	Eximbank
OJB	OceanBank
NASB	BacABank
OCB	OricomBank
TPB	TPBank
LPB	LienVietPostBank
SEAB	Seabank
BIDV	BIDV
VARB	AgriBank
BVB	BaoVietBank
SHB	SHB
KLB	KienLongBank
SCB	SCB

XI. Test Environment

NAPAS Payment Gateway

Virtual Payment Client URL: <https://sandbox.napas.com.vn/gateway/vpcpay.do>
Merchant ID: SMLTEST
Access Code: ECAFAB
Secure Hash: 198BE3F2E8C75A53F38C1C4A5B6DBA27

QueryDR

Virtual Payment Client URL: <https://sandbox.napas.com.vn/gateway/vpcdps>
Merchant ID: SMLTEST
Access Code: ECAFAB
Username: usertest
Password: passtest
Secure Hash: 198BE3F2E8C75A53F38C1C4A5B6DBA27

Refund

Virtual Payment Client URL: <https://sandbox.napas.com.vn/gateway/vpcdps>
Merchant ID: SMLTEST
Access Code: ECAFAB
Username: usertest
Password: passtest
Secure Hash: 198BE3F2E8C75A53F38C1C4A5B6DBA27

Domestic cards test

- 1. Card successful**
Card Name: NGUYEN VAN A
Card Number: 970400000000018
Card Expdate: 03/07
- 2. Card Lock**
Card Name: NGUYEN VAN A
Card Number: 970400000000026
Card Expdate: 03/07
- 3. Not sufficient funds**
Card Name: NGUYEN VAN A
Card Number: 970400000000034
Card Expdate: 03/07
- 4. Card limit**
Card Name: NGUYEN VAN A
Card Number: 970400000000042
Card Expdate: 03/07

Static OTP for test: OTP

Visa/MasterCard test:

- 1. MasterCard**
Card Number: 5123456789012346
Card Expdate: 05/17
Cvv: 123

- 2. Visa**
Card Number 4005550000000001
Card Expdate: 05/17
Cvv: 123