

# INTEGRATION SPECIFICATION

## PAYMENT GATEWAY

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*Version 2.4*

**OnePay**

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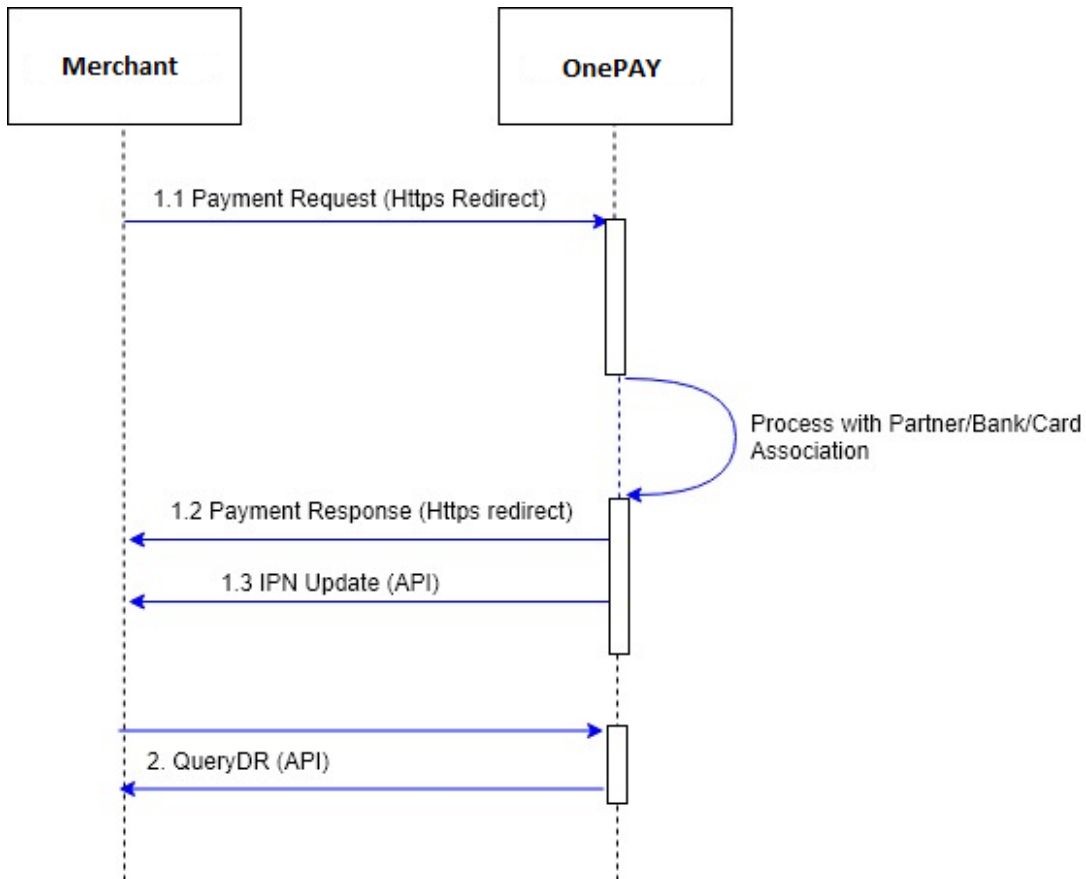
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## I. OVERVIEW

- This document is used for Credit Card / ATM card / Bank Account
- This document describes how to integrate merchant's website with OnePAY payment gateway.
- These information, Merchant ID, Hash code, Access code, URL are used for testing purpose only.

## II. TECHNICAL DESCRIPTION

### 1. Transaction flow



- **Step 1: (1.1) Payment request:** Merchant sends payment request to OnePAY using https Redirect GET protocol to process transaction.
- **Step 2: (1.2) Payment response:** OnePAY will process and response the transaction result back to Merchant site using https Redirect GET. Merchant also receives the transaction result by back-end as the same with URL front-end return (https redirect). Merchant should implement IPN update (**flow 1.3**)

**Note:**

- **(2)** Moreover, OnePAY also provide QueryDR function, which allow Merchant calls OnePAY to get the current transaction status

## 2. Payment Request

- Payment URL structure (TEST): <https://mtf.onepay.vn/paygate/vpcpay.op>
- Payment URL structure (PROD): <https://onepay.vn/paygate/vpcpay.op>
- Method: GET
- Format: [key=value]&[Key=value]&...
- Keys and Values for payment request:

Key	Value			
	Required or Optional	Data type	Length	Description
<b>Static parameters: OnePAY Account, payment gateway parameter</b>				
vpc_Version	M	Number	2	Version module of payment gateway, default is "2"
vpc_Currency	M	String	3	Payment Currency, default is VND
vpc_Command	M	String	16	Payment Function, value is "pay"
vpc_AccessCode	M	String	8	Unique value for each merchant provided by OnePAY
vpc_Merchant		String	12	
vpc_Locale	M	String	2	Language is used on the payment site Vietnamese: vn, English: en
vpc_ReturnURL	M	String	128	Merchant's URL Website for redirect response
<b>Website parameters have active value: Price, Order ID, ...</b>				
vpc_MerchTxnRef	M	String	40	A unique value is created by merchant then send to OnePAY.
vpc_OrderInfo	M	String	34	Order information, it could be an order number or brief description of order
vpc_Amount	M	String	12	The amount of the transaction, this value does not have decimal comma. Add "00" before redirect to payment gateway. If transaction amount is VND 25,000 then the amount is 2500000
vpc_TicketNo	M	String	15	IP address of customer – Do not set a fixed IP
vpc_CardList	O	String	256	Payment method and Bank Card displayed on the payment gateway  - Null, Accept all payment methods - Sending one or more values to accept payment methods, separated by commas "," + <b>INTERNATIONAL</b> : International card payment card  + <b>DOMESTIC</b> : ATM card  + <b>QR</b> : Payment Mobile Banking and E-Wallet

				<p>+ <b>BNPL</b>: Buy Now Pay Later (Buy Now Pay Later)</p> <p>- Bank code to display the step of entering bank card information Ex: Go to the page to enter VCB card, vpc_CardList=970436 Table of ATM card bank codes see section III.5</p>
AgainLink	M	String	64	The link of website before redirecting to OnePAY.
Title	M	String	64	Title of payment gateway is shown on the cardholder's browser
vpc_Customer_Phone	O	String	16	Customer's phone
vpc_Customer_Email	O	String	24	Customer's email
vpc_Customer_Id	O	String	64	<p>User id information is used for card token generated</p> <ul style="list-style-type: none"> <li>- Null if not request create Token</li> <li>- Send User id in case request generated a Token</li> </ul> <p>Ensure that user id is unique at merchants</p>
user_Xxxxxx	O	String	64	<p>Field is defined by merchant, field name start with prefix "user_", for example: user_<b>Abc123</b>, user_<b>Bcd234</b>,... merchant can use free field name (alphanumeric).</p> <p>Max length of field name: 20 Max length of field value: 64</p>
<b>Parameter encryption string, encrypted from parameters</b>				
vpc_SecureHash	M	String	64	Hash encryption is for merchant to authenticate and ensure data integrity.

**Note:**

- M: Mandatory
- O: Optional
- Value of parameters using Vietnamese fonts and special characters are not accepted.

**3. Payment Response**

- Payment Response URL structure:  
[vpc\_ReturnURL]?[key=value]&[Key=value]&... (Keys and values are described in the table below, not required in order.)
- Keys and Values are used in Payment Response URL:

Key	Value		
	Data type	Length	Description
<b>Transaction parameters</b>			
vpc_Command	String	3	The value of the vpc_Command sent to OnePAY
vpc_Locale	String	2-5	Language is used on the payment site Vietnamese: vn, English: en
vpc_Version	String	2	Version module of payment gateway, default is "2"
vpc_MerchTxnRef	String	1-40	The value of the vpc_MerchTxnRef sent to OnePAY
vpc_Merchant	String	1-12	The value of the vpc_Merchant sent to OnePAY
vpc_OrderInfo	String	1-34	The value of the vpc_OrderInfo sent to OnePAY
vpc_Amount	String	3-12	The value of the vpc_Amount sent to OnePAY
vpc_TxnResponseCode	String	3	A response code that is generated by the Payment Server to indicate the status of the transaction. Value is "0" indicates that the transaction was processed successfully. Any other value indicates that the transaction was delined. For a list of values, see Response code table. Check item III.3
vpc_TransactionNo	String	1-32	A unique number generated by payment gateway for each transaction.
vpc_Message	String	1-200	Indicate transaction error maybe available when making payment
vpc_Card	String	6	Card Type Identification Number + International card: VC, MC, JC, AE, CUP + Domestic ATM card: 6 identification number of Acquirer Bank (similar to the first 6 number of the card) BIN – Bank Identification Number, First 6 digits of card number  Check item 5 for list of Banks. + Mobile banking or eWallet name.
vpc_PayChannel	String	12	Pay Channel: + WEB: payment by card (international and domestic) + APP: Mobile banking or eWallet
vpc_CardUid	String	32	Option: Unique value for each card, example: ABE4864268F53BD5D531D8845FAAF5F1  Not response for TCB, VIB and DongABank.
vpc_CardNum	String	15,16	Card masked, First6/Last4, example: 412345xxxxxx1234
vpc_AuthorizeId	String	6	Authorization ID, only return for successful transaction.
vpc_CardHolderName	String	64	Card holder name. Only for installment payment
vpc_ItaBank	String	12	Bank code. Only for installment payment. Check item III.6
vpc_ItaFeeAmount	String	12	Installment Fee. Only for installment payment
vpc_ItaTime	String	2	Installment Time. Only for installment payment

vpc_OrderAmount	String	12	Order Amount (before add fee). Only for installment payment
vpc_ItaMobile	String	12	Mobile number. Only for installment payment
vpc_ItaEmail	String	32	Email address. Only for installment payment
user_Xxxxxx	String	64	Fields are defined by merchant that sent in payment request
vpc_SecureHash	String	64	This value allows merchant to check whether Payment Response is valid or not.

A transaction is successful if 2 conditions are correct

- vpc\_TxnResponseCode = "0" and
- Secure hash is valid (hash validate)

**In case of vpc\_TxnResponseCode <> 0:** refers to response code table to show message detail to customer.

**Note:** Number of parameters depended on status or card type, not fixed. Parameters in this table may not all parameters returned.

#### 4. QueryDR API

- Using this function to call OnePAY after 15 minutes up to 30 minutes since Merchant sent payment request to get final status.
- Method: POST
- Header: application/x-www-form-urlencoded
- URL Query of test system:  
https://mtf.onepay.vn/msp/api/v1/vpc/invoices/queries
- URL Query of PROD system:  
https://onepay.vn/msp/api/v1/vpc/invoices/queries

#### 4.1. Request

Key	Value			
	Required or Optional	Data type	Length	Description
vpc_Command	M	String	16	Default is "queryDR"
vpc_Version	M	String	2	Default is 2
vpc_MerchTxnRef	M	String	40	Value of vpc_MerchTxnRef send to OnePAY
vpc_Merchant	M	String	12	Unique value for each merchant, which are provided by OnePAY
vpc_AccessCode	M	String	8	
vpc_User	M	String	32	User OnePAY issued with account (op01)

vpc_Password	M	String	50	Password OnePAY issued with account (op123456)
vpc_SecureHash	M	String	64	Secure Hash value

## 4.2. Response

Key	Value		
	Data type	Length	Description
vpc_DRExists	String	1	Confirm whether transaction is existed or not ✓ N: Not exist transaction ✓ Y: Exist payment transaction
vpc_TxnResponseCode	String	3	Response code, confirm whether transaction is successful or not ✓ 0: Successful transaction ✓ <> 0: Unsuccessful transaction ✓ 300: Pending transaction ✓ 100: Transaction is in progress or unpaid
vpc_Command	String	3	The value of the vpc_Command sent to OnePAY
vpc_Locale	String	2-5	Language is used on the payment site Vietnamese: vn, English: en
vpc_Version	String	2	Version module of payment gateway, default is "2"
vpc_TransactionNo	String	1-32	A unique number generated by payment gateway for each transaction.
vpc_MerchTxnRef	String	1-40	The value of the vpc_MerchTxnRef from DO that is returned in the DR
vpc_Merchant	String	1-12	The value of the vpc_Merchant from DO that is returned in the DR
vpc_OrderInfo	String	1-34	The value of the vpc_OrderInfo from DO that is returned in the DR
vpc_Amount	String	3-12	The value of the vpc_Amount from DO that is returned in the DR
vpc_Message	String	1-200	Indicate transaction error maybe available when making payment
vpc_Card	String	6	Card Type Identification Number + International card: VC, MC, JC, AE, CUP + Domestic ATM card: 6 identification number of Acquirer Bank (similar to the first 6 number of the card) BIN – Bank Identification Number, First 6 digits of card number  Check item 5 for list of Banks.
vpc_PayChannel	String	12	Pay Channel: + WEB: payment channel on OnePAY website + APP: Mobile banking or eWallet
vpc_CardUid	String	32	Option: Unique value for each card, example: ABE4864268F53BD5D531D8845FAAF5F1



			Not response for TCB, VIB and DongABank.
vpc_CardNum	String	15,16	Card masked, First6/Last4, example: 412345xxxxxx1234
vpc_AuthorizeId	String	6	Authorization ID, only return for successful transaction.
vpc_CardHolderName	String	64	Card holder name. Only for installment payment
vpc_ItaBank	String	12	Bank code. Only for installment payment. Check item III.6
vpc_ItaFeeAmount	String	12	Installment Fee. Only for installment payment
vpc_ItaTime	String	2	Installment Time. Only for installment payment
vpc_OrderAmount	String	12	Order Amount (before add fee). Only for installment payment
vpc_ItaMobile	String	12	Mobile number. Only for installment payment
vpc_ItaEmail	String	32	Email address. Only for installment payment
user_Xxxxxx	String	64	Fields are defined by merchant that sent in payment request
vpc_SecureHash	String	64	This value allows merchant to check whether Payment Response is valid or not.

**Note:** Number of parameters depended on status or card type, not fixed. Parameters in this table may not all parameters returned.

## 5. IPN Update API (Instant Payment Notification)

- Merchant creates an URL to received payment data via backend. Paramters the same as parameters on Return URL. This WebService is called by OnePAY gateway to update transaction status.
- Protocol: GET/POST through URL

### 5.1. Parameter when OnePAY calls IPN Update:

- Similar to Payment Response parameter, type Key=Value&Key=Value&...

### 5.2. Parameter responses to OnePAY when calls IPN Update:

- Response responsecode=1&desc=confirm-success string
  - o Responsecode = 1: received
  - o Responsecode = 0: received and invalid hash

### III. TEST ENVIRONMENT INFORMATION AND REFERENCE

#### 1. How to check SecureHash (vpc\_SecureHash)

- Format: Hexa value UPPERCASE, 64 digits
- Use encryption parameter HMAC-SHA256 (parameter HashString, key)

##### Rules of creating SecureHash:

- HashString include all parameters have prefix “vpc\_” or “user\_”
- Parameter is sorted in **alphabetical order**.
- Key used for Hash is hexa string which provided by OnePAY for each Merchant ID (Hash code or SECURE\_SECRET)

##### How to check response from OnePAY:

- Create Hash string as above rules then compare with vpc\_SecureHash in response from OnePAY.

#### 2. Test enviroment information

- Merchant ID (vpc\_Merchant): TESTONEPAY
- Access code (vpc\_AccessCode): 6BEB2546
- Hash Key: 6D0870CDE5F24F34F3915FB0045120DB
- Card information

Card Type	Card Holder Name	Card Number	Date (MM/YY)	OTP/CVV
ABB - ATM	NGUYEN VAN A	970425000000000001	01/13	123456
VCB - ATM	NGUYEN VAN A	97043600000000000002	01/13	123456
Visa		40000000000001091 40000000000001000	05/2024	123
Master		512345000000000008	05/2024	123

#### 3. Response Code table (vpc\_TxnResponseCode)

Response Code	Mô tả	
	Tiếng Việt	Tiếng Anh

0	Approved	Giao dịch thành công	Successful Transaction
1	Unspecified Failure	Ngân hàng từ chối cấp phép giao dịch.	Unspecified failure in the authorization process of your Card Issuer.
2	Declined	Ngân hàng phát hành thẻ từ chối cấp phép giao dịch.	Card Issuer declined to authorize the transaction.
3	Timed Out	Không nhận được kết quả phản hồi từ Tổ chức phát hành thẻ.	No response from Card Issuer.
4	Expired Card	Tháng/Năm hết hạn của thẻ không đúng hoặc thẻ đã hết hạn sử dụng.	Invalid Expiration Date or your card is now expired.
5	Insufficient Funds	Số dư/Hạn mức của thẻ không đủ để thanh toán.	Your card credit limit/ account balance was not enough to cover the payment.
6	Error Communicating with Bank	Không nhận được kết quả phản hồi từ Tổ chức phát hành thẻ.	No response from Card Issuer.
7	System Error	Lỗi trong quá trình xử lý giao dịch của Ngân hàng.	System error while processing transaction.
8	Not Supported	Ngân hàng phát hành thẻ không hỗ trợ thanh toán trực tuyến.	Card Issuer does not support online payment.
9	Invalid Card Name	Tên chủ thẻ/tài khoản không hợp lệ.	Card Issuer declined to authorize the transaction.
10	Expired Card	Thẻ hết hạn/Thẻ bị khóa.	Your card is now expired or deactivated.
11	Not Registered	Thẻ/Tài khoản chưa đăng ký dịch vụ hỗ trợ thanh toán trực tuyến.	Your card/account was not activated features supporting for online payment.
12	Invalid Card Date	Tháng/Năm phát hành hoặc hết hạn của thẻ không hợp lệ.	Invalid Issue Date or Expiration Date.
13	Exist Amount	Giao dịch vượt quá hạn mức thanh toán trực tuyến theo quy định của Ngân hàng.	Your transaction was exceeded online payment limit in accordance with your Bank's regulations.
14	Invalid Card number	Số thẻ không hợp lệ.	Invalid card number.
21	Insufficient Fund	Số dư tài khoản không đủ để thanh toán.	Your account balance was not enough to cover the payment.
22	Invalid Account	Thông tin tài khoản không hợp lệ.	Invalid Account Information.
23	Account Lock	Thẻ/Tài khoản bị khóa hoặc chưa được kích hoạt.	Your card/account is now blocked or not activated.

24	Invalid Card Info	Thông tin thẻ/tài khoản không hợp lệ.	Invalid Card/Account Information.
25	Invalid OTP	Mã xác thực OTP không hợp lệ.	Invalid OTP.
26	Expired OTP	Mã xác thực OTP đã hết hiệu lực.	OTP has expired.
98	Authentication cancelled	Xác thực giao dịch bị hủy.	Authentication was cancelled.
99	User Cancel	Người dùng hủy giao dịch.	User cancelled transaction.
B	Transaction Blocked	Lỗi trong quá trình xác thực giao dịch của Ngân hàng phát hành thẻ.	Authentication failed.
D	Awaiting Processing	Lỗi trong quá trình xác thực giao dịch của Ngân hàng phát hành thẻ.	Authentication failed.
F	3D Secure Failure	Xác thực giao dịch không thành công.	Transaction authentication was not successful.
U	Card Security Code Failed	Xác thực mã CSC không thành công.	CSC authentication was not successful.
Z	Cannot process card	Giao dịch bị từ chối.	Your transaction was declined.
253	Expired	Hết thời hạn nhập thông tin thanh toán.	Your session has expired.
	Other	Lỗi không xác định.	Unspecified failure.

#### 4. Abbreviations of the Document

#	Abbreviations	Description
1	OnePAY	OnePAY payment gateway
2	Bank	Card/Bank Account management system and transaction processing
3	Merchant	Merchant and website accept online payment
4	URL	Uniform Resource Locator, link to website
5	OTP	One-time password generated by issuer bank system then sent to customer mobile by SMS to confirm the transaction.

6	SSL	Protocol to encrypt and secure information transmitted through the Internet
7	IPN	Instant Payment Notification: Instant notice for Merchant that the transaction is made through OnePAY

## 5. Bank List

#	BANK NAME	BIN	Note
1	Techcombank	970407	Internet Banking
2	Tienphongbank	970423	
3	Vietinbank	970415	
4	VIB	970441	Internet Banking
5	VietA	970427	
6	MSB	970426	
7	EXIM	970431	
8	SHB	970443	
9	HDBank	970437	
10	Vietcombank	970436	
11	DongAbank	970406	Internet Banking
12	MB	970422	
13	NAB	970428	
14	SEABANK	970440	
15	OCEANBANK	970414	
16	BIDV	970418	
17	BACA	970409	
18	VPBANK	970432	
19	NCB (NAVIBANK)	970419	
20	AGRIBANK	970405	
21	SAIGONBANK (SCB)	970429	
22	SACOMBANK	970403	
23	AnBinh Bank	970425	
24	PVCom Bank	970412	
25	VCCB (Bản Việt)	970454	
26	ACB	9704161	
27	GPBank	9704081	
28	OCB	9704481	
29	LienVietPostBank	9704491	
30	BAOVIET Bank	9704381	
31	Kienlongbank	9704521	
32	VRB	9704211	

33	Public Bank Vietnam	9704391	
34	SAIGONBANK	9704001	
35	PG Bank	9704301	
36	IVB	9704341	
37	Wooribank	9704571	
38	UOB Vietnam	9704581	
39	Shinhan Bank Vietnam	9704241	
40	Techcombank	9704071	Nhập thẻ
41	TINVIET(Vietcredit)	9704601	
42	VIETBANK	9704331	

## 6. Bank code (vpc\_ItaBank - for installment payment response)

#	BANK NAME	Code
1	SCB	SACLNVX
2	BIDV	BIDVVNVX
3	SACOMBANK	SGTTNVX
4	VIB	VNIBNVX
5	MBBank	MSCBVNVX
6	SHB	SHBAVNVX
7	VPBank	VPBKVNVX
8	TECHCOMBANK	VTCBVNVX
9	MSB	MCOBVNVX
10	SEABANK	SEAVNVX
11	SHINHANBANK	SHBKVNVX
12	Nam A Bank	NAMAVNVX
13	HSBC	HSBCVNVX
14	TPBank	TPBVNVX
15	Standard Chartered	SCBLNVX
16	Vietcombank	BFTVVNVX
17	EXIMBANK	EBVIVNVX
18	OCB	ORCOVNVX
19	Kien Long Bank	KLBKVNVX
20	ACB	ASCBVNVX
21	VIETINBANK	ICBVNVX
22	PVCOMBANK	WBVVNVX
23	HDBANK	HDBCNVX
24	FE CREDIT	VPBKVNVXFE

## **7. Requirments for logo and term condition**

### 5.1 Logo of cards and payment methods

- Merchant need to show logo of cards on checkout page.

### 5.2 Hiện thị điều khoản thanh toán

- Merchant need to show payment term and condition on checkout page.

Refer sample content by this link:

[https://mf.onepay.vn/client/logo\\_term\\_guide/Logo\\_term\\_guide\\_VN\\_EN.html](https://mf.onepay.vn/client/logo_term_guide/Logo_term_guide_VN_EN.html)