



cloudECR POS

V 1.3.4

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Revision

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1.0.0	Initial version	12 th August 2024	Faruzi Shaiful
1.1.0	<ul style="list-style-type: none"> Define Response Codes Change merchantId as mandatory field for all request by POS Add Heartbeat Add transData for Ping, to include device location and telco name Change parameter name from msg to responseText in Response message Move responseCode to message header Add Wallet Inquiry transType Add Card and Wallet response code in Appendix A and B 	27 th August 2024	Faruzi Shaiful
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1.2.0	<ul style="list-style-type: none"> Remove heartbeat as WebSocket have keep alive feature built-in Highlight that POS referenceId will be printed and forwarded to Fiuu by terminal Add productIndex parameter to support POS multiple products Add transData for walletInquiry, getLast, cancel Add promoSale parameter for sale promotion Add TID and MID in Ping response 	4 th November 2024	Faruzi Shaiful
1.3.0	<ul style="list-style-type: none"> Remove Ping Process Flow Remove multi-POS single Terminal Setup, 5.2 (next phase) Change printCount default value to 2 Add parameter referenceLabel in request message, 7.0 Change cvmType to string, 7.2.1 Update cvmType key, 7.3.4 Update bind-terminal flow, 4.1 Update Sample Message, 8.0 	28 th January 2025	Faruzi Shaiful
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1.3.3	<ul style="list-style-type: none">• Add getLast sample message• Add walletInquiry sample message• Add chapter 4.6 POS Response Handling and Verification Guidelines• Add originalDatetime for walletInquiry• Remove metadata from transData• Remove merchantRefId• Remove cancel event• Remove Settlement• Remove cloudECRStatus• Simplify Void request transData	13 th March 2025	Faruzi Shaiful
1.3.4	<ul style="list-style-type: none">• Update section 6.0.2 Response Message Format – add statusCode	24 th July 2025	Faruzi Shaiful

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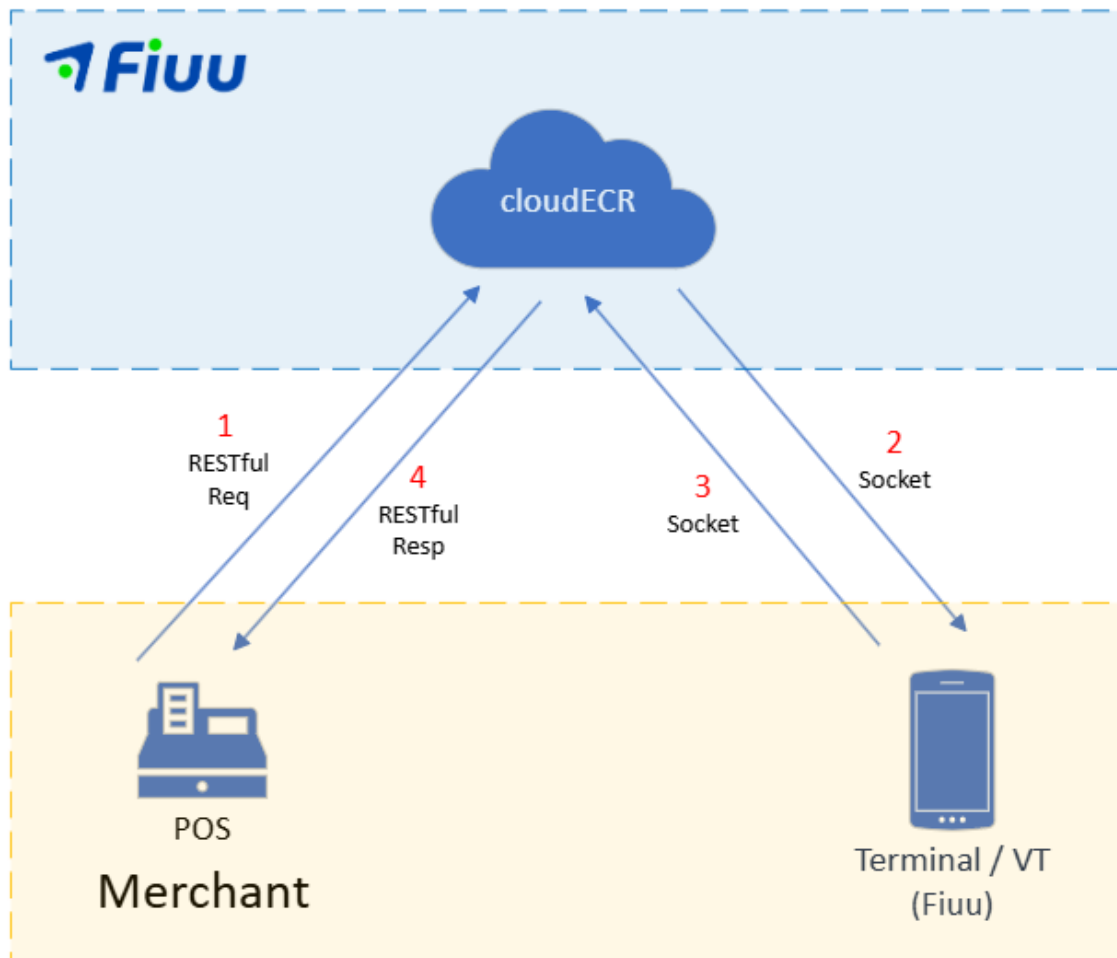
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1.0 Introduction

This document serves as a guideline for integration between Terminal/VT, Fiiuu cloudECR, and merchant POS system.



Communication between Merchant's POS and cloudECR will be using Representational State Transfer (RESTful) while between cloudECR and Terminal/VT will be using Web Socket, both use JSON as its data representation format

2.0 Security Features

cloudECR API service is protected for only authorized merchants with a hardened platform to secure payment data transmission.

- **Secure Sockets Layer (SSL) data transport**

HTTPS is required for all interchange messages between merchants and cloudECR.

- **Transport Layer Security (TLS)**

Protocol that provides authentication, privacy, and data integrity between two communicating computer applications. Used for web browsers and other applications that require data to be securely exchange over a network. The required TLS for this API is TLS 1.2 & above.

- **Data Message Protection (Signature)**

This is an application layer security in ensuring data integrity. All data in the message exchange will be hashed using a unique Secret Key and output as Signature. Secret Key is a Public Key assigned to POS and terminal during account creation. cloudECR will validate this Signature to prevent any data tampering during the message exchange. POS and terminal are strongly recommended to perform the same validation for all response messages received from cloudECR.

- **Session Management**

The API utilizes a robust session management strategy to maintain user sessions securely. Each session is uniquely identified and tied to the authenticated user, reducing the risk of session hijacking. Sessions are configured with a reasonable expiration time, after which they automatically expire. This limits the time frame for potential unauthorized access and encourages users to re-authenticate regularly.

- **HttpOnly Cookies**

Session identifiers are stored in cookies marked as HttpOnly, which prevents client-side scripts from accessing them. This mitigates the risk of cross-site scripting (XSS) attacks, where malicious scripts could attempt to steal session cookies. In addition to being HttpOnly, session cookies are also marked as Secure, ensuring they are only transmitted over HTTPS. This further protects against eavesdropping during data transmission.



3.0 Getting Started

3.1 Merchant Application Account

Merchants must register an account with Fiuu before beginning the integration with cloudECR. Each account provided will be paired with its own secret key.

For integration and production processing, Fiuu will provide the following account information to the merchant.

Secret Key	A server-side shared secret key which will be used to generate signatures for API communication.
POS ID	A unique identifier for POS. Each POS is assigned a distinct ID for identification purposes, which can be retrieved through the API .
Device ID	A unique identifier for terminals. Each terminal is assigned a distinct ID for identification purposes.

3.2 API Version

The version represents the functionality or enhancement provided by each iteration.

- **V1** – Initial Version

3.3 Service URL

The terminal communicates with the cloudECR using a WebSockets connection. This connection establishes a direct and reliable link between the terminal and the cloudECR, enabling real-time data exchange. There are two types of environments which are sandbox and production.

- a. Sandbox environment is used for testing and development purposes. All requests made to the sandbox URL will simulate real-world interactions without affecting the production system.

[IP Whitelisting required]

Sandbox socket URL: <https://uat-cloudecr.fiiu.com/>

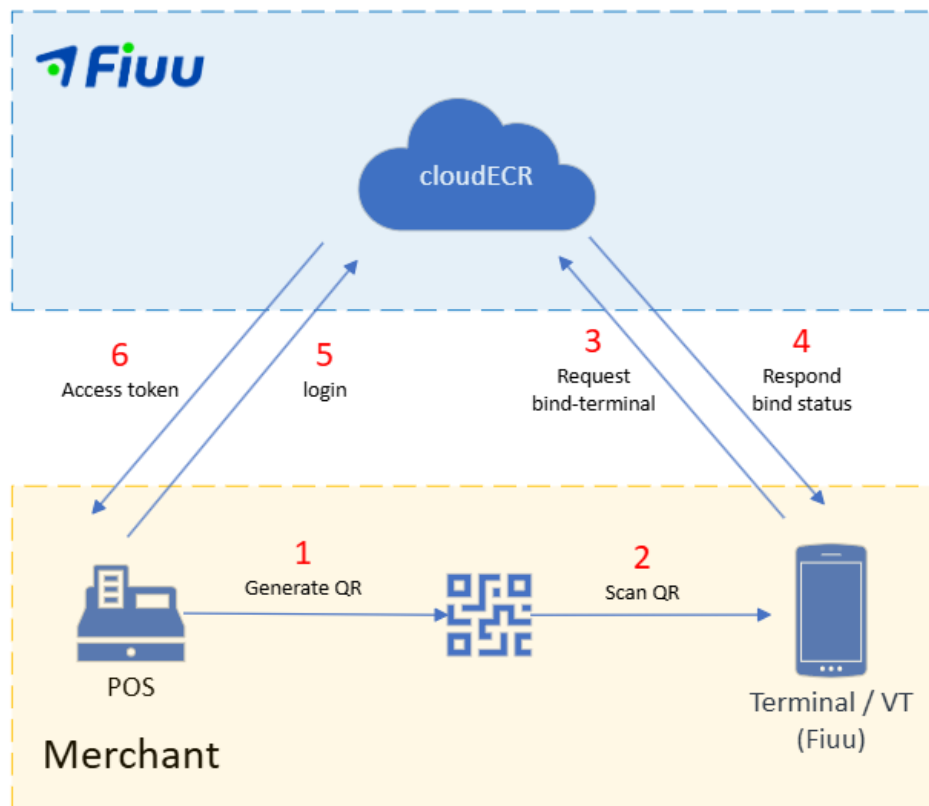
- b. Production environment is used for real-world use. Requests to this URL will directly interact with the production system and should be handled with caution.

Production socket URL: <https://cloudecr.fiiu.com/>

4.0 Overview of the cloudECR Flow

4.1 Bind-terminal Flow

This process is used to connect a newly installed Terminal/VT with a registered POS. The device scans the QR code provided by the POS and updates the cloudECR to initiate pairing. Bound devices will then be visible to the POS after successful login.

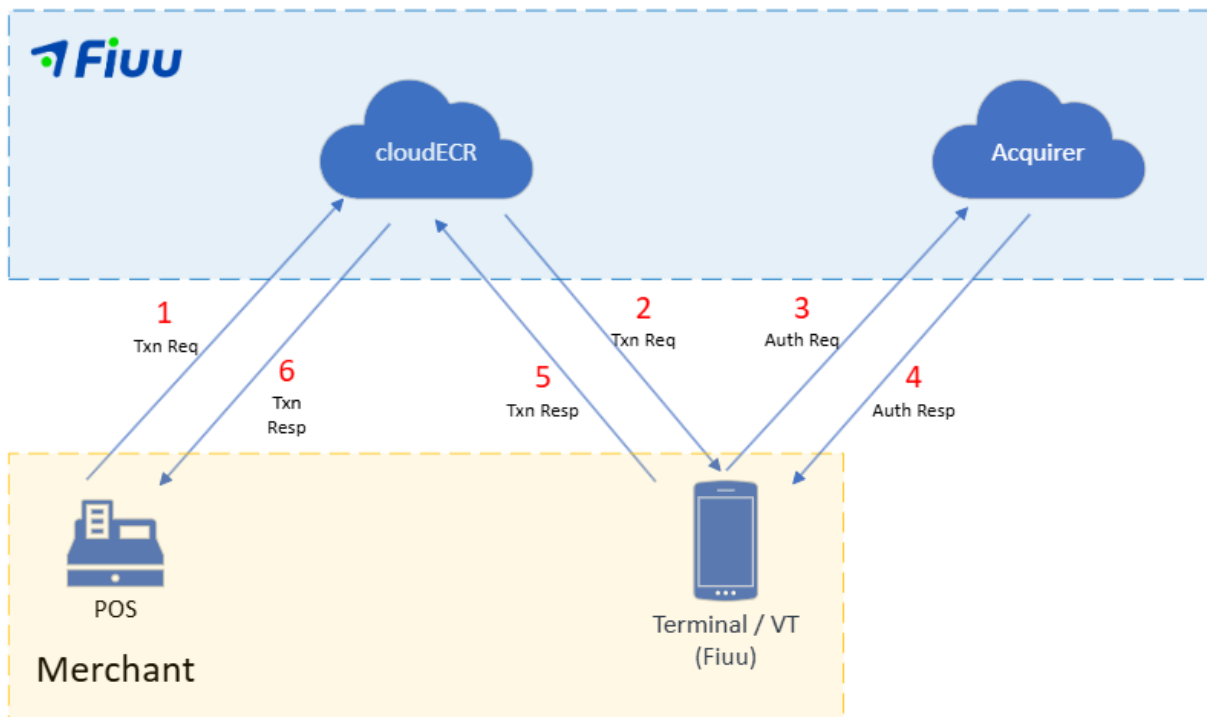


Take note: After a successful login, an access token will be issued to the POS along with the token's expiry details

Access token expiry: 15 minutes / 12:00 am
Refresh token expiry: 12:00 am daily

4.2 Transaction Process Flow

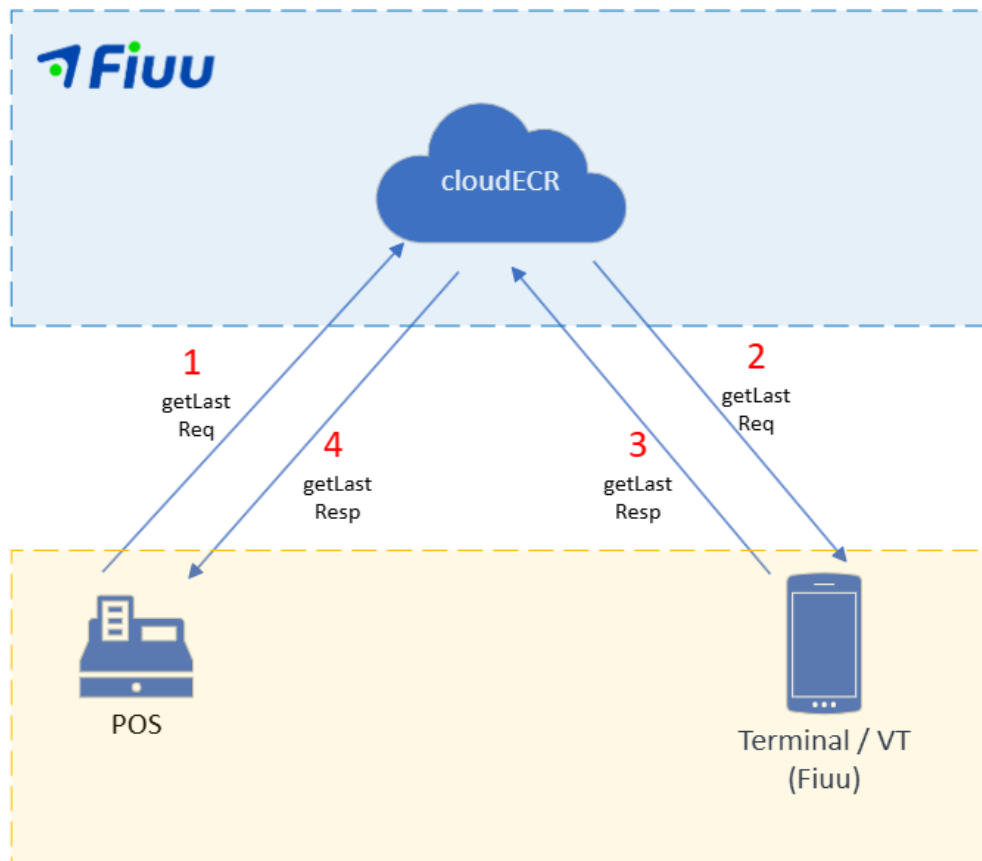
This process initiates the Terminal/VT to perform a transaction and return the transaction result to the POS.



- 1. Transaction Request (POS to cloudECR):**
The POS sends a transaction request to the cloudECR.
- 2. Transaction Request (cloudECR to Terminal/VT):**
The cloudECR validates the request and forwards it to the Terminal/VT for processing.
- 3. Authorization Request (Terminal/VT to Acquirer):**
The Terminal/VT sends an authorization request to the Acquirer for approval.
- 4. Authorization Response (Acquirer to Terminal/VT):**
The Acquirer responds to the Terminal/VT with the authorization result.
- 5. Transaction Response (Terminal/VT to cloudECR):**
The Terminal/VT sends the transaction status and details back to the cloudECR.
- 6. Transaction Response (cloudECR to POS):**
The cloudECR validates the response and sends it to the POS.

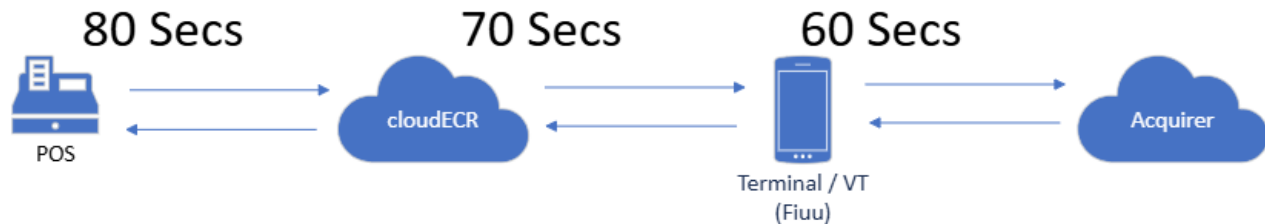
4.3 Get Last Process Flow

This process is used when a timeout occurs between the POS and cloudECR. The POS can use this API to inquire about the result of the last transaction.



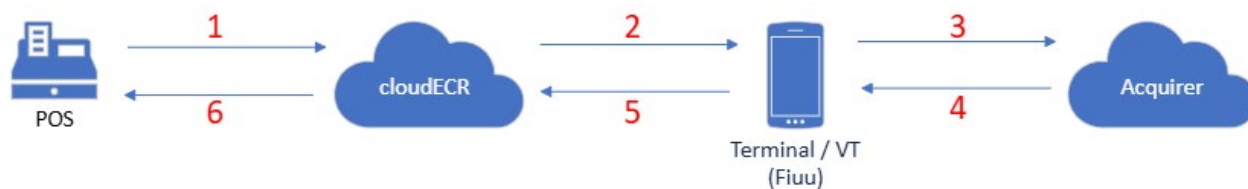
4.4 Timeout Values

These are the recommended timeout values for each party.



- POS timeout to receive a response from cloudECR: **80 seconds**.
- The process (cloudECR → Terminal/VT → Acquirer) must complete within this time.
- The Terminal/VT can cancel the transaction if necessary.
- Once the transaction leaves the POS, it must either be cancelled by the Terminal/VT or wait for the timeout, unless a transaction response is received.

4.5 Transaction Error Handling and Troubleshooting



Issue	Node	Suggested Action
Bind Terminal/VT Failed	-	a. Verify the devices' credentials <ul style="list-style-type: none"> - merchantId - device Id
POS transaction request couldn't reach Terminal/VT	1, 2	b. Verify the device's internet connection. c. Attempt the transaction again
Terminal/VT showing communication error messages after trigger transaction	3	a. Check the internet connection of the Terminal/VT and try again. b. If the problem continues, contact Fiiu Support
User is charged (Bank card) but transaction not success at Terminal/VT and no receipt issued	4	a. Do not release the goods. b. Retry the transaction. c. The initial transaction will be refunded. d. Keep the receipt from the second transaction for Fiiu's reference if needed
User is charged (Wallet) but transaction status shows Pending	4	a. Do not release the goods. b. Perform a wallet inquiry to check the transaction status.
Transaction success at Terminal/VT but the POS didn't receive any respond	5, 6	a. Perform getLast to retrieve the recent transaction status.



4.6 POS Response Handling and Verification Guidelines

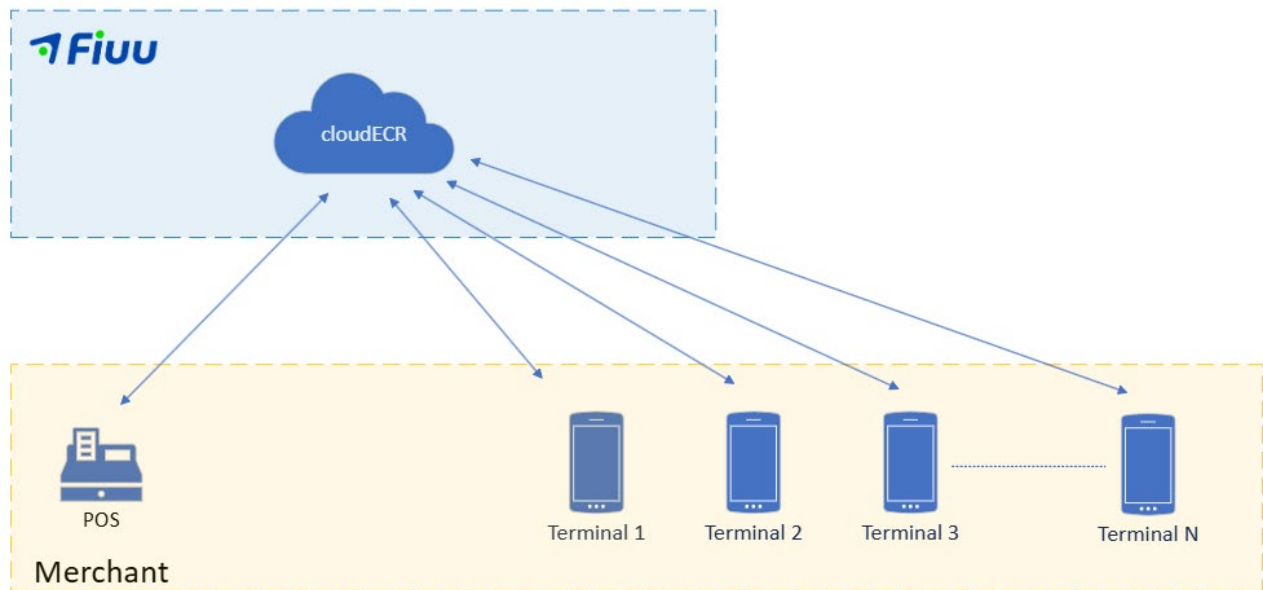
Upon receiving a response message from cloudECR, the POS must perform verification. If verification fails, the response should be dropped. The POS may use the **getLast** function to recover the correct transaction. If issue persist, merchant may re-login the API account.

posId	Must match the device posId
deviceId	Must match the requested deviceId
referenceId	Must match the requested referenceId
signature	Must match the calculated signature

5.0 Multiple device setup

5.1 Single POS Multiple Terminal

A single POS may have multiple Terminal/VT connected. POS is required to use the correct device ID to reach the desired device correctly.



6.0 Message Format

6.0.1 Request Message Format

Parameter	Description	Type	Required	Remarks
transType	Transaction type	String(32)	Mandatory	Transaction Identifier. E.g.: sale
posId	POS ID	String(100)	Mandatory	POS ID given by Fiiuu
merchantId	Merchant ID	String(100)	Mandatory	Unique merchant ID by Fiiuu.
deviceId	Device Identifier	String(100)	Mandatory	Single POS may have multiple Devices (uniqueId)
referenceId	Reference ID	String(20)	Mandatory	Identifier for transaction, generated by POS. Can be duplicated Not required for getLast Can be retrieved online in the Fiiuu portal as metadata
referenceLabel	Label to be printed on receipt	String(10)	Optional	If not provided, VT/Terminal will print "POS Ref" as a default label
apiVersion	API Version	String(3)	Mandatory	Version of cloudECR API starts with prefix "v" followed by the version number
datetime	Time stamp	String (ISO 8601)	Mandatory	Should be in UTC, formatted as yyyyMMddHHmmss for accurate event tracking. This is the main reference point for walletInquiry.
transData	Transaction Data	JSONObject	Conditional	JSON object with details specific to each transaction type. Not required for some types (e.g., Ping).
signature	Signature	String(64)	Mandatory	Digital signature for authenticating the request. Must be computed based on included fields.

6.0.2 Response Message Format

Parameter	Description	Type	Required	Remarks
transType	Transaction type	String(32)	Mandatory	Transaction Identifier. E.g.: Sale
posId	POS ID	String(100)	Mandatory	Identical to request
deviceId	Device Identifier	String(100)	Mandatory	Single POS may have multiple Devices (uniqueId)
referenceId	Reference ID	String(20)	Mandatory	Identical to request
apiVersion	API Version	String(3)	Mandatory	Version of cloudECR API starts with prefix "v" followed by the version number.
statusCode	Transaction request status	String(2)	Mandatory	00 = Success 11 = Failure 22 = Pending
responseCode	Channel Response Code	String(5)	Mandatory	Indicating the result of the transaction returned by the Channel. If statusCode is not Success, may refer here for exact code.
responseText	Text to Display on POS	String(128)	Optional	Message to display on the POS screen, especially in case of errors, to help users understand the issue.
terminalSn	Serial Number	String(40)	Mandatory	Terminal/VT Serial Number
softwareVersion	Software Version	String(40)	Mandatory	Version of the terminal or VT software.
transData	Transaction Data	JSONObject	Conditional	Contains additional data based on the transaction type. Not required for every response type.
signature	Signature	String(64)	Mandatory	Digital signature for validating the response's integrity. Generated based on response parameters.

6.1 Transaction Data

Only certain transactions as listed below require transData.

6.1.1 Sale / Cashout

Request

Key	Description	Type	Required	Channel	Remarks
transAmt	Transaction Amount	String(12)	M	All	Transaction Amount. Positive number. Always 2 decimal places with "." As a decimal point. 1.11 means 1 dollar and 11 cents
cashAmt	Cash Out Amount	String(12)	C	Bank Card	Only for CashOut. Same format as transAmt
paymentMethod	Payment Method	String(32)	M	All	Bank Card or QR
paymentChannel	Payment Channel	String(32)	C	Wallet	Required for Wallet (merchant presented) transactions
productIndex	Product Index	String(2)	O	All	For POS to categorized payment per product, up to 10
promoSale	Sale Promotion	String(2)	O	Bank Card	If card BIN is not under promo, transaction will be declined
note	Print Note	String(128)	O	All	It will be printed on terminal receipt remarks area
printCount	Number of prints	Number(1)	O	All	Number of receipts to be printed. If not given, default is 2 (Merchant and Customer copy)

Response

Key	Description	Type	Required	Channel	Remarks
transId	Transaction ID	Number(10)	M	All	Unique identifier given by Fiuu for transaction reference purpose
paymentChannel	Payment Method	String(32)	M	All	visa, mastercard, upi, tng, etc.
transAmt	Transaction Amount	String(12)	M	All	Transaction Amount. 1.11 means 1 dollar and 11 cents
cashAmt	Cash Out Amount	String(12)	C	Bank Card	Only for CashOut. Same format as transAmt
transDateTime	Transaction completion time	datetime	M	All	yyyy-MM-ddTHH:mm:ss
currency	Transaction Currency	String (10)	M	All	MYR, SGD, PHP
cardNo	Card Number	String(32)	C	Bank Card	Masked Card PAN (Mask with 'x' just show first 6, last 4) Eg: 554433xxxxx1234
invNo	Terminal Running Numbers	String(32)	M	All	Running numbers generated by terminal
batchNo	Batch Number	String(32)	O	All	Batch Number
tid	Terminal ID	String(32)	O	All	Terminal ID
mid	Merchant ID	String(32)	O	All	Merchant ID
entryMode	Entry Mode	String(32)	C	Bank Card	Chip, Contactless, Magstripe, Fallback
rrn	Retrieval Reference Number	String(32)	C	Bank Card	Retrieval Reference Number
apprCode	Authentication Number	String(32)	C	Bank Card	Authentication Number
tvr	Terminal Verification Result	String(32)	C	Bank Card	EMV Terminal Verification Result



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appCrypt	Application Cryptogram	String(32)	C	Bank Card	EMV Application Cryptogram
aid	Application ID	String(32)	C	Bank Card	EMV Application ID
cvmType	CVM Type	String(2)	C	Bank Card	CVM Type
cardLabel	Card Label	String(32)	C	Bank Card	Card Label
cardHoldersName	Card Holders Name	String(32)	O	Bank Card	Card Holders Name



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6.1.2 Void

Request

Key	Description	Type	Required	Channel	Remarks
transId	Transaction ID	Number(10)	M	All	Unique identifier given by Fiuu for transaction reference purpose
printCount	Number of prints	Number(1)	O	All	Number of receipts to be printed. If not given, default is 2 (Merchant and Customer copy)

Response

*Same as Sale / Cashout Response transData

6.1.3 walletInquiry

Request

Key	Description	Type	Required	Channel	Remarks
originalDatetime	Time stamp	String (ISO 8601)	M	wallet	Original transaction date time in UTC, formatted as yyyyMMddHHmmss

Response

*Same as Sale / Cashout Response transData

6.2 Parameter

6.2.1 transType

Key	Description
sale	Purchase
cashOut	Purchase with Cash Out. Only for MyDebit paymentChannel
void	Cancel specific transaction
walletInquiry	To be used for wallet transaction when there's a pending status
getLast	For POS to query the last transaction result at Terminal/VT end

6.2.2 paymentMethod

Key	Description
qrCustScan	Merchant Presented
qrMerchScan	Customer Presented
bankCard	Credit/Debit/Prepaid cards

6.2.3 paymentChannel

Key	Description
visa	Bank Card
mastercard	Bank Card
unionPay	Bank Card
myDebit	Bank Card
diners	Bank Card
amex	Bank Card
duitNowQr	Wallet
tng-d	Wallet
grabPay	Wallet
boost	Wallet
alipayPreAuth	Wallet
mae	Wallet
unionPayQr	Wallet
shopeePay	Wallet
alipay+	Wallet
atome	Wallet
weChatPay	Wallet

payNow	Wallet
kBankQR	Wallet
qrPh	Wallet

6.2.4 entryMethod

Key	Description
contact	Card inserted
contactless	Card tapped
manual	Card details manually entered
fallback	Fallback entry

6.2.5 cvmType

Key	CVM	Description
00	No CVM	No PIN or Signature Required
01	Signature	Signature Required
02	Online PIN	PIN Verified
03	Offline PIN	PIN Verified
04	CDCVM	No PIN or Signature Required

6.2.6 printCount

Key	Description
0	No Receipt
1	Merchant Copy Only
2	Merchant Copy and Customer Copy

6.2.7 statusCode

Key	Description
00	Success
11	Failure
22	Pending

7.0 Signature

- A signature is a HMAC-SHA256 hash string combination of a sequence of parameters and a secret key.
- Secret key is a server-side shared secret, this key is assigned to merchants by Fiuu
- All parameters used in the message exchange will form a part of the signature hash except
 - Empty parameter (NOT zero)
 - Signature parameter itself
- All parameter values that form a part of the signature hash must sort alphabetically based on parameter name
- All parameters that form a part of the signature hash must be in their original form (not URL encoded)
- All parameters that form a part of the signature hash are case sensitive.
- All strings will have leading and trailing whitespace stripped off.
- All signatures should include datetime to avoid duplication of transactions.

Example:

We shall be using these secretKey, MID, and TID for this example.

MID	6037780000000001
TID	91100033
MerchantID	fiuuMerch1
secretKey	75DC529B942513DFA77F43EC3451F137

Sale Request

```
{
  "transType": "sale",
  "posId": "fiiuPos1",
  "merchantId": "fiiuMerch1",
  "deviceId": "fiiuDeviceId1",
  "referenceId": "fiiuPosRefId1",
  "referenceLabel": "Contrib ID",
  "apiVersion": "v1",
  "datetime": "20250115081928",
  "transData": {
    "transAmt": "1.00",
    "paymentMethod": "bankCard"
  },
  "signature": "e3db7457b6f7913b439ec74915dfdbfcdd8a303e4f85a7dfc3760e78f61808d0"
}
```

Sort parameter values ordered by name alphabetically

{apiVersion} + {datetime} + {deviceId} + {merchantId} + {paymentMethod} + {posId}
+ {referenceId} + {referenceLabel} + {transAmt} + {transType}

2. Concatenate/combine the actual parameter's value

v120250115081928fiiuDeviceId1fiiuMerch1bankCardfiiuPos1fiiuPosRefId1Contrib
ID1.00sale

3. Hash concatenated string using HMAC-SHA256 algorithm with the secret key.

HMAC-
SHA256(v120250115081928fiiuDeviceId1fiiuMerch1bankCardfiiuPos1fiiuPosRefId1Contrib
ID1.00sale)
= **e3db7457b6f7913b439ec74915dfdbfcdd8a303e4f85a7dfc3760e78f61808d0**

8.0 sample Message

8.1 Sale bankCard

Request Message

```
{
  "transType": "sale",
  "posId": "fiuuPos1",
  "merchantId": "fiuuMerch1",
  "deviceId": "fiuuDeviceId1",
  "referenceId": "fiuuPosRefId1",
  "referenceLabel": "Contrib ID",
  "apiVersion": "v1",
  "datetime": "20250115081928",
  "transData": {
    "transAmt": "1.00",
    "paymentMethod": "bankCard"
  },
  "signature": "e3db7457b6f7913b439ec74915dfdbfcdd8a303e4f85a7dfc3760e78f61808d0"
}
```

Response Message

```
{
  "transType": "sale",
  "posId": "fiuuPos1",
  "deviceId": "fiuuDeviceId1",
  "referenceId": "fiuuPosRefId1",
  "apiVersion": "v1",
  "statusCode": "00",
  "responseCode": "00",
  "responseText": "Approved",
  "terminalSn": "dd8455778fa848f4",
  "softwareVersion": "Version 3.4.17",
  "transData": {
    "transId": "1516809",
    "paymentChannel": "mastercard",
    "transAmt": "1.00",
    "transDateTime": "2025-01-15T16:20:22",
    "currency": "MYR",
  }
}
```

```
{
  "cardNo": "*****7364",
  "invNo": "000001",
  "tid": "91100033",
  "mid": "603778000000001",
  "entryMode": "contactless",
  "rrn": "000003211036",
  "apprCode": "F99136",
  "tvr": "0000008001",
  "appCrypt": "d52e865f3f79d1d0",
  "aid": "A0000000041010",
  "cvmType": "00",
  "cardLabel": "Mastercard"
},
"signature": "cfa825407fea6ed8a04500ea36e791105181ea97499eaf1a03728a94f107b5e6"
}
```

8.2 Sale qrCustScan

Request Message

```
{
  "transType": "sale",
  "posId": "fiiuPos1",
  "merchantId": "fiiuMerch1",
  "deviceId": "fiiuDeviceId1",
  "referenceId": "fiiuPosRefId2",
  "referenceLabel": "Contrib ID",
  "apiVersion": "v1",
  "datetime": "20250115082437",
  "transData": {
    "transAmt": "1.00",
    "paymentMethod": "qrCustScan",
    "paymentChannel": "tng"
  },
  "signature": "bc250bf62daa000b3f5f7a9af2f75ad1aa5fe51af3f0f030f728aab5c1b3a517"
}
```

Response Message

```
{
  "transType": "sale",
  "posId": "fiiuPos1",
  "deviceId": "fiiuDeviceId1",

```

```
"referenceId": "fiiuPosRefId2",
"apiVersion": "v1",
"statusCode": "00",
"responseCode": "00",
"responseText": "Successfully paid with wallet",
"terminalSn": "dd8455778fa848f4",
"softwareVersion": "Version 3.4.17",
"transData": {
  "transId": "1516810",
  "paymentChannel": "tng",
  "transAmt": "1.00",
  "transDateTime": "2025-01-15T16:24:42",
  "currency": "MYR",
  "invNo": "000002",
  "tid": "91100033",
  "mid": "6037780000000001"
},
"signature": "3f2c819c65e9fe3a0430c7d689a42d686966bbb0ad505aa0bc48ab1192c4b9be"
}
```

8.3 Sale qrMerchScan

Request Message

```
{
  "transType": "sale",
  "posId": "fiiuPos1",
  "merchantId": "fiiuMerch1",
  "deviceId": "fiiuDeviceId1",
  "referenceId": "fiiuPosRefId3",
  "referenceLabel": "Contrib ID",
  "apiVersion": "v1",
  "datetime": "20250115082513",
  "transData": {
    "transAmt": "1.00",
    "paymentMethod": "qrMerchScan"
  },
  "signature": "bc40c71debc54b372d5819c7a21f6ef88b449ced68532da9a07e10729beced7a"
}
```

Response Message

```
{
  "transType": "sale",
  "posId": "fiuuPos1",
  "deviceId": "fiuuDeviceId1",
  "referenceId": "fiuuPosRefId3",
  "apiVersion": "v1",
  "statusCode": "00",
  "responseCode": "00",
  "responseText": "Successfully paid with wallet",
  "terminalSn": "dd8455778fa848f4",
  "softwareVersion": "Version 3.4.17",
  "transData": {
    "transId": "1516811",
    "paymentChannel": "duitNowQr",
    "transAmt": "1.00",
    "transDateTime": "2025-01-15T16:25:48",
    "currency": "MYR",
    "invNo": "000003",
    "tid": "91100033",
    "mid": "6037780000000001"
  },
  "signature": "85e813f801e3ea6e05f22752dd9cb832c511d0c8b994219cfc0addbfedel30ff"
}
```

8.4 Void bankCard

Request Message

```
{
  "transType": "void",
  "posId": "fiuuPos1",
  "merchantId": "fiuuMerch1",
  "deviceId": "fiuuDeviceId1",
  "referenceId": "fiuuPosRefId1",
  "referenceLabel": "Contrib ID",
  "apiVersion": "v1",
  "datetime": "20250115084536",
  "transData": {
    "transId": "1516809"
  },
  "signature": "e0836f8f212e90e9c7e38d4ae6c0d4e82e58fa2a0c771a69a0db8588bfb82b02"
}
```

Response Message

```
{
  "transType": "void",
  "posId": "fiuuPos1",
  "deviceId": "fiuuDeviceId1",
  "referenceId": "fiuuPosRefId1",
  "apiVersion": "v1",
  "statusCode": "00",
  "responseCode": "00",
  "responseText": "Successfully void payment",
  "terminalSn": "dd8455778fa848f4",
  "softwareVersion": "Version 3.4.17",
  "transData": {
    "transId": "1516809",
    "paymentChannel": "mastercard",
    "transAmt": "1.00",
    "transDateTime": "2025-01-15T16:45:22",
    "currency": "MYR",
    "cardNo": "*****7364",
    "invNo": "000001",
    "tid": "91100033",
    "mid": "603778000000001",
  }
}
```



```
{
  "entryMode": "contactless",
  "rrn": "000076822649",
  "apprCode": "563108",
  "tvr": "8000008000",
  "appCrypt": "02636923643fc3b2",
  "aid": "A0000000041010",
  "cvmType": "00",
  "cardLabel": "Mastercard"
},
"signature": "91d6c014920a8f6a9fcf50e2d8ef94be24348b47f4fe0c529c3c91b7fcb3e010"
}
```

8.5 Void wallet

Request Message

```
{
  "transType": "void",
  "posId": "fiiuPos1",
  "merchantId": "fiiuMerch1",
  "deviceId": "fiiuDeviceId1",
  "referenceId": "fiiuPosRefId2",
  "referenceLabel": "Contrib ID",
  "apiVersion": "v1",
  "datetime": "20250115084640",
  "transData": {
    "transId": "1516810"
  },
  "signature": "e15588dc3c4eacbde1d7f2dffa13f195cdfcd916facc4c8ad53009a126bb370"
}
```

Response Message

```
{
  "transType": "void",
  "posId": "fiiuPos1",
  "deviceId": "fiiuDeviceId1",
  "referenceId": "fiiuPosRefId2",
  "apiVersion": "v1",
  "statusCode": "00",
  "responseCode": "00",
  "responseText": "Successfully void payment",
}
```

```
"terminalSn": "dd8455778fa848f4",
"softwareVersion": "Version 3.4.17",
"transData": {
  "transId": "1516810",
  "paymentChannel": "tng",
  "transAmt": "1.00",
  "transDateTime": "2025-01-15T16:46:13",
  "currency": "MYR",
  "invNo": "000002",
  "tid": "91100033",
  "mid": "6037780000000001"
},
"signature": "bc1d218ce6484054edc1d0b2df2760c9609d8fc90037fa891dc6b564f3b3952c"
}
```

8.6 getLast

Request Message

```
{
  "transType": "getLast",
  "posId": "fiiuPos1",
  "merchantId": "fiiuMerch1",
  "deviceId": "fiiuDeviceId1",
  "apiVersion": "v1",
  "datetime": "20250115084840",
  "signature": "13297c880929e7e7fcb9a1edb30d47dd1c3fla58e530bde93e6c823ad94dddbc"
}
```

Response Message

```
{
  "transType": "void",
  "posId": "fiiuPos1",
  "deviceId": "fiiuDeviceId1",
  "referenceId": "fiiuPosRefId2",
  "apiVersion": "v1",
  "statusCode": "00",
  "responseCode": "00",
  "responseText": "Successfully void payment",
  "terminalSn": "dd8455778fa848f4",
  "softwareVersion": "Version 3.4.17",
}
```

```
"transData": {
  "transId": "1516810",
  "paymentChannel": "tng",
  "transAmt": "1.00",
  "transDateTime": "2025-01-15T16:46:13",
  "currency": "MYR",
  "invNo": "000002",
  "tid": "91100033",
  "mid": "603778000000001"
},
"signature": "6e97fbb4elf5c6491f66c733aeeab3209a0325293810a72c9d44ccdc7ec4b528"
}
```

8.7 Wallet Inquiry

Request Message

```
{
  "transType": "walletInquiry",
  "posId": "fiuuPos1",
  "merchantId": "fiuuMerch1",
  "deviceId": "fiuuDeviceId1",
  "referenceId": "fiuuPosRefId3",
  "apiVersion": "v1",
  "datetime": "20250115084840",
  "signature": "b790d38cf61a47d22633c2bbbd3bb77a2f312bd06de88a92420d18db48e014fd"
}
```

Response Message

```
{
  "transType": "sale",
  "posId": "fiuuPos1",
  "deviceId": "fiuuDeviceId1",
  "referenceId": "fiuuPosRefId3",
  "apiVersion": "v1",
  "statusCode": "00",
  "responseCode": "00",
  "responseText": "Successfully paid with wallet",
  "terminalSn": "dd8455778fa848f4",
  "softwareVersion": "Version 3.4.17",
  "transData": {
```



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```
"transId": "1516811",
"paymentChannel": "duitNowQr",
"transAmt": "1.00",
"transDateTime": "2025-01-15T16:25:48",
"currency": "MYR",
"invNo": "0000003",
"tid": "91100033",
"mid": "6037780000000001"
},
"signature": "85e813f801e3ea6e05f22752dd9cb832c511d0c8b994219cfc0adbbfedel30ff"
}
```

Appendix A: General Response Code

These are possible response codes to be returned in responseCode
(to be updated with error code from cloudECR)

Response Code	Description
-40	Error from SDK Server
-41	Card Payment Not Available
-42	Printer Not Available
-44	Cancelled payment transaction
-48	cloudECR request Timeout
-01	Timeout from Terminal. Perform getLast to inquiry
-02	Device Busy
-21	Invalid posId
-22	Invalid merchantId
-23	Invalid deviceId
-24	Invalid apiVersion
-25	Invalid applicationCode
-26	Invalid signature
-311	NFC not supported

Appendix B: Card Response Code

Based on Fiuu_Acquirer_Specification_V3.0

Response Code	Description
00	Approved or completed successfully
01	Please call Issuer
02	Please call Referral
03	Invalid merchant
04	Pick-up card
05	Do not honour
06	Error
07	Pick-up card, special condition
08	Honour with identification
12	Invalid transaction
13	Invalid amount
14	Invalid card number (no such number)
15	No such Issuer
19	Re-enter Transaction
25	Declined, wrong crypto
30	Format error / Invalid MAC Error
31	Bank not supported by switch
32	Completed Partially
33	Expired card
34	Suspected fraud
35	Card acceptors contact Acquirer
37	Card acceptor call Acquirer security
38	Allowable PIN tries exceeded
39	No credit account
40	Function does not support
41	Lost card
43	Please call card centre
46	Please Insert Card
50	Online PIN requested
51	Insufficient funds

54	Expired card
55	Incorrect PIN (personal identification number)
56	No record found
57	Transaction not permitted to cardholder
58	Transaction not permitted to terminal
59	Suspected Fraud
60	Contact Acquirer
61	Exceeds Purchase amount limit
62	Restricted card
65	Exceeds Purchase frequency limit
68	Response received too late
75	Allowable number of PIN tries exceeded
78	Old Record Not Found
88	Cryptographic failure
90	Cut off is in process
91	Network Error
92	Transaction cannot be found for routing
94	Duplicate transmission
95	Reconcile error
96	Invalid message
V1	Unable to void

Appendix C: Wallet Response Code

Based on [OPA+MAP] Razer Offline Payment API v2.1.11

Code	Description
00	Success The transaction was completed successfully
01	Pending Unknown transaction status. Merchant is required to inquire about the transaction to further confirm transaction status.
11	Pending authorize Transaction is pending for user to authorize. Merchant can inquire about the transaction once user completed authorization
99	Failed The transaction failed.
1000	Client version not matched User Wallet client version is not up-to-date. Please ask the user to update to the latest version before retry payment.
1001	Invalid authorization code The authorization code captured is invalid or expired. Please rescan and retry payment.
1002	Insufficient balance User Wallet does not have sufficient balance to proceed payment.
1003	Exceed transaction limit Transaction had exceeded the limitation set in Wallet payment provider.
1004	Forbidden word There is a forbidden word in the description that does not pass China authority.
1005	Payer account not exists Payer account does not exists.
1006	Forbidden payer account Payer account is disabled or current status does not allow it to perform payment.
1007	Payer disabled payment option Payer has disabled or does not enable related payment options to allow payment.
1008	Refund amount exceeded Refund amount had exceeded the original amount or the remaining amount.
1009	Unable to reverse or refund Transactions had been reversed or refunded.
1010	Trade Closed Transaction had expired.
1011	Merchant account unauthorized. Merchant account not found or invalid merchant account info at channel side.
1012	Invalid channel coupon / voucher. Applied channel coupon / voucher unable to use

1013	Invalid forex rate, currency info, or country info. System unable to detect forex rate, currency info, or country info.
1014	Unable to reverse or refund Payment made with a voucher unable to reverse or refund.
9999	Other error
40000	Bad Request
40001	Invalid AuthorizationCode
40002	Invalid API version
40003	Invalid CurrencyCode
40004	Promo code fully redeemed
40005	Invalid ChannelID
40006	This channel does not support the following API
40007	Image size value must be in WIDTHxHEIGHT format
40008	Exceed authorized amount
40009	Duplicate Reference ID
40100	Unauthorized
40101	Invalid ApplicationCode
40102	Invalid Hash Type
40103	Invalid Signature
40104	Channel not enabled or account inactive
40105	Minimum amount is @currency 0.10
40106	Image format not supported
40107	Image resolution not supported
40108	Trade Closed
40109	Invalid promo Voucher Voucher/Coupon used does not meet the terms and conditions stated.
40110	Transaction not allowed to reverse or refund
40111	Invalid extraInfo
40400	Payment Not Found
40401	@parameter is required
40402	Merchant account not found
40403	Refund record not found
50000	Internal server error
50030	System under maintenance
50200	Bad Gateway