SHIFT4™

API Specifications

Data Open API

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Introduction

This document provides an in-depth description of Shift4's Open API Data service and Shift4's notification engine.

Shift4's Open Data API is an easy to implement tool for retrieving information about your activity with Shift4. The data is provided in pull mode.

Shift4's notification engine is an easy to implement tool for receiving push notifications regarding your Shift4 account. The data is provided in push mode.

Intended Audience

This document is intended for software developers wishing to develop applications using the Shift4 Open API. It fully documents the REST application programming interface that enables developers to interact with the Shift4 application management platform. This document assumes you have a general understanding of the consuming web services and have an active Shift4 Open API username for accessing Shift4 services.

Useful Documents/References

The following documents may also be useful in understanding the Data Open API:

- Shift4 Payment API: a document providing an in-depth description of Shift4 payment API.

Security/Authentication

All HTTP requests must be sent over SSL (HTTPS) over a secure channel. The client is authenticated using source IP and user/password mechanism (login).

Open Data API

Introduction

Shift4's Open Data API is a proprietary platform for data-reporting services.

The Data API protocol exposes data search operations on various data sets. The mechanism works as a search engine on the client's relevant data records.

The API operates using a basic request-response method where the client gives instructions to perform a data search and receives a reply with the relevant raw data set.

The following sections provide an in-depth description of the Data API call and its iteration mechanism.

Iteration Mechanism

The Data API is built with an Iteration engine. Each API call retrieves 250 records of results.

In order to perform iterations, the response also includes the following field:

- next_page_indicator - An indication whether there are additional matching records that were not retrieved as part of the current iteration.
- fixed_timestamp - The first iteration's request timestamp. Used to delimit the result set according to the first iteration timestamp in order to maintain continuity of records between iterations. Relevant for 2nd iteration and on. The value can be extracted from the previous iteration response. If no value is sent, the results are not delimited. That is, if new records are inserted into the source table while the iterations are being executed, the same transaction may appear in two different iterations. Relevant to 'Processing Activity' API call only.

You can control the iteration by including the following fields in the request:

- first_rec – The first requested record number of the iteration. In keeping with the sequence, the value should be multiples of 250, starting from 0.

  For example:

  1st iteration=0

  2nd iteration=250

  3rd iteration= 500

  If no value is sent, the engine uses the default value of 0.

Note:

To maintain the continuity of records, all iterations should include the same request fields values, except for first_rec

Step by Step Data Retrieval

Data API solution contains two steps:

1. Authentication call – request a token
2. Get Data call – Initiate the data retrieval

Step 1- Authentication Call

Introduction

The Shift4 Data API uses tokens to authorise access to all resources.

Tokens are returned when a user logs in by authenticating with the REST API, and they expire after 15 min.

With the exception of login, a valid token is always mandatory when requesting resources from the REST-API. Failing to provide a valid token will always result in the server responding with status code 401 (Unauthorised).

Method: POST.

Addresses

Integration address	https://openapi-int.credorax.com/openAPI/rest/v1/login
Production address	https://openapi.credorax.net/openAPI/rest/v1/login

Request Fields Description

The following section describes all API fields.

Note that the **required** column states whether the API field is mandatory (m), conditional (c), or optional (o).

Parameters should be passed in the request body.

Note:

Field names and field values are case sensitive.

Authentication Request

Authentication request body must be sent as x-www-form-urlencoded.

Authentication API Request Fields

Name	Type	Min	Max	Required	Description
user_name	[0-9A-Za-z\-]	8	100	m	Shift4-assigned user_name
password	[0-9A-Za-z]	8	100	m	Unique password used to authenticate requests.

Authentication Request Example

Headers

Content-Type - application/x-www-form-urlencoded

Body

user_name=DARR2978OpenAPI

password=DJGNhW7x5tk6

Authentication API Response Fields

Name	Type	Min	Max	Description
token	[0-9A-Za-z\-]	24	1000	Service authentication token to be used in the API call for authentication purposes.

Authentication Response Example


```
eyJhbGciOiJIUzM4NCJ9.eyJpc3MiOiJTQS04MTUzNSIsImlhdCI6MTc1NTg0NTg2MCwiZXhw
IjoxNzU1ODQ2NzYwfQ.u5FDguf7NRIYGNCmVoLn7lAeiHhi2M4KIiKImM4L3b5m07GJWXnZcM
kUxs1qws6u
```


Step 2- Get Data Calls

Perform one of the below API calls in order to retrieve different data sets.

Processing Activity API Call

Introduction

The service exposes raw transactions data, based on customer transactions sent to Shift4's Payments Platform API as well as relevant clearing information.

Gateway transactions are available for retrieval using the Open Data API in near-real-time relative to the Gateway sending time. Clearing information is available via the API after completion of Shift4 internal transaction-clearing processes.

Shift4 applies data enrichment processes to enhance, refine or improve the response data set.

Method: GET.

Addresses

Integration address	https://openapi-int.credorax.com/openAPI/rest/v2/getActivity
Production address	https://openapi.credorax.net/openAPI/rest/v2/getActivity

Processing Activity Request Fields

The following table describes the fields of the Get Activity request. Note:

- All field names and values are case sensitive.
- The **Required** column states whether the API field is mandatory (m), conditional (c), or optional (o).
- The **Multi selection** column states whether the request input can be sent with multiple values. The format required for multiple values is a comma separated list.

Name	Type	Min	Max	Required	Multi selection	Description
token	[a-zA-Z0-9\-]	24	1000	m	No	Authentication token, as received in the authentication response.
first_rec	[0-9]	1	8	o	No	The first requested record number of the iteration. In keeping with the sequence, the value should be a multiple of 250. For example: First iteration=0 Second iteration=250 Third iteration=500

Name	Type	Min	Max	Required	Multi selection	Description
						If no value is sent, the engine uses the default value of 0. See Iteration Mechanism.
row_limit	[0-9]	1	6	o	No	A limit on the number of records to be returned between 1 and 250. Default is 250.
fixed_timestamp	YYYY-MM-DDTHH:MM:SS	19	19	o	No	The first iteration's timestamp. Relevant for 2nd iteration and on. See Iteration Mechanism.
format	[a-zA-Z]	3	4	o	No	Response format. Valid options: • JSON • XML Default is JSON.
merchant_name	[a-zA-Z0-9*]	0	100	o	No	Filter the results by merchant name. Available to PSPs only.
trx_timeframe	[a-zA-Z0-9]	9	13	o	No	Filter the results by timeframe. The filtering is applied to each transaction's timestamp. Valid options: • LAST HOUR • LAST 3 HOURS • LAST 12 HOURS • LAST 24 HOURS • YESTERDAY • LAST 7 DAYS • LAST MONTH • MONTH TO DATE

Name	Type	Min	Max	Required	Multi selection	Description
						• DATE RANGE – a customer-defined range. See date_from and date_to.
date_from	YYYY-MM-DD			c (if trx_timeframe = DATE RANGE)	No	Used when filtering the results by trx_timeframe = DATE RANGE. The result set includes transactions from the last full 5 months and the current month. Therefore, the earliest value is the first day of the first month of the past 5 full months.
date_to	YYYY-MM-DD			c (if trx_timeframe = DATE RANGE)	No	Used when filtering the results by trx_timeframe = DATE RANGE The value must be bigger than the date specified in the date_from field, and smaller than or equal to the current date.
op_code	[0-9]	1	3	o	Yes	Filter the result based on the transaction's operation code. Refer to Shift4's Payments Platform API for further details on the O parameter.
trx_response_code	[A-Z0-9-]	1	3	o	Yes	Filter the results based on the transaction's response code.

Name	Type	Min	Max	Required	Multi selection	Description
						Refer to Appendix B-trx_response_code for a list of possible values.
gw_mid	[A-Z0-9_]	3	8	o	Yes	Filter the results based on the Shift4 gateway mid parameter of the transaction. Refer to Shift4's Payments Platform API for further details on the M parameter
processor	[a-zA-Z0-9*]	0	100	o	No	The acquirer that processed the transaction.
card_scheme	[a-zA-Z]	4	10	o	Yes	Filter the results based on the transaction-related card scheme. Valid options: • Visa • MasterCard
payment_source_code	[0-9]	1	2	o	Yes	Filter the results based on the transaction's payment channel. Refer to Shift4's Payments Platform API for further details on the A2 parameter.
currency	[A-Z]	3	3	o	No	Filter the results based on the transaction's currency. Refer to Shift4's Payments Platform API for further details on the a5 parameter (or ISO 4217-alpha-3).
card_number	[0-9]	4	4	o	No	Filter the results by the last 4 digits of the card holder's card number.

Name	Type	Min	Max	Required	Multi selection	Description
						Refer to to Shift4's Payments Platform API for further details on the b1 parameter.
trx_amount	decimal (25,2)			o	No	Filter the results by the transaction amount. Transaction amount is calculated based on a4, a5 and currency exponent. For example: for transaction with 120 EUR the trx_amount= 1.2 EUR.
arn	[0-9]	23	23	o	No	Filter the results by ARN.
clearing_status	[a-zA-Z]	7	11	o	Yes	Filter the results by the clearing status. Valid options: • Cleared • Not cleared
payment_id	[a-zA-Z0-9]	32	32	o	No	Filter the results by payment ID.
terminal_id	[a-zA-Z0-9]	8	8	o	No	The ID number of the terminal device.
rrn	[a-zA-Z0-9]	1	32	o	No	Filter the results by RRN.
bin_country	[A-Z]	3	3	o	Yes	Filter the results by BIN country. Refer to ISO 3166-alpha-3 for a list of possible values.
request_id	^[\-0-9A-Za-z]+	1	32	o	No	Filter the results by the transaction's request ID. Refer to to Shift4's Payments Platform

Name	Type	Min	Max	Required	Multi selection	Description
						API for further details on the a1 parameter.
auth_code	[a-zA-Z0-9]	1	10	o	No	Filter the results by the transaction's authorisation code. Refer to Shift4's Payments Platform API for further details on the g3 parameter.
reference_number	text	1	32	o	No	Filter the results by the transaction's merchant reference number. Refer to Shift4's Payments Platform API for further details on the h9 parameter.
region	[a-zA-Z]	5	8	o	Yes	Filter the results by the transaction region. Valid options: • Domestic • Intra • Inter

Processing Activity Request Example

```
https://openapi-
int.credorax.com/openapi/rest/v2/getActivity?token=c40852f7-bb0f-488e-
a771-dc215a1ae129&op_code=1%2C2%2C3&rrn=636114000070
```

Processing Activity Response Field Description

If no search parameters were specified in the request, the result set will include the last 250 transactions.

Response parameters per request:

Name	Type	Min	Max	Description
next_page_indicator	boolean			Iteration indication, indicating whether further result records matching the request were found.
fixed_timestamp	datetime			The first iteration response will include the request timestamp
num_of_responses	numeric	1	10	Number of activities included in the response.

Response parameters per activity:

Name	Type	Min	Max	Description
merchant_name	text	3	250	The transaction-related merchant. Available for PSPs only.
gw_mid_id	[A-Z0-9_]	3	8	The transaction-related GW mid. Refer to Shift4's Payments Platform API for further details on the M parameter.
processor	[a-zA-Z0-9*]	0	100	The acquirer that processed the transaction.
op_code	[0-9]	1	3	The transaction-related operational code. Refer to Shift4's Payments Platform API for further details on the O parameter.
op_code_desc	text	1	250	Operational code description.

Name	Type	Min	Max	Description
trx_response_code	[A-Z0-9-]	1	3	The transaction's response code as received from the gateway. Refer to Appendix B-trx_response_code for a list of possible values.
trx_response_desc	text	1	250	Transaction's response code description.
payment_source_code	[0-9]	1	2	The transaction's payment channel code. Refer to Shift4's Payments Platform API for further details on the a2 parameter.
payment_source_desc	text	1	250	Transaction payment channel code description.
trx_timeframe	YYYY-MM-DD HH:MM:SS	19	19	The transaction's timestamp (UTC). Refer to Shift4's Payments Platform API for further details on the T parameter.
card_number	[0-9*\.]	8	19	The transaction's masked card number. Refer to Shift4's Payments Platform API for further details on the b1 parameter.

Name	Type	Min	Max	Description
currency	[A-Z]	3	3	The transaction's currency parameter. Refer to Shift4's Payments Platform API for further details on the A5 parameter (or ISO 4217-alpha-3).
trx_amount	decimal (25,2)			The transaction amount. Transaction amount is calculated based on a4, a5 and currency exponent. For example: for transaction with 120 EUR the trx_amount= 1.2 EUR.
request_id	^[\-0-9A-Za-z]+	1	32	The transaction's request ID parameter. Refer to Shift4's Payments Platform API for further details on the a1 parameter.
clearing_status	[a-zA-Z]	7	11	The clearing status of the transaction according to the Shift4 clearing process.
card_brand	[a-zA-Z]	3	128	The card brand related to the card holder card.

Name	Type	Min	Max	Description
descriptor	text	1	39	The transaction's billing descriptor Refer to Shift4's Payments Platform API for further details on the i2 parameter.
three_d_secure_code	[a-zA-Z0-9\:\=\+]	10	128	The transaction's 3D secure code. Refer to Shift4's Payments Platform API for further details on the i8 parameter. Available in V1 only.
three_d_secure_desc	text	1	250	The transaction's 3D secure code description. Available in V1 only.
cft_type_code	[0-9]	1	3	The transaction's CFT type code.
cft_type_desc	text	1	250	The CFT type code description.
billing_country	[A-Z]	3	3	The transaction's billing country. Refer to Shift4's Payments Platform API for further details on the c9 parameter (or ISO 3166-alpha-2)
ip_country	[A-Z]	3	3	The country ISO 3166-alpha-3 based on the transaction's IP address.
bin_country	[A-Z]	3	3	The country ISO 3166-alpha-3 based on the transaction's bin number.

Name	Type	Min	Max	Description
auth_code	[a-zA-Z0-9]	1	10	The transaction's authorisation code. Refer to Shift4's Payments Platform API for further details on the g3 parameter.
rrn	[a-zA-Z0-9]	1	32	The transaction's RRN number. Refer to Shift4's Payments Platform API for further details on the z13 parameter.
payment_id	[a-zA-Z0-9]	32	32	The transaction's payment ID. Refer to Shift4's Payments Platform API for further details on the z55 parameter.
cvv2_code	[A-Z]	1	1	The transaction's CVV2 response code. Refer to Shift4's Payments Platform API for further details on the z14 parameter.
cvv2_desc	text	1	250	The CVV2 response code description.
clearing_date	YYYY-MM-DD	10	10	The transaction's clearing date.
settelment_currency	[A-Z]	3	3	The transaction's settlement currency.
settelment_amount	decimal (25,2)			The transaction's settlement amount.

Name	Type	Min	Max	Description
settelment_charges	decimal (25,2)			The transaction's fee amount, in the settlement currency.
net_settelment_amount	decimal (25,2)			The transaction's settlement amount after fee deduction.
arn	[0-9]	23	23	The transaction's ARN number.
card_type	[a-zA-Z]	5	6	The transaction's card type. Possible options: • Credit • Debit
region	[a-zA-Z]	5	8	The transaction's calculated region. Possible options: • Domestic • Inter • Intra
token	[a-zA-Z0-9]	1	32	The transaction's payment token. Refer to Shift4's Payments Platform API for further details on the g1 parameter.
trx_recurring_code	[0-9]	1	2	The transaction's recurring code. Refer to Shift4's Payments Platform API for further details on the a9 parameter.
trx_recurring_desc	text	1	250	The transaction's recurring code description.

Name	Type	Min	Max	Description
cardholder_name	text	1	250	The transaction's masked cardholder name. Refer to Shift4's Payments Platform API for further details on the c1 parameter.
cardholder_email	text	1	250	The transaction's masked cardholder. Refer to Shift4's Payments Platform API for further details on the c3 parameter.
echo_parameter	text	3	128	The transaction's echo parameter. Refer to Shift4's Payments Platform API for further details on the d2 parameter.
sub_merchant_id	[0-9]	1	15	The transaction's sub merchant ID. Refer to Shift4's Payments Platform API for further details on the h3 parameter.
reference_number	text	1	32	The transaction's merchant reference number. Refer to Shift4's Payments Platform API for further details on the h9 parameter.

Name	Type	Min	Max	Description
description	text	5	64	The transaction's description parameter. Refer to Shift4's Payments Platform API for further details on the i1 parameter.
Response_id	[a-zA-Z0-9]	1	32	The transaction's response ID. Refer to Shift4's Payments Platform API for further details on the z1 parameter.
Avs_response_code	[A-Z0-9]	1	2	The transaction's AVS response code. Refer to Shift4's Payments Platform API for further details on the z9 parameter.
Avs_response_desc	text	1	250	The transaction's AVS response code description.
Pin_entry_capability	[0-9]	1	1	The transaction's pin entry capability. Refer to Shift4's Payments Platform API for further details on the b10 parameter.
Card_product	[a-zA-Z]	3	128	The transaction's card product.

Name	Type	Min	Max	Description
Local_trx_date	YYYY-MM-DD HH:MM:SS			The transaction's local date and time. Refer to Shift4's Payments Platform API for further details on the a6 and a7 parameters.
Card_scheme	[a-zA-Z]	4	10	The transaction's card scheme. Possible options: • Visa • MasterCard
terminal_cp_id	text	1	8	The transaction's card acceptor terminal ID. Refer to Shift4's Payments Platform API for further details on the b17 parameter.
Device_id	text	1	256	Unique terminals ID. Refer to Shift4's Payments Platform API for further details on the b12 parameter.
Entry_mode_code	[0-9]	2	2	The transaction's entry mode. Refer to Shift4's Payments Platform API for further details on the b9 parameter.

Name	Type	Min	Max	Description
3DS_STATUS	text	1	1	The result of the authentication process. **Available only in V2 of Open Data API.** For further details see the description of the 3ds_status parameter in Shift4's Payments Platform API.
3DS_VERSION	[0-9\.]	3	5	Indicates whether the 3D Secure protocol version is 1.0 or 2.0 **Available only in V2 of Open Data API.** For further details see the description of the 3ds_version parameter in Shift4's Payments Platform API.
3DS_TRX_ID	[a-zA-Z0-9]	36	36	Universally unique transaction identifier to identify a single 3D Secure transaction. **Available only in V2 of Open Data API.** For further details see the description of the 3ds_trxid parameter in Shift4's Payments Platform API.

Name	Type	Min	Max	Description
3DS_TRX_SOURCE	[a-zA-Z0-9]	0	250	Indicates the type of channel interface being used to initiate the transaction. **Available only in V2** For further details see the description of the 3ds_channel parameter in Shift4's Payments Platform API.
3DS_COMPIND	[0-9]	1	1	This input will be received only as part of a transaction that was initiated in a Browser channel **Available only in V2** For further details see the description of the 3ds_compind parameter in Shift4's Payments Platform API.

Name	Type	Min	Max	Description
3DS_ECI	[0-9]	1	250	Electronic Commerce Indicator (ECI) is a value returned by Directory Servers (namely Visa, Mastercard, JCB, and American Express) indicating the outcome of authentication attempted on transactions enforced by 3DS. **Available only in V2 of Open Data API.** For further details see the description of the 3ds_eci parameter in Shift4's Payments Platform API.

Name	Type	Min	Max	Description
3DS_ADVISER_RE	[a-zA-Z0-9]	1	32	3D Secure Adviser recommendation. Possible values: • 3D Secure – recommend issuing a payment transaction with 3D secure • Payment without 3D Secure – recommend issuing a payment without 3D secure **Available only in V2 of Open Data API**. For further details see the description of the smart_3ds_result parameter in Shift4's Payments Platform API.
pass_through_wallet	[a-zA-Z]	4	16	Indicates whether the transaction originally issued from a passthrough wallet supported by Shift4. **Available only in V2 of Open Data API.** For further details see the description of the b21 parameter in Shift4's Payments Platform API.

Name	Type	Min	Max	Description
requested_amount	decimal (23,5)			The original amount requested for the transaction. Relevant for cases of partial amount approval. For further details see the description of the a4 parameter in the Shift4's Payments Platform API.
payment_account_reference	[0-9]	0	29	Payment Account Reference (PAR). For further details see the description of the b20 parameter in the Shift4's Payments Platform API.
transit_transaction_type	[0-9]	0	2	Transit Transaction Type. For further details see the description of the t1 parameter in the Shift4 Transit API.
transit_transportation_type	[0-9]	0	2	Transit Transportation Type. For further details on the t2 parameter in the Shift4 Transit API.
subtotal_amount	[0-9]	1	12	Sub Total Amount. For further details see the description of the a41 parameter in the Shift4's Payments Platform API.

Name	Type	Min	Max	Description
vat_amount	[0-9]	1	12	Vat Amount. For further details see the description of the a42 parameter in the Shift4's Payments Platform API.
shipping_amount	[0-9]	1	12	Shipping Amount. For further details see the description of the a44 parameter in the Shift4's Payments Platform API.
tip_amount	[0-9]	1	12	Tip Amount. For further details see the description of the a46 parameter in the Shift4's Payments Platform API.
operation	text	0	250	SmartGuard payment/transaction type. For further details see the description of the operation parameter in the SmartGuard specifications.
operation_result_successful	text	0	250	SmartGuard transaction result. For further details see the description of the operation_result_successful parameter in the SmartGuard specifications.

Name	Type	Min	Max	Description
merchant_fixed_transaction_fee	decimal (25,2)			The fixed transaction fee.
merchant_interchange_amount	decimal (25,2)			The interchange amount. For merchants with IC++ pricing model.
merchant_card_scheme_fee	decimal (25,2)			Fees charged by the card schemes. For merchants with IC++ pricing model.
merchant_acquiring_fee	Decimal (25,2)			Fees charged by Shift4. For merchants with IC++ pricing model.
Other_transactional_charges	Decimal (25,2)			Miscellaneous fees charged in transaction level.
ancillary_fee_code_1	[a-zA-Z0-9]	0	4	Travel additional data. For further details see the description of the an1 parameter in the Shift4's Payments Platform API.
ancillary_fee_code_2	[a-zA-Z0-9]	0	4	Travel additional data. For further details see the description of the an2 parameter in the Shift4's Payments Platform API.

Name	Type	Min	Max	Description
ancillary_fee_code_3	[a-zA-Z0-9]	0	4	Travel additional data. For further details see the description of the an3 parameter in the Shift4's Payments Platform API.
ancillary_fee_code_4	[a-zA-Z0-9]	0	4	Travel additional data. For further details see the description of the an4 parameter in the Shift4's Payments Platform API.
ancillary_fee_amount_1	[a-zA-Z0-9]	0	12	Travel additional data. For further details see the description of the an1 parameter in the Shift4's Payments Platform API.
ancillary_fee_amount_2	[a-zA-Z0-9]	0	12	Travel additional data. For further details see the description of the an2 parameter in the Shift4's Payments Platform API.
ancillary_fee_amount_3	[a-zA-Z0-9]	0	12	Travel additional data. For further details see the description of the an3 parameter in the Shift4's Payments Platform API.

Name	Type	Min	Max	Description
ancillary_fee_amount_4	[a-zA-Z0-9]	0	12	Travel additional data. for further details see the description of the an4 parameter in the Shift4's Payments Platform API.
ancillary_fee_code_sub_category_1	[a-zA-Z0-9]	0	4	Travel additional data. For further details see the description of the an1 parameter in the Shift4's Payments Platform API.
ancillary_fee_code_sub_category_2	[a-zA-Z0-9]	0	4	Travel additional data. For further details see the description of the an2 parameter in the Shift4's Payments Platform API.
ancillary_fee_code_sub_category_3	[a-zA-Z0-9]	0	4	Travel additional data. For further details see the description of the an3 parameter in the Shift4's Payments Platform API.
ancillary_fee_code_sub_category_4	[a-zA-Z0-9]	0	4	Travel additional data. For further details see the description of the an4 parameter in the Shift4's Payments Platform API.

Name	Type	Min	Max	Description
fast_funds_indicator	[A-Z]	1	1	Indicates whether the issuer supports fast funds functionality. For further details see the description of the z51 parameter in the Shift4's Payments Platform API.
credorax_on_behalf_service_result	[0-9]	1	1	Shift4 stand-in Service Result. For further details see the description of the z43 parameter in the Shift4's Payments Platform API.
final_response_time	timestamp			Shift4 stand-in Final Response Time.
other_transactional_charges	Decimal (28,10)			Miscellaneous fees charged in transaction level.

Processing Activity Response Example


```
{
    "fixed_timestamp": "2021-03-01T16:04:44",
    "num_of_responses": 1,
    "next_page_indicator": false,
    "activity": [
        {
            "arn": "74512345678901234567890",
            "auth_code": "123456",
            "avs_response_code": "D",
            "avs_response_desc": "Full Match - Address and ZIP/Postal Code
match",
            "billing_country": "USA",
            "bin_country": "USA",
            "card_brand": "Visa Classic",
            "card_number": "411234...1234",
            "card_product": "consumer",
            "card_scheme": "Visa",
```

```
            "card_type": "Debit",
            "cardholder_email": "chemail********@****1.com",
            "cardholder_name": "cardholder name",
            "cft_type_code": "",
            "cft_type_desc": "",
            "clearing_date": "Jan 1,2021",
            "clearing_status": "Cleared",
            "currency": "USD",
            "cvv2_code": "",
            "cvv2_desc": "",
            "description": "",
            "descriptor": "",
            "device_id": "",
            "echo_parameter": "",
            "entry_mode_code": "",
            "gw_mid_id": "12345678",
            "ip_country": "USA",
            "local_trx_date": "",
            "merchant_name": "",
            "net_settelment_amount": "3.66",
            "op_code": "24",
            "op_code_desc": "Use Token Recurring Sale",
            "payment_source_code": "2",
            "payment_source_desc": "2 - Online Order",
            "pin_entry_capability": "",
            "reference_number": "referenceexample",
            "region": "Inter",
            "request_id": "1234567890",
            "response_id": "XZZ12345678901234567890123456789",
            "rrn": "123456789060",
            "settelment_amount": "3.99",
            "settelment_charges": "-0.33",
            "settelment_currency": "USD",
            "sub_merchant_id": "",
            "terminal_cp_id": "",
            "token": "X3ZZ123456789012345678901234567 8",
            "trx_amount": "3.99",
            "trx_recurring_code": "2",
            "trx_recurring_desc": "2 - Subsequent recurring",
            "trx_response_code": "0",
            "trx_response_desc": "Completed Successfully",
            "trx_timeframe": "2021-01-01 20:35:38",
            "payment_id": "XZZ12345678901234567890123456789",
            "requested_amount": "3.99",
            "pass_through_wallet": "--",
            "payment_account_reference": "V11111111111",
            "transit_transaction_type": "--",
            "transit_transportation_type": "--",
```

```
            "subtotal_amount": "--",
            "vat_amount": "--",
            "shipping_amount": "--",
            "tip_amount": "--",
            "operation": "--",
            "operation_result_successful": "--",
            "ancillary_fee_code_1": "--",
            "ancillary_fee_code_2": "--",
            "ancillary_fee_code_3": "--",
            "ancillary_fee_code_4": "--",
            "ancillary_fee_amount_1": "--",
            "ancillary_fee_amount_2": "--",
            "ancillary_fee_amount_3": "--",
            "ancillary_fee_amount_4": "--",
            "ancillary_fee_code_sub_category_1": "--",
            "ancillary_fee_code_sub_category_2": "--",
            "ancillary_fee_code_sub_category_3": "--",
            "ancillary_fee_code_sub_category_4": "--",
            "fast_funds_indicator": "--",
            "credorax_on_behalf_service_result": "--",
            "final_response_time": "--",
            "smart_3d_rule_id": "--"
        }
    ]
}
```


Chargeback Activity API Call

Introduction

The service exposes raw chargeback data, both from an operational and from a financial point of view.

Method: GET.

Addresses

Integration address	https://openapi-int.credorax.com/openAPI/rest/v1/chargebacks
Production address	https://openapi.credorax.net/openAPI/rest/v1/chargebacks

Chargeback Activity Request Fields

The following table describes the fields of the Get CBK Activity request. Note:

- All field names and values are case sensitive.

- The **Required** column states whether the API field is mandatory (m), conditional (c), or optional (o).
- The **Multi selection** column states whether the request input can be sent with multiple values. The format required for multiple values is a comma separated list.

Name	Type	Min	Max	Required	Multi selection	Description
token	[a-zA-Z0-9\-]	24	1000	M	No	Authentication token, as received in the authentication response.
first_rec	[0-9]	1	8	O	No	The first requested record number of the iteration. In keeping with the sequence, the value should be a multiple of 250. For example: First iteration=0 Second iteration=250 Third iteration=500 If no value is sent, the engine uses the default value of 0. See Iteration Mechanism.
row_limit	[0-9]	1	6	O	No	A limit on the number of records to be returned between 1 and 250. Default is 250.
format	[a-zA-Z]	3	4	O	No	Response format. Valid options: JSON XML Default is JSON.
merchant_name	[a-zA-Z0-9*]	0	100	O	No	Filter the results by merchant name.

Name	Type	Min	Max	Required	Multi selection	Description
						Available to PSPs only.
date_from	YYYY-MM-DD			O	No	Filter the results by earliest date. Refers to the posting_date parameter.
date_to	YYYY-MM-DD			O	No	Filter the results by latest date. Refers to posting_date parameter. The value must be bigger than the date specified in the date_from field, and smaller than or equal to the current date.
card_number_last4	[0-9]	4	4	O	No	Filter the results by the last 4 digits of the card holder's card number.
arn	[0-9]	23	23	O	No	Filter the results by the Acquirer Reference Number. This is the card scheme's transaction reference number which is identical for all transactions in the chargeback life cycle.
rrn	[a-zA-Z0-9]	1	32	O	No	Filter the results by the RRN (Retrieval Reference Number). This is Shift4's assigned transaction identifier.

Name	Type	Min	Max	Required	Multi selection	Description
orig_request_id	^[\-0-9A-Za-z]+	1	32	O	No	Filter the results by the original Request ID as received by Shift4's Payments Platform API (parameter a1).
record_type	[0-9]	1	2	O	Yes	Filter the results by the type of record. Refer to Appendix D - Record_Type for a list of possible values.
reason_code	[0-9]	1	4	O	Yes	The chargeback reason code. See Appendix C - Chargeback & Retrieval Reason Codes for the full list.
payment_id	[0-9A-Za-z]	32	32	O	No	The assigned payment ID.

Chargeback Activity Request Example

```
http:// openapi-
int.credorax.com/openapi/rest/v1/chargebacks?token=99ae5180-bea0-4371-
a0c3-b9fe46d2c3ca&arn=747712760206021034941111
```

Chargeback Activity Response Field Description

If no search parameters were specified in the request, the result set will include the last 250 transactions.

Response parameters per request:

Name	Type	Min	Max	Description
next_page_indicator	boolean			Iteration indication, indicating whether further result records matching the request were found.
num_of_records	numeric	1	10	Number of records included in the response.
total_num_of_records	numeric	1	1000	The total number of records that match the request filter parameters.
last_updates_date	date			The last date on which the data set was updated.

Response parameters per record:

Name	Type	Min	Max	Description
merchant_name	text	3	250	The transaction-related merchant. Available for PSPs only.
record_type_code	[0-9]	1	2	The record type ID. Refer to Appendix D - Record_Type for a list of possible values.
record_type	[a-zA-Z0-9]	1	200	The record type description.

Name	Type	Min	Max	Description
				Refer to Appendix D - Record_Type for a list of possible values.
posting_date	MM/DD/YYYY			The date when the chargeback was submitted in Shift4 systems.
reason_code	[0-9]	1	4	The chargeback reason code. See Appendix C - Chargeback & Retrieval Reason Codes for the full list. Note that this field will be empty for record_type=Reimbursement or Reimbursement-reversal.
reason_description	[a-zA-Z0-9]	1	500	The chargeback reason code description. See Appendix C - Chargeback & Retrieval Reason Codes for the full list. Note that this field will be empty for record_type=Reimbursement or Reimbursement-reversal.
amount	decimal (25,2)			The currency in which the chargeback was raised by the card scheme. However, for record_type=Reimbursement or Reimbursement-reversal, the amount is the financial movement amount that occurred due to a dispute step.
currency	[A-Z]	3	3	The currency, in ISO 4217 alpha-3 format, of the amount for which the chargeback was raised by the card scheme. However, for record_type=Reimbursement or Reimbursement-reversal, the currency is the financial movement currency
orig_trx_amount	decimal (25,2)			The transaction amount of the original presentment.

Name	Type	Min	Max	Description
				Note that this field will be empty for record_type=Reimbursement or Reimbursement-reversal.
orig_trx_currency	[A-Z]	3	3	The currency of the original presentment, in ISO 4217 alpha-3 format. Note that this field will be empty for record_type=Reimbursement or Reimbursement-reversal.
card_number	[0-9*\.]	16	16	The transaction's masked card number, in the format: (######.....####), where the first 6 and last 4 digits are shown.
arn	[0-9]	23	23	The Acquirer Reference Number. This is the card scheme's transaction reference number which is identical for all transactions in the chargeback life cycle.
orig_trx_posting_date	MM/DD/YYYY			The transaction posting date of the original presentment. Note that this field will be empty for record_type=Reimbursement or Reimbursement-reversal.
orig_trx_date	MM/DD/YYYY			The transaction date of the original presentment. Note that this field will be empty for record_type=Reimbursement or Reimbursement-reversal.
orig_trx_type	[A-Z]	1	100	The transaction type of the original presentment. Note that this field will be empty for record_type=Reimbursement or Reimbursement-reversal.
auth_code	[A-Z0-9]	1	100	The CBK related authorisation code.

Name	Type	Min	Max	Description
card_scheme	[A-Za-z]	1	100	The payment network used for processing the original presentment.
orig_request_id	^[\-0-9A-Za-z]+	1	32	Transaction original request ID. For further details see the description of the a1 parameter in the Shift4's Payments Platform API.
orig_reference_number	Text	1	32	The original Merchant Reference Number. For further details see the description of the h9 parameter in the Shift4's Payments Platform API.
sub_merchant_id	[0-9]	1	15	The Sub-merchant Identification. For further details see the description of the h3 parameter in the Shift4's Payments Platform API.
orig_trx_settelment_amount	decimal (25,2)	4	27	The original transaction's settlement amount. Note that this field will be empty for record_type=Reimbursement or Reimbursement-reversal.
orig_trx_settelment_currency	[A-Z]	3	3	The original transaction's settlement currency, in ISO 4217 alpha-3 format. Note that this field will be empty for record_type=Reimbursement or Reimbursement-reversal.
orig_response_id	[a-zA-Z0-9]	1	32	The original response ID. For further details see the description of the z1 parameter in the Shift4's Payments Platform API.
is_reversal	boolean			Indicates whatever the dispute was reversed by the issuer.

Name	Type	Min	Max	Description
				Note that this field will be empty for record_type=Reimbursement or Reimbursement-reversal.
is_represented	boolean			Indicates whatever the dispute was represented. Note that this field will be empty for record_type=Reimbursement or Reimbursement-reversal.
rrn	[a-zA-Z0-9]	1	32	The Retrieval Reference Number. For further details see the description of the z13 parameter in the Shift4's Payments Platform API.
fee_amount	decimal (25,2)			Fee dispute amount. Note that this field will be empty for record_type=Reimbursement or Reimbursement-reversal.
fee_currency	[A-Z]	3	3	Fee dispute currency, in ISO 4217 alpha-3 format. Note that this field will be empty for record_type=Reimbursement or Reimbursement-reversal.
chargeback_type	Text	0	255	Visa chargeback type. Note that this field will return 'Null' for Mastercard chargebacks, and Visa chargebacks posted prior to VCR
payment_id	[0-9A-Za-z]	32	32	The assigned payment ID. For further details see the description of the z55 parameter in the Shift4's Payments Platform API.

Chargeback Activity Response Example

```
{
    "total_num_of_records": 1,
    "last_updates_date": "2021-03-15",
    "next_page_indicator": false,
    "num_of_records": 2,
    "chargebacks_properties": [
        {
            "merchant_name": "merchant name",
            "record_type": "1st Chargeback",
            "record_type_code": "2",
            "posting_date": "03/01/2021",
            "reason_code": "10.4",
            "reason_description": "Other Fraud Card-Absent Environment",
            "amount": "38.59",
            "currency": "USD",
            "orig_trx_amount": "38.59",
            "orig_trx_currency": "USD",
            "card_number": "412345******1234",
            "arn": "74591234567890123456789",
            "orig_trx_posting_date": "01/23/2021",
            "orig_trx_date": "01/23/2021",
            "orig_trx_type": "Purchase",
            "auth_code": "12345B",
            "card_scheme": "Visa",
            "orig_request_id": "b831234567890abcd1234567890abcd1",
            "orig_reference_number": "referencenumber",
            "sub_merchant_id": null,
            "orig_trx_settelment_amount": "38.59",
            "orig_trx_settelment_currency": "USD",
            "orig_response_id": "XZZ1234567890abcd1234567890abcd1",
            "is_reversal": "0",
            "is_represented": "0",
            "rrn": "123456789012",
            "fee_amount": "-24.2688900000",
            "fee_currency": "USD",
            "chargeback_type": "Allocation",
            "payment_id": "XZZ12345678901234567890PAYMENTID"
        }
    ]
}
]
```


Event API Call

The service exposes event data.
Currently the service exposes PF Immediate setup events, that is, it enables receiving the status of an immediate setup request.

Method: GET.

Addresses

Integration address	https://openapi-int.credorax.com/openAPI/rest/v1/event
Production address	https://openapi.credorax.net/openAPI/rest/v1/event

Event Request Fields

The following table describes the fields of the Get Event request. Note:

- All field names and values are case sensitive.
- The **Required** column states whether the API field is mandatory (m), conditional (c), or optional (o).

Name	Type	Min	Max	Required	Description
token	[a-zA-Z0-9-]	24	1000	M	Authentication token, as received in the authentication response.
first_rec	[0-9]	1	8	O	The first requested record number of the iteration. See Iteration Mechanism.
fixed_timestamp	YYYY-MM-DDTHH:MM:SS	19	19	O	The first iteration's timestamp. Relevant for 2nd iteration and on. See Iteration Mechanism.
row_limit	[0-9]	1	6	O	A limit on the number of records to be returned between 1 and 250. Default is 250.
event_id	[a-zA-Z0-9]	1	32	C	The event ID / the process identifier. Refer to Appendix E for a list of possible values
event_type	[a-zA-Z0-9]	1	32	M	Refer to Appendix E for a list of possible values
date_from	YYYY-MM-DD			C	Filter the results by earliest date.
date_to	YYYY-MM-DD			C	Filter the results by latest date.

Note:

Either ‘event_id’ or ‘date_from + date_to’ are required.

Event Request Example

```
http:// openapi-int.credorax.com/openapi/rest/v1/event?token=99ae5180-
bea0-4371-a0c3-
b9fe46d2c3ca&event_id=XZZ995651a0e410e638XE7V2OY7ZJGQD&event_type="Immedi
ate Setup"
```

Event Response fields

The following table describes the fields of the Get Event response.

Name	Type	Min	Max	Description
next_page_indicator	boolean			Iteration indication, indicating whether further result records matching the request were found.
fixed_timestamp	datetime			The first iteration request's timestamp.
num_of_records	numeric	1	3	Number of records included in the response.
total_num_of_records	numeric	1	10	The total number of records that match the request filter parameters.
event_id	[a-zA-Z0-9]	32	32	The event id / the process identifier.
event_timestamp	datetime			The event timestamp.
event_type	[a-zA-Z0-9]	1	32	The event type.
event_status_code	[a-zA-Z0-9]	1	32	The code indicating the event status. Refer to Appendix E for a list of possible values
event_status_description	[a-zA-Z0-9]	1	255	Description of the event status. Refer to Appendix E for a list of possible values
event_additional_fields	JSON : [a-zA-Z0-9]	1	2555	Additional event data Refer to Appendix E for a list of possible values

Event Response Example

```
{
  "fixed_timestamp": "2017-04-04T15:36:27",
  "num_of_records": 1,
  "next_page_indicator": false,
  "num_of_records": 1,
  "event": [
    {
        "event_id" : "XZZ995651a0e410e638XE7V2OY7ZJGQD",
        "event_timestamp" : "2017-04-03T15:15:15"
        "event_type" : "Immediate Setup",
        "event_status_code" : "00",
        "event_status_description" : "Successfully completed",
        "event_additional_fields" :
           "gw_mid" : "ABO008"
           "sub_merchant_id" : "941103000000104"
           "cp_device_id" : "R0029958"
    }
  ]
}
```


Token Account Updater API Call

Introduction

The service exposes your Token Account Updater activity, based on Token Account Updater processes.

The Token Account Updater automatically updates all the merchant's tokens stored on the Shift4 Token Engine whenever the associated card details are updated due to a new card number, new card expiry date, or account closure. Each Shift4 token represents a stored card profile and is used to process transactions without exposing the actual card details. This service is only relevant for merchants registered to the Token Account Updater service.

Method: GET.

Addresses

Integration address	https://openapi-int.credorax.com/openAPI/rest/v1/accountUpdater
Production address	https://openapi.credorax.net/openAPI/rest/v1/accountUpdater

Token Account Updater Request Fields

The following table describes the fields of the Get Token Account Updater request. Note:

- All field names and values are case sensitive.
- The **Required** column states whether the API field is mandatory (m), conditional (c), or optional (o).

Name	Type	Min	Max	Required	Description
token	[a-zA-Z0-9-]	24	1000	m	Authentication token, as received in the authentication response.
first_rec	[0-9]	1	8	o	The first requested record number of the iteration. See Iteration Mechanism.
fixed_timestamp	YYYY-MM-DDTHH:MM:SS	19	19	o	The first iteration's timestamp. Relevant for 2nd iteration and on. See Iteration Mechanism.
row_limit	[0-9]	1	6	o	A limit on the number of records to be returned between 1 and 250. Default is 250.
merchant_id	[a-zA-Z0-9]	1	15	o	Filter results by the merchant ID.
sub_merchant_id	[a-zA-Z0-9]	1	15	o	Filter results by the sub merchant ID.
file_id	[a-zA-Z0-9]	1	12	o	Filter results by the file ID.
card_scheme	[A-Z]	2	4	o	Filter results by the account's related card scheme. Valid options: VISA MC
date_from	YYYY-MM-DD			o	Filter the results by earliest date.
date_to	YYYY-MM-DD			o	Filter the results by latest date.

Token Account Updater Request Example

```
http://openapi-int.credorax.com/openapi/rest/v1/accountUpdater?token=99ae5180-bea0-4371-a0c3-b9fe46d2c3ca&file_id=156
```

Token Account Updater Response fields

The following table describes the fields of the Get Token Account Updater response.

Name	Type	Min	Max	Description
next_page_indicator	boolean			Iteration indication, indicating whether further result records matching the request were found.
fixed_timestamp	datetime			The first iteration request's timestamp.
num_of_records	numeric	1	3	Number of records included in the response.
total_num_of_records	numeric	1	10	The total number of records that match the request filter parameters.
file_id	[0-9]	1	12	The request file ID.
merchant_id	[a-zA-Z0-9]	1	15	The merchant ID associated with the accounts.
sub_merchant_id	[a-zA-Z0-9]	1	15	The sub merchant ID associated with the accounts.
date	YYYY-MM-DD			The date when the request file was processed.
card_scheme	[A-Z]	2	4	The account's related card scheme. Valid options: • VISA • MC
token_id	[a-zA-Z0-9]	1	32	The Shift4 Token that refers to the stored card profile.
org_card_number	[0-9*]	8	19	The original card number.
org_exp_date	[0-9]	4	4	The original card's expiry date in YYMM format.
reason_code	[A-Z0-9]	1	2	The Account Updater reason code. See Appendix F – Token Account Updater Reason Codes for the full list.
new_card_number	[0-9*]	8	19	The new card number, returned in case of a new card number.
new_expiry_date	[0-9]	4	4	The new card expiration date, returned in case of a new expiration date or new card number.

Token Account Updater Response Example

```
{
  "fixed_timestamp": "2017-04-04",
  "num_of_records": 1,
  "next_page_indicator": false,
  "total_num_of_records": 1,
  "event": [
    {
      "file_id": "156",
      "merchant_id": "merchant123",
      "date": "2017-04-03",
      "card_scheme": "MC",
      "token_id": "lkhfkashj1231ffaio132456apohf679",
      "org_card_number": "123456***1111",
      "org_exp_date": "1911",
      "reason_code": "A",
      "new_card_number": "987654***1111",
      "new_exp_date": "2511"
    }
  ]
}
```

Notification Engine

Introduction

Shift4's notification engine is a tool designed to provide merchants with a fast, easy and exceptionally user-friendly method of receiving push notifications regarding the merchant account in Shift4 via different channels such as Webhook, SMS, Email, etc.

This section mainly deals with how to use this service via Webhooks.

Intended Audience

This section is intended for software developers wishing to develop applications using the Shift4 notification engine. It fully documents the REST application programming interface that enables developers to interact with the Shift4 application management platform. To use the information provided here, you should have a general understanding of the consuming web services and have an active Shift4 notification service.

Security/Authentication

All HTTP requests must be sent over a secure TLS (Transport Layer Security) 1.2 channel. The Notification Engine does not authenticate the TLS/SSL (Secure Sockets Layer) session using a client-based certificate, and thus does not employ a regular type of session authentication. Instead, the client is authenticated by its source IP, alongside a cipher sent in the push notification header and used for validating that the notifications were sent by Shift4. Refer to SHA512 Notification Signature for further details.

IP Whitelist

In order to accept the following IPs, they need to be whitelisted on the merchant side:

- Production
  - 199.233.202.133
  - 199.233.203.133
- Integration
  - 199.233.203.143

Notification Retries

The notification engine looks for the '200' HTTP response after a notification is sent.

If the response is not ‘200’, the notification is resent according to the retry mechanism policy.

Notification API

API fields

The following table describes the notification fields:

Name	Type	Min	Max	Description
event_id	[a-zA-Z0-9]	1	32	The event ID / the process identifier. Refer to Appendix E for a list of possible values
type	[a-zA-A0-9]	1	32	The event type: Refer to Appendix E for a list of possible values
event_status_code	[a-zA-Z0-9]	1	32	The code indicating the event status. Refer to Appendix E for a list of possible values
event_status_description	[a-zA-Z0-9]	1	255	Description of the event status. Refer to Appendix E for a list of possible values
event_additional_fields	JSON : [a-zA-Z0-9]	1	2555	Additional event data. Refer to Appendix E for a list of possible values

Notification Example


```
{
  "event_id": "XZZ6416774870b6eBD1LIANI3QX5JAQT",
  "type": "Immediate Setup",
  "event_status_code": "00",
  "event_status_description": "Setup completed successfully. You can now start processing.",
  "event_additional_fields": {
    "gw_mid": "ABO008",
    "sub_merchant_id": "941103000000104",
    "cp_device_id": "R0029958"
  }
}
```


SHA512 Notification Signature

Every push notification is associated with a package signature sent as an Authentication header in order to ensure the authenticity of the data transfer. This package signature, in turn, contains the SHA512 hash of all the request values and the merchant's unique notification key, which will be received once the merchant finishes onboarding to the notification service.

Calculating the Signature

1. Apply the HMAC-SHA512 hashing algorithm to the JSON body of the request and the merchant's notification key.
2. Append the result of step 1 to the request's authentication header.

Signature Calculation Example

The following is an example of how the signature is calculated using the following original request:


```
{
  "event_id": "XZZ6416774870b6eBD1LIANI3QX5JAQT",
  "type": "Immediate Setup",
  "event_status_code": "00",
  "event_status_description": "Setup completed successfully. You can now start processing.",
  "event_additional_fields": {
    "gw_mid": "ABO008",
```

```
    "sub_merchant_id": "941103000000104",
    "cp_device_id": "R0029958"
  }
}
```

With the notification key being: “secretkey1234567891234567891234 5”.

The result of applying HMAC-SHA512 to the request body and key is:

cbe63bea13b5f7cd5f8b25f8b9ce1af899ffceb2b8555a2157e99d17ca76c3e1b2be8035224747312f5b4d000a3beda74089d265665311771660b3f0508a3806

Appendix A - API Response Codes

The following table lists the possible response code returned in the *'response code'* parameter.

Code	Description
200	One of the following: • Success • No records matching your request were found.
400	One or more of the request parameters are malformed.
401	One of the following: • User authentication has failed, user_name or password is incorrect. • Token is invalid or has been expired.
403	User X has exceeded the maximum number of requests per minute.
404	Unexpected error occurred
405	Method: 'X' is not allowed
504	Timeout

Appendix B - trx_response_code

The following table lists the possible codes returned in the *'trx_response_code'* field.

Code	Description
-69	Transaction has been declined. Invalid 3ds_version parameter
-68	Authentication process timed out. Please try again
-66	Invalid combination of 3ds_initiate and exemption_action values
-65	Gateway MID is not allowed for this exemption
-64	TRA exemption is not allowed for this transaction amount
-63	The requested gateway mid is not enrolled to 3D-secure service
-50	An error occurred during the 3D secure process
-39	You need to be registered with the 3D Secure Adviser service to complete the request
-38	The transaction has been denied by the Gateway because 3D secure Authentication failed
-37	Transaction has been denied. Malformed or missing {} parameter. Originating component: {}
-36	The selected Processor does not support some of the transaction's parameters
-35	The selected MID is not registered to your account
-33	You need to be registered with the routing service to complete the routing request
-32	You are not registered with the selected Processor
-30	Transaction Failed due to error in 3D secure process
-20	Processor authentication error. Please contact Credorax support
-17	Fraud-protection service is unavailable
-16	Rejected. Overriding the fraud threshold is not allowed
-15	Rejected. Bypassing the fraud service is not allowed.
-13	The requested gateway mid is not enrolled in the 3D Secure Adviser service.
-12	Transaction has been declined due to security restrictions.
-11	Rejected. Format Error
-10	Internal server error. Please contact Source support.
-9	The parameter is malformed.
-8	The Package Signature is malformed.
-7	Incorrect Gateway Response. Connection is broken.
0	Completed Successfully

Code	Description
1	The transaction has been denied by the Gateway.
2	Transaction has been denied by the gateway due to its fraud high risk.
03	Transaction has been denied by the gateway due to its AVS high risk
04	Transaction has been denied by the gateway due to the interchange timeout.
06	Transaction pending cardholder authentication.
9	Transaction has been denied by the gateway due to the LUHN check failure
10	Transaction has been partially approved.
01	Refer to card issuer
02	Refer to card issuer special condition
03	Invalid merchant
04	Pick up card
05	Do not Honour
06	Error
07	Pick up card special condition
08	Honour with identification
10	Approved for partial amount
11	The queried transaction is currently being processed. Please try again.
12	Invalid transaction card / issuer / acquirer
13	Rejected. The fraud-protection service is unavailable.
13	Invalid amount
14	Invalid card number
15	No such issuer
15	Rejected. Risk score is above limit.
19	Re-enter transaction
21	No action taken
30	Format error
34	Implausible card data
39	No credit account
41	Lost Card, Pickup
42	No universal account

Code	Description
43	Pick up, stolen card
44	No investment account
50	Do not renew
51	Insufficient funds
52	No checking Account
53	No savings account
54	Expired card
55	Incorrect PIN
57	Transaction not allowed for cardholder
58	Transaction not permitted to terminal
61	Exceeds withdrawal limit
62	Restricted card
63	Security violation
64	Wrong original account
65	Activity count limit exceeded
68	Response received too late
70	PIN data required
71	Decline, PIN not changed
75	PIN tries exceeded
76	Wrong PIN, number of PIN tries exceeded
77	Wrong Reference Number
78	Record not found
80	Network error
81	PIN cryptographic error
82	Timeout at issuer system
83	Transaction failed
84	Pre-authorization timed out
85	No reason to decline
86	Cannot verify pin
87	Purchase amount only, no cashback allowed

Code	Description
88	Cryptographic failure
89	Authentication Failure
91	Issuer not available
92	Unable to route at acquirer Module
93	Transaction cannot be completed, violation of law
94	Duplicate transmission
95	Reconcile error / Auth not found
96	System malfunction
97	Transaction has been declined by the processor
R0	Stop Payment Order
R1	Revocation of Authorisation Order
R3	Revocation of all Authorisation Order
1A	1A Strong Customer Authentication required

Appendix C - Chargeback & Retrieval Reason Codes

Visa

Visa Chargeback Codes (VCR)	
10.1	EMV-Liability Shift Counterfeit Fraud
10.2	EMV-Liability Shift Counterfeit Non-Fraud
10.3	Other Fraud Card-Present Environment
10.4	Other Fraud Card-Absent Environment
10.5	Visa Fraud Monitoring Program
11.1	Card Recovery Bulletin
11.2	Decline Authorisation
11.3	No Authorisation
12.1	Late Presentment
12.2	Incorrect Transaction Code
12.3	Incorrect Currency
12.4	Incorrect Account Number
12.5	Incorrect Amount
12.6	Duplicate Processing / Paid by Other Means
12.7	Invalid Data
13.1	Merchandise/Services Not Received
13.2	Cancelled Recurring
13.3	Not as Described or Defective Merchandise/ Service
13.4	Counterfeit Merchandise
13.5	Misrepresentation
13.6	Credit Not Processed
13.7	Cancelled Merchandise/Services
13.8	Original Credit Transaction Not Accepted
13.9	Non-Receipt of Cash or Load Transaction Value

Visa Retrieval Request Codes	
28	Cardholder Requests Copy Bearing Signature
30	Cardholder Dispute - Cardholder Requests Draft
33	Legal Process or Fraud Analysis
34	Repeat Request for Copy

Mastercard

Mastercard Chargeback Codes	
4801	Requested Transaction Information not Received
4802	Requested / Required information illegible or missing
4807	Warning bulletin file
4808	Authorisation-Related Chargeback
4812	Account number not on file
4831	Transaction amount differs
4834	Duplicate processing
4835	Card not valid or expired
4837	No cardholder authorisation
4840	Fraudulent processing of transaction
4841	Cancelled recurring transaction
4842	Late presentation
4846	Correct transaction currency code not provided
4847	Requested/Required Authorisation Not Obtained and Fraudulent Transaction
4849	Questionable merchant activity
4850	Credit posted as a purchase
4853	Cardholder disputes - Services /merchandise defective or not as described
4854	Cardholder disputes - Not classified in other category (US cardholders only)
4855	Non receipt of merchandise
4857	Card activated telephone transactions
4859	Services not rendered
4860	Credit not processed
4862	Counterfeit Transaction – Magnetic stripe POS fraud

Mastercard Chargeback Codes	
4863	Cardholder does not recognize – potential fraud (US Only)
4870	Chip Liability Shift
4871	Chip/PIN Liability Shift
4999	Domestic Chargeback Dispute (Europe Region Only)

Mastercard Retrieval Request Codes	
5	Cardholder Does Not Agree with Amount Billed
21	Cardholder Inquiry –Does Not Recognize Transaction
22	Cardholder Inquiry –Disagrees with Billing
23	Cardholder Inquiry – Needs for Personal Records
41	Legal/Fraud Signature Verification
42	Potential Chargeback or Compliance Documentation
43	Legal/Fraud Imprint Verification

Appendix D - Record_Type

Code	Description
1	Retrieval request
2	1st Chargeback
3	Re-presentment
4	1st Chargeback Reversal
7	Re-presentment Reversal
8	Reimbursement
9	Reimbursement-reversal
10	Resolved chargeback
11	Resolved chargeback reversal
12	Pre-arbitration
13	Arbitration

Appendix E – Events

Immediate Setup Events

Event ID

To query an Immediate setup event, you can send the value of the z1 parameter from the setup transaction response in the event_id field or to query with date frame

Event Type

To query an Immediate setup event, you must send “Immediate Setup” as the value of the event_type field.

Event Response Codes and Descriptions

Code	Description
-1	Setup failed. Please contact Credorax support for more information.
00	Setup completed successfully. You can now start processing.
10	Setup failed. The following fields are missing: <field names>. Please complete and retry setup.
11	Setup failed. The i2 parameter is missing.
12	Setup failed. The i2 parameter is missing. Please complete and retry setup.
13	Setup failed. One of the following fields in the h5 parameter is missing: <Street>/<Zip code>/<City>/<Country>. Please complete and retry setup.
14	Setup failed. The h5 parameter is missing : <Street>/<Zip code>/<City>/<Country>. Please complete and retry setup.
15	Setup failed. The i2 parameter includes more than one asterisk (*). Please complete and retry setup.
16	Setup failed. The i2 parameter does not include the field "Sub Merchant DBA Name". Please complete and retry setup.
17	Setup failed. The i2 parameter does not include the field "City/Customer support number". Please complete and retry setup.
18	Setup failed. The i2 parameter must include an asterisk (*). Complete and retry setup.
19	Setup failed. At least one of the fields in h11 parameters is missing. Please complete and retry setup
21	Setup failed. The h3 parameter must include exactly 15 digits. Check and retry setup.
22	Setup failed. The Street field included in the h5 parameter is too long. Make sure it includes no more than 40 characters and retry setup.

23	Setup failed. The Zip code is too long. Make sure it includes no more than 11 characters and retry setup.
24	Setup failed. The country code included in the h5 parameter must be an alpha-2 code. Check and retry setup.
25	Setup failed. The Sub Merchant DBA Name field included in the i2 parameter is longer than 22 characters. Check and retry setup.
26	Setup failed. Fields: <WEB>/<MOTO>/<Card Present> can contain the values 'TRUE / FALSE' only. Check and retry setup.
27	Setup failed. The expected monthly turnover in the h11 parameter must include only digits. Check and retry setup.
31	Setup failed. The country code included in the h5 parameter is not supported. Check and retry setup.
32	Setup failed. One of the payment channels you are trying to set up for this sub-merchant is not approved for the PF. Check and retry setup.
33	Setup failed. The country code included in the h11 parameter is not supported. Check and retry setup.
41	Setup failed. The Sub merchant ID in the h3 parameter must include only digits. Check and retry setup.
42	Setup failed. The Street field includes special characters. You may only use letters A-Z (with no accents), 0-9, Hyphen (-), full stop (.) and Space ( ). Check and retry setup.
43	Setup failed. The City included in the i2 Parameter includes special characters. You may only use letters A-Z, a-z (with no accents). Check and retry setup
44	Setup failed. The Sub Merchant DBA Name included in the i2 parameter contains special characters. You may only use letters A-Z, a-z (with no accents), Space ( ). Check and retry setup.
45	Setup failed. The i2 parameter includes special characters. You may only use letters A-Z, a-z (with no accents), 0-9, Space ( ). Check and retry setup.
46	Setup failed. The city field included in the i2 parameter includes special characters. You may only use letters A-Z, a-z (with no accents), Space ( ). Check and retry setup.
47	Setup failed. The h11 parameter contains non supported characters. Check and retry setup
48	Setup failed. The URL in the h12 parameter contains non supported characters. Check and retry setup
49	Setup failed. The City included in the h5 parameter includes invalid characters. Check and retry setup.
51	Setup failed. You can initiate setup for web sub-merchants only.
52	Setup failed. You can initiate setup for card-present sub-merchants only.
53	Setup failed. The setup scenario is not valid for retry. Please contact Credorax support for more information.

61	Setup failed. The h3 parameter already exists in our systems under a different Partner. Contact Credorax Support for more information.
62	Setup failed. The b17 parameter already exists in our systems. Contact Credorax Support for more information.
81	Immediate Setup is not allowed for this Gateway MID.
82	Sorry, you need permission to send requests for immediate setup.
83	Setup failed. The Setup request type does not match the Gateway MID type. Check and retry setup.
84	Setup failed. The parameters h11 and h12 are not allowed for this Gateway MID.
91	Setup failed. The 6-digit prefix included in the h3 parameter does not match the PF ID. Check and retry setup.

Additional Event Data

Additional data is available for each event through a dynamic field, event_additional_fields, which provides different information depending on the event type. The field is in JSON format with the following possible values.

Field	Description	Notes
gw_mid	The related gw_mid	
sub_merchant_id	The created sub_merchant_id	
cp_device_id	The created cp_device_id	Sent only for CP setup.

Account Updater on Demand

Event ID

In order to query the Account Updater on Demand event, send the value of the process id parameter you received in the response to the original request.

Event Type

In order to query the Account Updater on Demand event, send “Account Updater on Demand” as the value of event type field.

Event Response Codes

Code	Description
-1	Your Account Updater on Demand results are delayed, Contact Credorax Support for more details

Code	Description
00	Your Account Updater on Demand results are ready, use the Result Retrieval API to query your results

Additional Event Data

Additional data is available for each event through the dynamic field event_additional_fields, which provides different information depending on the event type. The field is in JSON format with the following possible values.

Field	Description
request_id	The request id of the original account update request
brand	The available card brands result. Possible values: • Visa • MC • Unknown: at least one card is seemingly neither a Visa nor a Mastercard card • All

Appendix F – Token Account Updater Reason Codes

This appendix describes the possible response codes received in the Token Account Updater process. A response code is returned for each account in the response, based on the information received from the schemes.

Code	Description
A	New account number and/or new expiration date.
B	New expiration date, same account number.
C	Account is marked as closed.
D	Contact cardholder for updated information.
E	No updates were found but the account is valid.
F	No match for the data provided. Participating BIN/ issuer.
H	No match for the data provided. Non-participating BIN/issuer.
I	Error – Non-numeric Account Number.
J	Error – Invalid Expiration Date format.
K	Error – Merchant isn't registered to the service.
L	Error – Sub merchant isn't registered to the service.
O	Cardholder opted out from service.
1	Error – Account number does not start with 2, 3, 4, 5 or 6.
2	Error – Account number contains non-numeric characters or is not the proper length.

Change History

Version	Subject	Description	Date of Change
2.6	Updates to Record_Type table	Updates to chargeback values in Record_Type table	April 2026
2.5	Updates to chargeback dispute process	• Changes in Appendix D – Record Type: ○ Adding new chargeback stages- Pre-arbitration, Arbitration ○ Removing 2nd Chargeback, 2nd Chargeback Reversal	January 2026
2.4	Authentication Response Authentication Request	• Removing response_code field from the Authentication Response fields • Changing the example which reflects the token format. • Change in the Authentication request body format	December 2025
2.3	other_transactional_charges	• Addition of other_transactional_charges to processing activity response.	March 2025
2.2	New and updated fields	• The maximum length of the token value updated from 100 to 1000 characters. • New fields added on the Processing Activity API call: o Request Fields: ▪ terminal_id ▪ processor o Response Fields: ▪ processor ▪ merchant_fixed_transaction_fee ▪ merchant_interchange_amount ▪ merchant_card_scheme_fee ▪ merchant_acquiring_fee • The names of fields in the Processing Activity response were updated to: ▪ 3DS_STATUS ▪ 3DS_VERSION	February 2024

Version	Subject	Description	Date of Change
		• 3DS_TRX_ID • 3DS_TRX_SOURCE • 3DS_COMPIND • 3DS_ECI • 3DS_ADVISER_RE	
2.1	Rebranding Fixes	Fixed remaining issues on the rebranding	December 2023
2.0	Rebranding	Rebranding to Shift4	November 2023
1.10 rev 1	Field name change	The processing activity request field gw_mid_id was changed to gw_mid.	May 2023
1.10	New record types added in Appendix D	Added 'Resolved chargeback' and 'Resolved chargeback reversal'	May 2021
1.9	New Processing Activity Response parameters and new response codes	Corrected the Type, Min, Max and Description of various parameters, added missing Processing Activity Response fields, added missing response codes in the *trx_response_code* table, made minor text changes	April 2021
1.8	New response parameter in Processing activity call	Added REQUESTED_AMOUNT_ORG parameter to Processing activity response	October 2020
1.7 rev 1	Passthrough Wallet Indicator	Added new response parameter b21: passthrough_wallet_indicator	August 2020
1.7	Brand field addition	Changed Type of posting_date, orig_trx_posting_date and orig_trx_date fields. Changed min and max of orig_trx_settlement_amount Changed Chargeback Activity Response Example Added the brand field to the Additional Event Data section when querying the Account Updater on Demand event	June 2020

Version	Subject	Description	Date of Change
1.6	Payment ID field	Added payment_id field to the Processing Activity API call and Chargeback Activity API call Updated links to external documents	February 2020
1.5 rev 2	Token Account Updater	Added Token Account Updater API Call request fields, response fields and response codes	February 2020
1.5 rev 1	Text changes	Minor text changes	October 2019
1.5	Notification Engine	Added notification engine as data push service	September 2019
1.4 rev 2	Events	Added Immediate Setup Events	July 2019
1.4 rev 1	3D Secure data	Adding new 3D secure fields	April 2019
1.3 rev 2	3D Adviser	Changed the parameter BIN to bin	December 2018
1.3	Processing activity call	New value option in 'trx_timeframe' filter	October 2018
1.2	VCR 3D Advisor	New Visa chargeback reason codes New service – 3D Secure Advisor (SmartAdvisor)	April 2018
1.1	CBK API call	New API call	09-July-2017
1.0	Authentication call Processing activity call	New API call	01-May-2017

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