SHIFT4

API Specifications

Dynamic Currency Conversion

Version 1.2 | December 2025

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Introduction

Dynamic Currency Conversion (DCC) is a service that enables merchants to offer cardholders at the checkout stage the option of paying in their native currency (the currency in which their card was issued). When the cardholder initiates a transaction the merchant sends a DCC rate lookup to the gateway. If DCC is supported and relevant, the cardholder is presented with an offer to complete the transaction in their native currency, with additional markup fees.

To start using this service you need to add it to your account first. Contact your Account Manager to add this feature to your account.

Additional Information

For full information about the Shift4 Gateway, Card Present operations and DCC guidelines, refer to the following resources:

- Shift4 Payments Platform API Specifications
- Shift4 Card Present Specifications
- DCC Merchant Implementation Guidelines

The documents are available in Shift4 Developer's Portal.

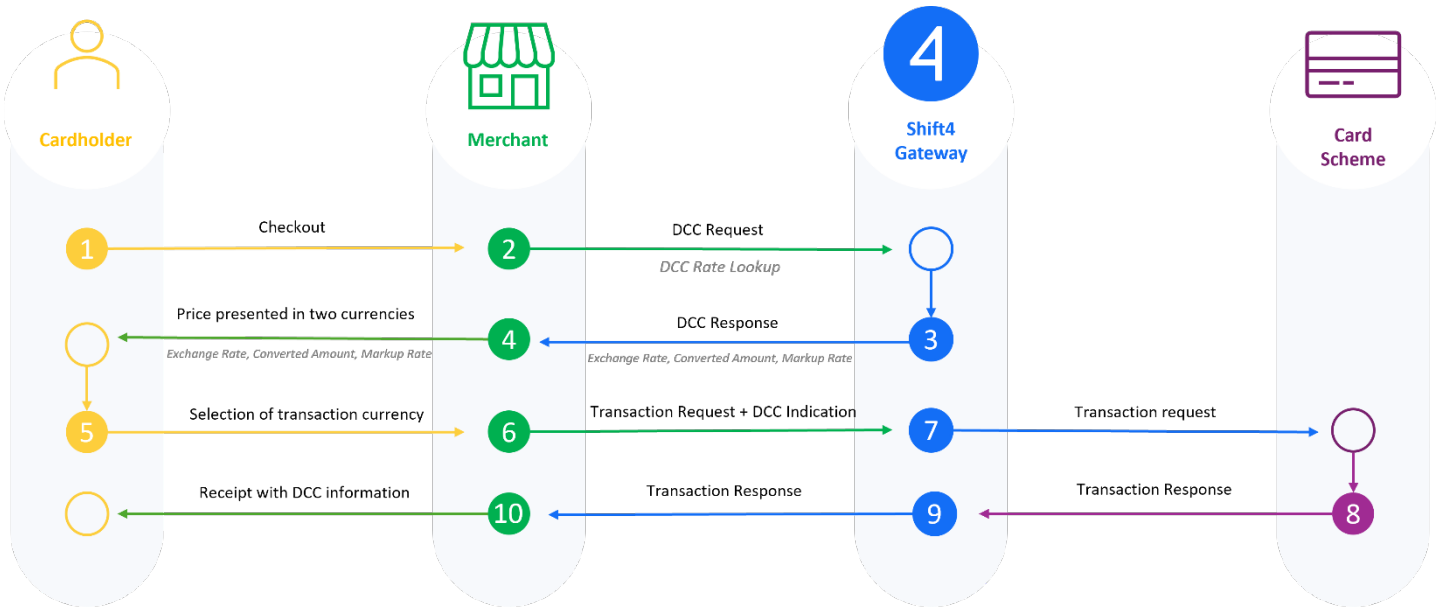
Transaction Flow

The DCC service uses a dedicated operation code:

[150]	DCC Rate Lookup

When sending a request with this operation code, you will get the exchange rate, converted amount and currency, and markup rate in the response.

You can then procceed to send the transaction using the basic and referral operation codes, as well as the DCC parameters if applicable.



1. The cardholder presents the card at checkout.
2. The merchant sends a DCC request (Operation code [150] – DCC Rate Lookup) to the Shift4 Gateway with the required fields.
3. If DCC is supported, the Shift4 Gateway sends a DCC response with the converted amount, exchange rate and markup rate.
4. The merchant presents to the cardholder the price in the two currencies, as well as the markup rate and exchange rate for the DCC option.
5. The cardholder chooses whether to proceed with the converted amount (DCC option) or to decline the offer and continue with the transaction in the merchant's currency.
6. The merchant sends the transaction request (using the applicable operation codes - based on the business use case) with the cardholder's choice in DCC indication.
7. Shift4 sends the transaction to the scheme according to the DCC requirements.
8. The scheme sends a transaction response.
9. Shift4 sends the transaction response to the merchant.
10. The merchant provides the cardholder with a receipt with DCC information according to the regulations.

Additional Information

1. The DCC request and the transaction request **must be sent on the same business day. Otherwise, the transaction will be declined.**
2. Partial refund, Partial Void and Partial Captures are currently not supported.
3. DCC might not be supported, for the following reasons:
   a. DCC is not supported technically.
   b. The card is not eligible for DCC.
   c. The Merchant currency and card currency are identical, hence the DCC is not relevant.

Required Parameters

DCC Rate Lookup

Steps 2-4 in Transaction Flow

In the first stage, send the DCC rate lookup request (Operation code [150]), to get the DCC offer you can make to the cardholder.

Request Fields

Name	Description	Type	Length (min,max)	Requirement [150]
M	Shift4 assigned gateway merchant ID	[A-Z0-9_]	3,8	M
K	Unique cipher used for authenticating requests. Refer to *Appendix A: Message Cipher* in *Shift4 Payments Platform API Specifications* for further details on how to generate the cipher.	[0-9A-Za-z]	1,32	M
O	Operation Code The operation code is used for determining the requested service. **For DCC send 150**	[0-9]	1,3	M

Name	Description	Type	Length (min,max)	Requirement [150]
a1	Request ID A unique transaction reference number. It should be unique to each transaction and to each MID. May be used when corresponding with the payment processor or reconciling transactions. Note: No plaintext cardholder data should be provided in this field.	[A-Za-z0-9-]	1,32	M
a2	Payment source type Valid options are: • 8 - Mobile device (mPOS) • 6 - UCAT Terminal • 10 - POS terminal	[0-9]	1,2	M
a4	Requested billing amount in the merchant's currency	[0-9]	1,12	M
a5	Transaction currency Indicates the currency that should be used in the transaction. Amounts in currencies that have two, three or no exponents should be formatted according to their currency requirements. Refer to *Appendix H: Transaction Currencies in Shift4 Payments Platform API Specifications* for further information. Refer to ISO 4217-alpha-3 for further information.	[A-Z]	3,3	M

Name	Description	Type	Length (min,max)	Requirement [150]
a9	Transaction type. Valid values are: **Value** **Description** 1 First standing order 2 Subsequent standing order 5 Card-Only Validation 6 Straight Operation 8 Unscheduled Card-on-File transactions initiated by the merchant 9 Unscheduled Card-on-File transactions initiated by the cardholder 10 Card validations for an unscheduled Card-on-File 11 First Subscription 12 Subscription Note: By default, the transaction type is considered a straight operation (6) unless specified otherwise.	[0-9]	1,2	O
b1	PAN – Primary Account Number	[0-9]	8,19	M
b3	Card expiration month Two-digit number (*mm* format)	[0-9]	2,2	M
b4	Card expiration year Two-digit number (*yy* format)	[0-9]	2,2	M
b7	Track 2 data. The data must be stripped of start and end sentinels and have no parity but must otherwise remain unaltered.	[0-9,D]	10,37	C, M if the data is available.

b9	Card entry mode. Possible values: **Value** **Description** 00 Unknown or terminal not used 01 Manual (key entry) 02 Magnetic stripe read 05 PAN auto-entry via integrated circuit card (ICC) 07 PAN auto-entry via contactless M/Chip 09 PAN entry via electronic commerce, including remote chip. 10 Credential on file 79 Chip card at chip-capable terminal was unable to process the transaction using chip technology. The transaction proceeds as fallback to a magnetic stripe read transaction, but the ᴎerminal is unable to send the transaction online. The transaction is subsequently authorized by the Voice Center, where the PAN is keyed in manually by the acquirer. 80 PAN auto-entry via magnetic stripe. The full track data has been read and transmitted in Track 1 Data or in Track 2 Data without alteration or truncation. This mode is used as fall back to PAN auto-entry via ICC when the chip card could not be read. Only valid for MasterCard and Maestro transactions. 81 PAN auto-entry via electronic commerce.	[0-9]	2,2	M

Name	Description	Type	Length (min,max)	Requirement [150]
	82 PAN Auto Entry via Server (issuer, acquirer, or third-party vendor system). 90 PAN auto-entry via magnetic stripe – the FULL track data has been read from the magnetic stripe and transmitted in Track 2 Data (BM 035). Valid for VISA, Mastercard and Maestro transactions 91 PAN auto-entry via contactless magnetic stripe 95 Card Data was chip read and data is potentially unreliable			
b10	PIN entry capability. Valid Values are: **Value** **Description** 0 Unspecified or unknown 1 Terminal has PIN entry capability 2 Terminal does not have PIN entry capability 8 Terminal has PIN entry capability but PIN pad is not currently operative	[0-9]	1,1	M
b17	Card acceptor terminal ID. Identifies a terminal, unique to an acquirer. Must be sent in all card present transactions including referrals (in referral transactions, this field should indicate the terminal ID of the original transaction)	[A-Za-z0-9-]	1,8	M

Response Fields

The following are the DCC-specific response fields that are received as part of the DCC rate lookup request. The response also includes all standard response parameters, refer to the *Response Fields* chapter in the *Shift4 Payments Platform API Specifications* for full information.

Name	Description	Type	Length (min,max)	Requirement [150]
dcc_support_indication	Indication whether the card supports DCC or not. Possible values: 1 - The request was successful. DCC can be used. 0 - DCC is not supported	[0-9]	1,2	C (received only if DCC is supported for the specific GWMID)
dcc_exchange_rate	The exchange rate of the DCC. There can be up to 4 decimal places after the decimal point, for example: 1.1234	[0-9.]	1,12	C , received if dcc_support_indication = 1
dcc_exchange_rate_date	The date of the DCC rate. *mmdd* format	[0-9]	4,4	C , received if dcc_support_indication= 1
dcc_converted_amount	The converted amount. There is no decimal point in this field; the decimal place is implied based on the currency.	[0-9]	1,12	C , received if dcc_support_indication= 1
dcc_converted_currency	The currency code of the converted currency. This field contains a 3-digit numeric code according to ISO standard codes.	[0-9]	3,3	C , received if dcc_support_indication= 1
dcc_markup_percentage	The markup that is applied to the wholesale exchange rate. Can include up to 4 decimal places.	[0-9]	2,12	C , received if dcc_support_indication= 1

Transaction with DCC

Steps 6-9 in Transaction Flow

Send the transaction request using the basic and referral operation codes and include the DCC request fields listed below according to the requirements. The transaction request must be sent on the same calendar day as the DCC request.

When sending referral operations, note the following:

1. In referral operations (such as captures, voids, and incremental authorizations), **do not include** DCC parameters. These parameters are provided in the original transaction to which the referral operation pertains. **Resending DCC parameters may result in a transaction decline**.
2. In capture requests, the final transaction amount will be adjusted based on the DCC rate at the time of capture.
3. Voids and refunds will be performed on the final amount and currency paid in the original transaction.
4. Partial refunds, partial voids, and partial captures are currently not supported.
   - To issue a partial refund, submit an independent refund request specifying the requested amount and currency. Your account should be enabled for independent refunds to process such requests.
5. In incremental requests, the additional transaction amount will be adjusted based on the DCC rate at the time of the increment, and added to the original DCC amount.

Refer to the *Basic Operations* and *Referral Operations* sections in the *Required Fields* chapter in the *Shift4 Payments Platform API Specifications* for full information.

Request Fields

The following are the DCC-specific request fields that need to be sent as part of the transaction in addition to the standard request parameters. These fields are added to the following Operation codes:

- [1] - Sale
- [2] – Authorisation

They will be returned in the response only if sent in the request.

Name	Description	Type	Length (min,max)	Requirement
dcc_indicator	Indicates DCC usage in the transaction. Possible values: 1 **Converted**: DCC is being used. 2 **Nonconvertible**: DCC cannot be used. 3 **Declined**: DCC was an option, but the customer declined it.	[0-9]	1,1	M
dcc_request_id	The Shift4 Gateway Transaction Identifier, received in parameter **z1** of the DCC response.	[a-zA-Z0-9]	1,32	M

Error Codes

DCC error codes will appear in the z2 and z3 parameters. z2=72 indicates a DCC transaction error, and the specific error is returned in z3. The table below describes the meaning of all possible received z3 values.

z3 Error Message	Explanation
DCC Decline: Undefined Merchant/Operation combination.	DCC was declined because the merchant sent DCC request but is not allowed DCC
DCC Decline: The merchant is not enrolled for DCC	DCC was declined because the merchant sent the DCC request but is not enrolled for DCC
DCC request ID has not been found. Please submit a new DCC request	DCC was declined because the dcc_request_id referring to the DCC request was not found.
DCC request ID has not been found or approved. Please submit a new DCC request.	DCC was declined because the dcc_request_id referring to the DCC request was declined or not found.
DCC Decline: DCC request and transaction must be sent on the same business day. Please submit a new DCC request.	DCC was declined because the request and the transaction were not made on the same calendar day.
DCC Decline: Amount doesn't match the original transaction amount	DCC was declined because the void amount and the original transaction amount do not match
DCC Decline: please try again without DCC	DCC was declined because the refund transaction was sent with DCC indicators, but the original transaction was not sent with DCC

Version Control

Date	Version	Change Description
December 2025	1.2	Updated Card entry mode parameter b9 values
February 2025	1.1	Added clarification on partial referral transactions in “Transaction with DCC” chapter
January 2025	1.0	First release

Need Support?

Contact our 24/7 Client Relations Centre for any additional information or technical issue:

EU: +356 2778 0876

UK: +44.20.3608.1288

US: +1.617.715.1977

Email: support.europe@shift4.com