

How Transactions are Processed

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When payment information is sent for processing by you or your customers, a complex series of activities is triggered that involves many players, often at wide geographic distances from one another. Understanding this process and the various players involved will help you in identifying and resolving future payment-related questions that arise. The following article describes what happens from the time payment information is sent to the financial network for approval to when the associated funds are deposited in your bank account. It is part of a series of articles offered by TransActive to help merchants understand the many facets of processing credit card payments.

The Participants and Their Roles

A number of participants are involved in the sequence of events that take place whenever a transaction is authorized or settled. The key participants and their roles are outlined below:

Participants	Roles
Customer	<ul style="list-style-type: none"> • Makes payment for good or service
Merchant	<ul style="list-style-type: none"> • Initiates settlement process • Extracts reporting data from system • Pays associated merchant account and processing fees
Payment Gateway	<ul style="list-style-type: none"> • Performs fraud checking and data validation functions • Formats data appropriately to pass to processor • Sends appropriate response messages back to merchant's payment application • Stores data for future retrieval and/or action
Processor	<ul style="list-style-type: none"> • Formats and sends data to appropriate financial system participant
Acquiring Bank	<ul style="list-style-type: none"> • Pays merchant for sale of good/service
Issuing Bank	<ul style="list-style-type: none"> • Determines if the cardholder has sufficient funds to complete the transaction
Credit Card Associations	<ul style="list-style-type: none"> • Acts as an intermediary between the various financial institutions

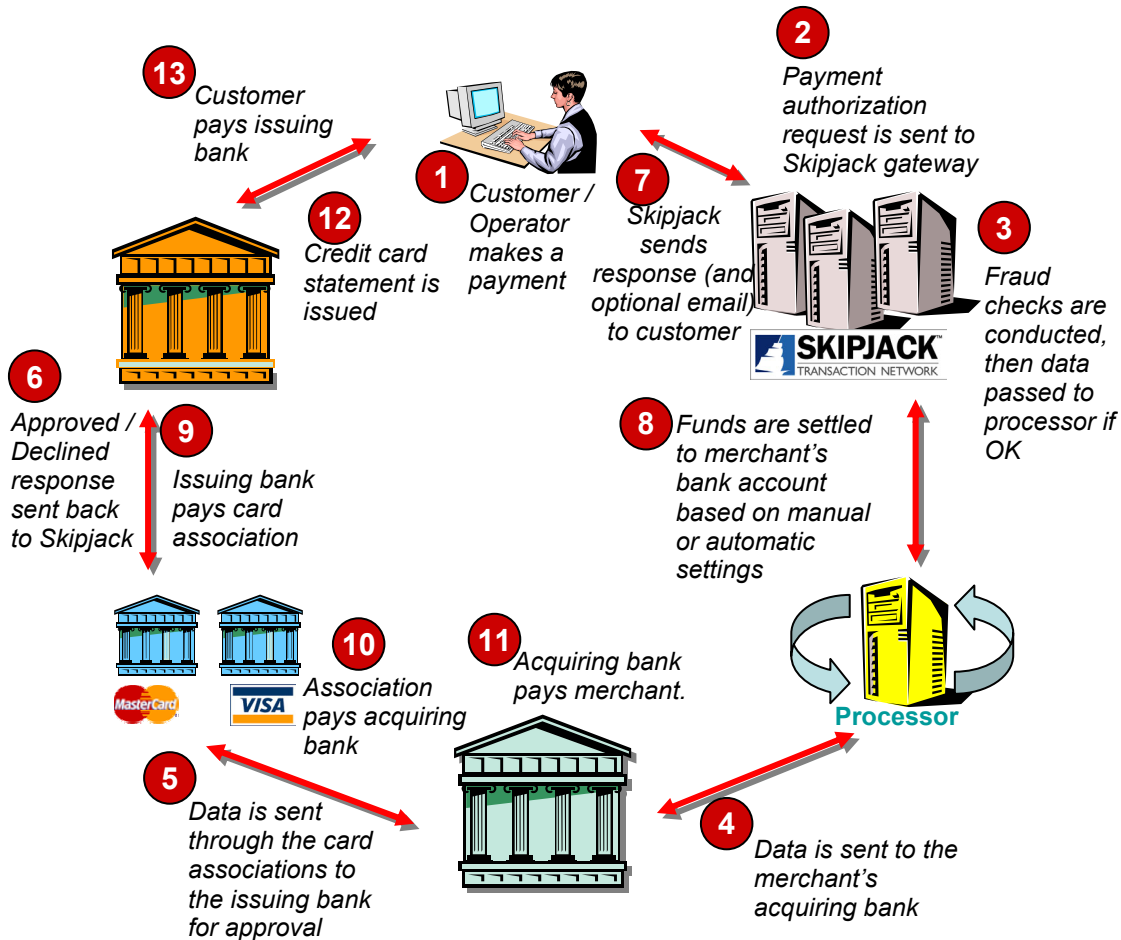
The Transaction Phases

In general, merchants will encounter two main phases in the typical payment cycle. These include the authorization and settlement stages.

Authorization refers to the process of determining whether a purchaser (cardholder) has sufficient funds on their credit card to complete a purchase.

Settlement refers to the process of depositing the appropriate funds that result from the sale (less any related merchant account fees) to the merchant's bank account.

Both of these phases will be discussed in more detail later in this article.



Authorizing a Transaction

Authorizing a transaction is the process of verifying whether there are sufficient funds on the purchaser's credit card to complete the purchase.

The authorization process begins when a purchaser (customer) or merchant enters the payment details into a payment application, such as online payment form, shopping cart or Virtual Point of Sale application. Although it can vary, generally the credit card number, expiry date and amount is the minimal information required in order to authorize a transaction. Additional order details are generally captured as well, however, including customer name and address information, purchase details and custom information. This information is sent via a secure Internet connection to the payment gateway (TransActive uses Skipjack as its payment gateway).

Before processing the information further, Skipjack performs a series of validation checks to determine if all of the information that is required to process the transaction has been sent. It also performs what is known as a MOD10 check. This determines whether the credit card number is valid by applying a mathematical algorithm to the credit card numbers. If the transaction passes validation, it is stored, formatted, and passed on to the processor for further action.

The payment processor connects to the various banks. They route the transaction to the appropriate bank based on merchant identification information contained in the transaction. The acquiring bank passes the data through the card association (i.e. VISA or MasterCard) who in turn sends it to the bank that issued the credit card to the customer (issuing bank).

The issuing bank determines whether there are sufficient funds on the credit card, and an appropriate message (approved or declined) is sent back through to the payment gateway. The payment gateway then sends that message to the merchant's application for presentation to the customer.

Note that the entire authorization process takes place in under 10 seconds!

Settling a Transaction

In order for a merchant to receive funds for the transaction, the transaction must go through a "settlement" process. The settlement process is either initiated automatically on a periodic basis (e.g. daily) by the payment gateway, or the merchant identifies specific transactions for settlement and submits them when it is appropriate (typically after goods have been shipped or a service rendered).

Once the settlement process has been initiated by the merchant, the payment gateway "batches" the appropriate transactions and sends them to the processor. The processor interacts with the various financial institutions to ensure that the appropriate funds, less applicable merchant account fees (depending upon the card type), are deposited into the merchant's bank account.

The merchant will typically receive funds in their account in 24-48 hours (several days in the case of American Express). This timeframe is in the control of the financial network rather than the payment gateway or processor.

Summary

There are many participants involved in the process of authorizing and settling transactions. Understanding who these various participants are and their roles will help as you evaluate and engage the various service providers that are required in order to process credit card payments. It will also help should you encounter any issues with respect to payment processing once your application launches.

About TransActive Ecommerce Solutions

TransActive is a leading supplier of payment processing solutions to businesses across North America. Offering world-class solutions at affordable prices, TransActive helps merchants simplify the process of acquiring, launching and using payment solutions to improve the way they do business. Visit us at www.TransActive.ca.

For a description of some of the e-commerce terms used in this article, please visit our online glossary at www.TransActive.ca.

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