# Methodology
Three-Step

Method Overview

- **Step One:** Submit all transaction details to the Payment Gateway except the customer's sensitive payment information. The Payment Gateway will return a variable **form-url**.

- **Step Two:** Create an HTML form that collects the customer's sensitive payment information and use the **form-url** that the Payment Gateway returns as the submit action in that form.

- **Step Three:** Once the customer has been redirected, obtain the **token-id** and complete the transaction through an HTTPS POST including the **token-id** which abstracts the sensitive payment information that was collected directly by the Payment Gateway.

Detailed Explanation

To start step one, your payment application will submit a behind-the-scenes HTTPS direct POST that includes transaction variables, including an additional variable **redirect-url**, which is a URL that must exist on your web server that handles a future browser redirect. Sensitive payment information such as **cc-number**, **cc-exp**, and **cvv** cannot be submitted during step one. The Payment Gateway will generate and return the form-url variable containing a unique URL to be used in Step 2.

Next, during step two, you must develop an HTML form that collects at least the customer's sensitive payment information such as **cc-number**, **cc-exp**, and **cvv**. You must use the **form-url** obtained in step one as the action in the HTML of your payment form. When the customer submits the form, the customer's browser will transparently POST the contents of the payment form directly to the Payment Gateway. This methodology keeps your web server and payment application from seeing or transmitting any credit card data or other sensitive data. Once the Payment Gateway has collected the customer's sensitive payment details, the customer's browser will be instructed to return to the **redirect-url** on your web server. Furthermore, the Payment Gateway will generate and append a unique variable named **token-id** to the **redirect-url** in the GET query string. This **token-id** is an abstraction of the customer's sensitive payment information that the Payment Gateway collected. Your **redirect-url** script must parse the **token-id** for use in step three.

To complete the transaction, you will submit another behind-the-scenes HTTPS direct POST including only the **token-id** and **api-key**. This **token-id** is used to "tie" together the initial customer information with the sensitive payment information that the payment gateway collected directly.
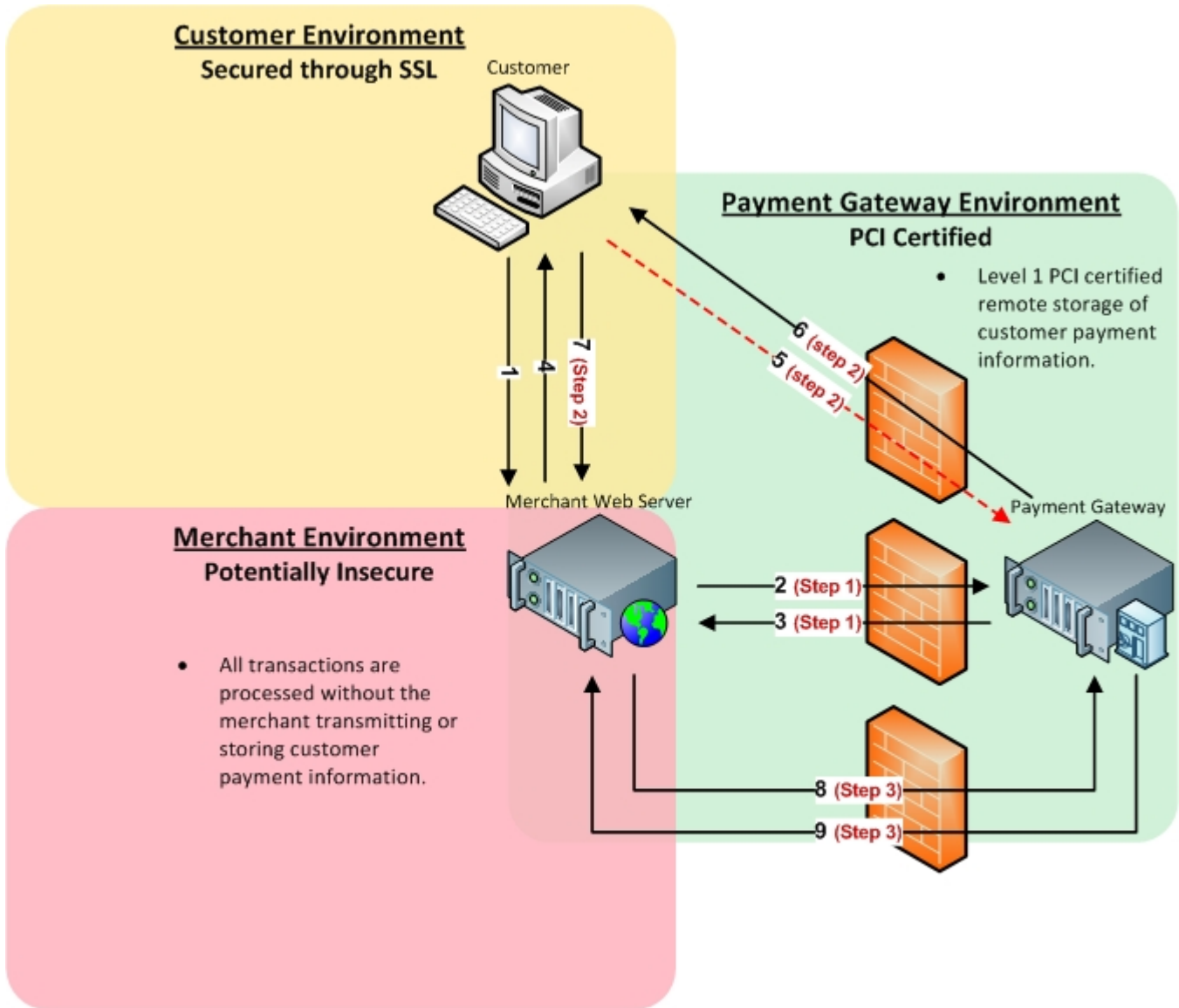
Step One

Three-Step: Transactions

Sale/Auth/Credit/Validate/Offline XML Request

XML Element	Description
<sale|auth|credit|validate|offline>	Type of transaction to perform.
api-key[*]	api-key is obtained in the security keys section of the control panel settings.
redirect-url[*]	A URL on your web server that the gateway will redirect your customer to after sensitive data collection.
amount[*]	Total amount to be charged (For "validate" actions, amount must be 0.00 or omitted).
surcharge-amount	Surcharge amount. Format: x.xx
authorization-code[**]	Specify authorization code. For use with "offline" action only.
ip-address	Cardholder's IP address. Format: xxx.xxx.xxx.xxx
industry	Specify industry classification of transaction. Values: 'ecommerce', 'moto', or 'retail'
billing-method	Set additional billing indicators. Values: 'recurring' or 'installment'
billing-number	Specify installment billing number, on supported processors. For use when "billing-method" is set to installment. Values: 0-99
billing-total	Specify installment billing total on supported processors. For use when "billing-method" is set to installment.
processor-id	If using multiple processors, route to specified processor. Obtained under Settings->Transaction Routing in the merchant control panel.
sec-code	ACH standard entry class codes. Values: 'PPD', 'WEB', 'TEL', 'CCD', 'POP', or 'ARC'
descriptor	Set payment descriptor on supported processors.
descriptor-phone	Set payment descriptor phone on supported processors.
descriptor-address	Set payment descriptor address on supported processors.
descriptor-city	Set payment descriptor city on supported processors.
descriptor-state	Set payment descriptor state on supported processors.
descriptor-postal	Set payment descriptor postal code on supported processors.
descriptor-country	Set payment descriptor country on supported processors.
descriptor-mcc	Set payment descriptor mcc on supported processors.
descriptor-merchant-id	Set payment descriptor merchant id on supported processors.
descriptor-url	Set payment descriptor url on supported processors.

currency	Set transaction currency. Format: ISO 4217
order-description	Order description.
customer-id	Customer identification.
customer-vault-id	Load customer details from an existing customer vault record. If set, no payment information is required during step two.
merchant-receipt-email	Send merchant receipt to email
customer-receipt	Send receipt if billing email included. Values: 'true' or 'false'
merchant-defined-field-#	Merchant specified custom fields. Format: <merchant-defined-field-1>Value</merchant-defined-field-1>
tracking-number	Shipping tracking number.
shipping-carrier	Shipping carrier. Values: 'ups', 'fedex', 'dhl', or 'usps'
order-id[***]	Order id.
signature-image	Cardholder signature image. For use with "sale" and "auth" actions only. Format: base64 encoded raw PNG image. (16kiB maximum)
po-number[***]	Cardholder's purchase order number.
tax-amount[***]	The sales tax included in the transaction amount associated with the purchase. Setting tax equal to '-1' indicates an order that is exempt from sales tax. Default: '0.00' Format: x.xx
shipping-amount[***]	Total shipping amount.
ship-from-postal[****]	Postal/ZIP code of the address from where purchased goods are being shipped. Defaults to merchant profile postal code.
summary-commodity-code[****]	A code representing the type of commodity being purchased. The acquirer or processor will provide a list of current codes.
duty-amount	Amount included in the transaction amount associated with the import of the purchased goods. Default: '0.00'
discount-amount	Amount included in the transaction amount of any discount applied to the complete order by the merchant. Default: '0.00'
national-tax-amount	The national tax amount included in the transaction amount. Default: '0.00'
alternate-tax-amount	Second tax amount included in the transaction amount in countries where more than one type of tax can be applied to the purchases. Default: '0.00'
alternate-tax-id	Tax identification number of the merchant that reported the alternate tax amount.

vat-tax-amount	Contains the amount of any value added taxes which can be associated with the purchased item. Default: '0.00'
vat-tax-rate	Contains the tax rate used to calculate the sales tax amount appearing. Can contain up to 2 decimal places, ie 1% = 1.00. Default: '0.00'
vat-invoice-reference-number	Invoice number that is associated with the VAT invoice.
customer-vat-registration	Value added tax registration number supplied by the cardholder.
merchant-vat-registration	Government assigned tax identification number of the merchant from whom the goods or services were purchased.
order-date	Purchase order date. Defaults to the date of the transaction. Format: YYMMDD
skip-3ds	Skip over 3DS authentication process for this specific transaction. Values: "true" or "false"
cardholder-auth[†]	Set 3D Secure condition. Values: 'verified' or 'attempted'
eci[†]	E-commerce indicator. Values: '0', '1', '2', '5', '6', or '7'
cavv[†]	Cardholder authentication verification value. Format: base64 encoded
xid[†]	Cardholder authentication transaction id. Format: base64 encoded
three-ds-version[†]	3DSecure version. Examples: "1.0.2" or "2.0"
directory-server-id	Directory Server Transaction ID. May be provided as part of 3DSecure 2.0 authentication. Format: xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx
initiated-by	Who initiated the transaction. Values: 'customer' or 'merchant'
initial-transaction-id	Original payment gateway transaction id.
stored-credential-indicator	The indicator of the stored credential. Values: 'stored' or 'used' Use **'stored'** when processing the initial transaction in which you are storing a customer's payment details (customer credentials) in the Customer Vault or other third-party payment storage system. Use **'used'** when processing a subsequent or follow-up transaction using the customer payment details (customer credentials) you have already stored to the Customer Vault or third-party payment storage method.
dup-seconds[‡]	Override duplicate transaction detection time in seconds.
avs-reject[‡]	The transaction is rejected if the address verification result is a code in this list. Values are letters obtained under Settings->Address Verification in the control panel. Format: x|x|x|x...
cvv-reject[‡]	The transaction is rejected if the card ID verification result is a code in this list. Values are letters obtained under Settings->Card ID Verification in the control panel. Format: x|x|x|x...

\<billing\>	The customer's billing information
billing-id	Specify billing id. Recommended when using customer vault hybrid action. Will be ignored if no hybrid add/update-customer is done.
first-name	Cardholder's first name.
last-name	Cardholder's last name.
address1	Cardholder's billing address.
city	Card billing city.
state	Card billing state/province. Format: CC
postal	Card billing postal code.
country	Card billing country code. Format: CC/ISO 3166
phone	Billing phone number.
email	Billing email address.
company	Cardholder's company.
address2	Card billing address, line 2.
fax	Billing fax number.
account-type[§]	The customer's ACH account type. Values: 'checking' or 'savings'
entity-type[§]	The customer's ACH account entity. Values: 'personal' or 'business'
\</billing\>	
\<shipping\>	The customer's shipping information.
shipping-id	Specify shipping id. Recommended when using customer vault hybrid action. Will be ignored if no hybrid add/update-customer is done.
first-name	Shipping first name.
last-name	Shipping last name.
address1	Shipping billing address.
city	Shipping city.
state	Shipping state/province. Format: CC
postal[****]	Shipping postal code.
country[****]	Shipping country code. Format: CC/ISO 3166
phone	Shipping phone number.
email	Shipping email address.
company	Shipping company.
address2	Shipping address, line 2.
fax	Shipping fax number.
\</shipping\>	

<product>	Product line item detail. Multiple product elements are allowed.
product-code****¶	Merchant defined description code of the item being purchased.
description****	Description of the item(s) being supplied.
commodity-code****	International description code of the individual good or service being supplied. The acquirer or processor will provide a list of current codes.
unit-of-measure****	Code for units of measurement as used in international trade. Default: 'EACH'
unit-cost****	Unit cost of item purchased. May contain up to 4 decimal places.
quantity****	Quantity of the item(s) being purchased. Default: '1'
total-amount****	Purchase amount associated with the item. Default to 'unit-cost' x 'quantity' rounded to the nearest penny.
tax-amount****	Amount of tax on specific item. Amount should not be included in item-total-amount. Default: '0.00'
tax-rate****	Percentage representing the value-added tax applied. 1% = 1.00. Default: '0.00'
discount-amount	Discount amount which can have been applied by the merchant on the sale of the specific item. Amount should not be included in 'item-total-amount'.
discount-rate	Discount rate for the line item. 1% = 1.00. Default: '0.00'
tax-type	Type of value-added taxes that are being used.
alternate-tax-id	Tax identification number of the merchant that reported the alternate tax amount.
</product>	
<add-subscription>	Perform a simultaneous 'hybrid' recurring action while processing a transaction.
start-date	The first day that the customer will be charged. Format: YYYYMMDD
<plan>	
plan-id	The unique plan ID that references only this recurring plan.
payments	The number of payments before the recurring plan is complete. Note: Use '0' for 'until canceled'
amount	The plan amount to be charged each billing cycle. Format: x.xx
day-frequency	How often, in days, to charge the customer. Cannot be set with 'month-frequency' or 'day-of-month'.
month-frequency	How often, in months, to charge the customer. Cannot be set with 'day-frequency'. Must be set with 'day-of-month'. Values: 1 through 24
day-of-month	The day that the customer will be charged. Cannot be set with 'day-frequency'. Must be set with 'month-frequency'. Values: 1 through 31 - for months without 29, 30, or 31 days, the charge will be on the last day

</plan>	
</add-subscription>	
<add-customer|update-customer>	Perform a simultaneous 'hybrid' customer vault action while processing a transaction. This tag can be blank if submitting an 'add-customer' without specifying a 'customer-vault-id'.
customer-vault-id	Specify customer vault id. If omitted, will be auto-generated and returned in response. Required for 'update-customer'.
</add-customer|update-customer>	
partial-payments††	Specify whether a partial amount or full amount of the transaction should be settled. Format: 'settle_partial' or 'payment_in_full'
partial-payment-id††	Specify a partial payment ID. Required to collect an additional amount associated with an existing Partial Payment Transaction. Do not use on initial transaction.
</sale|auth|credit|validate|offline>	

*	Always required
**	Required for offline transactions
***	Required for Level 2 and Level 3 transactions
****	Required for Level 3 transactions
†	Required for 3D-Secure transactions
‡	Required for Override transactions
††	Required for Partial Payment Transactions
§	Required for ACH transactions
¶	Required for Line Item Reporting

Sale/Auth/Credit/Validate/Offline XML Response

XML Element	Description
<response>	
result	1=Approved 2=Declined 3=Error in transaction data or system error
result-text	Textual response.
transaction-id	Payment Gateway transaction id.
result-code	Numeric mapping of processor responses (See Appendix 3).
form-url	URL used as the action of the HTML form in step two.
</response>	

Step Two
Three-Step: Transactions

HTML Form Fields Request

HTML Form Fields	Description
billing-cc-number[*]	Credit card number.
billing-cc-exp[*]	Credit card expiration. Format: MMYY
billing-cvv	Card security code.
billing-account-name[**]	The name on the customer's ACH Account.
billing-account-number[**]	The customer's bank account number.
billing-routing-number[**]	The customer's bank routing number.
billing-account-type	The customer's ACH account type. Values: 'checking' or 'savings'
billing-entity-type	The customer's ACH account entity. Values: 'personal' or 'business'
billing-micr[†]	Physical check's Magnetic ink strip, on supported check processors. For use with 'POP' or 'ARC' sec-code.
billing-track-1[***]	Raw magnetic stripe data, track 1.
billing-track-2[***]	Raw magnetic stripe data, track 2.
billing-track-3[***]	Raw magnetic stripe data, track 3.
billing-magnesafe-track-1[***]	Raw MagTek Magensa encrypted reader data.
billing-magnesafe-track-2[***]	Raw MagTek Magensa encrypted reader data.
billing-magnesafe-track-3[***]	Raw MagTek Magensa encrypted reader data.
billing-magnesafe-ksn[***]	Raw MagTek Magensa encrypted reader data.
billing-magnesafe-magneprint[***]	Raw MagTek Magensa encrypted reader data.
billing-magnesafe-magneprint-status[***]	Raw MagTek Magensa encrypted reader data.
billing-social-security-number[****]	Customer's social security number, checked against bad check writers database if check verification is enabled.
billing-drivers-license-number[****]	Driver's license number, checked against bad check writers' database if check verification is enabled.
billing-drivers-license-dob [****]	Driver's license date of birth.
billing-drivers-license-state [****]	Customer's driver's license state. Format: CC
billing-first-name	Cardholder's first name. Overwrites value if passed during step one.

billing-last-name	Cardholder's last name. Overwrites value if passed during step one..
billing-address1	Cardholder's billing address. Overwrites value if passed during step one.
billing-city	Card billing city. Overwrites value if passed during step one.
billing-state	Card billing state/province. Overwrites value if passed during step one. Format: CC
billing-postal	Card billing postal code. Overwrites value if passed during step one.
billing-country	Card billing country code. Overwrites value if passed during step one. Format: CC/ISO 3166
billing-phone	Billing phone number. Overwrites value if passed during step one.
billing-email	Billing email address. Overwrites value if passed during step one.
billing-company	Cardholder's company. Overwrites value if passed during step one.
billing-address2	Card billing address, line 2. Overwrites value if passed during step one.
billing-fax	Billing fax number. Overwrites value if passed during step one.
shipping-first-name	Shipping first name. Overwrites value if passed during step one.
shipping-last-name	Shipping last name. Overwrites value if passed during step one.
shipping-address1	Shipping billing address. Overwrites value if passed during step one.
shipping-city	Shipping city. Overwrites value if passed during step one.
shipping-state	Shipping state/province. Overwrites value if passed during step one.
shipping-postal	Shipping postal code. Overwrites value if passed during step one.
shipping-country	Shipping country code. Overwrites value if passed during step one.
shipping-phone	Shipping phone number. Overwrites value if passed during step one.
shipping-email	Shipping email address. Overwrites value if passed during step one.
shipping-company	Shipping company. Overwrites value if passed during step one.
shipping-address2	Shipping address, line 2. Overwrites value if passed during step one.
shipping-fax	Shipping fax number. Overwrites value if passed during step one.

*   Required for keyed credit card transactions.

**	Required for ACH transactions.
***	Used for retail transactions. Variables used dependent on swipe device.
****	Required for check verification.
†	Required for check scanning.

HTML Form Fields Response

Once the Payment Gateway has collected the customer's sensitive payment details, the customer's browser will immediately be redirected back to the **redirect-url** on your web server. A variable named **token-id** will be appended to the **redirect-url** in the GET query string as described below:

https://**redirect-url**/?**token-id**=[token]

Step Three

Three-Step: Transactions

Complete Transaction XML Request

XML Element	Description
<complete-action>	
api-key*	api-key is obtained in the security keys section of the control panel settings.
token-id*	Customer payment token returned during step two.
</complete-action>	

*   Required

Complete Transaction XML Response

XML Element	Description
<response>	
result	1=Transaction Approved 2=Transaction Declined 3=Error in transaction data or system error
result-text	Textual response.
transaction-id	Payment Gateway transaction ID
result-code	Numeric mapping of processor responses. (See Appendix 3)
authorization-code	Transaction authorization code.
avs-result	AVS response code. (See Appendix 1)
cvv-result	CVV response code. (See Appendix 2)
action-type	Action type that was initially specified. Values: 'sale', 'auth', 'credit', 'validate', or 'offline'
amount	Total amount charged. Format: x.xx
amount-authorized	Returns the amount authorized. Format: x.xx
ip-address	Cardholder's IP address. Format: xxx.xxx.xxx.xxx
industry	Industry classification of transaction. Values: 'ecommerce', 'moto', or 'retail'
billing-method	Billing indicators used. Values: 'recurring' or 'installment'
processor-id	Processor transaction was made through.
sec-code	ACH standard entry class codes. Values: 'PPD', 'WEB', 'TEL', 'CCD', 'POP', or \ARC'
descriptor	Payment descriptor.
descriptor-phone	Payment descriptor phone.

descriptor-address	Set payment descriptor address on supported processors.
descriptor-city	Set payment descriptor city on supported processors.
descriptor-state	Set payment descriptor state on supported processors.
descriptor-postal	Set payment descriptor postal code on supported processors.
descriptor-country	Set payment descriptor country on supported processors.
descriptor-mcc	Set payment descriptor mcc on supported processors.
descriptor-merchant-id	Set payment descriptor merchant id on supported processors.
descriptor-url	Set payment descriptor url on supported processors.
currency	Transaction currency used. (Table 1.b)
order-description	Order description.
customer-id	Customer identification.
customer-vault-id	Customer vault id used or created during action.
merchant-receipt-email	Merchant receipt email.
customer-receipt	Customer email receipt sent. Values: 'true' or 'false'
partial-payment-balance	Returns the payment's remaining balance.
partial-payment-id	Numeric identifier used to submit subsequent partial payment transactions.
merchant-defined-field-#	Merchant specified custom fields. Format: <merchant-defined-field-1>Value</merchant-defined-field-1>
tracking-number	Shipping tracking number.
shipping-carrier	Shipping carrier. Values: 'ups', 'fedex', 'dhl', or 'usps'
order-id	Order id.
po-number	Cardholder's purchase order number.
tax-amount	The sales tax included in the transaction amount associated with the purchase. Format: x.xx
shipping-amount	Total shipping amount. Format: x.xx
ship-from-postal	Postal/ZIP code of the address from where purchased goods are being shipped.
summary-commodity-code	A code representing the type of commodity being purchased. The acquirer or processor will provide a list of current codes.
duty-amount	Amount included in the transaction amount associated with the import of the purchased goods. Format: x.xx
discount-amount	Amount included in the transaction amount of any discount applied to the complete order by the merchant. Format: x.xx
national-tax-amount	The national tax amount included in the transaction amount. Format: x.xx

alternate-tax-amount	Second tax amount included in the transaction amount in countries where more than one type of tax can be applied to the purchases. Default: '0.00' Format: x.xx
alternate-tax-id	Tax identification number of the merchant that reported the alternate tax amount.
vat-tax-amount	Contains the amount of any value added taxes which can be associated with the purchased item. Format: x.xx
vat-tax-rate	Contains the tax rate used to calculate the sales tax amount appearing. Can contain up to 2 decimal places, ie 1% = 1.00. Format: x.xx
vat-invoice-reference-number	Invoice number that is associated with the VAT invoice.
customer-vat-registration	Value added tax registration number supplied by the cardholder.
merchant-vat-registration	Government assigned tax identification number of the merchant from whom the goods or services were purchased.
order-date	Purchase order date. Format: YYMMDD
cardholder-auth	3D Secure condition. Values: 'verified' or 'attempted'
eci	E-commerce indicator. Values: '0', '1', '2', '5', '6', or '7'
cavv	Cardholder authentication verification value. Format: base64 encoded
xid	Cardholder authentication transaction id. Format: base64 encoded
three-ds-version	3DSecure version. Examples: "1.0.2" or "2.0"
directory-server-id	Directory Server Transaction ID. May be provided as part of 3DSecure 2.0 authentication. Format: xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx
dup-seconds	Override duplicate transaction detection checking in seconds.
avs-reject	Values are letters obtained under Settings->Address Verification in the control panel.
cvv-reject	Values are letters obtained under Settings->Card ID Verification in the control panel.
<billing>	The customer's billing information
billing-id	Billing id used or created for this action.
first-name	Cardholder's first name.
last-name	Cardholder's last name.
address1	Cardholder's billing address.
city	Card billing city.

state	Card billing state/province. Format: CC	
postal	Card billing postal code.	
country	Card billing country code. Format: CC/ISO 3166	
phone	Billing phone number.	
email	Billing email address.	
company	Cardholder's company.	
address2	Card billing address, line 2.	
fax	Billing fax number.	
social-security-number	Customer's social security number	
drivers-license-number	Driver's license number.	
drivers-license-dob	Driver's license date of birth.	
drivers-license-state	Customer's driver's license state. Format: CC	
cc-number	Masked credit card number. Format: XXXXXX*******XXXX	
cc-exp	Credit card expiration Format: MMYY	
account-name	The name on the customer's bank account.	
account-number	Masked bank account number. Format: X****XXXX	
routing-number	Masked bank routing number. Format: X****XXXX	
account-type	The customer's ACH account type. Values: 'checking' or 'savings'	
entity-type	The customer's ACH account entity. Values: 'personal' or 'business'	
priority	Billing id priority. Format: Numeric, 1-255	
</billing>		
<shipping>	The customer's shipping information.	
shipping-id	Shipping id used or created for this action. Recommended when using customer vault hybrid action; will be ignored if no hybrid add/update-customer is done.	
first-name	Shipping first name.	
last-name	Shipping last name.	
address1	Shipping billing address.	
city	Shipping city.	
state	Shipping state/province. Format: CC	
postal	Shipping postal code.	
country	Shipping country code. Format: CC/ISO 3166	

phone	Shipping phone number.
email	Shipping email address.
company	Shipping company.
address2	Shipping address, line 2.
fax	Shipping fax number.
priority	Shipping id priority. Format: Numeric, 1-255
</shipping>	
<product>	Product line item detail. Multiple product elements are allowed.
product-code	Merchant defined description code of the item being purchased.
description	Description of the item(s) being supplied.
commodity-code	International description code of the individual good or service being supplied. The acquirer or processor will provide a list of current codes.
unit-of-measure	Code for unites of measurement as used in international trade.
unit-cost	Unit cost of item purchased. May contain up to 4 decimal places.
quantity	Quantity of the item(s) being purchased.
total-amount	Purchase amount associated with the item. Format: x.xx
tax-amount	Amount of tax on specific item. Amount should not be included in item-total-amount. Format: x.xx
tax-rate	Percentage representing the value-added tax applied. 1% = 1.00. Format: x.xx
discount-amount	Discount amount which can have been applied by the merchant on the sale of the specific item. Format: x.xx
discount-rate	Discount rate for the line item. 1% = 1.00 Format: x.xx
tax-type	Type of value-added taxes that are being used.
alternate-tax-id	Tax identification number of the merchant that reported the alternate tax amount.
</product>	
</response>	

Additional Operations

Three-Step: Transactions

Capture XML Request

Element	Description
<capture>	
api-key*	api-key is obtained in the security keys section of the control panel settings.
transaction-id*	Original Payment Gateway transaction id.
amount	Total amount to be settled, this amount may be equal to or less than the authorized amount.
merchant-defined-field-#	Merchant specified custom fields. Format: <merchant-defined-field-1>Value</merchant-defined-field-1>
tracking-number	Shipping tracking number.
shipping-carrier	Shipping carrier used. Values: 'ups', 'fedex', 'dhl', or 'usps'
order-id	Order ID.
signature-image	Cardholder signature image. Format: base64 encoded raw PNG image. (16kiB maximum)
</capture>	

*   Required

Void XML Request

Element	Description
<void>	
api-key*	api-key is obtained in the security keys section of the control panel settings.
transaction-id*	Original Payment Gateway transaction id.
merchant-defined-field-#	Merchant specified custom fields. Format: <merchant-defined-field-1>Value</merchant-defined-field-1>
</void>	

*   Required

Refund XML Request

Element	Description
<refund>	
api-key*	api-key is obtained in the security keys section of the control panel settings.
transaction-id*	Original Payment Gateway transaction id.

amount	Total amount to be refunded. This amount may be equal to or less than the settled amount. Setting the amount to 0.00 will refund the entire amount.
merchant-defined-field-#	Merchant specified custom fields. Format: <merchant-defined-field-1>Value</merchant-defined-field-1>
</refund>	

*   Required

Update XML Request

Element	Description
<update>	
api-key*	api-key is obtained in the security keys section of the control panel settings.
transaction-id*	Original Payment Gateway transaction id.
merchant-defined-field-#	Merchant specified custom fields. Format: <merchant-defined-field-1>Value</merchant-defined-field-1>
tracking-number	Shipping tracking number.
shipping-carrier	Shipping carrier used. Values: 'ups', 'fedex', 'dhl', or 'usps'
order-id	Order ID.
signature-image	Cardholder signature image. Format: base64 encoded raw PNG image. (16kiB maximum)
</update>	

*   Required

Complete Partial Payment XML Request

Element	Description
<complete-partial-payment>	
api-key*	api-key is obtained in the security keys section of the control panel settings.
partial-payment-id*	Specify a partial payment ID. Required to collect an additional amount associated with an existing Partial Payment Transaction. Do not use on initial transaction.
</complete-partial-payment>	

*   Required

Step One
Three-Step: Customer Vault

Add/Update Customer XML Request

XML Element	Description

<add-customer|update-customer>	Type of transaction to perform.
api-key*	api-key is obtained in the security keys section of the control panel settings.
redirect-url*	A URL on your web server that the gateway will redirect your customer to after sensitive data collection. Value is not required for 'update-customer' requests when sensitive data is not being presented. Example: Updating an address or zip code only.
customer-vault-id	Load customer details from an existing customer vault record. If set, no payment information is required during step two.
merchant-defined-field-#	Merchant specified custom fields. Format: <merchant-defined-field-1>Value</merchant-defined-field-1>
source-transaction-id	Specifies a payment gateway transaction id in order to associate payment information with a Customer Vault record.
<billing>	The customer's billing information
billing-id	Specify billing id. Required for 'update-customer' if multiple billing-ids exist, optional for 'add-billing'.
first-name	Cardholder's first name.
last-name	Cardholder's last name.
address1	Cardholder's billing address.
city	Card billing city.
state	Card billing state/province. Format: CC
postal	Card billing postal code.
country	Card billing country code. Format: CC/ISO 3166
phone	Billing phone number.
email	Billing email address.
company	Cardholder's company.
address2	Card billing address, line 2.
fax	Billing fax number.
account-type	The customer's ACH account type. Values: 'checking' or 'savings'
entity-type	The customer's ACH account entity. Values: 'personal' or 'business'
priority	Specify priority (If omitted, will be auto-generated and returned in response). Format: Numeric, 1-255
</billing>	
<shipping>	The customer's shipping information.
shipping-id	Specify shipping id (Required for update-customer if multiple shipping-ids exist. Optional for add-billing).
first-name	Shipping first name.

last-name	Shipping last name.
address1	Shipping billing address.
city	Shipping city.
state	Shipping state/province. Format: CC
postal	Shipping postal code.
country	Shipping country code. Format: CC/ISO 3166
phone	Shipping phone number.
email	Shipping email address.
company	Shipping company.
address2	Shipping address, line 2.
fax	Shipping fax number.
priority	Specify priority, if omitted, will be auto-generated and returned in response. Format: Numeric, 1-255
</shipping>	
</add-customer|update-customer>	

*   Required

XML Response

XML Element	Description
<response>	
result	1=Approved 2=Declined 3=Error in transaction data or system error
result-text	Textual response.
result-code	Numeric mapping of processor responses. (See Appendix 3)
form-url	URL used as the action of the HTML form in step two.
</response>	

Step Two
Three-Step: Customer Vault

HTML Form Fields Request

HTML Form Fields	Description
billing-cc-number[*]	Credit card number.
billing-cc-exp[*]	Credit card expiration. Format: MMYY
billing-cvv	Card security code.
billing-account-name[**]	The name on the customer's ACH Account.
billing-account-number[**]	The customer's bank account number.
billing-routing-number[**]	The customer's bank routing number.
billing-account-type	The customer's ACH account type. Values: 'checking' or 'savings'
billing-entity-type	The customer's ACH account entity. Values: 'personal' or 'business'
billing-micr[†]	Physical check's Magnetic ink strip, on supported check processors. For use with 'POP' or 'ARC' sec-code.
billing-track-1[***]	Raw magnetic stripe data, track 1.
billing-track-2[***]	Raw magnetic stripe data, track 2.
billing-track-3[***]	Raw magnetic stripe data, track 3.
billing-magnesafe-track-1[***]	Raw MagTek Magensa encrypted reader data.
billing-magnesafe-track-2[***]	Raw MagTek Magensa encrypted reader data.
billing-magnesafe-track-3[***]	Raw MagTek Magensa encrypted reader data.
billing-magnesafe-ksn[***]	Raw MagTek Magensa encrypted reader data.
billing-magnesafe-magneprint-status[***]	Raw MagTek Magensa encrypted reader data.
billing-social-security-number[****]	Customer's social security number (Checked against bad check writers database if check verification is enabled).
billing-drivers-license-number[****]	Driver's license number (Checked against bad check writers database if check verification is enabled).
billing-drivers-license-dob[****]	Driver's license date of birth.
billing-drivers-license-state[****]	Customer's driver's license state. Format: CC
billing-first-name	Cardholder's first name, overwrites value if passed during step one.
billing-last-name	Cardholder's last name, overwrites value if passed during step one.

billing-address1	Cardholder's billing address, overwrites value if passed during step one.
billing-city	Card billing city, overwrites value if passed during step one.
billing-state	Card billing state/province, overwrites value if passed during step one. Format: CC
billing-postal	Card billing postal code, overwrites value if passed during step one.
billing-country	Card billing country code, overwrites value if passed during step one. Format: CC/ISO 3166
billing-phone	Billing phone number, overwrites value if passed during step one.
billing-email	Billing email address, overwrites value if passed during step one.
billing-company	Cardholder's company, overwrites value if passed during step one.
billing-address2	Card billing address, line 2, overwrites value if passed during step one.
billing-fax	Billing fax number, overwrites value if passed during step one.
shipping-first-name	Shipping first name, overwrites value if passed during step one.
shipping-last-name	Shipping last name, overwrites value if passed during step one.
shipping-address1	Shipping billing address, overwrites value if passed during step one.
shipping-city	Shipping city, overwrites value if passed during step one.
shipping-state	Shipping state/province, overwrites value if passed during step one. Format: CC
shipping-postal	Shipping postal code, overwrites value if passed during step one.
shipping-country	Shipping country code, overwrites value if passed during step one. Format: CC/ISO 3166
shipping-phone	Shipping phone number, overwrites value if passed during step one.
shipping-email	Shipping email address, overwrites value if passed during step one.
shipping-company	Shipping company, overwrites value if passed during step one.
shipping-address2	Shipping address, line 2, overwrites value if passed during step one.
shipping-fax	Shipping fax number, overwrites value if passed during step one.

*   Required for keyed credit card transactions.

**   Required for ACH transactions.

***   Used for retail transactions. Variables used dependent on swipe device.

****   Required for check verification.

†   Required for check scanning.

HTML Form Fields Response

Once the Payment Gateway has collected the customer's sensitive payment details, the customer's browser will immediately be redirected back to the **redirect-url** on your web server. A variable named **token-id** will be appended to the **redirect-url** in the GET query string as described below:

https://**redirect-url**/?**token-id**=[token]

Step Three

Three-Step: Customer Vault

Complete Action XML Request

XML Element	Description
<complete-action>	
api-key*	api-key is obtained in the security keys section of the control panel settings.
token-id*	Customer payment token returned during step two.
</complete-action>	

*   Required

Complete Action XML Response

XML Element	Description
<response>	
result	1=Transaction Approved 2=Transaction Declined 3=Error in transaction data or system error
result-text	Textual response.
result-code	Numeric mapping of processor responses. (See Appendix 3)
action-type	Action type that was initially specified. Values: 'sale', 'auth', 'credit', 'validate', or 'offline'
customer-vault-id	Customer vault id used or created during action.
merchant-defined-field-#	Merchant specified custom fields. Format: <merchant-defined-field-1>Value</merchant-defined-field-1>
<billing>	The customer's billing information.
billing-id	Billing id used or created for this action.
first-name	Cardholder's first name.
last-name	Cardholder's last name.
address1	Cardholder's billing address.
city	Card billing city.
state	Card billing state/province. Format: CC
postal	Card billing postal code.
country	Card billing country code. Format: CC/ISO 3166
phone	Billing phone number.
email	Billing email address.
company	Cardholder's company.
address2	Card billing address, line 2.

fax	Billing fax number.
social-security-number	Customer's social security number
drivers-license-number	Driver's license number.
drivers-license-dob	Driver's license date of birth.
drivers-license-state	Customer's driver's license state. Format: CC
cc-number	Masked credit card number. Format: XXXXXX********XXXX
cc-exp	Credit card expiration. Format: MMYY
account-name	The name on the customer's bank account.
account-number	Masked bank account number. Format: X****XXXX
routing-number	Masked bank routing number. Format: X****XXXX
account-type	The customer's ACH account type. Values: 'checking' or 'savings'
entity-type	The customer's ACH account entity. Values: 'personal' or 'business'
priority	Billing id priority. Format: Numeric, 1-255
</billing>	
<shipping>	The customer's shipping information.
shipping-id	Shipping id used or created during action.
first-name	Shipping first name.
last-name	Shipping last name.
address1	Shipping billing address.
city	Shipping city.
state	Shipping state/province. Format: CC
postal	Shipping postal code.
country	Shipping country code. Format: CC/ISO 3166
phone	Shipping phone number.
email	Shipping email address.
company	Shipping company.
address2	Shipping address, line 2.
fax	Shipping fax number.
priority	Shipping id priority. Format: Numeric, 1-255
</shipping>	
</response>	

Additional Operations

Three-Step: Customer Vault

Add/Update Billing Request (Step 1)

XML Element	Description
<add-billing|update-billing>	Type of transaction to perform.
api-key*	api-key is obtained in the security keys section of the control panel settings.
redirect-url*	A URL on your web server that the gateway will redirect your customer to after sensitive data collection. Value is not required for 'update-billing' requests when sensitive data is not presented. Example: Updating an address or zip code only.
customer-vault-id*	Load customer details from an existing customer vault record. If set, no payment information is required during step two.
<billing>	The customer's billing information
billing-id	Specify billing id. Required for update-customer if multiple billing ids exist, optional for add-billing.
first-name	Cardholder's first name.
last-name	Cardholder's last name.
address1	Cardholder's billing address.
city	Card billing city.
state	Card billing state/province. Format: CC
postal	Card billing postal code.
country	Card billing country code. Format: CC/ISO 3166
phone	Billing phone number.
email	Billing email address.
company	Cardholder's company.
address2	Card billing address, line 2.
fax	Billing fax number.
account-type	The customer's ACH account type. Values: 'checking' or 'savings'
entity-type	The customer's ACH account entity. Values: 'personal' or 'business'
priority	Specify priority (If omitted, will be auto-generated and returned in response.) Format: Numeric, 1-255
</billing>	
</add-billing|update-billing>	

*   Required

Customer Vault initiated Sale/Auth/Credit/Validate/Offline XML Request

Element	Description
\<sale|auth|credit|validate|offline\>	Any and all optional fields described here can be appended to this request.
api-key*	api-key is obtained in the security keys section of the control panel settings.
amount*	Total amount to be charged (For "validate" actions, amount must be 0.00 or omitted). Format: x.xx
surcharge-amount	Surcharge amount. Format: x.xx
authorization-code	Specify authorization code. For use with "offline" action only.
processor-id	If using multiple MIDs, route to this processor. The values for 'processor-id' are obtained under 'Settings'->'Transaction Routing' in the Control Panel.
customer-vault-id*	Load Customer details from an existing Customer Vault record.
signature-image	Cardholder signature image. For use with "sale" and "auth" actions only. Format: base64 encoded raw PNG image. (16kiB maximum)
\<billing\>	The customer's billing information.
billing-id	Load Billing ID details from an existing Billing record. If not set, the billing-id with the highest priority will be used by default.
\</billing\>	
\<shipping\>	The customer's shipping information.
shipping-id	Load shipping id details from an existing shipping record. If unset, the shipping-id with the highest priority will be used by default.
\</shipping\>	
\</sale|auth|credit|validate|offline\>	

*   Required

Delete Customer XML Request

Element	Description
\<delete-customer\>	
api-key*	api-key is obtained in the security keys section of the control panel settings.

Element	Description
customer-vault-id*	Specify customer to be deleted.
</delete-customer>	

*   Required

Delete Billing XML Request

Element	Description
<delete-billing>	
api-key*	api-key is obtained in the security keys section of the control panel settings.
customer-vault-id*	Load customer details from an existing customer vault record. If set, no payment information is required during step two.
<billing>	
billing-id*	Specify billing id to delete.
</billing>	
</delete-billing>	

*   Required

Add/Update/Delete Shipping XML Request

These requests can be made the by replacing the billing section with shipping

Step One
Three-Step: Recurring

Add Subscription to an Existing Plan

Element	Description
<add-subscription>	Associate payment information with a recurring plan.
api-key*	api-key is obtained in the Security Keys section of the Control Panel Settings.
redirect-url*	A URL on your web server that the gateway will redirect your customer to after sensitive data collection. Value is not required when sensitive data is not presented. Example: Adding a Subscription using a Customer Vault ID.
customer-vault-id	Load customer details from an existing customer vault record. If set, no payment information is required during step two.
start-date	The first day that the customer will be charged. Format: YYYYMMDD
order-id	Order id.
po-number	Cardholder's purchase order number.
order-description	Order description.

currency	Set transaction currency. Format: ISO 4217
tax-amount	The sales tax included in the transaction amount associated with the purchase. Setting tax equal to '-1' indicates an order that is exampt from sales tax. Default: 0.00' Format: x.xx
shipping-amount	Total shipping amount.
merchant-defined-field-#	Merchant specified custom fields. Format: <merchant-defined-field-1>Value</merchant-defined-field-1>
source-transaction-id	Specifies a payment gateway transaction id in order to associate payment information with a Subscription record.
<plan>	
plan-id*	The unique plan ID that references only this recurring plan.
</plan>	
<billing>	The customer's billing information
billing-id	Specify billing id. Recommended when using customer vault hybrid action. Will be ignored if no hybrid add/update-customer is done.
first-name	Cardholder's first name.
last-name	Cardholder's last name.
address1	Cardholder's billing address.
city	Card billing city.
state	Card billing state/province. Format: CC
postal	Card billing postal code.
country	Card billing country code. Format: CC/ISO 3166
phone	Billing phone number.
email	Billing email address.
company	Cardholder's company.
address2	Card billing address, line 2.
fax	Billing fax number.
account-type**	The customer's ACH account type. Values: 'checking' or 'savings'
entity-type**	The customer's ACH account entity. Values: 'personal' or 'business'
</billing>	
<shipping>	The customer's shipping information.
shipping-id	Specify shipping id. Recommended when using customer vault hybrid action. Will be ignored if no hybrid add/update-customer is done.
first-name	Shipping first name.
last-name	Shipping last name.
address1	Shipping address.

city	Shipping city.
state	Shipping state/province. Format: CC
postal	Shipping postal code.
country	Shipping country code. Format: CC/ISO 3166
phone	Shipping phone number.
email	Shipping email address.
company	Shipping company.
address2	Shipping address, line 2.
fax	Shipping fax number.
</shipping>	
</add-subscription>	

*   Always required

**   Required for ACH transactions

Add Subscription to a Custom Plan

Element	Description
<add-subscription>	Associate payment information with a recurring plan.
api-key*	api-key is obtained in the Security Keys section of the Control Panel Settings.
redirect-url*	A URL on your web server that the gateway will redirect your customer to after sensitive data collection. Value is not required when sensitive data is not presented. Example: Adding a Subscription using a Customer Vault ID.
customer-vault-id	Load customer details from an existing customer vault record. If set, no payment information is required during step two.
start-date	The first day that the customer will be charged. Format: YYYYMMDD
order-id	Order id.
po-number	Cardholder's purchase order number.
order-description	Order description.
currency	Set transaction currency. Format: ISO 4217
tax-amount	The sales tax included in the transaction amount associated with the purchase. Setting tax equal to '-1' indicates an order that is exampt from sales tax. Default: '0.00' Format: x.xx
shipping-amount	Total shipping amount.
merchant-defined-field-#	Merchant specified custom fields. Format: <merchant-defined-field-1>Value</merchant-defined-field-1>

source-transaction-id	Specifies a payment gateway transaction id in order to associate payment information with a Subscription record.
\<plan\>	
payments[*]	The number of payments before the recurring plan is complete. Notes: '0' for until canceled
amount[*]	The plan amount to be charged each billing cycle. Format: x.xx
day-frequency[***]	How often, in days, to charge the customer. Cannot be set with 'month-frequency' or 'day-of-month'.
month-frequency[****]	How often, in months, to charge the customer. Cannot be set with 'day-frequency'. Must be set with 'day-of-month'. Values: 1 through 24
day-of-month[****]	The day that the customer will be charged. Cannot be set with 'day-frequency'. Must be set with 'month-frequency'. Values: 1 through 31 - for months without 29, 30, or 31 days, the charge will be on the last day
\</plan\>	
\<billing\>	The customer's biling information
billing-id	Specify billing id. Recommended when using customer vault hybrid action. Will be ignored if no hybrid add/update-customer is done.
first-name	Cardholder's first name.
last-name	Cardholder's last name.
address1	Cardholder's billing address.
city	Card billing city.
state	Card billing state/province. Format: CC
postal	Card billing postal code.
country	Card billing country code. Format: CC/ISO 3166
phone	Billing phone number.
email	Billing email address.
company	Cardholder's company.
address2	Card billing address, line 2.
fax	Billing fax number.
account-type[**]	The customer's ACH account type. Values: 'checking' or 'savings'
entity-type[**]	The customer's ACH account entity. Values: 'personal' or 'business'
\</billing\>	
\<shipping\>	The customer's shipping information.
shipping-id	Specify shipping id. Recommended when using customer vault hybrid action. Will be ignored if no hybrid add/update-customer is done.
first-name	Shipping first name.
last-name	Shipping last name.

address1	Shipping address.
city	Shipping city.
state	Shipping state/province. Format: CC
postal	Shipping postal code.
country	Shipping country code. Format: CC/ISO 3166
phone	Shipping phone number.
email	Shipping email address.
company	Shipping company.
address2	Shipping address, line 2.
fax	Shipping fax number.
</shipping>	
</add-subscription>	

*   Always required

**   Required for ACH transactions

***   Required unless 'month-frequency' and 'day-of-month' is set.

****   Required unless 'day-frequency' is set.

Update Subscription Information

Element	Description
<update-subscription>	Update Customer's information for a subscription.
api-key*	api-key is obtained in the Security Keys section of the Control Panel Settings.
redirect-url*	A URL on your web server that the gateway will redirect your customer to after sensitive data collection. Value is not required when sensitive data is not presented. Example: Updating a Subscription using a Customer Vault ID.
subscription-id*	The subscription that will be updated.
order-id	Order id.
po-number	Cardholder's purchase order number.
order-description	Order description.
currency	Set transaction currency. Format: ISO 4217
merchant-defined-field-#	Merchant specified custom fields. Format: <merchant-defined-field-1>Value</merchant-defined-field-1>
<billing>	The customer's billing information
first-name	Cardholder's first name.
last-name	Cardholder's last name.
address1	Cardholder's billing address.

city	Card billing city.
state	Card billing state/province. Format: CC
postal	Card billing postal code.
country	Card billing country code. Format: CC/ISO 3166
phone	Billing phone number.
email	Billing email address.
company	Cardholder's company.
address2	Card billing address, line 2.
fax	Billing fax number.
account-type**	The customer's ACH account type. Values: 'checking' or 'savings'
entity-type**	The customer's ACH account entity. Values: 'personal' or 'business'
</billing>	
<shipping>	The customer's shipping information.
first-name	Shipping first name.
last-name	Shipping last name.
address1	Shipping address.
city	Shipping city.
state	Shipping state/province. Format: CC
postal	Shipping postal code.
country	Shipping country code. Format: CC/ISO 3166
phone	Shipping phone number.
email	Shipping email address.
company	Shipping company.
address2	Shipping address, line 2.
fax	Shipping fax number.
</shipping>	
</update-subscription>	

*   Always Required.

**   Required for ACH subscriptions.

Step Two

Three-Step: Recurring

HTML Form Fields Request

HTML Form Fields	Description
billing-cc-number[*]	Credit card number.
billing-cc-exp[*]	Credit card expiration. Format: MMYY
billing-cvv	Card security code.
billing-account-name[**]	The name on the customer's ACH Account.
billing-account-number[**]	The customer's bank account number.
billing-routing-number[**]	The customer's bank routing number.
billing-account-type	The customer's ACH account type. Values: 'checking' or 'savings'
billing-entity-type	The customer's ACH account entity. Values: 'personal' or 'business'
billing-micr[†]	Physical check's Magnetic ink strip, on supported check processors. For use with 'POP' or 'ARC' sec-code.
billing-track-1[***]	Raw magnetic stripe data, track 1.
billing-track-2[***]	Raw magnetic stripe data, track 2.
billing-track-3[***]	Raw magnetic stripe data, track 3.
billing-magnesafe-track-1[***]	Raw MagTek Magensa encrypted reader data.
billing-magnesafe-track-2[***]	Raw MagTek Magensa encrypted reader data.
billing-magnesafe-track-3[***]	Raw MagTek Magensa encrypted reader data.
billing-magnesafe-ksn[***]	Raw MagTek Magensa encrypted reader data.
billing-magnesafe-magneprint-status[***]	Raw MagTek Magensa encrypted reader data.
billing-social-security-number[****]	Customer's social security number, checked against bad check writers database if check verification is enabled.
billing-drivers-license-number[****]	Drivers license number, checked against bad check writers database if check verification is enabled.
billing-drivers-license-dob[****]	Drivers license date of birth.
billing-drivers-license-state[****]	Customer's drivers license state. Format: CC
billing-first-name	Cardholder's first name. Overwrites value if passed during step one.
billing-last-name	Cardholder's last name. Overwrites value if passed during step one.

billing-address1	Cardholder's billing address. Overwrites value if passed during step one.
billing-city	Card billing city. Overwrites value if passed during step one.
billing-state	Card billing state/province. Overwrites value if passed during step one. Format: CC
billing-postal	Card billing postal code. Overwrites value if passed during step one.
billing-country	Card billing country code. Overwrites value if passed during step one. Format: CC/ISO 3166
billing-phone	Billing phone number. Overwrites value if passed during step one.
billing-email	Billing email address. Overwrites value if passed during step one.
billing-company	Cardholder's company. Overwrites value if passed during step one.
billing-address2	Card billing address, line 2. Overwrites value if passed during step one.
billing-fax	Billing fax number. Overwrites value if passed during step one.
shipping-first-name	Shipping first name. Overwrites value if passed during step one.
shipping-last-name	Shipping last name. Overwrites value if passed during step one.
shipping-address1	Shipping address. Overwrites value if passed during step one.
shipping-city	Shipping city. Overwrites value if passed during step one.
shipping-state	Shipping state/province. Overwrites value if passed during step one.
shipping-postal	Shipping postal code. Overwrites value if passed during step one.
shipping-country	Shipping country code. Overwrites value if passed during step one.
shipping-phone	Shipping phone number. Overwrites value if passed during step one.
shipping-email	Shipping email address. Overwrites value if passed during step one.
shipping-company	Shipping company. Overwrites value if passed during step one.
shipping-address2	Shipping address, line 2. Overwrites value if passed during step one.
shipping-fax	Shipping fax number. Overwrites value if passed during step one.

*   Required for keyed credit card transactions.

**   Required for ACH transactions.

***   Used for retail transactions. Variables used dependant on swipe device.

****   Required for check verification.

†   Required for check scanning.

HTML Form Fields Response

Once the Payment Gateway has collected the customer's sensitive payment details, the customer's browser will immediately be redirected back to the **redirect-url** on your web server. A variable named **token-id** will be appended to the **redirect-url** in the GET query string as described below:

https://**redirect-url**/?**token-id**=[token]

Step Three

Three-Step: Recurring

Complete Action XML Request

XML Element	Description
<complete-action>	
api-key*	api-key is obtained in the security keys section of the control panel settings.
token-id*	Customer payment token returned during step two.
</complete-action>	

*   Required

Complete Action XML Response

XML Element	Description
response	
result	1=Transaction Approved 2=Transction Declined 3=Error in transaction data or system error
result-text	Textual response.
result-code	Numeric mapping of processor responses. (See Appendix 3)
action-type	Action type that was initially specified. Values: 'sale', 'auth', 'credit', 'validate', or 'offline'
subscription-id	Subscription ID used or created during action.
merchant-defined-field-#	Merchant specified custom fields. Format: <merchant-defined-field-1>Value</merchant-defined-field-1>
<plan>	
payments	The number of payments before the recurring plan is complete. Notes: '0' for until canceled
amount	The plan amount to be charged each billing cycle. Format: x.xx
name	The display name of the plan.
plan-id	The plan ID that is associated with this subscription.
day-frequency	How often, in days, to charge the customer. Cannot be set with 'month-frequency' or 'day-of-month'.
month-frequency	How often, in months, to charge the customer. Cannot be set with 'day-frequency'. Must be set with 'day-of-month'. Values: 1 through 24
day-of-month	The day that the customer will be charged. Cannot be set with 'day-frequency'. Must be set with 'month-frequency'. Values: 1 through 31 - for months without 29, 30, or 31 days, the charge will be on the last day
</plan>	

<billing>	The customer's billing information.
billing-id	Billing id used or created for this action.
first-name	Cardholder's first name.
last-name	Cardholder's last name.
address1	Cardholder's billing address.
city	Card billing city.
state	Card billing state/province. Format: CC
postal	Card billing postal code.
country	Card billing country code. Format: CC/ISO 3166
phone	Billing phone number.
email	Billing email address.
company	Cardholder's company.
address2	Card billing address, line 2.
fax	Billing fax number.
social-security-number	Customer's social security number
drivers-license-number	Drivers license number.
drivers-license-dob	Drivers license date of birth.
drivers-license-state	Customer's drivers license state. Format: CC
cc-number	Masked credit card number. Format: XXXXXX********XXXX
cc-exp	Credit card expiration. Format: MMYY
account-name	The name on the customer's bank account.
account-number	Masked bank account number. Format: X****XXXX
routing-number	Masked bank routing number. Format: X****XXXX
account-type	The customer's ACH account type. Values: 'checking' or 'savings'
entity-type	The customer's ACH account entity. Values: 'personal' or 'business'
priority	Billing id priority. Format: Numeric, 1-255
</billing>	
<shipping>	The customer's shipping information.
shipping-id	Shipping id used or created during action.
first-name	Shipping first name.
last-name	Shipping last name.
address1	Shipping address.
city	Shipping city.

state	Shipping state/province. Format: CC
postal	Shipping postal code.
country	Shipping country code. Format: CC/ISO 3166
phone	Shipping phone number.
email	Shipping email address.
company	Shipping company.
address2	Shipping address, line 2.
fax	Shipping fax number.
priority	Shipping id priority. Format: Numeric, 1-255
</shipping>	
</response>	

Additional Operations

Three-Step: Recurring

Add Plan XML Request

Element	Description
\<add-plan\>	Add a recurring plan that subscriptions can be added to in the future.
api-key*	api-key is obtained in the Security Keys section of the Control Panel Settings.
\<plan\>	
payments*	The number of payments before the recurring plan is complete. Notes: '0' for until canceled
amount*	The plan amount to be charged each billing cycle. Format: x.xx
name*	The display name of the plan.
plan-id*	The unique plan ID that references only this recurring plan.
day-frequency**	How often, in days, to charge the customer. Cannot be set with 'month-frequency' or 'day-of-month'.
month-frequency***	How often, in months, to charge the customer. Cannot be set with 'day-frequency'. Must be set with 'day-of-month'. Values: 1 through 24
day-of-month***	The day that the customer will be charged. Cannot be set with 'day-frequency'. Must be set with 'month-frequency'. Values: 1 through 31 - for months without 29, 30, or 31 days, the charge will be on the last day
\</plan\>	
\</add-plan\>	

*   Always required

**   Required unless 'month-frequency' and 'day-of-month' is set.

***   Required unless 'day-frequency' is set.

Delete a Subscription

Element	Description
\<delete-subscription\>	Delete the subscription. Customer will no longer be charged.
api-key*	api-key is obtained in the Security Keys section of the Control Panel Settings.
subscription-id*	The subscription ID that will be deleted.
\</delete-subscription\>	

*   Always required

Testing Information
Three-Step

Transaction Testing Credentials

Transactions can be tested using one of two methods. First, transactions can be submitted to any merchant account that is in test mode. Keep in mind that if an account is in test mode, all valid credit cards will be approved but no charges will actually be processed.

The Payment Gateway demo account can also be used for testing at any time. Please use the following api-key for testing with this account:

api-key:	2F822Rw39fx762MaV7Yy86jXGTC7sCDy

Transaction POST URL

In step one and step three, transaction details should be POST'ed using XML to the following URL:

POST URL	https://centavo.transactiongateway.com/api/v2/three-step

Test Data

Transactions can be submitted using the following information:

Visa:	4111111111111111
MasterCard:	5431111111111111
Discover:	6011601160116611
American Express:	341111111111111
Diner's Club:	30205252489926
JCB:	3541963594572595
Maestro:	6799990100000000019
Credit Card Expiration:	10/25
account (ACH):	123123123
routing (ACH):	123123123
amount	1.00 (Amounts under 1.00 generate failure).

Triggering Errors in Test Mode

- To cause a declined message, pass an amount less than 1.00.
- To trigger a fatal error message, pass an invalid card number.
- To simulate an AVS match, pass 888 in the address1 field, 77777 for zip.
- To simulate a CVV match, pass 999 in the cvv field.

Appendix 1

Three-Step

AVS Response Codes

X	Exact match, 9-character numeric ZIP
Y	Exact match, 5-character numeric ZIP
D	Exact match, 5-character numeric ZIP
M	Exact match, 5-character numeric ZIP
2	Exact match, 5-character numeric ZIP, customer name
6	Exact match, 5-character numeric ZIP, customer name
A	Address match only
B	Address match only
3	Address, customer name match only
7	Address, customer name match only
W	9-character numeric ZIP match only
Z	5-character ZIP match only
P	5-character ZIP match only
L	5-character ZIP match only
1	5-character ZIP, customer name match only
5	5-character ZIP, customer name match only
N	No address or ZIP match only
C	No address or ZIP match only
4	No address or ZIP or customer name match only
8	No address or ZIP or customer name match only
U	Address unavailable
G	Non-U.S. issuer does not participate
I	Non-U.S. issuer does not participate
R	Issuer system unavailable
E	Not a mail/phone order
S	Service not supported
0	AVS not available
O	AVS not available
B	AVS not available

Appendix 2
Three-Step

CVV Response Codes

M	CVV2/CVC2 match
N	CVV2/CVC2 no match
P	Not processed
S	Merchant has indicated that CVV2/CVC2 is not present on card
U	Issuer is not certified and/or has not provided Visa encryption keys

Appendix 3

Three-Step

Result Code Table

100	Transaction was approved.
200	Transaction was declined by processor.
201	Do not honor.
202	Insufficient funds.
203	Over limit.
204	Transaction not allowed.
220	Incorrect payment information.
221	No such card issuer.
222	No card number on file with issuer.
223	Expired card.
224	Invalid expiration date.
225	Invalid card security code.
226	Invalid PIN.
240	Call issuer for further information.
250	Pick up card.
251	Lost card.
252	Stolen card.
253	Fraudulent card.
260	Declined with further instructions available. (See response text)
261	Declined-Stop all recurring payments.
262	Declined-Stop this recurring program.
263	Declined-Update cardholder data available.
264	Declined-Retry in a few days.
300	Transaction was rejected by gateway.
400	Transaction error returned by processor.
410	Invalid merchant configuration.
411	Merchant account is inactive.
420	Communication error.
421	Communication error with issuer.
430	Duplicate transaction at processor.
440	Processor format error.
441	Invalid transaction information.
460	Processor feature not available.
461	Unsupported card type.