NMI Three Step Redirect API

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Contents

Overview

Three Step Redirect API

- **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.
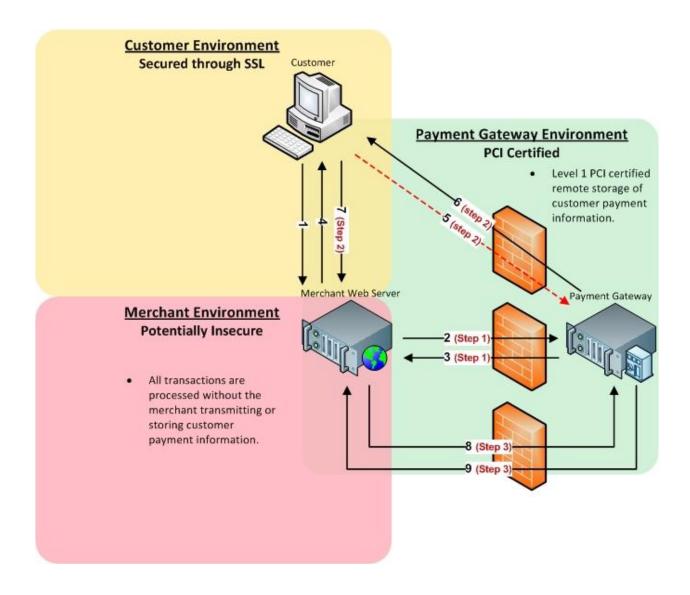
Methodology

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 a variable named *form-url* containing a unique URL.

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**.

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

XML Communication

The communication protocol used to send messages to the Payment Gateway is through the HTTP protocol over an SSL connection. (HTTPS) Transaction POST URL and testing credentials available in [Testing Information](#).

Step One and **Step Three** are processed using XML. The XML message is sent in the content-body of the HTTPS request. The *content-type* header must be "text/xml".

XML Elements will not be renamed or changed, but applications should be developed that can handle the addition of new XML response tags.

Default XML response tags are:

<result>, <result-text>, <avs-result>,<cvv-result>,<result-code>,<transaction-id>,<billing-id>,<shipping-id>, <customer-vault-id>

XML responses always include the default tags plus any variables that are included in the incoming request.

Transaction Operations

Three Step Transaction Actions

Step 1

Start Transaction

- Send an XML request to the gateway including transaction data *except* for any sensitive payment information. The Payment Gateway will respond with a unique URL that will be used in **Step Two**.

Sale/Auth/Credit/Offline XML Request

XML Transaction Element	Required	Format	Description
<sale|auth|credit|validate|offline>			
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
redirect-url	Required		A URL on your web server that the gateway will redirect your customer to after sensitive data collection
amount	Required	x.xx	Total amount to be charged (i.e. 10.00) *(For "validate" actions, amount must be 0.00, or omitted)*
authorization-code	*Conditional*	xxxxxx	Specify authorization code *(Typically used when processing a Voice Authorization. For use with "offline" action only)*
ip-address	Recommended	xxx.xxx.xxx.xxx	Cardholder's IP address
industry	*Optional*	ecommerce/moto/retail	Specify industry classification of transaction
billing-method	*Optional*	recurring/installment	Set additional Billing Indicators
billing-number	*Optional*	0-99	Specify Installment Billing Number *(On supported processors. For use when billing-method is set to installment.)*
billing-total	*Optional*	0-99	Specify Installment Billing Total *(On*

			supported processors. For use when billing-method is set to installment.)
processor-id	*Optional*		If using multiple processors, route to specified processor. *(processor-id is obtained under Options -> Transaction Routing in the Merchant Control Panel.)*
sec-code	*Optional (ACH)*	PPD/WEB/TEL/ CCD/POP/ARC	ACH Standard Entry Class codes
descriptor	*Optional*		Set payment descriptor *(On supported processors)*
descriptor-phone	*Optional*		Set payment descriptor phone *(On supported processors)*
currency	*Optional*	ISO 4217	Set transaction currency
order-description	*Optional*		Order Description
customer-id	*Optional*		Customer identification
customer-vault-id	*Optional*		Load Customer details from an existing Customer Vault record. *(If set, no payment information is required during Step Two)*
merchant-receipt-email	*Optional*	test@example.com	Send merchant receipt to email
customer-receipt	*Optional*	true/false	Send receipt (if billing email included)
merchant-defined-field-*x*	*Optional*		Merchant specified custom Fields *(merchant-defined-field-1, merchant-defined-field-2, etc.* **Up to 20.***)*
tracking-number	*Optional*		Shipping tracking number
shipping-carrier	*Optional*	ups/fedex/dhl/usps	Shipping carrier
order-id	*Level II/Level III*		Order ID
po-number	*Level II/Level III*		Cardholder's purchase order number
tax-amount	*Level II/Level III*	x.xx	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 *(Defaults to 0.00)*
shipping-amount	*Level II/Level III*	x.xx	Total shipping amount
ship-from-postal	*Level III*		Postal/ZIP code of the address from where purchased goods are being shipped *(Defaults to Merchant Profile Postal Code)*
summary-commodity-code	*Level III*		Postal/ZIP code of the address from where purchased goods are being shipped *(The acquirer or processor will provide a list of current codes)*
duty-amount	*Level III*	x.xx	Amount included in the transaction amount associated with the import of the purchased goods. *(Defaults to 0.00)*
discount-amount	*Level III*	x.xx	Amount included in the transaction amount of any discount applied to the complete order by the merchant *(Defaults to 0.00)*

national-tax-amount	*Level III*	x.xx	The national tax amount included in the transaction amount *(Defaults to 0.00)*
alternate-tax-amount	*Level III*	x.xx	Second tax amount included in the transaction amount in countries where more than one type of tax can be applied to the purchases *(Defaults to 0.00)*
alternate-tax-id	*Level III*		Tax identification number of the merchant that reported the alternate tax amount
vat-tax-amount	*Level III*	x.xx	Contains the amount of any value added taxes which can be associated with the purchased item *(Defaults to 0.00)*
vat-tax-rate	*Level III*	x.xx	Contains the tax rate used to calculate the sales tax amount appearing Can contain up to 2 decimal places, ie 1% = 1.00 *(Defaults to 0.00)*
vat-invoice-reference-number	*Level III*		Invoice number that is associated with the VAT invoice
customer-vat-registration	*Level III*		Value Added Tax registration number supplied by the cardholder
merchant-vat-registration	*Level III*		Government assigned tax identification number of the merchant for whom the goods or services were purchased from
order-date	*Level III*		Purchase order date supplied in the format YYMMDD*(Defaults to the date of the transaction)*
cardholder-auth	3D Secure	verified/attempted	Set 3D Secure condition
eci	3D Secure	2/5/7	E-Commerce indicator
cavv	3D Secure	base 64 encoded	Cardholder authentication verification value
xid	3D Secure	base 64 encoded	Cardholder authentication transaction id
dup-seconds	Override		Override Duplicate Transaction Detection checking (in seconds)
avs-reject	Override	x|x|x|..	*(Values are "letters" obtained under Options->Address Verification in the Control Panel)*
cvv-reject	Override	x|x|x|..	*(Values are "letters" obtained under Options->Card ID Verification in the Control Panel)*
<billing>	**The customer's Billing Information**		
billing-id	*Conditional*		Specify Billing ID – Ex. Home *(Recommended when using customer vault hybrid action. **Will be ignored if no hybrid add/update-customer is done**)*
first-name	Recommended		Cardholder's first name

last-name	Recommended		Cardholder's last name
address1	Recommended		Card billing address
city	Recommended		Card billing city
state	Recommended	CC	Card billing state/province
postal	Recommended		Card billing postal code
country	Recommended	CC (ISO-3166)	Card billing country code
phone	*Optional*		Billing phone number
email	*Optional*		Billing email address
company	*Optional*		Cardholder's company
address2	*Optional*		Card billing address – line 2
fax	*Optional*		Billing fax number
account-type	*Optional (ACH)***	checking/savings	The customer's ACH account type
entity-type	*Optional (ACH)***	personal/business	The customer's ACH account entity
</billing>			
<shipping>	**The customer's Shipping Information**		
shipping-id	*Conditional*		Specify Shipping ID – Ex. Home *(Recommended when using customer vault hybrid action. **Will be ignored if no hybrid add/update-customer is done**)*
first-name	*Optional*		Shipping first name
last-name	*Optional*		Shipping last name
address1	*Optional*		Shipping address
city	*Optional*		Shipping city
state	*Optional*	CC	Shipping state/province
postal	*Optional/ **Level III***		Shipping postal code
country	*Optional/ **Level III***	CC (ISO-3166)	Shipping country code
phone	*Optional*		Shipping phone number
email	*Optional*		Shipping email address
company	*Optional*		Shipping company
address2	*Optional*		Shipping address – line 2
fax	*Optional*		Shipping fax
</shipping>			
<product>	**Product Line Item Detail. Multiple product elements are allowed**		
product-code	*Level III*		Merchant defined description code of the item being purchased
description	*Level III*		Description of the item(s) being supplied
commodity-code	*Level III*		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	*Level III*		Code for units of measurement as used in international trade *(Defaults to EACH)*
unit-cost	*Level III*		Unit cost of item purchased May contain up to 4 decimal places
quantity	*Level III*		Quantity of the item(s) being purchased *(Defaults to 1)*

total-amount	*Level III*	x.xx	Purchase Amount associated with the item *(Defaults to: unit-cost x quantity rounded to the nearest penny)*
tax-amount	*Level III*	x.xx	Amount of tax on specific item Amount should not be included in item-total-amount *(Defaults to 0.00)*
tax-rate	*Level III*	x.xx	Percentage representing the value-added tax applied Can contain up to 2 decimal places, ie 1% = 1.00 *(Defaults to 0.00)*
discount-amount	*Level III*	x.xx	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	*Level III*	x.xx	Discount rate for the line item Can contain up to 2 decimal places, ie 1% = 1.00 *(Defaults to 0.00)*
tax-type	*Level III*		Type of value-added taxes that are being used
alternate-tax-id	*Level III*		Tax identification number of the merchant that reported the alternate tax amount
</product>			
<add-customer|update-customer>	*Optional*	**Do 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	*Optional*		Specify Customer Vault ID *(If omitted, will be auto-generated and returned in response. **Required for update-customer**)*
</add-customer|update-customer>			
</sale|auth|credit|validate|offline>			

Sale/Auth/Credit/Offline XML Response

(Step One)

XML Transaction Element	Format	Description
<response>		
result	1|2|3	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 2

Generate HTML submission form

- You must build an HTML form the collects your customer's sensitive payment information. The action of this form must be the *form-url* returned by the Payment Gateway in **Step One**.
- After the sensitive payment information has been collected by the Payment Gateway, the customer will immedietly be redirected to your *redirect-url* that was submitted during **Step One**.
- A variable named *token-id* will be appended to the *redirect-url* in the GET query string. This variable will be needed to perform **Step Three**.

HTML Form Fields Request

HTML Form Fields	Required	Format	Description
<HTML>			
billing-cc-number	Required**		Credit card number
billing-cc-exp	Required**	MMYY	Credit card expiration *(ie. 0711 = 7/2011)*
billing-account-name	Required(ACH)**		The name on the customer's ACH Account.
billing-account-number	Required(ACH)**		The customer's bank account number
billing-routing-number	Required(ACH)**		The customer's bank routing number
billing-cvv	Recommended		Card security code
billing-track-1	Retail	Raw	Raw magnetic stripe data, track 1
billing-track-2	Retail	Raw	Raw magnetic stripe data, track 2
billing-track-3	Retail	Raw	Raw magnetic stripe data, track 3
billing-magnesafe-track-1	Encrypted Retail	Raw	Raw MagTek Magensa reader Data
billing-magnesafe-track-2	Encrypted Retail	Raw	Raw MagTek Magensa reader Data
billing-magnesafe-track-3	Encrypted Retail	Raw	Raw MagTek Magensa reader Data
billing-magnesafe-magneprint	Encrypted Retail	Raw	Raw MagTek Magensa reader Data
billing-magnesafe-ksn	Encrypted Retail	Raw	Raw MagTek Magensa reader Data
billing-magnesafe-magneprint-status	Encrypted Retail	Raw	Raw MagTek Magensa reader Data
billing-social-security-number	Check Verification		Customer's Social Security Number *(Checked against bad check writers database, if Check Verification is enabled)*
billing-drivers-license-number	Check Verification		Drivers license Number *(Checked against bad check writers database, if Check Verification is enabled)*
billing-drivers-license-dob	Check Verification		Drivers license Date of Birth
billing-drivers-license-state	Check Verification	CC	Customer's Drivers license State
billing-micr	Check Scanning		Physical check's Magnetic Ink Strip *(On supported Check processors. For use with POP/ARC sec-code)*

billing-account-type	*Optional (ACH)***	checking/savings	The customer's ACH account type
billing-entity-type	*Optional (ACH)***	personal/business	The customer's ACH account entity
billing-first-name	*Optional*		Cardholder's first name *(Overwrites value if passed during Step One)*
billing-last-name	*Optional*		Cardholder's last name *(Overwrites value if passed during Step One)*
billing-address1	*Optional*		Card billing address *(Overwrites value if passed during Step One)*
billing-city	*Optional*		Card billing city *(Overwrites value if passed during Step One)*
billing-state	*Optional*	CC	Card billing state/province *(Overwrites value if passed during Step One)*
billing-postal	*Optional*		Card billing postal code *(Overwrites value if passed during Step One)*
billing-country	*Optional*	CC (ISO-3166)	Card billing country code *(Overwrites value if passed during Step One)*
billing-phone	*Optional*		Billing phone number *(Overwrites value if passed during Step One)*
billing-email	*Optional*		Billing email address *(Overwrites value if passed during Step One)*
billing-company	*Optional*		Cardholder's company *(Overwrites value if passed during Step One)*
billing-address2	*Optional*		Card billing address – line 2 *(Overwrites value if passed during Step One)*
billing-fax	*Optional*		Billing fax number *(Overwrites value if passed during Step One)*
shipping-first-name	*Optional*		Shipping first name *(Overwrites value if passed during Step One)*
shipping-last-name	*Optional*		Shipping last name *(Overwrites value if passed during Step One)*
shipping-address1	*Optional*		Shipping address *(Overwrites value if passed during Step One)*
shipping-city	*Optional*		Shipping city *(Overwrites value if passed during Step One)*
shipping-state	*Optional*	CC	Shipping state/province *(Overwrites value if passed during Step One)*
shipping-postal	*Optional*		Shipping postal code *(Overwrites value if passed during Step One)*
shipping-country	*Optional*	CC (ISO-3166)	Shipping country code *(Overwrites value if passed during Step One)*
shipping-phone	*Optional*		Shipping phone number *(Overwrites value if passed during Step One)*
shipping-email	*Optional*		Shipping email address *(Overwrites value if passed during Step One)*
shipping-company	*Optional*		Shipping company *(Overwrites value if passed during Step One)*
shipping-address2	*Optional*		Shipping address – line 2 *(Overwrites value if passed during Step One)*
shipping-fax	*Optional*		Shipping fax *(Overwrites value if passed during Step One)*

</HTML>

HTML Form Fields Response

(Step Two)

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*=305s0b19

Step 3

Complete Transaction

- Now that the Payment Gateway has collected the sensitive customer data, you must submit another behind-the-scenes direct POST to complete the trasanction using the ***token-id***.

Complete Transaction XML Request

XML Transaction Element	Required	Format	Description
\<complete-action\>			
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
token-id	Required		Customer payment token returned during **Step Two**
\</complete-action\>			

Complete Transaction XML Response

(Step Three)

XML Transaction Element	Format	Description
\<response\>		
result	1|2|3	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	sale/auth/credit validate/offline	Action Type that was initially specified.
amount	x.xx	Total amount to be charged (i.e. 10.00)
ip-address	xxx.xxx.xxx.xxx	Cardholder's IP address

Field	Value	Description
industry	ecommerce/moto/retail	Specify industry classification of transaction
billing-method	recurring	Billing Indicator Used
processor-id		Transaction was processed using this processor. *(processor-id is obtained under Options -> Load Balancing in the Control Panel.)*
sec-code	PPD/WEB/TEL/CCD	ACH Standard Entry Class codes
descriptor		Payment descriptor *(On supported processors)*
descriptor-phone		Payment descriptor phone *(On supported processors)*
currency	Table 1.B	Transaction currency used
order-description		Order Description
customer-id		Customer identification
customer-vault-id		Customer Vault ID used or created during action.
merchant-receipt-email	test@example.com	Merchant receipt email
customer-receipt	true/false	Customer receipt email sent
merchant-defined-field-*x*		Auxiliary Custom Fields *(merchant-defined-field-1, merchant-defined-field-2, etc.* **Up to 20.***)*
tracking-number		Shipping tracking number
shipping-carrier	ups/fedex/dhl/usps	Shipping carrier
dup-seconds		Duplicate Transaction checking override (in seconds)
order-id		Order ID
po-number		Cardholder's purchase order number
tax-amount	x.xx	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 *(Defaults to 0.00)*
shipping-amount	x.xx	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		Postal/ZIP code of the address from where purchased goods are being shipped *(The acquirer or processor will provide a list of current codes)*
duty-amount	x.xx	Amount included in the transaction amount associated with the import of the purchased goods. *(Defaults to 0.00)*
discount-amount	x.xx	Amount included in the transaction amount of any discount applied to the complete order by the merchant *(Defaults to 0.00)*
national-tax-amount	x.xx	The national tax amount included in the transaction amount *(Defaults to 0.00)*
alternate-tax-amount	x.xx	Second tax amount included in the transaction amount in countries where more than one type of tax can be applied to the purchases *(Defaults to 0.00)*
alternate-tax-id		Tax identification number of the merchant that reported the alternate tax amount
vat-tax-amount	x.xx	Contains the amount of any value added taxes which can be associated with the purchased item *(Defaults to 0.00)*
vat-tax-rate	x.xx	Contains the tax rate used to calculate the sales tax amount appearing Can contain up to 2 decimal places, ie 1% = 1.00 *(Defaults to 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 for whom the goods or services were purchased from
order-date		Purchase order date supplied in the format YYMMDD *(Defaults to the date of the transaction)*
cardholder-auth	verified/attempted	Set 3D Secure condition
eci	2/5/7	E-Commerce indicator
cavv	base 64 encoded	Cardholder authentication verification value
xid	base 64 encoded	Cardholder authentication transaction id
dup-seconds		Override Duplicate Transaction Detection checking (in seconds)
avs-reject		*(Values are "letters" obtained under Options->Address Verification in the Control Panel)*
cvv-reject		*(Values are "letters" obtained under Options->Card ID Verification in the Control Panel)*
<billing>		**The customer's Billing Information**
billing-id		Billing ID used or created during transaction.
first-name		Cardholder's first name
last-name		Cardholder's last name
address1		Card billing address
city		Card billing city
state	CC	Card billing state/province
postal		Card billing postal code
country	CC (ISO-3166)	Card billing country code
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 *(Checked against bad check writers database, if Check Verification is enabled)*
drivers-license-number		Drivers license Number *(Checked against bad check writers database, if Check Verification is enabled)*
drivers-license-dob		Drivers license Date of Birth
drivers-license-state	CC	Customer's Drivers license State
cc-number	411111********1111	Masked credit card number
cc-exp	MMYY	Credit card expiration *(ie. 0711 = 7/2011)*
account-name		The name on the customer's ACH Account.
account-number	1****3123	The customer's bank account number
routing-number	1****3123	The customer's bank routing number
account-type	checking/savings	The customer's ACH account type
entity-type	personal/business	The customer's ACH account entity
priority	Numeric, 1-255	Billing ID Priority
</billing>		
<shipping>		**The customer's Shipping Information**
shipping-id		Billing ID used or created during transaction.

first-name		Shipping first name
last-name		Shipping last name
address1		Shipping address
city		Shipping city
state	CC	Shipping state/province
postal		Shipping postal code
country	CC (ISO-3166)	Shipping country code
phone		Shipping phone number
email		Shipping email address
company		Shipping company
address2		Shipping address – line 2
fax		Shipping fax
Priority	Numeric, 1-255	Shipping ID Priority
</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 *(Defaults to EACH)*
unit-cost		Unit cost of item purchased May contain up to 4 decimal places
quantity		Quantity of the item(s) being purchased *(Defaults to 1)*
total-amount	x.xx	Purchase Amount associated with the item *(Defaults to: unit-cost x quantity rounded to the nearest penny)*
tax-amount	x.xx	Amount of tax on specific item Amount should not be included in item-total-amount *(Defaults to 0.00)*
tax-rate	x.xx	Percentage representing the value-added tax applied Can contain up to 2 decimal places, ie 1% = 1.00 *(Defaults to 0.00)*
discount-amount	x.xx	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	x.xx	Discount rate for the line item Can contain up to 2 decimal places, ie 1% = 1.00 *(Defaults to 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>		
</response>		

Additional Direct Transaction Actions

Additional Operations

- Additional operations can be submitting using the actions below. These actions must take place after a transaction has already been started and the redirect has already taken place.

Capture XML Request

Element	Required	Format	Description
\<capture\>			
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
transaction-id	Required		Original Payment Gateway transaction id
amount	*Optional*	x.xx	Total amount to be settled (i.e. 10.00) *(This amount may be equal to or less than the authorized amount)*
merchant-defined-field-*x*	*Optional*		*(merchant-defined-field-1,merchant-defined-field-2, etc..)*
tracking-number	*Optional*		Shipping tracking number
shipping-carrier	*Optional*	ups/fedex/dhl/usps	Shipping carrier
order-id	*Optional*		Order ID
\</capture\>			

Void XML Request

Element	Required	Format	Description
\<void\>			
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
transaction-id	Required		Original Payment Gateway transaction id
merchant-defined-field-*x*	*Optional*		*(merchant-defined-field-1,merchant-defined-field-2, etc..)*
\</void\>			

Refund XML Request

Element	Required	Format	Description
\<refund\>			
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
transaction-id	Required		Original Payment Gateway transaction id
amount	*Optional*	x.xx	Total amount to be refunded (i.e. 10.00) *(This amount may be equal to or less than the settled amount)*
merchant-defined-field-*x*	*Optional*		*(merchant-defined-field-1,merchant-defined-field-2, etc..)*
\</refund\>			

Update XML Request

Element	Required	Format	Description
\<update\>			
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
transaction-id	Required		Original Payment Gateway transaction id
order-id	*Optional*		Order ID
merchant-defined-field-*x*	*Optional*		*(merchant-defined-field-1,merchant-defined-field-2, etc..)*
tracking-number	*Optional*		Shipping tracking number
shipping-carrier	*Optional*	ups/fedex/dhl/usps	Shipping carrier
\</update\>			

Customer Vault Operations

Three Step Customer Vault Actions

Step 1

Start Customer Vault Actions

- Send an XML request to the gateway including Customer Vault data *except* for any sensitive payment information. The Payment Gateway will respond with a unique URL that will be used in **Step Two**.

Add Customer/Update Customer XML Request

XML Transaction Element	Required	Format	Description
<add-customer|update-customer>			
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
redirect-url	Required		A URL on your web server that the gateway will redirect your customer to after sensitive data collection
customer-vault-id	*Optional*		Specify Customer Vault ID *(If omitted, will be auto-generated and returned in response.)*
merchant-defined-field-*x*	*Optional*		Auxiliary Custom Fields *(merchant-defined-field-1,merchant-defined-field-2, etc. Up to 20.)*
<billing>	The customer's Billing Information		
billing-id	*Conditional*		Specify Billing ID – Ex. Home *(Required for update-customer if multiple billing-id's exist. Optional for add-billing. If omitted, will be auto-generated and returned in response)*
first-name	Recommended		Cardholder's first name
last-name	Recommended		Cardholder's last name
address1	Recommended		Card billing address
city	Recommended		Card billing city
state	Recommended	CC	Card billing state/province
postal	Recommended		Card billing postal code
country	Recommended	CC (ISO-3166)	Card billing country code

phone	Recommended		Billing phone number
email	Recommended		Billing email address
company	*Optional*		Cardholder's company
address2	*Optional*		Card billing address – line 2
fax	*Optional*		Billing fax number
account-type	*Optional (ACH)***	checking/savings	The customer's ACH account type
entity-type	*Optional (ACH)***	personal/business	The customer's ACH account entity
priority	*Optional*	Numeric, 1-255	Specify Priority *(If omitted, will be auto-generated and returned in response)*
</billing>			
<shipping>		**The customer's Shipping Information**	
shipping-id	*Conditional*		Specify Shipping ID – Ex. Home *(**Required for update-customer if multiple shipping-id's exist**. Optional for add-billing. If omitted, will be auto-generated and returned in response)*
first-name	*Optional*		Shipping first name
last-name	*Optional*		Shipping last name
address1	*Optional*		Shipping address
city	*Optional*		Shipping city
state	*Optional*	CC	Shipping state/province
postal	*Optional*		Shipping postal code
country	*Optional*	CC (ISO-3166)	Shipping country code
phone	*Optional*		Shipping phone number
email	*Optional*		Shipping email address
company	*Optional*		Shipping company
address2	*Optional*		Shipping address – line 2
Fax	*Optional*		Shipping fax
priority	*Optional*	Numeric, 1-255	Specify Priority *(If omitted, will be auto-generated and returned in response)*
</shipping>			
</add-customer|update-customer>			

Add Customer/Update Customer XML Response

(Step One)

XML Transaction Element	Format	Description
<response>		
Result	1|2|3	1 = Customer Vault Action Approved 2 = Customer Vault Action Declined 3 = Error in 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>		

Add Billing/Update Billing XML Request

XML Transaction Element	Required	Format	Description
\<add-billing|update-billing\>	*Used to manage multiple billing records per Customer Vault record*		
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
redirect-url	Required		A URL on your web server that the gateway will redirect your customer to after sensitive data collection
customer-vault-id	Required		Specify Customer Vault ID
\<billing\>	**The customer's Billing Information**		
billing-id	*Conditional*		Specify Billing ID – Ex. Home. *(**Required for update-customer if multiple billing-id's exist**. Optional for add-billing. If omitted, will be auto-generated and returned in response)*
first-name	Recommended		Cardholder's first name
last-name	Recommended		Cardholder's last name
address1	Recommended		Card billing address
city	Recommended		Card billing city
state	Recommended	CC	Card billing state/province
postal	Recommended		Card billing postal code
country	Recommended	CC (ISO-3166)	Card billing country code
phone	*Optional*		Billing phone number
email	*Optional*		Billing email address
company	*Optional*		Cardholder's company
address2	*Optional*		Card billing address – line 2
fax	*Optional*		Billing fax number
account-type	*Optional (ACH)***	checking/savings	The customer's ACH account type
entity-type	*Optional (ACH)***	personal/business	The customer's ACH account entity
priority	*Optional*	Numeric, 1-255	Specify Priority *(If omitted, will be auto-generated and returned in response)*
\</billing\>			
\</add-billing|update-billing\>			

Add Billing/Update Billing XML Response

(Step One)

XML Transaction Element	Format	Description
<response>		
result	1|2|3	1 = Customer Vault Action Approved
		2 = Customer Vault Action Declined
		3 = Error in 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 2

Generate HTML submission form

- You must build an HTML form the collects your customer's sensitive payment information. The action of this form must be the ***form-url*** returned by the Payment Gateway in **Step One**.
- After the sensitive payment information has been collected by the Payment Gateway, the customer will immedietly be redirected to your ***redirect-url*** that was submitted during **Step One**.
- A variable named ***token-id*** will be appended to the ***redirect-url*** in the GET query string. This variable will be needed to perform **Step Three**.

HTML Form Fields Request

HTML Form Fields	Required	Format	Description
<HTML>			
billing-cc-number	Required**		Credit card number
billing-cc-exp	Required**	MMYY	Credit card expiration *(ie. 0711 = 7/2011)*
billing-account-name	Required(ACH)**		The name on the customer's ACH Account.
billing-account-number	Required(ACH)**		The customer's bank account number
billing-routing-number	Required(ACH)**		The customer's bank routing number
billing-cvv	Recommended		Card security code
billing-track-1	Retail	Raw	Raw magnetic stripe data, track 1

billing-track-2	Retail	Raw	Raw magnetic stripe data, track 2
billing-track-3	Retail	Raw	Raw magnetic stripe data, track 3
billing-magnesafe-track-1	Encrypted Retail	Raw	Raw MagTek Magensa reader Data
billing-magnesafe-track-2	Encrypted Retail	Raw	Raw MagTek Magensa reader Data
billing-magnesafe-track-3	Encrypted Retail	Raw	Raw MagTek Magensa reader Data
billing-magnesafe-magneprint	Encrypted Retail	Raw	Raw MagTek Magensa reader Data
billing-magnesafe-ksn	Encrypted Retail	Raw	Raw MagTek Magensa reader Data
billing-magnesafe-magneprint-status	Encrypted Retail	Raw	Raw MagTek Magensa reader Data
billing-social-security-number	Check Verification		Customer's Social Security Number *(Checked against bad check writers database, if Check Verification is enabled)*
billing-drivers-license-number	Check Verification		Drivers license Number *(Checked against bad check writers database, if Check Verification is enabled)*
billing-drivers-license-dob	Check Verification		Drivers license Date of Birth
billing-drivers-license-state	Check Verification	CC	Customer's Drivers license State
billing-micr	Check Scanning		Physical check's Magnetic Ink Strip *(On supported Check processors. For use with POP/ARC sec-code)*
billing-account-type	*Optional (ACH)***	checking/savings	The customer's ACH account type
billing-entity-type	*Optional (ACH)***	personal/business	The customer's ACH account entity
billing-first-name	*Optional*		Cardholder's first name *(Overwrites value if passed during **Step One**)*
billing-last-name	*Optional*		Cardholder's last name *(Overwrites value if passed during **Step One**)*
billing-address1	*Optional*		Card billing address *(Overwrites value if passed during **Step One**)*
billing-city	*Optional*		Card billing city *(Overwrites value if passed during **Step One**)*
billing-state	*Optional*	CC	Card billing state/province *(Overwrites value if passed during **Step One**)*
billing-postal	*Optional*		Card billing postal code *(Overwrites value if passed during **Step One**)*
billing-country	*Optional*	CC (ISO-3166)	Card billing country code *(Overwrites value if passed during **Step One**)*
billing-phone	*Optional*		Billing phone number *(Overwrites value if passed during **Step One**)*
billing-email	*Optional*		Billing email address *(Overwrites value if passed during **Step One**)*
billing-company	*Optional*		Cardholder's company *(Overwrites value if passed during **Step One**)*
billing-address2	*Optional*		Card billing address – line 2 *(Overwrites value if passed during **Step One**)*
billing-fax	*Optional*		Billing fax number *(Overwrites value if passed during **Step One**)*
shipping-first-name	*Optional*		Shipping first name *(Overwrites value if passed during **Step One**)*
shipping-last-name	*Optional*		Shipping last name *(Overwrites value if passed during **Step One**)*
shipping-address1	*Optional*		Shipping address *(Overwrites value if passed during **Step One**)*

shipping-city	*Optional*		**Shipping city** *(Overwrites value if passed during Step One)*
shipping-state	*Optional*	CC	**Shipping state/province** *(Overwrites value if passed during Step One)*
shipping-postal	*Optional*		**Shipping postal code** *(Overwrites value if passed during Step One)*
shipping-country	*Optional*	CC (ISO-3166)	**Shipping country code** *(Overwrites value if passed during Step One)*
shipping-phone	*Optional*		**Shipping phone number** *(Overwrites value if passed during Step One)*
shipping-email	*Optional*		**Shipping email address** *(Overwrites value if passed during Step One)*
shipping-company	*Optional*		**Shipping company** *(Overwrites value if passed during Step One)*
shipping-address2	*Optional*		**Shipping address – line 2** *(Overwrites value if passed during Step One)*
shipping-fax	*Optional*		**Shipping fax** *(Overwrites value if passed during Step One)*

</HTML>

HTML Form Fields Response

(Step Two)

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*=305s0b19

Step 3

Complete Customer Vault Actions

- Now that the Payment Gateway has collected the sensitive customer data, you must submit another behind-the-scenes direct POST to complete the trasanction using the ***token-id***.

Complete Add Customer XML Request

XML Transaction Element	Required	Format	Description
\<complete-action>			
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
token-id	Required		Customer payment token returned during **Step Two**
\</complete-action>			

Complete Add Customer XML Response

(Step Three)

XML Transaction Element	Format	Description
\<response>		
result	1|2|3	1 = Customer Vault Action Approved 2 = Customer Vault Action Declined 3 = Error in data or system error
result-text		Textual response
result-code		Numeric mapping of processor responses (see Appendix 3)
action-type	add-customer	Specifies the Customer Vault Action
customer-vault-id		Customer Vault ID used or created during action.
merchant-defined-field-*x*		Auxiliary Custom Fields *(merchant-defined-field-1,merchant-defined-field-2, etc..)*
\<billing>	The customer's Billing Information	
billing-id		Billing ID used or created during action.
first-name		Cardholder's first name
last-name		Cardholder's last name
address1		Card billing address

city		Card billing city
state	CC	Card billing state/province
postal		Card billing postal code
country	CC (ISO-3166)	Card billing country code
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 *(Checked against bad check writers database, if Check Verification is enabled)*
drivers-license-number		Drivers license Number *(Checked against bad check writers database, if Check Verification is enabled)*
drivers-license-dob		Drivers license Date of Birth
drivers-license-state	CC	Customer's Drivers license State
cc-number	411111********1111	Masked credit card number
cc-exp	MMYY	Credit card expiration *(ie. 0711 = 7/2011)*
account-name		The name on the customer's ACH Account.
account-number	1****3123	The customer's bank account number
routing-number	1****3123	The customer's bank routing number
account-type	checking/savings	The customer's ACH account type
entity-type	personal/business	The customer's ACH account entity
priority	Numeric, 1-255	Assigned Priority
</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	CC	Shipping state/province
postal		Shipping postal code
country	CC (ISO-3166)	Shipping country code
phone		Shipping phone number
email		Shipping email address
company		Shipping company
address2		Shipping address – line 2
fax		Shipping fax
priority	Numeric, 1-255	Assigned Priority
</shipping>		
</response>		

Complete Add Billing/Update Billing XML Request

XML Transaction Element	Required	Format	Description
<complete-action>			
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
token-id	Required		Customer payment token returned during **Step Two**
</complete-action>			

Complete Add Billing/Update Billing XML Response

(Step Three)

XML Transaction Element	Format	Description
<response>		
result	1|2|3	1 = Customer Vault Action Approved 2 = Customer Vault Action Declined 3 = Error in data or system error
result-text		Textual response
result-code		Numeric mapping of processor responses (see Appendix 3)
action-type	add-billing/update-billing	Specifies the Customer Vault Action
customer-vault-id		Customer Vault ID used or created during action.
merchant-defined-field-*x*		Auxiliary Custom Fields *(merchant-defined-field-1,merchant-defined-field-2, etc..)*
<billing>	**The customer's Billing Information**	
billing-id		Billing ID used or created during action.
first-name		Cardholder's first name
last-name		Cardholder's last name
address1		Card billing address
city		Card billing city
state	CC	Card billing state/province
postal		Card billing postal code
country	CC (ISO-3166)	Card billing country code
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 *(Checked against bad check writers database, if Check Verification is enabled)*
drivers-license-number		Drivers license Number *(Checked against bad check writers database, if Check Verification is enabled)*
drivers-license-dob		Drivers license Date of Birth

drivers-license-state		Customer's Drivers license State
cc-number	411111********1111	Masked credit card number
cc-exp	MMYY	Credit card expiration *(ie. 0711 = 7/2011)*
account-name		The name on the customer's ACH Account.
account-number	1****3123	The customer's bank account number
routing-number	1****3123	The customer's bank routing number
account-type	checking/savings	The customer's ACH account type
entity-type	personal/business	The customer's ACH account entity
priority	Numeric, 1-255	Assigned Priority
</billing>		
</response>		

Additional Direct Customer Vault Actions

Additional Operations

- These additional Customer Vault operations can be completed using a single Direct XML request to the gateway. None of these operations submit sensitive payment information and theorefore do not require any Three Step Redirect functionlity.

Customer Vault Initiated Sale/Auth/Credit/Offline XML Request

XML Transaction Element	Required	Format	Description
<sale|auth|credit|offline>	*Any and all optional fields described here can be appended to this request*		
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
amount	Required	x.xx	Total amount to be charged (i.e. 10.00)
processor-id	*Optional*		If using multiple MIDs, route to this processor. *(processor-id is obtained under Options -> Transaction Routing in the Control Panel.)*
customer-vault-id	Required		Load Customer details from an existing Customer Vault record.
<billing>	**The customer's Billing Information**		
billing-id	*Optional*		Load Billing ID details from an existing Billing record. *(If unset, the billing-id with the highest priority will be used by default)*
</billing>			
<shipping>	**The customer's Shipping Information**		
shipping-id	*Optional*		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|offline>			

Update Customer XML Request

XML Transaction Element	Required	Format	Description
<update-customer>			
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
customer-vault-id	Required		Specify Customer Vault ID
merchant-defined-field-*x*	*Optional*		Auxiliary Custom Fields *(merchant-defined-field-1,merchant-defined-field-2, etc. Up to 20.)*
<billing>	The customer's Billing Information		
billing-id	*Conditional*		Specify Billing ID – Ex. Home *(Required for update-customer if multiple billing-id's exist.)*
first-name	Recommended		Cardholder's first name
last-name	Recommended		Cardholder's last name
address1	Recommended		Card billing address
city	Recommended		Card billing city
state	Recommended	CC	Card billing state/province
postal	Recommended		Card billing postal code
country	Recommended	CC (ISO-3166)	Card billing country code
phone	Recommended		Billing phone number
email	Recommended		Billing email address
company	*Optional*		Cardholder's company
address2	*Optional*		Card billing address – line 2
fax	*Optional*		Billing fax number
account-type	*Optional (ACH)***	checking/savings	The customer's ACH account type
entity-type	*Optional (ACH)***	personal/business	The customer's ACH account entity
priority	*Optional*	Numeric, 1-255	Specify Priority *(If omitted, will be auto-generated and returned in response)*
</billing>			
<shipping>	The customer's Shipping Information		
shipping-id	*Conditional*		Specify Shipping ID – Ex. Home *(Required for update-customer if multiple shipping-id's exist.)*
first-name	*Optional*		Shipping first name
last-name	*Optional*		Shipping last name
address1	*Optional*		Shipping address
city	*Optional*		Shipping city
state	*Optional*	CC	Shipping state/province
postal	*Optional*		Shipping postal code
country	*Optional*	CC (ISO-3166)	Shipping country code
phone	*Optional*		Shipping phone number
email	*Optional*		Shipping email address
company	*Optional*		Shipping company
address2	*Optional*		Shipping address – line 2
fax	*Optional*		Shipping fax
priority	*Optional*	Numeric, 1-255	Specify Priority *(If omitted, will be auto-generated and returned in response)*

</shipping>	
</update-customer>	

Delete Customer XML Request

XML Transaction Element	Required	Format	Description
<delete-customer>			
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
customer-vault-id	*Optional*		Specify Customer Vault ID to delete.
</delete-customer>			

Update Billing XML Request

XML Transaction Element	Required	Format	Description
<update-billing>	*Used to manage multiple billing records per Customer Vault record*		
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
customer-vault-id	Required		Specify Customer Vault ID
<billing>	**The customer's Billing Information**		
billing-id	*Conditional*		Specify Billing ID – Ex. Home. *(Required for update-customer if multiple billing-id's exist.)*
first-name	Recommended		Cardholder's first name
last-name	Recommended		Cardholder's last name
address1	Recommended		Card billing address
city	Recommended		Card billing city
state	Recommended	CC	Card billing state/province
postal	Recommended		Card billing postal code
country	Recommended	CC (ISO-3166)	Card billing country code
phone	*Optional*		Billing phone number
email	*Optional*		Billing email address
company	*Optional*		Cardholder's company
address2	*Optional*		Card billing address – line 2
fax	*Optional*		Billing fax number
account-type	*Optional (ACH)***	checking/savings	The customer's ACH account type
entity-type	*Optional (ACH)***	personal/business	The customer's ACH account entity
priority	*Optional*	Numeric, 1-255	Specify Priority *(If omitted, will be auto-generated and returned in response)*
</billing>			
</update-billing>			

Delete Billing XML Request

XML Transaction Element	Required	Format	Description
<delete-billing>	*You may include multiple billing elements in a single request, up to 255*		
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
customer-vault-id	Required		Specify Customer Vault ID
<billing>	**The customer's Billing Information**		
billing-id	Required		Specify Billing ID to delete. Ex. Home
</billing>			
</delete-billing>			

Add Shipping/Update Shipping XML Request

XML Transaction Element	Required	Format	Description
<add-shipping|update-shipping>	*You may include multiple shipping elements in a single request, up to 255*		
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
customer-vault-id	Required		Specify Customer Vault ID
<shipping>	**The customer's Shipping Information**		
shipping-id	*Conditional*		Specify Shipping ID – Ex. Home *(Required for update-shipping if multiple shipping-id's exist. Optional for add-shipping. If omitted, will be auto-generated and returned in response)*
first-name	*Optional*		Shipping first name
last-name	*Optional*		Shipping last name
address1	*Optional*		Shipping address
city	*Optional*		Shipping city
state	*Optional*	CC	Shipping state/province
postal	*Optional*		Shipping postal code
country	*Optional*	CC (ISO-3166)	Shipping country code
phone	*Optional*		Shipping phone number
email	*Optional*		Shipping email address
company	*Optional*		Shipping company
address2	*Optional*		Shipping address – line 2
fax	*Optional*		Shipping fax
priority	*Optional*	Numeric, 1-255	Specify Priority *(If omitted, will be auto-generated and returned in response)*
</shipping>			
</add-shipping|update-shipping>			

Delete Shipping XML Request

XML Transaction Element	Required	Format	Description
<delete-shipping>	*You may include multiple shipping elements in a single request, up to 255*		
api-key	Required		api-key is obtained in the Security Keys section of the Control Panel options
customer-vault-id	Required		Specify Customer Vault ID
<shipping>	**The customer's Shipping Information**		
shipping-id	Required		Specify Shipping ID – Ex. Home
</shipping>			
</delete-shipping>			

Testing Information

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 username and password 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://secure.nmi.com/api/v2/three-step

Note: In **Step Two**, transaction details should be POST'ed to the *form-url* returned in **Step One**.

Test Data

Transactions can be submitted using the following information:

Visa	4111111111111111
MasterCard	5431111111111111
DiscoverCard	6011601160116611
American Express	341111111111111
Credit Card Expiration	10/10
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 Mismatch, pass 888 in the address1 field, 77777 for zip.
- ✓ To simulate a CVV Mismatch, pass 999 in the cvv field.

Appendix 1 – 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
A	Address match only
B	Address 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
N	No address or ZIP match
C	No address or ZIP match
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 – 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 – result-code Table

Gateway Response Codes

Tier 1 Response Codes	All processing platforms will return this level of feedback
Tier 2 Response Codes	Many processing platforms will return this level of feedback
Tier 3 Response Codes	Some processing platforms will return this level of feedback

Recommended Best Pratice

Code	Description
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 Data
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
240	Call Issuer for Further Information
250	Pick Up Card
251	Lost Card
252	Stolen Card
253	Fraudulant 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