Merchant Integration Guide

Transaction DTD - Vault

v.1.1.5

Moneris SOLUTIONS

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**** PLEASE READ CAREFULLY****

You have a responsibility to protect cardholder and merchant related confidential account information. Under no circumstances should ANY confidential information be sent via email while attempting to diagnose integration or production issues. When sending sample files or code for analysis by Moneris staff, all references to valid card numbers, merchant accounts and transaction tokens should be removed and or obscured. Under no circumstances should live cardholder accounts be used in the test environment.

1. About this Documentation

The eSELECTplus payment gateway supports credit card transactions in XML format over the HTTPS protocol. This document contains detailed information on the request and response transaction requirements of eSELECTplus' XML format. When creating custom API's, these requirements must be met in order for transactions to be sent to eSELECTplus in the proper format.

This document describes the basic information for using creating a custom API for Vault transactions as well as outlining all administrative functions of the Vault. The Vault feature allows a merchant to create customer profiles, edit those profiles, and use them to process transactions without having to enter financial information each time. This document will outline all the steps required in order to fully utilize this functionality and will not describe basic transaction processing. To access basic transaction processing information without the Vault, for example Refund and Void, please refer to the main Transaction DTD Integration Guide.

2. What is the Process I will need to follow?

You will need to follow these steps.

1. Do the required development as outlined in this document
2. Test your solution in the test environment
3. Activate your store
4. Make the necessary changes to move your solution from the test environment into production as outlined in this document

Note:

It is important to note that all Merchants and Service Providers that store, process, or transmit cardholder data must comply with PCI DSS and the Card Association Compliance Programs. However, certification requirements vary by business and are contingent upon your "Merchant Level" or "Service Provider Level". Failure to comply with PCI DSS and the Card Association Compliance Programs may result in a Merchant being subject to fines, fees or assessments and/or termination of processing services. Non-compliant solutions may prevent merchants boarding with Moneris Solutions.

As a Moneris Solutions client or partner using this method of integration, your solution must demonstrate compliance to the Payment Card Industry Data Security Standard (PCI DSS) and/or the Payment Application Data Security Standard (PA DSS). These standards are designed to help the cardholders and merchants in such ways as they ensure credit card numbers are encrypted when transmitted/stored in a database and that merchants have strong access control measures.

For further information on PCI DSS and PA DSS requirements, please visit http://www.pcisecuritystandards.org.

For more information on how to get your application PCI-DSS compliant, please contact our Integration Specialists and visit http://www.eselectplus.ca/en/downloadable-content to download the PCI-DSS Implementation Guide.

3. Transaction Types and Transaction Flow

The Vault supports both financial and administrative transactions. These transactions are outlined below.

Vault Transactions (Admin)

ResAddCC – This transaction is used to create a new Credit Card profile. A unique data_key will be generated and returned to the merchant in the response. This will be the identifier for this profile which all other Vault financial transactions will use in order to associate the transaction with the saved information.

ResUpdateCC – This transaction is used to update an existing Vault profile. All fields are optional besides the data_key. If a field is submitted, it will be updated. For example, if a blank field is submitted in cust_id, the cust_id will be deleted. The ResolveData will return all the details that are associated with the profile *after* the update.

ResDelete – This transaction is used to delete an existing Vault profile. The data_key from the original profile will be required for this transaction. Within the ResolveData of the response, all details that were associated with the profile will be returned. Please note, the full card number will not be returned. *It is important to note that once a profile is deleted, the information which was saved within can no longer be retrieved.*

ResGetExpiring – Retrieve all credit cards which are about to expire, as well as the Vault data which is associated with each profile. This transaction will retrieve cards which will expire within the current calendar month or one month following. This transaction will be limited to being performed a maximum of 2 times per calendar day.

ResLookupMasked – Retrieve all Vault data that is associated with a unique data_key. The Credit Card number that will be returned will be masked.

ResLookupFull – Retrieve all Vault data that is associated with a unique data_key. Unlike ResLookupMasked, this transaction will return both the full unmasked Credit Card number as well as the masked value.

ResIscorporate – Determine if the credit card associated with an existing profile is a corporate card. The result of this transaction is returned as a Boolean value in the 'CorporateCard' response field.

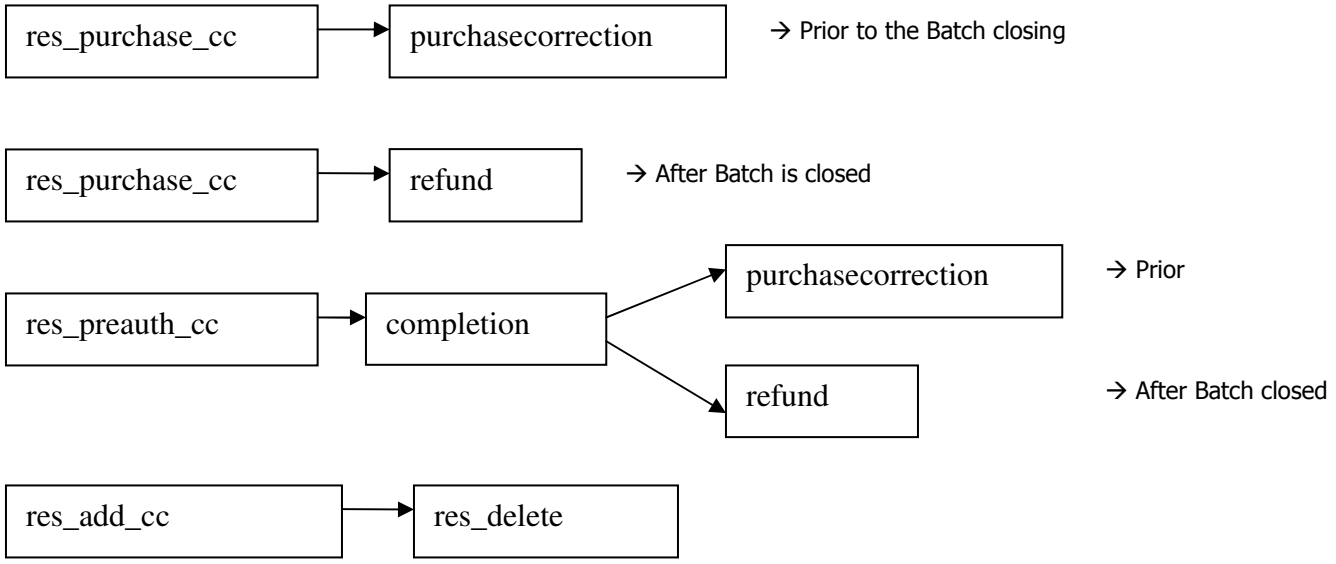
Vault Transactions (Financial)

ResPreauthCC – This is a preauthorization transaction for Credit Card profiles. This transaction will use a unique data_key which will identify a previously registered Credit Card profile. The details within the profile will be submitted to perform the preauthorization transaction.

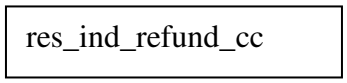
ResPurchaseCC – This is a purchase transaction for Credit Card profiles. This transaction will use a unique data_key which will identify a previously registered Credit Card profile. The details within the profile will be submitted to perform the purchase transaction.

ResIndRefundCC – This is an independent refund transaction which can be used for Credit Card profiles. This transaction will use a unique data_key which will identify a previously registered Credit Card profile. The details within the profile will be submitted to perform the independent refund transaction.

Process Flow for Vault Transactions



Transactions with no Follow-on Required



4. Vault Request DTD

<!-- The Vault CA Request DTD -->

<!-- Main Elements -->

<!ELEMENT request (store_id, api_token, (res_add_cc | res_update_cc | res_delete | res_lookup_full | res_lookup_masked | res_get_expiring | res_purchase_cc | res_preauth_cc | res_ind_refund_cc | res_iscorporatecard))>
<!ELEMENT store_id (#PCDATA)>
<!ELEMENT api_token (#PCDATA)>

<!-- Administrative transactions -->
<!ELEMENT res_add_cc (cust_id?,phone?,email?,note?,pan,expdate,crypt_type,avs_info?)>
<!ELEMENT res_update_cc (data_key,cust_id?,phone?,email?,note?,pan?,expdate?,crypt_type?,avs_info?)>
<!ELEMENT res_delete (data_key)>
<!ELEMENT res_lookup_full (data_key)>
<!ELEMENT res_lookup_masked (data_key)>
<!ELEMENT res_get_expiring (#PCDATA)>
<!ELEMENT res_iscorporatecard (data_key)>

<!-- Financial transactions -->
<!ELEMENT res_purchase_cc (data_key,order_id,cust_id?,amount,crypt_type,cust_info?,avs_info?,cvd_info?,recur?)>
<!ELEMENT res_preauth_cc (data_key,order_id,cust_id?,amount,crypt_type,cust_info?,avs_info?,cvd_info?)>
<!ELEMENT res_ind_refund_cc (data_key,order_id,cust_id?,amount,crypt_type)>

<!ELEMENT data_key (#PCDATA)>
<!ELEMENT order_id (#PCDATA)>
<!ELEMENT cust_id (#PCDATA)>
<!ELEMENT phone (#PCDATA)>
<!ELEMENT email (#PCDATA)>
<!ELEMENT note (#PCDATA)>
<!ELEMENT pan (#PCDATA)>
<!ELEMENT expdate (#PCDATA)>
<!ELEMENT crypt_type (#PCDATA)>
<!ELEMENT amount (#PCDATA)>

<!-- AVS info -->
<!ELEMENT avs_info (avs_street_number, avs_street_name, avs_zipcode)>
<!ELEMENT avs_street_number (#PCDATA)>
<!ELEMENT avs_street_name (#PCDATA)>
<!ELEMENT avs_zipcode (#PCDATA)>

<!-- CVD info -->
<!ELEMENT cvd_info (cvd_indicator, cvd_value)>
<!ELEMENT cvd_indicator (#PCDATA)>
<!ELEMENT cvd_value (#PCDATA)>

<!-- recur info -->
<!ELEMENT recur (recur_unit, start_now, start_date, num_recurs, period, recur_amount)>
<!ELEMENT recur_unit (#PCDATA)>
<!ELEMENT start_now (#PCDATA)>
<!ELEMENT start_date (#PCDATA)>
<!ELEMENT num_recurs (#PCDATA)>
<!ELEMENT period (#PCDATA)>
<!ELEMENT recur_amount (#PCDATA)>

<!-- cust info -->
<!ELEMENT cust_info (billing, shipping, email, instructions, item+)>
<!ELEMENT billing (first_name, last_name, company_name, address, city, province, postal_code, country, phone_number, fax, tax1, tax2, tax3, shipping_cost)>
<!ELEMENT shipping (first_name, last_name, company_name, address, city, province, postal_code, country, phone_number, fax, tax1, tax2, tax3, shipping_cost)>
<!ELEMENT instructions (#PCDATA)>
<!ELEMENT item (name, quantity, product_code, extended_amount)>
<!ELEMENT first_name (#PCDATA)>
<!ELEMENT last_name (#PCDATA)>
<!ELEMENT company_name (#PCDATA)>
<!ELEMENT address (#PCDATA)>
<!ELEMENT city (#PCDATA)>
<!ELEMENT province (#PCDATA)>
<!ELEMENT postal_code (#PCDATA)>
<!ELEMENT country (#PCDATA)>
<!ELEMENT phone_number (#PCDATA)>
<!ELEMENT fax (#PCDATA)>
<!ELEMENT name (#PCDATA)>
<!ELEMENT quantity (#PCDATA)>
<!ELEMENT product_code (#PCDATA)>
<!ELEMENT extended_amount (#PCDATA)>
<!ELEMENT tax1 (#PCDATA)>
<!ELEMENT tax2 (#PCDATA)>
<!ELEMENT tax3 (#PCDATA)>
<!ELEMENT shipping_cost (#PCDATA)>

5. Vault Response DTD

<!-- The Vault CA Response DTD -->

<!-- Main Elements -->

```
<!ELEMENT response (receipt+)>
<!ELEMENT receipt (DataKey, ReceiptId, ReferenceNum, ResponseCode, AuthCode, ISO, Message,
                   TransTime, TransDate, TransType, Complete,  TransAmount, CardType,
                   TransID, TimedOut, CvdResultCode, AvsResultCode, RecurSuccess,
                   CorporateCard, ResSuccess, PaymentType, ResolveData)>
<!ELEMENT DataKey (#PCDATA)>
<!ELEMENT ReceiptId (#PCDATA)>
<!ELEMENT ReferenceNum (#PCDATA)>
<!ELEMENT ResponseCode (#PCDATA)>
<!ELEMENT AuthCode (#PCDATA)>
<!ELEMENT ISO (#PCDATA)>
<!ELEMENT TransTime (#PCDATA)>
<!ELEMENT TransDate (#PCDATA)>
<!ELEMENT TransType (#PCDATA)>
<!ELEMENT Complete (#PCDATA)>
<!ELEMENT Message (#PCDATA)>
<!ELEMENT TransAmount (#PCDATA)>
<!ELEMENT CardType (#PCDATA)>
<!ELEMENT TransID (#PCDATA)>
<!ELEMENT TimedOut (#PCDATA)>
<!ELEMENT CvdResultCode (ECR)>
<!ELEMENT AvsResultCode (#PCDATA)>
<!ELEMENT RecurSuccess (#PCDATA)>
<!ELEMENT CorporateCard (#PCDATA)>
<!ELEMENT ResSuccess (#PCDATA)>
<!ELEMENT PaymentType (#PCDATA)>

<!ELEMENT ResolveData (data_key?, payment_type?, cust_id, phone, email, note,
                       masked_pan?, pan?, expdate?, crypt_type?,
                       avs_street_number?, avs_street_name?, avs_zipcode?)>

<!-- the following are only returned with res_get_expiring -->
<!ELEMENT data_key (#PCDATA)>
<!ELEMENT payment_type (#PCDATA)>

<!-- the following are always returned, even if they are blank in the profile -->
<!ELEMENT cust_id (#PCDATA)>
<!ELEMENT phone (#PCDATA)>
<!ELEMENT email (#PCDATA)>
<!ELEMENT note (#PCDATA)>

<!-- the following are depending on what is stored in the profile -->
<!ELEMENT masked_pan (#PCDATA)>
<!ELEMENT expdate (#PCDATA)>
<!ELEMENT crypt_type (#PCDATA)>
<!ELEMENT avs_street_number (#PCDATA)>
<!ELEMENT avs_street_name (#PCDATA)>
<!ELEMENT avs_zipcode (#PCDATA)>

<!-- the following are only returned with res_lookup_full -->
<!ELEMENT pan (#PCDATA)>
```

6. What Information will I get as a Response to My Transaction Request?

For each transaction you will receive a response message. For a full description of each field please refer to Appendix B. Definitions of Response Fields.

To determine whether a transaction is successful or not the field that must be checked is ResponseCode. See the table below to determine the transaction result.

Response Code	Result
0 – 49 (inclusive)	Approved
50 – 999 (inclusive)	Declined
Null	Incomplete

For a full list of response codes and the associated message please refer to http://www.eselectplus.ca/en/downloadable-content and download the Response Code document.

7. How Do I Test My Solution?

A testing environment is available for you to connect to while you are integrating your site to our payment gateway. The test environment is generally available 7x24, however since it is a test environment we cannot guarantee 100% availability. Also, please be aware that other merchants are using the test environment so you may see transactions and user IDs that you did not create. As a courtesy to others that are testing we ask that when you are processing Refunds, changing passwords and/or trying other functions that you use only the transactions/users that you created.

When using the APIs in the test environment you will need to use test store_id and api_token. These are different than your production IDs. The IDs that you can use in the test environment are in the table below.

Test IDs			
store_id	api_token	Username	Password
store1	yesguy	DemoUser	password
store2	yesguy	DemoUser	password
store3	yesguy	DemoUser	password
store5 *	yesguy	DemoUser	password

* "store5" is for testing eFraud (AVS & CVD)

When testing you may use the following test card numbers well with any future expiry date.

Test Card Numbers	
Card Plan	**Card Number**
MasterCard	5454545454545454
Visa	4242424242424242
Amex	373599005095005
Diners	36462462742008

To access the Merchant Resource Centre in the test environment go to https://esqa.moneris.com/mpg and use the logins provided in the Test ID table.

The test environment has been designed to replicate our production environment as closely as possible. One major difference is that we are unable to send test transactions onto the production authorization network and thus Issuer responses are simulated. Additionally, the requirement to emulate approval, decline and error situations dictates that we use certain transaction variables to initiate various response and error situations.

The test environment will approve and decline credit card transactions based on the penny value of the amount field. For example, a transaction made for the amount of $9.00 or $1.00 will approve since the .00 penny value is set to approve in the test environment. Transactions in the test environment should not exceed $11.00. This limit does not exist in the production environment. For a list of all current test environment responses for various penny values, please see the Test Environment Penny Response table as well as the Test Environment eFraud Response table, available at http://www.eselectplus.ca/en/downloadable-content.

NOTE These responses may change without notice. Moneris Solutions recommends you regularly refer to our download website to check for possible changes.

8. What Do I Need to Include in the Receipt?

When completing a Vault financial transactions (ResPreauth, ResPurchase, ResIndRefund), a receipt will need to be presented to the customer. Visa and MasterCard expect certain variables be returned to the cardholder and presented as a receipt when a transaction is approved. These 12 fields are listed below. A sample receipt is provided in Appendix I. Sample Receipt.

1. Amount
2. Transaction Type
3. Date and Time
4. Auth Code
5. Response Code
6. ISO Code
7. Response Message
8. Reference Number
9. Goods and Services Order
10. Merchant Name
11. Merchant URL
12. Cardholder Name
13. Return Policy (only a requirement for e-commerce transactions)

9. How Do I Activate My Store?

Once you have received your activation letter/fax go to https://www3.moneris.com/mpg/activate/ as instructed in the letter/fax. You will need to input your store ID and merchant ID then click on 'Activate'. In this process you will need to create an administrator account that you will use to log into the Merchant Resource Centre to access and administer your eSELECTplus store. You will need to use the Store ID and API Token to send transactions through the custom API.

Once you have created your first Merchant Resource Centre user, please log on to the Interface by clicking the "eSELECTplus" button. Once you have logged in please proceed to ADMIN and then STORE SETTINGS. At the top of the page you will locate your production API Token.

10. How Do I Configure My Store For Production?

Once you have completed your testing you are ready to point your store to the production host. You will need to change the path as listed below. You will also need to change the store_id to reflect your production store ID and well the api_token must be changed to your production token to reflect the token that you received during activation.

PRODUCTION	`https://www3.moneris.com:443/gateway2/servlet/MpgRequest`
DEVELOPMENT	`https://esqa.moneris.com:443/gateway2/servlet/MpgRequest`

Once you are in production you will access the Merchant Resource Centre at https://www3.moneris.com/mpg. You can use the store administrator ID you created during the activation process and then create additional users as needed.

For further information on how to use the Merchant Resource Centre please see the eSELECTplus Merchant Resource Centre User's Guide which is available at http://www.eselectplus.ca/en/downloadable-content.

11. How Do I Get Help?

If you require technical assistance while integrating your store, please contact the eSELECTplus Support Team:

For Technical Support (7/24):
Phone: 1-866-319-7450 (Technical Difficulties)

For Integration Support (M-F 8am-8pm EST):
Phone: 1-866-562-4354
Email: eselectplus@moneris.com

When sending an email support request please be sure to include your name and phone number, a clear description of the problem as well as the type of API that you are using. **For security reasons, please do not send us your API Token combined with your store ID, or your merchant number and device number in the same email.**

12. Appendix A. Definition of Request Fields

Request Fields		
Variable Name	**Size/Type**	**Description**
order_id	50 / an	Merchant defined unique transaction identifier - must be unique for every ResPurchase, ResPreAuth and ResIndRefund attempt. Characters allowed for Order ID: **a-z A-Z 0-9 _ - : . @ spaces**
data_key	50 / an	An alphanumeric identifier used in Vault transactions to uniquely identify a Vault profile. The data_key is generated by Moneris Solutions and returned to the merchant when the profile is first registered using ResAddCC.
pan	20 / variable	Credit Card Number - no spaces or dashes. Most credit card numbers today are 16 digits in length but some 13 digits are still accepted by some issuers. This field has been intentionally expanded to 20 digits in consideration for future expansion and/or potential support of private label card ranges.
expdate	4 / num	Expiry Date - format **YYMM** no spaces or slashes. PLEASE NOTE THAT THIS IS REVERSED FROM THE DATE DISPLAYED ON THE PHYSICAL CARD WHICH IS MMYY
amount	9 / decimal	Amount of the transaction. This must contain 3 digits with two penny values. The minimum value passed can be 0.01 and the maximum 9999999.99
crypt_type	1 / an	E-Commerce Indicator: 1 - Mail Order / Telephone Order - Single 2 - Mail Order / Telephone Order - Recurring 3 - Mail Order / Telephone Order - Instalment 4 - Mail Order / Telephone Order - Unknown Classification 7 - SSL enabled merchant 8 - Non Secure Transaction (Web or Email Based) 9 - SET non - Authenticated transaction
cust_id	50 / an	This is an optional field that can be either registered in a profile or sent as part of a ResPurchase, ResPreauth or ResIndRefund request. It is searchable from the Moneris Merchant Resource Centre. It is commonly used for policy number, membership number, student ID or invoice number.
phone	30 / an	Phone number of the customer. This is an optional field which can be sent in when creating or updating a Vault profile.
email	30 / an	Email of the customer. This is an optional field which can be sent in when creating or updating a Vault profile.
note	30 / an	This field can be used for supplementary information which is to be sent in with the transaction. This is an optional field which can be sent in when creating or updating a Vault profile.
avs_street_number avs_street_name	19 / an	Street Number & Street Name (max – 19 digit limit for street number and street name combined). This must match the address that the issuing bank has on file.
avs_zipcode	9 / an	Zip or Postal Code – This must match what the issuing bank has on file.
cvd_value	4 / num	Credit Card CVD value – this number accommodates either 3 or 4 digit CVD values. Refer to Appendix F. Card Validation Digits (CVD)for further details.
cvd_indicator	1 / num	CVD presence indicator (1 digit – refer to Appendix F. Card Validation Digits (CVD) for values)

NOTE The order_id allows the following characters: **a-z A-Z 0-9 _ - : . @ spaces**

All other request fields allow the following characters: **a-z A-Z 0-9 _ - : . @ $ =** /

13. Appendix B. Definitions of Response Fields

Response Fields		
Variable Name	**Size/Type**	**Description**
ReceiptId	50 / an	order_id specified in request
ReferenceNum	18 / num	The reference number is an 18 character string that references the terminal used to process the transaction as well as the shift, batch and sequence number, This data is typically used to reference transactions on the host systems and must be displayed on any receipt presented to the customer. This information should be stored by the merchant. The following illustrates the breakdown of this field where "660123450010690030" is the reference number returned in the message, "66012345" is the terminal id, "001" is the shift number, "069" is the batch number and "003" is the transaction number within the batch. Moneris Host Transaction identifier.
ReponseCode	3 / num	Transaction Response Code Financial Transaction Responses (i.e. ResPurchase) < 50 Transaction approved >= 50 Transaction declined NULL Transaction was not sent for authorization * If you would like further details on the response codes that are returned please see the Response Codes document available at http://www.eselectplus.ca/en/downloadable-content Vault Admin Responses (i.e. ResAdd or ResDelete) 001 Successfully registered CC details. Successfully updated CC details. Successfully deleted CC details. Successfully located CC details. Successfully located # expiring cards. (NOTE: # = the number of cards located) 983 Can not find previous 986 Incomplete: timed out 987 Invalid transaction 988 Can not find expiring cards Null Error: Malformed XML
AuthCode	8 / an	Authorization code returned from the issuing institution
TransTime	##:##:##	Processing host time stamp
TransDate	yyyy-mm-dd	Processing host date stamp
TransType	an	Type of transaction that was performed
Complete	true/false	Transaction was sent to authorization host and a response was received
Message	100 / an	Response description returned from issuing institution.
TransAmount		
CardType	2 / alpha	Credit Card Type
Txn_number	20 / an	Gateway Transaction identifier

TimedOut	true/false	Transaction failed due to a process timing out
Ticket	n/a	reserved
RecurSuccess	true/false	Indicates whether the recurring billing transaction successfully registered.
AvsResultCode	1/alpha	Indicates the address verification result. Refer to Appendix G. Address Verification Service (AVS)
CvdResultCode	2/an	Indicates the CVD validation result. Refer to Appendix F. Card Validation Digits (CVD).
ResSuccess	true/false	Indicates if Vault transaction was successful.
PaymentType	cc	Indicates the payment type associated with a Vault profile.
DataKey	50 / an	The data_key specified in the request. If processing a ResAdd transaction, then this will indicate the newly generated unique data_key associated with the new profile.
CorporateCard	true/false	Indicates whether the card associated with the vault profile is a corporate card or not.
ResolveData		The fields returned within ResolveData will coincide with the registered profile details. Please refer to the examples. Fields found in ResolveData are: data_key, payment_type, cust_id, phone, email, note, masked_pan, pan, expdate, crypt_type, avs_street_number, avs_street_name, avs_zipcode.

14. Appendix C. CustInfo Fields

Field Definitions		
Field Name	**Size/Type**	**Description**
Billing and Shipping Information		
NOTE: The fields for billing and shipping information are identical.		
first_name	30 / an	
last_name	30 / an	
company_name	30 / an	
address	30 / an	
city	30 / an	
province	30 / an	
postal_code	30 / an	
country	30 / an	
phone	30 / an	
fax	30 / an	
tax1	30 / an	
tax2	30 / an	
tax3	30 / an	
shipping_cost	30 / an	
Item Information		
NOTE: You may send multiple items		
item_description	30 / an	
item_quantity	10 / num	You must send a quanitity > 0 or the item will not be added to the item list (ie. minimum 1, maximum 9999999999)
item_product_code	30 / an	
item_extended_amount	9 /decimal	This must contain 3 digits with two penny values. The minimum value passed can be 0.01 and the maximum 9999999.99
Extra Details		
email	50 / an	
instructions	50 / an	

	If you send characters that are not included in the allowed list, these extra transaction details may not be stored.
NOTE	All fields are alphanumeric and allow the following characters: **a-z A-Z 0-9 _ - : . @ $ =** /
	Also, the data sent in Billing and Shipping Address fields will not be used for any address verification. Please refer to the section 0 for further details about Address Verification Service (AVS).

15. Appendix D. Recur Fields

Recur Request Fields		
Variable Name	**Size/Type**	**Description**
recur_unit	day, week, month	The unit that you wish to use as a basis for the Interval. This can be set as day, week or month. Then using the "period" field you can configure how many days, weeks, months between billing cycles.
start_date	YYYY/MM/DD	This is the date on which the first charge will be billed. The value must be in the future. It cannot be the day on which the transaction is being sent. If the transaction is to be billed immediately the start_now feature must be set to true and the start_date should be set at the desired interval after today.
num_recurs	1 – 99 / num	The number of times to recur the transaction. Moneris advises not set the duration longer than 5 - 10 years in the future.
start_now	true / false	When a charge is to be made against the card immediately start_now should be set to true. If the billing is to start in the future then this value is to be set to false. When start_now is set to true the amount to be billed immediately may differ from the recur_amount billed on a regular basis thereafter.
period	0 – 999 / num	This is the number of recur_units you wish to pass between billing cycles. Example : period = 3, recur_unit=month -> Card will be billed every 3 months. period = 4, recur_unit=week -> Card will be billed every 4 weeks. period = 45, recur_unit=day -> Card will be billed every 45 days. Please note that the total duration of the recurring billing transaction should not exceed 5-10 years in the future.
recur_amount	9 / decimal	Amount of the recurring transaction. This must contain 3 digits with two penny values. The minimum value passed can be 0.01 and the maximum 9999999.99. This is the amount that will be billed on the start_date and every interval thereafter.
amount	9 / decimal	When start_now is set to true the amount field in the transaction array becomes the amount to be billed immediately. When start_now is set to false the amount field in the transaction array should be the same as the recur_amount field.

Recur Request Examples	
Recur Request Example	**Description**
recur_unit='month', start_date='2006/07/02', num_recurs='12', start_now='false', period = '2', recur_amount= '30.00'	In the example to the left the first transaction will occur in the future on July 2nd 2006. It will bill $30.00 every 2 months on the 2nd of each month. The card will be billed a total of 12 times.
recur_unit='week', start_date='2006/07/02', num_recurs='26', start_now='true', period = '2', recur_amount= '30.00' amount='15.00'	In the example on the left the first charge will be billed immediately. The initial charge will be for $15.00. Then starting on July 2nd 2006 the credit card will be billed $30.00 every 2 weeks for 26 recurring charges. The card will be billed a total of 27 times. (1 x $15.00 (immediate) and 26 x $30.00 (recurring))

NOTE When completing the recurring billing portion please keep in mind that to prevent the shifting of recur bill dates, avoid setting the start_date for anything past the 28th of any given month. For example, all billing dates set for the 31st of May will shift and bill on the 30th in June and will then bill the cardholder on the 30th for every subsequent month.

16. Appendix E. Error Messages

Global Error Receipt – You are not connecting to our servers. This can be caused by a firewall or your internet connection.

Response Code = NULL – The response code can be returned as null for a variety of reasons. A majority of the time the explanation is contained within the Message field. When a 'NULL' response is returned it can indicate that the Issuer, the credit card host, or the gateway is unavailable, either because they are offline or you are unable to connect to the internet. A 'NULL' can also be returned when a transaction message is improperly formatted.

Below are error messages that are returned in the Message field of the response.

Message: XML Parse Error in Request: <System specific detail>
Cause: For some reason an improper XML document was sent from the API to the servlet

Message: XML Parse Error in Response: <System specific detail>
Cause: For some reason an improper XML document was sent back from the servlet

Message: Transaction Not Completed Timed Out
Cause: Transaction times out before the host responds to the gateway

Message: Request was not allowed at this time
Cause: The host is disconnected

Message: Could not establish connection with the gateway:
<System specific detail>
Cause: Gateway is not accepting transactions or server does not have proper access to internet

Message: Input/Output Error: <System specific detail>
Cause: Servlet is not running

Message: The transaction was not sent to the host because of a duplicate order id
Cause: Tried to use an order id which was already in use

Message: The transaction was not sent to the host because of a duplicate order id
Cause: Expiry Date was sent in the wrong format

Vault Specific Responses

Message: Can not find previous
Cause: data_key provided was not found in our records or profile is no longer active.

Message: Invalid Transaction
Cause: -Transaction can not be performed due to improper data being sent in.
-Mandatory field is missing or an invalid SEC code is sent in.

Message: Malformed XML
Cause: Parse error.

Message: Incomplete
Cause: -Timed out.
-Can not find expiring cards.

17. Appendix F. Card Validation Digits (CVD)

The Card Validation Digits (CVD) value refers to the numbers appearing on the back of the credit card which are not imprinted on the front. The exception to this is with American Express cards where this value is indeed printed on the front. The cvd_info parameter is broken down into two elements. The first element is the CVD Value itself.

The second element is the CVD Indicator. This value indicates the possible scenarios when collecting CVD information. This is a 1 digit value which can have any of the following values:

CVD INDICATOR	
VALUE	**DEFINITION**
0	CVD value is deliberately bypassed or is not provided by the merchant.
1	CVD value is present.
2	CVD value is on the card, but is illegible.
9	Cardholder states that the card has no CVD imprint.

CVD Response codes:

The CVD response is an alphanumeric 2 byte variable. The first byte is the numeric CVD indicator sent in the request; the second byte would be the response code. The following is a list of all possible responses once a CVD value has been passed in.

CVD RESPONSE CODES	
RESULT VALUE	**DEFINITION**
M	Match
N	No Match
P	Not Processed
S	CVD should be on the card, but Merchant has indicated that CVD is not present
U	Issuer is not a CVD participant
Other	Invalid Response Code

NOTE

For American Express, a CVD Response code will not be returned; the response will be either Approved or Declined.

To have CVD for American Express added to your profile, please contact AmEx directly.

***For additional information on how to handle these responses, please refer to Appendix H. Additional Information for CVD and AVS**

18. Appendix G. Address Verification Service (AVS)

The Address Verification Service (AVS) value refers to the cardholder's street number, street name and zip/postal code as it would appear on their statement. avs_info is broken down into three elements:

Element	Type	Length
Street Number	Numeric	19 characters combined.
Street Name	Alphanumeric	
Zip/Postal Code	Alphanumeric	9 characters

The following table outlines the possible responses when passing in AVS information.

AVS RESPONSE CODES		
VALUE	**VISA**	**MASTERCARD/DISCOVER**
A	Address matches, ZIP does not. Acquirer rights not implied.	Address matches, postal code does not.
B	Street addresses match. Postal code not verified due to incompatible formats. (Acquirer sent both street address and postal code.)	N/A
C	Street addresses not verified due to incompatible formats. (Acquirer sent both street address and postal code.)	N/A
D	Street addresses and postal codes match.	N/A
F	Street address and postal code match. Applies to U.K. only	N/A
G	Address information not verified for international transaction. Issuer is not an AVS participant, or AVS data was present in the request but issuer did not return an AVS result, or Visa performs AVS on behalf of the issuer and there was no address record on file for this account.	N/A
I	Address information not verified.	N/A
K	N/A	N/A
L	N/A	N/A
M	Street address and postal code match.	N/A
N	No match. Acquirer sent postal/ZIP code only, or street address only, or both postal code and street address. Also used when acquirer requests AVS but sends no AVS data.	Neither address nor postal code matches.
O	N/A	N/A
P	Postal code match. Acquirer sent both postal code and street address but street address not verified due to incompatible formats.	N/A
R	Retry: system unavailable or timed out. Issuer ordinarily performs AVS but was unavailable. The code R is used by Visa when issuers are unavailable. Issuers should refrain from using this code.	Retry; system unable to process.
S	N/A	AVS currently not supported.
U	Address not verified for domestic transaction. Issuer is not an AVS participant, or AVS data was present in the request but issuer did not return an AVS result, or Visa performs AVS on behalf of the issuer and there was no address record on file for this account.	No data from Issuer/Authorization system.
W	Not applicable. If present, replaced with 'Z' by Visa. Available for U.S. issuers only.	For U.S. Addresses, nine-digit postal code matches, address does not; for address outside the U.S. postal code matches, address does not.
X	N/A	For U.S. addresses, nine-digit postal code and addresses matches; for addresses outside the U.S., postal code and address match.
Y	Street address and postal code match.	For U.S. addresses, five-digit postal code and address matches.
Z	Postal/Zip matches; street address does not match or street address not included in request.	For U.S. addresses, five digit postal code matches, address does not.

19. Appendix H. Additional Information for CVD and AVS

The responses that are received from CVD and AVS verifications are intended to provide added security and fraud prevention, but the response itself will not affect the completion of a transaction. Upon receiving a response, the choice to proceed with a transaction is left entirely to the merchant.

Please note that all responses coming back from these verification methods are not direct indicators of whether a merchant should complete any particular transaction. The responses should not be used as a strict guideline of which transaction will approve or decline.

NOTE

Please note that CVD verification is only applicable towards Visa, MasterCard and AmEx transactions.

Also, please note that AVS verification is only applicable towards Visa, MasterCard, and Discover transactions. This verification method is not applicable towards AmEx or any other card type.

20. Appendix I. Sample Receipt

Your order has been Approved

Print this receipt for your records

QA Merchant #1
3250 Bloor St West
Toronto Ontario
M8X2X9

1 800 987 1234
www.moneris.com

Transaction Type: Purchase

Order ID:	mhp3495435587		
Date/Time:	2002-10-18 11:27:48	Approval Code:	030012
Sequence Number:	660021630012090020	Response / ISO Code:	028/04
Amount:	12.00	APPROVED * =	

Item	Description	Qty	Amount	Subtotal
cir-001	Med Circle	1	2.00	2.00
tri-002	Big triangle	1	1.00	1.00
squ-003	small square	2	1.00	3.00
			Shipping:	4.00
			GST :	1.00
			PST :	1.00
			Total:	12.00 CAD

Bill To:

Test Customer

123 Main St
Springfield
ON
Canada
M1M 1M1
tel: 416 555 1111
fax: 416 555 1111

Ship To:

Test

1 King St
Bakersville
ON
Canda
M1M 1M1
tel: 416 555 2222
fax: 416 555 2222

Special Instructions

Knock on Back door when delivering
E-Mail Address:eselectsupport@moneris.com

Refund Policy

30 Days - Must be unopened, 10% restocking charge.