



BE PAYMENT READY

Java - Moneris Gateway API - Integration Guide

Version: 1.2.4

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Security and Compliance

Your solution may be required to demonstrate compliance with the card associations' PCI/CISP/PABP requirements. For more information on how to make your application PCI-DSS compliant, contact the Moneris Sales Center and visit <https://developer.moneris.com> to download the PCI_DSS Implementation Guide.

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".

The card association has some data security standards that define specific requirements for all organizations that store, process, or transmit cardholder data. As a Moneris 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.

Non-compliant solutions may prevent merchant boarding with Moneris. A non-compliant merchant can also be subject to fines, fees, assessments or termination of processing services.

For further information on PCI DSS & PA DSS requirements, visit <http://www.pcisecuritystandards.org>.

Confidentiality

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.

Changes in v1.2.4

Changes limits in Amount, Transaction Amount, Completion Amount request variables to reflect 10 decimals.

Previous version changes

Changes in v1.2.3

This version adds information about passing Offlinx™ data for the Card Match pixel tag via Unified API transactions.

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1 About This Documentation

1.1 Purpose

This document describes the transaction information for using the Java API for sending credit card transactions. In particular, it describes the format for sending transactions and the corresponding responses you will receive.

This document contains information about the following features:

- Basic transactions
- MPI – Verified by Visa, MasterCard Secure Code and American Express SafeKey
- INTERAC® Online Payment
- Vault
- MSR (Magnetic Swipe Reader) and Encrypted MSR
- Apple Pay and Android Pay In-App
- Transaction Risk Management Tool
- Convenience fee
- Visa Checkout
- MasterCard MasterPass
- Level 2/3 Transactions

Getting Help

Moneris has help for you at every stage of the integration process.

| Getting Started | During Development | Production |
|--|--|--|
| Contact our Client Integration Specialists: clientintegrations@moneris.com Hours: Monday – Friday, 8:30am to 8 pm ET | If you are already working with an integration specialist and need technical development assistance, contact our eProducts Technical Consultants: 1-866-319-7450 eproducts@moneris.com Hours: 8am to 8pm ET | If your application is already live and you need production support, contact Moneris Customer Service: onlinepayments@moneris.com 1-866-319-7450 Available 24/7 |

For additional support resources, you can also make use of our community forums at <http://community.moneris.com/product-forums/>

1.2 Who Is This Guide For?

The Moneris Gateway API - Integration Guide is intended for developers integrating with the Moneris Gateway.

This guide assumes that the system you are trying to integrate meets the requirements outlined below and that you have some familiarity with the Java programming language.

System Requirements

- `[[[Undefined variable GlobalVariables.ProgrammingLanguageMinimumRequired]]]` or above
- Port 443 open for bi-directional communication
- Web server with a SSL certificate

2 Basic Transaction Set

- 2.1 Basic Transaction Type Definitions
- 2.2 Purchase
- 2.3 Pre-Authorization
- 2.4 Pre-Authorization Completion
- 2.5 Re-Authorization
- 2.6 Force Post
- 2.7 Purchase Correction
- 2.8 Refund
- 2.9 Independent Refund
- 2.10 Card Verification with AVS and CVD
- 2.11 Batch Close
- 2.12 Open Totals

2.1 Basic Transaction Type Definitions

The following is a list of basic transactions that are supported by the Moneris Java API.

Purchase

Verifies funds on the customer's card, removes the funds and prepares them for deposit into the merchant's account.

Pre-Authorization

Verifies and locks funds on the customer's credit card. The funds are locked for a specified amount of time based on the card issuer.

To retrieve the funds that have been locked by a Pre-Authorization transaction so that they may be settled in the merchant's account, a Completion transaction must be performed. A Pre-Authorization transaction may only be "completed" once.

Completion

Retrieves funds that have been locked (by either a Pre-Authorization or a Re-Authorization transaction), and prepares them for settlement into the merchant's account.

Re-Authorization

If a Pre-Authorization transaction has already taken place, and not all the locked funds were released by a Completion transaction, a Re-Authorization allows you to lock the remaining funds so that they can be released by another Completion transaction in the future.

Re-Authorization is necessary because funds that have been locked by a Pre-Authorization transaction can only be released by a Completion transaction **one** time. If the Completion amount is less than the Pre-Authorization amount, the remaining money cannot be "completed".

Force Post

Retrieves the locked funds and prepares them for settlement into the merchant's account.

This is used when a merchant obtains the authorization number directly from the issuer by a third-party authorization method (such as by phone).

Purchase Correction

Restores the full amount of a previous Purchase, Completion or Force Post transaction to the cardholder's card, and removes any record of it from the cardholder's statement.

This transaction is sometimes referred to as "void".

This transaction can be used against a Purchase or Completion transaction that occurred same day provided that the batch containing the original transaction remains open. When using the automated closing feature, Batch Close occurs daily between 10 and 11pm Eastern Time.

Refund

Restores all or part of the funds from a Purchase, Completion or Force Post transaction to the cardholder's card. Unlike a Purchase Correction, there is a record of both the initial charge and the refund on the cardholder's statement.

Independent Refund

Credits a specified amount to the cardholder's credit card. The credit card number and expiry date are mandatory.

It is not necessary for the transaction that you are refunding to have been processed via the Moneris Gateway

Card Verification

Verifies the validity of the credit card, expiry date and any additional details (such as the Card Verification Digits or Address Verification details). It does not verify the available amount or lock any funds on the credit card.

Recur Update

Alters characteristics of a previously registered Recurring Billing transaction.

This transaction is commonly used to update a customer's credit card information and the number of recurs to the account.

Recurring billing is explained in more detail in Section 1 (page 1). The Recur Update transaction is specifically discussed in Section 1.2 (page 1).

Batch Close

Takes the funds from all Purchase, Completion, Refund and Force Post transactions so that they will be deposited or debited the following business day.

For funds to be deposited the following business day, the batch must close before 11pm Eastern Time.

Open Totals

Returns the details about the currently open batch.

This transaction is similar to the Batch Close. The difference is that it does not close the batch for settlement.

2.2 Purchase

Purchase transaction object definition

```
Purchase purchase = new Purchase();
```

HttpPostRequest object for Purchase transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(purchase);
```

Purchase transaction values

Table 1: Purchase transaction object mandatory values

| Value | Type | Limits | Set method |
|----------------------|--------|---|--|
| Order ID | String | 50-character alphanumeric | <code>purchase.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>purchase.SetAmount(amount);</code> |
| Credit card number | String | 20-character alphanumeric | <code>purchase.SetPan(pan);</code> |
| Expiry date | String | 4-character alphanumeric (YYMM format) | <code>purchase.SetExpdate(expiry_date);</code> |
| E-commerce indicator | String | 1-character alphanumeric | <code>purchase.SetCryptType(crypt);</code> |

Table 2: Purchase transaction object optional values

| Value | Type | Limits | Set method |
|---|---------|---------------------------|--|
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |
| Card Match ID NOTE: Applies to Off-linx™ only; must be unique value for each transaction | String | 50-character alphanumeric | <code>purchase.SetCmId(transaction_id);</code> |
| Customer information | Object | N/A | <code>purchase.SetCustInfo(customer);</code> |
| AVS | Object | N/A | <code>purchase.SetAvsInfo(avsCheck);</code> |
| CVD NOTE: When storing credentials on the initial transaction, the CVD object must be sent; for subsequent transactions using stored credentials, CVD can be sent with cardholder-initiated transactions only— merchants must not store CVD information. | Object | N/A | <code>purchase.SetCvdInfo(cvdCheck);</code> |
| Convenience fee NOTE: This variable does not apply to Credential on File transactions. | Object | N/A | <code>purchase.SetConvFeeInfo(convFeeInfo);</code> |
| Recurring billing | Object | N/A | <code>purchase.SetRecur(recurring_cycle);</code> |

Table 2: Purchase transaction object optional values

| Value | Type | Limits | Set method |
|---|--------|----------------------------|---|
| Dynamic descriptor | String | 20-character alpha-numeric | <code>purchase.SetDynamicDescriptor(dynamic_descriptor);</code> |
| Wallet indicator ¹ <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: For basic Purchase and Preauthorization, the wallet indicator applies to Visa Checkout and MasterCard MasterPass only. For more, see Appendix A Definitions of Request Fields</p> </div> | String | 3-character alpha-numeric | <code>purchase.SetWalletIndicator(wallet_indicator);</code> |
| Credential on File Info cof <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. The Credential on File Info object has its own request variables, listed in blue in the table below, "Credential on File Object Request Variables".</p> </div> | Object | N/A | <code>purchase.SetCofInfo(cof);</code> |

¹Available to Canadian integrations only.

Credential on File Transaction Object Request Fields

| Value | Type | Limits | Set Method |
|--|--------|---|--|
| <p>Issuer ID</p> <p>NOTE: This variable is required for all merchant-initiated transactions following the first one; upon sending the first transaction, the Issuer ID value is received in the transaction response and then used in subsequent transaction requests.</p> | String | <p>15-character alphanumeric</p> <p>variable length</p> | <p>cof.SetIssuerId("VALUE_FOR_ISSUER_ID");</p> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |
| <p>Payment Indicator</p> | String | <p>1-character alphabetic</p> | <p>cof.SetPaymentIndicator("PAYMENT_INDICATOR_VALUE");</p> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |
| <p>Payment Information</p> | String | <p>1-character numeric</p> | <p>cof.SetPaymentInformation("PAYMENT_INFO_VALUE");</p> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |

Sample Purchase

```

using System;
using System.Collections.Generic;
using System.Text;
using Moneris;
namespace CanadaPurchaseConsoleTest
{
    class CanadaPurchaseTest
    {
        public static void Main(string[] args)
        {
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string store_id = "store5";
            string api_token = "yesguy";
        }
    }
}
    
```

Sample Purchase

```

string amount = "5.00";
string pan = "4242424242424242";
string expdate = "1901"; //YYMM format
string crypt = "7";
string processing_country_code = "CA";
bool status_check = false;
CofInfo cof = new CofInfo();
cof.SetPaymentIndicator("U");
cof.SetPaymentInformation("2");
cof.SetIssuerId("12345678901234");
Purchase purchase = new Purchase();
purchase.SetOrderId(order_id);
purchase.SetAmount(amount);
purchase.SetPan(pan);
purchase.SetExpDate("2011");
purchase.SetCryptType(crypt);
purchase.SetDynamicDescriptor("2134565");
//purchase.SetWalletIndicator(""); //Refer to documentation for details
purchase.SetCofInfo(cof);

//Optional - Set for Multi-Currency only
//setAmount must be 0.00 when using multi-currency
//purchase.SetMCPAmount("500"); //penny value amount 1.25 = 125
//purchase.SetMCPCurrencyCode("840"); //ISO-4217 country currency number
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(purchase);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("IsVisaDebit = " + receipt.GetIsVisaDebit());
Console.WriteLine("HostId = " + receipt.GetHostId());
Console.WriteLine("MCPAmount = " + receipt.GetMCPAmount());
Console.WriteLine("MCPCurrencyCode = " + receipt.GetMCPCurrencyCode());
Console.WriteLine("IssuerId = " + receipt.GetIssuerId());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}

```

| Sample Purchase |
|------------------|
| } } } } |

2.3 Pre-Authorization

Things to Consider:

- If a Pre-Authorization transaction is not followed by a Completion transaction, it must be reversed via a Completion transaction for 0.00. See "Pre-Authorization Completion" on page 25
- A Pre-Authorization transaction may only be "completed" once . If the Completion transaction is for less than the original amount, a Re-Authorization transaction is required to collect the remaining funds by another Completion transaction. See Re-Authorization (page 28).
- For a process flow, see "Process Flow for Basic Pre-Auth, Re-Auth and Completion Transactions" on page 463

Pre-Authorization transaction object definition

```
PreAuth preauth = new PreAuth();
```

HttpPostRequest object for Pre-Authorization transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();  
mpgReq.SetTransaction(preauth);
```

Pre-Authorization transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 3: Pre-Authorization object required values

| Value | Type | Limits | Set method |
|----------------------|--------|---|---|
| Order ID | String | 50-character alpha-numeric | <code>preauth.SetOrderId (order_id) ;</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>preauth.SetAmount (amount) ;</code> |
| Credit card number | String | 20-character numeric | <code>preauth.SetPan (pan) ;</code> |
| Expiry date | String | 4-character numeric | <code>preauth.SetExpdate (expiry_date) ;</code> |
| E-Commerce indicator | String | 1-character alpha-numeric | <code>preauth.SetCryptType (crypt) ;</code> |

Table 4: Pre-Authorization object optional values

| Value | Type | Limits | Set method |
|--|---------|----------------------------|--|
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck (status_check) ;</code> |
| Dynamic descriptor | String | 20-character alpha-numeric | <code>preauth.SetDynamicDescriptor (dynamic_descriptor) ;</code> |
| Card Match ID NOTE: Applies to Off-linx™ only; must be unique value for each transaction | String | 50-character alpha-numeric | <code>preauth.SetCmId (transaction_id) ;</code> |
| Customer information | Object | N/A | <code>preauth.SetCustInfo (customer) ;</code> |
| AVS | Object | N/A | <code>preauth.SetAvsInfo (avsCheck) ;</code> |

| Value | Type | Limits | Set method |
|---|--------|---------------------------|--|
| <p>CVD</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: When storing credentials on the initial transaction, the CVD object must be sent; for subsequent transactions using stored credentials, CVD can be sent with cardholder-initiated transactions only—merchants must not store CVD information.</p> </div> | Object | N/A | <code>preauth.SetCvdInfo(cvdCheck);</code> |
| Customer ID | String | 50-character alphanumeric | <code>preauth.SetCustId(cust_id);</code> |
| <p>Wallet indicator¹</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: For basic Purchase and Preauthorization, the wallet indicator applies to Visa Checkout and MasterCard MasterPass only. For more, see Appendix A Definitions of Request Fields</p> </div> | String | 3-character alphanumeric | <code>preauth.SetWalletIndicator(wallet_indicator);</code> |
| <p>Credential on File Info</p> <p>cof</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. The Credential on File Info object has its own request variables, listed in blue in the table below, "Credential on File Object Request Variables".</p> </div> | Object | N/A | <code>cof.SetCofInfo(cof);</code> |

¹Available to Canadian integrations only.

Credential on File Transaction Object Request Fields

| Value | Type | Limits | Set Method |
|---|--------|--|--|
| Issuer ID NOTE: This variable is required for all merchant-initiated transactions following the first one; upon sending the first transaction, the Issuer ID value is received in the transaction response and then used in subsequent transaction requests. | String | 15-character alphanumeric variable length | <code>cof.SetIssuerId("VALUE_FOR_ISSUER_ID");</code> NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File |
| Payment Indicator | String | 1-character alphabetic | <code>cof.SetPaymentIndicator("PAYMENT_INDICATOR_VALUE");</code> NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File |
| Payment Information | String | 1-character numeric | <code>cof.SetPaymentInformation("PAYMENT_INFO_VALUE");</code> NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File |

Sample Pre-Authorization

```
using System;
using System.Collections.Generic;
using System.Text;
using Moneris;
namespace CanadaPurchaseConsoleTest
{
    class CanadaPreauthTest
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
        }
    }
}
```

Sample Pre-Authorization

```
string amount = "5.00";
string pan = "4242424242424242";
string expdate = "0412";
string crypt = "7";
string processing_country_code = "CA";
bool status_check = false;
CofInfo cof = new CofInfo();
cof.SetPaymentIndicator("U");
cof.SetPaymentInformation("2");
cof.SetIssuerId("12345678901234");
PreAuth preauth = new PreAuth();
preauth.SetOrderId(order_id);
preauth.SetAmount(amount);
preauth.SetPan(pan);
preauth.SetExpDate(expdate);
preauth.SetCryptType(crypt);
//preauth.SetWalletIndicator(""); //Refer to documentation for details
preauth.SetCofInfo(cof);
//Optional - Set for Multi-Currency only
//setAmount must be 0.00 when using multi-currency
//preauth.SetMCPAmount("500"); //penny value amount 1.25 = 125
//preauth.SetMCPCurrencyCode("840"); //ISO-4217 country currency number
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(preauth);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("CardType = " + receipt.GetCardType());
    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
    Console.WriteLine("TransType = " + receipt.GetTransType());
    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("ISO = " + receipt.GetISO());
    Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Ticket = " + receipt.GetTicket());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("IsVisaDebit = " + receipt.GetIsVisaDebit());
    //Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
    //Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
    Console.WriteLine("MCPAmount = " + receipt.GetMCPAmount());
    Console.WriteLine("MCPCurrencyCode = " + receipt.GetMCPCurrencyCode());
    Console.WriteLine("IssuerId = " + receipt.GetIssuerId());
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
```

Sample Pre-Authorization

```

}
}
}
using System;
using System.Collections.Generic;
using System.Text;
using Moneris;
namespace CanadaPurchaseConsoleTest
{
class CanadaPreauthTest
{
public static void Main(string[] args)
{
string store_id = "store5";
string api_token = "yesguy";
string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
string amount = "5.00";
string pan = "4242424242424242";
string expdate = "0412";
string crypt = "7";
string processing_country_code = "CA";
bool status_check = false;
CofInfo cof = new CofInfo();
cof.SetPaymentIndicator("U");
cof.SetPaymentInformation("2");
cof.SetIssuerId("168451306048014");
PreAuth preauth = new PreAuth();
preauth.SetOrderId(order_id);
preauth.SetAmount(amount);
preauth.SetPan(pan);
preauth.SetExpDate(expdate);
preauth.SetCryptType(crypt);
//preauth.SetWalletIndicator(""); //Refer to documentation for details
preauth.SetCofInfo(cof);
//Optional - Set for Multi-Currency only
//setAmount must be 0.00 when using multi-currency
//preauth.SetMCPAmount("500"); //penny value amount 1.25 = 125
//preauth.SetMPCurrencyCode("840"); //ISO-4217 country currency number
//preauth.SetCmId("8nAK8712sGaAkl56"); //set only for usage with Offlinx - Unique max 50
alphanumeric characters transaction id generated by merchant
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(preauth);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
}
}
}
}

```


Sample Pre-Authorization

```
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("IsVisaDebit = " + receipt.GetIsVisaDebit());
//Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
//Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
Console.WriteLine("MCPAmount = " + receipt.GetMCPAmount());
Console.WriteLine("MCPCurrencyCode = " + receipt.GetMCPCurrencyCode());
Console.WriteLine("IssuerId = " + receipt.GetIssuerId());
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
```

2.4 Pre-Authorization Completion

Things to Consider:

- Completion is also known as "capture" or "pre-authorization completion".
- A Pre-Authorization or Re-Authorization transaction can only be completed once. Refer to the Re-Authorization transaction (page 28 for more information on how to perform multiple Completion transactions.
- To reverse the full amount of a Pre-Authorization transaction, use the Completion transaction with the amount set to 0.00.
- To process this transaction, you need the order ID and transaction number from the original Pre-Authorization transaction.
- For a process flow, see "Process Flow for Basic Pre-Auth, Re-Auth and Completion Transactions" on page 463

Completion transaction object

```
Completion completion = new Completion();
```

HttpRequest object for Completion transaction

```
HttpRequest mpgReq = new HttpRequest();
mpgReq.SetTransaction(completion);
```

Completion transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 5: Completion transaction object mandatory values

| Value | Type | Limits | Set method |
|----------------------|--------|---|---|
| Order ID | String | 50-character alphanumeric | <code>completion.SetOrderId(order_id);</code> |
| Completion Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>completion.SetCompAmount(comp_amount);</code> |
| Transaction number | String | 255-character alphanumeric | <code>completion.SetTxnNumber(txn_number);</code> |
| E-Commerce indicator | String | 1-character alphanumeric | <code>completion.SetCryptType(crypt);</code> |

Table 6: Completion transaction optional values

| Value | Type | Limits | Set method |
|---------------------------------|---------|---------------------------|---|
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |
| Customer ID | String | 50-character alphanumeric | <code>completion.SetCustId(cust_id);</code> |
| Dynamic descriptor | String | 20-character alphanumeric | <code>completion.SetDynamicDescriptor(dynamic_descriptor);</code> |
| Shipping indicator ¹ | String | 1-character alphanumeric | <code>completion.SetShipIndicator(ship_indicator);</code> |

¹Available to Canadian integrations only.

Sample Basic Pre-Authorization Completion

```
namespace Moneris
{
    using System;
    public class TestCanadaCompletion
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string order_id = "Test20160815041528";
            string amount = "2.00";
            string txn_number = "118149-0_10";
            string crypt = "7";
            string cust_id = "my customer id";
            string dynamic_descriptor = "my descriptor";
            string ship_indicator = "F";
            string processing_country_code = "CA";
            bool status_check = false;
            Completion completion = new Completion();
            completion.SetOrderId(order_id);
            completion.SetCompAmount(amount);
            completion.SetTxnNumber(txn_number);
            completion.SetCryptType(crypt);
            completion.SetCustId(cust_id);
            completion.SetDynamicDescriptor(dynamic_descriptor);
            //completion.SetShipIndicator(ship_indicator); //optional
            //Optional - Set for Multi-Currency only
            //setAmount must be 0.00 when using multi-currency
            //completion.SetMCPAmount("300"); //penny value amount 1.25 = 125
            //completion.SetMCPCurrencyCode("840"); //ISO-4217 country currency number
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(completion);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("CardType = " + receipt.GetCardType());
                Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
                Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                Console.WriteLine("TransType = " + receipt.GetTransType());
                Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("ISO = " + receipt.GetISO());
                Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
                Console.WriteLine("Message = " + receipt.GetMessage());
                Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
                Console.WriteLine("Complete = " + receipt.GetComplete());
                Console.WriteLine("TransDate = " + receipt.GetTransDate());
                Console.WriteLine("TransTime = " + receipt.GetTransTime());
                Console.WriteLine("Ticket = " + receipt.GetTicket());
                Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
                Console.WriteLine("IsVisaDebit = " + receipt.GetIsVisaDebit());
                Console.WriteLine("MCPAmount = " + receipt.GetMCPAmount());
            }
        }
    }
}
```

Sample Basic Pre-Authorization Completion

```

Console.WriteLine("MPCurrencyCode = " + receipt.GetMPCurrencyCode());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

2.5 Re-Authorization

For a process flow, Process Flow for Basic Pre-Auth, Re-Auth and Completion Transactions (page 463).

Re-Authorization transaction object definition

```
ReAuth reauth = new ReAuth();
```

HttpPostRequest object for Re-Authorization transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(reauth);
```

Re-Authorization transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 7: Re-Authorization transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------|--------|---|--|
| Order ID | String | 50-character alpha-numeric | <code>reauth.SetOrderId(order_id);</code> |
| Original order ID | String | 50-character alpha-numeric | <code>reauth.SetOrigOrderId(orig_order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>reauth.SetAmount(amount);</code> |
| Transaction number | String | 255-character | <code>reauth.SetTxnNumber(txn_</code> |

Table 7: Re-Authorization transaction object mandatory values

| Value | Type | Limits | Set method |
|----------------------|--------|---------------------------|------------------------------|
| | | variable character | number) ; |
| E-Commerce indicator | String | 1-character alpha-numeric | reauth.SetCryptType(crypt) ; |

Table 1 Re-Authorization transaction optional values

| Value | Type | Limits | Set Method |
|----------------------|---------|----------------------------|---|
| Customer ID | String | 50-character alpha-numeric | reauth.SetCustId(cust_id) ; |
| Status check | Boolean | true/false | mpgReq.SetStatusCheck(status_check) ; |
| Dynamic descriptor | String | 20-character alpha-numeric | reauth.SetDynamicDescriptor(dynamic_descriptor) ; |
| Customer information | Object | N/A | reauth.SetCustInfo(customer) ; |
| AVS | Object | N/A | reauth.SetAvsInfo(avsCheck) ; |
| CVD | Object | N/A | reauth.SetCvdInfo(cvdCheck) ; |

NOTE: When storing credentials on the initial transaction, the CVD object must be sent; for subsequent transactions using stored credentials, CVD can be sent with cardholder-initiated transactions only—**merchants must not store CVD information.**

Sample Re-Authorization

```

namespace Moneris
{
    using System;
    public class TestCanadaReauth
    {
        public static void Main(string[] args)
    }
}
    
```

Sample Re-Authorization

```

{
string store_id = "store5";
string api_token = "yesguy";
string order_id = "mvt2713557ss83ss9ssdfsdffsdff";
string orig_order_id = "mvt3525350028";
string amount = "1.00";
string txn_number = "113457-0_10";
string crypt = "8";
string dynamic_descriptor = "123456";
string cust_id = "my customer id";
string processing_country_code = "CA";
bool status_check = false;
ReAuth reauth = new ReAuth();
reauth.SetOrderId(order_id);
reauth.SetCustId(cust_id);
reauth.SetOrigOrderId(orig_order_id);
reauth.SetTxnNumber(txn_number);
reauth.SetAmount(amount);
reauth.SetCryptType(crypt);
reauth.SetDynamicDescriptor(dynamic_descriptor);
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(reauth);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("IsVisaDebit = " + receipt.GetIsVisaDebit());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

2.6 Force Post

Things to Consider:

- This transaction is an independent completion where the original Pre-Authorization transaction was not processed via the same Moneris Gateway merchant account.
- It is not required for the transaction that you are submitting to have been processed via the Moneris Gateway. However, a credit card number, expiry date and original authorization number are required.
- Force Post transactions are not supported for UnionPay

ForcePost transaction object definition

```
ForcePost forcepost = new ForcePost();
```

HttpPostRequest object for ForcePost transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(forcepost);
```

Force Post transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 8: Force Post transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------|--------|---|--|
| Order ID | String | 50-character alpha-numeric | <code>forcepost.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>forcepost.SetAmount(amount);</code> |
| Credit card number | String | 20-character numeric | <code>forcepost.SetPan(pan);</code> |

Table 8: Force Post transaction object mandatory values

| Value | Type | Limits | Set method |
|----------------------|--------|---------------------------|---|
| Expiry date | String | 4-character numeric | <code>forcepost.SetExpdate(expiry_date);</code> |
| Authorization code | String | 8-character alpha-numeric | <code>forcepost.SetAuthCode(auth_code);</code> |
| E-Commerce indicator | String | 1-character alpha-numeric | <code>forcepost.SetCryptType(crypt);</code> |

Table 9: Force Post transaction optional values

| Value | Type | Limits | Set method |
|--------------------|---------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | <code>forcepost.SetCustId(cust_id);</code> |
| Dynamic descriptor | String | 20-character alpha-numeric | <code>forcepost.SetDynamicDescriptor(dynamic_descriptor);</code> |
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |

Sample Basic Force Post

```

using System;
namespace Moneris
{
    public class TestCanadaForcePost
    {
        public static void Main(string[] args)
        {
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string cust_id = "my customer id";
            string store_id = "moneris";
            string api_token = "hurgle";
            string amount = "59.00";
            string pan = "4242424242424242";
            string expdate = "1901"; //YYMM format
            string auth_code = "88864";
            string crypt = "7";
            string dynamic_descriptor = "my descriptor";
            string processing_country_code = "CA";
            bool status_check = false;
            ForcePost forcepost = new ForcePost();
            forcepost.SetOrderId(order_id);
            forcepost.SetCustId(cust_id);
            forcepost.SetAmount(amount);
            forcepost.SetPan(pan);
        }
    }
}

```


Sample Basic Force Post

```
forcepost.SetExpDate(expdate);
forcepost.SetAuthCode(auth_code);
forcepost.SetCryptType(crypt);
forcepost.SetDynamicDescriptor(dynamic_descriptor);
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(forcepost);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("CardType = " + receipt.GetCardType());
    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
    Console.WriteLine("TransType = " + receipt.GetTransType());
    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("ISO = " + receipt.GetISO());
    Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Ticket = " + receipt.GetTicket());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("CorporateCard = " + receipt.GetCorporateCard());
    Console.WriteLine("IssuerId = " + receipt.GetIssuerId());
    //Console.WriteLine("MessageId = " + receipt.GetMessageId());
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
```

2.7 Purchase Correction

Things to Consider:

- Purchase correction is also known as "void" or "correction".
- To process this transaction, you need the order ID and the transaction number from the original Completion, Purchase or Force Post transaction.

Purchase Correction transaction object definition

```
PurchaseCorrection purchasecorrection = new PurchaseCorrection();
```

HttpPostRequest object for Purchase Correction transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(purchasecorrection);
```

Purchase Correction transaction object values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 10: Purchase Correction transaction object mandatory values

| Value | Type | Limits | Set method |
|----------------------|--------|----------------------------------|---|
| Order ID | String | 50-character alpha-numeric | <code>purchasecorrection.SetOrderId(order_id);</code> |
| Transaction number | String | 255-character variable character | <code>purchasecorrection.SetTxnNumber(txn_number);</code> |
| E-Commerce indicator | String | 1-character alpha-numeric | <code>purchasecorrection.SetCryptType(crypt);</code> |

Table 11: Purchase Correction transaction optional values

| Value | Type | Limits | Set method |
|--------------------|---------|----------------------------|---|
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |
| Customer ID | String | 50-character alpha-numeric | <code>purchasecorrection.SetCustId(cust_id);</code> |
| Dynamic descriptor | String | 20-character alpha-numeric | <code>purchasecorrection.SetDynamicDescriptor(dynamic_descriptor);</code> |

Sample Purchase Correction

```
namespace Moneris
{
    using System;
    public class TestCanadaPurchaseCorrection
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
```

Sample Purchase Correction

```

string api_token = "yesguy";
string order_id = "Test20150723031154";
string txn_number = "165745-0_10";
string crypt = "8";
string dynamic_descriptor = "123456";
string processing_country_code = "CA";
bool status_check = false;
PurchaseCorrection purchasecorrection = new PurchaseCorrection();
purchasecorrection.SetOrderId(order_id);
purchasecorrection.SetTxnNumber(txn_number);
purchasecorrection.SetCryptType(crypt);
purchasecorrection.SetDynamicDescriptor(dynamic_descriptor);
purchasecorrection.SetCustId("my customer id");
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(purchasecorrection);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("CardType = " + receipt.GetCardType());
    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
    Console.WriteLine("TransType = " + receipt.GetTransType());
    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("ISO = " + receipt.GetISO());
    Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Ticket = " + receipt.GetTicket());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("IsVisaDebit = " + receipt.GetIsVisaDebit());
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}

```

2.8 Refund

To process this transaction, you need the order ID and transaction number from the original Completion, Purchase or Force Post transaction.

Refund transaction object definition

```
Refund refund = new Refund();
```

HttpPostRequest object for Refund transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(refund);
```

Refund transaction object values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 12: Refund transaction object mandatory values

| Value | Type | Limits | Set method |
|----------------------|--------|---|---|
| Order ID | String | 50-character alpha-numeric | <code>refund.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>refund.SetAmount(amount);</code> |
| Transaction number | String | 255-character variable character | <code>refund.SetTxnNumber(txn_number);</code> |
| E-Commerce indicator | String | 1-character alpha-numeric | <code>refund.SetCryptType(crypt);</code> |

Table 13: Refund transaction optional values

| Value | Type | Limits | Set method |
|--------------|---------|------------|---|
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |

Sample Refund

```
namespace Moneris
{
    using System;
    public class TestCanadaRefund
    {
        public static void Main(string[] args)
```

Sample Refund

```
{
string store_id = "store1";
string api_token = "yesguy";
string amount = "1.00";
string crypt = "7";
string dynamic_descriptor = "123456";
string custid = "mycust9";
string order_id = "mvt3230836758";
string txn_number = "21964-0_10";
string processing_country_code = "CA";
bool status_check = false;
Refund refund = new Refund();
refund.SetTxnNumber(txn_number);
refund.SetOrderId(order_id);
refund.SetAmount(amount);
refund.SetCryptType(crypt);
refund.SetCustId(custid);
refund.SetDynamicDescriptor(dynamic_descriptor);
HttpPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(refund);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
```

2.9 Independent Refund

Things to Consider:

- Because of the potential for fraud, permission for this transaction is not granted to all accounts by default. If it is required for your business, it must be requested via your account manager.

Independent Refund transaction object definition

```
IndependentRefund indrefund = new IndependentRefund();
```

HttpPostRequest object for Independent Refund transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(indrefund);
```

Independent Refund transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 14: Independent Refund transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------|--------|---|--|
| Order ID | String | 50-character alpha-numeric | <code>indrefund.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>indrefund.SetAmount(amount);</code> |
| Credit card number | String | 20-character alpha-numeric | <code>indrefund.SetPan(pan);</code> |

Table 14: Independent Refund transaction object mandatory values (continued)

| Value | Type | Limits | Set method |
|----------------------|--------|--|--|
| Expiry date | String | 4-character alpha-numeric (YYMM format) | <code>indrefund.SetExpdate (expiry_date);</code> |
| E-Commerce indicator | String | 1-character alpha-numeric | <code>indrefund.SetCryptType (crypt);</code> |

Table 15: Independent Refund transaction optional values

| Value | Type | Limits | Set method |
|--------------------|---------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | <code>indrefund.SetCustId (cust_id);</code> |
| Dynamic descriptor | String | 20-character alpha-numeric | <code>indrefund .SetDynamicDescriptor (dynamic_descriptor);</code> |
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck (status_check);</code> |

Sample Independent Refund

```

namespace Moneris
{
    using System;
    public class TestCanadaIndependentRefund
    {
        public static void Main(string[] args)
        {
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string store_id = "store5";
            string api_token = "yesguy";
            string cust_id = "my customer id";
            string amount = "20.00";
            string pan = "4242424242424242";
            string expdate = "1901"; //YYMM
            string crypt = "7";
            string processing_country_code = "CA";
            bool status_check = false;
            IndependentRefund indrefund = new IndependentRefund();
            indrefund.SetOrderId(order_id);
            indrefund.SetCustId(cust_id);
            indrefund.SetAmount(amount);
            indrefund.SetPan(pan);
            indrefund.SetExpdate(expdate);
            indrefund.SetCryptType(crypt);
            indrefund.SetDynamicDescriptor("123456");
            HttpsPostRequest mpgReq = new HttpsPostRequest();
        }
    }
}

```

Sample Independent Refund

```

mpgReq.SetProcCountryCode (processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken (api_token);
mpgReq.SetTransaction(indrefund);
mpgReq.SetStatusCheck (status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("IsVisaDebit = " + receipt.GetIsVisaDebit());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

2.10 Card Verification with AVS and CVD

Things to Consider:

- The Card Verification transaction is only supported by Visa, MasterCard and Discover
- For some Credential on File transactions, Card Verification with AVS and CVD is used as a prior step to get the Issuer ID used in the subsequent transaction
- For Card Verification, CVD is supported by Visa, MasterCard and Discover.
- For Card Verification, AVS is supported by Visa, MasterCard and Discover.
- When testing Card Verification, please use the Visa and MasterCard test card numbers provided in the MasterCard Card Verification and Visa Card Verification tables available in CVD & AVS (E-Fraud) Simulator.

- For a full list of possible AVS & CVD result codes refer to the CVD and AVS Result Code tables.

Card Verification object definition

```
CardVerification cardVerification = new CardVerification();
```

HttpPostRequest object for Card Verification transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(cardVerification);
```

Card Verification transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 16: Card Verification transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------|--------|--|--|
| Order ID | String | 50-character alpha-numeric | <code>cardVerification.SetOrderId(order_id);</code> |
| Credit card number | String | 20-character alpha-numeric | <code>cardVerification.SetPan(pan);</code> |
| Expiry date | String | 4-character alpha-numeric (YYMM format) | <code>cardVerification.SetExpdate(expiry_date);</code> |

Table 16: Card Verification transaction object mandatory values

| Value | Type | Limits | Set method |
|---|--------|---------------------------|---|
| E-commerce indicator | String | 1-character alpha-numeric | <code>cardVerification.SetCryptType(crypt);</code> |
| AVS | Object | N/A | <code>cardVerification.SetAvsInfo(avsCheck);</code> |
| CVD NOTE: When storing credentials on the initial transaction, the CVD object must be sent; for subsequent transactions using stored credentials, CVD can be sent with cardholder-initiated transactions only— merchants must not store CVD information. | Object | N/A | <code>cardVerification.SetCvdInfo(cvdCheck);</code> |

Table 17: Basic Card Verification transaction object optional values

| Value | Type | Limits | Set Method |
|---|--------|--------|--|
| Credential on File Info <code>cof</code> NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. The Credential on File Info object has its own request variables, listed in blue in the table below, "Credential on File Object Request Variables". | Object | N/A | <code>cardVerification.SetCofInfo(cof);</code> |

Credential on File Transaction Object Request Fields

| Value | Type | Limits | Set Method |
|--|--------|--|--|
| <p>Issuer ID</p> <p>NOTE: This variable is required for all merchant-initiated transactions following the first one; upon sending the first transaction, the Issuer ID value is received in the transaction response and then used in subsequent transaction requests.</p> | String | 15-character alphanumeric variable length | <pre>cof.SetIssuerId("VALUE_FOR_ISSUER_ID");</pre> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |
| <p>Payment Indicator</p> | String | 1-character alphabetic | <pre>cof.SetPaymentIndicator("PAYMENT_INDICATOR_VALUE");</pre> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |
| <p>Payment Information</p> | String | 1-character numeric | <pre>cof.SetPaymentInformation("PAYMENT_INFO_VALUE");</pre> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |

Sample Card Verification

```
namespace Moneris
{
    using System;
    public class TestCanadaCardVerficiation
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string pan = "4242424242424242";
            string expdate = "1901"; //YYMM format
            string crypt = "7";
            string processing_country_code = "CA";
            bool status_check = false;
        }
    }
}
```

Sample Card Verification

```

AvsInfo avsCheck = new AvsInfo();
avsCheck.SetAvsStreetNumber("212");
avsCheck.SetAvsStreetName("Payton Street");
avsCheck.SetAvsZipCode("M1M1M1");
CvdInfo cvdCheck = new CvdInfo();
cvdCheck.SetCvdIndicator("1");
cvdCheck.SetCvdValue("099");
CofInfo cof = new CofInfo();
cof.SetPaymentIndicator("U");
cof.SetPaymentInformation("2");
cof.SetIssuerId("12345678901234");
CardVerification cardVerification = new CardVerification();
cardVerification.SetOrderId(order_id);
cardVerification.SetPan(pan);
cardVerification.SetExpDate(expdate);
cardVerification.SetCryptType(crypt);
cardVerification.SetAvsInfo(avsCheck);
cardVerification.SetCvdInfo(cvdCheck);
cardVerification.SetCofInfo(cof);
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(cardVerification);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("CardType = " + receipt.GetCardType());
    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
    Console.WriteLine("TransType = " + receipt.GetTransType());
    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("ISO = " + receipt.GetISO());
    Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Ticket = " + receipt.GetTicket());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("IsVisaDebit = " + receipt.GetIsVisaDebit());
    Console.WriteLine("IssuerId = " + receipt.GetIssuerId());
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}

```

2.11 Batch Close

Batch Close transaction object definition

```
BatchClose batchclose = new BatchClose();
```

HttpPostRequest object for Batch Close transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(batchclose);
```

Batch Close transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 18: Batch Close transaction object mandatory values

| Value | Type | Limits | Set method |
|---------------------------------------|--------|--------------------------------------|---|
| ECR (electronic cash register) number | String | No limit (value provided by Moneris) | <code>batchclose.SetEcrno(ecr_no);</code> |

Sample Batch Close

```
namespace Moneris
{
    using System;
    public class TestCanadaBatchClose
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string ecr_no = "66013455"; //ecr within store
            string processing_country_code = "CA";
            bool status_check = false;
            BatchClose batchclose = new BatchClose();
            batchclose.SetEcrno(ecr_no);
            HttpPostRequest mpgReq = new HttpPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(batchclose);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                if ((receipt.GetReceiptId()).Equals("Global Error Receipt"))
                {
                    Console.WriteLine("CardType = " + receipt.GetCardType());
                    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
                    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                }
            }
        }
    }
}
```

Sample Batch Close

```

Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = null");
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
}
else
{
    foreach (string ecr in receipt.GetTerminalIDs())
    {
        Console.WriteLine("ECR: " + ecr);
        foreach (string cardType in receipt.GetCreditCards(ecr))
        {
            Console.WriteLine("\tCard Type: " + cardType);
            Console.WriteLine("\t\tPurchase: Count = "
                + receipt.GetPurchaseCount(ecr, cardType)
                + " Amount = "
                + receipt.GetPurchaseAmount(ecr,
                    cardType));
            Console.WriteLine("\t\tRefund: Count = "
                + receipt.GetRefundCount(ecr, cardType)
                + " Amount = "
                + receipt.GetRefundAmount(ecr, cardType));
            Console.WriteLine("\t\tCorrection: Count = "
                + receipt.GetCorrectionCount(ecr, cardType)
                + " Amount = "
                + receipt.GetCorrectionAmount(ecr,
                    cardType));
        }
    }
}
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}

```

2.12 Open Totals

Open Totals transaction object definition

```
OpenTotals opentotals = new OpenTotals();
```

HttpRequest object for Open Totals transaction

```
HttpRequest mpgReq = new HttpRequest();
```

```
mpgReq.SetTransaction(opentotals);
```

Open Totals transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 19: Open Totals transaction object mandatory values

| Value | Type | Limits | Set method |
|---------------------------------------|--------|--------------------------------------|---|
| ECR (electronic cash register) number | String | No limit (value provided by Moneris) | <code>opentotals.SetEcrno(ecr_no);</code> |

Sample Open Totals

```
namespace Moneris
{
    using System;
    public class TestCanadaOpenTotals
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string ecr_no = "66013455";
            //string ecr_no = "66013455";
            string processing_country_code = "CA";
            OpenTotals opentotals = new OpenTotals();
            opentotals.SetEcrno(ecr_no);
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(opentotals);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                if ((receipt.GetReceiptId().Equals("Global Error Receipt") ||
                    receipt.GetReceiptId().Equals("")) ||
                    receipt.GetReceiptId().Equals("null"))
                {
                    Console.WriteLine("CardType = null ");
                    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
                    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                    Console.WriteLine("TransType = " + receipt.GetTransType());
                    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
                    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                    Console.WriteLine("ISO = " + receipt.GetISO());
                    Console.WriteLine("BankTotals = null");
                    Console.WriteLine("Message = " + receipt.GetMessage());
                    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
                    Console.WriteLine("Complete = " + receipt.GetComplete());
                    Console.WriteLine("TransDate = " + receipt.GetTransDate());
                    Console.WriteLine("TransTime = " + receipt.GetTransTime());
                    Console.WriteLine("Ticket = " + receipt.GetTicket());
                }
            }
        }
    }
}
```

Sample Open Totals

```
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
}
else
{
foreach (string ecr in receipt.GetTerminalIDs())
{
Console.WriteLine("ECR: " + ecr);
foreach (string cardType in receipt.GetCreditCards(ecr))
{
Console.WriteLine("\tCard Type: " + cardType);
Console.WriteLine("\t\tPurchase: Count = "
+ receipt.GetPurchaseCount(ecr, cardType)
+ " Amount = "
+ receipt.GetPurchaseAmount(ecr,
cardType));
Console.WriteLine("\t\tRefund: Count = "
+ receipt.GetRefundCount(ecr, cardType)
+ " Amount = "
+ receipt.GetRefundAmount(ecr, cardType));
Console.WriteLine("\t\tCorrection: Count = "
+ receipt.GetCorrectionCount(ecr, cardType)
+ " Amount = "
+ receipt.GetCorrectionAmount(ecr,
cardType));
}
}
}
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
```


3 Credential on File

- 3.1 About Credential on File
- 3.2 Credential on File Info Object and Variables
- 3.3 Credential on File Transaction Types
- 3.4 Initial Transactions in Credential on File
- 3.5 Vault Tokenize Credit Card and Credential on File
- 3.7 Card Verification and Credential on File Transactions

3.1 About Credential on File

When storing customers' credit card credentials for use in future authorizations, or when using these credentials in subsequent transactions, card brands now require merchants to indicate this in the transaction request.

In the Moneris API, this is handled by the Moneris Gateway via the inclusion of the Credential on File info object and its variables in the transaction request.

While the requirements for handling Credential on File transactions relate to Visa, Mastercard and Discover only, in order to avoid confusion and prevent error, please implement these changes for all card types and the Moneris system will then correctly flow the relevant card data values as appropriate.

While in the testing phase, we recommend that you test with Visa cards because implementation for the other card brands is still in process.

NOTE: If either the first transaction or a Card Verification authorization is declined when attempting to store cardholder credentials, those credentials cannot be stored—therefore the merchant must not use the credential for any subsequent transactions.

3.2 Credential on File Info Object and Variables

The Credential on File Info object is nested within the request for the applicable transaction types.

Object:

cof

Variables in the cof object:

Payment Indicator
Payment Information
Issuer ID

For more information, see Definitions of Request Fields – Credential on File.

3.3 Credential on File Transaction Types

The Credential on File Info object applies to the following transaction types:

- Purchase
- Pre-Authorization
- Purchase with 3-D Secure – cavvPurchase
- Purchase with 3-D Secure and Recurring Billing
- Pre-Authorization with 3-D Secure – cavvPreauth
- Purchase with Vault – ResPurchaseCC
- Pre-Authorization with Vault – ResPreauthCC
- Card Verification with AVS and CVD
- Card Verification with Vault – ResCardVerificationCC
- Vault Add Credit Card – ResAddCC
- Vault Update Credit Card – ResUpdateCC
- Vault Add Token – ResAddToken
- Vault Tokenize Credit Card – ResTokenizeCC
- Recurring Billing

3.4 Initial Transactions in Credential on File

When sending an *initial* transaction with the Credential on File Info object, i.e., a transaction request where the cardholder's credentials are being stored for the *first* time, it is important to understand the following:

- You must send the cardholder's Card Verification Digits (CVD)
- **Issuer ID** will be sent without a value on the initial transaction, because it is received in the response to that initial transaction; for all *subsequent* merchant-initiated transactions and all administrative transactions you send this **Issuer ID**
- The **payment information** field should always be set to a value of 0 on the first transaction
- The **payment indicator** field should be set to the value that is appropriate for the transaction

3.5 Vault Tokenize Credit Card and Credential on File

When you want to store cardholder credentials from previous transactions into the Vault, you use the Vault Tokenize Credit Card transaction request. Credential on File rules require that only previous transactions with the Credential on File Info object can be tokenized to the Vault.

For more information about this transaction, see 4.3.10 Vault Tokenize Credit Card – ResTokenizeCC.

3.6 Credential on File and Converting Temporary Tokens

In the event you decide to convert a temporary token representing cardholder credentials into a permanent token, these credentials become stored credentials, and therefore necessary to send Credential on File information.

For Temporary Token Add transactions where you subsequently decide to convert the temporary token into a permanent token (stored credentials):

1. Send a transaction request that includes the Credential on File Info object to get the Issuer ID; this can be a Card Verification, Purchase or Pre-Authorization request
2. After completing the transaction, send the Vault Add Token request with the Credential on File object (Issuer ID only) in order to convert the temporary token to a permanent one.

3.7 Card Verification and Credential on File Transactions

In the absence of a Purchase or Pre-Authorization, a Card Verification transaction is used to get the unique Issuer ID value (**issuerId**) that is used in subsequent Credential on File transactions. Issuer ID is a variable included in the nested Credential on File Info object.

For all first-time transactions, including Card Verification transactions, you must also request the cardholder's Card Verification Details (CVD). For more on CVD, see 9.2 Card Validation Digits (CVD).

For a complete list of these variables, see each transaction type or Definitions of Request Fields – Credential on File

The Card Verification request, including the Credential on File Info object, must be sent immediately prior to storing cardholder credentials.

For information about Card Verification, see 2.10 Card Verification with AVS and CVD.

3.7.1 When to Use Card Verification With COF

If you are not sending a Purchase or Pre-Authorization transaction (i.e., you are not charging the customer immediately), you must use Card Verification (or in the case of Vault Add Token, Card Verification with Vault) first before running the transaction in order to get the Issuer ID.

Transactions this applies to:

- Vault Add Credit Card – ResAddCC
- Vault Update Credit Card – ResUpdateCC
- Vault Add Token – ResAddToken
- Recurring Billing transactions, if:
 - the first transaction is set to start on a future date

3.7.2 Credential on File and Vault Add Token

For Vault Add Token transactions:

1. Send Card Verification with Vault transaction request including the Credential on File object to get the Issuer ID
2. Send the Vault Add Token request including the Credential on File object (with Issuer ID only; other fields are not applicable)

For more on this transaction type, see 4.3.9 Vault Add Token – ResAddToken.

3.7.3 Credential on File and Vault Update Credit Card

For Vault Update Credit Card transactions where you are updating the credit card number:

1. Send Card Verification transaction request including the Credential on File object to get the Issuer ID
2. Send the Vault Update Credit Card request including the Credential on File Info object (Issuer ID only).

For more on this transaction type, see 4.3.3 Vault Update Credit Card – ResUpdateCC.

3.7.4 Credential on File and Vault Add Credit Card

For Vault Add Credit Card transactions:

1. Send Card Verification transaction request including the Credential on File object to get the Issuer ID
2. Send the Vault Add Credit Card request including the Credential on File Info object (Issuer ID only)

For more on this transaction type, see 4.3.1 Vault Add Credit Card – ResAddCC.

3.7.5 Credential on File and Recurring Billing

NOTE: The value of the **payment indicator** field must be **R** when sending Recurring Billing transactions.

For Recurring Billing transactions which are set to start **immediately**:

1. Send a Purchase transaction request with both the Recurring Billing and Credential on File info objects

For Recurring Billing transactions which are set to start on a **future** date:

1. Send Card Verification transaction request including the Credential on File info object to get the Issuer ID
2. Send Purchase transaction request with the Recur and Credential on File info objects included

For updating a Recurring Billing series where you are updating the card number (does not apply if you are only modifying the schedule or amount in a recurring series):

1. Send Card Verification request including the Credential on File info object to get the Issuer ID
2. Send a Recurring Billing Update transaction

For more information about the Recurring Billing object, see Definition of Request Fields – Recurring.

4 Vault

- 4.1 About the Vault Transaction Set
- 4.2 Vault Transaction Types
- 4.3 Vault Administrative Transactions
- 4.4 Vault Financial Transactions
- 4.5 Hosted Tokenization

4.1 About the Vault Transaction Set

The Vault feature allows merchants to create customer profiles, edit those profiles, and use them to process transactions without having to enter financial information each time. Customer profiles store customer data essential to processing transactions, including credit and signature debit.

The Vault is a complement to the recurring payment module. It securely stores customer account information on Moneris secure servers. This allows merchants to bill customers for routine products or services when an invoice is due.

4.2 Vault Transaction Types

The Vault API supports both administrative and financial transactions.

4.2.1 Administrative Vault Transaction types

ResAddCC

Creates a new credit card profile, and generates a unique data key which can be obtained from the Receipt object.

This data key is the profile identifier that all future financial Vault transactions will use to associate with the saved information.

EncResAddCC

Creates a new credit card profile, but requires the card data to be either swiped or manually keyed in via a Moneris-provided encrypted mag swipe reader.

ResTempAdd

Creates a new temporary token credit card profile. This transaction requires a duration to be set to indicate how long the temporary token is to be stored for.

During the lifetime of this temporary token, it may be used for any other vault transaction before it is permanently deleted from the system.

ResUpdateCC

Updates a Vault profile (based on the data key) to contain credit card information.

All information contained within a credit card profile is updated as indicated by the submitted fields.

EncResUpdateCC

Updates a profile (based on the data key) to contain credit card information. The encrypted version of this transaction requires the card data to either be swiped or manually keyed in via a Moneris-provided encrypted mag swipe reader.

ResDelete

Deletes an existing Vault profile of any type using the unique data key that was assigned when the profile was added.

It is important to note that after a profile is deleted, the information which was saved within can no longer be retrieved.

ResLookupFull

Verifies what is currently saved under the Vault profile associated with the given data key. The response to this transaction returns the latest active data for that profile.

Unlike ResLookupMasked (which returns the masked credit card number), this transaction returns both the masked and the unmasked credit card numbers.

ResLookupMasked

Verifies what is currently saved under the Vault profile associated with the given data key. The response to this transaction returns the latest active data for that profile.

Unlike ResLookupFull (which only returns both the masked and the unmasked credit card numbers), this transaction only returns the masked credit card number.

ResGetExpiring

Verifies which profiles have credit cards that are expiring during the current and next calendar month. For example, if you are processing this transaction on September 30, then it will return all cards that expire(d) in September and October of this year.

When generating a list of profiles with expiring credit cards, only the **masked** credit card numbers are returned.

This transaction can be performed no more than 2 times on any given calendar day, and it only applies to credit card profiles.

ResIsCorporateCard

Determines whether a profile has a corporate card registered within it.

After sending the transaction, the response field to the Receipt object's getCorporateCard method is either `true` or `false` depending on whether the associated card is a corporate card.

ResAddToken

Converts a Hosted Tokenization temporary token to a permanent Vault token.

A temporary token is valid for 15 minutes after it is created.

ResTokenizeCC

Creates a new credit card profile using the credit card number, expiry date and e-commerce indicator that were submitted in a previous financial transaction. A transaction that was previously done in Moneris Gateway is taken, and the card data from that transaction is stored in the Moneris Vault.

As with ResAddCC, a unique data key is generated and returned to the merchant via the Receipt object. This is the profile identifier that all future financial Vault transactions will use to associate with the saved information.

4.2.2 Financial Vault Transaction types

ResPurchaseCC

Uses the data key to identify a previously registered credit card profile. The details saved within the profile are then submitted to perform a Purchase transaction.

ResPreauthCC

Uses the data key to identify a previously registered credit card profile. The details within the profile are submitted to perform a Pre-Authorization transaction.

ResIndRefundCC

Uses the unique data key to identify a previously registered credit card profile, and credits a specified amount to that credit card.

ResMpiTxn

Uses the data key (as opposed to a credit card number) in a VBV/SecureCode Txn MPI transaction. The merchant uses the data key with ResMpiTxn request, and then reads the response fields to verify whether the card is enrolled in Verified by Visa or MasterCard SecureCode. Retrieves the vault transaction value to pass on to Visa or MasterCard.

After it has been validated that the data key is enrolled in 3-D Secure, a window appears in which the customer can enter the 3-D Secure password. The merchant may initiate the forming of the validation form `getMpiInLineForm()`.

For more information on integrating with MonerisMPI, refer to 8 MPI

4.3 Vault Administrative Transactions

Administrative transactions allow you to perform such tasks as creating new Vault profiles, deleting existing Vault profiles and updating profile information.

Some Vault Administrative Transactions require the Credential on File object to be sent with the **issuer ID** field only.

4.3.1 Vault Add Credit Card – ResAddCC

ResAddCC transaction object definition

```
ResAddCC resaddcc = new ResAddCC();
```

HttpPostRequest object for ResAddCC transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(resaddcc);
```

ResAddCC transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 20: Vault Add Credit Card transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------------------|--------|--|--|
| Credit card number | String | 20-character alpha-numeric | <code>resaddcc.SetPan(pan);</code> |
| Expiry date | String | 4-character alpha-numeric (YYMM format) | <code>resaddcc.SetExpdate(expiry_date);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>resaddcc.SetCryptType(crypt);</code> |
| Credential on File Info cof | Object | N/A | <code>resaddcc.SetCofInfo(cof);</code> |

NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. The Credential on File Info object has its own request variables, listed in [blue](#) in the table below, "Credential on File Object Request Variables".

Table 21: Vault Add Credit Card transaction optional values

| Value | Type | Limits | Set method |
|-----------------|--------|----------------------------|---|
| Customer ID | String | 50-character alpha-numeric | <code>resaddcc.SetCustId(cust_id);</code> |
| AVS information | Object | N/A | <code>resaddcc.SetAvsInfo(avsCheck);</code> |
| Email address | String | 30-character alpha-numeric | <code>resaddcc.SetEmail(email);</code> |

Table 21: Vault Add Credit Card transaction optional values

| Value | Type | Limits | Set method |
|-----------------|--------|---------------------------|---|
| Phone number | String | 30-character alphanumeric | <code>resaddcc.SetPhone(phone);</code> |
| Note | String | 30-character alphanumeric | <code>resaddcc.SetNote(note);</code> |
| Data key format | String | 2-character alphanumeric | <code>resaddcc.SetDataKeyFormat(data_key_format)</code> |

Credential on File Transaction Object Request Fields

| Value | Type | Limits | Set Method |
|--|--------|--|---|
| <p>Issuer ID</p> <p>NOTE: This variable is required for all merchant-initiated transactions following the first one; upon sending the first transaction, the Issuer ID value is received in the transaction response and then used in subsequent transaction requests.</p> | String | 15-character alphanumeric variable length | <p><code>cof.SetIssuerId("VALUE_FOR_ISSUER_ID");</code></p> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |

Sample Vault Add Credit Card

```
namespace Moneris
{
    using System;
    using System.Text;
    using System.Collections;
    public class TestCanadaResAddCC
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string pan = "4242424242424242";
            string expdate = "1912";
            string phone = "0000000000";
            string email = "bob@smith.com";
            string note = "my note";
        }
    }
}
```

Sample Vault Add Credit Card

```
string cust_id = "customer1";
string crypt_type = "7";
string data_key_format = "0";
string processing_country_code = "CA";
bool status_check = false;
AvsInfo avsCheck = new AvsInfo();
avsCheck.SetAvsStreetNumber("212");
avsCheck.SetAvsStreetName("Payton Street");
avsCheck.SetAvsZipCode("M1M1M1");
CofInfo cof = new CofInfo();
cof.SetIssuerId("168451306048014");
ResAddCC resaddcc = new ResAddCC();
resaddcc.SetPan(pan);
resaddcc.SetExpDate(expdate);
resaddcc.SetCryptType(crypt_type);
resaddcc.SetCustId(cust_id);
resaddcc.SetPhone(phone);
resaddcc.SetEmail(email);
resaddcc.SetNote(note);
resaddcc.SetAvsInfo(avsCheck);
resaddcc.SetGetCardType("true");
//resaddcc.SetDataKeyFormat(data_key_format); //optional
resaddcc.SetCofInfo(cof);
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(resaddcc);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("DataKey = " + receipt.GetDataKey());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
    Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
    Console.WriteLine("Cust ID = " + receipt.GetResDataCustId());
    Console.WriteLine("Phone = " + receipt.GetResDataPhone());
    Console.WriteLine("Email = " + receipt.GetResDataEmail());
    Console.WriteLine("Note = " + receipt.GetResDataNote());
    Console.WriteLine("MaskedPan = " + receipt.GetResDataMaskedPan());
    Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate());
    Console.WriteLine("Crypt Type = " + receipt.GetResDataCryptType());
    Console.WriteLine("Avs Street Number = " + receipt.GetResDataAvsStreetNumber());
    Console.WriteLine("Avs Street Name = " + receipt.GetResDataAvsStreetName());
    Console.WriteLine("Avs Zipcode = " + receipt.GetResDataAvsZipcode());
    Console.WriteLine("IssuerId = " + receipt.GetIssuerId());
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
```

| Sample Vault Add Credit Card |
|------------------------------|
| <pre> } } } } </pre> |

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see Definitions of Response Fields (page 447).

4.3.1.1 Vault Data Key

The ResAddCC sample code includes the following instruction from the Receipt object:

```
Console.WriteLine("DataKey = " + receipt.GetDataKey());
```

The data key response field is populated when you send a Vault Add Credit Card – ResAddCC (page 55), Vault Encrypted Add Credit Card – EncResAddCC (page 59), Vault Tokenize Credit Card – ResTokenizeCC (page 82), Vault Temporary Token Add – ResTempAdd (page 62) or Vault Add Token – ResAddToken (page 78) transaction. It is the profile identifier that all future financial Vault transactions will use to associate with the saved information.

The data key is a maximum 28-character alphanumeric string.

4.3.1.2 Vault Encrypted Add Credit Card – EncResAddCC

Vault Encrypted Add Credit Card transaction object definition

```
EncResAddCC encresaddcc = new EncResAddCC();
```

HttpPostRequest object for Vault Encrypted Add Credit Card transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(encresaddcc);
```

Vault Encrypted Add Credit Card transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 22: Vault Encrypted Add Credit Card transaction object mandatory values

| Value | Type | Limits | Set method |
|-----------------------|--------|----------------------------|--|
| Encrypted Track2 data | String | 40-character numeric | <code>encresaddcc.SetEncTrack2(enc_track2);</code> |
| Device type | String | 30-character alpha-numeric | <code>encresaddcc.SetDeviceType(device_type);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>encresaddcc.SetCryptType(crypt);</code> |

Table 23: Vault Encrypted Add Credit Card transaction optional values

| Value | Type | Limits | Set method |
|------------------------------|--------|--|--|
| Customer ID | String | 50-character alpha-numeric | <code>encresaddcc.SetCustId(cust_id);</code> |
| AVS information | Object | Not applicable. Click here See 9.1 (page 291). | <code>encresaddcc.SetAvsInfo(avsCheck);</code> |
| Email address | String | 30-character alpha-numeric | <code>encresaddcc.SetEmail(email);</code> |
| Phone number | String | 30-character alpha-numeric | <code>encresaddcc.SetPhone(phone);</code> |
| Note | String | 30-character alpha-numeric | <code>encresaddcc.SetNote(note);</code> |
| Data key format ¹ | String | 2-character alpha-numeric | <code>encresaddcc.SetDataKeyFormat(data_key_format)</code> |

Sample Vault Encrypted Add Credit Card

```
namespace Moneris
{
    using System;
    public class TestCanadaEncResAddCC
    {
        public static void Main(string[] args)
```

¹Available to Canadian integrations only.

Sample Vault Encrypted Add Credit Card

```

{
/***** REQUEST VARIABLES *****/
string store_id = "store5";
string api_token = "yesguy";
string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
string cust_id = "nqa";
string amount = "1.00";
string device_type = "idtech_bdk";
string crypt = "7";
string enc_track2 = "ENCRYPTEDTRACK2DATA";
string data_key_format = "0";
string processing_country_code = "CA";
bool status_check = false;

EncResAddCC encresaddcc = new EncResAddCC();
encresaddcc.SetEncTrack2(enc_track2);
encresaddcc.SetDeviceType(device_type);
encresaddcc.SetCryptType(crypt);
encresaddcc.SetCustId(cust_id);
encresaddcc.SetNote("Just a note");
encresaddcc.SetEmail("example@test.com");
encresaddcc.SetPhone("866-319-7450");
//encresaddcc.SetDataKeyFormat(data_key_format); //optional

/***** Address Verification Service *****/
AvsInfo avsCheck = new AvsInfo();
avsCheck.SetAvsStreetNumber("212");
avsCheck.SetAvsStreetName("Payton Street");
avsCheck.SetAvsZipCode("M1M1M1");
encresaddcc.SetAvsInfo(avsCheck);

HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(encresaddcc);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("DataKey = " + receipt.GetDataKey());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
//ResolveData
Console.WriteLine("\nCust ID = " + receipt.GetResDataCustId());
Console.WriteLine("Phone = " + receipt.GetResDataPhone());
Console.WriteLine("Email = " + receipt.GetResDataEmail());
Console.WriteLine("Note = " + receipt.GetResDataNote());
Console.WriteLine("MaskedPan = " + receipt.GetResDataMaskedPan());
Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate());
Console.WriteLine("Crypt Type = " + receipt.GetResDataCryptType());
}
}

```

Sample Vault Encrypted Add Credit Card

```
Console.WriteLine("Avs Street Number = " + receipt.GetResDataAvsStreetNumber());
Console.WriteLine("Avs Street Name = " + receipt.GetResDataAvsStreetName());
Console.WriteLine("Avs Zipcode = " + receipt.GetResDataAvsZipcode());
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
```

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see Definitions of Response Fields (page 447).

4.3.2 Vault Temporary Token Add – ResTempAdd

Creates a new temporary token credit card profile. This transaction requires a duration to be set to indicate how long the temporary token is to be stored for.

During the lifetime of this temporary token, it may be used for any other Vault transaction before it is permanently deleted from the system.

Things to Consider:

- The duration, or lifetime, of the temporary token can be set to be a maximum of 15 minutes.

Vault Temporary Token Add transaction object definition

```
ResTempAdd resTempAdd = new ResTempAdd();
```

HttpRequest object for Vault Temporary Token Add transaction

```
HttpRequest mpgReq = new HttpRequest();
```

```
mpgReq.SetTransaction(resTempAdd);
```

Vault Temporary Token Add transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 24: Vault Temporary Token Add transaction object mandatory values

| Value | Type | Limits | Set method |
|----------------------|--------|---|--|
| Credit card number | String | 20-character numeric | <code>resTempAdd.SetPan(pan);</code> |
| Expiry date | String | 4-character numeric | <code>resTempAdd.SetExpdate(expiry_date);</code> |
| Duration | String | 3-character numeric maximum 15 minutes | <code>resTempAdd.SetDuration(duration);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>resTempAdd.SetCryptType(crypt);</code> |

Table 25: Vault Temporary Token Add transaction optional values

| Value | Type | Limits | Set method |
|------------------------------|--------|---------------------------|---|
| Data key format ¹ | String | 2-character alpha-numeric | <code>resTempAdd.SetDataKeyFormat(data_key_format)</code> |

Sample Vault Temporary Token Add

```

namespace Moneris
{
    using System;
    using System.Text;
    using System.Collections;
    public class TestCanadaResTempAdd
    {
        public static void Main(string[] args)
        {
            string store_id = "store1";
            string api_token = "yesguy";
            string pan = "5454545454545454";
            string expdate = "1901"; //YYMM format
            string crypt_type = "7";
            string duration = "900";
            string data_key_format = "0";
            string processing_country_code = "CA";
            bool status_check = false;
            ResTempAdd resTempAdd = new ResTempAdd();
            resTempAdd.SetPan(pan);
            resTempAdd.SetExpDate(expdate);
            resTempAdd.SetDuration(duration);
            resTempAdd.SetCryptType(crypt_type);
            //resTempAdd.SetDataKeyFormat(data_key_format); //optional
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
        }
    }
}

```

¹Available to Canadian integrations only.

Sample Vault Temporary Token Add

```
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(resTempAdd);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("DataKey = " + receipt.GetDataKey());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
    Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
    Console.WriteLine("MaskedPan = " + receipt.GetResDataMaskedPan());
    Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate());
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
```

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see Definitions of Response Fields (page 447).

4.3.3 Vault Update Credit Card – ResUpdateCC

Updates a Vault profile (based on the data key) to contain credit card information. All information contained within a credit card profile is updated as indicated by the submitted fields.

Things to Consider:

- This will update a profile to contain Credit Card information by referencing the profile's unique data key. If the profile which is being updated was already a Credit Card profile, all information contained within it will simply be updated as indicated by the submitted fields. This means that all fields are optional, and only those fields that are submitted will be updated.
- To update a specific field on the profile, only set that specific element using the corresponding set method.

Vault Update Credit Card transaction object definition

```
ResUpdateCC resUpdateCC = new ResUpdateCC();
```

HttpPostRequest object for Vault Update Credit Card transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(resUpdateCC);
```

Vault Update Credit Card transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 26: Vault Update Credit Card transaction object mandatory values

| Value | Type | Limits | Set method |
|----------|--------|----------------------------|---|
| Data key | String | 25-character alpha-numeric | <code>resUpdateCC.SetData(data_key);</code> |

Optional values that are submitted to the ResUpdateCC object are updated. Unsubmitted optional values (with one exception) remain unchanged. This allows you to change only the fields you want.

If a profile contains AVS information, but a Vault Update Credit Card transaction is submitted without an AVS Info object, the existing AVS Info details are deactivated and the new credit card information is registered without AVS.

Table 27: Vault Update Credit Card transaction optional values

| Value | Type | Limits | Set method |
|----------------------|--------|--|---|
| Credit card number | String | 20-character alpha-numeric | <code>resUpdateCC.SetPan(pan);</code> |
| Expiry date | String | 4-character alpha-numeric (YYMM format) | <code>resUpdateCC.SetExpdate(expiry_date);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>resUpdateCC.SetCryptType(crypt);</code> |
| Customer ID | String | 50-character alpha-numeric | <code>resUpdateCC.SetCustId(cust_id);</code> |
| AVS information | Object | n/a | <code>resUpdateCC.SetAvsInfo(avsCheck);</code> |
| Email address | String | 30-character alpha-numeric | <code>resUpdateCC.SetEmail(email);</code> |

| Value | Type | Limits | Set method |
|---------------------------------------|--------|----------------------------|---|
| Phone number | String | 30-character alpha-numeric | <code>resUpdateCC.SetPhone(phone);</code> |
| Note | String | 30-character alpha-numeric | <code>resUpdateCC.SetNote(note);</code> |
| Credential on File Info <i>cof</i> | Object | N/A | <code>resUpdateCC.SetCofInfo(cof);</code> |

NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. The Credential on File Info object has its own request variables, listed in blue in the table below, "Credential on File Object Request Variables".

Credential on File Transaction Object Request Fields

| Value | Type | Limits | Set Method |
|-----------|---------------|---|--|
| Issuer ID | <i>String</i> | 15-character alpha-numeric variable length | <code>cof.SetIssuerId("VALUE_FOR_ISSUER_ID");</code> |

NOTE: This variable is required for all merchant-initiated transactions following the first one; upon sending the first transaction, the Issuer ID value is received in the transaction response and then used in subsequent transaction requests.

NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File

Sample Vault Update Credit Card

```

namespace Moneris
{

```

Sample Vault Update Credit Card

```

using System;
using System.Text;
using System.Collections;
public class TestCanadaResUpdateCC
{
    public static void Main(string[] args)
    {
        string store_id = "store1";
        string api_token = "yesguy";
        string data_key = "cIjurYyhGCAiGuCKdp94AspE7";
        string pan = "4242424242424242";
        string expdate = "1901";
        string phone = "0000000000";
        string email = "bob@smith.com";
        string note = "my note";
        string cust_id = "customer1";
        string crypt_type = "7";
        string processing_country_code = "CA";
        bool status_check = false;
        AvsInfo avsCheck = new AvsInfo();
        avsCheck.SetAvsStreetNumber("212");
        avsCheck.SetAvsStreetName("Payton Street");
        avsCheck.SetAvsZipCode("M1M1M1");
        CofInfo cof = new CofInfo();
        cof.SetIssuerId("168451306048014");
        ResUpdateCC resUpdateCC = new ResUpdateCC();
        resUpdateCC.SetDataKey(data_key);
        resUpdateCC.SetAvsInfo(avsCheck);
        resUpdateCC.SetCustId(cust_id);
        resUpdateCC.SetPan(pan);
        resUpdateCC.SetExpDate(expdate);
        resUpdateCC.SetPhone(phone);
        resUpdateCC.SetEmail(email);
        resUpdateCC.SetNote(note);
        resUpdateCC.SetCryptType(crypt_type);
        resUpdateCC.SetCofInfo(cof);
        HttpsPostRequest mpgReq = new HttpsPostRequest();
        mpgReq.SetProcCountryCode(processing_country_code);
        mpgReq.SetTestMode(true); //false or comment out this line for production transactions
        mpgReq.SetStoreId(store_id);
        mpgReq.SetApiToken(api_token);
        mpgReq.SetTransaction(resUpdateCC);
        mpgReq.SetStatusCheck(status_check);
        mpgReq.Send();
        try
        {
            Receipt receipt = mpgReq.GetReceipt();
            Console.WriteLine("DataKey = " + receipt.GetDataKey());
            Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
            Console.WriteLine("Message = " + receipt.GetMessage());
            Console.WriteLine("TransDate = " + receipt.GetTransDate());
            Console.WriteLine("TransTime = " + receipt.GetTransTime());
            Console.WriteLine("Complete = " + receipt.GetComplete());
            Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
            Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
            Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
            Console.WriteLine("Cust ID = " + receipt.GetResDataCustId());
            Console.WriteLine("Phone = " + receipt.GetResDataPhone());
            Console.WriteLine("Email = " + receipt.GetResDataEmail());
        }
    }
}

```

| Sample Vault Update Credit Card |
|--|
| <pre> Console.WriteLine("Note = " + receipt.GetResDataNote()); Console.WriteLine("MaskedPan = " + receipt.GetResDataMaskedPan()); Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate()); Console.WriteLine("Crypt Type = " + receipt.GetResDataCryptType()); Console.WriteLine("Avs Street Number = " + receipt.GetResDataAvsStreetNumber()); Console.WriteLine("Avs Street Name = " + receipt.GetResDataAvsStreetName()); Console.WriteLine("Avs Zipcode = " + receipt.GetResDataAvsZipcode()); Console.ReadLine(); } catch (Exception e) { Console.WriteLine(e); } } } } </pre> |

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see Definitions of Response Fields (page 447).

4.3.3.1 Vault Encrypted Update CC - EncResUpdateCC

Vault Encrypted Update CC transaction object definition

```
EncResUpdateCC encresupdatecc = new EncResUpdateCC();
```

HttpPostRequest object for Vault Encrypted Update CC transaction

```

HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(encresupdatecc);

```

Vault Encrypted Update CC transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 28: Vault Encrypted Update CC transaction object mandatory values

| Value | Type | Limits | Set method |
|-----------------------|--------|----------------------------|--|
| Data key | String | 25-character alpha-numeric | encresupdatecc.SetData(data_key); |
| Encrypted Track2 data | String | Variable length | encresupdatecc.SetEncTrack2(enc_track2); |
| Device type | String | 30-character alpha-numeric | encresupdatecc.SetDeviceType(device_type); |

Optional values that are submitted to the ResUpdateCC object are updated, while unsubmitted optional values (with one exception) remain unchanged. This allows you to change only the fields you want.

The exception is that if you are making changes to the payment type, **all** of the variables in the optional values table below must be submitted.

If you update a profile to a different payment type, it is automatically deactivated and a new credit card profile is created and assigned to the data key. The only values from the prior profile that will remain unchanged are the customer ID, phone number, email address, and note.

EXAMPLE: If a profile contains AVS information, but a ResUpdateCC transaction is submitted without an AVSInfo object, the existing AVSInfo details are deactivated and the new credit card information is registered without AVS.

Table 29: Vault Encrypted Update CC transaction optional values

| Value | Type | Limits | Set method |
|----------------------|--------|--|---|
| E-commerce indicator | String | 1-character alpha-numeric | <code>encresupdatecc.SetCryptType(crypt);</code> |
| Customer ID | String | 50-character alpha-numeric | <code>encresupdatecc.SetCustId(cust_id);</code> |
| AVS information | Object | Not applicable. Click here See 9.1 (page 291). | <code>encresupdatecc.SetAvsInfo(avsCheck);</code> |
| Email address | String | 30-character alpha-numeric | <code>encresupdatecc.SetEmail(email);</code> |
| Phone number | String | 30-character alpha-numeric | <code>encresupdatecc.SetPhone(phone);</code> |
| Note | String | 30-character alpha-numeric | <code>encresupdatecc.SetNote(note);</code> |

Sample Vault Encrypted Update CC - CA

```
namespace Moneris
{
    using System;
    public class TestCanadaEncResUpdateCC
    {
        public static void Main(string[] args)
        {
            /****** REQUEST VARIABLES******/
        }
    }
}
```

Sample Vault Encrypted Update CC - CA

```
string store_id = "store5";
string api_token = "yesguy";
string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
string cust_id = "nqa";
string device_type = "idtech_bdk";
string crypt = "7";
string enc_track2 = "ENCRYPTEDTRACK2DATA";
string processing_country_code = "CA";
string data_key = "gF5IpsWD3s42r2TZxZyecE9Gs";
bool status_check = false;

EncResUpdateCC encresupdatecc = new EncResUpdateCC();
encresupdatecc.SetDataKey(data_key);
encresupdatecc.SetCustId(cust_id);
encresupdatecc.SetNote("Just a note2");
encresupdatecc.SetEmail("example1@test.com");
encresupdatecc.SetPhone("866-319-7450");
encresupdatecc.SetEncTrack2(enc_track2);
encresupdatecc.SetDeviceType(device_type);
encresupdatecc.SetCryptType(crypt);

/***** Address Verification Service *****/
AvsInfo avsCheck = new AvsInfo();
avsCheck.SetAvsStreetNumber("3300");
avsCheck.SetAvsStreetName("Bloor Street");
avsCheck.SetAvsZipCode("M2X2X2");
encresupdatecc.SetAvsInfo(avsCheck);
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(encresupdatecc);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();

try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("DataKey = " + receipt.GetDataKey());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
    Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
    //ResolveData
    Console.WriteLine("\nCust ID = " + receipt.GetResDataCustId());
    Console.WriteLine("Phone = " + receipt.GetResDataPhone());
    Console.WriteLine("Email = " + receipt.GetResDataEmail());
    Console.WriteLine("Note = " + receipt.GetResDataNote());
    Console.WriteLine("MaskedPan = " + receipt.GetResDataMaskedPan());
    Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate());
    Console.WriteLine("Crypt Type = " + receipt.GetResDataCryptType());
    Console.WriteLine("Avs Street Number = " + receipt.GetResDataAvsStreetNumber());
    Console.WriteLine("Avs Street Name = " + receipt.GetResDataAvsStreetName());
    Console.WriteLine("Avs Zipcode = " + receipt.GetResDataAvsZipcode());
}
```

Sample Vault Encrypted Update CC - CA

```

Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see Definitions of Response Fields (page 447).

4.3.4 Vault Delete - ResDelete

NOTE: After a profile has been deleted, the details can no longer be retrieved.

Vault Delete transaction object definition

```
ResDelete resDelete = new ResDelete(data_key);
```

HttpPostRequest object for Vault Delete transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(resDelete);
```

Vault Delete transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 30: Vault Delete transaction object mandatory values

| Value | Type | Limits | Set method |
|----------|--------|----------------------------|------------------------------|
| Data key | String | 25-character alpha-numeric | resDelete.SetData(data_key); |

Sample Vault Delete

```

namespace Moneris
{
using System;

```

Sample Vault Delete

```

using System.Text;
using System.Collections;
public class TestCanadaResDelete
{
public static void Main(string[] args)
{
string store_id = "store5";
string api_token = "yesguy";
string data_key = "PjVKjtEmclFvFyjxHE4EwBMxi";
string processing_country_code = "CA";
bool status_check = false;
ResDelete resDelete = new ResDelete(data_key);
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(resDelete);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();

try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("DataKey = " + receipt.GetDataKey());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
//ResolveData
Console.WriteLine("Cust ID = " + receipt.GetResDataCustId());
Console.WriteLine("Phone = " + receipt.GetResDataPhone());
Console.WriteLine("Email = " + receipt.GetResDataEmail());
Console.WriteLine("Note = " + receipt.GetResDataNote());
Console.WriteLine("MaskedPan = " + receipt.GetResDataMaskedPan());
Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate());
Console.WriteLine("Crypt Type = " + receipt.GetResDataCryptType());
Console.WriteLine("Avs Street Number = " + receipt.GetResDataAvsStreetNumber());
Console.WriteLine("Avs Street Name = " + receipt.GetResDataAvsStreetName());
Console.WriteLine("Avs Zipcode = " + receipt.GetResDataAvsZipcode());
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see [Definitions of Response Fields \(page 447\)](#).

4.3.5 Vault Lookup Full - ResLookupFull

Vault Lookup Full transaction object definition

```
ResLookupFull resLookupFull = new ResLookupFull(data_key);
```

HttpPostRequest object for Vault Lookup Full transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(resLookupFull);
```

Vault Lookup Full transaction values

Table 31: Vault Lookup Full transaction object mandatory values

| Value | Type | Limits | Set method |
|----------|--------|----------------------------|----------------------------------|
| Data key | String | 25-character alpha-numeric | resLookupFull.SetData(data_key); |

Sample Vault Lookup Full

```
namespace Moneris
{
    using System;
    using System.Text;
    using System.Collections;
    public class TestCanadaResLookupFull
    {
        public static void Main(string[] args)
        {
            string store_id = "store1";
            string api_token = "yesguy";
            string data_key = "pi3ZMZoTTM8pLM9wuwws2KBxw";
            string processing_country_code = "CA";
            bool status_check = false;
            ResLookupFull resLookupFull = new ResLookupFull(data_key);
            HttpPostRequest mpgReq = new HttpPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(resLookupFull);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("DataKey = " + receipt.GetDataKey());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("Message = " + receipt.GetMessage());
                Console.WriteLine("TransDate = " + receipt.GetTransDate());
                Console.WriteLine("TransTime = " + receipt.GetTransTime());
                Console.WriteLine("Complete = " + receipt.GetComplete());
                Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
            }
        }
    }
}
```

| Sample Vault Lookup Full |
|---|
| <pre> Console.WriteLine("ResSuccess = " + receipt.GetResSuccess()); Console.WriteLine("PaymentType = " + receipt.GetPaymentType()); Console.WriteLine("Cust ID = " + receipt.GetResDataCustId()); Console.WriteLine("Phone = " + receipt.GetResDataPhone()); Console.WriteLine("Email = " + receipt.GetResDataEmail()); Console.WriteLine("Note = " + receipt.GetResDataNote()); Console.WriteLine("Pan = " + receipt.GetResDataPan()); Console.WriteLine("MaskedPan = " + receipt.GetResDataMaskedPan()); Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate()); Console.WriteLine("Crypt Type = " + receipt.GetResDataCryptType()); Console.WriteLine("Avs Street Number = " + receipt.GetResDataAvsStreetNumber()); Console.WriteLine("Avs Street Name = " + receipt.GetResDataAvsStreetName()); Console.WriteLine("Avs Zipcode = " + receipt.GetResDataAvsZipcode()); Console.ReadLine(); } catch (Exception e) { Console.WriteLine(e); } } } } </pre> |

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see Definitions of Response Fields (page 447).

4.3.6 Vault Lookup Masked - ResLookupMasked

Vault Lookup Masked transaction object definition

```
ResLookupMasked resLookupMasked = new ResLookupMasked();
```

HttpPostRequest object for Vault Lookup Masked transaction

```

HttpPostRequest mpgReq = new HttpPostRequest();

mpgReq.SetTransaction(resLookupMasked);

```

Vault Lookup Masked transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 32: Vault Lookup Masked transaction object mandatory values

| Value | Type | Limits | Set method |
|----------|--------|----------------------------|------------|
| Data key | String | 25-character alpha-numeric | |

Sample Vault Lookup Masked - CA

```

namespace Moneris
{
    using System;
    using System.Text;
    using System.Collections;
    public class TestCanadaResLookupMasked
    {
        public static void Main(string[] args)
        {
            string store_id = "store1";
            string api_token = "yesguy";
            string data_key = "pi3ZMZoTTM8pLM9wuwws2KBxw";
            string processing_country_code = "CA";
            bool status_check = false;
            ResLookupMasked resLookupMasked = new ResLookupMasked();
            resLookupMasked.SetData(data_key);
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(resLookupMasked);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("DataKey = " + receipt.GetDataKey());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("Message = " + receipt.GetMessage());
                Console.WriteLine("TransDate = " + receipt.GetTransDate());
                Console.WriteLine("TransTime = " + receipt.GetTransTime());
                Console.WriteLine("Complete = " + receipt.GetComplete());
                Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
                Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
                Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
                Console.WriteLine("Cust ID = " + receipt.GetResDataCustId());
                Console.WriteLine("Phone = " + receipt.GetResDataPhone());
                Console.WriteLine("Email = " + receipt.GetResDataEmail());
                Console.WriteLine("Note = " + receipt.GetResDataNote());
                Console.WriteLine("MaskedPan = " + receipt.GetResDataMaskedPan());
                Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate());
                Console.WriteLine("Crypt Type = " + receipt.GetResDataCryptType());
                Console.WriteLine("Avs Street Number = " + receipt.GetResDataAvsStreetNumber());
                Console.WriteLine("Avs Street Name = " + receipt.GetResDataAvsStreetName());
                Console.WriteLine("Avs Zipcode = " + receipt.GetResDataAvsZipcode());
                Console.ReadLine();
            }
            catch (Exception e)
            {
                Console.WriteLine(e);
            }
        }
    }
}

```

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see [Definitions of Response Fields \(page 447\)](#).

4.3.7 Vault Get Expiring - ResGetExpiring

Vault Get Expiring transaction object definition

```
ResGetExpiring resGetExpiring = new ResGetExpiring();
```

HttpPostRequest object for Vault Get Expiring transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(resGetExpiring);
```

Vault Get Expiring transaction values

ResGetExpiring transaction object mandatory values: None.

Sample Vault Get Expiring - CA

```
namespace Moneris
{
    using System;
    using System.Text;
    using System.Collections;
    public class TestCanadaResGetExpiring
    {
        public static void Main(string[] args)
        {
            string store_id = "store1";
            string api_token = "yesguy";
            string processing_country_code = "CA";
            bool status_check = false;
            ResGetExpiring resGetExpiring = new ResGetExpiring();
            HttpPostRequest mpgReq = new HttpPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(resGetExpiring);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("DataKey = " + receipt.GetDataKey());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("Message = " + receipt.GetMessage());
                Console.WriteLine("TransDate = " + receipt.GetTransDate());
                Console.WriteLine("TransTime = " + receipt.GetTransTime());
                Console.WriteLine("Complete = " + receipt.GetComplete());
                Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
                Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
                Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
                //ResolveData
                foreach (string dataKey in receipt.GetDataKeys())
                {
                    Console.WriteLine("\nDataKey = " + dataKey);
                    Console.WriteLine("Payment Type = " + receipt.GetExpPaymentType(dataKey));
                    Console.WriteLine("Cust ID = " + receipt.GetExpCustId(dataKey));
                    Console.WriteLine("Phone = " + receipt.GetExpPhone(dataKey));
                }
            }
        }
    }
}
```

Sample Vault Get Expiring - CA

```

Console.WriteLine("Email = " + receipt.GetExpEmail(dataKey));
Console.WriteLine("Note = " + receipt.GetExpNote(dataKey));
Console.WriteLine("Masked Pan = " + receipt.GetExpMaskedPan(dataKey));
Console.WriteLine("Exp Date = " + receipt.GetExpExpdate(dataKey));
Console.WriteLine("Crypt Type = " + receipt.GetExpCryptType(dataKey));
Console.WriteLine("Avs Street Number = " + receipt.GetExpAvsStreetNumber(dataKey));
Console.WriteLine("Avs Street Name = " + receipt.GetExpAvsStreetName(dataKey));
Console.WriteLine("Avs Zipcode = " + receipt.GetExpAvsZipCode(dataKey));
}
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see Definitions of Response Fields (page 447).

4.3.8 Vault Is Corporate Card - ResIsCorporateCard

Vault Is Corporate Card transaction object definition

```
ResIsCorporatecard resIsCorporatecard = new ResIsCorporatecard();
```

HttpPostRequest object for Vault Is Corporate Card transaction

```

HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(resIsCorporatecard);

```

Vault Is Corporate Card transaction values

Table 33: Vault Is Corporate Card transaction object mandatory values

| Value | Type | Limits | Set method |
|----------|--------|----------------------------|---------------------------------------|
| Data key | String | 25-character alpha-numeric | resIsCorporatecard.SetData(data_key); |

Sample Vault Is Corporate Card - CA

```

namespace Moneris
{
using System;

```

Sample Vault Is Corporate Card - CA

```

using System.Text;
using System.Collections;
public class TestCanadaResIsCorporatecard
{
public static void Main(string[] args)
{
string store_id = "store1";
string api_token = "yesguy";
string data_key = "eLqsADfwqHDxIpJG9vLnELx01";
string processing_country_code = "CA";
bool status_check = false;
ResIsCorporatecard resIsCorporatecard = new ResIsCorporatecard();
resIsCorporatecard.SetData(data_key);
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(resIsCorporatecard);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();

try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("DataKey = " + receipt.GetDataKey());
Console.WriteLine("CorporateCard = " + receipt.GetCorporateCard());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see [Definitions of Response Fields \(page 447\)](#).

4.3.9 Vault Add Token – ResAddToken

This transaction is used to convert a temporary token into a permanent token for storage in the Moneris Vault

Things to Consider:

- If you intend to store the token for use in future transactions (i.e., Credential on File transactions), **first** you must send either a Vault financial transaction (Purchase with Vault or Pre-Authorization with Vault) or a Card Verification with Vault in order to get the Issuer ID
- The Vault Add Token request uses the Issuer ID to indicate that it is referencing stored credentials

Vault Add Token transaction object definition

```
ResAddToken resAddToken = new ResAddToken(data_key, crypt_type);
```

HttpPostRequest object for Vault Add Token transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(resAddToken);
```

Vault Add Token transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 34: Vault Add Token transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------------------|--------|----------------------------|---|
| Data key | String | 28-character alpha-numeric | <code>resAddToken.SetData(data_key);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>resAddToken.SetCryptType(crypt);</code> |
| Credential on File Info cof | Object | N/A | <code>resaddcc.SetCofInfo(cof);</code> |

NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. The Credential on File Info object has its own request variables, listed in [blue](#) in the table below, "Credential on File Object Request Variables".

Table 35: Vault Add Token transaction optional values

| Value | Type | Limits | Set method |
|------------------------------|--------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | <code>resAddToken.SetCustId(cust_id);</code> |
| AVS information | Object | N/A | <code>resAddToken.SetAvsInfo(avsCheck);</code> |
| Email address | String | 30-character alpha-numeric | <code>resAddToken.SetEmail(email);</code> |
| Phone number | String | 30-character alpha-numeric | <code>resAddToken.SetPhone(phone);</code> |
| Note | String | 30-character alpha-numeric | <code>resAddToken.SetNote(note);</code> |
| Data key format ¹ | String | 2-character alpha-numeric | <code>resAddToken.SetDataKeyFormat(data_key_format)</code> |

Credential on File Transaction Object Request Fields

| Value | Type | Limits | Set Method |
|--|--------|---|--|
| <p>Issuer ID</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: This variable is required for all merchant-initiated transactions following the first one; upon sending the first transaction, the Issuer ID value is received in the transaction response and then used in subsequent transaction requests.</p> </div> | String | 15-character numeric variable length | <code>cof.SetIssuerId("VALUE_FOR_ISSUER_ID");</code> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> </div> |

| Sample Vault Add Token |
|--------------------------------|
| <pre>namespace Moneris {</pre> |

¹Available to Canadian integrations only.

Sample Vault Add Token

```

using System;
using System.Text;
using System.Collections;
public class TestCanadaResAddToken
{
    public static void Main(string[] args)
    {
        string store_id = "moneris";
        string api_token = "hurgle";
        string data_key = "ot-A8R8m9sjsUgltcyTIDNmOVuq9";
        string expdate = "1602";
        string phone = "000000000";
        string email = "bob@smith.com";
        string note = "my note";
        string cust_id = "customer1";
        string crypt_type = "7";
        string data_key_format = "0";
        string processing_country_code = "CA";
        bool status_check = false;
        AvsInfo avsCheck = new AvsInfo();
        avsCheck.SetAvsStreetNumber("212");
        avsCheck.SetAvsStreetName("Payton Street");
        avsCheck.SetAvsZipCode("M1M1M1");
        CofInfo cof = new CofInfo();
        cof.SetIssuerId("168451306048014");
        ResAddToken resAddToken = new ResAddToken(data_key, crypt_type);
        resAddToken.SetExpDate(expdate);
        resAddToken.SetCustId(cust_id);
        resAddToken.SetPhone(phone);
        resAddToken.SetEmail(email);
        resAddToken.SetNote(note);
        resAddToken.SetAvsInfo(avsCheck);
        resAddToken.SetCofInfo(cof);
        //resAddToken.SetDataKeyFormat(data_key_format); //optional
        HttpsPostRequest mpgReq = new HttpsPostRequest();
        mpgReq.SetProcCountryCode(processing_country_code);
        mpgReq.SetTestMode(true); //false or comment out this line for production transactions
        mpgReq.SetStoreId(store_id);
        mpgReq.SetApiToken(api_token);
        mpgReq.SetTransaction(resAddToken);
        mpgReq.SetStatusCheck(status_check);
        mpgReq.Send();
        try
        {
            Receipt receipt = mpgReq.GetReceipt();
            Console.WriteLine("DataKey = " + receipt.GetDataKey());
            Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
            Console.WriteLine("Message = " + receipt.GetMessage());
            Console.WriteLine("TransDate = " + receipt.GetTransDate());
            Console.WriteLine("TransTime = " + receipt.GetTransTime());
            Console.WriteLine("Complete = " + receipt.GetComplete());
            Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
            Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
            Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
            Console.WriteLine("Cust ID = " + receipt.GetResDataCustId());
            Console.WriteLine("Phone = " + receipt.GetResDataPhone());
            Console.WriteLine("Email = " + receipt.GetResDataEmail());
            Console.WriteLine("Note = " + receipt.GetResDataNote());
            Console.WriteLine("MaskedPan = " + receipt.GetResDataMaskedPan());
        }
    }
}

```

```

Sample Vault Add Token

Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate());
Console.WriteLine("Crypt Type = " + receipt.GetResDataCryptType());
Console.WriteLine("Avs Street Number = " + receipt.GetResDataAvsStreetNumber());
Console.WriteLine("Avs Street Name = " + receipt.GetResDataAvsStreetName());
Console.WriteLine("Avs Zipcode = " + receipt.GetResDataAvsZipcode());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see Definitions of Response Fields (page 447).

4.3.10 Vault Tokenize Credit Card – ResTokenizeCC

Creates a new credit card profile using the credit card number, expiry date and e-commerce indicator that were submitted in a previous financial transaction. Previous transactions to be tokenized must have included the Credential on File Info object.

The Issuer ID received in the previous transaction response is sent in the Vault Tokenize Credit Card request to reference that this is a stored credential.

Basic transactions that can be tokenized are:

- Purchase
- Pre-Authorization
- Card Verification

The tokenization process is outlined below :

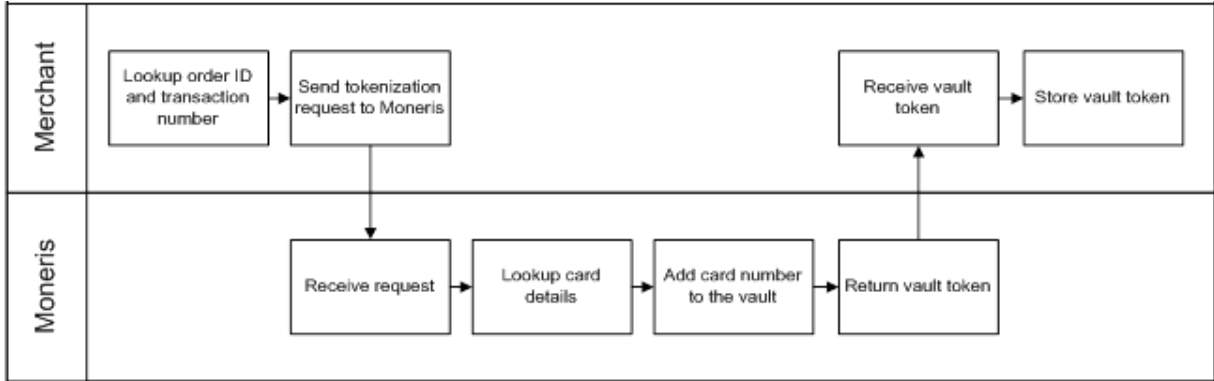


Figure 1: Tokenize process diagram

Vault Tokenize Credit Card transaction object definition

```
ResTokenizeCC resTokenizeCC = new ResTokenizeCC();
```

HttpPostRequest object for Vault Tokenize Credit Card transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(resTokenizeCC);
```

Vault Tokenize Credit Card transaction values

These mandatory values reference a previously processed credit card financial transaction. The credit card number, expiry date, and e-commerce indicator from the original transaction are registered in the Vault for future financial Vault transactions.

Table 36: Vault Tokenize Credit Card transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------|--------|-----------------------------|--|
| Order ID | String | 50-character alpha-numeric | <code>resTokenizeCC.SetOrderId(order_id);</code> |
| Transaction number | String | 255-character alpha-numeric | <code>resTokenizeCC.SetTxnNumber(txn_number);</code> |

Table 37: Vault Tokenize Credit Card transaction optional values

| Value | Type | Limits | Set method |
|---------------|--------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | <code>resTokenizeCC.SetCustId(cust_id);</code> |
| Email address | String | 30-character alpha-numeric | <code>resTokenizeCC.SetEmail(email);</code> |
| Phone number | String | 30-character alpha-numeric | <code>resTokenizeCC.SetPhone(phone);</code> |
| Note | String | 30-character alpha-numeric | <code>resTokenizeCC.SetNote(note);</code> |

| Value | Type | Limits | Set method |
|---------------------------------------|---------------|--------------------------|--|
| AVS information | Object | N/A | <code>resTokenizeCC.SetAvsInfo(avsCheck);</code> |
| Data key format ¹ | String | 2-character alphanumeric | <code>resTokenizeCC.SetDataKeyFormat(data_key_format)</code> |
| Credential on File Info <i>cof</i> | <i>Object</i> | N/A | <code>resTokenizeCC.SetCofInfo(cof);</code> |

NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. The Credential on File Info object has its own request variables, listed in [blue](#) in the table below, "Credential on File Object Request Variables".

Credential on File Transaction Object Request Fields

| Value | Type | Limits | Set Method |
|---------------------------|---------------|--|--|
| Issuer ID | <i>String</i> | 15-character alphanumeric variable length | <code>cof.SetIssuerId("VALUE_FOR_ISSUER_ID");</code> |

NOTE: This variable is required for all merchant-initiated transactions following the first one; upon sending the first transaction, the Issuer ID value is received in the transaction response and then used in subsequent transaction requests.

NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File

¹Available to Canadian integrations only.

Any field that is not set in the tokenize request is not stored with the transaction. That is, Moneris Gateway does not automatically take the optional information that was part of the original transaction.

The ResolveData that is returned in the response fields indicates what values were registered for this profile.

Sample Vault Tokenize Credit Card

```

namespace Moneris
{
    using System;
    using System.Text;
    using System.Collections;
    public class TestCanadaResTokenizeCC
    {
        public static void Main(string[] args)
        {
            string store_id = "store1";
            string api_token = "yesguy";
            string order_id = "1000189096";
            string txn_number = "880416-0_10";
            string phone = "0000000000";
            string email = "bob@smith.com";
            string note = "my note";
            string cust_id = "customer1";
            string data_key_format = "0";
            string processing_country_code = "CA";
            bool status_check = false;
            AvsInfo avsCheck = new AvsInfo();
            avsCheck.SetAvsStreetNumber("212");
            avsCheck.SetAvsStreetName("Payton Street");
            avsCheck.SetAvsZipCode("M1M1M1");
            CofInfo cof = new CofInfo();
            cof.SetIssuerId("168451306048014");
            ResTokenizeCC resTokenizeCC = new ResTokenizeCC();
            resTokenizeCC.SetOrderId(order_id);
            resTokenizeCC.SetTxnNumber(txn_number);
            resTokenizeCC.SetCustId(cust_id);
            resTokenizeCC.SetPhone(phone);
            resTokenizeCC.SetEmail(email);
            resTokenizeCC.SetNote(note);
            resTokenizeCC.SetAvsInfo(avsCheck);
            resTokenizeCC.SetCofInfo(cof);
            //resTokenizeCC.SetDataKeyFormat(data_key_format); //optional
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(resTokenizeCC);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("DataKey = " + receipt.GetDataKey());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("Message = " + receipt.GetMessage());
                Console.WriteLine("TransDate = " + receipt.GetTransDate());
                Console.WriteLine("TransTime = " + receipt.GetTransTime());
                Console.WriteLine("Complete = " + receipt.GetComplete());
            }
        }
    }
}

```

| Sample Vault Tokenize Credit Card |
|--|
| <pre> Console.WriteLine("TimedOut = " + receipt.GetTimedOut()); Console.WriteLine("ResSuccess = " + receipt.GetResSuccess()); Console.WriteLine("PaymentType = " + receipt.GetPaymentType()); //ResolveData Console.WriteLine("Cust ID = " + receipt.GetResDataCustId()); Console.WriteLine("Phone = " + receipt.GetResDataPhone()); Console.WriteLine("Email = " + receipt.GetResDataEmail()); Console.WriteLine("Note = " + receipt.GetResDataNote()); Console.WriteLine("MaskedPan = " + receipt.GetResDataMaskedPan()); Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate()); Console.WriteLine("Crypt Type = " + receipt.GetResDataCryptType()); Console.WriteLine("Avs Street Number = " + receipt.GetResDataAvsStreetNumber()); Console.WriteLine("Avs Street Name = " + receipt.GetResDataAvsStreetName()); Console.WriteLine("Avs Zipcode = " + receipt.GetResDataAvsZipcode()); Console.ReadLine(); } catch (Exception e) { Console.WriteLine(e); } } } </pre> |

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see Definitions of Response Fields (page 447).

4.4 Vault Financial Transactions

After a financial transaction is complete, the response fields indicate all the values that are currently saved under the profile that was used.

4.4.1 Customer ID Changes

Some financial transactions take the customer ID as an optional value. The customer ID may or may not already be in the Vault profile when the transaction is sent. Therefore, it is possible to change the value of the customer ID by performing a financial transaction

The table below shows what the customer ID will be in the response field after a financial transaction is performed.

Table 38: Customer ID use in response fields

| Already in profile? | Passed in? | Version used in response |
|---------------------|------------|-------------------------------------|
| No | No | Customer ID not used in transaction |
| No | Yes | Passed in |

| Already in profile? | Passed in? | Version used in response |
|---------------------|------------|--------------------------|
| Yes | No | Profile |
| Yes | Yes | Passed in |

4.4.2 Purchase with Vault – ResPurchaseCC

Purchase with Vault transaction object definition

```
ResPurchaseCC resPurchaseCC = new ResPurchaseCC();
```

HttpPostRequest object for Purchase with Vault transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(resPurchaseCC);
```

Purchase with Vault transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 39: Purchase with Vault transaction object mandatory values

| Value | Type | Limits | Set method |
|----------|--------|---|--|
| Data key | String | 25-character alpha-numeric | <code>resPurchaseCC.SetData(data_key);</code> |
| Order ID | String | 50-character alpha-numeric | <code>resPurchaseCC.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>resPurchaseCC.SetAmount(amount);</code> |

| Value | Type | Limits | Set method |
|---|--------|---------------------------|---|
| E-commerce indicator | String | 1-character alpha-numeric | <code>resPurchaseCC.SetCryptType(crypt);</code> |
| Credential on File Info <code>cof</code> | Object | N/A | <code>cof.SetCofInfo(cof);</code> |

NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. The Credential on File Info object has its own request variables, listed in blue in the table below, "Credential on File Object Request Variables".

Table 40: Purchase with Vault transaction optional values

| Value | Type | Limits | Set method |
|----------------------|---------|---|--|
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |
| Expiry date | String | 4-character numeric YYMM format. (Note that this is reversed from the date displayed on the card, which is MMY) | <code>resPurchaseCC.SetExpdate(expiry_date);</code> |
| Customer ID | String | 50-character alpha-numeric | <code>resPurchaseCC.SetCustId(cust_id);</code> |
| Dynamic descriptor | String | 20-character alpha-numeric | <code>resPurchaseCC.SetDynamicDescriptor(dynamic_descriptor);</code> |
| Customer information | Object | N/A | <code>resPurchaseCC.SetCustInfo(customer);</code> |

| Value | Type | Limits | Set method |
|---|--------|--------|---|
| AVS information | Object | N/A | <code>resPurchaseCC.SetAvsInfo(avsCheck);</code> |
| CVD information <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: When storing credentials on the initial transaction, the CVD object must be sent; for subsequent transactions using stored credentials, CVD can be sent with cardholder-initiated transactions only—merchants must not store CVD information.</p> </div> | Object | N/A | <code>resPurchaseCC.SetCvdInfo(cvdCheck);</code> |
| Recurring billing | Object | N/A | <code>resPurchaseCC.SetRecur(recurring_cycle);</code> |

Credential on File Transaction Object Request Fields

| Value | Type | Limits | Set Method |
|--|--------|--|--|
| <p>Issuer ID</p> <p>NOTE: This variable is required for all merchant-initiated transactions following the first one; upon sending the first transaction, the Issuer ID value is received in the transaction response and then used in subsequent transaction requests.</p> | String | 15-character alphanumeric variable length | <pre>cof.SetIssuerId("VALUE_FOR_ISSUER_ID");</pre> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |
| <p>Payment Indicator</p> | String | 1-character alphabetic | <pre>cof.SetPaymentIndicator("PAYMENT_INDICATOR_VALUE");</pre> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |
| <p>Payment Information</p> | String | 1-character numeric | <pre>cof.SetPaymentInformation("PAYMENT_INFO_VALUE");</pre> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |

Sample Purchase with Vault

```
namespace Moneris
{
    using System;
    using System.Text;
    using System.Collections;
    public class TestCanadaResPurchaseCC
    {
        public static void Main(string[] args)
        {
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string store_id = "store1";
            string api_token = "yesguy";
            string data_key = "eLqsADfwqHDxIpJG9vLnELx01";
            string amount = "1.00";
            string cust_id = "customer1"; //if sent will be submitted, otherwise cust_id from profile will be
```

Sample Purchase with Vault

```

used
string crypt_type = "1";
string descriptor = "my_descriptor";
string processing_country_code = "CA";
bool status_check = false;
CofInfo cof = new CofInfo();
cof.SetPaymentIndicator("U");
cof.SetPaymentInformation("2");
cof.SetIssuerId("12345678901234");
ResPurchaseCC resPurchaseCC = new ResPurchaseCC();
resPurchaseCC.SetDataKey(data_key);
resPurchaseCC.SetOrderId(order_id);
resPurchaseCC.SetCustId(cust_id);
resPurchaseCC.SetAmount(amount);
resPurchaseCC.SetCryptType(crypt_type);
resPurchaseCC.SetDynamicDescriptor(descriptor);
resPurchaseCC.SetCofInfo(cof);
//resPurchaseCC.SetExpDate("1511"); //optional - use for temp token only
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(resPurchaseCC);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("DataKey = " + receipt.GetDataKey());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
Console.WriteLine("IsVisaDebit = " + receipt.GetIsVisaDebit());
Console.WriteLine("IssuerId = " + receipt.GetIssuerId());

Console.WriteLine("Cust ID = " + receipt.GetResDataCustId());
Console.WriteLine("Phone = " + receipt.GetResDataPhone());
Console.WriteLine("Email = " + receipt.GetResDataEmail());
Console.WriteLine("Note = " + receipt.GetResDataNote());
Console.WriteLine("Masked Pan = " + receipt.GetResDataMaskedPan());
Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate());
Console.WriteLine("Crypt Type = " + receipt.GetResDataCryptType());
Console.WriteLine("Avs Street Number = " + receipt.GetResDataAvsStreetNumber());
Console.WriteLine("Avs Street Name = " + receipt.GetResDataAvsStreetName());
Console.WriteLine("Avs Zipcode = " + receipt.GetResDataAvsZipcode());
Console.ReadLine();
}

```

```

Sample Purchase with Vault

}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}
}
}
    
```

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see Definitions of Response Fields (page 447).

4.4.3 Pre-Authorization with Vault – ResPreauthCC

Pre-Authorization with Vault transaction object definition

```
ResPreauthCC resPreauthCC = new ResPreauthCC();
```

HttpPostRequest object for Pre-Authorization with Vault transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(resPreauthCC);
```

Pre-Authorization with Vault transaction values

Table 41: Pre-Authorization with Vault transaction object mandatory values

| Value | Type | Limits | Set method |
|----------------------|--------|---|------------------------------------|
| Data key | String | 25- character alpha-numeric | resPreauthCC.SetData(data_key); |
| Order ID | String | 50-character alpha-numeric | resPreauthCC.SetOrderId(order_id); |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div style="border: 1px solid #ccc; padding: 2px; display: inline-block; background-color: #e0ffe0;">EXAMPLE: 1234567.89</div> | resPreauthCC.SetAmount(amount); |
| E-commerce indicator | String | 1-character alpha- | resPreauthCC.SetCryptType |

Table 41: Pre-Authorization with Vault transaction object mandatory values (continued)

| Value | Type | Limits | Set method |
|---|--------|---------|--|
| | | numeric | <code>(crypt);</code> |
| Credential on File Info cof | Object | N/A | <code>resPreauthCC.SetCofInfo(cof);</code> |
| <p>NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. The Credential on File Info object has its own request variables, listed in blue in the table below, "Credential on File Object Request Variables".</p> | | | |

Table 42: Pre-Authorization with Vault transaction optional values

| Value | Type | Limits | Set method |
|--------------|---------|---|--|
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |
| Expiry date | String | 4-character alphanumeric (YYMM format) | <code>resPreauthCC.SetExpdate(expiry_date);</code> |
| Customer ID | String | 50-character alphanumeric | <code>resPreauthCC.SetCustId(cust_id);</code> |

| Value | Type | Limits | Set method |
|----------------------|--------|--------|--|
| Customer information | Object | N/A | <code>resPreauthCC.SetCustInfo(customer);</code> |
| AVS information | Object | N/A | <code>resPreauthCC.SetAvsInfo(avsCheck);</code> |
| CVD information | Object | N/A | <code>resPreauthCC.SetCvdInfo(cvdCheck);</code> |

NOTE: When storing credentials on the initial transaction, the CVD object must be sent; for subsequent transactions using stored credentials, CVD can be sent with cardholder-initiated transactions only—**merchants must not store CVD information.**

Credential on File Transaction Object Request Fields

| Value | Type | Limits | Set Method |
|--|---------------|---|---|
| <p>Issuer ID</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: This variable is required for all merchant-initiated transactions following the first one; upon sending the first transaction, the Issuer ID value is received in the transaction response and then used in subsequent transaction requests.</p> </div> | <i>String</i> | <p>15-character alphanumeric</p> <p>variable length</p> | <p><code>cof.SetIssuerId("VALUE_FOR_ISSUER_ID");</code></p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> </div> |
| <p>Payment Indicator</p> | <i>String</i> | 1-character alphabetic | <p><code>cof.SetPaymentIndicator("PAYMENT_INDICATOR_VALUE");</code></p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> </div> |
| <p>Payment Information</p> | <i>String</i> | 1-character numeric | <code>cof.SetPaymentInformation("PAYMENT_INFO_VALUE");</code> |

| Value | Type | Limits | Set Method |
|-------|------|--------|---|
| | | | <div style="border: 1px solid black; padding: 5px;"> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> </div> |

Sample Pre-Authorization with Vault

```

namespace Moneris
{
    using System;
    using System.Text;
    using System.Collections;
    public class TestCanadaResPreauthCC
    {
        public static void Main(string[] args)
        {
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string store_id = "store1";
            string api_token = "yesguy";
            string data_key = "YeMnLZ8i2p02gbwSB8i8Q02Fo";
            string amount = "1.00";
            string cust_id = "customer1"; //if sent will be submitted, otherwise cust_id from profile will be
            used
            string crypt_type = "1";
            string dynamic_descriptor = "my descriptor";
            string processing_country_code = "CA";
            bool status_check = false;
            CofInfo cof = new CofInfo();
            cof.SetPaymentIndicator("U");
            cof.SetPaymentInformation("2");
            cof.SetIssuerId("12345678901234");
            ResPreauthCC resPreauthCC = new ResPreauthCC();
            resPreauthCC.SetDataKey(data_key);
            resPreauthCC.SetOrderId(order_id);
            resPreauthCC.SetCustId(cust_id);
            resPreauthCC.SetAmount(amount);
            resPreauthCC.SetCryptType(crypt_type);
            resPreauthCC.SetDynamicDescriptor(dynamic_descriptor);
            resPreauthCC.SetCofInfo(cof);
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(resPreauthCC);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("DataKey = " + receipt.GetDataKey());
                Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
                Console.WriteLine("Message = " + receipt.GetMessage());
            }
        }
    }
}

```

Sample Pre-Authorization with Vault

```

Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
Console.WriteLine("IsVisaDebit = " + receipt.GetIsVisaDebit());
Console.WriteLine("IssuerId = " + receipt.GetIssuerId());

Console.WriteLine("Cust ID = " + receipt.GetResDataCustId());
Console.WriteLine("Phone = " + receipt.GetResDataPhone());
Console.WriteLine("Email = " + receipt.GetResDataEmail());
Console.WriteLine("Note = " + receipt.GetResDataNote());
Console.WriteLine("Masked Pan = " + receipt.GetResDataMaskedPan());
Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate());
Console.WriteLine("Crypt Type = " + receipt.GetResDataCryptType());
Console.WriteLine("Avs Street Number = " + receipt.GetResDataAvsStreetNumber());
Console.WriteLine("Avs Street Name = " + receipt.GetResDataAvsStreetName());
Console.WriteLine("Avs Zipcode = " + receipt.GetResDataAvsZipcode());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see [Definitions of Response Fields \(page 447\)](#).

4.4.4 Vault Independent Refund CC - ResIndRefundCC

Vault Independent Refund transaction object definition

```
ResIndRefundCC resIndRefundCC = new ResIndRefundCC();
```

HttpPostRequest object for Vault Independent Refund transaction

```

HttpPostRequest mpgReq = new HttpPostRequest();

mpgReq.SetTransaction(resIndRefundCC);

```

Vault Independent Refund transaction values

For a full description of mandatory and optional values, see [Appendix A Definitions of Request Fields](#)

Table 43: Vault Independent Refund transaction object mandatory values

| Value | Type | Limits | Set method |
|----------------------|--------|---|--|
| Data key | String | 25-character alpha-numeric | <code>resIndRefundCC.SetData (data_key);</code> |
| Order ID | String | 50-character alpha-numeric | <code>resIndRefundCC.SetOrderId (order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>resIndRefundCC.SetAmount (amount);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>resIndRefundCC.SetCryptType (crypt);</code> |

Table 44: Vault Independent Refund transaction optional values

| Value | Type | Limits | Set method |
|--------------------|---------|--|---|
| Customer ID | String | 50-character alpha-numeric | <code>resIndRefundCC.SetCustId (cust_id);</code> |
| Expiry date | String | 4-character alpha-numeric (YYMM format) | <code>resIndRefundCC.SetExpdate (expiry_date);</code> |
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck (status_check);</code> |
| Dynamic descriptor | String | 20-character alpha-numeric | <code>resIndRefundCC .SetDynamicDescriptor (dynamic_descriptor);</code> |

Sample Vault Independent Refund

```
namespace Moneris
{
```

Sample Vault Independent Refund

```
using System;
using System.Text;
using System.Collections;
public class TestCanadaResIndRefundCC
{
    public static void Main(string[] args)
    {
        string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
        string store_id = "store1";
        string api_token = "yesguy";
        string data_key = "qJD5kCZiCjsfabKH7WuxoHyZx";
        string amount = "1.00";
        string cust_id = "customer1";
        string crypt_type = "1";
        string processing_country_code = "CA";
        bool status_check = false;
        ResIndRefundCC resIndRefundCC = new ResIndRefundCC();
        resIndRefundCC.SetOrderId(order_id);
        resIndRefundCC.SetCustId(cust_id);
        resIndRefundCC.SetAmount(amount);
        resIndRefundCC.SetCryptType(crypt_type);
        resIndRefundCC.SetData(data_key);
        HttpsPostRequest mpgReq = new HttpsPostRequest();
        mpgReq.SetProcCountryCode(processing_country_code);
        mpgReq.SetTestMode(true); //false or comment out this line for production transactions
        mpgReq.SetStoreId(store_id);
        mpgReq.SetApiToken(api_token);
        mpgReq.SetTransaction(resIndRefundCC);
        mpgReq.SetStatusCheck(status_check);
        mpgReq.Send();
        try
        {
            Receipt receipt = mpgReq.GetReceipt();
            Console.WriteLine("DataKey = " + receipt.GetDataKey());
            Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
            Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
            Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
            Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
            Console.WriteLine("Message = " + receipt.GetMessage());
            Console.WriteLine("TransDate = " + receipt.GetTransDate());
            Console.WriteLine("TransTime = " + receipt.GetTransTime());
            Console.WriteLine("TransType = " + receipt.GetTransType());
            Console.WriteLine("Complete = " + receipt.GetComplete());
            Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
            Console.WriteLine("CardType = " + receipt.GetCardType());
            Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
            Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
            Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
            Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
            Console.WriteLine("IsVisaDebit = " + receipt.GetIsVisaDebit());
            Console.WriteLine("Cust ID = " + receipt.GetResDataCustId());
            Console.WriteLine("Phone = " + receipt.GetResDataPhone());
            Console.WriteLine("Email = " + receipt.GetResDataEmail());
            Console.WriteLine("Note = " + receipt.GetResDataNote());
            Console.WriteLine("Masked Pan = " + receipt.GetResDataMaskedPan());
            Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate());
            Console.WriteLine("Crypt Type = " + receipt.GetResDataCryptType());
            Console.WriteLine("Avs Street Number = " + receipt.GetResDataAvsStreetNumber());
            Console.WriteLine("Avs Street Name = " + receipt.GetResDataAvsStreetName());
```

Sample Vault Independent Refund

```

Console.WriteLine("Avs Zipcode = " + receipt.GetResDataAvsZipcode());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see Definitions of Response Fields (page 447).

4.4.5 Force Post with Vault - ResForcePostCC

Force Post with Vault transaction object definition

```
ResForcePostCC resForcePostCC = new ResForcePostCC();
```

HttpPostRequest object for Force Post with Vault transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(resForcePostCC);
```

Force Post with Vault transaction object values

Table 1 Force Post with Vault transaction object mandatory values

| Value | Type | Limits | Set Method |
|--------------------|--------|---|---|
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>resForcePostCC.SetAmount(amount);</code> |
| Data key | String | 25-character alpha-numeric | <code>resForcePostCC.SetData(data_key);</code> |
| Authorization code | String | 8-character alpha-numeric | <code>resForcePostCC.SetAuthCode(auth_code);</code> |

| Value | Type | Limits | Set Method |
|----------------------|--------|---------------------------|-------------------------------------|
| E-commerce indicator | String | 1-character alpha-numeric | resForcePostCC.SetCryptType(crypt); |

Table 2 Force Post with Vault transaction object optional values

| Value | Type | Limits | Set Method |
|--------------------|---------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | resForcePostCC.SetCustId(cust_id); |
| Dynamic Descriptor | String | 20-character alpha-numeric | resForcePostCC.SetDynamicDescriptor(dynamic_descriptor); |
| Status Check | Boolean | true/false | mpgReq.SetStatusCheck(status_check); |

| Sample Force Post with Vault |
|--|
| <pre> namespace Moneris { using System; using System.Text; using System.Collections; public class TestCanadaResForcePostCC { public static void Main(string[] args) { string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss"); string store_id = "store1"; string api_token = "yesguy"; string data_key = "eLqsADfwqHDxIpJG9vLnELx01"; string amount = "1.00"; string cust_id = "customer1"; //if sent will be submitted, otherwise cust_id from profile will be used string auth_code = "245465"; string crypt_type = "7"; string descriptor = "my descriptor"; string processing_country_code = "CA"; bool status_check = false; ResForcePostCC resForcePostCC = new ResForcePostCC(); resForcePostCC.SetDataKey(data_key); resForcePostCC.SetOrderId(order_id); resForcePostCC.SetCustId(cust_id); resForcePostCC.SetAmount(amount); resForcePostCC.SetAuthCode(auth_code); resForcePostCC.SetCryptType(crypt_type); resForcePostCC.SetDynamicDescriptor(descriptor); HttpsPostRequest mpgReq = new HttpsPostRequest(); mpgReq.SetProcCountryCode(processing_country_code); mpgReq.SetTestMode(true); //false or comment out this line for production transactions mpgReq.SetStoreId(store_id); } } </pre> |

Sample Force Post with Vault

```

mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(resForcePostCC);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("DataKey = " + receipt.GetDataKey());
    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("TransType = " + receipt.GetTransType());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
    Console.WriteLine("CardType = " + receipt.GetCardType());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
    Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
    Console.WriteLine("IsVisaDebit = " + receipt.GetIsVisaDebit());
    Console.WriteLine("Cust ID = " + receipt.GetResDataCustId());
    Console.WriteLine("Phone = " + receipt.GetResDataPhone());
    Console.WriteLine("Email = " + receipt.GetResDataEmail());
    Console.WriteLine("Note = " + receipt.GetResDataNote());
    Console.WriteLine("Masked Pan = " + receipt.GetResDataMaskedPan());
    Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate());
    Console.WriteLine("Crypt Type = " + receipt.GetResDataCryptType());
    Console.WriteLine("Avs Street Number = " + receipt.GetResDataAvsStreetNumber());
    Console.WriteLine("Avs Street Name = " + receipt.GetResDataAvsStreetName());
    Console.WriteLine("Avs Zipcode = " + receipt.GetResDataAvsZipcode());
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}
}

```

4.4.6 Card Verification with Vault – ResCardVerificationCC

Things to Consider:

- This transaction type only applies to Visa, Mastercard and Discover transactions
- The card number and expiry date for this transaction are passed using a token, as represented by the data key value

- When using a temporary token (e.g., such as with Hosted Tokenization) **and** you intend to store the cardholder credentials, this transaction must be run prior to running the Vault Add Token transaction

Card Verification with Vault object definition

```
CardVerification rescardverify = new CardVerification();
```

HttpPostRequest object for Card Verification with Vault transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(rescardverify);
```

Card Verification with Vault transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 45: Card Verification with Vault transaction object mandatory values

| Value | Type | Limits | Set method |
|----------------------|--------|----------------------------|--|
| Order ID | String | 50-character alpha-numeric | <code>rescardverify.SetOrderId(order_id);</code> |
| Data key | String | 25-character alpha-numeric | <code>rescardverify.SetDataKeyFormat(data_key_format)</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>rescardverify.SetCryptType(crypt);</code> |

Table 45: Card Verification with Vault transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------------------|--------|--------|---|
| AVS | Object | N/A | rescardverify.SetAvsInfo (avsCheck); |
| CVD | Object | N/A | rescardverify.SetCvdInfo (cvdCheck); |
| Credential on File Info cof | Object | N/A | rescardverify.SetCofInfo (cof); |

NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. The Credential on File Info object has its own request variables, listed in blue in the table below, "Credential on File Object Request Variables".

Credential on File Transaction Object Request Fields

| Value | Type | Limits | Set Method |
|--|--------|--|--|
| <p>Issuer ID</p> <p>NOTE: This variable is required for all merchant-initiated transactions following the first one; upon sending the first transaction, the Issuer ID value is received in the transaction response and then used in subsequent transaction requests.</p> | String | 15-character alphanumeric variable length | <pre>cof.SetIssuerId("VALUE_FOR_ISSUER_ID");</pre> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |
| <p>Payment Indicator</p> | String | 1-character alphabetic | <pre>cof.SetPaymentIndicator("PAYMENT_INDICATOR_VALUE");</pre> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |
| <p>Payment Information</p> | String | 1-character numeric | <pre>cof.SetPaymentInformation("PAYMENT_INFO_VALUE");</pre> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |

Sample Card Verification with Vault

```
namespace Moneris
{
    using System;
    public class TestResCardVerificationCC
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string data_key = "V6F9PJKdXQj6vKiCMNrWbsyJ2";
            string order_id = "Test_P_033333_6";
            string cust_id = "Customer1";
            string crypt = "7";
            string processing_country_code = "CA";
            bool status_check = false;
        }
    }
}
```


Sample Card Verification with Vault

```

/***** Address Verification Service *****/
AvsInfo avsCheck = new AvsInfo();
avsCheck.SetAvsStreetNumber("212");
avsCheck.SetAvsStreetName("Payton Street");
avsCheck.SetAvsZipCode("M1M1M1");

/***** Card Validation Digits *****/
CvdInfo cvdCheck = new CvdInfo();
cvdCheck.SetCvdIndicator("1");
cvdCheck.SetCvdValue("099");
/***** Credential on File *****/
CofInfo cof = new CofInfo();
cof.SetPaymentIndicator("U");
cof.SetPaymentInformation("2");
cof.SetIssuerId("12345678901234");
ResCardVerificationCC rescardverify = new ResCardVerificationCC();
rescardverify.SetDataKey(data_key);
rescardverify.SetOrderId(order_id);
rescardverify.SetCustId(cust_id);
//rescardverify.SetExpDate("1612"); //for use with Temp Tokens only
rescardverify.SetCryptType(crypt);
rescardverify.SetAvsInfo(avsCheck);
rescardverify.SetCvdInfo(cvdCheck);
rescardverify.SetCofInfo(cof);

HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(rescardverify);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("IsVisaDebit = " + receipt.GetIsVisaDebit());
Console.WriteLine("IssuerId = " + receipt.GetIssuerId());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}

```

Sample Card Verification with Vault

```
}  
}  
} // end TestResCardVerificationCC  
}
```

4.5 Hosted Tokenization

Moneris Hosted Tokenization is a solution for online e-commerce merchants who do not want to handle credit card numbers directly on their websites, yet want the ability to fully customize their check-out web page appearance.

When an hosted tokenization transaction is initiated, the Moneris Gateway displays (on the merchant's behalf) a single text box on the merchant's checkout page. The cardholder can then securely enter the credit card information into the text box. Upon submission of the payment information on the checkout page, Moneris Gateway returns a temporary token representing the credit card number to the merchant. This is then used in an API call to process a financial transaction directly with Moneris to charge the card. After receiving a response to the financial transaction, the merchant generates a receipt and allows the cardholder to continue with online shopping.

For more details on how to implement the Moneris Hosted Tokenization feature, see the Hosted Solutions Integration Guide. The guide can be downloaded from the Moneris Developer Portal (<https://developer.moneris.com>).

5 INTERAC® Online Payment

- 5.1 About INTERAC® Online Payment Transactions
- 5.2 Other Documents and References
- 5.3 Website and Certification Requirements
- 5.4 Transaction Flow for INTERAC® Online Payment
- 5.5 Sending an INTERAC® Online Payment Purchase Transaction
- 5.6 INTERAC® Online Payment Purchase
- 5.7 INTERAC® Online Payment Refund
- 5.8 INTERAC® Online Payment Field Definitions

5.1 About INTERAC® Online Payment Transactions

The INTERAC® Online Payment method offers cardholders the ability to pay using online banking. This payment method can be combined with the Moneris Gateway API solution to allow online payments using credit and debit cards.

INTERAC® Online Payment transactions via the API require two steps:

1. The cardholder guarantees the funds for the purchase amount using their online banking process.
2. The merchant confirms the payment by sending an INTERAC® Online Payment purchase request to Moneris using the API.

Any of the transaction objects that are defined in this section can be passed to the `HttpPostRequest` connection object defined in Section 17.5 (page 391)[here](#).

INTERAC® Online Payment transactions are available to **Canadian integrations** only.

5.2 Other Documents and References

INTERAC® Online Payment is offered by Acxsys Corporation, which is also a licensed user of the *Interac* logo. Refer to the following documentation and websites for additional details.

INTERAC® Online Payment Merchant Guideline

Visit the Moneris Developer Portal (<https://developer.moneris.com>) to access the latest documentation and downloads.

This details the requirements for each page consumers visit on a typical INTERAC® Online Payment merchant website. It also details the requirements that can be displayed on any page (that is, requirements that are not page-specific).

Logos

Visit the Moneris Developer Portal (<https://developer.moneris.com>) to access the logos and downloads.

5.3 Website and Certification Requirements

5.3.1 Things to provide to Moneris

Refer to the Merchant Guidelines referenced in Section 5.2 for instructions on proper use of logos and the term "INTERAC® Online Payment". You need to provide Moneris with the following registration information:

- Merchant logo to be displayed on the INTERAC® Online Payment Gateway page
 - In both French and English
 - 120 × 30 pixels
 - Only PNG format is supported.
- Merchant business name
 - In both English and French
 - Maximum 30 characters.
- List of all referrer URLs. That is, URLs from which the customer may be redirected to the INTERAC® Online Payment gateway.
- List of all URLs that may appear in the IDEBIT_FUNDEDURL field of the https form POST to the INTERAC® Online Payment Gateway.
- List of all URLs that may appear in the IDEBIT_NOTFUNDEDURL field of the https form POST to the INTERAC® Online Payment Gateway.

Note that if your test and production environments are different, provide the above information for both environments.

5.3.2 Certification process

Test cases

All independent merchants and third-party service/shopping cart providers must pass the certification process by conducting all the test cases outlined in Appendix E (page 464) and "Third-Party Service Provider Checklists for INTERAC® Online Payment Certification Testing" on page 468 respectively. This is required after you have completed all of your testing.

Any major changes to your website after certification (with respect to the INTERAC® Online Payment functionality) require the site to be re-certified by completing the test cases again.

Appendix H (page 476) is the Certification Test Case Detail showing all the information and requirements for each test case.

Screenshots

You must provide Moneris with screenshots of your check-out process showing examples of approved and declined transactions using the INTERAC® Online Payment service.

Checklists

To consistently portray the INTERAC Online service as a secure payment option, you must complete the respective Merchant Requirement checklist in Appendix E (page 464) or Appendix F (page 468) accordingly. The detailed descriptions of the requirements in these checklists can be found in the INTERAC® Online Payment Merchant Guidelines document referred to in 5.2 (page 107). If any item does not apply, mark it as "N/A".

After completion, fax or email the results to the Moneris Integration Support help desk for review before implementing the change into the production environment.

5.3.3 Client Requirements

Checklists

As a merchant using an INTERAC® Online Payment-certified third-party solution, your clients must complete the Merchant Checklists for INTERAC® Online Payment Certification form (Appendix G, page 473). They will **not** be required to complete any of the test cases.

Your clients must also complete the Merchant Requirement checklist (Appendix G, page 473). Ensure that your product documentation properly instructs your clients to fax or email the results to the Moneris Integration Support helpdesk for registration purposes.

Screenshots

Your clients must provide Moneris with screenshots of their check-out process that show examples of approved and declined transactions using INTERAC® Online Payment.

5.3.4 Delays

Note that merchants that fall under the following category codes listed in Table 46 may experience delays in the certification or registration process of up to 7 days.

Table 46: Category codes that might introduce certification/registration delays

| Category code | Merchant type/name |
|---------------|---|
| 4812 | Telecommunication equipment including telephone sales |
| 4829 | Money transfer—merchant |
| 5045 | Computers, computer peripheral equipment, software |
| 5732 | Electronic sales |
| 6012 | Financial institution—merchandise and services |
| 6051 | Quasi cash—merchant |

| Category code | Merchant type/name |
|---------------|--|
| 6530 | Remote stored value load—merchant |
| 6531 | Payment service provider—money transfer for a purchase |
| 6533 | Payment service provider—merchant—payment transaction |

5.4 Transaction Flow for INTERAC® Online Payment

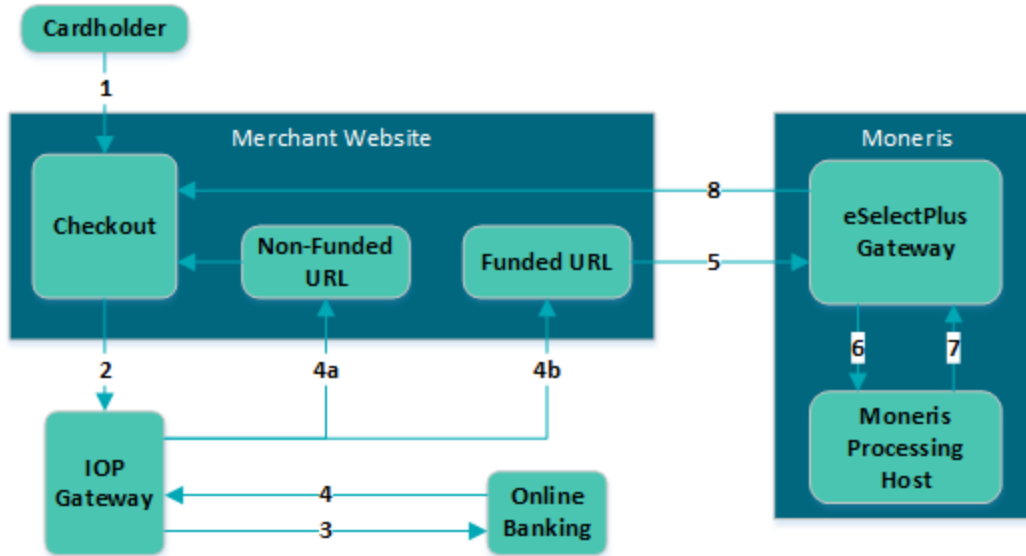


Figure 2: INTERAC® Online Payment transaction flow diagram

- Customer selects the INTERAC® Online Payment option on the merchant's web store.
- Merchant redirects the customer to the IOP gateway to select a financial institution (issuer) of choice. This step involves form-posting the following required variables over the HTTPS protocol:
 - IDEBIT_MERCHNUM
 - IDEBIT_AMOUNT¹
 - IDEBIT_CURRENCY
 - IDEBIT_FUNDEDURL
 - IDEBIT_NOTFUNDEDURL
 - IDEBIT_MERCHLANG
 - IDEBIT_VERSIONIDEBIT_TERMID - optional
 - IDEBIT_INVOICE - optional
 - IDEBIT_MERCHDATA - optional
- Customer selects an issuer, and is directed to the online banking site. Customer completes the online banking process and guarantees the funds for the purchase.

¹This value is expressed in cents. Therefore, \$1 is input as 100

4. Depending on the results of step 5.4, the issuer re-directs the customer through the IOP Gateway to either the merchant's non-funded URL (4a) or funded URL (4b). Both URLs can appear on the same page. The funded/non-funded URLs must validate the variables posted back according to 5.8 (page 117) before continuing.
 - 5.4 shows the variables that are posted back in the re-direction.
 - If the customer is directed to the non-funded URL, return to step 5.4 and ask for another means of payment.
 - If the customer is directed to the funded URL, continue to the next step.
5. Merchant sends an INTERAC® Online Payment purchase request to Moneris Gateway while displaying the "Please wait...." message to the customer. This should be done within 30 minutes of receiving the response in step 5.4.
6. Moneris' processing host sends a request for payment confirmation to the issuer.
7. The issuer sends a response (either approved or declined) to Moneris host.
8. Moneris Gateway relays the response back to the merchant. If the payment was approved, the merchant fulfills the order.

Table 47: Funded and non-funded URL variables

| To funded URL only | To funded and non-funded URL |
|--------------------|------------------------------|
| IDEBIT_TRACK2 | IDEBIT_VERSION |
| IDEBIT_ISSCONF | IDEBIT_ISSLANG |
| IDEBIT_ISSNAME | IDEBIT_TERMID (optional) |
| | IDEBIT_INVOICE (optional) |
| | IDEBIT_MERCHDATA (optional) |

5.5 Sending an INTERAC® Online Payment Purchase Transaction

5.5.1 Fund-Guarantee Request

After choosing to pay by INTERAC® Online Payment, the customer is redirected using an HTML form post to the INTERAC® Online PaymentGateway page. Below is a sample code that is used to post the request to the Gateway.

```
<form action='from Section 9' method='post'>
<input type='text' name='IDEBIT_INVOICE' value='your unique invoice number'>
  <input type='text' name='IDEBIT_AMOUNT' value='100'> <!-- ($1.00) use cent values instead of
    dollar.cent format ->
<input type='text' name='IDEBIT_MERCHNUM' value='from Moneris Solutions'>
<input type='text' name='IDEBIT_CURRENCY' value='CA'>
<input type='text' name='IDEBIT_FUNDEDURL' value='your funded url'>
<input type='text' name='IDEBIT_NOTFUNDEDURL' value='your not funded url'>
<input type='text' name='IDEBIT_ISSLANG' value='en'>
<input type='text' name='IDEBIT_VERSION' value='1'>
<input type="submit" name="Submit" value="Submit to Gateway">
</form>
```

5.5.2 Online Banking Response and Fund-Confirmation Request

The response variables are posted back in an HTML form to either the funded or non-funded URL that was provided to INTERAC®.

The following variables must be validated (5.8, page 117):

- IDEBIT_TRACK2
- IDEBIT_ISSCONF
- IDEBIT_ISSNAME
- IDEBIT_VERSION
- IDEBIT_ISSLANG
- IDEBIT_INVOICE

Note that IDEBIT_ISSCONF and IDEBIT_ISSNAME must be displayed on the client's receipt that is generated by the merchant.

After validation, IDEBIT_TRACK2 is used to form an IDebitPurchase transaction that is sent to Moneris Gateway to confirm the fund.

If the validation fails, redirect the client to the main page and ask for a different means of payment.

If the validation passes, an IDebitPurchase transaction can be sent to Moneris Gateway.

5.6 INTERAC® Online Payment Purchase

INTERAC® Online Payment Purchase transaction object definition

```
IDebitPurchase IOP_Txn = new IDebitPurchase();
```

HttpPostRequest object for INTERAC® Online Payment Purchase transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();  
mpgReq.SetTransaction(IOP_Txn);
```

INTERAC® Online Payment Purchase transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 48: INTERAC® Online Payment transaction object mandatory values

| Value | Type | Limits | Set method |
|-------------|--------|---|---------------------------------|
| Order ID | String | 50-character alpha-numeric | IOP_Txn.SetOrderId (order_id) ; |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | IOP_Txn.SetAmount (amount) ; |
| Track2 data | String | 40-character alpha-numeric | IOP_Txn.SetTrack2 (track2) ; |

Table 49: INTERAC® Online Payment Purchase transaction optional values

| Value | Type | Limits | Set method |
|----------------------|--------|---|---|
| Customer ID | String | 50-character alphanumeric | IOP_Txn.SetCustId (cust_id) ; |
| Dynamic descriptor | String | 20-character alphanumeric | IOP_Txn.SetDynamicDescriptor (dynamic_descriptor) ; |
| Customer information | Object | Not applicable. Click here See Section 14 (page 363). | IOP_Txn.SetCustInfo (customer) ; |

Sample INTERAC® Online Payment Purchase

```

namespace Moneris
{
    using System;
    public class TestCanadaIDebitPurchase
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string cust_id = "Lance_Briggs_55";
            string amount = "5.00";
            string track2 = "5268051119993326=0609AAAAAAAAAAAA000";
            string processing_country_code = "CA";
            bool status_check = false;
            /***** Billing/Shipping Variables *****/
            string first_name = "Bob";
        }
    }
}
    
```

Sample INTERAC® Online Payment Purchase

```

string last_name = "Smith";
string company_name = "ProLine Inc.";
string address = "623 Bears Ave";
string city = "Chicago";
string province = "Illinois";
string postal_code = "M1M2M1";
string country = "Canada";
string phone = "777-999-7777";
string fax = "777-999-7778";
string tax1 = "10.00";
string tax2 = "5.78";
string tax3 = "4.56";
string shipping_cost = "10.00";
/***** Order Line Item Variables *****/
string[] item_description = new string[] { "Chicago Bears Helmet", "Soldier Field Poster" };
string[] item_quantity = new string[] { "1", "1" };
string[] item_product_code = new string[] { "CB3450", "SF998S" };
string[] item_extended_amount = new string[] { "150.00", "19.79" };
/***** Customer Information Object *****/
CustInfo customer = new CustInfo();
/***** Set Customer Billing Information *****/
customer.SetBilling(first_name, last_name, company_name, address, city,
province, postal_code, country, phone, fax, tax1, tax2,
tax3, shipping_cost);
/***** Set Customer Shipping Information *****/
customer.SetShipping(first_name, last_name, company_name, address, city,
province, postal_code, country, phone, fax, tax1, tax2,
tax3, shipping_cost);
/***** Order Line Items *****/
customer.SetItem(item_description[0], item_quantity[0],
item_product_code[0], item_extended_amount[0]);
customer.SetItem(item_description[1], item_quantity[1],
item_product_code[1], item_extended_amount[1]);
/***** Request *****/
IDebitPurchase IOP_Txn = new IDebitPurchase();
IOP_Txn.SetOrderId(order_id);
IOP_Txn.SetCustId(cust_id);
IOP_Txn.SetAmount(amount);
IOP_Txn.SetIdebitTrack2(track2);
IOP_Txn.SetCustInfo(customer);
//IOP_Txn.SetDynamicDescriptor("dynamicdescriptor1");
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(IOP_Txn);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
}

```

Sample INTERAC® Online Payment Purchase

```

Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

5.7 INTERAC® Online Payment Refund

To process this transaction, you need the order ID and transaction number from the original INTERAC® Online Payment Purchase transaction.

INTERAC® Online Payment Refund transaction object definition

```
IDebitRefund refund = new IDebitRefund();
```

HttpPostRequest object for INTERAC® Online Payment Refund transaction

```

HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(refund);

```

INTERAC® Online Payment Refund transaction object values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 50: INTERAC® Online Payment Refund transaction object mandatory variables

| Value | Type | Limits | Set method |
|--------------------|--------|---|---|
| Order ID | String | 50-character alpha-numeric | <code>refund.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>refund.SetAmount(amount);</code> |
| Transaction number | String | 255-character alpha-numeric | <code>refund.SetTxnNumber(txn_number);</code> |

Table 51: INTERAC® Online Payment Refund transaction optional values

| Value | Type | Limits | Set method |
|--------------|---------|----------------------------|---|
| Customer ID | String | 50-character alpha-numeric | <code>refund.SetCustId(cust_id);</code> |
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |

Sample code

| Sample INTERAC® Online Payment Refund |
|--|
| <pre> namespace Moneris { using System; public class TestCanadaIDebitRefund { public static void Main(string[] args) { string store_id = "store5"; string api_token = "yesguy"; string order_id = "Test20150625014816"; string amount = "5.00"; string txn_number = "113524-0_10"; string processing_country_code = "CA"; bool status_check = false; IDebitRefund refund = new IDebitRefund(); refund.SetOrderId(order_id); } } } </pre> |

Sample INTERAC® Online Payment Refund

```

refund.SetAmount (amount);
refund.SetTxnNumber (txn_number);
HttpPostRequest mpgReq = new HttpPostRequest ();
mpgReq.SetProcCountryCode (processing_country_code);
mpgReq.SetTestMode (true); //false or comment out this line for production transactions
mpgReq.SetStoreId (store_id);
mpgReq.SetApiToken (api_token);
mpgReq.SetTransaction (refund);
mpgReq.SetStatusCheck (status_check);
mpgReq.Send ();
try
{
Receipt receipt = mpgReq.GetReceipt ();
Console.WriteLine ("CardType = " + receipt.GetCardType ());
Console.WriteLine ("TransAmount = " + receipt.GetTransAmount ());
Console.WriteLine ("TxnNumber = " + receipt.GetTxnNumber ());
Console.WriteLine ("ReceiptId = " + receipt.GetReceiptId ());
Console.WriteLine ("TransType = " + receipt.GetTransType ());
Console.WriteLine ("ReferenceNum = " + receipt.GetReferenceNum ());
Console.WriteLine ("ResponseCode = " + receipt.GetResponseCode ());
Console.WriteLine ("ISO = " + receipt.GetISO ());
Console.WriteLine ("BankTotals = " + receipt.GetBankTotals ());
Console.WriteLine ("Message = " + receipt.GetMessage ());
Console.WriteLine ("AuthCode = " + receipt.GetAuthCode ());
Console.WriteLine ("Complete = " + receipt.GetComplete ());
Console.WriteLine ("TransDate = " + receipt.GetTransDate ());
Console.WriteLine ("TransTime = " + receipt.GetTransTime ());
Console.WriteLine ("Ticket = " + receipt.GetTicket ());
Console.WriteLine ("TimedOut = " + receipt.GetTimedOut ());
Console.ReadLine ();
}
catch (Exception e)
{
Console.WriteLine (e);
}
}
}
}

```

5.8 INTERAC® Online Payment Field Definitions

Table 52: Field Definitions

| Value | Characters | | Limits |
|---------------------|---|-------------------------------|--------|
| | Description | | |
| IDEBIT_ MERCHNUM | 5-14 | Numbers and uppercase letters | |
| | This field is provided by Moneris. For example, 0003MONMPGXXXX. | | |
| IDEBIT_TERMID | 8 | Numbers and uppercase letters | |
| | Optional field | | |

Table 52: Field Definitions (continued)

| Value | Characters | | Limits |
|-------------------|---|--|--------|
| | Description | | |
| IDEBIT_ AMOUNT | 1-12 | Numbers | |
| | Amount expressed in cents (for example, 1245 for \$12.45) to charge to the card. | | |
| IDEBIT_ CURRENCY | 3 | "CAD" or "USD" | |
| | National currency of the transaction. | | |
| IDEBIT_ INVOICE | 1-20 | ISO-8859-1 encoded characters restricted to: <ul style="list-style-type: none"> • Uppercase and lowercase • Numbers • À Á Â Ã Ä Å Æ É Ê Ë Ì Í Î Ï Ò Ù Û Ü Ç à á â ã ä å è é ê ë ì í î ï ò ù û ü ý ç • Spaces • # \$. , - / = ? @ ' | |
| | Optional field Can be the Order ID when used with Moneris Gateway fund confirmation transactions. | | |
| IDEBIT_ MERCHDATA | 1024 | ISO-8859-1 restricted to single-byte codes, hex 20 to 7E (consistent with US-ASCII and ISO-8859-1 Latin-1). Note that the following character combinations may not be accepted in the IDEBIT_MERCHDATA field: <ul style="list-style-type: none"> • "/.", "/%2E.", "/.%2E", "/%2E%2E", "\\%2E%2E", "\\%2E.", "\\.%2E", "\\%2E%2E", "&#", "<", "%3C", ">", "%3E" | |
| | Free form data provided by the merchant that will be passed back unchanged to the merchant once the payment has been guaranteed in online banking. This may be used to identify the customer, session or both. | | |
| IDEBIT_ FUNDEDURL | 1024 | ISO-8859-1 restricted to single-byte codes, restricted to: <ul style="list-style-type: none"> • Uppercase and lowercase letters • Numbers • ; / ? : @ & = + \$, - _ . ! ~ * ' () % | |
| | Https address to which the issuer will redirect cardholders after guaranteeing the fund through online banking. | | |

Table 52: Field Definitions (continued)

| Value | Characters | Limits |
|---------------------|--|---|
| | Description | |
| IDEBIT_NOTFUNDEDURL | 1024 | ISO-8859-1, restricted to single-byte codes, restricted to: <ul style="list-style-type: none"> • Uppercase and lowercase letters • Numbers • ; / ? : @ & = + \$, - _ . ! ~ * ' () % |
| | Https address to which the issuer redirects cardholders after failing or canceling the online banking process. | |
| IDEBIT_MERCHLANG | 2 | “en” or “fr” |
| | Customer's current language at merchant. | |
| IDEBIT_VERSION | 3 | Numbers |
| | Initially, the value is 1. | |
| IDEBIT_ISSLANG | 2 | “en” or “fr” |
| | Customer’s current language at issuer. | |
| IDEBIT_TRACK2 | 37 | ISO-8859-1 (restricted to single-byte codes), hex 20 to 7E (consistent with US-ASCII and ISO-8859-1 Latin-1) |
| | Value returned by the issuer. It includes the PAN, expiry date, and transaction ID. | |
| IDEBIT_ISSCONF | 15 | ISO-8859-1 encoded characters restricted to: <ul style="list-style-type: none"> • Uppercase and lowercase letters • Numbers • À Á Â Ã Ä È É Ê Ë Ì Î Ï Ò Ù Û Ü Ç à á â ã è é ê ë ì î ï ò ù û ü ÿ ç • Spaces • # \$. , - / = ? @ ' |
| | Confirmation number returned from the issuer to be displayed on the merchant’s confirmation page and on the receipt. | |
| IDEBIT_ISSNAME | 30 | ISO-8859-1 encoded characters restricted to: <ul style="list-style-type: none"> • Uppercase and lowercase letters • Numbers • À Á Â Ã Ä È É Ê Ë Ì Î Ï Ò Ù Û Ü Ç à á â ã è é ê ë ì î ï ò ù û ü ÿ ç • Spaces • # \$. , - / = ? @ • ' |
| | Issuer name to be displayed on the merchant’s confirmation page and on the receipt. | |

6 Mag Swipe Transaction Set

- 6.1 Mag Swipe Transaction Type Definitions
- 6.2 Mag Swipe Purchase
 - 6.2.1 Encrypted Mag Swipe Purchase
- 6.3 Mag Swipe Pre-Authorization
 - 6.3.1 Encrypted Mag Swipe Pre-Authorization
- 6.4 Mag Swipe Completion
- 6.5 Mag Swipe Force Post
 - 6.5.1 Encrypted Mag Swipe Force Post
- 6.6 Mag Swipe Purchase Correction
- 6.7 Mag Swipe Refund
- 6.8 Mag Swipe Independent Refund
 - 6.8.1 Encrypted Mag Swipe Independent Refund

Mag Swipe transactions allow customers to swipe a credit card and submit the Track2 details.

These transactions support the submission of Track2 as well as a manual entry of the credit card number and expiry date. If all three fields are submitted, the Track2 details are used to process the transaction.

6.1 Mag Swipe Transaction Type Definitions

Purchase

Verifies funds on the customer's card, removes the funds and prepares them for deposit into the merchant's account.

Pre-Authorization

Verifies and locks funds on the customer's credit card. The funds are locked for a specified amount of time based on the card issuer.

To retrieve the funds that have been locked by a Pre-Authorization transaction so that they may be settled in the merchant's account, a Completion transaction must be performed. A Pre-Authorization may only be "completed" once.

Completion

Retrieves funds that have been locked (by a Mag Swipe Pre-Authorization transaction), and prepares them for settlement into the merchant's account.

Force Post

Retrieves the locked funds and prepares them for settlement into the merchant's account.

This is used when a merchant obtains the authorization number directly from the issuer by a third-party authorization method (such as by phone).

Purchase Correction

Restores the **full** amount of a previous Mag Swipe Purchase or Mag Swipe Completion transaction to the cardholder's card, and removes any record of it from the cardholder's statement. The order ID and transaction number from the original transaction are required, but the credit card does not need to be re-swiped.

This transaction can be used against a Purchase or Completion transaction that occurred same day provided that the batch containing the original transaction remains open. When using the automated closing feature, Batch Close occurs daily between 10 and 11 pm Eastern Time.

This transaction is sometimes referred to as "void".

Refund

Restores all or part of the funds from a Mag Swipe Purchase or Mag Swipe Completion transaction to the cardholder's card. Unlike a Purchase Correction, there is a record of the refund.

Independent Refund

Credits a specified amount to the cardholder's credit card.

This does not require a previous transaction (such as Mag Swipe Purchase) to be logged in the Moneris Gateway. However, a credit card must be swiped to provide the Track2 data.

6.1.1 Encrypted Mag Swipe Transactions

Encrypted Mag Swipe transactions allow the customer to swipe or key in a credit card using a Moneris-provided encrypted mag swipe reader, and submit the encrypted Track2 details.

The encrypted mag swipe reader can be used for processing:

- Swiped card-present transactions
- Manually keyed card-present transactions
- Manually keyed card-not-present transactions.

Encrypted Mag Swipe transactions are identical to the regular Mag Swipe transactions from the customer's perspective. However, the card data must be swiped or keyed in via a Moneris-provided encrypted mag swipe reader. Contact Moneris for more details.

Only Mag Swipe Purchase and Mag Swipe Pre-Authorization have encrypted versions. Their explanations appear in this document as subsections of the regular (unencrypted) Mag Swipe Purchase and Mag Swipe Pre-Authorization transactions respectively.

6.2 Mag Swipe Purchase

Mag Swipe Purchase transaction object definition

```
Track2Purchase track2purchase = new Track2Purchase();
```

HttpPostRequest object for Mag Swipe Purchase transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(track2purchase);
```

Mag Swipe Purchase transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 53: Mag Swipe Purchase transaction object mandatory values

| Value | Type | Limits | Set method |
|---|--------|---|---|
| Order ID | String | 50-character alpha-numeric | <code>track2purchase.SetOrderId (order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>track2purchase.SetAmount (amount);</code> |
| Credit card number OR Track2 data | String | 20-character numeric OR 40-character numeric | <code>track2purchase.SetPan (pan);</code> OR <code>track2purchase.SetTrack2 (track2);</code> |
| Expiry date | String | 4-character alpha-numeric (YYMM format) | <code>track2purchase.SetExpdate (expiry_date);</code> |
| POS code | String | 2-character numeric | <code>track2purchase.SetPosCode (pos_code);</code> |

Table 54: Mag Swipe Purchase transaction optional values

| Value | Type | Limits | Set method |
|-----------------|--------|----------------------------|--|
| AVS information | Object | N/A | <code>track2purchase.SetAvsInfo (avsCheck);</code> |
| Customer ID | String | 50-character alpha-numeric | <code>track2purchase.SetCustId (cust_id);</code> |
| CVD information | Object | N/A | <code>track2purchase.SetCvdInfo (cvdCheck);</code> |

Table 54: Mag Swipe Purchase transaction optional values

| Value | Type | Limits | Set method |
|--------------------|---------|----------------------------|--|
| Dynamic descriptor | String | 20-character alpha-numeric | track2purchase .SetDynamicDescriptor (dynamic_descriptor); |
| Status Check | Boolean | true/false | mpgReq.SetStatusCheck(status_ check); |

Sample Mag Swipe Purchase

```

namespace Moneris
{
    using System;
    using System.Text.RegularExpressions;
    public class TestCanadaTrack2Purchase
    {
        public static void Main(string[] args)
        {
            string store_id = "store1";
            string api_token = "yesguy";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string cust_id = "LBriggs";
            string amount = "1.00";
            string track2 = "";
            //string track2 = ";5258968987035454=06061015454001060101?";
            string pan = "4242424242424242";
            string exp_date = "1903"; //must send '0000' if swiped
            string pos_code = "00";
            string processing_country_code = "CA";
            bool status_check = false;
            Track2Purchase track2purchase = new Track2Purchase();
            track2purchase.SetOrderId(order_id);
            track2purchase.SetCustId(cust_id);
            track2purchase.SetAmount(amount);
            track2purchase.SetTrack2(track2);
            track2purchase.SetPan(pan);
            track2purchase.SetExpdate(exp_date);
            track2purchase.SetPosCode(pos_code);
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(track2purchase);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("CardType = " + receipt.GetCardType());
                Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
                Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                Console.WriteLine("TransType = " + receipt.GetTransType());
                Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
            }
        }
    }
}

```

Sample Mag Swipe Purchase

```

Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
//Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
//Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

6.2.1 Encrypted Mag Swipe Purchase

Encrypted Mag Swipe Purchase transaction object definition

```
EncTrack2Purchase encpurchase = new EncTrack2Purchase();
```

HttpPostRequest object for Encrypted Mag Swipe Purchase transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(encpurchase);
```

Encrypted Mag Swipe Purchase transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 55: Encrypted Mag Swipe Purchase transaction object mandatory values

| Value | Type | Limits | Set method |
|-----------------------|--------|---|--|
| Order ID | String | 50-character alpha-numeric | <code>encpurchase.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>encpurchase.SetAmount(amount);</code> |
| Encrypted Track2 data | String | n/a | <code>encpurchase.SetEncTrack2(enc_track2);</code> |
| POS code | String | 2-character numeric | <code>encpurchase.SetPosCode(pos_code);</code> |
| Device type | String | 30-character alpha-numeric | <code>encpurchase.SetDeviceType(device_type);</code> |

Table 56: Encrypted Mag Swipe Purchase transaction optional values

| Value | Type | Limits | Set method |
|--------------------|---------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | <code>encpurchase.SetCustId(cust_id);</code> |
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |
| AVS information | Object | n/a | <code>encpurchase.SetAvsInfo(avsCheck);</code> |
| Dynamic descriptor | String | 20-character alpha-numeric | <code>encpurchase.SetDynamicDescriptor(dynamic_descriptor);</code> |

Sample Encrypted Mag Swipe Purchase

| |
|--------------------------------|
| <pre>namespace Moneris {</pre> |
|--------------------------------|

Sample Encrypted Mag Swipe Purchase

```

using System;
using System.Text.RegularExpressions;
public class TestCanadaEncTrack2Purchase
{
public static void Main(string[] args)
{
string store_id = "store5";
string api_token = "yesguy";
string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
string cust_id = "LBriggs";
string amount = "1.00";
string pos_code = "00";
string device_type = "idtech_bdk";
string processing_country_code = "CA";
bool status_check = false;
string dynamic_descriptor = "my descriptor";
string enc_track2 = "ENCRYPTEDTRACK2DATA";
EncTrack2Purchase encpurchase = new EncTrack2Purchase();
encpurchase.SetOrderId(order_id);
encpurchase.SetCustId(cust_id);
encpurchase.SetAmount(amount);
encpurchase.SetEncTrack2(enc_track2);
encpurchase.SetPosCode(pos_code);
encpurchase.SetDeviceType(device_type);
encpurchase.SetDynamicDescriptor(dynamic_descriptor);
AvsInfo avsCheck = new AvsInfo();
avsCheck.SetAvsStreetNumber("212");
avsCheck.SetAvsStreetName("Payton Street");
avsCheck.SetAvsZipCode("M1M1M1");
encpurchase.SetAvsInfo(avsCheck);
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(encpurchase);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("MaskedPan = " + receipt.GetMaskedPan());
Console.WriteLine("CardLevelResult = " + receipt.GetCardLevelResult());
Console.WriteLine("AVS Response = " + receipt.GetAvsResultCode());
}
}
}

```

| Sample Encrypted Mag Swipe Purchase |
|--|
| <pre> } catch (Exception e) { Console.WriteLine(e); } } } } } </pre> |

6.3 Mag Swipe Pre-Authorization

Mag Swipe Pre-Authorization transaction object definition

```
Track2PreAuth track2preauth = new Track2PreAuth();
```

HttpPostRequest object for Mag Swipe Pre-Authorization transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(track2preauth);
```

Mag Swipe Pre-Authorization transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 57: Mag Swipe Pre-Authorization transaction object mandatory values

| Value | Type | Limits | Set method |
|---|--------|--|--|
| Order ID | String | 50-character alpha-numeric | track2preauth.SetOrderId (order_id); |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div style="border: 1px solid black; background-color: #e0ffe0; padding: 2px; display: inline-block;">EXAMPLE: 1234567.89</div> | track2preauth.SetAmount (amount); |
| Credit card number OR Track2 data | String | 20-character numeric OR 40-character numeric | track2preauth.SetPan (pan); OR track2preauth.SetPan (pan); |
| Expiry date | String | 4-character alpha- | track2preauth.SetExpdate (expiry_date); |

Table 57: Mag Swipe Pre-Authorization transaction object mandatory values (continued)

| Value | Type | Limits | Set method |
|----------|--------|--------------------------|--|
| | | numeric (YYMM format) | |
| POS code | String | 2-character numeric | <code>track2preauth.SetPosCode(pos_code);</code> |

Table 58: Mag Swipe Pre-Authorization transaction optional values

| Value | Type | Limits | Set method |
|--------------------|---------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | <code>track2preauth.SetCustId(cust_id);</code> |
| Dynamic descriptor | String | 20-character alpha-numeric | <code>track2preauth.SetDynamicDescriptor(dynamic_descriptor);</code> |
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |

Sample Mag Swipe Pre-Authorization

```

namespace Moneris
{
    using System;
    using System.Text.RegularExpressions;
    public class TestCanadaTrack2Preauth
    {
        public static void Main(string[] args)
        {
            string store_id = "store1";
            string api_token = "yesguy";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string cust_id = "LBriggs";
            string amount = "5.00";
            //string track2 = ";5258968987035454=06061015454001060101?";
            string track2 = "";
            string pan = "4242424242424242";
            string exp = "1906"; //must send '0000' if swiped
            string pos_code = "00";
            string processing_country_code = "CA";
            bool status_check = false;
            Track2PreAuth track2preauth = new Track2PreAuth();
            track2preauth.SetOrderId(order_id);
            track2preauth.SetCustId(cust_id);
            track2preauth.SetAmount(amount);
            track2preauth.SetTrack2(track2);
            track2preauth.SetPan(pan);
            track2preauth.SetExpdate(exp);
            track2preauth.SetPosCode(pos_code);
        }
    }
}

```


Sample Mag Swipe Pre-Authorization

```

HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(track2preauth);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("CardType = " + receipt.GetCardType());
    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
    Console.WriteLine("TransType = " + receipt.GetTransType());
    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("ISO = " + receipt.GetISO());
    Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Ticket = " + receipt.GetTicket());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    //Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
    //Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}
}

```

6.3.1 Encrypted Mag Swipe Pre-Authorization

Encrypted Mag Swipe Pre-Authorization transaction object definition

```
EncTrack2PreAuth enctrack2preauth = new EncTrack2PreAuth();
```

HttpPostRequest object for Encrypted Mag Swipe Pre-Authorization transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(enctrack2preauth);
```

Encrypted Mag Swipe Pre-Authorization transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 59: Encrypted Mag Swipe Pre-Authorization transaction object mandatory values

| Value | Type | Limits | Set method |
|--|--------|---|--|
| Order ID | String | 50-character alpha-numeric | <code>enctrack2preauth.SetOrderId (order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>enctrack2preauth.SetAmount (amount);</code> |
| Credit card number OR Encrypted Track2 | String | 20-character numeric OR n/a | <code>enctrack2preauth.SetPan (pan);</code> OR <code>enctrack2preauth.SetEncTrack2 (enc_track2);</code> |
| POS code | String | 2-character numeric | <code>enctrack2preauth.SetPosCode (pos_code);</code> |
| Device type | String | 30-character alpha-numeric | <code>enctrack2preauth .SetDeviceType (device_type);</code> |

Table 60: Encrypted Mag Swipe Pre-Authorization transaction optional values

| Value | Type | Limits | Set method |
|--------------|---------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | <code>enctrack2preauth.SetCustId (cust_id);</code> |
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck (status_check);</code> |

Sample Encrypted Mag Swipe Pre-Authorization

```

namespace Moneris
{
    using System;
    using System.Text.RegularExpressions;
    public class TestCanadaEncTrack2Preauth
    {
        public static void Main(string[] args)
        {

```

Sample Encrypted Mag Swipe Pre-Authorization

```
string store_id = "store5";
string api_token = "yesguy";
string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
string cust_id = "LBriggs";
string amount = "5.00";
string pos_code = "00";
string device_type = "idtech_bdk";
string processing_country_code = "CA";
bool status_check = false;
string enc_track2 = "ENCRYPTEDTRACK2DATA";
string descriptor = "nqa";

EncTrack2PreAuth enctrack2preauth = new EncTrack2PreAuth();
enctrack2preauth.SetOrderId(order_id);
enctrack2preauth.SetCustId(cust_id);
enctrack2preauth.SetAmount(amount);
enctrack2preauth.SetEncTrack2(enc_track2);
enctrack2preauth.SetPosCode(pos_code);
enctrack2preauth.SetDeviceType(device_type);
enctrack2preauth.SetDynamicDescriptor(descriptor);
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(enctrack2preauth);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("CardType = " + receipt.GetCardType());
    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
    Console.WriteLine("TransType = " + receipt.GetTransType());
    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("ISO = " + receipt.GetISO());
    Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Ticket = " + receipt.GetTicket());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("MaskedPan = " + receipt.GetMaskedPan());
    Console.WriteLine("CardLevelResult = " + receipt.GetCardLevelResult());
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
```

6.4 Mag Swipe Completion

Mag Swipe Completion transaction object definition

```
Track2Completion track2completion = new Track2Completion();
```

HttpPostRequest object for Mag Swipe Completion transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(track2completion);
```

Mag Swipe Completion transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 61: Mag Swipe Completion transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------|--------|---|---|
| Order ID | String | 50-character alpha-numeric | <code>track2completion.SetOrderId(order_id);</code> |
| Transaction number | String | 255-character variable character | <code>track2completion.SetTxnNumber(txn_number);</code> |
| Completion Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>track2completion.SetCompAmount(comp_amount);</code> |
| POS code | String | 2-character numeric | <code>track2completion.SetPosCode(pos_code);</code> |

Table 62: Mag Swipe Completion transaction optional values

| Value | Type | Limits | Set method |
|--------------------|---------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | <code>track2completion.SetCustId(cust_id);</code> |
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |
| Dynamic descriptor | String | 20-character alpha- | <code>track2completion.SetDynamicDescriptor</code> |

Table 62: Mag Swipe Completion transaction optional values (continued)

| Value | Type | Limits | Set method |
|-------|------|---------|-----------------------|
| | | numeric | (dynamic_descriptor); |

Sample Mag Swipe Completion

```

namespace Moneris
{
    using System;
    public class TestCanadaTrack2Completion
    {
        public static void Main(string[] args)
        {
            string store_id = "store1";
            string api_token = "yesguy";
            string order_id = "Test20150625035422";
            string txn_number = "87028-0_10";
            string amount = "1.00";
            string pos_code = "00";
            string dynamic_descriptor = "123456";
            string processing_country_code = "CA";
            bool status_check = false;
            Track2Completion track2completion = new Track2Completion();
            track2completion.SetOrderId(order_id);
            track2completion.SetTxnNumber(txn_number);
            track2completion.SetAmount(amount);
            track2completion.SetPosCode(pos_code);
            track2completion.SetDynamicDescriptor(dynamic_descriptor);
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(track2completion);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("CardType = " + receipt.GetCardType());
                Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
                Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                Console.WriteLine("TransType = " + receipt.GetTransType());
                Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("ISO = " + receipt.GetISO());
                Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
                Console.WriteLine("Message = " + receipt.GetMessage());
                Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
                Console.WriteLine("Complete = " + receipt.GetComplete());
                Console.WriteLine("TransDate = " + receipt.GetTransDate());
                Console.WriteLine("TransTime = " + receipt.GetTransTime());
                Console.WriteLine("Ticket = " + receipt.GetTicket());
                Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
                //Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
                //Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
            }
        }
    }
}

```

Sample Mag Swipe Completion

```

Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

6.5 Mag Swipe Force Post

Mag Swipe Force Post transaction object definition

```
Track2ForcePost track2forcePost = new Track2ForcePost();
```

HttpPostRequest object for Mag Swipe Force Post transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(track2forcePost);
```

Mag Swipe Force Post transaction mandatory arguments

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 63: Mag Swipe Force Post transaction object mandatory values

| Value | Type | Limits | Set method |
|---|--------|---|--|
| Order ID | String | 50-character alpha-numeric | <code>track2forcePost.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>track2forcePost.SetAmount(amount);</code> |
| Credit card number OR Track2 data | String | 20-character numeric OR 40-character numeric | <code>track2forcePost.SetPan(pan);</code> OR <code>track2forcePost.SetTrack2(track2);</code> |

Table 63: Mag Swipe Force Post transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------|--------|--|---|
| Expiry date | String | 4-character alpha-numeric (YYMM format) | <code>track2forcePost.SetExpdate(expiry_date);</code> |
| POS code | String | 2-character numeric | <code>track2forcePost.SetPosCode(pos_code);</code> |
| Authorization code | String | 8-character alpha-numeric | <code>track2forcePost.SetAuthCode(auth_code);</code> |

Table 64: Mag Swipe Force Post transaction optional values

| Value | Type | Limits | Set method |
|--------------------|---------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | <code>track2forcePost.SetCustId(cust_id);</code> |
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |
| Dynamic descriptor | String | 20-character alpha-numeric | <code>track2forcePost.SetDynamicDescriptor(dynamic_descriptor);</code> |

Sample Mag Swipe Force Post

```

namespace Moneris
{
    using System;
    public class TestCanadaTrack2ForcePost
    {
        public static void Main(string[] args)
        {
            string store_id = "store1";
            string api_token = "yesguy";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string amount = "10.00";
            string track2 = "";
            string pan = "4242424242424242";
            string expiry_date = "1212";
            string pos_code = "00";
            string auth_code = "AU4R6";
            string processing_country_code = "CA";
            bool status_check = false;
            Track2ForcePost track2forcePost = new Track2ForcePost();
            track2forcePost.SetOrderId(order_id);
            track2forcePost.SetAmount(amount);
        }
    }
}
    
```

Sample Mag Swipe Force Post

```

track2forcePost.SetTrack2(track2);
track2forcePost.SetPan(pan);
track2forcePost.SetExpdate(expiry_date);
track2forcePost.SetPosCode(pos_code);
track2forcePost.SetAuthCode(auth_code);
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(track2forcePost);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("CardType = " + receipt.GetCardType());
    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
    Console.WriteLine("TransType = " + receipt.GetTransType());
    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("ISO = " + receipt.GetISO());
    Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Ticket = " + receipt.GetTicket());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    //Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
    //Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}
}

```

6.5.1 Encrypted Mag Swipe Force Post

The Encrypted Mag Swipe Force Post is used when a merchant obtains the authorization number directly from the issuer using a phone or any third-party authorization method. This transaction does not require that an existing order be logged in the Moneris Gateway. However, the credit card must be swiped or keyed in using a Moneris-provided encrypted mag swipe reader, and the encrypted Track2 details must be submitted. There are also optional fields that may be submitted such as `cust_id` and `dynamic_descriptor`.

To complete the transaction, the authorization number obtained from the issuer must be entered.

Encrypted Mag Swipe Force Post transaction object definition

```
EncTrack2Forcepost enctrack2fp = new EncTrack2Forcepost();
```

HttpPostRequest object for Encrypted Mag Swipe Force Post transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(enctrack2fp);
```

Encrypted Mag Swipe Force Post transaction object values

Table 1 Encrypted Mag Swipe Force Post transaction object mandatory values

| Value | Type | Limits | Set Method |
|-----------------------|--------|---|--|
| Order ID | String | 50-character alpha-numeric | <code>enctrack2fp.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>enctrack2fp.SetAmount(amount);</code> |
| Encrypted Track2 data | String | n/a | <code>enctrack2fp.SetEncTrack2(enc_track2);</code> |
| POS Code | String | 2-character numeric | <code>enctrack2fp.SetPosCode(pos_code);</code> |
| Device type | String | 30-character alpha-numeric | <code>enctrack2fp.SetDeviceType(device_type);</code> |
| Authorization Code | String | 8-character alpha-numeric | <code>enctrack2fp.SetAuthCode(auth_code);</code> |

Table 2 Encrypted Mag Swipe Force Post transaction object optional values

| Value | Type | Limits | Set Method |
|--------------------|---------|---------------------------|--|
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |
| Customer ID | String | 50-character alphanumeric | <code>enctrack2fp.SetCustId(cust_id);</code> |
| Dynamic descriptor | String | 20-character alphanumeric | <code>enctrack2fp.SetDynamicDescriptor(dynamic_descriptor);</code> |

Sample Encrypted Mag Swipe Force Post

```

namespace Moneris
{
    using System;
    public class TestCanadaEncTrack2Forcepost
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string cust_id = "my customer id";
            string amount = "5.00";
            string pos_code = "00";
            string device_type = "idtech_bdk";
            string auth_code = "123456";
            string processing_country_code = "CA";
            bool status_check = false;
            string descriptor = "my descriptor";
            string enc_track2 = "ENCRYPTEDTRACK2DATA";
            EncTrack2Forcepost enctrack2fp = new EncTrack2Forcepost();
            enctrack2fp.SetOrderId(order_id);
            enctrack2fp.SetCustId(cust_id);
            enctrack2fp.SetAmount(amount);
            enctrack2fp.SetEncTrack2(enc_track2);
            enctrack2fp.SetPosCode(pos_code);
            enctrack2fp.SetDeviceType(device_type);
            enctrack2fp.SetAuthCode(auth_code);
            enctrack2fp.SetDynamicDescriptor(descriptor);
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(enctrack2fp);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("CardType = " + receipt.GetCardType());
                Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
            }
        }
    }
}

```

| Sample Encrypted Mag Swipe Force Post |
|--|
| <pre> Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber()); Console.WriteLine("ReceiptId = " + receipt.GetReceiptId()); Console.WriteLine("TransType = " + receipt.GetTransType()); Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum()); Console.WriteLine("ResponseCode = " + receipt.GetResponseCode()); Console.WriteLine("ISO = " + receipt.GetISO()); Console.WriteLine("BankTotals = " + receipt.GetBankTotals()); Console.WriteLine("Message = " + receipt.GetMessage()); Console.WriteLine("AuthCode = " + receipt.GetAuthCode()); Console.WriteLine("Complete = " + receipt.GetComplete()); Console.WriteLine("TransDate = " + receipt.GetTransDate()); Console.WriteLine("TransTime = " + receipt.GetTransTime()); Console.WriteLine("Ticket = " + receipt.GetTicket()); Console.WriteLine("TimedOut = " + receipt.GetTimedOut()); Console.WriteLine("MaskedPan = " + receipt.GetMaskedPan()); Console.WriteLine("CardLevelResult = " + receipt.GetCardLevelResult()); } catch (Exception e) { Console.WriteLine(e); } } } </pre> |

6.6 Mag Swipe Purchase Correction

Mag Swipe Purchase Correction transaction object definition

```
Track2PurchaseCorrection track2void = new Track2PurchaseCorrection();
```

HttpPostRequest object for Mag Swipe Purchase Correction transaction

```

HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(track2void);

```

Mag Swipe Purchase Correction transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 65: Mag Swipe Purchase Correction transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------|--------|-----------------------------|--|
| Order ID | String | 50-character alpha-numeric | track2purchasecorrection .SetOrderId(order_id); |
| Transaction number | String | 255-character alpha-numeric | track2purchasecorrection .SetTxnNumber(txn_number); |

Table 66: Mag Swipe Purchase Correction transaction optional values

| Value | Type | Limits | Set method |
|--------------|---------|----------------------------|---|
| Customer ID | String | 50-character alpha-numeric | track2purchasecorrection. .SetCustId(cust_id); |
| Status Check | Boolean | true/false | mpgReq.SetStatusCheck(status_ check); |

Sample Mag Swipe Purchase Correction

```

namespace Moneris
{
    using System;
    public class TestCanadaTrack2PurchaseCorrection
    {
        public static void Main(string[] args)
        {
            string store_id = "store1";
            string api_token = "yesguy";
            string order_id = "Test20150625030621";
            string txn_number = "86949-0_10";
            string dynamic_descriptor = "123456";
            string cust_id = "my customer id";
            string processing_country_code = "CA";
            bool status_check = false;
            Track2PurchaseCorrection track2void = new Track2PurchaseCorrection();
            track2void.SetOrderId(order_id);
            track2void.SetCustId(cust_id);
            track2void.SetTxnNumber(txn_number);
            track2void.SetDynamicDescriptor(dynamic_descriptor);
            HttpPostRequest mpgReq = new HttpPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(track2void);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("CardType = " + receipt.GetCardType());
                Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
                Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                Console.WriteLine("TransType = " + receipt.GetTransType());
                Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("ISO = " + receipt.GetISO());
                Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
                Console.WriteLine("Message = " + receipt.GetMessage());
                Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
                Console.WriteLine("Complete = " + receipt.GetComplete());
                Console.WriteLine("TransDate = " + receipt.GetTransDate());
                Console.WriteLine("TransTime = " + receipt.GetTransTime());
                Console.WriteLine("Ticket = " + receipt.GetTicket());
            }
        }
    }
}

```

```

Sample Mag Swipe Purchase Correction

Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
//Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
//Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}
}

```

6.7 Mag Swipe Refund

Mag Swipe Refund transaction object definition

```
Track2Refund track2refund = new Track2Refund();
```

HttpPostRequest object for Mag Swipe Refund transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();

mpgReq.SetTransaction(track2refund);
```

Mag Swipe Refund transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 67: Mag Swipe Refund transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------|--------|---|---|
| Order ID | String | 50-character alpha-numeric | <code>track2refund.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div style="border: 1px solid #ccc; background-color: #e0ffe0; padding: 2px; display: inline-block; margin-top: 5px;"> EXAMPLE: 1234567.89 </div> | <code>track2refund.SetAmount(amount);</code> |
| Transaction number | String | 255-character alpha-numeric | <code>track2refund.SetTxnNumber(txn_number);</code> |

Table 68: Mag Swipe Refund transaction optional values

| Value | Type | Limits | Set method |
|--------------------|---------|----------------------------|---|
| Customer ID | String | 50-character alpha-numeric | <code>track2refund.SetCustId(cust_id);</code> |
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |
| Dynamic descriptor | String | 20-character alpha-numeric | <code>track2refund.SetDynamicDescriptor(dynamic_descriptor);</code> |

Sample Mag Swipe Refund

```

namespace Moneris
{
    using System;
    public class TestCanadaTrack2Refund
    {
        public static void Main(string[] args)
        {
            string store_id = "store1";
            string api_token = "yesguy";
            string order_id = "Test20150625035152"; //will prompt user for input
            string txn_number = "87017-0_10";
            string amount = "1.00";
            string dynamic_descriptor = "123456";
            string cust_id = "customer id";
            string processing_country_code = "CA";
            bool status_check = false;
            Track2Refund track2refund = new Track2Refund();
            track2refund.SetOrderId(order_id);
            track2refund.SetAmount(amount);
            track2refund.SetCustId(cust_id);
            track2refund.SetTxnNumber(txn_number);
            track2refund.SetDynamicDescriptor(dynamic_descriptor);
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(track2refund);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("CardType = " + receipt.GetCardType());
                Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
                Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                Console.WriteLine("TransType = " + receipt.GetTransType());
                Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("ISO = " + receipt.GetISO());
            }
        }
    }
}

```

Sample Mag Swipe Refund

```
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
//Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
//Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
```

6.8 Mag Swipe Independent Refund

NOTE: If you receive a TRANSACTION NOT ALLOWED error, it may mean the Mag Swipe Independent Refund transaction is not supported on your account. Contact Moneris to have it temporarily (re-)enabled.

Mag Swipe Independent Refund transaction object definition

```
Track2IndependentRefund track2indrefund = new Track2IndependentRefund();
```

HttpPostRequest object for Mag Swipe Independent Refund transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(track2indrefund);
```

Mag Swipe Independent Refund transaction values

Table 69: Mag Swipe Independent Refund transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------|--------|---|--|
| Order ID | String | 50-character alpha-numeric | <code>track2indrefund.SetOrderId (order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>track2indrefund.SetAmount (amount);</code> |
| Credit card number | String | 20-character numeric | <code>track2indrefund.SetPan (pan);</code> |
| Track2 data | String | 40-character numeric | <code>track2indrefund.SetTrack2 (track2);</code> |
| Expiry date | String | 4-character alpha-numeric (YYMM format) | <code>track2indrefund.SetExpdate (expiry_date);</code> |
| POS code | String | 2-character numeric | <code>track2indrefund.SetPosCode (pos_code);</code> |

Table 70: Mag Swipe Independent Refund transaction optional values

| Value | Type | Limits | Set method |
|--------------------|---------|----------------------------|---|
| Customer ID | String | 50-character alpha-numeric | <code>track2indrefund.SetCustId (cust_id);</code> |
| Dynamic descriptor | String | 20-character alpha-numeric | <code>track2indrefund .SetDynamicDescriptor (dynamic_ descriptor);</code> |
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck (status_ check);</code> |

Sample Mag Swipe Independent Refund

namespace Moneris

Sample Mag Swipe Independent Refund

```
{
using System;
public class TestCanadaTrack2IndependentRefund
{
public static void Main(string[] args)
{
string store_id = "store1";
string api_token = "yesguy";
string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
string cust_id = "Ced_Benson32";
string amount = "5.00";
string track2 = "";
string pan = "4242424242424242";
string exp = "1903"; //must send '0000' if swiped
string pos_code = "00";
string processing_country_code = "CA";
bool status_check = false;
Track2IndependentRefund track2indrefund = new Track2IndependentRefund();
track2indrefund.SetOrderId(order_id);
track2indrefund.SetCustId(cust_id);
track2indrefund.SetAmount(amount);
track2indrefund.SetTrack2(track2);
track2indrefund.SetPan(pan);
track2indrefund.SetExpdate(exp);
track2indrefund.SetPosCode(pos_code);
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(track2indrefund);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
//Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
//Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
```

| Sample Mag Swipe Independent Refund |
|-------------------------------------|
| <pre> } } } } </pre> |

6.8.1 Encrypted Mag Swipe Independent Refund

The Encrypted Mag Swipe Independent Refund credits a specified amount to the cardholder's credit card. The Encrypted Mag Swipe Independent Refund does not require an existing order to be logged in the Moneris Gateway. However, the credit card must be swiped using the Moneris-provided encrypted mag swipe reader to provide the encrypted track2 details.

There are also optional fields that may be submitted such as `cust_id` and `dynamic_descriptor`. The transaction format is almost identical to Encrypted Mag Swipe Purchase and Encrypted Mag Swipe PreAuth.

NOTE:

The Encrypted Mag Swipe Independent Refund transaction may not be supported on your account. This may yield a TRANSACTION NOT ALLOWED error when attempting the transaction.

To temporarily enable (or re-enable) the Independent Refund transaction type, contact Moneris

Encrypted Mag Swipe Independent Refund transaction object definition

```
EncTrack2IndependentRefund encindrefund = new EncTrack2IndependentRefund();
```

HttpPostRequest object for Encrypted Mag Swipe Independent Refund transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(encindrefund);
```

Encrypted Mag Swipe Independent Refund transaction object values

Table 1 Encrypted Mag Swipe Independent Refund transaction object mandatory values

| Value | Type | Limits | Set Method |
|------------------------|--------|---|--|
| Order ID | String | 50-character alpha-numeric | <code>encindrefund.SetOrderId (order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>encindrefund.SetAmount (amount);</code> |
| Encrypted Track 2 data | String | n/a | <code>encindrefund.SetEncTrack2 (enc_track2);</code> |
| Device Type | String | 30-character alpha-numeric | <code>encindrefund.SetDeviceType (device_type);</code> |
| POS Code | String | 2-character numeric | <code>encindrefund.SetPosCode (pos_code);</code> |

Table 2 Encrypted Mag Swipe Independent Refund transaction object optional values

| Value | Type | Limits | Set Method |
|--------------|---------|----------------------------|--|
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck (status_check);</code> |
| Customer ID | String | 50-character alpha-numeric | <code>encindrefund.SetCustId (cust_id);</code> |

Sample Encrypted Mag Swipe Independent Refund

```
namespace Moneris
{
    using System;
    public class TestCanadaEncTrack2IndependentRefund
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string cust_id = "my customer id";
        }
    }
}
```

Sample Encrypted Mag Swipe Independent Refund

```
string amount = "5.00";
string pos_code = "00";
string device_type = "idtech_bdk";
string processing_country_code = "CA";
string enc_track2 = "ENCRYPTEDTRACK2DATA";
string descriptor = "nqa";
EncTrack2IndependentRefund encindrefund = new EncTrack2IndependentRefund();
encindrefund.SetOrderId(order_id);
encindrefund.SetCustId(cust_id);
encindrefund.SetAmount(amount);
encindrefund.SetEncTrack2(enc_track2);
encindrefund.SetPosCode(pos_code);
encindrefund.SetDeviceType(device_type);
encindrefund.SetDynamicDescriptor(descriptor);
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(encindrefund);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("CardType = " + receipt.GetCardType());
    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
    Console.WriteLine("TransType = " + receipt.GetTransType());
    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("ISO = " + receipt.GetISO());
    Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Ticket = " + receipt.GetTicket());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("MaskedPan = " + receipt.GetMaskedPan());
    Console.WriteLine("CardLevelResult = " + receipt.GetCardLevelResult());
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
```

7 Level 2/3 Transactions

- 7.1 About Level 2/3 Transactions
- 7.2 Level 2/3 Visa Transactions
- 7.3 Level 2/3 MasterCard Transactions
- 7.4 Level 2/3 American Express Transactions

7.1 About Level 2/3 Transactions

The Moneris Gateway API supports passing Level 2/3 purchasing card transaction data for Visa, MasterCard and American Express corporate cards.

All Level 2/3 transactions use the same Pre-Authorization transaction as described in the topic Pre-Authorization (page 19).

7.2 Level 2/3 Visa Transactions

- 7.2.1 Level 2/3 Transaction Types for Visa
- 7.2.2 Level 2/3 Transaction Flow for Visa
- 7.2.3 VS Completion
- 7.2.5 VS Force Post
- 7.2.4 VS Purchase Correction
- 7.2.6 VS Refund
- 7.2.7 VS Independent Refund
- 7.2.8 VS Corpais

7.2.1 Level 2/3 Transaction Types for Visa

This transaction set includes a suite of corporate card financial transactions as well as a transaction that allows for the passing of Level 2/3 data. Please ensure that Visa Level 2/3 support is enabled on your merchant account. Batch Close, Open Totals and Pre-authorization are identical to the transactions outlined in the section Basic Transaction Set (page 12).

- When the Pre-authorization response contains CorporateCard equal to true then you can submit the Visa transactions.
- If CorporateCard is false then the card does not support Level 2/3 data and non Level 2/3 transaction are to be used. If the card is not a corporate card, please refer to the section 2 Basic Transaction Set for the appropriate non-corporate card transactions.

NOTE: This transaction set is intended for transactions where Corporate Card is true and Level 2/3 data will be submitted. If the credit card is found to be a corporate card but you do

not wish to send any Level 2/3 data then you may submit Visa transactions using the basic transaction set outlined in 2 Basic Transaction Set.

Pre-authorization– (authorization/pre-authorization)

Pre-authorization verifies and locks funds on the customer’s credit card. The funds are locked for a specified amount of time, based on the card issuer. To retrieve the funds from a preauth so that they may be settled in the merchant account a capture must be performed. CorporateCard will return as true if the card supports Level 2/3.

VS Completion – (Capture/Pre-authorization Completion)

Once a Pre-authorization is obtained the funds that are locked need to be retrieved from the customer’s credit card. The capture retrieves the locked funds and readies them for settlement into the merchant account. Prior to performing a VS Completion, a Pre-authorization must be performed. Once the transaction is completed, VS Corpais must be used to process the Level 2/3 data.

VS Force Post – (Force Capture/Pre-authorization Completion)

This transaction is an alternative to VS Completion to obtain the funds locked on Pre-auth obtained from IVR or equivalent terminal. The VS Force Post retrieves the locked funds and readies them for settlement in to the merchant account. Once the transaction is completed, VS Corpais must be used to process the Level 2/3 data.

VS Purchase Correction (Void, Correction)

VS Completion and VS Force Post can be voided the same day* that they occur. A VS Purchase Correction must be for the full amount of the transaction and will remove any record of it from the cardholder statement.

VS Refund – (Credit)

A VS Refund can be performed against a VS Completion to refund any part or all of the transaction. Once the transaction is completed, VS Corpais must be used to process the Level 2/3 data.

VS Independent Refund – (Credit)

A VS Independent Refund can be performed against a purchase or a capture to refund any part, or all of the transaction. Independent refund is used when the originating transaction was not performed through Moneris Gateway. Once the transaction is completed, VS Corpais must be used to process the Level 2/3 data.

NOTE: the Independent Refund transaction may or may not be supported on your account. If you receive a transaction not allowed error when attempting an independent refund, it may mean the transaction is not supported on your account. If you wish to have the Independent Refund transaction type temporarily enabled (or re-enabled), please contact the Service Centre at 1-866-319-7450.

VS Corpais – (Level 2/3 Data)

VS Corpais will contain all the required and optional data fields for Level 2/3 Business to Business data. VS Corpais data can be sent when the card has been identified in the Pre-authorization transaction request as being a corporate card.

* A VS Purchase Correction can be performed against a transaction as long as the batch that contains the original transaction remains open. When using the automated closing feature, the batch close occurs daily between 10–11 pm EST.

7.2.2 Level 2/3 Transaction Flow for Visa

Pre-authorization/Completion Transaction Flow

Purchase Correction Transaction Flow

7.2.3 VS Completion

Once a Pre-authorization is obtained, the funds that are locked need to be retrieved from the customer's credit card. This VS Completion transaction is used to secure the funds locked by a pre-authorization transaction and readies them for settlement into the merchant account.

NOTE: Once you have completed this transaction successfully, to submit the complete supplemental level 2/3 data, please proceed to VS Corpais.

VS Completion transaction object definition

```
VsCompletion vsCompletion = new VsCompletion();
```

HttpPostRequest object for VS Completion transaction object

```
HttpPostRequest mpgReq = new HttpPostRequest();  
mpgReq.SetTransaction(vsCompletion);
```

VS Completion transaction object values

Table 1 VS Completion transaction object mandatory values

| Value | Type | Limits | Set Method |
|----------------------|--------|---|---|
| Order ID | String | 50-character alpha-numeric | <code>vsCompletion.SetOrderId(order_id);</code> |
| Completion amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>vsCompletion.SetCompAmount(comp_amount);</code> |
| Transaction number | String | 255-character alpha-numeric | <code>vsCompletion.SetTxnNumber(txn_number);</code> |
| E-Commerce Indicator | String | 1-character alpha-numeric | <code>vsCompletion.SetCryptType(crypt);</code> |

Table 2 Visa - Corporate Card Common Data - Level 2 Request Fields

| Req* | Value | Limits | Set Method | Description |
|------|---|----------------------------|--|---|
| Y | National Tax | 12-character decimal | <code>vsCompletion.SetNationalTax(national_tax);</code> | Must reflect the amount of National Tax (GST or HST) appearing on the invoice. Minimum - 0.01 Maximum - 999999.99. Must have 2 decimal places. |
| Y | Merchant VAT Registration/Single Business Reference | 20-character alpha-numeric | <code>vsCompletion.SetMerchantVatNo(merchant_vat_no);</code> | Merchant's Tax Registration Number must be provided if tax is included on the invoice |

| Req* | Value | Limits | Set Method | Description |
|------|--|---------------------------|--|---|
| | | | | <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>NOTE: Must not be all spaces or all zeroes</p> </div> |
| C | Local Tax | 12-character decimal | <pre>vsCompletion .SetLocalTax (local_tax);</pre> | <p>Must reflect the amount of Local Tax (PST or QST) appearing on the invoice</p> <p>If Local Tax included then must not be all spaces or all zeroes; Must be provided if Local Tax (PST or QST) applies</p> <p>Minimum = 0.01</p> <p>Maximum = 999999.99</p> <p>Must have 2 decimal places</p> |
| C | Local Tax (PST or QST) Registration Number | 15-character alphanumeric | <pre>vsCompletion .SetLocalTaxNo (local_tax_no);</pre> | <p>Merchant's Local Tax (PST/QST) Registration Number</p> <p>Must be provided if tax is included on the invoice; If Local Tax included then must not be all spaces or all zeroes</p> <p>Must be</p> |

| Req* | Value | Limits | Set Method | Description |
|------|---|---------------------------|--|---|
| | | | | provided if Local Tax (PST or QST) applies |
| C | Customer VAT Registration Number | 13-character alphanumeric | <code>vsCompletion .SetCustomerVatNo (customer_vat_no);</code> | If the Customer's Tax Registration Number appears on the invoice to support tax exempt transactions it must be provided here |
| C | Customer Code/Customer Reference Identifier (CRI) | 16-character alphanumeric | <code>vsCompletion .SetCri(cri);</code> | Value which the customer may choose to provide to the supplier at the point of sale – must be provided if given by the customer |
| N | Customer Code | 17-character alphanumeric | <code>vsCompletion .SetCustomerCode (customer_code);</code> | Optional customer code field that will not be passed along to Visa, but will be included on Moneris reporting |
| N | Invoice Number | 17-character alphanumeric | <code>vsCompletion .SetInvoiceNumber (invoice_number);</code> | Optional invoice number field that will not be passed along to Visa, but will be included on Moneris reporting |

*Y = Required, N = Optional, C = Conditional

Sample VS Completion

```

namespace Moneris
{
    using System;
    using System.Collections;
    using System.Text;
    public class TestVsCompletion
    {
        public static void Main(string[] args)
        {
            string store_id = "moneris";
            string api_token = "hurgle";
            string processing_country_code = "CA";
            bool status_check = false;

            string order_id="ord-210916-15:14:46";
            string comp_amount="5.00";
            string txn_number = "19002-0_11";
            string crypt="7";
            string national_tax = "1.23";
            string merchant_vat_no = "gstn0111";
            string local_tax = "2.34";
            string customer_vat_no = "gstno999";
            string cri = "CUST-REF-002";
            string customer_code="ccvsfp";
            string invoice_number="invsfp";
            string local_tax_no="ltaxno";
            VsCompletion vsCompletion = new VsCompletion();
            vsCompletion.SetOrderId(order_id);
            vsCompletion.SetCompAmount(comp_amount);
            vsCompletion.SetTxnNumber(txn_number);
            vsCompletion.SetCryptType(crypt);
            vsCompletion.SetNationalTax(national_tax);
            vsCompletion.SetMerchantVatNo(merchant_vat_no);
            vsCompletion.SetLocalTax(local_tax);
            vsCompletion.SetCustomerVatNo(customer_vat_no);
            vsCompletion.SetCri(cri);
            vsCompletion.SetCustomerCode(customer_code);
            vsCompletion.SetInvoiceNumber(invoice_number);
            vsCompletion.SetLocalTaxNo(local_tax_no);
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(vsCompletion);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("CardType = " + receipt.GetCardType());
                Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
                Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                Console.WriteLine("TransType = " + receipt.GetTransType());
                Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("ISO = " + receipt.GetISO());
                Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
            }
        }
    }
}

```

| Sample VS Completion |
|--|
| <pre> Console.WriteLine("Message = " + receipt.GetMessage()); Console.WriteLine("AuthCode = " + receipt.GetAuthCode()); Console.WriteLine("Complete = " + receipt.GetComplete()); Console.WriteLine("TransDate = " + receipt.GetTransDate()); Console.WriteLine("TransTime = " + receipt.GetTransTime()); Console.WriteLine("Ticket = " + receipt.GetTicket()); Console.WriteLine("TimedOut = " + receipt.GetTimedOut()); Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode()); Console.ReadLine(); } catch (Exception e) { Console.WriteLine(e); } } } </pre> |

7.2.4 VS Purchase Correction

The VS Purchase Correction (also known as a "void") transaction is used to cancel a transaction that was performed in the current batch. No amount is required because a void is always for 100% of the original transaction. The only transaction that can be voided using VS Purchase Correction is a VS Completion or VS Force Post. To send a void the order_id and txn_number from the VS Completion/VS Force Post are required.

VS Purchase Correction transaction object definition

```
VsPurchaseCorrection vsPurchaseCorrection = new VsPurchaseCorrection();
```

HttpPostRequest object for VS Purchase Correction transaction

```

HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(vsPurchaseCorrection);

```

VS Purchase Correction transaction object values

Table 1 VS Purchase Correction transaction object mandatory values

| Value | Type | Limits | Set Method |
|----------------------|--------|-----------------------------|--|
| Order ID | String | 50-character alpha-numeric | vsPurchaseCorrection .SetOrderId(order_id); |
| Transaction number | String | 255-character alpha-numeric | vsPurchaseCorrection .SetTxnNumber(txn_number); |
| E-Commerce Indicator | String | 1-character alpha-numeric | vsPurchaseCorrection .SetCryptType(crypt); |

Sample VS Purchase Correction

```

namespace Moneris
{
    using System;
    using System.Collections;
    using System.Text;
    public class TestVsPurchaseCorrection
    {
        public static void Main(string[] args)
        {
            string store_id = "moneris";
            string api_token = "hurgle";
            string processing_country_code = "CA";
            bool status_check = false;

            string order_id="Test20170116050230";
            string txn_number = "39016-0_11";
            string crypt="7";
            VsPurchaseCorrection vsPurchaseCorrection = new VsPurchaseCorrection();
            vsPurchaseCorrection.SetOrderId(order_id);
            vsPurchaseCorrection.SetTxnNumber(txn_number);
            vsPurchaseCorrection.SetCryptType(crypt);
            HttpPostRequest mpgReq = new HttpPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(vsPurchaseCorrection);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("CardType = " + receipt.GetCardType());
                Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
                Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                Console.WriteLine("TransType = " + receipt.GetTransType());
                Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("ISO = " + receipt.GetISO());
                Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
                Console.WriteLine("Message = " + receipt.GetMessage());
                Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
                Console.WriteLine("Complete = " + receipt.GetComplete());
                Console.WriteLine("TransDate = " + receipt.GetTransDate());
                Console.WriteLine("TransTime = " + receipt.GetTransTime());
                Console.WriteLine("Ticket = " + receipt.GetTicket());
                Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
                Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
                Console.ReadLine();
            }
            catch (Exception e)
            {
                Console.WriteLine(e);
            }
        }
    }
}

```

7.2.5 VS Force Post

The VS Force Post transaction is used to secure the funds locked by a pre-authorization transaction performed over IVR or equivalent terminal. When sending a force post request, you will need Order ID, Amount, Credit Card Number, Expiry Date, E-commerce Indicator and the Authorization Code received in the pre-authorization response.

NOTE: Once you have completed this transaction successfully, to submit the complete supplemental level 2/3 data, please proceed to VS Corpais.

VS Force Post transaction object definition

```
VsForcePost vsForcePost = new VsForcePost();
```

HttpPostRequest object for VS Force Post transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(vsForcePost);
```

VS Force Post transaction object values

Table 1 VS Force Post transaction object mandatory values

| Value | Type | Limits | Set Method |
|--------------------|--------|---|--|
| Order ID | String | 50-character alpha-numeric | <code>vsForcePost.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div style="border: 1px solid black; padding: 2px; display: inline-block;">EXAMPLE: 1234567.89</div> | <code>vsForcePost.SetAmount(amount);</code> |
| Credit card number | String | 20-character numeric | <code>vsForcePost.SetPan(pan);</code> |

| Value | Type | Limits | Set Method |
|----------------------|--------|------------------------------------|--|
| Expiry Date | String | 4-character numeric YYMM format | <code>vsForcePost.SetExpdate (expiry_date);</code> |
| Authorization code | String | 8-character alpha- numeric | <code>vsForcePost.SetAuthCode(auth_ code);</code> |
| E-commerce Indicator | String | 1-character alpha- numeric | <code>vsForcePost.SetCryptType (crypt);</code> |

Table 2 VS Force Post transaction object optional values

| Value | Type | Limits | Set Method |
|-------------|--------|--------------------------------|---|
| Customer ID | String | 50-character alpha- numeric | <code>vsForcePost.SetCustId(cust_ id);</code> |

Table 3 Visa - Corporate Card Common Data - Level 2 Request Fields

| Req* | Value | Limits | Set Method | Description |
|------|---|--------------------------------|---|---|
| Y | National Tax | 12-character decimal | <code>vsForcePost .SetNationalTax (national_tax);</code> | Must reflect the amount of National Tax (GST or HST) appearing on the invoice. Minimum - 0.01 Maximum - 999999.99. Must have 2 decimal places. |
| Y | Merchant VAT Registration/Single Business Reference | 20-character alpha- numeric | <code>vsForcePost .SetMerchantVatNo (merchant_vat_no);</code> | Merchant's Tax Registration Number must be provided if tax is included on the invoice NOTE: Must not be all spaces or all |

| Req* | Value | Limits | Set Method | Description |
|------|--|---------------------------|---|---|
| | | | | <div style="border: 1px solid black; padding: 2px; width: fit-content;">zeroes</div> |
| C | Local Tax | 12-character decimal | <pre>vsForcePost .SetLocalTax (local_tax);</pre> | <p>Must reflect the amount of Local Tax (PST or QST) appearing on the invoice</p> <p>If Local Tax included then must not be all spaces or all zeroes; Must be provided if Local Tax (PST or QST) applies</p> <p>Minimum = 0.01</p> <p>Maximum = 999999.99</p> <p>Must have 2 decimal places</p> |
| C | Local Tax (PST or QST) Registration Number | 15-character alphanumeric | <pre>vsForcePost .SetLocalTaxNo (local_tax_no);</pre> | <p>Merchant's Local Tax (PST/QST) Registration Number</p> <p>Must be provided if tax is included on the invoice; If Local Tax included then must not be all spaces or all zeroes</p> <p>Must be provided if Local Tax (PST</p> |

| Req* | Value | Limits | Set Method | Description |
|------|---|---------------------------|---|---|
| | | | | or QST) applies |
| C | Customer VAT Registration Number | 13-character alphanumeric | <code>vsForcePost .SetCustomerVatNo (customer_vat_no);</code> | If the Customer's Tax Registration Number appears on the invoice to support tax exempt transactions it must be provided here |
| C | Customer Code/Customer Reference Identifier (CRI) | 16-character alphanumeric | <code>vsForcePost .SetCri(cri);</code> | Value which the customer may choose to provide to the supplier at the point of sale – must be provided if given by the customer |
| N | Customer Code | 17-character alphanumeric | <code>vsForcePost .SetCustomerCode (customer_code);</code> | Optional customer code field that will not be passed along to Visa, but will be included on Moneris reporting |
| N | Invoice Number | 17-character alphanumeric | <code>vsForcePost .SetInvoiceNumber (invoice_number);</code> | Optional invoice number field that will not be passed along to Visa, but will be included on Moneris reporting |

*Y = Required, N = Optional, C = Conditional

Sample VS Force Post

```
namespace Moneris
{
    using System;
    using System.Collections;
    using System.Text;
    public class TestVsForcePost
    {
        public static void Main(string[] args)
        {
            string store_id = "moneris";
            string api_token = "hurgle";
            string processing_country_code = "CA";
            bool status_check = false;

            string order_id="Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string cust_id="CUST13343";
            string amount="5.00";
            string pan="4242424254545454";
            string expiry_date="2012"; //YYMM
            string auth_code="123456";
            string crypt="7";
            string national_tax = "1.23";
            string merchant_vat_no = "gstno111";
            string local_tax = "2.34";
            string customer_vat_no = "gstno999";
            string cri = "CUST-REF-002";
            string customer_code="ccvsfp";
            string invoice_number="invsfp";
            string local_tax_no="ltaxno";
            VsForcePost vsForcePost = new VsForcePost ();
            vsForcePost.SetOrderId(order_id);
            vsForcePost.SetCustId(cust_id);
            vsForcePost.SetAmount(amount);
            vsForcePost.SetPan(pan);
            vsForcePost.SetExpDate(expiry_date);
            vsForcePost.SetAuthCode(auth_code);
            vsForcePost.SetCryptType(crypt);
            vsForcePost.SetNationalTax(national_tax);
            vsForcePost.SetMerchantVatNo(merchant_vat_no);
            vsForcePost.SetLocalTax(local_tax);
            vsForcePost.SetCustomerVatNo(customer_vat_no);
            vsForcePost.SetCri(cri);
            vsForcePost.SetCustomerCode(customer_code);
            vsForcePost.SetInvoiceNumber(invoice_number);
            vsForcePost.SetLocalTaxNo(local_tax_no);
            HttpsPostRequest mpgReq = new HttpsPostRequest ();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(vsForcePost);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("CardType = " + receipt.GetCardType());
                Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
            }
        }
    }
}
```

Sample VS Force Post

```

Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}

```

7.2.6 VS Refund

VS Refund will credit a specified amount to the cardholder's credit card. A refund can be sent up to the full value of the original VS Completion or VS Force Post. To send a VS Refund you will require the Order ID and Transaction Number from the original VS Completion or VS Force Post.

NOTE: Once you have completed this transaction successfully, to submit the complete supplemental level 2/3 data, please proceed to VS Corpais.

VS Refund transaction object definition

```
VsRefund vsRefund = new VsRefund();
```

HttpRequest object for VS Refund transaction

```
HttpRequest mpgReq = new HttpRequest();
```

```
mpgReq.SetTransaction(vsRefund);
```

VS Refund transaction object values

Table 1 VS Refund transaction object mandatory values

| Value | Type | Limits | Set Method |
|----------------------|--------|---|---|
| Order ID | String | 50-character alpha-numeric | <code>vsRefund.SetOrderId(order_id);</code> |
| Transaction number | String | 255-character alpha-numeric | <code>vsRefund.SetTxnNumber(txn_number);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>vsRefund.SetAmount(amount);</code> |
| E-Commerce Indicator | String | 1-character alpha-numeric | <code>vsRefund.SetCryptType(crypt);</code> |

Table 2 Visa - Corporate Card Common Data - Level 2 Request Fields

| Req* | Value | Limits | Set Method | Description |
|------|---|----------------------------|--|---|
| Y | National Tax | 12-character decimal | <code>vsRefund.SetNationalTax(national_tax);</code> | Must reflect the amount of National Tax (GST or HST) appearing on the invoice. Minimum - 0.01 Maximum - 999999.99. Must have 2 decimal places. |
| Y | Merchant VAT Registration/Single Business Reference | 20-character alpha-numeric | <code>vsRefund.SetMerchantVatNo(merchant_vat_no);</code> | Merchant's Tax Registration Number must be |

| Req* | Value | Limits | Set Method | Description |
|------|--|---------------------------|--|---|
| | | | | <p>provided if tax is included on the invoice</p> <div style="border: 1px solid black; padding: 5px;"> <p>NOTE: Must not be all spaces or all zeroes</p> </div> |
| C | Local Tax | 12-character decimal | <pre>vsRefund .SetLocalTax (local_tax);</pre> | <p>Must reflect the amount of Local Tax (PST or QST) appearing on the invoice</p> <p>If Local Tax included then must not be all spaces or all zeroes; Must be provided if Local Tax (PST or QST) applies</p> <p>Minimum = 0.01</p> <p>Maximum = 999999.99</p> <p>Must have 2 decimal places</p> |
| C | Local Tax (PST or QST) Registration Number | 15-character alphanumeric | <pre>vsRefund .SetLocalTaxNo (local_tax_no);</pre> | <p>Merchant's Local Tax (PST/QST) Registration Number</p> <p>Must be provided if tax is included on the invoice; If Local Tax included then</p> |

| Req* | Value | Limits | Set Method | Description |
|------|---|---------------------------|--|---|
| | | | | <p>must not be all spaces or all zeroes</p> <p>Must be provided if Local Tax (PST or QST) applies</p> |
| C | Customer VAT Registration Number | 13-character alphanumeric | <code>vsRefund .SetCustomerVatNo (customer_vat_no);</code> | If the Customer's Tax Registration Number appears on the invoice to support tax exempt transactions it must be provided here |
| C | Customer Code/Customer Reference Identifier (CRI) | 16-character alphanumeric | <code>vsRefund .SetCri(cri);</code> | Value which the customer may choose to provide to the supplier at the point of sale – must be provided if given by the customer |
| N | Customer Code | 17-character alphanumeric | <code>vsRefund .SetCustomerCode (customer_code);</code> | Optional customer code field that will not be passed along to Visa, but will be included on Moneris reporting |
| N | Invoice Number | 17-character alphanumeric | <code>vsRefund .SetInvoiceNumber (invoice_number);</code> | Optional invoice number field that will not be passed along to Visa, |

| Req* | Value | Limits | Set Method | Description |
|------|-------|--------|------------|---|
| | | | | but will be included on Moneris reporting |

*Y = Required, N = Optional, C = Conditional

Sample VS Refund

```

namespace Moneris
{
    using System;
    using System.Collections;
    using System.Text;
    public class TestVsRefund
    {
        public static void Main(string[] args)
        {
            string store_id = "moneris";
            string api_token = "hurgle";
            string processing_country_code = "CA";
            bool status_check = false;

            string order_id="Test20170116043144";
            string amount="5.00";
            string txn_number = "39011-0_11";
            string crypt="7";
            string national_tax = "1.23";
            string merchant_vat_no = "gstno111";
            string local_tax = "2.34";
            string customer_vat_no = "gstno999";
            string cri = "CUST-REF-002";
            string customer_code="ccvsfp";
            string invoice_number="invsfp";
            string local_tax_no="ltaxno";
            VsRefund vsRefund = new VsRefund();
            vsRefund.SetOrderId(order_id);
            vsRefund.SetAmount(amount);
            vsRefund.SetTxnNumber(txn_number);
            vsRefund.SetCryptType(crypt);
            vsRefund.SetNationalTax(national_tax);
            vsRefund.SetMerchantVatNo(merchant_vat_no);
            vsRefund.SetLocalTax(local_tax);
            vsRefund.SetCustomerVatNo(customer_vat_no);
            vsRefund.SetCri(cri);
            vsRefund.SetCustomerCode(customer_code);
            vsRefund.SetInvoiceNumber(invoice_number);
            vsRefund.SetLocalTaxNo(local_tax_no);
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(vsRefund);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {

```

Sample VS Refund

```

Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}

```

7.2.7 VS Independent Refund

VS Independent Refund will credit a specified amount to the cardholder's credit card. The independent refund does not require an existing order to be logged in the Moneris Gateway; however, the credit card number and expiry date will need to be passed. The transaction format is almost identical to a pre-authorization.

NOTE: Once you have completed this transaction successfully, to submit the complete supplemental level 2/3 data, please proceed to VS Corpais.

VS Independent Refund transaction object definition

```
VsIndependentRefund vsIndependentRefund = new VsIndependentRefund();
```

HttpPostRequest object for VS Independent Refund transaction

```

HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(vsIndependentRefund);

```


VS Independent Refund transaction object values

Table 1 VS Independent Refund transaction object mandatory values

| Value | Type | Limits | Set Method |
|----------------------|--------|---|---|
| Order ID | String | 50-character alpha-numeric | <code>vsIndependentRefund.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>vsIndependentRefund.SetAmount(amount);</code> |
| Credit card number | String | 20-character numeric | <code>vsIndependentRefund.SetPan(pan);</code> |
| Expiry date | String | 4-character numeric YYMM format | <code>vsIndependentRefund.SetExpdate(expiry_date);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>vsIndependentRefund.SetCryptType(crypt);</code> |

Table 2 VS Independent Refund transaction object optional values

| Value | Type | Limits | Set Method |
|-------------|--------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | <code>vsIndependentRefund.SetCustId(cust_id);</code> |

Table 3 Visa - Corporate Card Common Data - Level 2 Request Fields

| Req* | Value | Limits | Set Method | Description |
|------|--------------|----------------------|--|--|
| Y | National Tax | 12-character decimal | <code>vsIndependentRefund.SetNationalTax(national_tax);</code> | Must reflect the amount of National Tax (GST or HST) appearing on the invoice. Minimum - 0.01 Maximum |

| Req* | Value | Limits | Set Method | Description |
|------|---|---------------------------|---|---|
| | | | | - 999999.99. Must have 2 decimal places. |
| Y | Merchant VAT Registration/Single Business Reference | 20-character alphanumeric | <code>vsIndependentRefund .SetMerchantVatNo (merchant_vat_no);</code> | <p>Merchant's Tax Registration Number</p> <p>must be provided if tax is included on the invoice</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>NOTE: Must not be all spaces or all zeroes</p> </div> |
| C | Local Tax | 12-character decimal | <code>vsIndependentRefund .SetLocalTax(local_tax);</code> | <p>Must reflect the amount of Local Tax (PST or QST) appearing on the invoice</p> <p>If Local Tax included then must not be all spaces or all zeroes; Must be provided if Local Tax (PST or QST) applies</p> <p>Minimum = 0.01</p> <p>Maximum = 999999.99</p> <p>Must have 2 decimal places</p> |
| C | Local Tax (PST or QST) Registration Number | 15-character alphanumeric | <code>vsIndependentRefund .SetLocalTaxNo (local_tax_no);</code> | Merchant's Local Tax |

| Req* | Value | Limits | Set Method | Description |
|------|---|--------------------------------|---|---|
| | | | | <p>(PST/QST) Registration Number</p> <p>Must be provided if tax is included on the invoice; If Local Tax included then must not be all spaces or all zeroes</p> <p>Must be provided if Local Tax (PST or QST) applies</p> |
| C | Customer VAT Registration Num- ber | 13-character alpha- numeric | <code>vsIndependentRefund .SetCustomerVatNo (customer_vat_no);</code> | If the Cus- tomer's Tax Registration Number appears on the invoice to sup- port tax exempt trans- actions it must be provided here |
| C | Customer Code/Cus- tomer Reference Iden- tifier (CRI) | 16-character alpha- numeric | <code>vsIndependentRefund .SetCri(cri);</code> | Value which the customer may choose to provide to the supplier at the point of sale – must be provided if given by the customer |
| N | Customer Code | 17-character alpha- numeric | <code>vsIndependentRefund .SetCustomerCode (customer_code);</code> | Optional cus- tomer code field that will not be passed along to Visa, |

| Req* | Value | Limits | Set Method | Description |
|------|----------------|---------------------------|---|--|
| | | | | but will be included on Moneris reporting |
| N | Invoice Number | 17-character alphanumeric | vsIndependentRefund.SetInvoiceNumber(invoice_number); | Optional invoice number field that will not be passed along to Visa, but will be included on Moneris reporting |

*Y = Required, N = Optional, C = Conditional

| Sample VS Independent Refund |
|---|
| <pre> namespace Moneris { using System; using System.Collections; using System.Text; public class TestVsIndependentRefund { public static void Main(string[] args) { string store_id = "moneris"; string api_token = "hurgle"; string processing_country_code = "CA"; bool status_check = false; string order_id="Test" + DateTime.Now.ToString("yyyyMMddhhmmss"); string cust_id="CUST13343"; string amount="5.00"; string pan="4242424254545454"; string expiry_date="2012"; //YYMM string crypt="7"; string national_tax = "1.23"; string merchant_vat_no = "gstno111"; string local_tax = "2.34"; string customer_vat_no = "gstno999"; string cri = "CUST-REF-002"; string customer_code="ccvsfp"; string invoice_number="invsfp"; string local_tax_no="ltaxno"; VsIndependentRefund vsIndependentRefund = new VsIndependentRefund(); vsIndependentRefund.SetOrderId(order_id); vsIndependentRefund.SetCustId(cust_id); vsIndependentRefund.SetAmount(amount); vsIndependentRefund.SetPan(pan); vsIndependentRefund.SetExpDate(expiry_date); vsIndependentRefund.SetCryptType(crypt); vsIndependentRefund.SetNationalTax(national_tax); } } </pre> |

Sample VS Independent Refund

```

vsIndependentRefund.SetMerchantVatNo(merchant_vat_no);
vsIndependentRefund.SetLocalTax(local_tax);
vsIndependentRefund.SetCustomerVatNo(customer_vat_no);
vsIndependentRefund.SetCri(cri);
vsIndependentRefund.SetCustomerCode(customer_code);
vsIndependentRefund.SetInvoiceNumber(invoice_number);
vsIndependentRefund.SetLocalTaxNo(local_tax_no);
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(vsIndependentRefund);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

7.2.8 VS Corpais

VS Corpais will contain all the required and optional data fields for Level 2/3 Purchasing Card Addendum data. VS Corpais data can be sent when the card has been identified in the Pre-authorization transaction request as being a corporate card.

In addition to the Order ID and Transaction number, this transaction also contains two objects:

- VS Purcha – Corporate Card Common Data
- VS Purchl – Line Item Details

VS Corpais request must be preceded by a financial transaction (VS Completion, VS Force Post, VS Refund, VS Independent Refund) and the Corporate Card flag must be set to “true” in the Pre-authorization response.

VS Corpais transaction object definition

```
VsCorpais vsCorpais = new VsCorpais();
```

HttpPostRequest object for VS Corpais transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(vsCorpais);
```

VS Corpais transaction object values

Table 1 VS Corpais transaction object mandatory values

| Value | Type | Limits | Set Method |
|---|--------|----------------------------|--|
| Order ID | String | 50-character alphanumeric | <code>vsCorpais.SetOrderId(order_id);</code> |
| Transaction number | String | 255-character alphanumeric | <code>vsCorpais.SetTxnNumber(txn_number);</code> |
| vsPurcha For a list of the variables that appear in this object, see the table below | Object | n/a | <code>VsPurcha vsPurcha = new VsPurcha();</code> <code>vsCorpais.SetVsPurch(vsPurcha, vsPurchl);</code> |
| vsPurchl For a list of the variables that appear in this object, see the table below | Object | n/a | <code>VsPurchl vsPurchl = new VsPurchl();</code> <code>vsCorpais.SetVsPurch(vsPurcha, vsPurchl);</code> |

*Y = Required, N = Optional, C = Conditional

7.2.8.1 VS Purcha - Corporate Card Common Data

VS Corpais transactions use the VS Purcha object to contain Level 2 data.

Table 1 Corporate Card Common Data - Level 2 Request Fields - VSPurcha

| Req* | Value | Limits | Set Method | Description |
|------|------------|---------------------------|---|----------------------|
| C | Buyer Name | 30-character alphanumeric | <code>vsPurcha.SetBuyerName(buyer_name);</code> | Buyer/Recipient Name |

| Req* | Value | Limits | Set Method | Description |
|------|----------------------------|---------------------|---|--|
| | | | | <p>NOTE: Name required by CRA on transactions >\$150</p> |
| C | Local Tax Rate | 4-character decimal | <code>vsPurchaSetLocalTaxRate (local_tax_rate);</code> | <p>Indicates the detailed tax rate applied in relationship to a local tax amount</p> <p>EXAMPLE: 8% PST should be 8.0</p> <p>Minimum = 0.01 Maximum = 99.99</p> <p>NOTE: Must be provided if Local Tax (PST or QST) applies.</p> |
| N | Duty Amount | 9-character decimal | <code>vsPurchaSetDutyAmount (duty_amount);</code> | <p>Duty on total purchase amount</p> <p>A minus sign means 'amount is a credit', plus sign or no sign means 'amount is a debit'</p> <p>maximum without sign is 999999.99</p> |
| N | Invoice Discount Treatment | 1-character numeric | <code>vsPurcha .SetDiscountTreatment (discount_treatment);</code> | <p>Indicates how the merchant is managing discounts</p> <p>Must be one of the following values:</p> <p>0 - if no invoice level discounts apply for this invoice</p> <p>1 - if Tax was calculated on Post-Discount totals</p> |

| Req* | Value | Limits | Set Method | Description |
|------|----------------------------------|---------------------------|--|--|
| | | | | 2 - if Tax was calculated on Pre-Discount totals |
| N | Invoice Level Discount Amount | 9-character decimal | <code>vsPurcha.SetDiscountAmt(discount_amt);</code> | <p>Amount of discount (if provided at the invoice level according to the Invoice Discount Treatment)</p> <p>Must be non-zero if Invoice Discount Treatment is 1 or 2</p> <p>Minimum amount is 0.00 and maximum is 999999.99</p> |
| C | Ship To Postal Code / Zip Code | 10-character alphanumeric | <code>vsPurcha.SetShipToPostalCode(ship_to_pos_code);</code> | <p>The postal code or zip code for the destination where goods will be delivered</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>NOTE: Required if shipment is involved</p> </div> <p>Full alpha postal code - Valid ANA<space>NAN format required if shipping to an address within Canada</p> |
| C | Ship From Postal Code / Zip Code | 10-character alphanumeric | <code>vsPurcha.SetShipFromPostalCode(ship_from_pos_code);</code> | <p>The postal code or zip code from which items were shipped</p> <p>For Canadian addresses, requires full alpha postal code for the merchant with Valid ANA<space>NAN</p> |

| Req* | Value | Limits | Set Method | Description |
|------|-------------------------------------|---------------------------|---|---|
| | | | | format |
| C | Destination Country Code | 2-character alphanumeric | <code>vsPurcha.SetDesCouCode(des_cou_code);</code> | <p>Code of country where purchased goods will be delivered</p> <p>Use ISO 3166-1 alpha-2 format</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>NOTE: Required if it appears on the invoice for an international transaction</p> </div> |
| Y | Unique VAT Invoice Reference Number | 25-character alphanumeric | <code>vsPurcha.SetVatRefNum(vat_ref_num);</code> | <p>Unique Value Added Tax Invoice Reference Number</p> <p>Must be populated with the invoice number and this cannot be all spaces or zeroes</p> |
| Y | Tax Treatment | 1-character alphanumeric | <code>vsPurcha.SetTaxTreatment(tax_treatment);</code> | <p>Must be one of the following values:</p> <p>0 = Net Prices with tax calculated at line item level;</p> <p>1 = Net Prices with tax calculated at invoice level;</p> <p>2 = Gross prices given with tax information provided at line item level;</p> <p>3 = Gross prices given with tax information provided at invoice level;</p> <p>4 = No tax applies (small merchant) on the invoice for the transaction</p> |

| Req* | Value | Limits | Set Method | Description |
|------|---------------------------------------|---------------------|--|--|
| N | Freight/Shipping Amount (Ship Amount) | 9-character decimal | vsPurcha .SetFreightAmount (freight_amount); | <p>Freight charges on total purchase</p> <p>If shipping is not provided as a line item it must be provided here, if applicable</p> <p>Signed monetary amount:</p> <p>Minus (-) sign means 'amount is a credit',</p> <p>Plus (+) sign or no sign means 'amount is a debit'</p> <p>Maximum without sign is 999999.99</p> |
| C | GST HST Freight Rate | 4-character decimal | vsPurcha .SetGstHstFreightRate (gst_hst_freight_rate); | <p>Rate of GST (excludes PST) or HST charged on the shipping amount (in accordance with the Tax Treatment)</p> <p>If Freight/Shipping Amount is provided then this (National GST or HST) tax rate must be provided.</p> <p>Monetary amount, maximum is 99.99. Such as 13% HST is 13.00</p> |
| C | GST HST Freight Amount | 9-character decimal | vsPurcha .SetGstHstFreightAmount (gst_hst_freight_amount); | <p>Amount of GST (excludes PST) or HST charged on the shipping amount</p> <p>If Freight/Shipping Amount is</p> |

| Req* | Value | Limits | Set Method | Description |
|------|-------|--------|------------|---|
| | | | | <p>provided then this (National GST or HST) tax amount must be provided if taxTreatment is 0 or 2</p> <p>Signed monetary amount: maximum without sign is 999999.99.</p> |

7.2.8.2 VS Purchl - Line Item Details

VS Corpais transactions use the VS Purchl object to contain Level 3 data.

Line Item Details for VS Purchl

```
string[] item_com_code = {"X3101", "X84802"};
string[] product_code = {"CHR123", "DDSK200"};
string[] item_description = {"Office Chair", "Disk Drive"};
string[] item_quantity = {"3", "1"};
string[] item_uom = {"EA", "EA"};
string[] unit_cost = {"0.20", "0.40"};
string[] vat_tax_amt = {"0.00", "0.00"};
string[] vat_tax_rate = {"13.00", "13.00"};
string[] discount_treatmentL = {"0", "0"};
string[] discount_amtL = {"0.00", "0.00"};
```

Setting VS Purchl Line Item Details

```
vsPurchl.SetVsPurchl(item_com_code[0], product_code[0], item_description[0],
item_quantity[0], item_uom[0], unit_cost[0], vat_tax_amt[0], vat_tax_rate[0],
discount_treatmentL[0], discount_amtL[0]);
```

```
vsPurchl.SetVsPurchl(item_com_code[1], product_code[1], item_description[1],
item_quantity[1], item_uom[1], unit_cost[1], vat_tax_amt[1], vat_tax_rate[1],
discount_treatmentL[1], discount_amtL[1]);
```

Table 1 Corporate Card Common Data - Level 3 Request Fields - VSPurchI

| Req* | Value | Limits | Variable/Field | Description |
|------|----------------------|----------------------------|------------------|---|
| C | Item Commodity Code | 12-character alpha-numeric | item_com_code | Line item Comodity Code (if this field is not sent, then Product Code must be sent) |
| Y | Product Code | 12-character alpha-numeric | product_code | <p>Product code for this line item – merchant’s product code, manufacturer’s product code or buyer’s product code</p> <p>Typically this will be the SKU or identifier by which the merchant tracks and prices the item or service</p> <p>This should always be provided for every line item</p> |
| Y | Item Description | 35-character alpha-numeric | item_description | Line item description |
| Y | Item Quantity | 12-character decimal | item_quantity | <p>Quantity invoiced for this line item</p> <p>Up to 4 decimal places supported, whole numbers are accepted</p> <p>Minimum = 0.0001</p> <p>Maximum = 999999999999</p> |
| Y | Item Unit of Measure | 2-character alpha-numeric | item_uom | <p>Unit of measure</p> <p>Use ANSI X-12 EDI Allowable Units of Measure and</p> |

| Req* | Value | Limits | Variable/Field | Description |
|------|--------------------|----------------------|---------------------|---|
| | | | | Codes |
| Y | Item Unit Cost | 12-character decimal | unit_cost | Line item cost per unit 2-4 decimal places accepted Minimum = 0.0001 Maximum = 999999.9999 |
| N | VAT Tax Amount | 12-character decimal | vat_tax_amt | Any value-added tax or other sales tax amount Must have 2 decimal places Minimum = 0.01 Maximum = 999999.99 |
| N | VAT Tax Rate | 4-character decimal | vat_tax_rate | Sales tax rate <div style="border: 1px solid black; background-color: #e0f0e0; padding: 2px; display: inline-block;">EXAMPLE: 8% PST should be 8.0</div> maximum 99.99 |
| Y | Discount Treatment | 1-character numeric | discount_treatmentL | Must be one of the following values: 0 if no invoice level discounts apply for this invoice 1 if Tax was calculated on Post-Discount totals 2 if Tax was calculated on Pre-Discount totals |
| C | Discount Amount | 12-character decimal | discount_amtL | Amount of discount, if provided for this line item according to the Line Item Discount |

| Req* | Value | Limits | Variable/Field | Description |
|------|-------|--------|----------------|---|
| | | | | <p>Treatment</p> <p>Must be non-zero if Line Item Discount Treatment is 1 or 2</p> <p>Must have 2 decimal places</p> <p>Minimum = 0.01</p> <p>Maximum = 999999.99</p> |

7.2.8.3 Sample Code for VS Corpais

| Sample VS Corpais |
|--|
| <pre> namespace Moneris { using System; using System.Collections; using System.Text; public class TestVsCorpais { public static void Main(string[] args) { string store_id = "moneris"; string api_token = "hurgle"; string processing_country_code = "CA"; bool status_check = false; string order_id="ord-160916-15:31:39"; string txn_number="18306-0_11"; string buyer_name = "Buyer Manager"; string local_tax_rate = "13.00"; string duty_amount = "0.00"; string discount_treatment = "0"; string discount_amt = "0.00"; string freight_amount = "0.20"; string ship_to_pos_code = "M8X 2W8"; string ship_from_pos_code = "M1K 2Y7"; string des_cou_code = "CAN"; string vat_ref_num = "VAT12345"; string tax_treatment = "3";//3 = Gross prices given with tax information provided at invoice level string gst_hst_freight_amount = "0.00"; string gst_hst_freight_rate = "13.00"; string[] item_com_code = {"X3101", "X84802"}; string[] product_code = {"CHR123", "DDSK200"}; string[] item_description = {"Office Chair", "Disk Drive"}; string[] item_quantity = {"3", "1"}; string[] item_uom = {"EA", "EA"}; string[] unit_cost = {"0.20", "0.40"}; } } </pre> |

Sample VS Corpais

```

string[] vat_tax_amt = {"0.00", "0.00"};
string[] vat_tax_rate = {"13.00", "13.00"};
string[] discount_treatmentL = {"0", "0"};
string[] discount_amtL = {"0.00", "0.00"};
//Create and set VsPurcha
VsPurcha vsPurcha = new VsPurcha();
vsPurcha.SetBuyerName(buyer_name);
vsPurcha.SetLocalTaxRate(local_tax_rate);
vsPurcha.SetDutyAmount(duty_amount);
vsPurcha.SetDiscountTreatment(discount_treatment);
vsPurcha.SetDiscountAmt(discount_amt);
vsPurcha.SetFreightAmount(freight_amount);
vsPurcha.SetShipToPostalCode(ship_to_pos_code);
vsPurcha.SetShipFromPostalCode(ship_from_pos_code);
vsPurcha.SetDesCouCode(des_cou_code);
vsPurcha.SetVatRefNum(vat_ref_num);
vsPurcha.SetTaxTreatment(tax_treatment);
vsPurcha.SetGstHstFreightAmount(gst_hst_freight_amount);
vsPurcha.SetGstHstFreightRate(gst_hst_freight_rate);
//Create and set VsPurchl
VsPurchl vsPurchl = new VsPurchl();
vsPurchl.SetVsPurchl(item_com_code[0], product_code[0], item_description[0], item_quantity[0],
item_uom[0], unit_cost[0], vat_tax_amt[0], vat_tax_rate[0], discount_treatmentL[0], discount_amtL
[0]);
vsPurchl.SetVsPurchl(item_com_code[1], product_code[1], item_description[1], item_quantity[1],
item_uom[1], unit_cost[1], vat_tax_amt[1], vat_tax_rate[1], discount_treatmentL[1], discount_amtL
[1]);

VsCorpais vsCorpais = new VsCorpais();
vsCorpais.SetOrderId(order_id);
vsCorpais.SetTxnNumber(txn_number);
vsCorpais.SetVsPurch(vsPurcha, vsPurchl);
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(vsCorpais);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());

```

Sample VS Corpais

```
Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
```

7.3 Level 2/3 MasterCard Transactions

- 7.3.1 Level 2/3 Transaction Types for MasterCard
- 7.3.2 Level 2/3 Transaction Flow for MasterCard
- 7.3.3 MC Completion
- 7.3.4 MC Force Post
- 7.3.5 MC Purchase Correction
- 7.3.6 MC Refund
- 7.3.7 MC Independent Refund
- 7.3.8 MC Corpais - Corporate Card Common Data with Line Item Details

7.3.1 Level 2/3 Transaction Types for MasterCard

This transaction set includes a suite of corporate card financial transactions as well as a transaction that allows for the passing of Level 2/3 data. Please ensure MC Level 2/3 processing support is enabled on your merchant account. Batch Close, Open Totals and Pre-authorization are identical to the transactions outlined in the section Basic Transaction Set (page 12).

When the Preauth response contains CorporateCard equal to true then you can submit the MC transactions.

If CorporateCard is false then the card does not support Level 2/3 data and non Level 2/3 transaction are to be used. If the card is not a corporate card, please refer to section 4 for the appropriate non-corporate card transactions.

NOTE: This transaction set is intended for transactions where Corporate Card is true and Level 2/3 data will be submitted. If the credit card is found to be a corporate card but you do not wish to send any Level 2/3 data then you may submit MC transactions using the transaction set outlined in Basic Transaction Set (page 12).

Pre-auth – (authorization/pre-authorization)

The pre-auth verifies and locks funds on the customer's credit card. The funds are locked for a specified amount of time, based on the card issuer. To retrieve the funds from a pre-auth so that they may be settled in the merchant account a capture must be performed. Level 2/3 data submission is not supported as part of a pre-auth as a pre-auth is not settled. When CorporateCard is returned true then Level 2/3 data may be submitted.

MC Completion – (Capture/Preauth Completion)

Once a Pre-authorization is obtained the funds that are locked need to be retrieved from the customer's credit card. The capture retrieves the locked funds and readies them for settlement in to the merchant account. Prior to performing an MCCompletion a Pre-auth must be performed.

MC Force Post – (Force Capture/Preauth Completion)

This transaction is an alternative to MC Completion to obtain the funds locked on Preauth obtained from IVR or equivalent terminal. The MC Force Post requires that the original Pre-authorization's auth code is provided and it retrieves the locked funds and readies them for settlement in to the merchant account.

MC Purchase Correction – (Void, Correction)

MC Completions can be voided the same day* that they occur. A void must be for the full amount of the transaction and will remove any record of it from the cardholder statement. * An MC Purchase Correction can be performed against a transaction as long as the batch that contains the original transaction remains open. When using the automated closing feature batch close occurs daily between 10 – 11 pm EST.

MC Refund – (Credit)

A MC Refund can be performed against an MC Completion or MC Force Post to refund an amount less than or equal to the amount of the original transaction.

MC Independent Refund – (Credit)

A MC Independent Refund can be performed against an completion to refund any part, or all of the transaction. Independent refund is used when the originating transaction was not performed through Moneris Gateway. Please note, the MC Independent Refund transaction may or may not be supported on your account. If you receive a transaction not allowed error when attempting an MC Independent Refund, it may mean the transaction is not supported on your account. If you wish to have the MC Independent Refund transaction type temporarily enabled (or re-enabled), please contact the Service Centre at 1-866-319-7450.

MC Corpais Common Line Item – (Level 2/3 Data)

MC Corpais Common Line Item will contain the entire required and optional data field for Level 2/3 data. MCCorpais Common Line Item data can be sent when the card has been identified in the transaction request as being a corporate card. This transaction supports multiple data types and combinations:

- Purchasing Card Data:
 - Corporate card common data with Line Item Details

7.3.2 Level 2/3 Transaction Flow for MasterCard

Pre-authorization/Completion Transaction Flow

Purchase Correction Transaction Flow

7.3.3 MC Completion

The MC Completion transaction is used to secure the funds locked by a pre-authorization transaction. When sending a capture request you will need two pieces of information from the original pre-authorization– the Order ID and the transaction number from the returned response.

Once you have completed this transaction successfully, to submit the complete supplemental level 2/3 data, please proceed to MC Corpais.

MC Completion transaction object definition

```
McCompletion mcCompletion = new McCompletion();
```

HttpPostRequest object for MC Completion transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();  
mpgReq.SetTransaction(mcCompletion);
```

MC Completion transaction object values

Table 1 MC Completion transaction object mandatory values

| Value | Type | Limits | Set Method |
|---------------------------|--------|---|--|
| Order ID | String | 50-character alpha-numeric | <code>mcCompletion.SetOrderId(order_id);</code> |
| Completion amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>mcCompletion.SetCompAmount(comp_amount);</code> |
| Transaction number | String | 255-character alpha-numeric | <code>mcCompletion.SetTxnNumber(txn_number);</code> |
| Merchant reference number | String | 19-character alpha-numeric | <code>mcCompletion.SetMerchantRefNo(merchant_ref_no);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>mcCompletion.SetCryptType(crypt);</code> |

Sample MC Completion

```
namespace Moneris
{
    using System;
    using System.Collections;
    using System.Text;
    public class TestMcCompletion
    {
        public static void Main(string[] args)
        {
            string store_id = "moneris";
            string api_token = "hurgle";
            string processing_country_code = "CA";
            bool status_check = false;

            string order_id="Test20170112020548";
            string comp_amount="5.00";
            string txn_number="660117311792017012140548199-0_11";
            string crypt="7";
            string merchant_ref_no = "319038";
            McCompletion mcCompletion = new McCompletion();
            mcCompletion.SetOrderId(order_id);
        }
    }
}
```

Sample MC Completion

```

mcCompletion.SetCompAmount(comp_amount);
mcCompletion.SetTxnNumber(txn_number);
mcCompletion.SetCryptType(crypt);
mcCompletion.SetMerchantRefNo(merchant_ref_no);
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(mcCompletion);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

7.3.4 MC Force Post

MC Force Post transaction is used to secure the funds locked by a pre-authorization transaction performed over IVR or equivalent terminal. When sending a force post request, you will need order_id, amount, pan (card number), expiry date, crypt type and the authorization code received in the pre-authorization response.

MC Force Post transaction object definition

```
McForcePost mcforcepost= new McForcePost();
```

HttpPostRequest object for MC Force Post transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(mcforcepost);
```

MC Force Post transaction object values**Table 1 MC Force Post transaction object mandatory values**

| Value | Type | Limits | Set Method |
|---------------------------|--------|---|---|
| Order ID | String | 50-character alpha-numeric | <code>mcforcepost.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>mcforcepost.SetAmount(amount);</code> |
| Credit card number | String | 20-character alpha-numeric | <code>mcforcepost.SetPan(pan);</code> |
| Expiry date | String | 4-character alpha-numeric (YYMM format) | <code>mcforcepost.SetExpdate(expiry_date);</code> |
| Authorization code | String | 8-character alpha-numeric | <code>mcforcepost.SetAuthCode(auth_code);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>mcforcepost.SetCryptType(crypt);</code> |
| Merchant reference number | String | 19-character alpha-numeric | <code>mcforcepost.SetMerchantRefNo(merchant_ref_no);</code> |

Table 2 MC Force Post transaction object optional values

| Value | Type | Limits | Set Method |
|-------------|--------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | <code>mcforcepost.SetCustId(cust_id);</code> |

Sample MC Force Post

```
namespace Moneris
{
    using System;
    using System.Collections;
    using System.Text;
    public class TestMcForcePost
    {
        public static void Main(string[] args)
        {
            string store_id = "moneris";
            string api_token = "hurgle";
            string processing_country_code = "CA";
            bool status_check = false;

            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string cust_id = "CUST13343";
            string amount = "5.00";
            string pan = "5454545442424242";
            string expiry_date = "1912"; //YYMM
            string auth_code = "123456";
            string crypt = "7";
            string merchant_ref_no = "319038";
            McForcePost mcforcepost = new McForcePost();
            mcforcepost.SetOrderId(order_id);
            mcforcepost.SetCustId(cust_id);
            mcforcepost.SetAmount(amount);
            mcforcepost.SetPan(pan);
            mcforcepost.SetExpDate(expiry_date);
            mcforcepost.SetAuthCode(auth_code);
            mcforcepost.SetCryptType(crypt);
            mcforcepost.SetMerchantRefNo(merchant_ref_no);
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(mcforcepost);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("CardType = " + receipt.GetCardType());
                Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
                Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                Console.WriteLine("TransType = " + receipt.GetTransType());
                Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("ISO = " + receipt.GetISO());
                Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
                Console.WriteLine("Message = " + receipt.GetMessage());
                Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
                Console.WriteLine("Complete = " + receipt.GetComplete());
                Console.WriteLine("TransDate = " + receipt.GetTransDate());
                Console.WriteLine("TransTime = " + receipt.GetTransTime());
                Console.WriteLine("Ticket = " + receipt.GetTicket());
                Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
                Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
            }
        }
    }
}
```

Sample MC Force Post

```

Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

7.3.5 MC Purchase Correction

The MC Purchase Correction (void) transaction is used to cancel a transaction that was performed in the current batch. No amount is required because a void is always for 100% of the original transaction. The only transaction that can be voided is completion. To send a void, the Order ID and Transaction Number from the MC Completion or MC Force Post are required.

MC Purchase Correction transaction object definition

```
McPurchaseCorrection mcpurchasecorrection = new McPurchaseCorrection();
```

HttpRequest object for MC Purchase Correction transaction

```

HttpRequest mpgReq = new HttpRequest();
mpgReq.SetTransaction(mcpurchasecorrection);

```

MC Purchase Correction transaction object values

Table 1 MC Purchase Correction transaction object mandatory values

| Value | Type | Limits | Set Method |
|----------------------|--------|-----------------------------|--|
| Order ID | String | 50-character alpha-numeric | mcpurchasecorrection .SetOrderId(order_id); |
| Transaction number | String | 255-character alpha-numeric | mcpurchasecorrection .SetTxnNumber(txn_number); |
| E-commerce indicator | String | 1-character alpha-numeric | mcpurchasecorrection .SetCryptType(crypt); |

Sample MC Purchase Correction

```
namespace Moneris
{
    using System;
    using System.Collections;
    using System.Text;
    public class TestMcPurchaseCorrection
    {
        public static void Main(string[] args)
        {
            string store_id = "moneris";
            string api_token = "hurgle";
            string processing_country_code = "CA";
            bool status_check = false;

            string order_id="Test20170112020548";
            string txn_number="660117311792017012140548199-0_11";
            string crypt="7";
            McPurchaseCorrection mcpurchasecorrection = new McPurchaseCorrection();
            mcpurchasecorrection.SetOrderId(order_id);
            mcpurchasecorrection.SetTxnNumber(txn_number);
            mcpurchasecorrection.SetCryptType(crypt);
            HttpPostRequest mpgReq = new HttpPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(mcpurchasecorrection);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("CardType = " + receipt.GetCardType());
                Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
                Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                Console.WriteLine("TransType = " + receipt.GetTransType());
                Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("ISO = " + receipt.GetISO());
                Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
                Console.WriteLine("Message = " + receipt.GetMessage());
                Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
                Console.WriteLine("Complete = " + receipt.GetComplete());
                Console.WriteLine("TransDate = " + receipt.GetTransDate());
                Console.WriteLine("TransTime = " + receipt.GetTransTime());
                Console.WriteLine("Ticket = " + receipt.GetTicket());
                Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
                Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
                Console.ReadLine();
            }
            catch (Exception e)
            {
                Console.WriteLine(e);
            }
        }
    }
}
```


7.3.6 MC Refund

The MC Refund will credit a specified amount to the cardholder's credit card. A refund can be sent up to the full value of the original capture. To send a refund you will require the Order ID and Transaction Number from the original MC Completion or MC Force Post.

MC Refund transaction object definition

```
McRefund mcRefund = new McRefund();
```

HttpPostRequest object for MC Refund transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(mcRefund);
```

MC Refund transaction object values

Table 1 MC Refund transaction object mandatory values

| Value | Type | Limits | Set Method |
|---------------------------|--------|---|--|
| Order ID | String | 50-character alphanumeric | <code>mcRefund.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>mcRefund.SetAmount(amount);</code> |
| Transaction number | String | 255-character alphanumeric | <code>mcRefund.SetTxnNumber(txn_number);</code> |
| E-commerce indicator | String | 1-character alphanumeric | <code>mcRefund.SetCryptType(crypt);</code> |
| Merchant reference number | String | 19-character alphanumeric | <code>mcRefund.SetMerchantRefNo(merchant_ref_no);</code> |

Sample MC Refund

```
namespace Moneris
{
    using System;
    using System.Collections;
    using System.Text;
    public class TestMcRefund
    {
        public static void Main(string[] args)
        {
            string store_id = "moneris";
            string api_token = "hurgle";
            string processing_country_code = "CA";
            bool status_check = false;

            string order_id="Test20170112020548";
            string amount="5.00";
            string txn_number="660117311792017012140548199-0_11";
            string crypt="7";
            string merchant_ref_no = "319038";
            McRefund mcRefund = new McRefund();
            mcRefund.SetOrderId(order_id);
            mcRefund.SetAmount(amount);
            mcRefund.SetTxnNumber(txn_number);
            mcRefund.SetCryptType(crypt);
            mcRefund.SetMerchantRefNo(merchant_ref_no);
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(mcRefund);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("CardType = " + receipt.GetCardType());
                Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
                Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                Console.WriteLine("TransType = " + receipt.GetTransType());
                Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("ISO = " + receipt.GetISO());
                Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
                Console.WriteLine("Message = " + receipt.GetMessage());
                Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
                Console.WriteLine("Complete = " + receipt.GetComplete());
                Console.WriteLine("TransDate = " + receipt.GetTransDate());
                Console.WriteLine("TransTime = " + receipt.GetTransTime());
                Console.WriteLine("Ticket = " + receipt.GetTicket());
                Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
                Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
                Console.ReadLine();
            }
            catch (Exception e)
            {
                Console.WriteLine(e);
            }
        }
    }
}
```

| Sample MC Refund |
|--------------------|
| <pre> } } } </pre> |

7.3.7 MC Independent Refund

MC Independent Refund is used when the originating transaction was not performed through Moneris Gateway and does not require an existing order to be logged in the Moneris Gateway; however, the credit card number and the expiry date will need to be passed. The transaction format is almost identical to a purchase or a pre-authorization.

NOTE: Independent refund transactions are not supported on all accounts. If you receive a transaction not allowed error when attempting an independent refund transaction, it may mean the feature is not supported on your account. To have Independent Refund transaction functionality temporarily enabled (or re-enabled), please contact the Moneris Customer Service Centre at 1-866-319-7450.

Once you have completed this transaction successfully, to submit the complete supplemental level 2/3 data, please proceed to MC Corpais.

MC Independent Refund transaction object definition

```
McIndependentRefund mcindrefund = new McIndependentRefund();
```

HttpPostRequest object for MC Independent Refund transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(mcindrefund);
```

MC Independent Refund transaction object values

Table 1 MC Independent Refund transaction object mandatory values

| Value | Type | Limits | Set Method |
|---------------------------|--------|---|---|
| Order ID | String | 50-character alpha-numeric | <code>mcindrefund.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>mcindrefund.SetAmount(amount);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>mcindrefund.SetCryptType(crypt);</code> |
| Credit card number | String | 20-character numeric | <code>mcindrefund.SetPan(pan);</code> |
| Expiry date | String | 4-character numeric (YYMM format) | <code>mcindrefund.SetExpdate(expiry_date);</code> |
| Merchant reference number | String | 19-character alpha-numeric | <code>mcindrefund.SetMerchantRefNo(merchant_ref_no);</code> |

Table 2 MC Independent Refund transaction object optional values

| Value | Type | Limits | Set Method |
|-------------|--------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | <code>mcindrefund.SetCustId(cust_id);</code> |

Sample MC Independent Refund

```
namespace Moneris
{
    using System;
    using System.Collections;
    using System.Text;
    public class TestMcIndependentRefund
    {
        public static void Main(string[] args)
    }
}
```

Sample MC Independent Refund

```

{
    string store_id = "moneris";
    string api_token = "hurgle";
    string processing_country_code = "CA";
    bool status_check = false;

    string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
    string cust_id = "CUST13343";
    string amount = "5.00";
    string pan = "5454545442424242";
    string expiry_date = "1912"; //YYMM
    string crypt = "7";
    string merchant_ref_no = "319038";
    McIndependentRefund mcindrefund = new McIndependentRefund();
    mcindrefund.SetOrderId(order_id);
    mcindrefund.SetCustId(cust_id);
    mcindrefund.SetAmount(amount);
    mcindrefund.SetPan(pan);
    mcindrefund.SetExpDate(expiry_date);
    mcindrefund.SetCryptType(crypt);
    mcindrefund.SetMerchantRefNo(merchant_ref_no);
    HttpsPostRequest mpgReq = new HttpsPostRequest();
    mpgReq.SetProcCountryCode(processing_country_code);
    mpgReq.SetTestMode(true); //false or comment out this line for production transactions
    mpgReq.SetStoreId(store_id);
    mpgReq.SetApiToken(api_token);
    mpgReq.SetTransaction(mcindrefund);
    mpgReq.SetStatusCheck(status_check);
    mpgReq.Send();
    try
    {
        Receipt receipt = mpgReq.GetReceipt();
        Console.WriteLine("CardType = " + receipt.GetCardType());
        Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
        Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
        Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
        Console.WriteLine("TransType = " + receipt.GetTransType());
        Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
        Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
        Console.WriteLine("ISO = " + receipt.GetISO());
        Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
        Console.WriteLine("Message = " + receipt.GetMessage());
        Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
        Console.WriteLine("Complete = " + receipt.GetComplete());
        Console.WriteLine("TransDate = " + receipt.GetTransDate());
        Console.WriteLine("TransTime = " + receipt.GetTransTime());
        Console.WriteLine("Ticket = " + receipt.GetTicket());
        Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
        Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
        Console.ReadLine();
    }
    catch (Exception e)
    {
        Console.WriteLine(e);
    }
}

```

7.3.8 MC Corpais - Corporate Card Common Data with Line Item Details

This transaction example includes the following elements for Level 2 and 3 purchasing card corporate card data processing:

- Corporate Card Common Data (MC Corpac)
 - only 1 set of MC Corpac fields can be submitted
 - this data set includes data elements that apply to the overall order, e.g., the total overall taxes
- Line Item Details (MC Corpal)
 - 1-998 counts of MC Corpal line items can be submitted
 - This data set includes the details about each individual item or service purchased

The MC Corpais request must be preceded by a financial transaction (MC Completion, MC Force Post, MC Refund, MC Independent Refund) and the Corporate Card flag must be set to “true” in the Preauthorization response. The MC Corpais request will need to contain the Order ID of the financial transaction as well as the Transaction Number.

In addition, MC Corpais has a tax array object that can be sent via the Tax fields in MC Corpac and MC Corpal. For more about the tax array object, see 7.3.8.3 Tax Array Object - MC Corpais.

For descriptions of the Level 2/3 fields, please see Definition of Request Fields for Level 2/3 - MasterCard (page 427).

MC Corpais transaction object definition

```
McCorpais mcCorpais = new McCorpais();
```

HttpPostRequest object for MC Corpais transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(mcCorpais);
```

MC Corpais transaction object values

Table 1 MC Corpais transaction object mandatory values

| Value | Type | Limits | Set Method |
|--------------------|--------|-----------------------------|--|
| Order ID | String | 50-character alpha-numeric | <code>mcCorpais.SetOrderId(order_id);</code> |
| Transaction number | String | 255-character alpha-numeric | <code>mcCorpais.SetTxnNumber(txn_number);</code> |
| MCCorpac | Object | n/a | <code>mcCorpac.SetMcCorpac(mcCorpac);</code> |
| MC Corpal | Object | n/a | <code>mcCorpais.SetMcCorpai</code> |

| Value | Type | Limits | Set Method |
|-------|------|--------|-------------|
| | | | (mcCorpac); |

*Y = Required, N = Optional, C = Conditional

7.3.8.1 MC Corpac - Corporate Card Common Data

Table 1 Corporate Card Common Data - Level 2 Request Fields - MCCorpac

| Re- q* | Value | Limits | Set Method | Description |
|-----------|-----------------------|--|---|---|
| N | Austin-Tetra Number | 15-character alpha-numeric | mcCorpac .SetAustinTetraNumber (austin_tetra_number); | The Austin-Tetra Number assigned to the card acceptor |
| N | NAICS Code | 15-character alpha-numeric | mcCorpac.SetNaicsCode (naics_code); | North American Industry Classification System (NAICS) code assigned to the card acceptor |
| N | Customer Code | 25-character alpha-numeric | mcCorpac.SetCustomerCode1 (customer_code1_c); | A control number, such as purchase order number, project number, department allocation number or name that the purchaser supplied the merchant Left-justified; may be spaces |
| N | Unique Invoice Number | 17-character alpha-numeric | mcCorpac .SetUniqueInvoiceNumber (unique_invoice_number_c); | Unique number associated with the individual transaction provided by the merchant |
| N | Commodity Code | 15-character alpha-numeric | mcCorpac.SetCommodityCode (commodity_code); | Code assigned by the merchant that best categorizes the item(s) being purchased |
| N | Order Date | 6-character numeric YYMMDD format | mcCorpac.SetOrderDate (order_date_c); | The date the item was ordered NOTE: If present, must con- |

| Req* | Value | Limits | Set Method | Description |
|------|-----------------------------------|--|--|--|
| | | | | <div style="border: 1px solid black; padding: 2px; width: fit-content;">tain a valid date</div> |
| N | Corporation VAT Number | 20-character alphanumeric | <code>mcCorpac .SetCorporationVatNumber (corporation_vat_number_c);</code> | Contains a corporation's value added tax (VAT) number |
| N | Customer VAT Number | 20-character alphanumeric | <code>mcCorpac .SetCustomerVatNumber (customer_vat_number_c);</code> | Contains the VAT number for the customer / cardholder used to identify the customer when purchasing goods and services from the merchant |
| N | Freight Amount | 12-character decimal | <code>mcCorpac.SetFreightAmount1 (freight_amount_c);</code> | <p>The freight on the total purchase</p> <p>Must have 2 decimals</p> <p>Minimum = 0.00 Maximum = 999999.99</p> |
| N | Duty Amount | 12-character decimal | <code>mcCorpac.SetDutyAmount1 (duty_amount_c);</code> | <p>The duty on the total purchase</p> <p>Must have 2 decimals</p> <p>Minimum = 0.00</p> <p>Maximum = 999999.99</p> |
| N | Destination State / Province Code | 3-character alphanumeric | <code>mcCorpac .SetDestinationProvinceCode (destination_province_code);</code> | <p>State or Province of the country where the goods will be delivered</p> <p>Left justified with trailing spaces</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-top: 5px;">EXAMPLE: ONT = Ontario</div> |
| N | Destination Country Code | 3-character alphanumeric ISO 3166-1 | <code>mcCorpac .SetDestinationCountryCode (destination_country_code);</code> | <p>The country code where goods will be delivered</p> <p>Left justified with trailing spaces</p> |

| Req* | Value | Limits | Set Method | Description |
|------|-------------------------------|--|---|--|
| | | alpha-3 format | | ISO 3166-1 alpha-3 format EXAMPLE: CAN = Canada |
| N | Ship From Postal Code | 10-character alpha-numeric ANA NAN format | <code>mcCorpac.SetShipFromPosCode(ship_from_pos_code);</code> | The postal code or zip code from which items were shipped Full alpha postal code - Valid ANA<space>NAN format |
| N | Destination Postal Code | 10-character alpha-numeric | <code>mcCorpac.SetShipToPosCode(ship_to_pos_code_c);</code> | The postal code or zip code where goods will be delivered Full alpha postal code - Valid ANA<space>NAN format if shipping to an address within Canada |
| N | Authorized Contact Name | 36-character alpha-numeric | <code>mcCorpac.SetAuthorizedContactName(authorized_contact_name_c);</code> | Name of an individual or company contacted for company authorized purchases |
| N | Authorized Contact Phone | 17-character alpha-numeric | <code>mcCorpac.SetAuthorizedContactPhone(authorized_contact_phone);</code> | Phone number of an individual or company contacted for company authorized purchases |
| N | Additional Card Acceptor Data | 40-character alpha-numeric | <code>mcCorpac.SetAdditionalCardAcceptorData(additional_card_acceptor_data);</code> | Information pertaining to the card acceptor |
| N | Card Acceptor Type | 8-character alpha-numeric | <code>mcCorpac.SetCardAcceptorType(card_acceptor_type);</code> | Various classifications of business ownership characteristics This field takes 8 characters. Each character represents a different component, as follows: |

| Re- q* | Value | Limits | Set Method | Description |
|-----------|-------|--------|------------|--|
| | | | | <p>1st character represents 'Business Type' and contains a code to identify the specific classification or type of business:</p> <ol style="list-style-type: none"> 1. Corporation 2. Not known 3. Individual/Sole Proprietorship 4. Partnership 5. Association/Estate/Trust 6. Tax Exempt Organizations (501C) 7. International Organization 8. Limited Liability Company (LLC) 9. Government Agency <p>2nd character represents 'Business Owner Type'. Contains a code to identify specific characteristics about the business owner.</p> <ol style="list-style-type: none"> 1 - No application classification 2 - Female business owner 3 - Physically handicapped female business owner 4 - Physically handicapped male business owner 0 - Unknown <p>3rd character represents 'Business Certification Type'. Contains a code to identify specific characteristics about the busi-</p> |

| Re- q* | Value | Limits | Set Method | Description |
|-----------|-------|--------|------------|---|
| | | | | <p>ness certification type, such as small business, disadvantaged, or other certification type:</p> <ul style="list-style-type: none"> 1 - Not certified 2 - Small Business Administration (SBA) certification small business 3 - SBA certification as small disadvantaged business 4 - Other government or agency-recognized certification (such as Minority Supplier Development Council) 5 - Self-certified small business 6 - SBA certification as small and other government or agency-recognized certification 7 - SBA certification as small disadvantaged business and other government or agency-recognized certification 8 - Other government or agency-recognized certification and self-certified small business A - SBA certification |

| Re- q* | Value | Limits | Set Method | Description |
|-----------|-------|--------|------------|--|
| | | | | <p>as 8(a) B - Self-certified small disadvantaged business (SDB) C - SBA certification as HUBZone 0 - Unknown</p> <p>4th character represents 'Business Racial/Ethnic Type'. Contains a code identifying the racial or ethnic type of the majority owner of the business.</p> <p>1 - African American 2 - Asian Pacific American 3 - Subcontinent Asian American 4 - Hispanic American 5 - Native American Indian 6 - Native Hawaiian 7 - Native Alaskan 8 - Caucasian 9 - Other 0 - Unknown</p> <p>5th character represents 'Business Type Provided Code'</p> <p>Y - Business type is provided. N - Business type was not provided. R - Card acceptor refused to provide business type</p> <p>6th character represents 'Business Owner Type</p> |

| Re- q* | Value | Limits | Set Method | Description |
|-----------|------------------|---------------------|---|--|
| | | | | <p>Provided Code'</p> <p>Y - Business owner type is provided. N - Business owner type was not provided. R - Card acceptor refused to provide business type</p> <p>7th character represents 'Business Certification Type Provided Code'</p> <p>Y - Business certification type is provided. N - Business certification type was not provided. R - Card acceptor refused to provide business type</p> <p>8th character represents 'Business Racial/Ethnic Type'</p> <p>Y - Business racial/ethnic type is provided. N - Business racial/ethnic type was not provided. R - Card acceptor refused to provide business racial/ethnic type</p> |
| N | Card Acceptor | 20-character alpha- | mcCorpac .SetCardAcceptorTaxTd(card_ | US federal tax ID number or value-added tax (VAT) ID |

| Req* | Value | Limits | Set Method | Description |
|------|--------------------------------|---------------------------|---|--|
| | Tax ID | numeric | <code>acceptor_tax_id_c</code> ; | |
| N | Card Acceptor Reference Number | 25-character alphanumeric | <code>mcCorpac .SetCardAcceptorReferenceNumber(card_acceptor_reference_number)</code> ; | Code that facilitates card acceptor/corporation communication and record keeping |
| N | Card Acceptor VAT Number | 20-character alphanumeric | <code>mcCorpac .SetCardAcceptorVatNumber(card_acceptor_vat_number_c)</code> ; | Value added tax (VAT) number for the card acceptor location Used to identify the card acceptor when collecting and reporting taxes |
| C | Tax | Up to 6 arrays | <code>mcCorpac.SetTax(tax_c)</code> ; | Can have up to 6 arrays containing different tax details NOTE: If you use this variable, you must fill in all the fields of tax array mentioned below. |

7.3.8.2 MC Corpal - Line Item Details

MC Corpal Object - Line Item Details

```
mcCorpac.SetMcCorpac(customer_code1_l[0], line_item_date1_l[0], ship_date1_l[0],
order_date1_l[0], medical_services_ship_to_health_industry_number1_l[0], contract_number1_l[0],
medical_services_adjustment1_l[0], medical_services_product_number_qualifier1_l[0],
product_code1_l[0], item_description1_l[0], item_quantity1_l[0], unit_cost1_l[0],
item_unit_measure1_l[0], ext_item_amount1_l[0], discount_amount1_l[0], commodity_code1_l[0],
type_of_supply1_l[0], vat_ref_num1_l[0], tax1_l[0]);
```

Table 1 Line Item Details - Level 3 Request Fields - MC Corpal

| Req* | Value | Limits | Variable | Description |
|------|---------------|---------------------------|-------------------------------|--|
| N | Customer Code | 25-character alphanumeric | <code>customer_code1_l</code> | A control number, such as purchase order number, project number, department alloc- |

| Req* | Value | Limits | Variable | Description |
|------|------------------|--------------------------------------|---------------------|---|
| | | | | ation number or name that the purchaser supplied the merchant |
| N | Line Item Date | 6-character numeric YYMMDD format | line_item_date_1 | The purchase date of the line item referenced in the associated Corporate Card Line Item Detail Fixed length 6 Numeric, in YYMMDD format |
| N | Ship Date | 6-character numeric YYMMDD format | ship_date_1 | The date the merchandise was shipped to the destination Fixed length 6 Numeric, in YYMMDD format |
| N | Order Date | 6-character numeric YYMMDD format | order_date1_11 | The date the item was ordered Fixed length 6-character numeric, in YYMMDD format |
| Y | Product Code | 12-character alphanumeric | product_code1_11 | Line item Product Code Contains the non-fuel related product code of the individual item purchased |
| Y | Item Description | 35-character alphanumeric | item_description_11 | Line Item description Contains the |

| Req* | Value | Limits | Variable | Description |
|------|----------------------|---------------------------|----------------------|--|
| | | | | description of the individual item purchased |
| Y | Item Quantity | 12-character alphanumeric | item_quantity_ll | Quantity of line item Up to 5 decimal places supported Minimum amount is 0.0 and maximum is 9999999.99999 |
| Y | Unit Cost | 12-character decimal | unit_cost_ll | Line item cost per unit. Must contain a minimum of 2 decimal places, up to 5 decimal places supported. Minimum amount is 0.00001 and maximum is 999999.99999 |
| Y | Item Unit Measure | 12-character alphanumeric | item_unit_measure_ll | The line item unit of measurement code ANSI X-12 EDI Allowable Units of Measure and Codes |
| Y | Extended Item Amount | 9-character decimal | ext_item_amount_ll | Contains the individual item amount that is normally calculated as price multiplied by quantity Must contain 2 decimal places Minimum amount |

| Req* | Value | Limits | Variable | Description |
|------|-----------------|---------------------------|--------------------|---|
| | | | | is 0.00 and maximum is 999999.99 |
| N | Discount Amount | 9-character decimal | discount_amount_11 | Contains the item discount amount Must contain 2 decimal places Minimum amount is 0.00 and maximum is 999999.99 |
| N | Commodity Code | 15-character alphanumeric | commodity_code_11 | Code assigned to the merchant that best categorizes the item(s) being purchased |
| C | Tax | Up to 6 arrays | tax_1 | Can have up to 6 arrays containing different tax details –see Tax Array Request Fields table below for each field description NOTE: If you use this variable, you must fill in all the fields of tax array mentioned below. |

7.3.8.3 Tax Array Object - MC Corpac

The tax array object is used when you use the Tax field of both MC Corpac and MC Corpal. If you use the tax array object, all of the array fields must be sent.

Setting the tax array differs slightly between the two objects.

Setting tax array for MC Corpac

```
string[] tax_amount_c = { "1.19", "1.29"};
string[] tax_rate_c = { "6.0", "7.0"};
string[] tax_type_c = { "GST", "PST"};
```

```
string[] tax_id_c = { "gst1298", "pst1298"};
string[] tax_included_in_sales_c = { "Y", "N"};
McTax tax_c = new McTax();
tax_c.SetTax(tax_amount_c[0], tax_rate_c[0], tax_type_c[0], tax_id_c[0], tax_included_in_sales_c[0]);
```

Setting tax array for MC Corpal

```
//Tax Details for Items
string[] tax_amount_l = {"0.52", "1.48"};
string[] tax_rate_l = {"13.0", "13.0"};
string[] tax_type_l = {"HST", "HST"};
string[] tax_id_l = {"hst1298", "hst1298"};
string[] tax_included_in_sales_l = {"Y", "Y"};
McTax[] tax_l = new McTax[2];
tax_l[1].SetTax(tax_amount_l[1], tax_rate_l[1], tax_type_l[1], tax_id_l[1], tax_included_in_sales_l[1]);
```

Table 1 MC Corpais Tax Array Request Fields

| Req* | Value | Limits | Variable | Description |
|------|------------|----------------------|---------------------------|--|
| Y | Tax Amount | 12-character decimal | tax_amount_c/tax_amount_l | <p>Contains detail tax amount for purchase of goods or services</p> <p>Must be 2 decimal places. Minimum amount is 0.00 and maximum is 999999.99</p> |
| Y | Tax Rate | 5-character decimal | tax_rate_c/tax_rate_l | <p>Contains the detailed tax rate applied in relationship to a specific tax amount</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>EXAMPLE: 5% GST should be '5.0' or 9.975% QST should be '9.975'</p> </div> |

| Req* | Value | Limits | Variable | Description |
|------|---------------------------------|---------------------------|---|---|
| | | | | May contain up to 3 decimals, minimum 0.001, maximum up to 9999.9 |
| Y | Tax Type | 4-character alphanumeric | tax_type_c/tax_type_l | Contains tax type, such as GST,QST,PST,HST |
| Y | Tax ID | 20-character alphanumeric | tax_id_c/tax_id_l | Provides an identification number used by the card acceptor with the tax authority in relationship to a specific tax amount, such as GST/HST number |
| Y | Tax included in sales indicator | 1-character alphanumeric | tax_included_in_sales_c/tax_included_in_sales_l | This is the indicator used to reflect additional tax capture and reporting Valid values are: Y = Tax included in total purchase amount N = Tax not included in total purchase amount |

7.3.8.4 Sample Code for MC Corpais

| Sample MC Corpais - Corporate Card Common Data with Line Item Details |
|---|
| <pre> namespace Moneris { using System; using System.Collections; using System.Text; public class TestMcCorpaisCommonLineItem { public static void Main(string[] args) { string store_id = "moneris"; string api_token = "hurgle"; string processing_country_code = "CA"; bool status_check = false; </pre> |

Sample MC Corpais - Corporate Card Common Data with Line Item Details

```

string order_id="ord-200916-13:29:27";
string txn_number="66011731632016264132927986-0_11";
string customer_code1_c ="CustomerCode123";
string card_acceptor_tax_id_c ="UrTaxId";//Merchant tax id which is mandatory
string corporation_vat_number_c ="cvn123";
string freight_amount_c ="1.23";
string duty_amount_c ="2.34";
string ship_to_pos_code_c ="M1R 1W5";
string order_date_c ="141211";
string customer_vat_number_c ="customervn231";
string unique_invoice_number_c ="uin567";
string authorized_contact_name_c ="John Walker";
//Tax Details
string[] tax_amount_c = { "1.19", "1.29"};
string[] tax_rate_c = { "6.0", "7.0"};
string[] tax_type_c = { "GST", "PST"};
string[] tax_id_c = { "gst1298", "pst1298"};
string[] tax_included_in_sales_c = { "Y", "N"};
//Item Details
string[] customer_code1_l = {"customer code", "customer code2"};
string[] line_item_date_l = {"150114", "150114"};
string[] ship_date_l = {"150120", "150122"};
string[] order_date1_l = {"150114", "150114"};
string[] medical_services_ship_to_health_industry_number_l = {null, null};
string[] contract_number_l = {null, null};
string[] medical_services_adjustment_l = {null, null};
string[] medical_services_product_number_qualifier_l = {null, null};
string[] product_code1_l = {"pc11", "pc12"};
string[] item_description_l = {"Good item", "Better item"};
string[] item_quantity_l = {"4", "5"};
string[] unit_cost_l ={"1.25", "10.00"};
string[] item_unit_measure_l = {"EA", "EA"};
string[] ext_item_amount_l ={"5.00", "50.00"};
string[] discount_amount_l ={"1.00", "50.00"};
string[] commodity_code_l ={"cCode11", "cCode12"};
string[] type_of_supply_l = {null, null};
string[] vat_ref_num_l = {null, null};
//Tax Details for Items
string[] tax_amount_l = {"0.52", "1.48"};
string[] tax_rate_l = {"13.0", "13.0"};
string[] tax_type_l = {"HST", "HST"};
string[] tax_id_l = {"hst1298", "hst1298"};
string[] tax_included_in_sales_l = {"Y", "Y"};
//Create and set Tax for McCorpac
McTax tax_c = new McTax();
tax_c.SetTax(tax_amount_c[0], tax_rate_c[0], tax_type_c[0], tax_id_c[0], tax_included_in_sales_c
[0]);
tax_c.SetTax(tax_amount_c[1], tax_rate_c[1], tax_type_c[1], tax_id_c[1], tax_included_in_sales_c
[1]);
//Create and set McCorpac for common data - only set values that you know
McCorpac mcCorpac = new McCorpac();
mcCorpac.SetCustomerCode1(customer_code1_c);
mcCorpac.SetCardAcceptorTaxTd(card_acceptor_tax_id_c);
mcCorpac.SetCorporationVatNumber(corporation_vat_number_c);
mcCorpac.SetFreightAmount1(freight_amount_c);
mcCorpac.SetDutyAmount1(duty_amount_c);
mcCorpac.SetShipToPosCode(ship_to_pos_code_c);
mcCorpac.SetOrderDate(order_date_c);

```

Sample MC Corpais - Corporate Card Common Data with Line Item Details

```

mcCorpac.SetCustomerVatNumber(customer_vat_number_c);
mcCorpac.SetUniqueInvoiceNumber(unique_invoice_number_c);
mcCorpac.SetAuthorizedContactName(authorized_contact_name_c);
mcCorpac.SetTax(tax_c);
//Create and set Tax for McCorpac
McTax[] tax_l = new McTax[2];
tax_l[0] = new McTax();
tax_l[0].SetTax(tax_amount_l[0], tax_rate_l[0], tax_type_l[0], tax_id_l[0], tax_included_in_sales_l[0]);
tax_l[1] = new McTax();
tax_l[1].SetTax(tax_amount_l[1], tax_rate_l[1], tax_type_l[1], tax_id_l[1], tax_included_in_sales_l[1]);
//Create and set McCorpac for each item
McCorpac mcCorpac = new McCorpac();
mcCorpac.SetMcCorpac(customer_code_l[0], line_item_date_l[0], ship_date_l[0], order_date_l[0],
medical_services_ship_to_health_industry_number_l[0], contract_number_l[0],
medical_services_adjustment_l[0], medical_services_product_number_qualifier_l[0], product_code_l[0],
item_description_l[0], item_quantity_l[0],
unit_cost_l[0], item_unit_measure_l[0], ext_item_amount_l[0], discount_amount_l[0], commodity_code_l[0],
type_of_supply_l[0], vat_ref_num_l[0], tax_l[0]);
mcCorpac.SetMcCorpac(customer_code_l[1], line_item_date_l[1], ship_date_l[1], order_date_l[1],
medical_services_ship_to_health_industry_number_l[1], contract_number_l[1],
medical_services_adjustment_l[1], medical_services_product_number_qualifier_l[1], product_code_l[1],
item_description_l[1], item_quantity_l[1],
unit_cost_l[1], item_unit_measure_l[1], ext_item_amount_l[1], discount_amount_l[1], commodity_code_l[1],
type_of_supply_l[1], vat_ref_num_l[1], tax_l[1]);
McCorpais mcCorpais = new McCorpais();
mcCorpais.SetOrderId(order_id);
mcCorpais.SetTxnNumber(txn_number);
mcCorpais.SetMcCorpac(mcCorpac);
mcCorpais.SetMcCorpac(mcCorpac);
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(mcCorpais);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
}

```

Sample MC Corpais - Corporate Card Common Data with Line Item Details

```
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
```

7.4 Level 2/3 American Express Transactions

- 7.4.1 Level 2/3 Transaction Types for Amex
- 7.4.2 Level 2/3 Transaction Flow for Amex
- 7.4.4 AX Completion
- 7.4.5 AX Force Post
- 7.4.6 AX Purchase Correction
- 7.4.7 AX Refund
- 7.4.8 AX Independent Refund

7.4.1 Level 2/3 Transaction Types for Amex

This transaction set includes a suite of corporate card financial transactions as well as a transaction that allows for the passing of Level 2/3 data. Please ensure American Express Level 2/3 processing support is enabled on your merchant account. Batch Close, Open Totals and Pre-authorization are identical to the transactions outlined in the section Basic Transaction Set (page 12).

- When the Pre-authorization response contains CorporateCard equal to true then you can submit the AX transactions.
- If CorporateCard is false then the card does not support Level 2/3 data and non Level 2/3 transaction are to be used. If the card is not a corporate card, please refer to 2 Basic Transaction Set for the appropriate non-corporate card transactions.

NOTE: This transaction set is intended for transactions where Corporate Card is true and Level 2/3 data will be submitted. If the credit card is found to be a corporate card but you do not wish to send any Level 2/3 data then you may submit AX transactions using the transaction set outlined in the section Basic Transaction Set (page 12).

Pre-authorization – (authorization)

The preauth verifies and locks funds on the customer's credit card. The funds are locked for a specified amount of time, based on the card issuer. To retrieve the funds from a pre-auth so that they may be settled in the merchant account a capture must be performed. CorporateCard will return as true if the card supports Level 2/3.

AX Completion – (Capture/Pre-authorization Completion)

Once a Pre-authorization is obtained the funds that are locked need to be retrieved from the customer's credit card. The capture retrieves the locked funds and readies them for settlement in to the merchant account. Prior to performing an AXCompletion a Preauth must be performed.

AX Force Post – (Force Capture/Pre-authorization Completion)

This transaction is an alternative to AX Completion to obtain the funds locked on a Pre-authorization obtained from IVR or equivalent terminal. The capture retrieves the locked funds and readies them for settlement in to the merchant account.

AX Purchase Correction – (Void, Correction)

AX Completion and AX Force Post can be voided the same day* that they occur. A void must be for the full amount of the transaction and will remove any record of it from the cardholder statement. * An AX Purchase Correction can be performed against a transaction as long as the batch that contains the original transaction remains open. When using the automated closing feature, the batch close occurs daily between 10 – 11 pm EST.

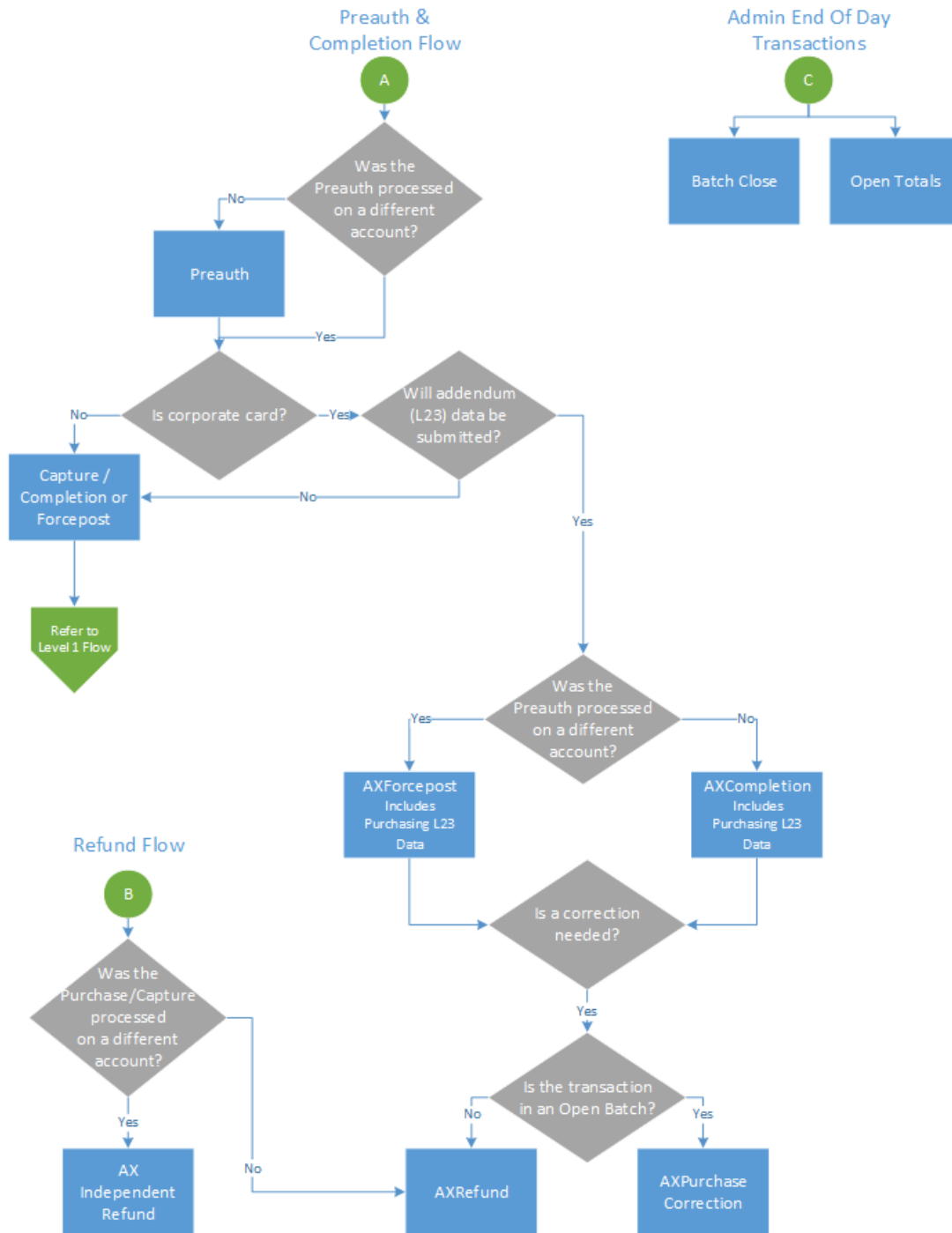
AX Refund – (Credit)

An AX Refund can be performed against an AX Completion and AX Force Post to refund any part, or all of the transaction.

AX Independent Refund – (Credit)

An AX Independent Refund can be performed against a purchase or a capture to refund any part, or all of the transaction. Independent refund is used when the originating transaction was not performed through Moneris Gateway. Please note, the Independent Refund transaction may or may not be supported on your account. If you receive a transaction not allowed error when attempting an independent refund, it may mean the transaction is not supported on your account. If you wish to have the AX Independent Refund transaction type temporarily enabled (or re-enabled), please contact the Service Centre at 1-866-319-7450.

7.4.2 Level 2/3 Transaction Flow for Amex



7.4.3 Level 2/3 Data Objects in Amex

- 7.4.3.1 About the Level 2/3 Data Objects for Amex
- 7.4.3.2 Defining the AxLevel23 Object
 - Table 1 Object
 - Table 2 Object
 - Table 3 Object

7.4.3.1 About the Level 2/3 Data Objects for Amex

Many of the Level 2/3 transaction requests using American Express also include a mandatory data object called AxLevel23. AxLevel23 is also comprised of other objects, also described in this section.

The Level 2/3 data objects within this section apply to all of the following transactions and are passed as part of the transaction request for:

- AX Completion
- AX Force Post
- AX Refund
- AX Independent Refund

Things to Consider:

- Please ensure the addendum data below is complete and accurate.
- Please ensure the math on quantities calculations, amounts, discounts, taxes, etc. properly adds up to the overall transaction amount. Incorrect amounts will cause the transaction to be rejected.

7.4.3.2 Defining the AxLevel23 Object

AxLevel23 object definition

```
AxLevel23 level23 = new AxLevel23();
```

The AxLevel23 object itself has three objects, Table1, Table2 and Table3, all of which are mandatory.

Table 1 AxLevel23 Object

| Req* | Value | Limits | Set Method | Description |
|------|--------|--------|---|--|
| Y | Table1 | Object | <pre>AxTable1 table1 = new AxTable1(); level23.SetTable1</pre> | Refer below for further breakdown and definition of table1 |

| Req* | Value | Limits | Set Method | Description |
|------|--------|--------|---|--|
| | | | (table1); | |
| Y | Table2 | Object | <pre>AxTable2 table2 = new AxTable2(); level23.SetTable2 (table2);</pre> | Refer below for further breakdown and definition of table2 |
| Y | Table3 | Object | <pre>AxTable3 table3 = new AxTable3(); level23.SetTable3 (table3);</pre> | Refer below for further breakdown and definition of table3 |

*Y = Required, N = Optional, C = Conditional

Table 1 Object

Table 1 contains the addendum data heading information. Contains information such as identification elements that uniquely identify an invoice (transaction), the customer name and shipping address.

Table 1 object definition

```
AxTable1 table1 = new AxTable1();
```

Table 1 AxLevel23 object - Table 1 object fields

| Req* | Value | Limits | Set Method | Description |
|------|-----------------------|----------------------------|-------------------------------------|--|
| C | Purchase Order Number | 22-character alpha-numeric | <pre>table1.SetBig04 (big04);</pre> | <p>The cardholder supplied Purchase Order Number, which is entered by the merchant at the point-of-sale</p> <p>This entry is used in the Statement/Reporting process and may include accounting information specific to the client</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: This element is mandatory, if the merchant's customer provides a Purchase Order Number.</p> </div> |

| Req* | Value | Limits | Set Method | Description |
|------|----------------|----------------------------|---------------------------|--|
| N | Release Number | 30-character alpha-numeric | table1.SetBig05 (big05); | A number that identifies a release against a Purchase Order previously placed by the parties involved in the transaction |
| N | Invoice Number | 8-character alpha-numeric | table1.SetBig10 (big10); | Contains the Amex invoice/reference number |
| N | N1Loop | Object | table1.SetN1Loop (n1Loop) | Refer below for further breakdown and definition of N1Loop object |

*Y = Required, N = Optional, C = Conditional

Table 1 also has its own objects:

- N1Loop object
- AxRef object

Table 1 - Setting the N1Loop Object

The N1Loop data set contains the Requester names. It can also optionally contain the buying group, ship from, ship to and receiver details.

A minimum of at least 1 n1Loop must be set. Up to 5 n1Loop can be set.

N1Loop object definition

```
n1Loop.SetN1Loop(n101, n102, n301, n401, n402, n403, axRef1);
```

Table 1 AxLevel23 object - Table 1 object - N1Loop object fields

| Req* | Value | Limits | Variable or Set Method | Description |
|------|------------------------|---------------------------|------------------------|--|
| Y | Entity Identifier Code | 2-character alpha-numeric | n101 | Supported values: R6 - Requester (required) BG - Buying Group (optional) SF - Ship From (optional) ST - Ship To (optional) |

| Req* | Value | Limits | Variable or Set Method | Description | | | | | | | | | | | | |
|-----------|-------------------|----------------------------|---|--|-----------|--------------|----|----------------|----|-------------------|----|----------------|----|--------------|----|---------------|
| | | | | 40 - Receiver (optional) | | | | | | | | | | | | |
| Y | Name | 40-character alpha-numeric | n102 | <table border="1"> <thead> <tr> <th>n101 code</th> <th>n102 meaning</th> </tr> </thead> <tbody> <tr> <td>R6</td> <td>Requester Name</td> </tr> <tr> <td>BG</td> <td>Buying Group Name</td> </tr> <tr> <td>SF</td> <td>Ship From Name</td> </tr> <tr> <td>ST</td> <td>Ship To Name</td> </tr> <tr> <td>40</td> <td>Receiver Name</td> </tr> </tbody> </table> | n101 code | n102 meaning | R6 | Requester Name | BG | Buying Group Name | SF | Ship From Name | ST | Ship To Name | 40 | Receiver Name |
| n101 code | n102 meaning | | | | | | | | | | | | | | | |
| R6 | Requester Name | | | | | | | | | | | | | | | |
| BG | Buying Group Name | | | | | | | | | | | | | | | |
| SF | Ship From Name | | | | | | | | | | | | | | | |
| ST | Ship To Name | | | | | | | | | | | | | | | |
| 40 | Receiver Name | | | | | | | | | | | | | | | |
| N | Address | 40-character alpha-numeric | n301 | Address | | | | | | | | | | | | |
| N | City | 30-character alpha-numeric | n401 | City | | | | | | | | | | | | |
| N | State or Province | 2-character alpha-numeric | n402 | State or province | | | | | | | | | | | | |
| N | Postal Code | 15-character alpha-numeric | n403 | Postal Code | | | | | | | | | | | | |
| N | AxRef | Object | <pre>AxRef axRef1 = new AxRef ();</pre> | <p>Refer below for further breakdown and definition of AxRef object.</p> <p>This object contains the customer postal code (mandatory) and customer reference number (optional)</p> <p>A minimum of 1 axRef1 must be set; maximum of 2 axRef1's may be set</p> | | | | | | | | | | | | |

*Y = Required, N = Optional, C = Conditional

Table 1 - Setting the AxRef Object

Setting AXRef object

```

AxRef axRef1 = new AxRef();

string[] ref01 = {"4C", "CR"}; //Reference ID Qualifier

string[] ref02 = {"M5T3A5", "16802309004"}; //Reference ID

axRef1.SetRef(ref01[0], ref02[0]);

axRef1.SetRef(ref01[1], ref02[1]);

```

Table 1 AxLevel23 object - Table 1 object - AxRef object fields

| Req* | Value | Limits | Variable | Description | | | | | | | | | | | | |
|------------|---|----------------------------|----------|--|------------|------------------|----|---|----|-----|----|-----|----|-----|----|-----|
| Y | Reference Identification Qualifier | 2-character alpha-numeric | ref01 | <p>This element may contain the following qualifiers for the corresponding occurrences of the N1Loop:</p> <table border="1"> <thead> <tr> <th>n101 value</th> <th>ref01 denotation</th> </tr> </thead> <tbody> <tr> <td>R6</td> <td>Supported values: 4C - Shipment Destination Code (mandatory) CR - Customer Reference Number (conditional)</td> </tr> <tr> <td>BG</td> <td>n/a</td> </tr> <tr> <td>SF</td> <td>n/a</td> </tr> <tr> <td>ST</td> <td>n/a</td> </tr> <tr> <td>40</td> <td>n/a</td> </tr> </tbody> </table> | n101 value | ref01 denotation | R6 | Supported values: 4C - Shipment Destination Code (mandatory) CR - Customer Reference Number (conditional) | BG | n/a | SF | n/a | ST | n/a | 40 | n/a |
| n101 value | ref01 denotation | | | | | | | | | | | | | | | |
| R6 | Supported values: 4C - Shipment Destination Code (mandatory) CR - Customer Reference Number (conditional) | | | | | | | | | | | | | | | |
| BG | n/a | | | | | | | | | | | | | | | |
| SF | n/a | | | | | | | | | | | | | | | |
| ST | n/a | | | | | | | | | | | | | | | |
| 40 | n/a | | | | | | | | | | | | | | | |
| Y | Reference Identification | 15-character alpha-numeric | ref02 | This field must be populated for each ref01 provided | | | | | | | | | | | | |

| Req* | Value | Limits | Variable | Description | | | | | | |
|-----------------------|--|--------|----------|---|-------------|------------------|----------------------|---|-----------------------|--|
| | | | | <table border="1"> <thead> <tr> <th>ref01 value</th> <th>ref02 denotation</th> </tr> </thead> <tbody> <tr> <td>4C (n101 value = R6)</td> <td>This element must contain the Amex Ship-to Postal Code of the destination where the commodity was shipped. If the Ship-to Postal Code is unavailable, the postal code of the merchant location where the transaction took place may be substituted.</td> </tr> <tr> <td>CR (n101 value = R6):</td> <td>This element must contain the Amex Card member Reference Number (e.g., purchase order, cost center, project number, etc.) that corresponds to this transaction, if provided by the Cardholder. This information may be displayed in the statement/reporting process and may include client-specific accounting information.</td> </tr> </tbody> </table> | ref01 value | ref02 denotation | 4C (n101 value = R6) | This element must contain the Amex Ship-to Postal Code of the destination where the commodity was shipped. If the Ship-to Postal Code is unavailable, the postal code of the merchant location where the transaction took place may be substituted. | CR (n101 value = R6): | This element must contain the Amex Card member Reference Number (e.g., purchase order, cost center, project number, etc.) that corresponds to this transaction, if provided by the Cardholder. This information may be displayed in the statement/reporting process and may include client-specific accounting information. |
| ref01 value | ref02 denotation | | | | | | | | | |
| 4C (n101 value = R6) | This element must contain the Amex Ship-to Postal Code of the destination where the commodity was shipped. If the Ship-to Postal Code is unavailable, the postal code of the merchant location where the transaction took place may be substituted. | | | | | | | | | |
| CR (n101 value = R6): | This element must contain the Amex Card member Reference Number (e.g., purchase order, cost center, project number, etc.) that corresponds to this transaction, if provided by the Cardholder. This information may be displayed in the statement/reporting process and may include client-specific accounting information. | | | | | | | | | |

*Y = Required, N = Optional, C = Conditional

Table 2 Object

Table 2 includes the transaction’s addendum detail. It contains transaction data including reference codes, debit or credit and tax amounts, line item detail descriptions, shipping information and much more. All transaction data in an invoice relate to a single transaction and cardholder account number.

Table 2 object definition

```
AxTable2 table2 = new AxTable2();
```

Table 1 AxLevel23 object - Table 2 object fields

| Req* | Value | Limits | Set Method | Description |
|------|---------|--------|-----------------------------|---|
| N | It1loop | Object | table2.SetIt1Loop(it1Loop); | Refer below for further breakdown and definition of object details. |

*Y = Required, N = Optional, C = Conditional

Table 2 - Setting the AxIt1Loop Object

The AxIt1Loop data defines the baseline item data for the invoice. This data is defined for each item/service purchased and included within this invoice. This data set contains basic transaction data, including quantity, unit of measure, unit price and goods/services reference information.

- A minimum of 1 it1Loop required
- A maximum of 999 it1Loop's supported

AxIt1Loop object definition

```
AxIt1Loop it1Loop = new AxIt1Loop();
```

```
it1Loop.SetIt1Loop(it102[0], it103[0], it104[0], it105[0], it106s[0], txi[0],  
pam05[0], pid05[0]);
```

```
it1Loop.SetIt1Loop(it102[1], it103[1], it104[1], it105[1], it106s[1], txi[1],  
pam05[1], pid05[1]);
```

Table 1 AxLevel23 object - Table 2 object - AxIt1Loop object fields

| Req* | Value | Limits | Variable | Description |
|------|------------------------------------|--------------------------|----------|--|
| Y | Line Item Quantity Invoiced | 10-character decimal | it102 | Quantity of line item Up to 2 decimal places supported Minimum amount is 0.0 and maximum is 9999999999 |
| Y | Unit or Basis for Measurement Code | 2-character alphanumeric | it103 | The line item unit of measurement code Must contain a |

| Req* | Value | Limits | Variable | Description |
|------|--------------------------|--------------------------|----------|--|
| | | | | <p>code that specifies the units in which the value is expressed or the manner in which a measurement is taken</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>EXAMPLE: EA = each, E5=inches</p> </div> <p>See ANSI X-12 EDI Allowable Units of Measure and Codes for the list of codes</p> |
| Y | Unit Price | 15-character decimal | it104 | <p>Line item cost per unit</p> <p>Must contain 2 decimal places</p> <p>Minimum amount is 0.00 and maximum is 999999.99</p> |
| N | Basis or Unit Price Code | 2-character alphanumeric | it105 | <p>Code identifying the type of unit price for an item</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>EXAMPLE: DR = dealer, AP = advise price</p> </div> <p>See ASC X12 004010 Element 639 for list of codes</p> |
| N | Axlt106s | object | it106s | <p>Refer below for further breakdown and definition of object details.</p> |
| N | AxTxi | object | txi | <p>Refer below for further breakdown and definition of</p> |

| Req* | Value | Limits | Variable | Description |
|------|---------------------------|---------------------------|----------|---|
| | | | | <p>object details</p> <p>A maximum of 12 AxTxi (tax information data sets) may be defined</p> <div style="border: 1px solid black; padding: 5px; background-color: #e0f2f1;"> <p>NOTE: that if line item level tax information is populated in AxTxi in Table2, then tax totals for the entire invoice (transaction) must be entered in Table3.</p> </div> |
| Y | Line Item Extended Amount | 8-character decimal | pam05 | <p>Contains the individual item amount that is normally calculated as price multiplied by quantity</p> <p>Must contain 2 decimal places</p> <p>Minimum amount is 0.00 and maximum is 99999.99</p> |
| Y | Line Item Description | 80-character alphanumeric | pid05 | <p>Line Item description</p> <p>Contains the description of the individual item purchased</p> <p>This field pertain to each line item in the transaction</p> |

*Y = Required, N = Optional, C = Conditional

Table 2 - Setting the AxIt106s Object

```
AxIt106s[] it106s = {new AxIt106s(), new AxIt106s(), new AxIt106s(), new
AxIt106s(), new AxIt106s()};

string[] it10618 = {"MG", "MG", "MG", "MG", "MG"}; //Product/Service ID
qualifier

string[] it10719 = {"DJFR4", "JFJ49", "FEF33", "FEE43", "DISCOUNT"};
//Product/Service ID (corresponds to it10618)
```

Table 1 AxLevel23 object - Table 2 object - AxIt106s object fields

| Req* | Value | Limits | Set Method | Description | | | | | | | | |
|---------|------------------------------|---|--|---|----|---------------------------|----|---------------------------|-------|---------------------------|--|--|
| N | Product/Service ID Qualifier | 2-character alpha-numeric | it106s [0].SetIt10618 (it10618[0]); it106s [1].SetIt10618 (it10618[1]); | Supported values: MG - Manufacturer's Part Number VC - Supplier Catalog Number SK - Supplier Stock Keeping Unit Number UP - Universal Product Code VP - Vendor Part Number PO - Purchase Order Number AN - Client Defined Asset Code | | | | | | | | |
| N | Product/Service ID | <table border="1"> <thead> <tr> <th>it10618</th> <th>it10719 - size/type</th> </tr> </thead> <tbody> <tr> <td>VC</td> <td>20-character alphanumeric</td> </tr> <tr> <td>PO</td> <td>22-character alphanumeric</td> </tr> <tr> <td>Other</td> <td>30-character alphanumeric</td> </tr> </tbody> </table> | it10618 | it10719 - size/type | VC | 20-character alphanumeric | PO | 22-character alphanumeric | Other | 30-character alphanumeric | it106s [0].SetIt10719 (it10719[0]); it106s [1].SetIt10719 (it10719[1]); | Product/Service ID corresponds to the preceding qualifier defined by it10618 The maximum length depends on the qualifier defined in it10618 |
| it10618 | it10719 - size/type | | | | | | | | | | | |
| VC | 20-character alphanumeric | | | | | | | | | | | |
| PO | 22-character alphanumeric | | | | | | | | | | | |
| Other | 30-character alphanumeric | | | | | | | | | | | |

*Y = Required, N = Optional, C = Conditional

Table 2 - Setting the AxTxi Object

Table 2 AxTxi object definition

```
//Create Table 2 with details

string[] txi01_GST = {"GS", "GS", "GS", "GS", "GS"}; //Tax type code
```

```

string[] txi02_GST = {"0.70", "1.75", "1.00", "0.80","0.00"}; //Monetary
amount

string[] txi03_GST = {"5.0", "5.0", "5.0", "5.0","5.0"}; //Percent

string[] txi06_GST = {"", "", "", "",""}; //Tax exempt code

string[] txi01_PST = {"PG", "PG", "PG","PG","PG"}; //Tax type code

string[] txi02_PST = {"0.80", "2.00", "1.00", "0.80","0.00"}; //Monetary
amount

string[] txi03_PST = {"7.0", "7.0", "7.0", "7.0","7.0"}; //Percent

string[] txi06_PST = {"", "", "", "",""}; //Tax exempt code

AxTxi[] txi = {new AxTxi(), new AxTxi(), new AxTxi(), new AxTxi(), new AxTxi
()};

txi[0].SetTxi(txi01_GST[0], txi02_GST[0], txi03_GST[0], txi06_GST[0]);
txi[0].SetTxi(txi01_PST[0], txi02_PST[0], txi03_PST[0], txi06_PST[0]);
txi[1].SetTxi(txi01_GST[1], txi02_GST[1], txi03_GST[1], txi06_GST[1]);
txi[1].SetTxi(txi01_PST[1], txi02_PST[1], txi03_PST[1], txi06_PST[1]);
txi[2].SetTxi(txi01_GST[2], txi02_GST[2], txi03_GST[2], txi06_GST[2]);
txi[2].SetTxi(txi01_PST[2], txi02_PST[2], txi03_PST[2], txi06_PST[2]);
txi[3].SetTxi(txi01_GST[3], txi02_GST[3], txi03_GST[3], txi06_GST[3]);
txi[3].SetTxi(txi01_PST[3], txi02_PST[3], txi03_PST[3], txi06_PST[3]);
txi[4].SetTxi(txi01_GST[4], txi02_GST[4], txi03_GST[4], txi06_GST[4]);
txi[4].SetTxi(txi01_PST[4], txi02_PST[4], txi03_PST[4], txi06_PST[4]);

```

Table 1 AxLevel23 object - Table 2 object - AxiTxi object fields

| Req* | Value | Limits | Variable | Description |
|------|---------------|--------|--------------------------|--|
| C | Tax Type code | txi01 | 2-character alphanumeric | Tax type code applicable to Canada and US only For Canada, this field must contain a code that specifies the type of tax If txi01 is used, |

| Req* | Value | Limits | Variable | Description |
|------|-----------------|--------|---------------------|---|
| | | | | <p>then txi02, txi03 or txi06 must be populated</p> <p>Valid codes include the following:</p> <p>CT – County/Tax (optional)</p> <p>CA – City Tax (optional)</p> <p>EV – Environmental Tax (optional)</p> <p>GS – Good and Services Tax (GST) (optional)</p> <p>LS – State and Local Sales Tax (optional)</p> <p>LT – Local Sales Tax (optional)</p> <p>PG – Provincial Sales Tax (PST) (optional)</p> <p>SP – State/Provincial Tax a.k.a. Quebec Sales Tax (QST) (optional)</p> <p>ST – State Sales Tax (optional)</p> <p>TX – All Taxes (required)</p> <p>VA – Value-Added Tax a.k.a. Canadian Harmonized Sales Tax (HST) (optional)</p> |
| C | Monetary Amount | txi02 | 6-character decimal | <p>This element may contain the monetary tax amount that corresponds to the Tax Type Code in txi01</p> <div style="border: 1px solid black; padding: 5px;"> <p>NOTE: If txi02 is used in mandatory occur-</p> </div> |

| Req* | Value | Limits | Variable | Description |
|------|-----------------|--------|--------------------------|---|
| | | | | <p>rence txi01=TX, txi02 must contain the total tax amount applicable to the entire invoice (transaction)</p> <p>If taxes are not applicable for the entire invoice (transaction), txi02 must be 0.00.</p> <p>The maximum value that can be entered in this field is "9999.99", which is \$9,999.99 (CAD)</p> <p>A debit is entered as: 9999.99</p> <p>A credit is entered as: -9999.99</p> |
| C | Percent | txi03 | 10-character decimal | <p>Contains the tax percentage (in decimal format) that corresponds to the tax type code defined in txi01</p> <p>Up to 2 decimal places supported</p> |
| C | Tax Exempt Code | txi06 | 1-character alphanumeric | <p>This element may contain the Tax Exempt Code that identifies the exemption status from sales and tax that corresponds to the Tax Type Code in txi01</p> <p>Supported values:</p> <p>1 – Yes (Tax Exempt)</p> <p>2 – No (Not Tax Exempt)</p> |

| Req* | Value | Limits | Variable | Description |
|------|-------|--------|----------|--|
| | | | | 4 – Not Exempt/For Resale A – Labor Taxable, Material Exempt B – Material Taxable, Labor Exempt C – Not Taxable F – Exempt (Goods / Services Tax) G – Exempt (Provincial Sales Tax) L – Exempt Local Service R – Recurring Exempt U – Usage Exempt |

*Y = Required, N = Optional, C = Conditional

Table 3 Object

Table 3 includes the transaction addendum summary. It contains the total invoice (transaction) amount, sales tax, freight and/or handling charges and invoice summary information, including total line items, number of segments in the invoice, and the transaction set control number (a.k.a., batch number).

Table 3 object definition

```
AxTable3 table3 = new AxTable3();
```

Table 1 AxLevel23 object - Table 3 object fields

| Req* | Value | Limits | Set Method | Description |
|------|-------|--------|--------------------------|--|
| C | AxTxi | Object | table3.SetTxi (taxTb13); | Refer below for further breakdown and definition of object details. <div style="border: 1px solid black; padding: 5px; width: fit-content;"> NOTE: if line item level tax information is populated in AxTxi in Table2, then tax totals for the entire invoice </div> |

| Req* | Value | Limits | Set Method | Description |
|------|-------|--------|------------|--|
| | | | | (transaction) must be entered in Table3. A maximum of 10 AxTxi's may be set in Table3. |

*Y = Required, N = Optional, C = Conditional

Table 3 - Setting the AxTxi Object

The mandatory tax information data set must contain the total tax amount applicable to the entire invoice (transaction) which includes all line items identified in Table2. If taxes are not applicable for the entire invoice (transaction), then txi02 must be set to 0.00.

Tax totals must be entered in this mandatory tax information segment in Table 3, even if line item detail level tax data is reported in Table 2.

At least one occurrence of txi02, txi03 or txi06 is required.

Table 3 AxiTxi object definition

```
AxTxi taxTbl3 = new AxTxi();
taxTbl3.SetTxi("GS", "4.25","5.0",""); //sum of GST taxes
taxTbl3.SetTxi("PG", "4.60","7.0",""); //sum of PST taxes
taxTbl3.SetTxi("TX", "8.85","13.0",""); //sum of all taxes
```

Table 1 AxLevel23 object - Table 3 object - AxiTxi object fields

| Req* | Value | Limits | Variable | Description |
|------|---------------|--------|--------------------------|--|
| C | Tax Type code | txi01 | 2-character alphanumeric | <p>Tax type code applicable to Canada and US only</p> <p>For Canada, this field must contain a code that specifies the type of tax</p> <p>If txi01 is used, then txi02, txi03 or txi06 must be populated</p> |

| Req* | Value | Limits | Variable | Description |
|------|-----------------|--------|---------------------|---|
| | | | | <p>Valid codes include the following:</p> <p>CT – County/Tax (optional)</p> <p>CA – City Tax (optional)</p> <p>EV – Environmental Tax (optional)</p> <p>GS – Good and Services Tax (GST) (optional)</p> <p>LS – State and Local Sales Tax (optional)</p> <p>LT – Local Sales Tax (optional)</p> <p>PG – Provincial Sales Tax (PST) (optional)</p> <p>SP – State/Provincial Tax a.k.a. Quebec Sales Tax (QST) (optional)</p> <p>ST – State Sales Tax (optional)</p> <p>TX – All Taxes (required)</p> <p>VA – Value-Added Tax a.k.a. Canadian Harmonized Sales Tax (HST) (optional)</p> |
| C | Monetary Amount | txi02 | 6-character decimal | <p>This element may contain the monetary tax amount that corresponds to the Tax Type Code in txi01</p> <div style="border: 1px solid black; padding: 5px;"> <p>NOTE: If txi02 is used in mandatory occurrence txi01=TX, txi02 must contain the total tax amount applicable to the entire invoice (transaction)</p> </div> |

| Req* | Value | Limits | Variable | Description |
|------|-----------------|--------|--------------------------|--|
| | | | | <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>If taxes are not applicable for the entire invoice (transaction), txi02 must be 0.00.</p> </div> <p>The maximum value that can be entered in this field is "9999.99", which is \$9,999.99 (CAD)</p> <p>A debit is entered as: 9999.99</p> <p>A credit is entered as: -9999.99</p> |
| C | Percent | txi03 | 10-character decimal | <p>Contains the tax percentage (in decimal format) that corresponds to the tax type code defined in txi01</p> <p>Up to 2 decimal places supported</p> |
| C | Tax Exempt Code | txi06 | 1-character alphanumeric | <p>This element may contain the Tax Exempt Code that identifies the exemption status from sales and tax that corresponds to the Tax Type Code in txi01</p> <p>Supported values:</p> <ul style="list-style-type: none"> 1 – Yes (Tax Exempt) 2 – No (Not Tax Exempt) 4 – Not Exempt/For Resale A – Labor Taxable, Material Exempt |

| Req* | Value | Limits | Variable | Description |
|------|-------|--------|----------|---|
| | | | | B – Material Taxable, Labor Exempt C – Not Taxable F – Exempt (Goods / Services Tax) G – Exempt (Provincial Sales Tax) L – Exempt Local Service R – Recurring Exempt U – Usage Exempt |

*Y = Required, N = Optional, C = Conditional

7.4.4 AX Completion

The AX Completion transaction is used to secure the funds locked by a pre-authorization transaction. When sending a capture request you will need two pieces of information from the original pre-authorization – the Order ID and the transaction number from the returned response.

AX Completion transaction object definition

```
AxCompletion axCompletion = new AxCompletion()
```

HttpPostRequest object for AX Completion

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(axCompletion);
```

AX Completion transaction object values

Table 1 AX Completion transaction object mandatory values

| Value | Type | Limits | Set Method |
|----------------------|--------|---|---|
| Order ID | String | 50-character alpha-numeric | <code>axCompletion.SetOrderId(order_id);</code> |
| Completion amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>axCompletion.SetCompAmount(comp_amount);</code> |
| Transaction number | String | 255-character alpha-numeric | <code>axCompletion.SetTxnNumber(txn_number);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>axCompletion.SetCryptType(crypt);</code> |
| Level 2/3 Data | Object | n/a | <code>axCompletion.SetAxLevel23(level23);</code> |

Sample AX Completion

```
namespace Moneris
{
    using System;
    using System.Collections;
    using System.Text;
    public class TestAxCompletion
    {
        public static void Main(string[] args)
        {
            string store_id = "moneris";
            string api_token = "hurgle";
            string processing_country_code = "CA";
            bool status_check = false;

            string order_id="ord-210916-12:06:38";
            string comp_amount="62.37";
            string txn_number = "18924-0_11";
            string crypt="7";

            //Create Table 1 with details
            string n101 = "R6"; //Entity ID Code
        }
    }
}
```

Sample AX Completion

```

string n102 = "Retailing Inc. International"; //Name
string n301 = "919 Oriole Rd."; //Address Line 1
string n401 = "Toronto"; //City
string n402 = "On"; //State or Province
string n403 = "H1T6W3"; //Postal Code
string[] ref01 = {"4C", "CR"}; //Reference ID Qualifier
string[] ref02 = {"M5T3A5", "16802309004"}; //Reference ID
string big04 = "PO7758545"; //Purchase Order Number
string big05 = "RN0049858"; //Release Number
string big10 = "INV99870E"; //Invoice Number
AxRef axRef1 = new AxRef();
axRef1.SetRef(ref01[0], ref02[0]);
axRef1.SetRef(ref01[1], ref02[1]);
AxNlLoop nlLoop = new AxNlLoop();
nlLoop.SetNlLoop(n101, n102, n301, n401, n402, n403, axRef1);
AxTable1 table1 = new AxTable1();
table1.SetBig04(big04);
table1.SetBig05(big05);
table1.SetBig10(big10);
table1.SetNlLoop(nlLoop);

//Create Table 2 with details
//the sum of the extended amount field (pam05) must equal the level 1 amount field
string[] it102 = {"1", "1", "1", "1", "1"}; //Line item quantity invoiced
string[] it103 = {"EA", "EA", "EA", "EA", "EA"}; //Line item unit or basis of measurement code
string[] it104 = {"10.00", "25.00", "8.62", "10.00", "-10.00"}; //Line item unit price
string[] it105 = {"", "", "", "", ""}; //Line item basis of unit price code

string[] it10618 = {"MG", "MG", "MG", "MG", "MG"}; //Product/Service ID qualifier
string[] it10719 = {"DJFR4", "JFJ49", "FEF33", "FEE43", "DISCOUNT"}; //Product/Service ID
(corresponds to it10618)

string[] txi01_GST = {"GS", "GS", "GS", "GS", "GS"}; //Tax type code
string[] txi02_GST = {"0.70", "1.75", "1.00", "0.80", "0.00"}; //Monetary amount
string[] txi03_GST = {"", "", "", "", ""}; //Percent
string[] txi06_GST = {"", "", "", "", ""}; //Tax exempt code

string[] txi01_PST = {"PG", "PG", "PG", "PG", "PG"}; //Tax type code
string[] txi02_PST = {"0.80", "2.00", "1.00", "0.80", "0.00"}; //Monetary amount
string[] txi03_PST = {"", "", "", "", ""}; //Percent
string[] txi06_PST = {"", "", "", "", ""}; //Tax exempt code
string[] pam05 = {"11.50", "28.75", "10.62", "11.50", "-10.00"}; //Extended line-item amount
string[] pid05 = {"Stapler", "Lamp", "Bottled Water", "Fountain Pen", "DISCOUNT"}; //Line item
description
AxIt106s[] it106s = {new AxIt106s(), new AxIt106s(), new AxIt106s(), new AxIt106s(), new AxIt106s
()};

it106s[0].SetIt10618(it10618[0]);
it106s[0].SetIt10719(it10719[0]);

it106s[1].SetIt10618(it10618[1]);
it106s[1].SetIt10719(it10719[1]);

it106s[2].SetIt10618(it10618[2]);
it106s[2].SetIt10719(it10719[2]);

it106s[3].SetIt10618(it10618[3]);
it106s[3].SetIt10719(it10719[3]);

```

Sample AX Completion

```

it106s[4].SetIt10618(it10618[4]);
it106s[4].SetIt10719(it10719[4]);
AxTxi[] txi = {new AxTxi(), new AxTxi(), new AxTxi(), new AxTxi(), new AxTxi()};
txi[0].SetTxi(txi01_GST[0], txi02_GST[0], txi03_GST[0], txi06_GST[0]);
txi[0].SetTxi(txi01_PST[0], txi02_PST[0], txi03_PST[0], txi06_PST[0]);
txi[1].SetTxi(txi01_GST[1], txi02_GST[1], txi03_GST[1], txi06_GST[1]);
txi[1].SetTxi(txi01_PST[1], txi02_PST[1], txi03_PST[1], txi06_PST[1]);
txi[2].SetTxi(txi01_GST[2], txi02_GST[2], txi03_GST[2], txi06_GST[2]);
txi[2].SetTxi(txi01_PST[2], txi02_PST[2], txi03_PST[2], txi06_PST[2]);
txi[3].SetTxi(txi01_GST[3], txi02_GST[3], txi03_GST[3], txi06_GST[3]);
txi[3].SetTxi(txi01_PST[3], txi02_PST[3], txi03_PST[3], txi06_PST[3]);
txi[4].SetTxi(txi01_GST[4], txi02_GST[4], txi03_GST[4], txi06_GST[4]);
txi[4].SetTxi(txi01_PST[4], txi02_PST[4], txi03_PST[4], txi06_PST[4]);
AxItlLoop itlLoop = new AxItlLoop();
itlLoop.SetItlLoop(it102[0], it103[0], it104[0], it105[0], it106s[0], txi[0], pam05[0], pid05[0]);
itlLoop.SetItlLoop(it102[1], it103[1], it104[1], it105[1], it106s[1], txi[1], pam05[1], pid05[1]);
itlLoop.SetItlLoop(it102[2], it103[2], it104[2], it105[2], it106s[2], txi[2], pam05[2], pid05[2]);
itlLoop.SetItlLoop(it102[3], it103[3], it104[3], it105[3], it106s[3], txi[3], pam05[3], pid05[3]);
itlLoop.SetItlLoop(it102[4], it103[4], it104[4], it105[4], it106s[4], txi[4], pam05[4], pid05[4]);
AxTable2 table2 = new AxTable2();
table2.SetItlLoop(itlLoop);
//Create Table 3 with details
AxTxi taxTbl3 = new AxTxi();
taxTbl3.SetTxi("GS", "4.25","",""); //sum of GST taxes
taxTbl3.SetTxi("PG", "4.60","",""); //sum of PST taxes
taxTbl3.SetTxi("TX", "8.85","",""); //sum of all taxes
AxTable3 table3 = new AxTable3();
table3.SetTxi(taxTbl3);

//Create and Set Level23 Object
AxLevel23 level23 = new AxLevel23();
level23.SetTable1(table1);
level23.SetTable2(table2);
level23.SetTable3(table3);
AxCompletion axCompletion = new AxCompletion();
axCompletion.SetOrderId(order_id);
axCompletion.SetCompAmount(comp_amount);
axCompletion.SetTxnNumber(txn_number);
axCompletion.SetCryptType(crypt);
axCompletion.SetAxLevel23(level23);
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(axCompletion);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
}

```

Sample AX Completion

```
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
```

7.4.5 AX Force Post

The AX Force Post transaction is used to secure the funds locked by a pre-authorization transaction performed over IVR or equivalent terminal. When sending an AX Force Post request, you will need the order ID, amount, credit card number, expiry date, authorization code and e-commerce indicator.

AX Force Post transaction object definition

```
AxForcePost axForcePost = new AxForcePost();
```

HttpPostRequest object for AX Force Post transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(axForcePost);
```

AX Force Post transaction object values

Table 1 AX Force Post transaction object mandatory values

| Value | Type | Limits | Set Method |
|----------------------|--------|---|---|
| Order ID | String | 50-character alpha-numeric | <code>axForcePost.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>axForcePost.SetAmount(amount);</code> |
| Credit card number | String | 20-character alpha-numeric | <code>axForcePost.SetPan(pan);</code> |
| Expiry date | String | 4-character alpha-numeric (YYMM format) | <code>axForcePost.SetExpdate(expiry_date);</code> |
| Authorization code | String | 8-character alpha-numeric | <code>axForcePost.SetAuthCode(auth_code);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>axForcePost.SetCryptType(encrypt);</code> |
| Level 2/3 Data | Object | n/a | <code>axForcePost.SetAxLevel23(level23);</code> |

Table 2 AX Force Post transaction object optional values

| Value | Type | Limits | Set Method |
|-------------|--------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | <code>axForcePost.SetCustId(cust_id);</code> |

Sample AX Force Post

```
namespace Moneris
```

Sample AX Force Post

```

{
using System;
using System.Collections;
using System.Text;
public class TestAxForcePost
{
public static void Main(string[] args)
{
string store_id = "moneris";
string api_token = "hurgle";
string processing_country_code = "CA";
bool status_check = false;

string order_id="Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
string cust_id="CUST13343";
string amount="62.37";
string pan="373269005095005";
string expiry_date="2012"; //YYMM
string auth_code="123456";
string crypt="7";

//Create Table 1 with details
string n101 = "R6"; //Entity ID Code
string n102 = "Retailing Inc. International"; //Name
string n301 = "919 Oriole Rd."; //Address Line 1
string n401 = "Toronto"; //City
string n402 = "On"; //State or Province
string n403 = "H1T6W3"; //Postal Code
string[] ref01 = {"4C", "CR"}; //Reference ID Qualifier
string[] ref02 = {"M5T3A5", "16802309004"}; //Reference ID
string big04 = "PO7758545"; //Purchase Order Number
string big05 = "RN0049858"; //Release Number
string big10 = "INV99870E"; //Invoice Number
AxRef axRef1 = new AxRef();
axRef1.SetRef(ref01[0], ref02[0]);
axRef1.SetRef(ref01[1], ref02[1]);
AxN1Loop n1Loop = new AxN1Loop();
n1Loop.SetN1Loop(n101, n102, n301, n401, n402, n403, axRef1);
AxTable1 table1 = new AxTable1();
table1.SetBig04(big04);
table1.SetBig05(big05);
table1.SetBig10(big10);
table1.SetN1Loop(n1Loop);

//Create Table 2 with details
//the sum of the extended amount field (pam05) must equal the level 1 amount field

string[] it102 = {"1", "1", "1", "1", "1"}; //Line item quantity invoiced
string[] it103 = {"EA", "EA", "EA", "EA", "EA"}; //Line item unit or basis of measurement code
string[] it104 = {"10.00", "25.00", "8.62", "10.00", "-10.00"}; //Line item unit price
string[] it105 = {"", "", "", "", ""}; //Line item basis of unit price code

string[] it10618 = {"MG", "MG", "MG", "MG", "MG"}; //Product/Service ID qualifier
string[] it10719 = {"DJFR4", "JFJ49", "FEF33", "FEE43", "DISCOUNT"}; //Product/Service ID
(corresponds to it10618)

string[] txi01_GST = {"GS", "GS", "GS", "GS", "GS"}; //Tax type code
string[] txi02_GST = {"0.70", "1.75", "1.00", "0.80", "0.00"}; //Monetary amount
string[] txi03_GST = {"", "", "", "", ""}; //Percent

```


Sample AX Force Post

```

string[] txi06_GST = {"", "", "", "", ""}; //Tax exempt code

string[] txi01_PST = {"PG", "PG", "PG", "PG", "PG"}; //Tax type code
string[] txi02_PST = {"0.80", "2.00", "1.00", "0.80", "0.00"}; //Monetary amount
string[] txi03_PST = {"", "", "", "", ""}; //Percent
string[] txi06_PST = {"", "", "", "", ""}; //Tax exempt code
string[] pam05 = {"11.50", "28.75", "10.62", "11.50", "-10.00"}; //Extended line-item amount
string[] pid05 = {"Stapler", "Lamp", "Bottled Water", "Fountain Pen", "DISCOUNT"}; //Line item
description
AxItl106s[] itl106s = {new AxItl106s(), new AxItl106s(), new AxItl106s(), new AxItl106s(), new AxItl106s
()};

itl106s[0].SetItl10618(itl10618[0]);
itl106s[0].SetItl10719(itl10719[0]);

itl106s[1].SetItl10618(itl10618[1]);
itl106s[1].SetItl10719(itl10719[1]);

itl106s[2].SetItl10618(itl10618[2]);
itl106s[2].SetItl10719(itl10719[2]);

itl106s[3].SetItl10618(itl10618[3]);
itl106s[3].SetItl10719(itl10719[3]);

itl106s[4].SetItl10618(itl10618[4]);
itl106s[4].SetItl10719(itl10719[4]);
AxTxi[] txi = {new AxTxi(), new AxTxi(), new AxTxi(), new AxTxi(), new AxTxi()};
txi[0].SetTxi(txi01_GST[0], txi02_GST[0], txi03_GST[0], txi06_GST[0]);
txi[0].SetTxi(txi01_PST[0], txi02_PST[0], txi03_PST[0], txi06_PST[0]);
txi[1].SetTxi(txi01_GST[1], txi02_GST[1], txi03_GST[1], txi06_GST[1]);
txi[1].SetTxi(txi01_PST[1], txi02_PST[1], txi03_PST[1], txi06_PST[1]);
txi[2].SetTxi(txi01_GST[2], txi02_GST[2], txi03_GST[2], txi06_GST[2]);
txi[2].SetTxi(txi01_PST[2], txi02_PST[2], txi03_PST[2], txi06_PST[2]);
txi[3].SetTxi(txi01_GST[3], txi02_GST[3], txi03_GST[3], txi06_GST[3]);
txi[3].SetTxi(txi01_PST[3], txi02_PST[3], txi03_PST[3], txi06_PST[3]);
txi[4].SetTxi(txi01_GST[4], txi02_GST[4], txi03_GST[4], txi06_GST[4]);
txi[4].SetTxi(txi01_PST[4], txi02_PST[4], txi03_PST[4], txi06_PST[4]);
AxItlLoop itlLoop = new AxItlLoop();
itlLoop.SetItlLoop(itl102[0], itl103[0], itl104[0], itl105[0], itl106s[0], txi[0], pam05[0], pid05[0]);
itlLoop.SetItlLoop(itl102[1], itl103[1], itl104[1], itl105[1], itl106s[1], txi[1], pam05[1], pid05[1]);
itlLoop.SetItlLoop(itl102[2], itl103[2], itl104[2], itl105[2], itl106s[2], txi[2], pam05[2], pid05[2]);
itlLoop.SetItlLoop(itl102[3], itl103[3], itl104[3], itl105[3], itl106s[3], txi[3], pam05[3], pid05[3]);
itlLoop.SetItlLoop(itl102[4], itl103[4], itl104[4], itl105[4], itl106s[4], txi[4], pam05[4], pid05[4]);
AxTable2 table2 = new AxTable2();
table2.SetItlLoop(itlLoop);
//Create Table 3 with details
AxTxi taxTbl3 = new AxTxi();
taxTbl3.SetTxi("GS", "4.25", "", ""); //sum of GST taxes
taxTbl3.SetTxi("PG", "4.60", "", ""); //sum of PST taxes
taxTbl3.SetTxi("TX", "8.85", "", ""); //sum of all taxes
AxTable3 table3 = new AxTable3();
table3.SetTxi(taxTbl3);

AxLevel23 level23 = new AxLevel23();
level23.SetTable1(table1);
level23.SetTable2(table2);
level23.SetTable3(table3);
AxForcePost axForcePost = new AxForcePost();
axForcePost.SetOrderId(order_id);

```

Sample AX Force Post

```

axForcePost.SetCustId(cust_id);
axForcePost.SetAmount(amount);
axForcePost.SetPan(pan);
axForcePost.SetExpDate(expiry_date);
axForcePost.SetAuthCode(auth_code);
axForcePost.SetCryptType(crypt);
axForcePost.SetAxLevel23(level23);
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(axForcePost);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

7.4.6 AX Purchase Correction

The AX Purchase Correction (Void) transaction is used to cancel a transaction that was performed in the current batch. No amount is required because a void is always for 100% of the original transaction. The only transaction that can be voided using AX Purchase Correction is AX Completion and AX Force Post. To send an AX Purchase Correction the Order ID and transaction number from the AX Completion or AX Force Post are required.

AX Purchase Correction transaction object definition

```
AxPurchaseCorrection axPurchaseCorrection = new AxPurchaseCorrection();
```

HttpPostRequest object for AX Purchase Correction transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(axPurchaseCorrection);
```

AX Purchase Correction transaction object values**Table 1 AX Purchase Correction transaction object mandatory values**

| Value | Type | Limits | Set Method |
|----------------------|--------|-----------------------------|--|
| Order ID | String | 50-character alpha-numeric | axPurchaseCorrection .SetOrderId(order_id); |
| Transaction number | String | 255-character alpha-numeric | axPurchaseCorrection .SetTxnNumber(txn_number); |
| E-commerce indicator | String | 1-character alpha-numeric | axPurchaseCorrection .SetCryptType(crypt); |

AX Purchase Correction

```
namespace Moneris
{
    using System;
    using System.Collections;
    using System.Text;
    public class TestAxPurchaseCorrection
    {
        public static void Main(string[] args)
        {
            string store_id = "moneris";
            string api_token = "hurgle";
            string processing_country_code = "CA";
            bool status_check = false;

            string order_id="Test20170119104952";
            string txn_number = "660117311852017019104953104-0_11";
            string crypt="7";
            AxPurchaseCorrection axPurchaseCorrection = new AxPurchaseCorrection();
            axPurchaseCorrection.SetOrderId(order_id);
            axPurchaseCorrection.SetTxnNumber(txn_number);
            axPurchaseCorrection.SetCryptType(crypt);
            HttpPostRequest mpgReq = new HttpPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(axPurchaseCorrection);
```

AX Purchase Correction

```

mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

7.4.7 AX Refund

The AX Refund will credit a specified amount to the cardholder's credit card. A refund can be sent up to the full value of the original AX Completion or AX Force Post. To send an AX Refund you will require the Order ID and transaction number from the original AX Completion or AX Force Post.

AX Refund transaction object definition

```
AxRefund axRefund = new AxRefund();
```

HttpPostRequest object for AX Refund transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(axRefund);
```

AX Refund transaction object values

Table 1 AX Refund transaction object mandatory values

| Value | Type | Limits | Set Method |
|----------------------|--------|---|---|
| Order ID | String | 50-character alpha-numeric | <code>axRefund.SetOrderId(order_id);</code> |
| Transaction number | String | 255-character alpha-numeric | <code>axRefund.SetTxnNumber(txn_number);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>axRefund.SetAmount(amount);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>axRefund.SetCryptType(crypt);</code> |
| Level 2/3 Data | Object | n/a | <code>axRefund.SetAxLevel123(level123);</code> |

Sample AX Refund

```
namespace Moneris
{
    using System;
    using System.Collections;
    using System.Text;
    public class TestAxRefund
    {
        public static void Main(string[] args)
        {
            string store_id = "moneris";
            string api_token = "hurgle";
            string processing_country_code = "CA";
            bool status_check = false;

            string order_id="ord-210916-12:06:38";
            string amount="62.37";
            string txn_number = "18924-4_11";
            string crypt="7";

            //Create Table 1 with details
            string n101 = "R6"; //Entity ID Code
        }
    }
}
```

Sample AX Refund

```

string n102 = "Retailing Inc. International"; //Name
string n301 = "919 Oriole Rd."; //Address Line 1
string n401 = "Toronto"; //City
string n402 = "On"; //State or Province
string n403 = "H1T6W3"; //Postal Code
string[] ref01 = {"4C", "CR"}; //Reference ID Qualifier
string[] ref02 = {"M5T3A5", "16802309004"}; //Reference ID
string big04 = "PO7758545"; //Purchase Order Number
string big05 = "RN0049858"; //Release Number
string big10 = "INV99870E"; //Invoice Number
AxRef axRef1 = new AxRef();
axRef1.SetRef(ref01[0], ref02[0]);
axRef1.SetRef(ref01[1], ref02[1]);
AxNlLoop nlLoop = new AxNlLoop();
nlLoop.SetNlLoop(n101, n102, n301, n401, n402, n403, axRef1);
AxTable1 table1 = new AxTable1();
table1.SetBig04(big04);
table1.SetBig05(big05);
table1.SetBig10(big10);
table1.SetNlLoop(nlLoop);

//Create Table 2 with details
//the sum of the extended amount field (pam05) must equal the level 1 amount field
string[] it102 = {"1", "1", "1", "1", "1"}; //Line item quantity invoiced
string[] it103 = {"EA", "EA", "EA", "EA", "EA"}; //Line item unit or basis of measurement code
string[] it104 = {"10.00", "25.00", "8.62", "10.00", "-10.00"}; //Line item unit price
string[] it105 = {"", "", "", "", ""}; //Line item basis of unit price code

string[] it10618 = {"MG", "MG", "MG", "MG", "MG"}; //Product/Service ID qualifier
string[] it10719 = {"DJFR4", "JFJ49", "FEF33", "FEE43", "DISCOUNT"}; //Product/Service ID
(corresponds to it10618)

string[] txi01_GST = {"GS", "GS", "GS", "GS", "GS"}; //Tax type code
string[] txi02_GST = {"0.70", "1.75", "1.00", "0.80", "0.00"}; //Monetary amount
string[] txi03_GST = {"", "", "", "", ""}; //Percent
string[] txi06_GST = {"", "", "", "", ""}; //Tax exempt code

string[] txi01_PST = {"PG", "PG", "PG", "PG", "PG"}; //Tax type code
string[] txi02_PST = {"0.80", "2.00", "1.00", "0.80", "0.00"}; //Monetary amount
string[] txi03_PST = {"", "", "", "", ""}; //Percent
string[] txi06_PST = {"", "", "", "", ""}; //Tax exempt code
string[] pam05 = {"11.50", "28.75", "10.62", "11.50", "-10.00"}; //Extended line-item amount
string[] pid05 = {"Stapler", "Lamp", "Bottled Water", "Fountain Pen", "DISCOUNT"}; //Line item
description
AxIt106s[] it106s = {new AxIt106s(), new AxIt106s(), new AxIt106s(), new AxIt106s(), new AxIt106s
()};

it106s[0].SetIt10618(it10618[0]);
it106s[0].SetIt10719(it10719[0]);

it106s[1].SetIt10618(it10618[1]);
it106s[1].SetIt10719(it10719[1]);

it106s[2].SetIt10618(it10618[2]);
it106s[2].SetIt10719(it10719[2]);

it106s[3].SetIt10618(it10618[3]);
it106s[3].SetIt10719(it10719[3]);

```

Sample AX Refund

```

it106s[4].SetIt10618(it10618[4]);
it106s[4].SetIt10719(it10719[4]);
AxTxi[] txi = {new AxTxi(), new AxTxi(), new AxTxi(), new AxTxi(), new AxTxi()};
txi[0].SetTxi(txi01_GST[0], txi02_GST[0], txi03_GST[0], txi06_GST[0]);
txi[0].SetTxi(txi01_PST[0], txi02_PST[0], txi03_PST[0], txi06_PST[0]);
txi[1].SetTxi(txi01_GST[1], txi02_GST[1], txi03_GST[1], txi06_GST[1]);
txi[1].SetTxi(txi01_PST[1], txi02_PST[1], txi03_PST[1], txi06_PST[1]);
txi[2].SetTxi(txi01_GST[2], txi02_GST[2], txi03_GST[2], txi06_GST[2]);
txi[2].SetTxi(txi01_PST[2], txi02_PST[2], txi03_PST[2], txi06_PST[2]);
txi[3].SetTxi(txi01_GST[3], txi02_GST[3], txi03_GST[3], txi06_GST[3]);
txi[3].SetTxi(txi01_PST[3], txi02_PST[3], txi03_PST[3], txi06_PST[3]);
txi[4].SetTxi(txi01_GST[4], txi02_GST[4], txi03_GST[4], txi06_GST[4]);
txi[4].SetTxi(txi01_PST[4], txi02_PST[4], txi03_PST[4], txi06_PST[4]);
AxItlLoop itlLoop = new AxItlLoop();
itlLoop.SetItlLoop(it102[0], it103[0], it104[0], it105[0], it106s[0], txi[0], pam05[0], pid05[0]);
itlLoop.SetItlLoop(it102[1], it103[1], it104[1], it105[1], it106s[1], txi[1], pam05[1], pid05[1]);
itlLoop.SetItlLoop(it102[2], it103[2], it104[2], it105[2], it106s[2], txi[2], pam05[2], pid05[2]);
itlLoop.SetItlLoop(it102[3], it103[3], it104[3], it105[3], it106s[3], txi[3], pam05[3], pid05[3]);
itlLoop.SetItlLoop(it102[4], it103[4], it104[4], it105[4], it106s[4], txi[4], pam05[4], pid05[4]);
AxTable2 table2 = new AxTable2();
table2.SetItlLoop(itlLoop);
//Create Table 3 with details
AxTxi taxTbl3 = new AxTxi();
taxTbl3.SetTxi("GS", "4.25","",""); //sum of GST taxes
taxTbl3.SetTxi("PG", "4.60","",""); //sum of PST taxes
taxTbl3.SetTxi("TX", "8.85","",""); //sum of all taxes
AxTable3 table3 = new AxTable3();
table3.SetTxi(taxTbl3);

//Create and Set Level23 Object
AxLevel23 level23 = new AxLevel23();
level23.SetTable1(table1);
level23.SetTable2(table2);
level23.SetTable3(table3);
AxRefund axRefund = new AxRefund();
axRefund.SetOrderId(order_id);
axRefund.SetAmount(amount);
axRefund.SetTxnNumber(txn_number);
axRefund.SetCryptType(crypt);
axRefund.SetAxLevel23(level23);
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(axRefund);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
}

```

Sample AX Refund

```
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
```

7.4.8 AX Independent Refund

The AX Independent Refund will credit a specified amount to the cardholder's credit card. The independent refund does not require an existing order to be logged in the Moneris Gateway; however, the credit card number and expiry date will need to be passed.

AX Independent Refund transaction object definition

```
AxIndependentRefund axIndependentRefund = new AxIndependentRefund();
```

HttpPostRequest object for AX Independent Refund transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(axIndependentRefund);
```


AX Independent Refund transaction object values

Table 1 AX Independent Refund transaction object mandatory values

| Value | Type | Limits | Set Method |
|----------------------|--------|---|---|
| Order ID | String | 50-character alpha-numeric | <code>axIndependentRefund.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>axIndependentRefund.SetAmount(amount);</code> |
| Credit card number | String | 20-character alpha-numeric | <code>axIndependentRefund.SetPan(pan);</code> |
| Expiry date | String | 4-character alpha-numeric (YYMM format) | <code>axIndependentRefund.SetExpdate(expiry_date);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>axIndependentRefund.SetCryptType(crypt);</code> |

Table 2 AX Independent Refund transaction object optional values

| Value | Type | Limits | Set Method |
|-------------|--------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | <code>axIndependentRefund.SetCustId(cust_id);</code> |

Sample AX Independent Refund

```
namespace Moneris
{
    using System;
    using System.Collections;
    using System.Text;
    public class TestAxIndependentRefund
    {
        public static void Main(string[] args)
        {
```

Sample AX Independent Refund

```

string store_id = "moneris";
string api_token = "hurgle";
string processing_country_code = "CA";
bool status_check = false;

string order_id="Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
string cust_id="CUST13343";
string amount="62.37";
string pan="373269005095005";
string expiry_date="2012"; //YYMM
string crypt="7";

//Create Table 1 with details
string n101 = "R6"; //Entity ID Code
string n102 = "Retailing Inc. International"; //Name
string n301 = "919 Oriole Rd."; //Address Line 1
string n401 = "Toronto"; //City
string n402 = "On"; //State or Province
string n403 = "H1T6W3"; //Postal Code
string[] ref01 = {"4C", "CR"}; //Reference ID Qualifier
string[] ref02 = {"M5T3A5", "16802309004"}; //Reference ID
string big04 = "PO7758545"; //Purchase Order Number
string big05 = "RN0049858"; //Release Number
string big10 = "INV99870E"; //Invoice Number
AxRef axRef1 = new AxRef();
axRef1.SetRef(ref01[0], ref02[0]);
axRef1.SetRef(ref01[1], ref02[1]);
AxNlLoop nlLoop = new AxNlLoop();
nlLoop.SetNlLoop(n101, n102, n301, n401, n402, n403, axRef1);
AxTable1 table1 = new AxTable1();
table1.SetBig04(big04);
table1.SetBig05(big05);
table1.SetBig10(big10);
table1.SetNlLoop(nlLoop);

//Create Table 2 with details
//the sum of the extended amount field (pam05) must equal the level 1 amount field
string[] it102 = {"1", "1", "1", "1", "1"}; //Line item quantity invoiced
string[] it103 = {"EA", "EA", "EA", "EA", "EA"}; //Line item unit or basis of measurement code
string[] it104 = {"10.00", "25.00", "8.62", "10.00", "-10.00"}; //Line item unit price
string[] it105 = {"", "", "", "", ""}; //Line item basis of unit price code

string[] it10618 = {"MG", "MG", "MG", "MG", "MG"}; //Product/Service ID qualifier
string[] it10719 = {"DJFR4", "JFJ49", "FEF33", "FEE43", "DISCOUNT"}; //Product/Service ID
(corresponds to it10618)

string[] txi01_GST = {"GS", "GS", "GS", "GS", "GS"}; //Tax type code
string[] txi02_GST = {"0.70", "1.75", "1.00", "0.80", "0.00"}; //Monetary amount
string[] txi03_GST = {"", "", "", "", ""}; //Percent
string[] txi06_GST = {"", "", "", "", ""}; //Tax exempt code

string[] txi01_PST = {"PG", "PG", "PG", "PG", "PG"}; //Tax type code
string[] txi02_PST = {"0.80", "2.00", "1.00", "0.80", "0.00"}; //Monetary amount
string[] txi03_PST = {"", "", "", "", ""}; //Percent
string[] txi06_PST = {"", "", "", "", ""}; //Tax exempt code
string[] pam05 = {"11.50", "28.75", "10.62", "11.50", "-10.00"}; //Extended line-item amount
string[] pid05 = {"Stapler", "Lamp", "Bottled Water", "Fountain Pen", "DISCOUNT"}; //Line item
description
AxIt106s[] it106s = {new AxIt106s(), new AxIt106s(), new AxIt106s(), new AxIt106s(), new AxIt106s()

```

Sample AX Independent Refund

```

());

it106s[0].SetIt10618(it10618[0]);
it106s[0].SetIt10719(it10719[0]);

it106s[1].SetIt10618(it10618[1]);
it106s[1].SetIt10719(it10719[1]);

it106s[2].SetIt10618(it10618[2]);
it106s[2].SetIt10719(it10719[2]);

it106s[3].SetIt10618(it10618[3]);
it106s[3].SetIt10719(it10719[3]);

it106s[4].SetIt10618(it10618[4]);
it106s[4].SetIt10719(it10719[4]);
AxTxi[] txi = {new AxTxi(), new AxTxi(), new AxTxi(), new AxTxi(), new AxTxi()};
txi[0].SetTxi(txi01_GST[0], txi02_GST[0], txi03_GST[0], txi06_GST[0]);
txi[0].SetTxi(txi01_PST[0], txi02_PST[0], txi03_PST[0], txi06_PST[0]);
txi[1].SetTxi(txi01_GST[1], txi02_GST[1], txi03_GST[1], txi06_GST[1]);
txi[1].SetTxi(txi01_PST[1], txi02_PST[1], txi03_PST[1], txi06_PST[1]);
txi[2].SetTxi(txi01_GST[2], txi02_GST[2], txi03_GST[2], txi06_GST[2]);
txi[2].SetTxi(txi01_PST[2], txi02_PST[2], txi03_PST[2], txi06_PST[2]);
txi[3].SetTxi(txi01_GST[3], txi02_GST[3], txi03_GST[3], txi06_GST[3]);
txi[3].SetTxi(txi01_PST[3], txi02_PST[3], txi03_PST[3], txi06_PST[3]);
txi[4].SetTxi(txi01_GST[4], txi02_GST[4], txi03_GST[4], txi06_GST[4]);
txi[4].SetTxi(txi01_PST[4], txi02_PST[4], txi03_PST[4], txi06_PST[4]);
AxItlLoop itlLoop = new AxItlLoop();
itlLoop.SetItlLoop(it102[0], it103[0], it104[0], it105[0], it106s[0], txi[0], pam05[0], pid05[0]);
itlLoop.SetItlLoop(it102[1], it103[1], it104[1], it105[1], it106s[1], txi[1], pam05[1], pid05[1]);
itlLoop.SetItlLoop(it102[2], it103[2], it104[2], it105[2], it106s[2], txi[2], pam05[2], pid05[2]);
itlLoop.SetItlLoop(it102[3], it103[3], it104[3], it105[3], it106s[3], txi[3], pam05[3], pid05[3]);
itlLoop.SetItlLoop(it102[4], it103[4], it104[4], it105[4], it106s[4], txi[4], pam05[4], pid05[4]);
AxTable2 table2 = new AxTable2();
table2.SetItlLoop(itlLoop);
//Create Table 3 with details
AxTxi taxTbl3 = new AxTxi();
taxTbl3.SetTxi("GS", "4.25","",""); //sum of GST taxes
taxTbl3.SetTxi("PG", "4.60","",""); //sum of PST taxes
taxTbl3.SetTxi("TX", "8.85","",""); //sum of all taxes
AxTable3 table3 = new AxTable3();
table3.SetTxi(taxTbl3);

//Create and Set Level23 Object
AxLevel23 level23 = new AxLevel23();
level23.SetTable1(table1);
level23.SetTable2(table2);
level23.SetTable3(table3);
AxIndependentRefund axIndependentRefund = new AxIndependentRefund();
axIndependentRefund.SetOrderId(order_id);
axIndependentRefund.SetCustId(cust_id);
axIndependentRefund.SetAmount(amount);
axIndependentRefund.SetPan(pan);
axIndependentRefund.SetExpDate(expiry_date);
axIndependentRefund.SetCryptType(crypt);
axIndependentRefund.SetAxLevel23(level23);
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions

```

Sample AX Independent Refund

```
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(axIndependentRefund);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("CardType = " + receipt.GetCardType());
    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
    Console.WriteLine("TransType = " + receipt.GetTransType());
    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("ISO = " + receipt.GetISO());
    Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Ticket = " + receipt.GetTicket());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
```

8 MPI

- 8.1 About MPI Transactions
- 8.2 3-D Secure Implementations (VbV, MCSC, SafeKey)
- 8.3 Activating VbV and MCSC
- 8.4 Activating Amex SafeKey
- 8.5 Transaction Flow for MPI
- 8.6 MPI Transactions

8.1 About MPI Transactions

The Moneris Gateway can enable transactions using the 3-D Secure protocol via Merchant Plug-In (MPI) and Access Control Server (ACS) .

Moneris Gateway supports the following 3-D Secure implementations:

- Verified by Visa (VbV)
- Mastercard Secure Code (MCSC)
- American Express SafeKey (applies to Canadian integrations only)

8.2 3-D Secure Implementations (VbV, MCSC, SafeKey)

Verified by Visa (VbV), MasterCard Secure Code (MCSC) and American Express SafeKey are programs based on the 3-D Secure Protocol to improve the security of online transactions.

These programs involve authentication of the cardholder during an online e-commerce transaction. Authentication is based on the issuer's selected method of authentication.

The following are examples of authentication methods:

- Risk-based authentication
- Dynamic passwords
- Static passwords.

Some benefits of these programs are reduced risk of fraudulent transactions and protection against chargebacks for certain fraudulent transactions.

Additional eFraud features

To further decrease fraudulent activity, Moneris also recommends implementing the following features:

- AVS: Address Verification Service (page 291)
- CVD: Card Validation Digits ().

8.3 Activating VbV and MCSC

To integrate Verified by Visa and/or MasterCard Secure Code transaction functionality in your system, call Moneris Sales Support to have Moneris enroll you in the program(s) and enable the functionality on your account.

8.4 Activating Amex SafeKey

To Activate Amex SafeKey transaction functionality with your system via the Moneris Gateway API:

1. Enroll in the SafeKey program with American Express at: <https://network.americanexpress.com/ca/en/safekey/index.aspx>
2. Call your Moneris sales centre at 1-855-465-4980 to get Amex SafeKey functionality enabled on your account.

8.5 Transaction Flow for MPI

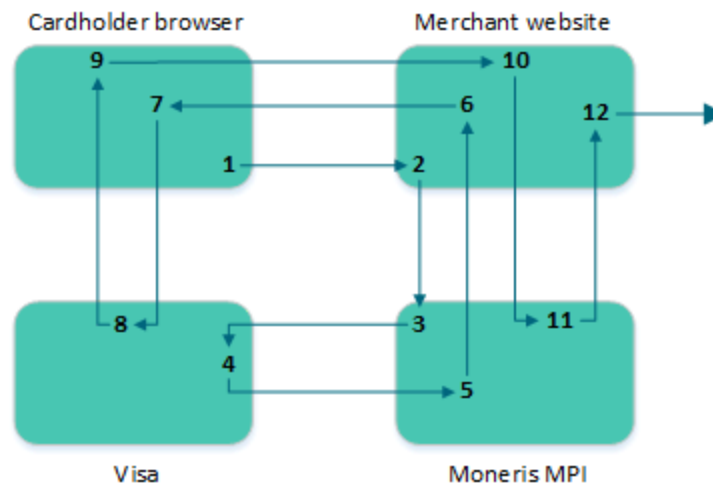


Figure 3: Transaction flow diagram

1. Cardholder enters the credit card number and submits the transaction information to the merchant.
2. Upon receiving the transaction request, the merchant calls the MonerisMPI API and passes a TXN type request. For sample code please refer to MpiTxn Request Transaction (page 258).
3. The Moneris MPI receives the request, authenticates the merchant and sends the transaction information to Visa, MasterCard or American Express.
4. Visa/MasterCard/Amex verifies that the card is enrolled and returns the issuer URL.
5. Moneris MPI receives the response from Visa, MasterCard or Amex and forwards the information to the merchant.
6. The MonerisMPI API installed at the merchant receives the response from the Moneris MPI. If the response is "Y" for enrolled, the merchant makes a call to the API, which opens a popup/in-line window in the cardholder browser. If the response is "N" for not enrolled, a transaction could be sent to the processor identifying it as VbV/MCSC/SafeKey attempted with an ECI value of 6.

If the response is “U” for unable to authenticate or the response times out, the transaction can be sent to the processor with an ECI value of 7. The merchant can then choose to continue with the transaction and be liable for a chargeback, or the merchant can choose to end the transaction.

7. The cardholder browser uses the URL that was returned from Visa/MasterCard/Amex via the merchant to communicate directly to the bank. The contents of the popup are loaded and the cardholder enters the PIN.
8. The information is submitted to the bank and authenticated. A response is then returned to the client browser.
9. The client browser receives the response from the bank, and forwards it to the merchant.
10. The merchant receives the response information from the cardholder browser, and passes an ACS request type to the Moneris MPI API.
11. Moneris MPI receives the ACS request and authenticates the information. The Moneris MPI then provides a CAVV value (getCavv()) and a crypt type (getMpiEciO) to the merchant.

If the getSuccess() of the response is “true”, the merchant may proceed with the cavv purchase or cavv preauth.

If the getSuccess() of the response is “false” **and** the getMessage() is “N”, the transaction must be cancelled because the cardholder failed to authenticate.

If the getSuccess() of the response is “false” **and** the getMessage is “U”, the transaction can be processed as a normal purchase or PreAuth; however in this case the merchant assumes liability of a chargeback.

If the response times out, the transaction can be processed as a normal purchase or PreAuth; however in this case the merchant assumes liability of a chargeback.

12. The merchant retrieves the CAVV value, and formats a cavv purchase or a cavv preauth request using the method that is normally used. As part of this transaction method, the merchant must pass the CAVV value and the crypt type.

8.6 MPI Transactions

Any of the transaction objects that are defined in this section can be passed to the HttpsPostRequest connection object defined in Section 17.5 (page 391)[here](#).

TXN

Sends the initial transaction data to the Moneris MPI to verify whether the card is enrolled.

The browser returns a PAREs as well as a success field.

ACS

Passes the PAREs (received in the response to the TXN transaction) to the Moneris MPI API.

Cavv Purchase

After receiving confirmation from the ACS transaction, this verifies funds on the customer’s card, removes the funds and prepares them for deposit into the merchant’s account.

Cavv Pre-Authorization

After receiving confirmation from the ACS transaction, this verifies and locks funds on the customer’s credit card. The funds are locked for a specified amount of time based on the card issuer.

To retrieve the funds that have been locked by a Pre-Authorization transaction so that they may be settled in the merchant’s account, a basic Completion transaction (page 25) must be performed. A PreAuthorization transaction may only be "completed" once.

NOTE: Cavv Purchase and Cavv Pre-Authorization transactions are also used to process Apple Pay and Android Pay transactions. For further details on how to process these wallet transactions, please refer to 10 Apple Pay In-App and on the Web Integration.

8.6.1 VbV, MCSC and SafeKey Responses

For each transaction, a crypt type is sent to identify whether it is a VbV-, MCSC- or SafeKey-authenticated transaction. Below are the tables defining the possible crypt types as well as the possible VARes and PARes responses.

Table 71: Crypt type definitions

| Crypt type | Visa definition | MasterCard definition | American Express Definition |
|------------|---|--|---|
| 5 | <ul style="list-style-type: none"> Fully authenticated There is a liability shift, and the merchant is protected from chargebacks | <ul style="list-style-type: none"> Fully authenticated There is a liability shift, and the merchant is protected from chargebacks. | <ul style="list-style-type: none"> Fully authenticated There is a liability shift, and the merchant is protected from chargebacks. |
| 6 | <ul style="list-style-type: none"> VbV has been attempted There is a liability shift, and the merchant is protected from certain chargebacks on fraudulent transactions | <ul style="list-style-type: none"> MCSC has been attempted There is a liability shift, and the merchant is protected from certain chargebacks on fraudulent transactions | <ul style="list-style-type: none"> SafeKey has been attempted There is a liability shift, and the merchant is protected from certain chargebacks on fraudulent transactions |
| 7 | <ul style="list-style-type: none"> Non-VbV transaction No liability shift Merchant is not protected from chargebacks | <ul style="list-style-type: none"> Non-MCSC transaction No liability shift Merchant is not protected from chargebacks | <ul style="list-style-type: none"> Non-SafeKey transaction No liability shift Merchant is not protected from chargebacks |

Table 72: VERes response definitions

| VERes Response | Response Definition |
|----------------|---|
| N | The card/issuer is not enrolled. Sent as a normal Purchase/PreAuth transaction with a crypt type of 6. |
| U | The card type is not participating in VbV/MCSC/SafeKey. It could be corporate card or another card plan that Visa/MasterCard/Amex excludes. Proceed with a regular transaction with a crypt type of 7 or cancel the transaction. |
| Y | The card is enrolled. Proceed to create the VbV/MCSC/SafeKey inline window for cardholder authentication. Proceed to PAREs for crypt type. |

Table 73: PAREs response definitions

| PAREs response | Response definition |
|----------------|---|
| A | Attempted to verify PIN, and will receive a CAVV. Send as a cavv_purchase/cavv_preAuth, which returns a crypt type of 6. |
| Y | Fully authenticated, and will receive a CAVV. Send as a cavv_purchase/cavv_preAuth which will return a crypt type of 5. |
| N | Failed to authenticate. No CAVV is returned. Cancel transaction. Merchant may proceed with a crypt type of 7 although this is strongly discouraged. |

Table 74: 3-D Secure/CAVV transaction handling

| Step 1: VERes Cardholder/issuer enrolled? | Step 2: PAREs VbV/MCSC InLine window response | Step 3: Transaction Are you protected? |
|---|---|---|
| Y | Y | Send a CAVV transaction |
| Y | N | Cancel transaction. Authentication failed or high-risk transaction. |
| Y | A | Send a CAVV transaction |
| U | n/a | Send a regular transaction with a crypt type of 7 |
| N | n/a | Send a regular transaction with a crypt type of 6 |

8.6.2 MpiTxn Request Transaction

MpiTxn transaction object definition

```
MpiTxn mpiTxn = new MpiTxn();
```

HttpPostRequest object for MpiTxn transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(mpiTxn);
```

MpiTxn transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 75: MpiTxn transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------|--------|---|--|
| XID | String | 20-character alpha-numeric | <code>mpiTxn.SetXid(xid);</code> |
| Credit card number | String | 20-character numeric | <code>mpiTxn.SetPan(pan);</code> |
| Expiry date | String | 4-character alpha-numeric (YYMM format) | <code>mpiTxn.SetExpdate(expiry_date);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>mpiTxn.SetAmount(amount);</code> |
| MD | String | 1024-character alpha-numeric | <code>mpiTxn.SetMD(MD);</code> |
| Merchant URL | String | N/A | <code>mpiTxn.SetMerchantUrl(merchantUrl);</code> |
| Accept | String | N/A | <code>mpiTxn.SetAccept(accept);</code> |
| User Agent | String | N/A | <code>mpiTxn.SetUserAgent(userAgent);</code> |

| Sample MpiTxn Request |
|---|
| <pre> { Console.WriteLine(e); } } } // end TestResMpiTxn } </pre> |

8.6.2.1 TXN Response and Creating the Popup

The TXN request returns a response with one of several possible values. The get Message method of the response object returns “Y”, “U”, or “N”.

- N**
Purchase or Pre-Authorization can be sent as a crypt type of 6 (attempted authentication).
- Y**
A call to the API to create the VBV form is made.
- U**
(Returned for non-participating cards such as corporate cards)
Merchant can send the transaction with crypt_type 7. However, the merchant is liable for chargebacks.

8.6.3 Vault MPI Transaction – ResMpiTxn

Vault MPI Transaction transaction object definition

```
ResMpiTxn resMpiTxn = new ResMpiTxn();
```

HttpPostRequest object for Vault MPI Transaction transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(resMpiTxn);
```

Vault MPI Transaction transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 76: Vault MPI Transaction transaction object mandatory values

| Value | Type | Limits | Set method |
|----------|--------|----------------------------|------------------------------|
| Data key | String | 25-character alpha-numeric | resMpiTxn.SetData(data_key); |
| XID | String | 20-character alpha-numeric | resMpiTxn.SetXid(xid); |
| Amount | String | 10-character decimal | resMpiTxn.SetAmount(amount); |

Table 76: Vault MPI Transaction transaction object mandatory values (continued)

| Value | Type | Limits | Set method |
|--------------|--------|---|---|
| | | Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | |
| MD | String | 1024-character alphanumeric | <code>resMpiTxn.SetMD(MD);</code> |
| Merchant URL | String | n/a | <code>resMpiTxn.SetMerchantUrl(merchantUrl);</code> |
| Accept | String | n/a | <code>resMpiTxn.SetAccept(accept);</code> |
| User Agent | String | n/a | <code>resMpiTxn.SetUserAgent(userAgent);</code> |
| Expiry date | String | 4-character alphanumeric (YYMM format) | <code>resMpiTxn.SetExpdate(expiry_date);</code> |

Sample Vault MPI Transaction

```

namespace Moneris
{
    using System;
    using System.Text;
    using System.Collections;
    public class TestCanadaResMpiTxn
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string data_key = "SzSrdoy0bt8UFXOtgs88wFAy7";
            string amount = "1.00";
            Random r = new Random();
            StringBuilder sb = new StringBuilder();
            for(int i=0; i< 20; i++)
            {
                sb.Append(r.Next(0,9));
            }
            string xid = sb.ToString();
        }
    }
}

```

Sample Vault MPI Transaction

```

string MD = xid + "mycardinfo" + amount;
string merchantUrl = "www.mystoreurl.com";
string accept = "true";
string userAgent = "Mozilla";
string processing_country_code = "CA";
bool status_check = false;
ResMpiTxn resMpiTxn = new ResMpiTxn();
resMpiTxn.SetData(data_key);
resMpiTxn.SetXid(xid);
resMpiTxn.SetAmount(amount);
resMpiTxn.SetMD(MD);
resMpiTxn.SetMerchantUrl(merchantUrl);
resMpiTxn.SetAccept(accept);
resMpiTxn.SetUserAgent(userAgent);
//*****OPTIONAL VARIABLES*****
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(resMpiTxn);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
/***** REQUEST *****/
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("MpiMessage = " + receipt.GetMpiMessage());
    Console.WriteLine("MpiSuccess = " + receipt.GetMpiSuccess());
    if (receipt.GetMpiSuccess() == "true")
    {
        Console.WriteLine(receipt.GetInLineForm());
    }
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
} // end TestResMpiTxn
}

```

Vault response fields

For a list and explanation of (Receipt object) response fields that are available after sending this Vault transaction, see Definitions of Response Fields (page 447).

8.6.4 MPI ACS Request Transaction

MPI ACS Request transaction object definition

```
MpiAcs mpiAcs = new MpiAcs();
```

HttpPostRequest object for MPI ACS Request transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(mpiAcs);
```

MPI ACS Request transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 77: MPI ACS Request transaction object mandatory values

| Value | Type | Limits | Set method |
|--------|--------|---|---|
| XID | String | 20-character alpha-numeric | NOTE: Is the concatenated 20-character prefix that forms part of the variable MD |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>mpiAcs.SetAmount(amount);</code> |
| MD | String | 1024-character alpha-numeric | <code>mpiAcs.SetMD(MD);</code> |
| PaRes | String | n/a | <code>mpiAcs.SetPaRes(PaRes);</code> |

Sample MPI ACS Request

```
namespace Moneris
{
    using System;
    public class TestCanadaMpiAcs
    {
        public static void Main(string[] args)
        {
            string store_id = "moneris";
            string api_token = "hurgle";
            string amount = "1.00";
            string xid = "12345678910111214005";
            string MD = xid + "mycardinfo" + amount;
            string PaRes = "PaRes String";
            string processing_country_code = "CA";
            bool status_check = false;
            MpiAcs resMpiAcs = new MpiAcs();
            resMpiAcs.SetPaRes(PaRes);
            resMpiAcs.SetMD(MD);
            //*****OPTIONAL VARIABLES*****
            HttpsPostRequest mpgReq = new HttpsPostRequest();
        }
    }
}
```

Sample MPI ACS Request

```

mpgReq.SetProcCountryCode (processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken (api_token);
mpgReq.SetTransaction(resMpiAcs);
mpgReq.SetStatusCheck (status_check);
mpgReq.Send();
/***** REQUEST *****/
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("MpiMessage = " + receipt.GetMpiMessage());
Console.WriteLine("MpiSuccess = " + receipt.GetMpiSuccess());
if (receipt.GetMpiSuccess() == "true")
{
Console.WriteLine("Cavv = " + receipt.GetMpiCavv());
Console.WriteLine("Crypt Type = " + receipt.GetMpiEci());
}
else
{
Console.WriteLine("Message = " + receipt.GetMessage());
}
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}

```

8.6.4.1 ACS Response and Forming a Transaction

The ACS response contains the CAVV value and the e-commerce indicator. These values are to be passed to the transaction engine using the Cavv Purchase or Cavv Pre-Authorization request. Please see the documentation provided by your payment solution.

Outlined below is how to send a transaction to Moneris Gateway.

```

if ( mpiRes.getSuccess().equals("true") )
{
//Send transaction to host using CAVV purchase or CAVV preauth, refer to sample
//code for Moneris Gateway. Call mpiRes.getCavv() to obtain the CAVV value.
//If you are using preauth/capture model, be sure to call getMessage() so the
//value can be stored and used in the capture transaction after on to protect
//your chargeback liability. (e.g. getMPIMessage()= A = crypt type of 6 for
//follow on transaction and getMPIMessage() = Y = crypt type of 5 for follow on
//transaction.
}
else
{
if (mpiRes.getMessage().equals("N"))
{
//Do not send transaction as the cardholder failed authentication.
}
else
{
//Optional to send transaction using the mpg API. In this case merchant
//assumes liability.
}
}
}

```


}

8.6.5 Purchase with 3-D Secure – cavvPurchase

The Purchase with 3-D Secure transaction follows a 3-D Secure MPI authentication. After receiving confirmation from the MPI ACS transaction, this Purchase verifies funds on the customer's card, removes the funds and prepares them for deposit into the merchant's account.

To perform the 3-D Secure authentication, the Moneris MPI or any 3rd party MPI may be used.

This transaction can also be used to process an Apple Pay transaction. This transaction is applicable only if choosing to integrate directly to Apple Wallet (if not using the Moneris Apple Pay SDK). Please refer to 10 Apple Pay In-App and on the Web Integration for more details on your integration options.

Refer to Apple's developer portal for details on integrating directly to the wallet to retrieve the payload data.

Purchase with 3-D Secure transaction object definition

```
CavvPurchase cavvPurchase = new CavvPurchase();
```

HttpPostRequest object for Purchase with 3-D Secure transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(cavvPurchase);
```

Cavv Purchase transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 78: Purchase with 3-D Secure transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------|---------------|---|---|
| Order ID | <i>String</i> | 50-character alphanumeric | <code>cavvPurchase.SetOrderId(order_id);</code> |
| Amount | <i>String</i> | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>cavvPurchase.SetAmount(amount);</code> |
| Credit card number | <i>String</i> | 20-character alphanumeric | <code>cavvPurchase.SetPan(pan);</code> |

Table 78: Purchase with 3-D Secure transaction object mandatory values

| Value | Type | Limits | Set method |
|--|---------------|--|---|
| Expiry date | <i>String</i> | 4-character alpha-numeric (YMMM format) | <code>cavvPurchase.SetExpdate (expiry_date);</code> |
| CAVV NOTE: For Apple Pay Cavv Purchase and Cavv Pre-Authorization transactions, CAVV field contains the decrypted cryptogram. For more, see Appendix A Definitions of Request Fields. | <i>String</i> | 50-character alpha-numeric | <code>cavvPurchase.SetCavv (cavv);</code> |
| E-commerce indicator NOTE: For Apple Pay Cavv Purchase and Cavv Pre-Authorization transactions, the E-commerce indicator is a mandatory field containing the value received from the decrypted payload or a default value of 5. If you get a 2-character value (e.g., 05 or 07) from the payload, remove the initial 0 and just send us the 2nd character. For more, see Appendix A Definitions of Request Fields. | <i>String</i> | 1-character alpha-numeric | <code>cavvPurchase.SetCryptType (crypt);</code> |

Table 1 INTERAC® e-Commerce Fields – Required for Apple Pay and Google Pay Only

| Variable and Field Name | Type | Limits | Set Method |
|---|--------|--------------------------|---|
| Network <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: This request variable is mandatory for INTERAC® e-Commerce transactions conducted via Apple Pay, and is not for use with credit card transactions.</p> </div> | String | alphabetical | <code>cavvPurchase.setNetwork(network);</code> |
| Data Type <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: This request variable is mandatory for INTERAC® e-Commerce transactions conducted via Apple Pay, and is not for use with credit card transactions.</p> </div> | String | 3-character alphanumeric | <code>cavvPurchase.setDataType(data_type);</code> |

Table 2 Purchase with 3-D Secure transaction object optional values

| Value | Type | Limits | Set Method |
|--|---------|---------------------------|---|
| Status Check | Boolean | true/false | <code>mpgReq.setStatusCheck(status_check);</code> |
| Customer ID | String | 50-character alphanumeric | <code>cavvPurchase.setCustId(cust_id);</code> |
| Dynamic descriptor | String | 20-character alphanumeric | <code>cavvPurchase.setDynamicDescriptor(dynamic_descriptor);</code> |
| Card Match ID <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: Applies to Offline™ only; must be unique value for each transaction</p> </div> | String | 50-character alphanumeric | <code>cavvPurchase.setCmId(transaction_id);</code> |
| Customer information | Object | N/A | <code>cavvPurchase.setCustInfo(customer);</code> |

| Value | Type | Limits | Set Method |
|--|---------------|--------|--|
| AVS | <i>Object</i> | N/A | <code>cavvPurchase.SetAvsInfo(avsCheck);</code> |
| CVD | <i>Object</i> | N/A | <code>cavvPurchase.SetCvdInfo(cvdCheck);</code> |
| Convenience fee <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>NOTE: Not applicable when processing Apple Pay transactions.</p> </div> | <i>Object</i> | N/A | <code>cavvPurchase.SetConvFeeInfo(convFeeInfo);</code> |

| Value | Type | Limits | Set Method |
|---|---------------|--------------------------|---|
| Recurring billing recur <div style="border: 1px solid black; padding: 5px;"> <p>NOTE: For sample code for a Purchase with 3-D Secure including the Recurring Billing Info Object, see 8.6.5.1 Purchase with 3-D Secure and Recurring Billing.</p> </div> | <i>Object</i> | N/A | <code>cavvPurchase.SetRecur(recurring_cycle);</code> |
| Wallet indicator <div style="border: 1px solid black; padding: 5px;"> <p>NOTE: For Cavv Purchase and Cavv Pre-Authorization, wallet indicator applies to Apple Pay or Android Pay only. For more, see Appendix A Definitions of Request Fields</p> </div> | <i>String</i> | 3-character alphanumeric | <code>cavvPurchase.SetWalletIndicator(wallet_indicator);</code> |
| Credential on File Info cof <div style="border: 1px solid black; padding: 5px;"> <p>NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. The Credential on File Info object has its own request variables, listed in blue in the table below, "Credential on File Object Request Variables".</p> </div> | <i>Object</i> | N/A | <code>cof.SetCofInfo(cof);</code> |

Credential on File Transaction Object Request Fields

| Value | Type | Limits | Set Method |
|--|---------------|---|--|
| <p>Issuer ID</p> <p>NOTE: This variable is required for all merchant-initiated transactions following the first one; upon sending the first transaction, the Issuer ID value is received in the transaction response and then used in subsequent transaction requests.</p> | <i>String</i> | <p>15-character alphanumeric</p> <p>variable length</p> | <pre>cof.SetIssuerId("VALUE_FOR_ISSUER_ID");</pre> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |
| Payment Indicator | <i>String</i> | 1-character alphabetic | <pre>cof.SetPaymentIndicator("PAYMENT_INDICATOR_VALUE");</pre> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |
| Payment Information | <i>String</i> | 1-character numeric | <pre>cof.SetPaymentInformation("PAYMENT_INFO_VALUE");</pre> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |

Recurring Billing Info Object Request Fields

| Variable and Field Name | Type and Limits | Description |
|---|--|---|
| <p>Number of Recurs</p> <p>num_rekurs</p> | <p><i>String</i></p> <p>numeric, 1-99</p> | The number of times that the transaction must recur |
| <p>Period</p> <p>period</p> | <p><i>String</i></p> <p>numeric, 1-999</p> | Number of recur units that must pass between recurring billings |
| Start Date | <i>String</i> | Date of the first future recurring |

| Variable and Field Name | Type and Limits | Description |
|---|---|--|
| start_date | YYYY/MM/DD | <p>billing transaction</p> <p>This value must be a date in the future</p> <p>If an additional charge is to be made immediately, the value of Start Now must be set to true</p> |
| <p>Start Now</p> <p>start_now</p> | <p><i>String</i></p> <p>true/false</p> | <p>If a single charge is to be made against the card immediately, set this value to true; the amount to be billed immediately may differ from the amount billed on a regular basis thereafter</p> <p>If the billing is to start in the future, set this value to false</p> <p>When set to false, use Card Verification prior to sending the Purchase with Recur and Credential on File objects</p> |
| <p>Recurring Amount</p> <p>recur_amount</p> | <p><i>String</i></p> <p>10-character decimal</p> <p>Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point</p> <div style="border: 1px solid black; background-color: #e0ffe0; padding: 5px; width: fit-content; margin: 10px auto;"> <p>EXAMPLE: 1234567.89</p> </div> | <p>Amount of the recurring transaction</p> <p>This is the amount that will be billed on the Start Date and then billed repeatedly based on the interval defined by Period and Recur Unit</p> |
| <p>Recur Unit</p> <p>recur_unit</p> | <p><i>String</i></p> <p>day, week, month or eom</p> | <p>Unit to be used as a basis for the interval</p> <p>Works in conjunction with Period to define the billing frequency</p> <p>Possible values are:</p> <p>day</p> <p>week</p> <p>month</p> |

| Variable and Field Name | Type and Limits | Description |
|-------------------------|-----------------|--------------------|
| | | eom (end of month) |

Sample Purchase with 3-D Secure - cavvPurchase

```

namespace Moneris
{
    using System;
    using System.Collections;
    public class TestCanadaCavvPurchase
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string cust_id = "CUS887H67";
            string amount = "10.42";
            string pan = "4242424242424242";
            string expdate = "1901"; //YYMM
            string cavv = "AAABBJg0VhI0VniQEjRWAAAAA=";
            string dynamic_descriptor = "123456";
            string wallet_indicator = "APP";
            string processing_country_code = "CA";
            string crypt_type = "5";
            bool status_check = false;
            CofInfo cof = new CofInfo();
            cof.SetPaymentIndicator("U");
            cof.SetPaymentInformation("2");
            cof.SetIssuerId("168451306048014");
            CavvPurchase cavvPurchase = new CavvPurchase();
            cavvPurchase.SetOrderId(order_id);
            cavvPurchase.SetCustId(cust_id);
            cavvPurchase.SetAmount(amount);
            cavvPurchase.SetPan(pan);
            cavvPurchase.SetExpDate(expdate);
            cavvPurchase.SetCavv(cavv);
            cavvPurchase.SetCryptType(crypt_type); //Mandatory for AMEX cards only
            cavvPurchase.SetDynamicDescriptor(dynamic_descriptor);
            //cavvPurchase.SetNetwork("Interac"); //set only for Interac e-commerce
            //cavvPurchase.SetDataType("3DSecure"); //set only for Interac e-commerce
            //cavvPurchase.SetWalletIndicator(wallet_indicator); //set only wallet transactions e.g. APPLE PAY
            //cavvPurchase.SetCmId("8nAK8712sGaAkls56"); //set only for usage with Offlinx - Unique max 50
            alphanumeric characters transaction id generated by merchant
            cavvPurchase.SetCofInfo(cof);
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(cavvPurchase);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("CardType = " + receipt.GetCardType());
            }
        }
    }
}

```


Sample Purchase with 3-D Secure - cavvPurchase

```

Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
Console.WriteLine("IssuerId = " + receipt.GetIssuerId());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

8.6.5.1 Purchase with 3-D Secure and Recurring Billing

The example below illustrates the Purchase with 3-D Secure when also sending the Recurring Billing Info object in the transaction.

Purchase with 3-D Secure and Recurring Billing

```

namespace Moneris
{
using System;
using System.Collections;
public class TestCanadaCavvPurchase
{
public static void Main(string[] args)
{
string store_id = "store5";
string api_token = "yesguy";
string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
string cust_id = "CUS887H67";
string amount = "10.42";
string pan = "4242424242424242";
string expdate = "1901"; //YYMM
string cavv = "AAABBJg0VhI0VniQEjRWAAAAAAA=";
string dynamic_descriptor = "123456";
string wallet_indicator = "APP";
string processing_country_code = "CA";
string crypt_type = "5";
bool status_check = false;
/***** Recur Variables *****/
string recur_unit = "month"; //eom = end of month

```

Purchase with 3-D Secure and Recurring Billing

```

string start_now = "true";
string start_date = "2018/02/25";
string num_rekurs = "12";
string period = "1";
string recur_amount = "30.00";
/***** Recur Object Option1 *****/
Recur recurring_cycle = new Recur(recur_unit, start_now, start_date,
num_rekurs, period, recur_amount);
/***** Recur Object Option2 *****/
Hashtable recur_hash = new Hashtable();
recur_hash.Add("recur_unit", recur_unit);
recur_hash.Add("start_now", start_now);
recur_hash.Add("start_date", start_date);
recur_hash.Add("num_rekurs", num_rekurs);
recur_hash.Add("period", period);
recur_hash.Add("recur_amount", recur_amount);
Recur recurring_cycle2 = new Recur(recur_hash);
CofInfo cof = new CofInfo();
cof.SetPaymentIndicator("R");
cof.SetPaymentInformation("2");
cof.SetIssuerId("168451306048014");

CavvPurchase cavvPurchase = new CavvPurchase();
cavvPurchase.SetOrderId(order_id);
cavvPurchase.SetCustId(cust_id);
cavvPurchase.SetAmount(amount);
cavvPurchase.SetPan(pan);
cavvPurchase.SetExpDate(expdate);
cavvPurchase.SetCavv(cavv);
cavvPurchase.SetCryptType(crypt_type); //Mandatory for AMEX cards only
cavvPurchase.SetDynamicDescriptor(dynamic_descriptor);
//cavvPurchase.SetNetwork("Interac"); //set only for Interac e-commerce
//cavvPurchase.SetDataType("3DSecure"); //set only for Interac e-commerce
//cavvPurchase.SetWalletIndicator(wallet_indicator); //set only wallet transactions e.g. APPLE PAY

cavvPurchase.SetRecur(recurring_cycle);
cavvPurchase.SetCofInfo(cof);
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(cavvPurchase);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
}

```

Purchase with 3-D Secure and Recurring Billing

```

Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
Console.WriteLine("IssuerId = " + receipt.GetIssuerId());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

8.6.6 Pre-Authorization with 3-D Secure – cavvPreauth

The Pre-Authorization with 3-D Secure transaction follows a 3-D Secure MPI authentication. After receiving confirmation from the MPI ACS transaction, this Pre-Authorization verifies funds on the customer's card, removes the funds and prepares them for deposit into the merchant's account.

To perform the 3-D Secure authentication, the Moneris MPI or any 3rd party MPI may be used.

This transaction can also be used to process an Apple Pay transaction. This transaction is applicable only if choosing to integrate directly to Apple Wallet (if not using the Moneris Apple Pay SDK). Please refer to 10 Apple Pay In-App and on the Web Integration for more details on your integration options.

Refer to Apple's developer portal for details on integrating directly to the wallet to retrieve the payload data.

Pre-Authorization with 3-D Secure transaction object definition

```
CavvPreAuth cavvPreauth = new CavvPreAuth();
```

HttpPostRequest object for Pre-Authorization with 3-D Secure transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(cavvPreauth);
```

Pre-Authorization with 3-D Secure transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 79: Pre-Authorization with 3-D Secure object mandatory values

| Value | Type | Limits | Set method |
|--------------------|---------------|--|--|
| Order ID | <i>String</i> | 50-character alpha-numeric | <code>cavvPreauth.SetOrderId(order_id);</code> |
| Amount | <i>String</i> | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div style="border: 1px solid black; background-color: #e0ffe0; padding: 2px; display: inline-block; margin-top: 5px;"> EXAMPLE: 1234567.89 </div> | <code>cavvPreauth.SetAmount(amount);</code> |
| Credit card number | <i>String</i> | 20-character numeric | <code>cavvPreauth.SetPan(pan);</code> |

| Value | Type | Limits | Set method |
|--|---------------|---------------------------|---|
| Cardholder Authentication Verification Value (CAVV) <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: For Apple Pay Cavv Purchase and Cavv Pre-Authorization transactions, CAVV field contains the decrypted cryptogram. For more, see Appendix A Definitions of Request Fields.</p> </div> | <i>String</i> | 50-character alphanumeric | <code>cavvPreauth.SetCavv(cavv);</code> |
| Expiry date | <i>String</i> | 4-character numeric | <code>cavvPreauth.SetExpdate(expiry_date);</code> |
| E-commerce indicator <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: For Apple Pay Cavv Purchase and Cavv Pre-Authorization transactions, the E-commerce indicator is a mandatory field containing the value received from the decrypted payload or a default value of 5. If you get a 2-character value (e.g., 05 or 07) from the payload, remove the initial 0 and just send us the 2nd character. For more, see Appendix A Definitions of Request Fields.</p> </div> | <i>String</i> | 1-character alphanumeric | <code>cavvPreauth.SetCryptType(crypt);</code> |

Table 1 INTERAC® e-Commerce Fields – Required for Apple Pay and Google Pay Only

| Variable and Field Name | Type | Limits | Set Method |
|---|--------|--------------------------|---|
| <p>Network</p> <p>NOTE: This request variable is mandatory for INTERAC® e-Commerce transactions conducted via Apple Pay, and is not for use with credit card transactions.</p> | String | alphabetical | <code>cavvPurchase.setNetwork(network);</code> |
| <p>Data Type</p> <p>NOTE: This request variable is mandatory for INTERAC® e-Commerce transactions conducted via Apple Pay, and is not for use with credit card transactions.</p> | String | 3-character alphanumeric | <code>cavvPurchase.setDataType(data_type);</code> |

Table 2 Pre-Authorization with 3-D Secure object optional values

| Value | Type | Limits | Set method |
|---|---------|---------------------------|--|
| Status Check | Boolean | true/false | <code>mpgReq.setStatusCheck(status_check);</code> |
| Customer ID | String | 50-character alphanumeric | <code>cavvPreauth.SetCustId(cust_id);</code> |
| Dynamic descriptor | String | 20-character alphanumeric | <code>cavvPreauth.SetDynamicDescriptor(dynamic_descriptor);</code> |
| <p>Card Match ID</p> <p>NOTE: Applies to Off-linx™ only; must be unique value for each transaction</p> | String | 50-character alphanumeric | <code>cavvPreauth.SetCmId(transaction_id);</code> |
| AVS | Object | N/A | <code>cavvPreauth.SetAvsInfo</code> |

| Value | Type | Limits | Set method |
|--|---------------|--------------------------|--|
| | | | <code>(avsCheck);</code> |
| CVD | <i>Object</i> | N/A | <code>cavvPreauth.SetCvdInfo(cvdCheck);</code> |
| Wallet indicator <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: For Cavv Purchase and Cavv Pre-Authorization, wallet indicator applies to Apple Pay or Android Pay only. For more, see Appendix A Definitions of Request Fields</p> </div> | <i>String</i> | 3-character alphanumeric | <code>cavvPreauth.SetWalletIndicator(wallet_indicator);</code> |
| Credential on File Info <code>cof</code> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. The Credential on File Info object has its own request variables, listed in blue in the table below, "Credential on File Object Request Variables".</p> </div> | <i>Object</i> | N/A | <code>cof.SetCofInfo(cof);</code> |

Credential on File Transaction Object Request Fields

| Value | Type | Limits | Set Method |
|--|--------|--|--|
| <p>Issuer ID</p> <p>NOTE: This variable is required for all merchant-initiated transactions following the first one; upon sending the first transaction, the Issuer ID value is received in the transaction response and then used in subsequent transaction requests.</p> | String | 15-character alphanumeric variable length | <pre>cof.SetIssuerId("VALUE_FOR_ISSUER_ID");</pre> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |
| <p>Payment Indicator</p> | String | 1-character alphabetic | <pre>cof.SetPaymentIndicator("PAYMENT_INDICATOR_VALUE");</pre> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |
| <p>Payment Information</p> | String | 1-character numeric | <pre>cof.SetPaymentInformation("PAYMENT_INFO_VALUE");</pre> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definitions of Request Fields – Credential on File</p> |

Sample Pre-Authorization with 3-D Secure – cavvPreauth

```
namespace Moneris
{
    using System;
    using System.Collections;
    public class TestCanadaCavvPreauth
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string cust_id = "CUS887H67";
            string amount = "10.42";
            string pan = "4242424242424242";
            string expdate = "1911"; //YYMM format
        }
    }
}
```


Sample Pre-Authorization with 3-D Secure – cavvPreauth

```

string cavv = "AAABBJg0VhI0VniQEjRWAAAAAAA=";
string dynamic_descriptor = "123456";
string wallet_indicator = "APP";
string processing_country_code = "CA";
string crypt_type = "5";
bool status_check = false;
CofInfo cof = new CofInfo();
cof.SetPaymentIndicator("U");
cof.SetPaymentInformation("2");
cof.SetIssuerId("168451306048014");
CavvPreAuth cavvPreauth = new CavvPreAuth();
cavvPreauth.SetOrderId(order_id);
cavvPreauth.SetCustId(cust_id);
cavvPreauth.SetAmount(amount);
cavvPreauth.SetPan(pan);
cavvPreauth.SetExpDate(expdate);
cavvPreauth.SetCavv(cavv);
cavvPreauth.SetCryptType(crypt_type); //Mandatory for AMEX cards only
cavvPreauth.SetDynamicDescriptor(dynamic_descriptor);
//cavvPreauth.SetWalletIndicator(wallet_indicator); //set only wallet transactions e.g. APPLE PAY
//cavvPreauth.SetCmId("8nAK8712sGaAkl56"); //set only for usage with Offlinx - Unique max 50
alphanumeric characters transaction id generated by merchant
cavvPreauth.SetCofInfo(cof);

HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(cavvPreauth);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
Console.WriteLine("IssuerId = " + receipt.GetIssuerId());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}

```

| Sample Pre-Authorization with 3-D Secure – cavvPreauth |
|--|
| <pre> } } } </pre> |

8.6.7 Cavv Result Codes for Verified by Visa

Table 80: CAVV result codes for VbV

| Code | Message | Significance |
|------|--|---|
| 0 | CAVV authentication results invalid | For this transaction, you may not receive protection from chargebacks as a result of using VbV because the CAVV was considered invalid at the time the financial transaction was processed. Check that you are following the VbV process correctly and passing the correct data in our transactions. |
| 1 | CAVV failed validation; authentication | Provided that you have implemented the VbV process correctly, the liability for this transaction should remain with the Issuer for chargeback reason codes covered by Verified by Visa. |
| 2 | CAVV passed validation; authentication | The CAVV was confirmed as part of the financial transaction. This transaction is a fully authenticated VbV transaction (ECI 5) |
| 3 | CAVV passed validation; attempt | The CAVV was confirmed as part of the financial transaction. This transaction is an attempted VbV transaction (ECI 6) |
| 4 | CAVV failed validation; attempt | Provided that you have implemented the VbV process correctly the liability for this transaction should remain with the Issuer for chargeback reason codes covered by Verified by Visa. |
| 7 | CAVV failed validation; attempt (US issued cards only) | Please check that you are following the VbV process correctly and passing the correct data in your transactions. Provided that you have implemented the VbV process correctly the liability for this transaction should be the same as an attempted transaction (ECI 6) |

Table 80: CAVV result codes for VbV (continued)

| Code | Message | Significance |
|------|--|---|
| 8 | CAVV passed validation; attempt (US issued cards only) | The CAVV was confirmed as part of the financial transaction. This transaction is an attempted VbV transaction (ECI 6) |
| 9 | CAVV failed validation; attempt (US issued cards only) | Please check that you are following the VbV process correctly and passing the correct data in our transactions. Provided that you have implemented the VbV process correctly the liability for this transaction should be the same as an attempted transaction (ECI 6) |
| A | CAVV passed validation; attempt (US issued cards only) | The CAVV was confirmed as part of the financial transaction. This transaction is an attempted VbV transaction (ECI 6) |
| B | CAVV passed validation; information only, no liability shift | The CAVV was confirmed as part of the financial transaction. However, this transaction does not qualify for the liability shift. Treat this transaction the same as an ECI 7. |

8.6.8 Vault Cavv Purchase

Vault Cavv Purchase transaction object definition

```
ResCavvPurchaseCC resCavvPurchaseCC = new ResCavvPurchaseCC();
```

HttpPostRequest object for Vault Cavv Purchase transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(resCavvPurchaseCC);
```

Vault Cavv Purchase transaction details

Table 81: Vault Cavv Purchase transaction object mandatory values

| Value | Type | Limits | Set method |
|---|--------|---|--|
| Data Key | String | 25-character alpha-numeric | <code>resCavvPurchaseCC.SetData(data_key);</code> |
| Order ID | String | 50-character alpha-numeric | <code>resCavvPurchaseCC.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>resCavvPurchaseCC.SetAmount(amount);</code> |
| Cardholder Authentication Verification Value (CAVV) | String | 50-character alpha-numeric | <code>resCavvPurchaseCC.SetCavv(cavv);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>resCavvPurchaseCC.SetCryptType(crypt);</code> |

Table 82: Vault Cavv Purchase transaction object optional values

| Value | Type | Limits | Set method |
|--------------|---------|--|---|
| Customer ID | String | 50-character alpha-numeric | <code>resCavvPurchaseCC.SetCustId(cust_id);</code> |
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |
| Expiry date | String | 4-character alpha-numeric (YYMM format) | <code>resCavvPurchaseCC.SetExpdate(expiry_date);</code> |

Sample Vault Cavv Purchase

```

namespace Moneris
{
    using System;
    using System.Text;
    using System.Collections;
    public class TestCanadaResCavvPreauthCC
    {
        public static void Main(string[] args)
        {
            string store_id = "store1";
            string api_token = "yesguy";
            string data_key = "4INQR1A8ocxD0oafSz50LADXY";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string amount = "1.00";
            string cust_id = "customer1"; //if sent will be submitted, otherwise cust_id from profile will be
            used
            string cavv = "AAABBJg0VhI0VniQEjRWAAAAA";
            string expdate = "1911";
            string processing_country_code = "CA";
            bool status_check = false;
            ResCavvPreauthCC resCavvPreauthCC = new ResCavvPreauthCC();
            resCavvPreauthCC.SetOrderId(order_id);
            resCavvPreauthCC.SetDataKey(data_key);
            resCavvPreauthCC.SetCustId(cust_id);
            resCavvPreauthCC.SetAmount(amount);
            resCavvPreauthCC.SetCavv(cavv);
            //resCavvPreauthCC.SetExpDate(expdate); //mandatory for temp token only
            HttpPostRequest mpgReq = new HttpPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(resCavvPreauthCC);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("DataKey = " + receipt.GetDataKey());
                Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
                Console.WriteLine("Message = " + receipt.GetMessage());
                Console.WriteLine("TransDate = " + receipt.GetTransDate());
                Console.WriteLine("TransTime = " + receipt.GetTransTime());
                Console.WriteLine("TransType = " + receipt.GetTransType());
                Console.WriteLine("Complete = " + receipt.GetComplete());
                Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                Console.WriteLine("CardType = " + receipt.GetCardType());
                Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
                Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
                Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
                Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
                Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
                //ResolveData
                Console.WriteLine("Cust ID = " + receipt.GetResDataCustId());
                Console.WriteLine("Phone = " + receipt.GetResDataPhone());
                Console.WriteLine("Email = " + receipt.GetResDataEmail());
            }
            catch { }
        }
    }
}

```

| Sample Vault Cavv Purchase |
|---|
| <pre> Console.WriteLine("Note = " + receipt.GetResDataNote()); Console.WriteLine("Masked Pan = " + receipt.GetResDataMaskedPan()); Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate()); Console.WriteLine("Crypt Type = " + receipt.GetResDataCryptType()); Console.WriteLine("Avs Street Number = " + receipt.GetResDataAvsStreetNumber()); Console.WriteLine("Avs Street Name = " + receipt.GetResDataAvsStreetName()); Console.WriteLine("Avs Zipcode = " + receipt.GetResDataAvsZipcode()); Console.ReadLine(); } catch (Exception e) { Console.WriteLine(e); } } } } </pre> |

8.6.9 Vault Cavv Pre-Authorization

Vault Cavv Pre-Authorization transaction object definition

```
ResCavvPreauthCC resCavvPreauthCC = new ResCavvPreauthCC();
```

HttpPostRequest object for Vault Cavv Pre-Authorization

```

HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(resCavvPreauthCC);

```

Vault Cavv Pre-Authorization transaction details

Table 83: Vault Cavv Pre-Authorization object mandatory values

| Value | Type | Limits | Set method |
|----------|--------|--|--|
| Data Key | String | 25-character alpha-numeric | resCavvPreauthCC.SetData(data_key); |
| Order ID | String | 50-character alpha-numeric | resCavvPreauthCC.SetOrderId(order_id); |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div style="border: 1px solid black; background-color: #e0ffe0; padding: 2px; display: inline-block; margin-top: 5px;"> EXAMPLE: 1234567.89 </div> | resCavvPreauthCC.SetAmount(amount); |

Table 83: Vault Cavv Pre-Authorization object mandatory values

| Value | Type | Limits | Set method |
|----------------------|--------|----------------------------|---------------------------------------|
| CAVV | String | 50-character alpha-numeric | resCavvPreauthCC.SetCavv(cavv); |
| E-commerce indicator | String | 1-character alpha-numeric | resCavvPreauthCC.SetCryptType(crypt); |

Table 84: Vault Cavv Pre-Authorization object optional values

| Value | Type | Limits | Set method |
|--------------|---------|---------------------------|---|
| Customer ID | String | 50-character alphanumeric | resCavvPreauthCC.SetCustId(cust_id); |
| Status Check | Boolean | true/false | mpgReq.SetStatusCheck(status_check); |
| Expiry date | String | 4-character numeric | resCavvPreauthCC.SetExpdate(expiry_date); |

Sample Vault Cavv Pre-Authorization

```

namespace Moneris
{
    using System;
    using System.Text;
    using System.Collections;
    public class TestCanadaResCavvPreauthCC
    {
        public static void Main(string[] args)
        {
            string store_id = "store1";
            string api_token = "yesguy";
            string data_key = "4INQR1A8ocxD0oafSz50LADXY";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string amount = "1.00";
            string cust_id = "customer1"; //if sent will be submitted, otherwise cust_id from profile will be used
            string cavv = "AAABBJg0VhI0VniQEjRWAAAAA";
            string expdate = "1911";
            string processing_country_code = "CA";
            bool status_check = false;
            ResCavvPreauthCC resCavvPreauthCC = new ResCavvPreauthCC();
            resCavvPreauthCC.SetOrderId(order_id);
            resCavvPreauthCC.SetDataKey(data_key);
            resCavvPreauthCC.SetCustId(cust_id);
            resCavvPreauthCC.SetAmount(amount);
            resCavvPreauthCC.SetCavv(cavv);
            //resCavvPreauthCC.SetExpDate(expdate); //mandatory for temp token only
        }
    }
}

```

Sample Vault Cavv Pre-Authorization

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(resCavvPreauthCC);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("DataKey = " + receipt.GetDataKey());
    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("TransType = " + receipt.GetTransType());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
    Console.WriteLine("CardType = " + receipt.GetCardType());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("ResSuccess = " + receipt.GetResSuccess());
    Console.WriteLine("PaymentType = " + receipt.GetPaymentType());
    Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
    //ResolveData
    Console.WriteLine("Cust ID = " + receipt.GetResDataCustId());
    Console.WriteLine("Phone = " + receipt.GetResDataPhone());
    Console.WriteLine("Email = " + receipt.GetResDataEmail());
    Console.WriteLine("Note = " + receipt.GetResDataNote());
    Console.WriteLine("Masked Pan = " + receipt.GetResDataMaskedPan());
    Console.WriteLine("Exp Date = " + receipt.GetResDataExpdate());
    Console.WriteLine("Crypt Type = " + receipt.GetResDataCryptType());
    Console.WriteLine("Avs Street Number = " + receipt.GetResDataAvsStreetNumber());
    Console.WriteLine("Avs Street Name = " + receipt.GetResDataAvsStreetName());
    Console.WriteLine("Avs Zipcode = " + receipt.GetResDataAvsZipcode());
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
```


9 e-Fraud Tools

- 9.1 Address Verification Service
- 9.2 Card Validation Digits (CVD)
- 9.3 Transaction Risk Management Tool

9.1 Address Verification Service

- 9.1.1 About Address Verification Service (AVS)
- 9.1.2 AVS Info Object
- 9.1.3 AVS Response Codes
- 9.1.4 AVS Sample Code

9.1.1 About Address Verification Service (AVS)

Address Verification Service (AVS) is an optional fraud-prevention tool offered by issuing banks whereby a cardholder's address is submitted as part of the transaction authorization. The AVS address is then compared to the address kept on file at the issuing bank. AVS checks whether the street number, street name and zip/postal code match. The issuing bank returns an AVS result code indicating whether the data was matched successfully. Regardless of the AVS result code returned, the credit card is authorized by the issuing bank.

The response that is received from AVS verification is intended to provide added security and fraud prevention, but the response itself does not affect the completion of a transaction. Upon receiving a response, the choice to proceed with a transaction is left entirely to the merchant. The responses is **not** a strict guideline of whether a transaction will be approved or declined.

The following transactions support AVS:

- Purchase (Basic and Mag Swipe)
- Pre-Authorization (Basic)
- Re-Authorization (Basic)
- ResAddCC (Vault)
- ResUpdateCC (Vault)

Things to Consider:

- AVS is supported by Visa, MasterCard, American Express, Discover and JCB.
- When testing AVS, you must **only** use the Visa test card numbers 4242424242424242 or 4005554444444403, and the amounts described in the Simulator eFraud Response Codes document available at the Moneris developer portal (<https://developer.moneris.com>).
- Store ID "store5" is set up to support AVS testing.

9.1.2 AVS Info Object

AVSInfo object definition

```
AvsInfo avsCheck = new AvsInfo();
```

Transaction object set method

```
<transaction>.setAvsInfo (avsCheck) ;
```

Table 1 AVS Info Object – Required Fields

| Variable and Field Name | Type and Limits | Set Method | Description |
|-------------------------|--|---|----------------------------|
| AVS street number | <p><i>String</i></p> <p>19-character alphanumeric</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: this character limit is a combined total allowed for AVS street number and AVS street name</p> </div> | <pre>avsCheck.SetAvsStreetNumber ("212");</pre> | Cardholder street number |
| AVS street name | <p><i>String</i></p> <p>19-character alphanumeric</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: this character limit is the combined total allowed for AVS street number and AVS street name</p> </div> | <pre>avsCheck.SetAvsStreetName ("Payton Street");</pre> | Cardholder street name |
| AVS zip/postal code | <p><i>String</i></p> <p>9-character alphanumeric</p> | <pre>avsCheck.SetAvsZipCode ("M1M1M1");</pre> | Cardholder zip/postal code |

9.1.3 AVS Response Codes

Below is a full list of possible AVS response codes. These can be returned when you call the `receipt.GetAvsResultCode()` method .

Table 85: AVS result codes

| Value | Visa | MasterCard/Discover | Amex/JCB |
|-------|---|---|--|
| A | Street address matches, zip/postal code does not. Acquirer rights not implied. | Address matches, zip/-postal code does not. | Billing address matches, zip/postal code does not. |
| B | Street address matches. Zip/Postal code not verified due to incompatible formats. (Acquirer sent both street address and zip/-postal code.) | N/A | N/A |
| C | Street address not verified due to incompatible formats. (Acquirer sent both street address and zip/postal code.) | N/A | N/A |
| D | Street address and zip/postal code match. | N/A | Customer name incorrect, zip/postal code matches |
| E | N/A | N/A | Customer name incorrect, billing address and zip/postal code match |
| F | (Applies to UK only) Street address and zip/-postal code match. | N/A | Customer name incorrect, billing address matches. |
| G | Address information not verified for international transaction. Any of the following may be true: <ul style="list-style-type: none"> • Issuer is not an AVS participant. • AVS data was present in the request, but issuer did not return an AVS result. • Visa performs AVS on behalf of the issuer and there was no address record on file for this account. | N/A | N/A |
| I | Address information not verified. | N/A | N/A |
| K | N/A | N/A | Customer name matches. |
| L | N/A | N/A | Customer name and postal code match. |
| N/A | N/A | Customer name and zip/postal code match. | |

Table 85: AVS result codes (continued)

| Value | Visa | MasterCard/Discover | Amex/JCB |
|-------|--|---|--|
| M | Street address and zip/postal code match. | N/A | Customer name, billing address, and zip/postal code match. |
| N | No match. Also used when acquirer requests AVS but sends no AVS data. | Neither address nor postal code matches. | Billing address and postal code do not match. |
| O | N/A | N/A | Customer name and billing address match |
| P | Postal code matches. Acquirer sent both postal code and street address, but street address not verified due to incompatible formats. | N/A | 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. | Retry. System unavailable. |
| S | N/A | AVS currently not supported. | AVS currently not supported. |
| T | N/A | Nine-digit zip/postal code matches, address does not match. | N/A |
| U | Address not verified for domestic transaction. One of the following is true: <ul style="list-style-type: none"> • Issuer is not an AVS participant • AVS data was present in the request, but issuer did not return an AVS result • 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. | Information is unavailable. |

Table 85: AVS result codes (continued)

| Value | Visa | MasterCard/Discover | Amex/JCB |
|-------|--|--|--|
| W | Not applicable. If present, replaced with 'Z' by Visa. Available for U.S. issuers only. | For US Addresses, nine-digit zip/postal code matches, address does not. For addresses outside the US, zip/postal code matches, address does not. | Customer name, billing address, and zip/postal code are all correct. |
| X | N/A | For US addresses, nine-digit zip/postal code and address match. For addresses outside the US, zip/postal code and address match. | N/A |
| Y | Street address and zip/postal code match. | For US addresses, five-digit zip/postal code and address match. | Billing address and zip/postal code match. |
| Z | Zip/postal code matches, but street address either does not match or street address was not included in request. | For U.S. addresses, five-digit zip code matches, address does not match. | Postal code matches, billing address does not match. |

9.1.4 AVS Sample Code

This is a sample of Java code illustrating how AVS is implemented with a Purchase transaction. Purchase object information that is not relevant to AVS has been removed.

For more about Purchase transactions, see 2.2 Purchase.

| Sample Purchase with AVS information |
|---|
| <pre> AvsInfo avsCheck = new AvsInfo(); avsCheck.SetAvsStreetNumber("212"); avsCheck.SetAvsStreetName("Payton Street"); avsCheck.SetAvsZipCode("M1M1M1"); avsCheck.SetAvsEmail("test@host.com"); avsCheck.SetAvsHostname("hostname"); avsCheck.SetAvsBrowser("Mozilla"); avsCheck.SetAvsShiptoCountry("CAN"); avsCheck.SetAvsShipMethod("G"); avsCheck.SetAvsMerchProdSku("123456"); avsCheck.SetAvsCustIp("192.168.0.1"); avsCheck.SetAvsCustPhone("5556667777"); Purchase purchase = new Purchase(); purchase.SetAvsInfo(avsCheck); </pre> |

9.2 Card Validation Digits (CVD)

- 9.2.1 About Card Validation Digits (CVD)
- 9.2.3 CVD Info Object
- 9.2.4 CVD Result Codes
- 9.2.5 Sample Purchase with CVD Info Object

9.2.1 About Card Validation Digits (CVD)

The Card Validation Digits (CVD) value is an additional number printed on credit cards that is used as an additional check when verifying cardholder credentials during a transaction.

The response that is received from CVD verification is intended to provide added security and fraud prevention, but the response itself does not affect the completion of a transaction. Upon receiving a response, the choice whether to proceed with a transaction is left entirely to the merchant. The responses is **not** a strict guideline of which transaction will approve or decline.

The following transactions support CVD:

- Purchase (Basic, Vault and Mag Swipe)
- Pre-Authorization (Basic and Vault)
- Re-Authorization

Things to Consider:

- CVD is only supported by Visa, MasterCard, American Express, Discover, JCB and UnionPay.
- For UnionPay cards, the CVD response will not be returned; the issuer will approve or decline based on the CVD result.
- When testing CVD, you must **only** use the Visa test card numbers 4242424242424242 or 4005554444444403, and the amounts described in the Simulator eFraud Response Codes document available at the Moneris developer portal (<https://developer.moneris.com>).
- Test store_id "store5" is set up to support CVD testing.

9.2.2 Transactions Where CVD Is Required

The Card Validation Digits (CVD) object is required in transaction requests in the following scenarios:

- Initial transactions when storing cardholder credentials in Credential on File scenarios; subsequent follow-on transactions do not use CVD
- Any Purchase, Pre-Authorization or Card Verification where you are not storing cardholder credentials

9.2.3 CVD Info Object

NOTE: The CVD value must only be passed to the Moneris Gateway. Under **no** circumstances may it be stored for subsequent uses or displayed as part of the receipt information.

CvdInfo object definition

```
CvdInfo cvdCheck = new CvdInfo();
```

Transaction object set method

```
transaction.setCvdInfo(cvdCheck);
```

Table 1 CVD Info Object – Required Fields

| Variable and Field Name | Type and Limits | Set Method | Description |
|-------------------------|--------------------------------------|---|--|
| CVD indicator | <i>String</i> 1-character numeric | <code>cvdCheck.SetCvdIndicator("1");</code> | Indicates presence of CVD Possible values: 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 value | <i>String</i> 4-character numeric | <code>cvdCheck.SetCvdValue("099");</code> | CVD value located on credit card <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>NOTE: The CVD value must only be passed to the Moneris Gateway. Under no circumstances may it be stored for subsequent uses or displayed as part of</p> </div> |

| Variable and Field Name | Type and Limits | Set Method | Description |
|-------------------------|-----------------|------------|--------------------------|
| | | | the receipt information. |

9.2.4 CVD Result Codes

| 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 |
| Y | Match for Amex/JCB only |
| D | Invalid security code for Amex or JCB only |
| Other | Invalid response code |

9.2.5 Sample Purchase with CVD Info Object

This is a sample of Java code illustrating how CVD is implemented with a Purchase transaction. Purchase object information that is not relevant to CVD has been removed.

| Sample Purchase with CVD Information |
|--|
| <pre> CvdInfo cvdCheck = new CvdInfo(); cvdCheck.setCvdIndicator("1"); cvdCheck.setCvdValue("099"); Purchase purchase = new Purchase(); purchase.setCvdInfo(cvdCheck); </pre> |

9.3 Transaction Risk Management Tool

- 9.3.1 About the Transaction Risk Management Tool
- 9.3.2 Introduction to Queries
- 9.3.3 Session Query
- 9.3.4 Attribute Query
- 9.3.6 Inserting the Profiling Tags Into Your Website
- 9.3.6 Inserting the Profiling Tags Into Your Website

The Transaction Risk Management Tool (TRMT) is available to **Canadian integrations** only.

9.3.1 About the Transaction Risk Management Tool

The Transaction Risk Management Tool provides additional information to assist in identifying fraudulent transactions. To maximize the benefits from the Transaction Risk Management Tool, it is highly recommended that you:

- Carefully consider the business logic and processes that you need to implement surrounding the handling of response information the Transaction Risk Management Tool provides.
- Implement the other fraud tools available through Moneris Gateway (such as AVS, CVD, Verified by Visa, MasterCard SecureCode and American Express SafeKey).

9.3.2 Introduction to Queries

There are two types of transactions associated with the Transaction Risk Management Tool (TRMT):

- Session Query (page 300)
- Attribute Query (page 307)

The Session Query and Attribute Query are used at the time of the transaction to obtain the risk assessment.

Moneris recommends that you use the Session Query as much as possible for obtaining your risk assessment because it uses the device fingerprint as well as other transaction information when providing the risk scores.

To use the Session Query, you must implement two components:

- Tags on your website to collect the device fingerprinting information
- Session Query transaction.

If you are not able to collect the necessary information for the Session Query (such as the device fingerprint), then use the Attribute Query.

9.3.3 Session Query

Once a device profiling session has been initiated upon a client device, the Session Query API is used at the time of the transaction or even to obtain a device identifier or 'fingerprint', attribute list and risk assessment for the client device.

Session Query transaction object definition

```
SessionQuery sq = new SessionQuery();
```

HttpPostRequest object for Session Query transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(sq);
```

Session Query transaction values

Table 86: Session Query transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------------|---|---|----------------------------------|
| | Description | | |
| Session ID | String | 9-character decimal Permitted characters: [a-z], [A-Z], 0-9, _ - | sq.SetSessionId(session_id); |
| | Web server session identifier generated when device profiling was initiated. | | |
| Service type | String | 9-character decimal | sq.SetServiceType(service_type); |
| | Which output fields are returned. session -- returns IP and device related attributes. | | |
| Event type | String | payment | sq.SetEventType(service_type); |
| | Defines the type of transaction or event for reporting purposes. payment - Purchasing of goods/services. | | |
| Credit card number (PAN) | String | 20-character numeric No spaces or dashes | sq.SetPan(pan); |
| | Most credit card numbers today are 16 digits, but some 13-digit numbers are still accepted by some issuers. This field has been intentionally expanded to 20 digits in consideration for future expansion and potential support of private label card ranges. | | |

Table 86: Session Query transaction object mandatory values (continued)

| Value | Type | Limits | Set method |
|-----------------------------------|---|---------------------------|--|
| | Description | | |
| Account address street 1 | String | 32-character alphanumeric | <code>sq.SetAccountAddressStreet1 ("3300 Bloor St W");</code> |
| | First portion of the street address component of the billing address. | | |
| Account Address street 2 | String | 32-character alphanumeric | <code>sq.SetAccountAddressStreet2 ("4th Flr West Tower");</code> |
| | Second portion of the street address component of the billing address. | | |
| Account address city | String | 50-character alphanumeric | <code>sq.SetAccountAddressCity ("Toronto");</code> |
| | The city component of the billing address. | | |
| Account address state/- province | String | 64-character alphanumeric | <code>sq.SetAccountAddressState ("Ontario");</code> |
| | The state/province component of the billing address. | | |
| Account address country | String | 2-character alphanumeric | <code>sq.SetAccountAddressCountry ("CA");</code> |
| | ISO2 country code of the billing addresses. | | |
| Account address ZIP/- postal code | String | 8-character alphanumeric | <code>sq.SetAccountAddressZip ("M8X2X2");</code> |
| | ZIP/postal code of the billing address. | | |
| Shipping address street 1 | String | 32-character alphanumeric | <code>sq.SetAccountAddressStreet1 ("3300 Bloor St W");</code> |
| | First portion of the street address component of the shipping address. | | |
| Shipping address street 2 | String | 32-character alphanumeric | <code>sq.SetAccountAddressStreet2 ("4th Flr West Tower");</code> |
| | Second portion of the street address component of the shipping address. | | |
| Shipping address city | String | 50-character alphanumeric | <code>sq.SetAccountAddressCity ("Toronto");</code> |
| | City component of the shipping address. | | |
| Shipping address state/- province | String | 64-character alphanumeric | <code>sq.SetAccountAddressState ("Ontario");</code> |
| | The state/province component of the shipping address. | | |

Table 86: Session Query transaction object mandatory values (continued)

| Value | Type | Limits | Set method |
|--------------------------|--|---|---|
| | Description | | |
| Shipping address country | String | 2-character alphanumeric | <code>sq.SetAccountAddressCountry("CA");</code> |
| | ISO2 country code of the account address country. | | |
| Shipping address ZIP | String | 8-character alphanumeric | <code>sq.SetAccountAddressZip("M8X2X2");</code> |
| | The ZIP/postal code component of the shipping address. | | |
| Local attribute 1-5 | String | 255-character alphanumeric | <code>sq.SetLocalAttrib1("a");</code> |
| | These five attributes can be used to pass custom attribute data. These are used if you wish to correlate some data with the returned device information. | | |
| Transaction amount | String | 255-character alphanumeric Must contain 2 decimal places | <code>sq.SetTransactionAmount("1.00");</code> |
| | The numeric currency amount. | | |
| Transaction currency | String | 10-character numeric | <code>sq.SetTransactionCurrency("840");</code> |
| | The currency type that the transaction was denominated in. If TransactionAmount is passed, the TransactionCurrency is required. Values to be used are: <ul style="list-style-type: none"> • CAD – 124 • USD – 840 | | |

Table 87: Session Query transaction object optional values

| Value | Type | Limits | Set method |
|---------------|---|----------------------------|--|
| | Description | | |
| Account login | String | 255-character alphanumeric | <code>sq.SetAccountLogin("13195417-8CA0-46cd-960D-14C158E4DBB2");</code> |
| | The Account Login name. | | |
| Password hash | String | 40-character alphanumeric | <code>sq.SetPasswordHash("489c830f10f7c601d30599a0deaf66e64d2aa50a");</code> |
| | The input must be a SHA-2 hash of the password in hexadecimal format. Used to check if it is on a watch list. | | |

Table 87: Session Query transaction object optional values (continued)

| Value | Type | Limits | Set method |
|-------------------------|--|----------------------------|--|
| | Description | | |
| Account number | String | 255-character alphanumeric | <code>sq.SetAccountNumber("3E17A905-AC8A-4c8d-A417-3DADA2A55220");</code> |
| | The account number for the account. | | |
| Account name | String | 255-character alphanumeric | <code>sq.SetAccountName("4590FCC0-DF4A-44d9-A57B-AF9DE98B84DD");</code> |
| | Account name (or concatenation of first and last name of account holder). | | |
| Account email | String | 100-character alphanumeric | <code>sq.SetAccountEmail("3CAE72EF-6B69-4a25-93FE-2674735E78E8@test.threatmetrix.com");</code> |
| | The email address entered into the form for this contact. Used to check if this is a high risk account email id. | | |
| Account telephone | String | 32-character alphanumeric | |
| | Contact telephone number including country and city codes. All whitespace is removed. Must be in format: 0..9,<space>,(,),[,] braces must be matched. | | |
| Address street 1 | String | 32-character alphanumeric | |
| | The first portion of the street address component of the account address. | | |
| Address street 2 | String | 32-character alphanumeric | |
| | The second portion of the street address component of the account address. | | |
| Address city | String | 50-character alphanumeric | |
| | The city component of the account address. | | |
| Address state/-province | String | 64-character alphanumeric | |
| | The state/province component of the account address | | |
| Address country | String | 2-character alphanumeric | |
| | The 2 character ISO2 country code of the account address country | | |

Table 87: Session Query transaction object optional values (continued)

| Value | Type | Limits | Set method |
|-----------------------------|--|----------------------------|------------|
| | Description | | |
| Address ZIP | String | 8-character alphanumeric | |
| | The ZIP/postal code of the account address. | | |
| Ship Address Street 1 | String | 32-character alphanumeric | |
| | The first portion of the street address component of the shipping address | | |
| Ship Address Street 2 | String | 32-character alphanumeric | |
| | The second portion of the street address component of the shipping address | | |
| Ship Address City | String | 50-character alphanumeric | |
| | The city component of the shipping address | | |
| Ship Address State/Province | String | 64-character alphanumeric | |
| | The state/province component of the shipping address | | |
| Ship Address Country | String | 2-character alphanumeric | |
| | The 2 character ISO2 country code of the shipping address country | | |
| Ship Address ZIP | String | 8-character alphanumeric | |
| | The ZIP/postal code of the shipping address | | |
| CC Number Hash | String | 255-character alphanumeric | |
| | This is a SHA-2 hash (in hexadecimal format) of the credit card number. | | |
| Custom Attribute 1-8 | String | 255-character alphanumeric | |
| | These 8 attributes can be used to pass custom attribute data which can be used within the rules. | | |

Sample Session Query - CA

```
namespace Moneris
{
    using System;
    using System.Collections;
    public class TestCanadaRiskCheckSession
    {
        public static void Main(string[] args)
        {
            string store_id = "moneris";
            string api_token = "hurgle";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string session_id = "abcl23";
            string service_type = "session";
            //string event_type = "LOGIN";
            string processing_country_code = "CA";
            bool status_check = false;
            SessionQuery sq = new SessionQuery();
            sq.SetOrderId(order_id);
            sq.SetSessionId(session_id);
            sq.SetServiceType(service_type);
            sq.SetEventType(service_type);
            //sq.SetPolicy("");
            //sq.SetDeviceId("4EC40DE5-0770-4fa0-BE53-981C067C598D");
            sq.SetAccountLogin("13195417-8CA0-46cd-960D-14C158E4DBB2");
            sq.SetPasswordHash("489c830f10f7c601d30599a0deaf66e64d2aa50a");
            sq.SetAccountNumber("3E17A905-AC8A-4c8d-A417-3DADA2A55220");
            sq.SetAccountName("4590FCC0-DF4A-44d9-A57B-AF9DE98B84DD");
            sq.SetAccountEmail("3CAE72EF-6B69-4a25-93FE-2674735E78E8@test.threatmetrix.com");
            //sq.SetAccountTelephone("5556667777");
            sq.SetPan("4242424242424242");
            //sq.SetAccountAddressStreet1("3300 Bloor St W");
            //sq.SetAccountAddressStreet2("4th Flr West Tower");
            //sq.SetAccountAddressCity("Toronto");
            //sq.SetAccountAddressState("Ontario");
            //sq.SetAccountAddressCountry("CA");
            //sq.SetAccountAddressZip("M8X2X2");
            //sq.SetShippingAddressStreet1("3300 Bloor St W");
            //sq.SetShippingAddressStreet2("4th Flr West Tower");
            //sq.SetShippingAddressCity("Toronto");
            //sq.SetShippingAddressState("Ontario");
            //sq.SetShippingAddressCountry("CA");
            //sq.SetShippingAddressZip("M8X2X2");
            //sq.SetLocalAttrib1("a");
            //sq.SetLocalAttrib2("b");
            //sq.SetLocalAttrib3("c");
            //sq.SetLocalAttrib4("d");
            //sq.SetLocalAttrib5("e");
            //sq.SetTransactionAmount("1.00");
            //sq.SetTransactionCurrency("840");
            //set SessionAccountInfo
            sq.SetTransactionCurrency("CAN");
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(sq);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
        }
    }
}
```

Sample Session Query - CA

```

try
{
    Hashtable results = new Hashtable();
    string[] rules;
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    // results = receipt.GetResult();
    //Iterate through the response
    // IDictionaryEnumerator r = results.GetEnumerator();
    // while (r.MoveNext())
    // {
    // Console.WriteLine(r.Key.ToString() + " = " + r.Value.ToString());
    // }
    //Iterate through the rules that were fired
    rules = receipt.GetRules();
    for (int i = 0; i < rules.Length; i++)
    {
        Console.WriteLine("RuleName = " + rules[i]);
        Console.WriteLine("RuleCode = " + receipt.GetRuleCode(rules[i]));
        Console.WriteLine("RuleMessageEn = " + receipt.GetRuleMessageEn(rules[i]));
        Console.WriteLine("RuleMessageFr = " + receipt.GetRuleMessageFr(rules[i]));
    }
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
} // end TestRiskCheckSession
}
    
```

9.3.3.1 Session Query Transaction Flow

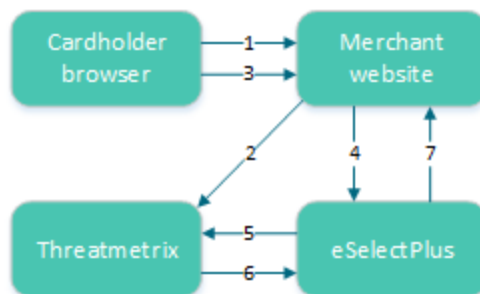


Figure 4: Session Query transaction flow

1. Cardholder logs onto the merchant website.
2. When the page has loaded in the cardholder's browser, special tags within the site allow information from the device to be gathered and sent to ThreatMetrix as the device fingerprint.
The HTML tags should be placed where the cardholder is resident on the page for a couple of seconds to get the broadest data possible.
3. Customer submits a transaction.

4. Merchant's web application makes a Session Query transaction to the Moneris Gateway using the same session id that was included in the device fingerprint. This call must be made within 30 minutes of profiling (2).
5. Moneris Gateway submits the Session Query data to ThreatMetrix.
6. ThreatMetrix uses the Session Query data and the device fingerprint information to assess the transaction against the rules. A score is generated based on the rules.
7. The merchant uses the returned device information in its risk analysis to make a business decision. The merchant may wish to continue or cancel with the cardholder's payment transaction.

9.3.4 Attribute Query

The Attribute Query is used to obtain a risk assessment of transaction-related identifiers such as the email address and the card number. Unlike the Session Query, the Attribute Query does not require the device fingerprinting information to be provided.

AttributeQuery transaction object definition

```
AttributeQuery aq = new AttributeQuery();
```

HttpPostRequest object for AttributeQuery transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

Attribute Query transaction values

Table 88: Attribute Query transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------|---|---|---|
| | Description | | |
| Service type | String | N/A | <code>aq.SetServiceType(service_type);</code> |
| | Which output fields are returned. session -- returns IP and device related attributes. | | |
| Device ID | String | 36-character alphanumeric | <code>aq.SetDeviceId("");</code> |
| | Unique device identifier generated by a previous call to the ThreatMetrix session-query API. | | |
| Credit card number | String | 20-character numeric No spaces or dashes | <code>aq.SetPan(pan);</code> |
| | Most credit card numbers today are 16 digits, but some 13-digit numbers are still accepted by some issuers. This field has been intentionally expanded to 20 digits in consideration for future expansion and potential support of private label card ranges. | | |

Table 88: Attribute Query transaction object mandatory values (continued)

| Value | Type | Limits | Set method |
|-----------------------------------|---|---------------------------|--|
| | Description | | |
| IP address | String | 64-character alphanumeric | <code>aq.SetIPAddress("192.168.0.1");</code> |
| | True IP address. Results will be returned as <code>true_ip_geo</code> , <code>true_ip_score</code> and so on. | | |
| IP forwarded | String | 64-character alphanumeric | <code>aq.SetIPForwarded("192.168.1.0");</code> |
| | <p>The IP address of the proxy. If the <code>IPAddress</code> is supplied, results will be returned as <code>proxy_ip_geo</code> and <code>proxy_ip_score</code>.</p> <p>If the IP Address is not supplied, this IP address will be treated as the true IP address and results will be returned as <code>true_ip_geo</code>, <code>true_ip_score</code> and so on</p> | | |
| Account address street 1 | String | 32-character alphanumeric | <code>aq.SetAccountAddressStreet1("3300 Bloor St W");</code> |
| | First portion of the street address component of the billing address. | | |
| Account Address Street 2 | String | 32-character alphanumeric | <code>aq.SetAccountAddressStreet2("4th Flr West Tower");</code> |
| | Second portion of the street address component of the billing address. | | |
| Account address city | String | 50-character alphanumeric | <code>aq.SetAccountAddressCity("Toronto");</code> |
| | The city component of the billing address. | | |
| Account address state/- province | String | 64-character alphanumeric | <code>aq.SetAccountAddressState("Ontario");</code> |
| | The state component of the billing address. | | |
| Account address country | String | 2-character alphanumeric | <code>aq.SetAccountAddressCountry("CA");</code> |
| | ISO2 country code of the billing addresses. | | |
| Account address zip/- postal code | String | 8-character alphanumeric | <code>aq.SetAccountAddressZip("M8X2X2");</code> |
| | Zip/postal code of the billing address. | | |
| Shipping address street 1 | String | 32-character alphanumeric | <code>aq.SetShippingAddressStreet1("3300 Bloor St W");</code> |
| | Account address country | | |
| Shipping Address Street 2 | String | 32-character alphanumeric | <code>aq.SetShippingAddressStreet2("4th Flr West Tower");</code> |
| | Second portion of the street address component of the shipping address. | | |

Table 88: Attribute Query transaction object mandatory values (continued)

| Value | Type | Limits | Set method |
|-----------------------------------|--|---------------------------|--|
| | Description | | |
| Shipping Address City | String | 50-character alphanumeric | aq.setShippingAddressCity("Toronto"); |
| | City component of the shipping address. | | |
| Shipping Address State/Province | String | 64-character alphanumeric | aq.setShippingAddressState("Ontario"); |
| | State/Province component of the shipping address. | | |
| Shipping Address Country | String | 2-character alphanumeric | aq.setShippingAddressCountry("CA"); |
| | ISO2 country code of the account address country. | | |
| Shipping Address zip/-postal code | String | 8-character alphanumeric | |
| | The zip/postal code component of the shipping address. | | |

Sample Attribute Query

```

namespace Moneris
{
    using System;
    using System.Collections;
    public class TestRiskCheckAttribute
    {
        public static void Main(string[] args)
        {
            string store_id = "moneris";
            string api_token = "hurgle";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string service_type = "session";
            string processing_country_code = "CA";
            bool status_check = false;
            AttributeQuery aq = new AttributeQuery();
            aq.SetOrderId(order_id);
            aq.SetServiceType(service_type);
            aq.setDeviceId("");
            aq.setAccountLogin("13195417-8CA0-46cd-960D-14C158E4DBB2");
            aq.setPasswordHash("489c830f10f7c601d30599a0deaf66e64d2aa50a");
            aq.setAccountNumber("3E17A905-AC8A-4c8d-A417-3DADA2A55220");
            aq.setAccountName("4590FCC0-DF4A-44d9-A57B-AF9DE98B84DD");
            aq.setAccountEmail("3CAE72EF-6B69-4a25-93FE-2674735E78E8@test.threatmetrix.com");
            //aq.setCCNumberHash("4242424242424242");
            //aq.setIPAddress("192.168.0.1");
            //aq.setIPForwarded("192.168.1.0");
            aq.setAccountAddressStreet1("3300 Bloor St W");
            aq.setAccountAddressStreet2("4th Flr West Tower");
            aq.setAccountAddressCity("Toronto");
            aq.setAccountAddressState("Ontario");
            aq.setAccountAddressCountry("CA");
            aq.setAccountAddressZip("M8X2X2");
        }
    }
}

```

Sample Attribute Query

```
aq.setShippingAddressStreet1("3300 Bloor St W");
aq.setShippingAddressStreet2("4th Flr West Tower");
aq.setShippingAddressCity("Toronto");
aq.setShippingAddressState("Ontario");
aq.setShippingAddressCountry("CA");
aq.setShippingAddressZip("M8X2X2");
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(aq);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Hashtable results = new Hashtable();
    string[] rules;
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    results = receipt.GetResult();
    //Iterate through the response
    IDictionaryEnumerator response = results.GetEnumerator();
    while (response.MoveNext())
    {
        Console.WriteLine(response.Key.ToString() + " = " + response.Value.ToString());
    }
    //Iterate through the rules that were fired
    rules = receipt.GetRules();
    for (int i = 0; i < rules.Length; i++)
    {
        Console.WriteLine("RuleName = " + rules[i]);
        Console.WriteLine("RuleCode = " + receipt.GetRuleCode(rules[i]));
        Console.WriteLine("RuleMessageEn = " + receipt.GetRuleMessageEn(rules[i]));
        Console.WriteLine("RuleMessageFr = " + receipt.GetRuleMessageFr(rules[i]));
    }
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
} // end TestRiskCheckAttribute
}
```

9.3.4.1 Attribute Query Transaction Flow

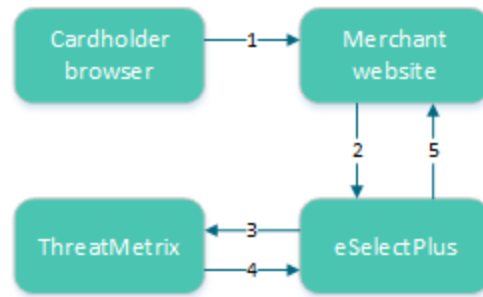


Figure 5: Attribute query transaction flow

1. Cardholder logs onto merchant website and submits a transaction.
2. The merchant's web application makes an Attribute Query transaction that includes the session ID to the Moneris Gateway.
3. Moneris Gateway submits Attribute Query data to ThreatMetrix.
4. ThreatMetrix uses the Attribute Query data to assess the transaction against the rules. A score is generated based on the rules.
5. The merchant uses the returned device information in its risk analysis to make a business decision. The merchant may wish to continue or cancel with the cardholder's payment transaction.

9.3.5 Handling Response Information

When reviewing the response information and determining how to handle the transaction, it is recommended that you (either manually or through automated logic on your site) use the following pieces of information:

- Risk score
- Rules triggered (such as Rule Codes, Rule Names, Rule Messages)
- Results obtained from Verified by Visa, MasterCard Secure Code, AVS, CVD and the financial transaction authorization
- Response codes for the Transaction Risk Management Transaction that are included by automated processes.

9.3.5.1 TRMT Response Fields

Table 89: Receipt object response values for TRMT

| Value | Type | Limits | Get method |
|------------------|--|---------------------------|---|
| | Definition | | |
| Response Code | String | 3-character alpha-numeric | <code>receipt.GetResponseCode();</code> |
| | 001 – Success 981 – Data error 982 – Duplicate Order ID 983 – Invalid Transaction 984 – Previously asserted 985 – Invalid activity description 986- Invalid impact description 987 – Invalid Confidence description 988 - Cannot find Previous | | |
| Message | String | N/A | <code>receipt.GetMessage();</code> |
| | Response message | | |
| Event type | String | N/A | |
| | Type of transaction or event returned in the response. | | |
| Org ID | String | N/A | |
| | ThreatMetrix-defined unique transaction identifier | | |
| Policy | String | N/A | |
| | Policy used for the Session Query will be returned with the return request. If the Policy was not included, then the Policy name default is returned. | | |
| Policy score | String | N/A | |
| | The sum of all the risks weights from triggered rules within the selected policy in the range [-100...100] | | |
| Request duration | String | N/A | |
| | Length of time it takes for the transaction to be processed. | | |

Table 89: Receipt object response values for TRMT (continued)

| Value | Type | Limits | Get method |
|--------------------|--|--------|------------|
| | Definition | | |
| Request ID | String | N/A | |
| | Unique number and will always be returned with the return request. | | |
| Request result | String | N/A | |
| | See 9.3.5.1 (page 312). | | |
| Review status | String | N/A | |
| | The transaction status based on the assessments and risk scores. | | |
| Risk rating | String | N/A | |
| | The rating based on the assessments and risk scores. | | |
| Service type | String | N/A | |
| | The service type will be returned in the attribute query response. | | |
| Session ID | String | N/A | |
| | Temporary identifier unique to the visitor will be returned in the return request. | | |
| Summary risk score | String | N/A | |
| | Based on all of the returned values in the range [-100 ... 100] | | |
| Transaction ID | String | N/A | |
| | This is the transaction identifier and will always be returned in the response when supplied as input. | | |
| Unknown session | String | N/A | |
| | If present, the value is "yes". It indicates the session ID that was passed was not found. | | |

Table 90: Response code descriptions

| Value | Definition |
|-------|------------------------------|
| 001 | Success |
| 981 | Data error |
| 982 | Duplicate order ID |
| 983 | Invalid transaction |
| 984 | Previously asserted |
| 985 | Invalid activity description |

| Value | Definition |
|-------|--------------------------------|
| 986 | Invalid impact description |
| 987 | Invalid confidence description |
| 988 | Cannot find previous |

Table 91: Request result values and descriptions

| Value | Definition |
|--------------------------------------|--|
| fail_duplicate_entities_of_same_type | More than one entity of the same was specified, e.g. password_hash was specified twice. |
| fail_incomplete | ThreatMetrix was unable to process the request due to incomplete or incorrect input data |
| fail_invalid_account_number | The format of the supplied account number was invalid |
| fail_invalid_characters | Invalid characters submitted |
| fail_invalid_charset | The value of character set was invalid |
| fail_invalid_currency_code | The format of the currency_code was invalid |
| fail_invalid_currency_format | The format of the currency_format was invalid |
| fail_invalid_telephone_number | Format of the supplied telephone number was invalid |
| fail_access | ThreatMetrix was unable to process the request because of API verification failing |
| fail_internal_error | ThreatMetrix encountered an error while processing the request |
| fail_invalid_device_id | Format of the supplied device_id was invalid |
| fail_invalid_email_address | Format of the supplied email address was invalid |
| fail_invalid_fuzzy_device_id | The format of fuzzy_device_id was invalid |
| fail_invalid_ip_address_parameter | Format of a supplied ip_address parameter was invalid |
| fail_invalid_parameter | The format of the parameter was invalid, or the |

| Value | Definition |
|---|--|
| | value is out of boundary |
| fail_invalid_sha_hash | The format of a parameter specified as a sha hash was invalid, sha hash included sha1/2/3 hash |
| fail_invalid_submitter_id | The format of the submitter id was invalid or the value is out of boundary |
| fail_no_policy_configured | No policy was configured against the org_id |
| fail_not_enough_params | Not enough device attributes were collected during profiling to perform a fingerprint match |
| fail_parameter_overlength | The value of the parameter was overlength |
| fail_temporarily_unavailable | Request failed because the service is temporarily unavailable |
| fail_too_many_instances_of_same_parameter | Multiple values for some parameters which only allow one instance |
| fail_verification | API query limit reached |
| success | ThreatMetrix was able to process the request successfully |

9.3.5.2 Understanding the Risk Score

For each Session Query or Attribute Query, a score with a value between -100 and +100 is returned based on the rules that were triggered for the transaction.

Table 92 defines the risk scores ranges.

Table 92: Session Query and Attribute Query risk score definitions

| Risk score | Visa definition |
|------------|---|
| -100 to -1 | A lower score indicates a higher probability that the transaction is fraudulent. |
| 0 | Neutral transaction |
| 1 to 100 | A higher score indicates a lower probability that the transaction is fraudulent. Note: All e-commerce transactions have some level of risk associated with them. Therefore, it is rare to see risk score in the high positive values. |

When evaluating the risk of a transaction, the risk score gives an initial indicator of the potential risk that the transaction is fraudulent. Because some of the rules that are evaluated on each transaction may not be relevant to your business scenario, review the rules that were triggered for the transaction before determining how to handle the transaction.

9.3.5.3 Understanding the Rule Codes, Rule Names and Rule Messages

The rule codes, rule names and rule messages provide details about what rules were triggered during the assessment of the information provided in the Session or Attribute Query. Each rule code has a rule name and rule message. The rule name and rule message are typically similar. Table 93 provides additional information on each rule.

When evaluating the risk of a transaction, it is recommended that you review the rules that were triggered for the transaction and assess the relevance to your business. (That is, how does it relate to the typical buying habits of your customer base?)

If you are automating some or all of the decision-making processes related to handling the responses, you may want to use the rule codes. If you are documenting manual processes, you may want to refer to the more user-friendly rule name or rule message.

Table 93: Rule names, numbers and messages

| Rule name | Rule number | Rule message |
|-------------------|--|---------------------------|
| | Rule explanation | |
| White lists | | |
| DeviceWhitelisted | WL001 | Device White Listed |
| | Device is on the white list. This indicates that the device has been flagged as always "ok". Note: This rule is currently not in use. | |
| IPWhitelisted | WL002 | IP White Listed |
| | IP address is on the white list. This indicates the device has been flagged as always "ok". Note: This rule is currently not in use. | |
| EmailWhitelisted | WL003 | Email White Listed |
| | Email address is on the white list. This indicates that the device has been flagged as always "ok". Note: This rule is currently not in use. | |
| Event velocity | | |
| 2DevicePayment | EV003 | 2 Device Payment Velocity |
| | Multiple payments were detected from this device in the past 24 hours. | |

Table 93: Rule names, numbers and messages (continued)

| Rule name | Rule number Rule message | |
|-------------------------------|--|--|
| | Rule explanation | |
| 2IPPaymentVelocity | EV006 | 2 IP Payment Velocity |
| | Multiple payments were detected from this IP within the past 24 hours. | |
| 2ProxyPaymentVelocity | EV008 | 2 Proxy Payment Velocity |
| | The device has used 3 or more different proxies during a 24 hour period. This could be a risk or it could be someone using a legitimate corporate proxy. | |
| Email | | |
| 3EmailPerDeviceDay | EM001 | 3 Emails for the Device ID in 1 Day |
| | This device has presented 3 different email IDs within the past 24 hours. | |
| 3EmailPerDeviceWeek | EM002 | 3 emails for the Device ID in 1 week |
| | This device has presented 3 different email IDs within the past week. | |
| 3DevciePerEmailDay | EM003 | 3 Device Ids for email address in 1 day |
| | This email has been presented from three different devices in the past 24 hours. | |
| 3DevciePerEmailWeek | EM004 | 3 Device Ids for email address in 1 week |
| | This email has been presented from three different devices in the past week. | |
| EmailDistanceTravelled | EM005 | Email Distance Travelled |
| | This email address has been associated with different physical locations in a short period of time. | |
| 3EmailPerSmartIDHour | EM006 | 3 Emails for SmartID in 1 Hour |
| | The SmartID for this device has been associated with 3 different email addresses in 1 hour. | |
| GlobalEMailOverOneMonth | EM007 | Global Email over 1 month |
| | The e-mail address involved in the transaction over 30 days ago. This generally indicates that the transaction is less risky. Note: This rule is set so that it does not impact the policy score or risk rating. | |
| ComputerGeneratedEmailAddress | EM008 | Computer Generated Email Address |

Table 93: Rule names, numbers and messages (continued)

| Rule name | Rule number | Rule message |
|--------------------------------|------------------|---|
| | Rule explanation | |
| | | This transaction used a computer-generated email address. |
| Account Number | | |
| 3AccountNumberPerDeviceDay | AN001 | 3 Account Numbers for device in 1 day |
| | | This device has presented 3 different user accounts within the past 24 hours. |
| 3AccountNumberPerDeviceWeek | AN002 | 3 Account Numbers for device in 1 week |
| | | This device has presented 3 different user accounts within the past week. |
| 3DeviciePerAccountNumberDay | AN003 | 3 Device IDs for account number in 1 day |
| | | This user account been used from three different devices in the past 24 hours. |
| 3DeviciePerAccountNumberWeek | AN004 | 3 Device IDs for account number in 1 week |
| | | This card number has been used from three different devices in the past week. |
| AccountNumberDistanceTravelled | AN005 | Account Number distance travelled |
| | | This card number has been used from a number of physically different locations in a short period of time. |
| Credit card/payments | | |
| 3CreditCardPerDeviceDay | CP001 | 3 credit cards for device in 1 day |
| | | This device has used three credit cards within 24 hours. |
| 3CreditCardPerDeviceWeek | CP002 | 3 credit cards for device in 1 week |
| | | This device has used three credit cards within 1 week. |
| 3DevicePerCreditCardDay | CP003 | 3 device ids for credit card in 1 day |
| | | This credit card has been used on three different devices in 24 hours. |
| 3DeviciePerCreditCardWeek | CP004 | 3 device ids for credit card in 1 week |
| | | This credit card has been used on three different devices in 1 week. |

Table 93: Rule names, numbers and messages (continued)

| Rule name | Rule number | Rule message |
|-------------------------------------|--|--|
| | Rule explanation | |
| CreditCardDistanceTravelled | CP005 | Credit Card has travelled |
| | The credit card has been used at a number of physically different locations in a short period of time. | |
| CreditCardShipAddressGeoMismatch | CP006 | Credit Card and Ship Address do not match |
| | The credit card was issued in a region different from the Ship To Address information provided. | |
| CreditCardBillAddressGeoMismatch | CP007 | Credit Card and Billing Address do not match |
| | The credit card was issued in a region different from the Billing Address information provided. | |
| CreditCardDeviceGeoMismatch | CP008 | Credit Card and device location do not match |
| | The device is located in a region different from where the card was issued. | |
| CreditCardBINShipAddressGeoMismatch | CP009 | Credit Card issuing location and Shipping address do not match |
| | The credit card was issued in a region different from the Ship To Address information provided. | |
| CreditCardBINBillAddressGeoMismatch | CP010 | Credit Card issuing location and Billing address do not match |
| | The credit card was issued in a region different from the Billing Address information provided. | |
| CreditCardBINDeviceGeoMismatch | CP011 | Credit Card issuing location and location of the device do not match |
| | The device is located in a region different from where the card was issued. | |
| TransactionValueDay | CP012 | Daily Transaction Value Threshold |
| | The transaction value exceeds the daily threshold. | |
| TransactionValueWeek | CP013 | Weekly Transaction Value Threshold |
| | The transaction value exceeds the weekly threshold. | |
| Proxy rules | | |
| 3ProxyPerDeviceDay | PX001 | 3 Proxy Ips in 1 day |
| | This device has used three different proxy servers in the past 24 hours. | |

Table 93: Rule names, numbers and messages (continued)

| Rule name | Rule number | Rule message |
|-------------------------------|--|--|
| | Rule explanation | |
| AnonymousProxy | PX002 | Anonymous Proxy IP |
| | This device is using an anonymous proxy | |
| UnusualProxyAttributes | PX003 | Unusual Proxy Attributes |
| | This transaction is coming from a source with unusual proxy attributes. | |
| AnonymousProxy | PX004 | Anonymous Proxy |
| | This device is connecting through an anonymous proxy connection. | |
| HiddenProxy | PX005 | Hidden Proxy |
| | This device is connecting via a hidden proxy server. | |
| OpenProxy | PX006 | Open Proxy |
| | This transaction is coming from a source that is using an open proxy. | |
| TransparentProxy | PX007 | Transparent Proxy |
| | This transaction is coming from a source that is using a transparent proxy. | |
| DeviceProxyGeoMismatch | PX008 | Proxy and True GEO Match |
| | This device is connecting through a proxy server that didn't match the devices geo-location. | |
| ProxyTrueISPMismatch | PX009 | Proxy and True ISP Match |
| | This device is connecting through a proxy server that doesn't match the true IP address of the device. | |
| ProxyTrueOrganizationMismatch | PX010 | Proxy and True Org Match |
| | The Proxy information and True ISP information for this source do not match. | |
| DeviceProxyRegionMismatch | PX011 | Proxy and True Region Match |
| | The proxy and device region location information do not match. | |
| ProxyNegativeReputation | PX012 | Proxy IP Flagged Risky in Reputation Network |
| | This device is connecting from a proxy server with a known negative reputation. | |

Table 93: Rule names, numbers and messages (continued)

| Rule name | Rule number | Rule message |
|---------------------------|--|--|
| | Rule explanation | |
| SatelliteProxyISP | PX013 | Satellite Proxy |
| | This transaction is coming from a source that is using a satellite proxy. | |
| GEO | | |
| DeviceCountriesNotAllowed | GE001 | True GEO in Countries Not Allowed blacklist |
| | This device is connecting from a high-risk geographic location. | |
| DeviceCountriesNotAllowed | GE002 | True GEO in Countries Not Allowed (negative whitelist) |
| | The device is from a region that is not on the whitelist of regions that are accepted. | |
| DeviceProxyGeoMismatch | GE003 | True GEO different from Proxy GEO |
| | The true geographical location of this device is different from the proxy geographical location. | |
| DeviceAccountGeoMismatch | GE004 | Account Address different from True GEO |
| | This device has presented an account billing address that doesn't match the devices geolocation. | |
| DeviceShipGeoMismatch | GE005 | Device and Ship Geo mismatch |
| | The location of the device and the shipping address do not match. | |
| DeviceShipGeoMismatch | GE006 | Device and Ship Geo mismatch |
| | The location of the device and the shipping address do not match. | |
| Device | | |
| SatelliteISP | DV001 | Satellite ISP |
| | This transaction is from a source that is using a satellite ISP. | |
| MidsessionChange | DV002 | Session Changed Mid-session |
| | This device changed session details and identifiers in the middle of a session. | |

Table 93: Rule names, numbers and messages (continued)

| Rule name | Rule number | Rule message |
|----------------------------|--|--|
| | Rule explanation | |
| LanguageMismatch | DV003 | Language Mismatch |
| | The language of the user does not match the primary language spoken in the location where the True IP is registered. | |
| NoDeviceID | DV004 | No Device ID |
| | No device ID was available for this transaction. | |
| Dial-upConnection | DV005 | Dial-up connection |
| | This device uses a less identifiable dial-up connection. | |
| DeviceNegativeReputation | DV006 | Device Blacklisted in Reputational Network |
| | This device has a known negative reputation as reported to the fraud network. | |
| DeviceGlobalBlacklist | DV007 | Device on the Global Black List |
| | This device has been flagged on the global blacklist of known problem devices. | |
| DeviceCompromisedDay | DV008 | Device compromised in last day |
| | This device has been reported as compromised in the last 24 hours. | |
| DeviceCompromisedHour | DV009 | Device compromised in last hour |
| | This device has been reported as compromised in the last hour. | |
| FlashImagesCookiesDisabled | DV010 | Flash Images Cookies Disabled |
| | Key browser functions/identifiers have been disabled on this device. | |
| FlashCookiesDisabled | DV011 | Flash Cookies Disabled |
| | Key browser functions/identifiers have been disabled on this device. | |
| FlashDisabled | DV012 | Flash Disabled |
| | Key browser functions/identifiers have been disabled on this device. | |
| ImagesDisabled | DV013 | Images Disabled |
| | Key browser functions/identifiers have been disabled on this device. | |

Table 93: Rule names, numbers and messages (continued)

| Rule name | Rule number | Rule message |
|-------------------------|--|---------------------------------|
| | Rule explanation | |
| CookiesDisabled | DV014 | Cookies Disabled |
| | Key browser functions/identifiers have been disabled on this device. | |
| DeviceDistanceTravelled | DV015 | Device Distance Travelled |
| | The device has been used from multiple physical locations in a short period of time. | |
| PossibleCookieWiping | DV016 | Cookie Wiping |
| | This device appears to be deleting cookies after each session. | |
| PossibleCookieCopying | DV017 | Possible Cookie Copying |
| | This device appears to be copying cookies. | |
| PossibleVPNConnection | DV018 | Possibly using a VPN Connection |
| | This device may be using a VPN connection | |

9.3.5.4 Examples of Risk Response

Session Query

| Sample Risk Response - Session Query |
|--|
| <pre> <?xml version="1.0"?> <response> <receipt> <ResponseCode>001</ResponseCode> <Message>Success</Message> <Result> <session_id>abc123</session_id> <unknown_session>yes</unknown_session> <event_type>payment</event_type> <service_type>session</service_type> <policy_score>-25</policy_score> <transaction_id>riskcheck42</transaction_id> <org_id>11kue096</org_id> <request_id>91C1879B-33D4-4D72-8FCB-B60A172B3CAC</request_id> <risk_rating>medium</risk_rating> <request_result>success</request_result> <summary_risk_score>-25</summary_risk_score> <Policy>default</policy> <review_status>review</review_status> </Result> <Rule> <RuleName>ComputerGeneratedEMail</RuleName> <RuleCode>UN001</RuleCode> </pre> |

Sample Risk Response - Session Query

```

<RuleMessageEn>Unknown Rule</RuleMessageEn>
<RuleMessageFr>Regle Inconnus</RuleMessageFr>
</Rule>
<Rule>
<RuleName>NoDeviceID</RuleName>
<RuleCode>DV004</RuleCode>
<RuleMessageEn>No Device ID</RuleMessageEn>
<RuleMessageFr>null</RuleMessageFr>
</Rule>
</receipt>
</response>

```

Attribute Query**Sample Risk Response - Attribute Query**

```

<?xml version="1.0"?>
<response>
<receipt>
<ResponseCode001</ReponseCode>
<Message = Success</Message>
<Result>
<org_id>11kue096</org_id>
<request_id>443D7FB5-CC5C-4917-A57E-27EAC824069C</request_id>
<service_type>session</service_type>
<risk_rating>medium</risk_rating>
<summary_risk_score>-25</summary_risk_score>
<request_result>success</request_result>
<policy>default</policy>
<policy_score>-25</policy_score>
<transaction_id>riskcheck19</transaction_id>
<review_status>review</review_status>
</Result>
<Rule>
<RuleName>ComputerGeneratedEMail</RuleName>
<RuleCode>UN001</RuleCode>
<RuleMessageEn>Unknown Rule</RuleMessageEn>
<RuleMessageFr>Regle Inconnus</RuleMessageFr>
</Rule>
<Rule>
<RuleName>NoDeviceID</RuleName>
<RuleCode>DV004</RuleCode>
<RuleMessageEn>No Device ID</RuleMessageEn>
<RuleMessageFr>null</RuleMessageFr>
</Rule>
</receipt>
</response>

```

9.3.6 Inserting the Profiling Tags Into Your Website

Place the profiling tags on an HTML page served by your web application such that ThreatMetrix can collect device information from the customer's web browser. The tags must be placed on a page that a visitor would display in a browser window for 3-5 seconds (such as a page that requires a user to input

data). After the device is profiled, a Session Query may be used to obtain the detail device information for risk assessment before submitting a financial payment transaction.

There are two profiling tags that require two variables. Those tags are `org_id` and `session_id`. `session_id` must match the session ID value that is to be passed in the Session Query transaction. The valid `org_id` values are:

11kue096

QA testing environment.

lbhqgx47

Production environment.

Below is an HTML sample of the profiling tags.

NOTE: Your site must replace `<my_session_id>` in the sample code with a unique alphanumeric value each time you fingerprint a new customer.

```
<p style="background:url(https://h.online-metrix.net/fp/clear.png?org_id=11kue096&session_id=<my_session_id>&m=1)">
</p>



<script src="https://h.onlinemetrix.net/fp/check.js?org_id=11kue096&session_id=<my_session_id>"
type="text/javascript">
</script>

<object type="application/x-shockwave-flash"

data="https://h.onlinemetrix.net/fp/fp.swf?org_id=11kue096&session_id=<my_session_id>"
width="1" height="1" id="obj_id">
<param name="movie"
value="https://h.onlinemetrix.net/fp/fp.swf?org_id=11kue096&session_id=<my_session_id>" />
<div></div>
</object>
```

9.4 Incorporating All Available Fraud Tools

- 9.4.1 Implementation Options for TRMT
- 9.4.2 Implementation Checklist
- 9.4.3 Making a Decision

To minimize fraudulent activity in online transactions, Moneris recommends that you implement all of the fraud tools available through the Moneris Gateway. These are explained below:

Address Verification Service (AVS)

Verifies the cardholder's billing address information.

Verified by Visa, MasterCard Secure Code and Amex SafeKey (VbV/MCSC/SafeKey)

Authenticates the cardholder at the time of an online transaction.

Card Validation Digit (CVD)

Validates that cardholder is in possession of a genuine credit card during the transaction.

Note that all responses that are returned from these verification methods are intended to provide added security and fraud prevention. The response itself does not affect the completion of a transaction. Upon receiving a response, the choice to proceed with a transaction is left entirely to the merchant.

9.4.1 Implementation Options for TRMT

Option A

Process a Transaction Risk Management Tool query and obtain the response. You can then decide whether to continue with the transaction, abort the transaction, or use additional eFraud features.

If you want to use additional eFraud features, perform one or both of the following to help make your decision about whether to continue with the transaction or abort it:

- Process a VbV/MCSC/SafeKey transaction and obtain the response. The merchant then makes the decision whether to continue with the transaction or to abort it.
- Process a financial transaction including AVS/CVD details and obtain the response. The merchant then makes a decision whether to continue with the transaction or to abort it.

Option B

1. Process a Transaction Risk Management Tool query and obtain the response.
2. Process a VbV/MCSC/SafeKey transaction and obtain the response.
3. Process a financial transaction including AVS/CVD details and obtain the response.
4. Merchant then makes a one-time decision based on the responses received from the eFraud tools.

9.4.2 Implementation Checklist

The following checklists provide high-level tasks that are required as part of your implementation of the Transaction Risk Management Tool. Because each organization has certain project requirements for implementing system and process changes, this list is only a guideline, and does not cover all aspects of your project.

Download and review all of the applicable APIs and Integration Guides

Please review the sections outlined within this document that refers to the following feature

Table 94: API documentation

| Document/API | Use the document if you are.... |
|--|--|
| Transaction Risk Management Tool Integration Guide (Section #) | Implementing or updating your integration for the Transaction Risk Management Tool |
| Moneris MPI – Verified by Visa/MasterCard SecureCode/American Express SafeKey – Java API Integration Guide | Implementing or updating Verified by Visa, MasterCard SecureCode or American Express SafeKey |
| Basic transaction with VS and CVD (Section#) | Implementing or updating transaction processing, AVS or CVD |

Design your transaction flow and business processes

When designing your transaction flow, think about which scenarios you would like to have automated, and which scenarios you would like to have handled manually by your employees.

The “Understand Transaction Risk Management Transaction Flow” and Handling Response Information (page 311) sections can help you work through the design of your transaction and process flows.

Things to consider when designing your process flows:

- Processes for notifying people within your organization when there is scheduled maintenance for Moneris Gateway.
- Handling refunds, canceled orders and so on.
- Communicating with customers when you will not be shipping the goods because of suspected fraud, back-ordered goods and so on.

Complete your development and testing

- The Moneris Gateway API - Integration Guide provides the technical details required for the development and testing. Ensure that you follow the testing instructions and data provided.

If you are an integrator

- Ensure that your solution meets the requirements for PCI-DSS/PA-DSS as applicable.
- Send an email to eproducts@moneris.com with the subject line “Certification Request”.
- Develop material to set up your customers as quickly as possible with your solution and a Moneris account. Include information such as:
 - Steps they must take to enter their store ID or API token information into your solution.

-
- Any optional services that you support via Moneris Gateway (such as TRMT, AVS, CVD, VBV/MCSC/SafeKey and so on) so that customers can request these features.

9.4.3 Making a Decision

Depending on your business policies and processes, the information obtained from the fraud tools (such as AVS, CVD, VbV/MCSC/SafeKey and TRMT) can help you make an informed decision about whether to accept a transaction or deny it because it is potentially fraudulent.

If you do not want to continue with a likely fraudulent transaction, you must inform the customer that you are not proceeding with their transaction.

If you are attempting to do further authentication by using the available fraud tools, but you have received an approval response instead, cancel the financial transaction by doing one of the following:

- If the original transaction is a Purchase, use a Purchase Correction or Refund transaction. You will need the original order ID and transaction number.
- If the original transaction is a Pre-Authorization, use a Completion transaction for \$0.00.

10 Apple Pay In-App and on the Web Integration

- 10.1 About Apple Pay In-App and on the Web Integration
- 10.2 About API Integration of Apple Pay
- 10.3 Apple Pay In-App Process Flows
- 10.4 Cavv Purchase – Apple Pay
- 10.5 Cavv Pre-Authorization – Apple Pay

10.1 About Apple Pay In-App and on the Web Integration

The Moneris Gateway enables merchants to process in-app or on the web payment methods in mobile applications and the Safari web browser on Apple devices via Apple Pay.

Moneris Solutions offers two processing and integration methods for Apple Pay. Merchants can choose to use one of two methods:

- Software Development Kit (SDK), or
- API

While both methods provide the same basic payment features, there are differences in their implementations.

This guide only deals with the API method; for detailed information about the SDK method of integration, see the Moneris Developer Portal at <https://developer.moneris.com>.

10.2 About API Integration of Apple Pay

An API integration works to provide a communication link between the merchants' server and Moneris' server. APIs are required to complete any transaction, and therefore the APIs for Apple Pay are also included within an SDK integration.

If the merchant chooses to use only an API integration, the merchant must decrypt payload information themselves before sending the decrypted information to the Moneris Gateway to be processed. Because this process is complicated, Apple recommend only businesses with expertise and a previously integrated payment processing system use APIs instead of SDKs.

10.2.1 Transaction Types That Use Apple Pay

In the Moneris Gateway API, there are two transaction types that allow you to process decrypted transaction payload information with Apple Pay:

- 10.4 Cavv Purchase – Apple Pay
- 10.5 Cavv Pre-Authorization – Apple Pay

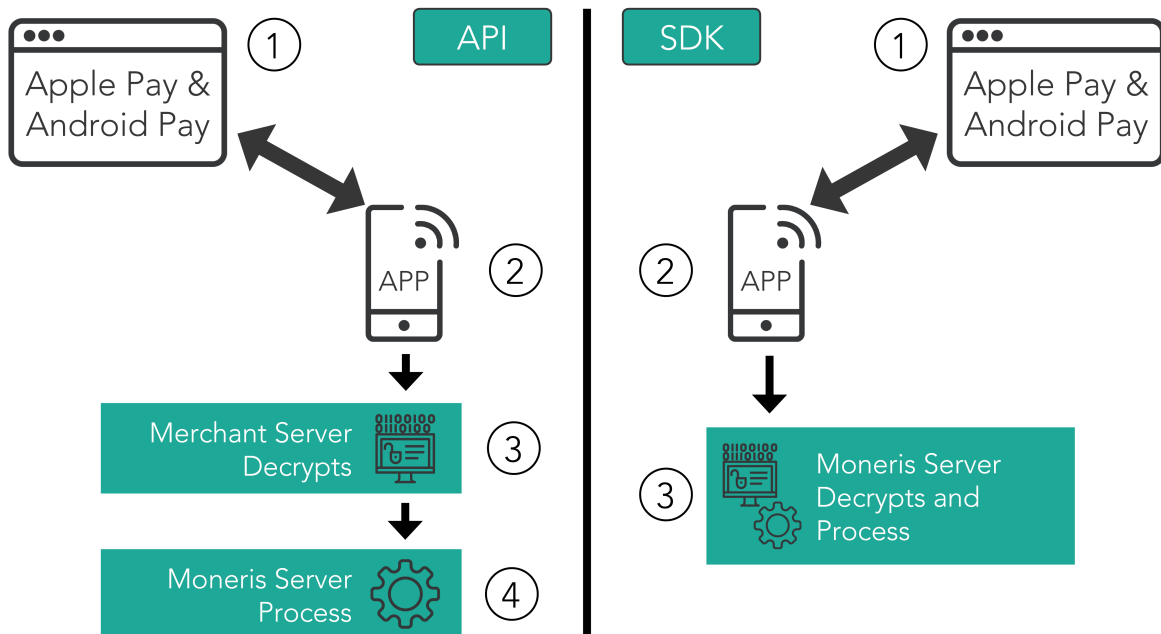
NOTE: INTERAC® e-Commerce functionality is currently available using the Cavv Purchase transaction type only.

Once you have processed the initial transaction using Cavv Purchase or Cavv Pre-Authorization, if required you can then process any of the following transactions:

- Refund (page 35)
- Pre-Authorization Completion (page 25)
- Purchase Correction (page 33)

10.3 Apple Pay In-App Process Flows

For both API and SDK methods of mobile in-app integration, the merchant’s iOS app uses Apple’s PassKit Framework to request and receive encrypted payment details from Apple. When payment details are returned in their encrypted form, they can be decrypted and processed by the Moneris Gateway in one of two ways: SDK or API.



Steps in the Apple Pay In-App and on the Web payment process

API

1. Merchant’s mobile application or web page requests and receives the encrypted payload.
2. Encrypted payload is sent to the merchant’s server, where it is decrypted.

3. Moneris Gateway receives the decrypted payload from the merchant's server, and processes the Cavv Purchase – Apple Pay (page 331) or Cavv Pre-Authorization – Apple Pay (page 336) transaction.
 - a. Please ensure the wallet indicator is properly populated with the correct value (APP for Apple Pay In-App or APW for Apple Pay on the Web).

SDK

1. Merchant's mobile application or web page requests and receives the encrypted payload.
2. Encrypted payload is sent from the merchant's server to the Moneris Gateway, and the payload is decrypted and processed.

This guide only deals with the API method; for detailed information about the SDK method of integration, see the Moneris Developer Portal at <https://developer.moneris.com>.

10.4 Cavv Purchase – Apple Pay

The Cavv Purchase for Apple Pay transaction follows a 3-D Secure model but it does not require an MPI. Once the Apple Pay payload has been decrypted, this Purchase verifies funds on the customer's card, removes the funds and prepares them for deposit into the merchant's account.

For Apple Pay processing, this transaction is only applicable if choosing to integrate directly to the Apple Wallet (if not using the Moneris Apple Pay SDK). Please refer to 10 Apple Pay In-App and on the Web Integration for more details on your integration options.

Refer to Apple's Developer Portal for details on integrating directly to Apple Wallet to retrieve the payload data.

CavvPurchase transaction object definition

```
CavvPurchase cavvPurchase = new CavvPurchase();
```

HttpRequest object for Cavv Purchase transaction

```
HttpRequest mpgReq = new HttpRequest();  
mpgReq.SetTransaction(cavvPurchase);
```

Cavv Purchase transaction values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 95: Cavv Purchase transaction object mandatory values

| Value | Type | Limits | Set method |
|--------------------|--------|--|--|
| Order ID | String | 50-character alpha-numeric | <code>cavvPurchase.SetOrderId (order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div style="border: 1px solid black; background-color: #e0ffe0; padding: 2px; display: inline-block; margin-top: 5px;"> EXAMPLE: 1234567.89 </div> | <code>cavvPurchase.SetAmount (amount);</code> |
| Credit card number | String | 20-character alpha-numeric | <code>cavvPurchase.SetPan (pan);</code> |

Table 95: Cavv Purchase transaction object mandatory values

| Value | Type | Limits | Set method |
|--|--------|--|---|
| Expiry date | String | 4-character alpha-numeric YYMM format | <code>cavvPurchase.SetExpdate (expiry_date);</code> |
| CAVV NOTE: For Apple Pay Cavv Purchase and Cavv Pre-Authorization transactions, CAVV field contains the decrypted cryptogram. For more, see Appendix A Definitions of Request Fields. | String | 100-character alpha-numeric | <code>cavvPurchase.SetCavv (cavv);</code> |
| E-commerce indicator NOTE: For Apple Pay Cavv Purchase and Cavv Pre-Authorization transactions, the E-commerce indicator is a mandatory field containing the value received from the decrypted payload or a default value of 5. If you get a 2-character value (e.g., 05 or 07) from the payload, remove the initial 0 and just send us the 2nd character. For more, see Appendix A Definitions of Request Fields. | String | 1-character alpha-numeric | <code>cavvPurchase.SetCryptType (crypt);</code> |

Table 1 CavvPurchase transaction object optional values

| Value | Type | Limits | Set Method |
|--|---------|---------------------------|---|
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |
| Customer ID | String | 50-character alphanumeric | <code>cavvPurchase.SetCustId(cust_id);</code> |
| Dynamic descriptor | String | 20-character alphanumeric | <code>cavvPurchase.SetDynamicDescriptor(dynamic_descriptor);</code> |
| Card Match ID NOTE: Applies to Off-linx™ only; must be unique value for each transaction | String | 50-character alphanumeric | <code>cavvPurchase.SetCmId(transaction_id);</code> |
| Customer information | Object | N/A | <code>cavvPurchase.SetCustInfo(customer);</code> |
| Network NOTE: This request variable is mandatory for INTERAC® e-Commerce transactions conducted via Apple Pay, and is not for use with credit card transactions. | String | alphabetical | <code>cavvPurchase.setNetwork(network);</code> |
| Data Type NOTE: This request variable is mandatory for INTERAC® e-Commerce transactions conducted via Apple Pay, and is not for use with credit card transactions. | String | 3-character alphanumeric | <code>cavvPurchase.setDataType(data_type);</code> |

Sample Cavv Purchase for Apple Pay

```

namespace Moneris
{
    using System;
    using System.Collections;
    public class TestCanadaCavvPurchase
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string cust_id = "CUS887H67";
            string amount = "10.42";
            string pan = "4242424242424242";
            string expdate = "1901"; //YYMM
            string cavv = "AAABBJg0VhI0VniQEjRWAAAAA=";
            string dynamic_descriptor = "123456";
            string wallet_indicator = "APP";
            string processing_country_code = "CA";
            string crypt_type = "5";
            bool status_check = false;
            CofInfo cof = new CofInfo();
            cof.SetPaymentIndicator("U");
            cof.SetPaymentInformation("2");
            cof.SetIssuerId("168451306048014");
            CavvPurchase cavvPurchase = new CavvPurchase();
            cavvPurchase.SetOrderId(order_id);
            cavvPurchase.SetCustId(cust_id);
            cavvPurchase.SetAmount(amount);
            cavvPurchase.SetPan(pan);
            cavvPurchase.SetExpDate(expdate);
            cavvPurchase.SetCavv(cavv);
            cavvPurchase.SetCryptType(crypt_type); //Mandatory for AMEX cards only
            cavvPurchase.SetDynamicDescriptor(dynamic_descriptor);
            //cavvPurchase.SetNetwork("Interac"); //set only for Interac e-commerce
            //cavvPurchase.SetDataType("3DSecure"); //set only for Interac e-commerce
            //cavvPurchase.SetWalletIndicator(wallet_indicator); //set only wallet transactions e.g. APPLE PAY
            //cavvPurchase.SetCmd("8nAK8712sGaAkl56"); //set only for usage with Offlinx - Unique max 50
            alphanumeric characters transaction id generated by merchant
            cavvPurchase.SetCofInfo(cof);
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(cavvPurchase);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("CardType = " + receipt.GetCardType());
                Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
                Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                Console.WriteLine("TransType = " + receipt.GetTransType());
                Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("ISO = " + receipt.GetISO());
            }
        }
    }
}

```

Sample Cavv Purchase for Apple Pay

```

Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
Console.WriteLine("IssuerId = " + receipt.GetIssuerId());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

10.5 Cavv Pre-Authorization – Apple Pay

The Cavv Pre-Authorization for Apple Pay transaction follows a 3-D Secure model but it does not require an MPI. Once the Apple Pay payload has been decrypted, this Pre-Authorization verifies funds on the customer's card, and holds the funds. To prepare the funds for deposit into the merchant's account please process a Pre-Authorization Completion transaction.

For Apple Pay processing, this transaction is only applicable if choosing to integrate directly to the Apple Wallet (if not using the Moneris Apple Pay SDK). Please refer to 10 Apple Pay In-App and on the Web Integration for more details on your integration options.

Refer to Apple's Developer Portal for details on integrating directly to Apple Wallet to retrieve the payload data.

NOTE: INTERAC® e-Commerce functionality is currently available using the Cavv Purchase transaction type only.

Cavv Pre-Authorization transaction object definition

```
CavvPreAuth cavvPreauth = new CavvPreAuth();
```

HttpPostRequest object for Cavv Pre-Authorization transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(cavvPreauth);
```


Cavv Pre-Authorization transaction values

Table 96: Cavv Pre-Authorization object mandatory values

| Value | Type | Limits | Set method |
|--------------------|--------|---|--|
| Order ID | String | 50-character alpha-numeric | <code>cavvPreauth.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>cavvPreauth.SetAmount(amount);</code> |
| Credit card number | String | 20-character numeric | <code>cavvPreauth.SetPan(pan);</code> |

| Value | Type | Limits | Set method |
|---|--------|---------------------------|---|
| Cardholder Authentication Verification Value (CAVV) <div style="border: 1px solid black; padding: 5px; background-color: #e0f2f1;"> NOTE: For Apple Pay Cavv Purchase and Cavv Pre-Authorization transactions, CAVV field contains the decrypted cryptogram. For more, see Appendix A Definitions of Request Fields. </div> | String | 50-character alphanumeric | <code>cavvPreauth.SetCavv(cavv);</code> |
| Expiry date | String | 4-character numeric | <code>cavvPreauth.SetExpdate(expiry_date);</code> |
| E-commerce indicator <div style="border: 1px solid black; padding: 5px; background-color: #e0f2f1;"> NOTE: For Apple Pay Cavv Purchase and Cavv Pre-Authorization transactions, the E-commerce indicator is a mandatory field containing the value received from the decrypted payload or a default value of 5. If you get a 2-character value (e.g., 05 or 07) from the payload, remove the initial 0 and just send us the 2nd character. For more, see Appendix A Definitions of Request Fields. </div> | String | 1-character alphanumeric | <code>cavvPreauth.SetCryptType(crypt);</code> |

Table 1 Cavv Pre-Authorization object optional values

| Value | Type | Limits | Set method |
|--------------------|---------|---------------------------|---|
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |
| Customer ID | String | 50-character alphanumeric | <code>cavvPreauth.SetCustId(cust_id);</code> |
| Dynamic descriptor | String | 20-character alpha- | <code>cavvPreauth</code> |

| Value | Type | Limits | Set method |
|--|--------|----------------------------|--|
| | | numeric | <code>.SetDynamicDescriptor (dynamic_descriptor);</code> |
| Card Match ID NOTE: Applies to Off-linx™ only; must be unique value for each transaction | String | 50-character alpha-numeric | <code>cavvPreauth.SetCmId (transaction_id);</code> |
| Network NOTE: This request variable is mandatory for INTERAC® e-Commerce transactions conducted via Apple Pay, and is not for use with credit card transactions. | String | alphabetical | <code>cavvPurchase.setNetwork (network);</code> |
| Data Type NOTE: This request variable is mandatory for INTERAC® e-Commerce transactions conducted via Apple Pay, and is not for use with credit card transactions. | String | 3-character alpha-numeric | <code>cavvPurchase.setDataType (data_type);</code> |

Sample Cavv Pre-Authorization for Apple Pay

```
namespace Moneris
{
    using System;
    using System.Collections;
    public class TestCanadaCavvPreauth
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string cust_id = "CUS887H67";
            string amount = "10.42";
            string pan = "4242424242424242";
        }
    }
}
```

Sample Cavv Pre-Authorization for Apple Pay

```

string expdate = "1911"; //YYMM format
string cavv = "AAABBJg0VhI0VniQEjRWAAAAAAA=";
string dynamic_descriptor = "123456";
string wallet_indicator = "APP";
string processing_country_code = "CA";
string crypt_type = "5";
bool status_check = false;
CofInfo cof = new CofInfo();
cof.SetPaymentIndicator("U");
cof.SetPaymentInformation("2");
cof.SetIssuerId("168451306048014");
CavvPreAuth cavvPreauth = new CavvPreAuth();
cavvPreauth.SetOrderId(order_id);
cavvPreauth.SetCustId(cust_id);
cavvPreauth.SetAmount(amount);
cavvPreauth.SetPan(pan);
cavvPreauth.SetExpDate(expdate);
cavvPreauth.SetCavv(cavv);
cavvPreauth.SetCryptType(crypt_type); //Mandatory for AMEX cards only
cavvPreauth.SetDynamicDescriptor(dynamic_descriptor);
//cavvPreauth.SetWalletIndicator(wallet_indicator); //set only wallet transactions e.g. APPLE PAY
//cavvPreauth.SetCmId("8nAK8712sGaAkls56"); //set only for usage with Offlinx - Unique max 50
alphanumeric characters transaction id generated by merchant
cavvPreauth.SetCofInfo(cof);

HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(cavvPreauth);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
Console.WriteLine("IssuerId = " + receipt.GetIssuerId());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}

```

| Sample Cavv Pre-Authorization for Apple Pay |
|---|
| <pre>} } } }</pre> |

11 Offlinx™

- What Is a Pixel Tag?
- Offlinx™ and API Transactions

11.1 What Is a Pixel Tag?

A pixel tag is a piece of code that goes on a web page and requests an image file (a tiny transparent image or pixel) when loaded, which, while not visible to the user, allows Offlinx™ to gather relevant information about the user.

The data collected by our pixel tag is:

- Anonymous (not personally identifiable) and compliant with privacy standards
- Secure — utilizes SSL communication to transmit the data securely
- Not shared with anyone

11.2 Offlinx™ and API Transactions

The Offlinx™ Card Match pixel tag feature can be implemented via the Unified API with the Card Match ID variable, which corresponds to the Transaction ID in Offlinx™. The Card Match ID must be a unique value for each transaction.

For more information about the Offlinx™ solution, consult the Offlinx™ Pixel Tag Setup Guide available from your account/service manager.

API transactions where this applies:

- Purchase
- Pre-Authorization
- Purchase with 3-D Secure – cavvPurchase
- Pre-Authorization with 3-D Secure – cavvPreauth
- Cavv Purchase – Apple Pay
- Cavv Pre-Authorization – Apple Pay

12 Convenience Fee

- 12.1 About Convenience Fee
- 12.2 Purchase with Convenience Fee
- 12.3 Convenience Fee Purchase w/ Customer Information
- 12.4 Convenience Fee Purchase with VbV, MCSC and Amex SafeKey

12.1 About Convenience Fee

The Convenience Fee program was designed to allow merchants to offer the convenience of an alternative payment channel to the cardholder at a charge. This applies only when providing a true "convenience" in the form of an alternative payment channel outside the merchant's customary face-to-face payment channels. The convenience fee will be a separate charge on top of what the consumer is paying for the goods and/or services they were given, and this charge will appear as a separate line item on the consumer's statement.

NOTE: The Convenience Fee program is only offered to certain supported Merchant Category Codes (MCCs). Please speak to your account manager for further details.

12.2 Purchase with Convenience Fee

NOTE: Convenience Fee Purchase with Customer Information is also supported.

Convenience Fee Purchase transaction object definition

```
Purchase purchase = new Purchase();
```

HttpPostRequest object for Convenience Fee Purchase transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();  
mpgReq.SetTransaction(purchase);
```

Convenience Fee Purchase transaction object values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 1 Convenience Fee Purchase transaction object mandatory values

| Value | Type | Limits | Set Method |
|------------------------|--------|---|--|
| Convenience Fee | Object | n/a | <code>purchase.SetConvFeeInfo (convFeeInfo) ;</code> |
| Order ID | String | 50-character alpha-numeric | <code>purchase.SetOrderId (order_id) ;</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>purchase.SetAmount (amount) ;</code> |
| Credit card number | String | 20-character numeric | <code>purchase.SetPan (pan) ;</code> |
| Expiry date | String | 4-character numeric YYMM format | <code>purchase.SetExpdate (expiry_date) ;</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>purchase.SetCryptType (crypt) ;</code> |
| Convenience fee amount | String | 9-character decimal | <code>.SetConvFeeInfo (convfee_amount) ;</code> |

Table 2 Convenience Fee Purchase transaction object optional values

| Value | Type | Limits | Set Method |
|--------------------|--------|----------------------------|---|
| Customer ID | String | 50-character alpha-numeric | <code>purchase.SetCustId (cust_id) ;</code> |
| Dynamic descriptor | String | 20-character alpha-numeric | <code>purchase.SetDynamicDescriptor (dynamic_descriptor) ;</code> |
| AVS information | Object | | <code>purchase.SetAvsInfo (avsCheck) ;</code> |
| CVD information | Object | | <code>purchase.SetCvdInfo (cvdCheck) ;</code> |

Sample Purchase with Convenience Fee

```

namespace Moneris
{
    using System;
    public class TestCanadaConvFeePurchase
    {
        public static void Main(string[] args)
        {
            string store_id = "monca00392";
            string api_token = "qYdISUhHiOdfTr1CLNpN";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string amount = "5.00";
            string pan = "4242424242424242";
            string expdate = "1602"; //YYMM format
            string crypt = "7";
            string convenience_fee = "1.00";
            string processing_country_code = "CA";
            bool status_check = false;
            ConvFeeInfo convFeeInfo = new ConvFeeInfo();
            convFeeInfo.SetConvenienceFee(convenience_fee);

            Purchase purchase = new Purchase();
            purchase.SetOrderId(order_id);
            purchase.SetAmount(amount);
            purchase.SetPan(pan);
            purchase.SetExpDate(expdate);
            purchase.SetCryptType(crypt);
            purchase.SetConvFeeInfo(convFeeInfo);
            HttpPostRequest mpgReq = new HttpPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(purchase);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("CardType = " + receipt.GetCardType());
                Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
                Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
                Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
                Console.WriteLine("TransType = " + receipt.GetTransType());
                Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
                Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
                Console.WriteLine("Message = " + receipt.GetMessage());
                Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
                Console.WriteLine("Complete = " + receipt.GetComplete());
                Console.WriteLine("TransDate = " + receipt.GetTransDate());
                Console.WriteLine("TransTime = " + receipt.GetTransTime());
                Console.WriteLine("Ticket = " + receipt.GetTicket());
                Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
                Console.WriteLine("CfSuccess = " + receipt.GetCfSuccess());
                Console.WriteLine("CfStatus = " + receipt.GetCfStatus());
                Console.WriteLine("FeeAmount = " + receipt.GetFeeAmount());
                Console.WriteLine("FeeRate = " + receipt.GetFeeRate());
                Console.WriteLine("FeeType = " + receipt.GetFeeType());
                //Console.WriteLine("CardLevelResult = " + receipt.GetCardLevelResult());
                //Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
            }
            catch { }
        }
    }
}

```

```

Sample Purchase with Convenience Fee

//Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}
}

```

12.3 Convenience Fee Purchase w/ Customer Information

Convenience Fee Purchase with Customer information transaction object definition

```
Purchase purchase = new Purchase();
```

HttpPostRequest object for Convenience Fee Purchase with Customer Info transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(purchase);
```

Convenience Fee Purchase with Customer information transaction object values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 1 Convenience Fee Purchase w/ Customer Info transaction object mandatory values

| Value | Type | Limits | Set Method |
|--------------------|--------|---|--|
| Convenience Fee | Object | n/a | <code>purchase.SetConvFeeInfo(convFeeInfo);</code> |
| Order ID | String | 50-character alpha-numeric | <code>purchase.SetOrderId(order_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div style="border: 1px solid #ccc; background-color: #e0ffe0; padding: 5px; display: inline-block;">EXAMPLE: 1234567.89</div> | <code>purchase.SetAmount(amount);</code> |
| Credit card number | String | 20-character numeric | <code>purchase.SetPan(pan);</code> |

Table 1 Convenience Fee Purchase w/ Customer Info transaction object mandatory values (continued)

| Value | Type | Limits | Set Method |
|------------------------|--------|------------------------------------|---|
| Expiry date | String | 4-character numeric YYMM format | <code>purchase.SetExpdate(expiry_date);</code> |
| E-commerce indicator | String | 1-character alpha- numeric | <code>purchase.SetCryptType(crypt);</code> |
| Convenience fee amount | String | 9-character decimal | <code>purchase.SetConvFeeInfo(convfee_amount);</code> |

Table 2 Convenience Fee Purchase w/ Customer Info transaction object optional values

| Value | Type | Limits | Set Method |
|----------------------|--------|--------------------------------|---|
| Customer ID | String | 50-character alpha- numeric | <code>purchase.SetCustId(cust_id);</code> |
| Dynamic descriptor | String | 20-character alpha- numeric | <code>purchase.SetDynamicDescriptor(dynamic_descriptor);</code> |
| Customer information | Object | n/a | <code>purchase.SetCustInfo(customer);</code> |
| AVS information | Object | n/a | <code>purchase.SetAvsInfo(avsCheck);</code> |
| CVD information | Object | n/a | <code>purchase.SetCvdInfo(cvdCheck);</code> |

Sample Convenience Fee Purchase with Customer Information

```

namespace Moneris
{
    using System;
    public class TestCanadaConvFeePurchaseCustInfo
    {
        public static void Main(string[] args)
        {
            string store_id = "monca00392";
            string api_token = "qYdISUhHiOdfTr1CLNpN";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string amount = "5.00";
            string pan = "400555444444403";
            string expdate = "1602"; //YYMM format
        }
    }
}

```

Sample Convenience Fee Purchase with Customer Information

```

string crypt = "7";
string cust_id = "my customer id";
string convenience_fee = "1.00";
string processing_country_code = "CA";
bool status_check = false;
ConvFeeInfo convFeeInfo = new ConvFeeInfo();
convFeeInfo.SetConvenienceFee(convenience_fee);

Purchase purchase = new Purchase();
purchase.SetOrderId(order_id);
purchase.SetCustId(cust_id);
purchase.SetAmount(amount);
purchase.SetPan(pan);
purchase.SetExpDate(expdate);
purchase.SetCryptType(crypt);
purchase.SetConvFeeInfo(convFeeInfo);
/***** Billing/Shipping Variables *****/
string first_name = "Bob";
string last_name = "Smith";
string company_name = "ProLine Inc.";
string address = "623 Bears Ave";
string city = "Chicago";
string province = "Illinois";
string postal_code = "M1M2M1";
string country = "Canada";
string phone = "777-999-7777";
string fax = "777-999-7778";
string tax1 = "10.00";
string tax2 = "5.78";
string tax3 = "4.56";
string shipping_cost = "10.00";
/***** Order Line Item Variables *****/
string[] item_description = new string[] { "Chicago Bears Helmet", "Soldier Field Poster" };
string[] item_quantity = new string[] { "1", "1" };
string[] item_product_code = new string[] { "CB3450", "SF998S" };
string[] item_extended_amount = new string[] { "150.00", "19.79" };
/***** Customer Information Object *****/
CustInfo customer = new CustInfo();
/***** Set Customer Billing Information *****/
customer.SetBilling(first_name, last_name, company_name, address, city,
province, postal_code, country, phone, fax, tax1, tax2,
tax3, shipping_cost);
/***** Set Customer Shipping Information *****/
customer.SetShipping(first_name, last_name, company_name, address, city,
province, postal_code, country, phone, fax, tax1, tax2,
tax3, shipping_cost);
/***** Order Line Items *****/
customer.SetItem(item_description[0], item_quantity[0],
item_product_code[0], item_extended_amount[0]);
customer.SetItem(item_description[1], item_quantity[1],
item_product_code[1], item_extended_amount[1]);
purchase.SetCustInfo(customer);
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(purchase);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();

```

Sample Convenience Fee Purchase with Customer Information

```

try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("CfSuccess = " + receipt.GetCfSuccess());
Console.WriteLine("CfStatus = " + receipt.GetCfStatus());
Console.WriteLine("FeeAmount = " + receipt.GetFeeAmount());
Console.WriteLine("FeeRate = " + receipt.GetFeeRate());
Console.WriteLine("FeeType = " + receipt.GetFeeType());
//Console.WriteLine("CardLevelResult = " + receipt.GetCardLevelResult());
//Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
//Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

12.4 Convenience Fee Purchase with VbV, MCSC and Amex SafeKey

Convenience Fee Purchase with VbV/MCSC/SafeKey transaction object definition

```
CavvPurchase cavvPurchase = new CavvPurchase();
```

HttpPostRequest object for Convenience Fee Purchase w/ VbV/MCSC/SafeKey transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(cavvPurchase);
```

Convenience Fee Purchase with VbV/MCSC/SafeKey transaction object values

For a full description of mandatory and optional values, see Appendix A Definitions of Request Fields

Table 1 Convenience Fee Purchase with VbV, MCSC, SafeKey - Required Fields

| Value | Type | Limits | Set Method |
|---|--------|---|--|
| Convenience Fee | Object | N/A | <code>cavvPurchase.SetConvFeeInfo (convFeeInfo) ;</code> |
| Order ID | String | 50-character alpha-numeric | <code>cavvPurchase.SetOrderId (order_id) ;</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>cavvPurchase.SetAmount (amount) ;</code> |
| Credit card number | String | 20-character numeric | <code>cavvPurchase.SetPan (pan) ;</code> |
| Expiry date | String | 4-character numeric YYMM format | <code>cavvPurchase.SetExpdate (expiry_date) ;</code> |
| E-Commerce indicator | String | 1-character alpha-numeric | <code>cavvPurchase.SetCryptType (crypt) ;</code> |
| Cardholder Authentication Verification Value (CAVV) | String | 50-character alpha-numeric | <code>cavvPurchase.SetCavv (cavv) ;</code> |
| Convenience fee amount | String | 9-character decimal | <code>.SetConvFeeInfo (convfee_amount) ;</code> |

Table 2 Convenience Fee Purchase with VbV, MCSC, SafeKey - Optional Values

| Value | Type | Limits | Set Method |
|--------------------|---------|----------------------------|--|
| Status Check | Boolean | true/false | <code>mpgReq.SetStatusCheck (status_check) ;</code> |
| Customer ID | String | 50-character alpha-numeric | <code>cavvPurchase.SetCustId (cust_id) ;</code> |
| Dynamic descriptor | String | 20-character alpha-numeric | <code>cavvPurchase .SetDynamicDescriptor (dynamic_descriptor) ;</code> |

| Value | Type | Limits | Set Method |
|----------------------|--------|---------------------|--|
| E-commerce indicator | String | 1-character numeric | <code>cavvPurchase.SetCryptType(crypt);</code> |
| Customer Information | Object | N/A | <code>cavvPurchase.SetCustInfo(customer);</code> |
| AVS Information | Object | N/A | <code>cavvPurchase.SetAvsInfo(avsCheck);</code> |
| CVD Information | Object | N/A | <code>cavvPurchase.SetCvdInfo(cvdCheck);</code> |

Sample Purchase with VbV/MCSC/SafeKey

```

namespace Moneris
{
    using System;
    using System.Collections;
    public class TestCanadaConvFeeCavvPurchase
    {
        public static void Main(string[] args)
        {
            string store_id = "monca00392";
            string api_token = "qYdISUhHiOdfTr1CLNpN";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string cust_id = "B_Urlac_54";
            string amount = "10.42";
            string pan = "4005554444444403";
            string expdate = "1901"; //YYMM format
            string cavv = "AAABBJg0VhI0VniQEjRWAAAAAAA";
            string crypt_type = "5";
            string convenience_fee = "1.00";
            string dynamic_descriptor = "my descriptor";
            string processing_country_code = "CA";
            bool status_check = false;
            AvsInfo avsCheck = new AvsInfo();
            avsCheck.SetAvsStreetNumber("212");
            avsCheck.SetAvsStreetName("Payton Street");
            avsCheck.SetAvsZipCode("M1M1M1");
            CvdInfo cvdCheck = new CvdInfo();
            cvdCheck.SetCvdIndicator("1");
            cvdCheck.SetCvdValue("099");

            ConvFeeInfo convFeeInfo = new ConvFeeInfo();
            convFeeInfo.SetConvenienceFee(convenience_fee);
            CavvPurchase cavvPurchase = new CavvPurchase();
            cavvPurchase.SetOrderId(order_id);
            cavvPurchase.SetCustId(cust_id);
            cavvPurchase.SetAmount(amount);
            cavvPurchase.SetPan(pan);
            cavvPurchase.SetExpDate(expdate);
            cavvPurchase.SetCavv(cavv);
            cavvPurchase.SetCryptType(crypt_type); //Mandatory for AMEX cards only
        }
    }
}

```

Sample Purchase with VbV/MCSC/SafeKey

```
cavvPurchase.SetDynamicDescriptor(dynamic_descriptor);
cavvPurchase.SetAvsInfo(avsCheck);
cavvPurchase.SetCvdInfo(cvdCheck);
cavvPurchase.SetConvFeeInfo(convFeeInfo);
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(cavvPurchase);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("CardType = " + receipt.GetCardType());
    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
    Console.WriteLine("TransType = " + receipt.GetTransType());
    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("ISO = " + receipt.GetISO());
    Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Ticket = " + receipt.GetTicket());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("Avs Response = " + receipt.GetAvsResultCode());
    Console.WriteLine("Cvd Response = " + receipt.GetCvdResultCode());
    //Console.WriteLine("CardLevelResult = " + receipt.GetCardLevelResult());
    Console.WriteLine("CavvResultCode = " + receipt.GetCavvResultCode());
    Console.WriteLine("CfSuccess = " + receipt.GetCfSuccess());
    Console.WriteLine("CfStatus = " + receipt.GetCfStatus());
    Console.WriteLine("FeeAmount = " + receipt.GetFeeAmount());
    Console.WriteLine("FeeRate = " + receipt.GetFeeRate());
    Console.WriteLine("FeeType = " + receipt.GetFeeType());
    //Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
    //Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
```


13 Recurring Billing

- 1 About Recurring Billing
- 13.2 Purchase with Recurring Billing
- 13.3 Recurring Billing Update
- 1 Recurring Billing Response Fields and Codes
- 13.5 Credential on File and Recurring Billing

13.1 About Recurring Billing

Recurring Billing allows you to set up payments whereby Moneris automatically processes the transactions and bills customers on your behalf based on the billing cycle information you provide.

Recurring Billing series are created by sending the Recurring Billing object in these transactions:

- Purchase
- Purchase with Vault
- Purchase with 3-D Secure (cavvPurchase)

You can modify a Recurring Billing series after it has been created by sending the Recurring Billing Update administrative transaction.

NOTE: Alternatively, if you prefer to manage recurring series on your own merchant system, you can send the periodic payments as basic Purchase transactions with the e-commerce indicator (`crypt_type`) value = 2 and with the Credential on File info object included.

13.2 Purchase with Recurring Billing

Recurring Billing Info Object Definition

```
Recur recurring_cycle = new Recur(recur_unit, start_now, start_date, num_recur, period, recur_amount);
```

Transaction object set method

```
<transaction>.SetRecur(recurring_cycle);
```

Recurring Billing Info Object Request Fields

| Variable and Field Name | Type and Limits | Description |
|--|--------------------------------|---|
| Number of Recurs <code>num_recur</code> | <i>String</i> numeric, 1-99 | The number of times that the transaction must recur |
| Period | <i>String</i> | Number of recur units that |

| Variable and Field Name | Type and Limits | Description |
|----------------------------------|---|---|
| period | numeric, 1-999 | must pass between recurring billings |
| Start Date start_date | <i>String</i> YYYY/MM/DD | Date of the first future recurring billing transaction This value must be a date in the future If an additional charge is to be made immediately, the value of Start Now must be set to true |
| Start Now start_now | <i>String</i> true/false | If a single charge is to be made against the card immediately, set this value to true; the amount to be billed immediately may differ from the amount billed on a regular basis thereafter If the billing is to start in the future, set this value to false When set to false, use Card Verification prior to sending the Purchase with Recur and Credential on File objects |
| Recurring Amount recur_amount | <i>String</i> 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div style="border: 1px solid black; background-color: #e0f0e0; padding: 5px; display: inline-block;">EXAMPLE: 1234567.89</div> | Amount of the recurring transaction This is the amount that will be billed on the Start Date and then billed repeatedly based on the interval defined by Period and Recur Unit |
| Recur Unit recur_unit | <i>String</i> day, week, month or eom | Unit to be used as a basis for the interval Works in conjunction with Period to define the billing frequency Possible values are: |

| Variable and Field Name | Type and Limits | Description |
|-------------------------|-----------------|--|
| | | day week month eom (end of month) |

Sample Purchase with Recurring Billing

```

namespace Moneris
{
    using System;
    using System.Collections;
    public class TestCanadaPurchaseRecur
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string amount = "10.00";
            string pan = "4242424242424242";
            string expiry_date = "1901"; //YMM format
            string crypt = "7";
            /***** Recur Variables *****/
            string recur_unit = "month"; //eom = end of month
            string start_now = "true";
            string start_date = "2016/07/28";
            string num_recur = "12";
            string period = "1";
            string recur_amount = "30.00";
            string processing_country_code = "CA";
            bool status_check = false;
            /***** Recur Object Option1 *****/
            Recur recurring_cycle = new Recur(recur_unit, start_now, start_date,
            num_recur, period, recur_amount);
            /***** Recur Object Option2 *****/
            Hashtable recur_hash = new Hashtable();
            recur_hash.Add("recur_unit", recur_unit);
            recur_hash.Add("start_now", start_now);
            recur_hash.Add("start_date", start_date);
            recur_hash.Add("num_recur", num_recur);
            recur_hash.Add("period", period);
            recur_hash.Add("recur_amount", recur_amount);
            Recur recurring_cycle2 = new Recur(recur_hash);
            /***** Transactional Object *****/
            Purchase purchase = new Purchase(order_id, amount, pan, expiry_date, crypt);
            /***** Set Recur *****/
            purchase.SetRecur(recurring_cycle);
            CofInfo cof = new CofInfo();
            cof.SetPaymentIndicator("R");
            cof.SetPaymentInformation("2");
            cof.SetIssuerId("168451306048014");
            purchase.SetCofInfo(cof);
            /***** Https Post Request *****/
            HttpsPostRequest mpgReq = new HttpsPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
        }
    }
}

```

Sample Purchase with Recurring Billing

```

mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(purchase);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
/***** Receipt *****/
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("Recur Success = " + receipt.GetRecurSuccess());
Console.WriteLine("IsVisaDebit = " + receipt.GetIsVisaDebit());
Console.WriteLine("IssuerId = " + receipt.GetIssuerId());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}

```

13.3 Recurring Billing Update

After you have set up a Recurring Billing transaction series, you can change some of the details of the series as long as it has not yet completed the preset recurring duration (i.e., it hasn't terminated yet).

Before sending a Recurring Billing Update transaction that updates the credit card number, you must send a Card Verification request. This requirement does not apply if you are only updating the schedule or amount.

Things to Consider:

- When completing the update recurring billing portion please keep in mind that the recur bill dates cannot be changed to have an end date greater than 10 years from

today and cannot be changed to have an end date end today or earlier.

Recurring Billing Update transaction object definition

```
RecurUpdate recurUpdate = new RecurUpdate();
```

HttpPostRequest object for Recurring Billing Update transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(recurUpdate);
```

Recurring Billing Update transaction values

Table 1 Recurring Billing Update – Basic Required Fields

| Variable and Field Name | Type and Limits | Set Method |
|-------------------------|-------------------------------------|---------------------------------|
| Order ID order_id | String 50-character alphanumeric | recurUpdate.setCustId(cust_id); |

Table 2 Recurring Billing Update – Basic Optional Fields

| Variable and Field Name | Type and Limits | Set Method |
|----------------------------|-------------------------------------|--------------------------------------|
| Customer ID cust_id | String 50-character alphanumeric | recurUpdate.setCustId(cust_id); |
| Credit card number pan | String 20-character alphanumeric | recurUpdate.SetPan(pan); |
| Expiry date expiry_date | String YYMM | recurUpdate.setExpdate(expiry_date); |

Table 3 Recurring Billing Update – Recurring Billing Required Fields

| Variable and Field Name | Type and Limits | Set Method | Description |
|-------------------------|-----------------|---|----------------------------|
| Recurring | String | recurUpdate.SetRecurAmount(recur_amount); | Changes the amount that is |

| Variable and Field Name | Type and Limits | Set Method | Description |
|---|--|---|---|
| amount recur_ amount | 10-character decimal; Up to 7 digits (dollars) + decimal point + 2 digits (cents) after the decimal point EXAMPL- E: 1234567- .89 | | billed recurrently The change takes effect on the next charge |
| Add number of recurs add_num | <i>String</i> numeric, 1-999 | recurUpdate.SetAddNumRecurs (add_num); | Adds to the given number of recur- ring transactions to the current (remaining) num- ber This can be used if a customer decides to extend a membership or subscription Cannot be used to decrease the cur- rent number of recurring trans- actions; use Change number of recurs instead |
| Change num- ber of recurs total_num | <i>String</i> numeric, 1-999 | recurUpdate.SetTotalNumRecurs (total_num); | Replaces the cur- rent (remaining) number of recur- ring transactions |
| Hold recurring billing hold | <i>String</i> true/false | recurUpdate.SetHold(hold); | Temporarily pauses recurring billing While a trans- action is on hold, it is not billed for the recurring amount; however, the number of remaining recurs continues to be decremented dur- |

| Variable and Field Name | Type and Limits | Set Method | Description |
|--|---------------------------------|---|--|
| | | | ing that time |
| Terminate recurring transaction terminate | <i>String</i> true/false | <code>recurUpdate.SetTerminate(terminate);</code> | Terminates recurring billing <div style="border: 1px solid black; padding: 5px;"> <p>NOTE: After it has been terminated, a recurring transaction cannot be reactivated; a new purchase transaction with recurring billing must be submitted.</p> </div> |

Sample Recurring Billing Update

```

namespace Moneris
{
    using System;
    public class TestCanadaRecurUpdate
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string order_id = "Test20150625013553";
            string cust_id = "antonio";
            string recur_amount = "1.50";
            string pan = "4242424242424242";
            string expiry_date = "1901";
            //string add_num = "";
            //string total_num = "";
            //string hold = "";
            //string terminate = "";
            string processing_country_code = "CA";
            bool status_check = false;

            CofInfo cof = new CofInfo();
            cof.SetIssuerId("139X3130ASCXAS9");
            RecurUpdate recurUpdate = new RecurUpdate();
            recurUpdate.SetOrderId(order_id);
            recurUpdate.SetCustId(cust_id);
            recurUpdate.SetRecurAmount(recur_amount);
            recurUpdate.SetPan(pan);
            recurUpdate.SetExpDate(expiry_date);
            //recurUpdate.SetAddNumRekurs(add_num);
            //recurUpdate.SetTotalNumRekurs(total_num);
            //recurUpdate.SetHold(hold);
        }
    }
}

```

```
Sample Recurring Billing Update
```

```

//recurUpdate.SetTerminate(terminate);
recurUpdate.SetCofInfo(cof);
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(recurUpdate);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("RecurUpdateSuccess = " + receipt.GetRecurUpdateSuccess());
Console.WriteLine("NextRecurDate = " + receipt.GetNextRecurDate());
Console.WriteLine("RecurEndDate = " + receipt.GetRecurEndDate());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
    
```

13.4 Recurring Billing Response Fields and Codes

Table 97 outlines the response fields that are part of recurring billing. Some are available when you set up recurring billing (such as with a Purchase transaction), and some are available when you update an existing transaction with the Recurring Billing transaction.

Receipt object definition

```
Receipt receipt = mpgReq.GetReceipt();
```

Table 97: Recurring Billing response fields

| Value | Type | Limits | Get method |
|---|---|---------------------|----------------------------|
| Description | | | |
| Transaction object with Recurring Billing response fields | | | |
| Response code | String | 3-character numeric | receipt.GetResponseCode(); |
| | See Table 98: for a description of possible response codes. | | |

Table 97: Recurring Billing response fields

| Value | Type | Limits | Get method |
|--|--|-------------------|--|
| | Description | | |
| Recur success | String | TBD | <code>receipt.GetRecurSuccess()</code> ; |
| | Indicates whether the transaction successfully registered | | |
| Recur update object response fields | | | |
| Recur update success | String | true/false | <code>receipt.GetRecurUpdateSuccess()</code> ; |
| | Indicates whether the transaction successfully updated. | | |
| Next recur date | String | yyyy-mm-dd format | <code>receipt.GetNextRecurDate()</code> ; |
| | Indicates when the transaction will be billed again. | | |
| Recur end date | String | yyyy-mm-dd format | <code>receipt.GetRecurEndDate()</code> ; |
| | Indicates when the Recurring Billing Transaction will end. | | |

The Recur Update response is a 3-digit numeric value. The following is a list of all possible responses after a Recur Update transaction has been sent.

Table 98: Recur update response codes

| Request Value | Definition |
|---------------|---|
| 001 | Recurring transaction successfully updated (optional: terminated) |
| 983 | Cannot find the previous transaction |
| 984 | Data error: (optional: field name) |
| 985 | Invalid number of recurs |
| 986 | Incomplete: timed out |
| null | Error: Malformed XML |

13.5 Credential on File and Recurring Billing

NOTE: The value of the **payment indicator** field must be **R** when sending Recurring Billing transactions.

For Recurring Billing transactions which are set to start **immediately**:

1. Send a Purchase transaction request with both the Recurring Billing and Credential on File info objects

For Recurring Billing transactions which are set to start on a **future** date:

1. Send Card Verification transaction request including the Credential on File info object to get the Issuer ID
2. Send Purchase transaction request with the Recur and Credential on File info objects included

For updating a Recurring Billing series where you are updating the card number (does not apply if you are only modifying the schedule or amount in a recurring series):

1. Send Card Verification request including the Credential on File info object to get the Issuer ID
2. Send a Recurring Billing Update transaction

For more information about the Recurring Billing object, see Definition of Request Fields – Recurring.

14 Customer Information

- 14.1 Using the Customer Information Object
- 14.2 Customer Information Sample Code

An optional add-on to a number of transactions the Customer Information object. The Customer Information object offers a number of fields to be submitted as part of the financial transaction, and stored by Moneris. These details may be viewed in the future in the Merchant Resource Center.

The following transactions support the Customer Information object :

- Purchase (Basic, Interac Debit and Vault)
- Pre-Authorization (Basic and Vault)
- Re-Authorization (Basic)

The Customer Information object holds three types of information:

- Miscellaneous customer information properties
- Billing/Shipping information
- Item information

Things to Consider:

- If you send characters that are not included in the allowed list, these extra transaction details may not be stored.
- All fields are alphanumeric and allow the following characters: a-z A-Z 0-9 _ - : . @ \$ = /
- All French accents should be encoded as HTML entities, such as ´.
- The data sent in Billing and Shipping Address fields will not be used for any address verification.

14.1 Using the Customer Information Object

- 14.1.1 CustInfo Object – Miscellaneous Properties
- 14.1.2 CustInfo Object – Billing and Shipping Information
- 14.1.3 CustInfo Object – Item Information

In addition to instantiating a transaction object and a connection object (as you would for a normal transaction), you must instantiate a CustInfo object.

Any transaction that supports CustInfo has a setCustInfo method. This is used to write the customer information to the transaction object before writing the transaction object to the connection object.

CustInfo object definition

```
CustInfo customer = new CustInfo();
```

Transaction object set method

```
<transaction>.SetCustInfo(customer);
```

14.1.1 CustInfo Object – Miscellaneous Properties

While most of the customer information data is organized into objects, there are some values that are properties of the CustInfo object itself. They are explained in the table below.

Table 99: CustInfo object miscellaneous properties

| Value | Type | Limits | Set method |
|---------------|--------|----------------------------|--|
| Email Address | String | 60-character alphanumeric | <code>customer.SetEmail(email);</code> |
| Instructions | String | 100-character alphanumeric | <code>customer.SetInstructions(note);</code> |

14.1.2 CustInfo Object – Billing and Shipping Information

Billing and shipping information is stored as part of the CustInfo object. They can be written to the object in one of two ways:

- Using set methods
- Using hash tables

Whichever method you use, you will be writing the information found in the table below for both the billing information and the shipping information.

All values are alphanumeric strings. Their maximum lengths are given in the Limit column.

Table 100: Billing and shipping information values

| Value | Limit | Hash table key |
|----------------|-------|----------------|
| First name | 30 | "first_name" |
| Last name | 30 | "last_name" |
| Company name | 50 | "company_name" |
| Address | 70 | "address" |
| City | 30 | "city" |
| Province/State | 30 | "province" |

Table 100: Billing and shipping information values (continued)

| Value | Limit | Hash table key |
|----------------------------|-------|-----------------|
| Postal/Zip code | 30 | "postal_code" |
| Country | 30 | "country" |
| Phone number (voice) | 30 | "phone" |
| Fax number | 30 | "fax" |
| Federal tax | 10 | "tax1" |
| Provincial/State tax | 10 | "tax2" |
| County/Local/Specialty tax | 10 | "tax3" |
| Shipping cost | 10 | "shipping_cost" |

14.1.2.1 Set Methods for Billing and Shipping Info

The billing information and the shipping information for a given CustInfo object are written by using the `customer.SetBilling()` and `customer.SetShipping()` methods respectively:

```
customer.SetBilling(first_name, last_name, company_name, address, city,
province, postal_code, country, phone, fax, tax1, tax2, tax3, shipping_cost);
```

```
customer.SetShipping(first_name, last_name, company_name, address, city,
province, postal_code, country, phone, fax, tax1, tax2, tax3, shipping_cost);
```

Both of these methods have the same set of mandatory arguments. They are described in the Billing and shipping information values table in 14.1.2.1 Set Methods for Billing and Shipping Info.

For sample code, see 14.2 Customer Information Sample Code.

14.1.2.2 Using Hash Tables for Billing and Shipping Info

Writing billing or shipping information using hash tables is done as follows:

1. Instantiate a CustInfo object.
2. Instantiate a hash table object. (The sample code uses a different hash table for billing and shipping for clarity purposes. However, the skillful developer can re-use the same one.)
3. Build the hash table using put methods with the hash table keys found in the Billing and shipping information values table in 14.1.2 CustInfo Object – Billing and Shipping Information.
4. Call the CustInfo object's setBilling/setShipping method to pass the hash table information to the CustInfo object
5. Call the transaction object's setCustInfo method to write the CustInfo object (with the billing/-shipping information to the transaction object.

For sample code, see 14.2 Customer Information Sample Code.

14.1.3 CustInfo Object – Item Information

The CustInfo object can hold information about multiple items. For each item, the values in the table below can be written.

All values are strings, but note the guidelines in the Limits column.

Table 101: Item information values

| Value | Limits | Hash table key |
|----------------------|--|-------------------|
| Item name | 45-character alphanumeric | "name" |
| Item quantity | 5-character numeric | "quantity" |
| Item product code | 20-character alphanumeric | "product_code" |
| Item extended amount | 9-character decimal with at least 3 digits and 2 penny values. 0.01-999999.99 | "extended_amount" |

One way of representing multiple items is with four arrays. This is the method used in the sample code. However, there are two ways to write the item information to the CustInfo object:

- Set methods
- Hash tables

14.1.3.1 Set Methods for Item Information

All the item information found in the Item information values table in 14.1.3 CustInfo Object – Item Information is written to the CustInfo object in one instruction for a given item. Such as:

```
customer.setItem(item_description, item_quantity, item_product_code, item_extended_amount);
```

For sample code (showing how to use arrays to write information about two items), see 14.2 Customer Information Sample Code.

14.1.3.2 Using Hash Tables for Item Information

Writing item information using hash tables is done as follows:

1. Instantiate a CustInfo object.
2. Instantiate a hash table object. (The sample code uses a different hash table for each item for clarity purposes. However, the skillful developer can re-use the same one.)
3. Build the hash table using put methods with the hash table keys in the Item information values table in 14.1.3 CustInfo Object – Item Information.
4. Call the CustInfo object's setItem method to pass the hash table information to the CustInfo object
5. Call the transaction object's setCustInfo method to write the CustInfo object (with the item information to the transaction object.

For sample code that shows how to use arrays to write information about two items, see 14.2 Customer Information Sample Code.

14.2 Customer Information Sample Code

Below are two examples of a Basic Purchase Transaction with Customer Information. Both samples start with the same declaration of variables, as shown.

Values that are not involved in the Customer Information feature are not shown.

Note that the two items ordered are represented by four arrays, and the billing and shipping details are the same.

Declaring the variables (common to both methods)

```
string first_name = "Bob";
string last_name = "Smith";
string company_name = "ProLine Inc.";
string address = "623 Bears Ave";
string city = "Chicago";
string province = "Illinois";
string postal_code = "M1M2M1";
string country = "Canada";
string phone = "777-999-7777";
string fax = "777-999-7778";
string tax1 = "10.00";
string tax2 = "5.78";
string tax3 = "4.56";
string shipping_cost = "10.00";
/***** Order Line Item Variables *****/
string[] item_description = new string[] { "Chicago Bears Helmet", "Soldier Field Poster" };
string[] item_quantity = new string[] { "1", "1" };
string[] item_product_code = new string[] { "CB3450", "SF998S" };
string[] item_extended_amount = new string[] { "150.00", "19.79" };
```

Sample Purchase with Customer Information – Set method version

```
CustInfo customer = new CustInfo();
/***** Set Customer Billing Information *****/
customer.SetBilling(first_name, last_name, company_name, address, city,
    province, postal_code, country, phone, fax, tax1, tax2,
    tax3, shipping_cost);
/***** Set Customer Shipping Information *****/
customer.SetShipping(first_name, last_name, company_name, address, city,
    province, postal_code, country, phone, fax, tax1, tax2,
    tax3, shipping_cost);
/***** Order Line Items *****/
customer.SetItem(item_description[0], item_quantity[0],
    item_product_code[0], item_extended_amount[0]);
customer.SetItem(item_description[1], item_quantity[1],
    item_product_code[1], item_extended_amount[1]);
```

Sample Purchase with Customer Information – Hash table version

```
CustInfo customer2 = new CustInfo();
/***** Billing Hashtable *****/
Hashtable b = new Hashtable(); //billing hashtable
b.Add("first_name", first_name);
b.Add("last_name", last_name);
b.Add("company_name", company_name);
b.Add("address", address);
b.Add("city", city);
b.Add("province", province);
b.Add("postal_code", postal_code);
b.Add("country", country);
b.Add("phone", phone);
b.Add("fax", fax);
b.Add("tax1", tax1); //federal tax
b.Add("tax2", tax2); //prov tax
b.Add("tax3", tax3); //luxury tax
b.Add("shipping_cost", shipping_cost); //shipping cost
customer2.SetBilling(b);
/***** Shipping Hashtable *****/
Hashtable s = new Hashtable(); //shipping hashtable
s.Add("first_name", first_name);
s.Add("last_name", last_name);
s.Add("company_name", company_name);
s.Add("address", address);
s.Add("city", city);
s.Add("province", province);
s.Add("postal_code", postal_code);
s.Add("country", country);
s.Add("phone", phone);
s.Add("fax", fax);
s.Add("tax1", tax1); //federal tax
s.Add("tax2", tax2); //prov tax
s.Add("tax3", tax3); //luxury tax
s.Add("shipping_cost", shipping_cost); //shipping cost
customer2.SetShipping(s);
/***** Order Line Item1 Hashtable *****/
Hashtable i1 = new Hashtable(); //item hashtable #1
i1.Add("name", item_description[0]);
i1.Add("quantity", item_quantity[0]);
i1.Add("product_code", item_product_code[0]);
i1.Add("extended_amount", item_extended_amount[0]);
customer2.SetItem(i1);
/***** Order Line Item2 Hashtable *****/
Hashtable i2 = new Hashtable(); //item hashtable #2
i2.Add("name", "item2's name");
i2.Add("quantity", "7");
i2.Add("product_code", "item2's product code");
i2.Add("extended_amount", "5.01");
customer2.SetItem(i2);
```


15 Status Check

- 15.1 About Status Check
- 15.2 Using Status Check Response Fields
- 15.3 Sample Purchase with Status Check

15.1 About Status Check

Status Check is a connection object value that allows merchants to verify whether a previously sent transaction was processed successfully.

To submit a Status Check request, resend the original transaction with all the same parameter values, but set the status check value to either `true` or `false`.

Once set to “true”, the gateway will check the status of a transaction that has an `order_id` that matches the one passed.

- If the transaction is found, the gateway will respond with the specifics of that transaction.
- If the transaction is not found, the gateway will respond with a not found message.

Once it is set to “false”, the transaction will process as a new transaction.

For example, if you send a Purchase transaction with Status Check, include the same values as the original Purchase such as the order ID and the amount.

The feature must be enabled in your merchant profile. To have it enabled, contact Moneris.

Things to Consider:

- The Status Check request should only be used once and immediately (within 2 minutes) after the last transaction that had failed.
- The Status Check request should not be used to check `openTotals` & `batchClose` requests.
- Do not resend the Status Check request if it has timed out. Additional investigation is required.

15.2 Using Status Check Response Fields

After you have used the connection object to send a Status Check request, you can use the Receipt object to obtain the information you want regarding the success of the original transaction.

The status response fields related to the status check are Status Code and Status Message.

Possible Status Code response values:

- 0-49: successful transaction
- 50-999: unsuccessful transaction.

Possible Status Message response values:

- Found: Status code is 0-49
- Not found or Null: Status code is 50-999)

If the Status Message is `Found`, all other response fields are the same as those from the original transaction.

If the Status Message is `Not found`, all other response fields will be Null.

15.3 Sample Purchase with Status Check

Sample Purchase transaction with Status Check

```
using System;
using System.Collections.Generic;
using System.Text;
using Moneris;
namespace CanadaPurchaseConsoleTest
{
    class CanadaPurchaseTest
    {
        public static void Main(string[] args)
        {
            Purchase purchase = new Purchase();
            purchase.SetOrderId("order");
            purchase.SetAmount("1.00");
            purchase.SetPan("4242424242424242");
            purchase.SetExpDate("2202");
            purchase.SetCryptType("1");

            HttpPostRequest mpgReq = new HttpPostRequest();
            mpgReq.SetProcCountryCode("CA");
            mpgReq.SetTestMode(true);
            mpgReq.SetStoreId("store1");
            mpgReq.SetApiToken("yesguy");
            mpgReq.SetTransaction(purchase);
            mpgReq.SetStatusCheck(true);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
                Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
                Console.ReadLine();
            }
            catch (Exception e)
            {
                Console.WriteLine(e);
            }
        }
    }
}
```

16 Visa Checkout

- 16.1 About Visa Checkout
- 16.2 Transaction Types - Visa Checkout
- 16.3 Integrating Visa Checkout Lightbox
- 16.4 Transaction Flow for Visa Checkout
- 16.5 Visa Checkout Purchase
- 16.6 Visa Checkout Pre-Authorization
- 16.7 Visa Checkout Completion
- 16.8 Visa Checkout Purchase Correction
- 16.9 Visa Checkout Refund
- 16.10 Visa Checkout Information

16.1 About Visa Checkout

Visa Checkout is a digital wallet service offered to customers using credit cards. Visa Checkout functionality can be integrated into the Moneris Gateway via the API.

16.2 Transaction Types - Visa Checkout

Below is a list of transactions supported by the Visa Checkout API, other terms used for the transaction type are indicated in brackets.

VdotMePurchase (sale)

Call to Moneris to obtain funds on the Visa Checkout `callId` and ready them for deposit into the merchant's account. It also updates the customer's Visa Checkout transaction history.

VdotMePreAuth (authorisation / pre-authorization)

Call to Moneris to verify funds on the Visa Checkout `callId` and reserve those funds for your merchant account. The funds are locked for a specified amount of time, based on the card issuer. To retrieve the funds from this call so that they may be settled in the merchant's account, a `VdotMeCompletion` must be performed. It also updates the customer's Visa Checkout transaction history.

VdotMeCompletion (Completion / Capture)

Call to Moneris to obtain funds reserved by `VdotMePreAuth` call. This transaction call retrieves the locked funds and readies them for settlement into the merchant's account. This call must be made typically within 72 hours of performing `VdotMePreAuth`. It also updates the customer's Visa Checkout transaction history.

VdotMePurchaseCorrection (Void / Purchase Correction)

Call to Moneris to void the `VdotMePurchases` and `VdotMeCompletions` the same day* that they occurred on. It also updates the customer's Visa Checkout transaction history.

VdotMeRefund (Credit)

Call to Moneris to refund against a `VdotMePurchase` or `VdotMeCompletion` to refund any part, or all of the transaction. It also updates the customer's Visa Checkout transaction history.

VdotMeInfo (Credit)

Call to Moneris to obtain cardholder details such as, name on card, partial card number, expiry date, shipping and billing information.

16.3 Integrating Visa Checkout Lightbox

1. Using the API Key you obtained when you configured your Visa Checkout store, create Visa Checkout Lightbox integration with JavaScript by following the Visa documentation, which is available on Visa Developer portal:

Visa Checkout General Information (JavaScript SDK download)

https://developer.visa.com/products/visa_checkout

Getting Started With Visa checkout

https://developer.visa.com/products/visa_checkout/guides#getting_started

Adding Visa Checkout to Your Web Page

https://developer.visa.com/products/visa_checkout/guides#adding_to_page

Submitting the Consumer Payment Request

https://developer.visa.com/products/visa_checkout/guides#submitting_csr

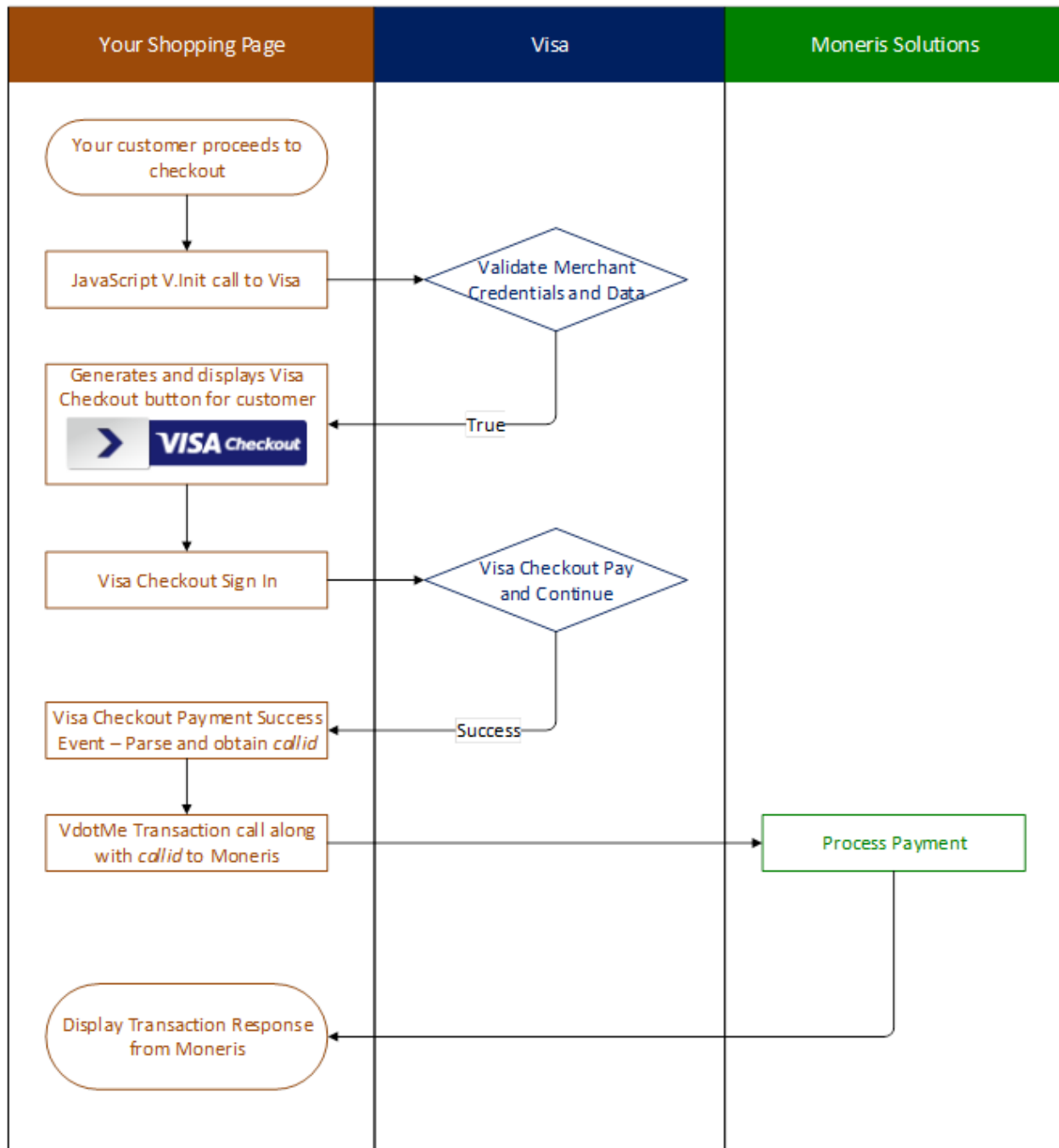
2. If you get a payment success event from the resulting Visa Lightbox JavaScript, you will have to parse and obtain the `callid` from their JSON response. The additional information is obtained using `VdotMeInfo`.

Once you have obtained the `callid` from Visa Lightbox, you can make appropriate Visa Checkout `VdotMe` transaction call to Moneris to process your transaction and obtain your funds.

NOTE: During Visa Checkout testing in our QA test environment, please use the API key that you generated in the Visa Checkout configuration for the `V.Init` call in your JavaScript.

16.4 Transaction Flow for Visa Checkout

VISA Checkout Process – Successful Process



16.5 Visa Checkout Purchase

VdotMePurchase transaction object definition

```
VdotMePurchase vmepurchase = new VdotMePurchase();
```

HttpPostRequest for VdotMePurchase transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(vmepurchase);
```

VdotMePurchase transaction object values

Table 1 VdotMePurchase transaction object mandatory values

| Value | Type | Limits | Set Method |
|----------------------|--------|---|--|
| Order ID | String | 50-character alpha-numeric | <code>vmepurchase.SetOrderId(order_id);</code> |
| Call ID | String | 20-character numeric | <code>vmepurchase.SetCallId(call_id);</code> |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>vmepurchase.SetAmount(amount);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>vmepurchase.SetCryptType(crypt);</code> |

Table 2 VdotMePurchase transaction object optional values

| Value | Type | Limits | Set Method |
|--------------------|---------|----------------------------|--|
| Dynamic descriptor | String | 20-character alpha-numeric | <code>vmepurchase.SetDynamicDescriptor(dynamic_descriptor);</code> |
| Status check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |

Sample VdotMePurchase

```

using System;
using System.Collections.Generic;
using System.Text;
using Moneris;
namespace Moneris
{
    class TestCanadaVdotMePurchase
    {
    public static void Main(string[] args)
    {
    string store_id = "store2";
    string api_token = "yesguy";
    string cust_id = "Joe Doe";
    string order_id = "VmeOrder" + DateTime.Now.ToString("yyyyMMddhhmmss");
    string amount = "8.00";
    string crypt_type = "7";
    string call_id = "2374837188642083454";
    string dynamic_descriptor = "inv123";
    string processing_country_code = "CA";
    bool status_check = false;
    VdotMePurchase vmepurchase = new VdotMePurchase();
    vmepurchase.SetOrderId(order_id);
    vmepurchase.SetCustId(cust_id);
    vmepurchase.SetAmount(amount);
    vmepurchase.SetCallId(call_id);
    vmepurchase.SetCryptType(crypt_type);
    vmepurchase.SetDynamicDescriptor(dynamic_descriptor);
    HttpsPostRequest mpgReq = new HttpsPostRequest();
    mpgReq.SetProcCountryCode(processing_country_code);
    mpgReq.SetTestMode(true); //false or comment out this line for production transactions
    mpgReq.SetStoreId(store_id);
    mpgReq.SetApiToken(api_token);
    mpgReq.SetTransaction(vmepurchase);
    mpgReq.SetStatusCheck(status_check);
    mpgReq.Send();
    try
    {
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("CardType = " + receipt.GetCardType());
    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
    Console.WriteLine("TransType = " + receipt.GetTransType());
    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("ISO = " + receipt.GetISO());
    Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Ticket = " + receipt.GetTicket());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
    Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
    Console.WriteLine("\r\nPress the enter key to exit");
    Console.ReadLine();
    }
    }
}

```

| Sample VdotMePurchase |
|--|
| <pre> catch (Exception e) { Console.WriteLine(e); } } } } </pre> |

16.6 Visa Checkout Pre-Authorization

VdotMePreAuth is virtually identical to the VdotMePurchase with the exception of the transaction type name.

If the order could not be completed for some reason, such as an order is cancelled, made in error or not fulfillable, the VdotMePreAuth transaction must be reversed within 72 hours.

To reverse an authorization, perform a VdotMeCompletion transaction for \$0.00 (zero dollars).

VdotMePreAuth transaction object definition

```
VdotMePreauth vMePreauthRequest = new VdotMePreauth();
```

HttpPostRequest object for VdotMePreAuth transaction

```

HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(vMePreauthRequest);

```

VdotMePreAuth transaction object values

Table 1 VdotMePreAuth transaction object mandatory values

| Value | Type | Limits | Set Method |
|----------|--------|--|---|
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div style="border: 1px solid black; background-color: #e6f2e6; padding: 2px; display: inline-block; margin-top: 5px;"> EXAMPLE: 1234567.89 </div> | vDotMeReauthRequest.SetAmount(amount); |
| Call ID | String | 20-character numeric | vDotMeReauthRequest.SetCallId(call_id); |
| Order ID | String | 50-character alpha-numeric | vDotMeReauthRequest.SetOrderId(order_id); |

| Value | Type | Limits | Set Method |
|----------------------|--------|---------------------------|---|
| E-commerce indicator | String | 1-character alpha-numeric | vDotMeReauthRequest. .SetCryptType(crypt); |

Table 2 VdotMePreAuth transaction object optional values

| Value | Type | Limits | Set Method |
|--------------------|--------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | vMePreauthRequest.SetCustId (cust_id); |
| Dynamic descriptor | String | 20-character alpha-numeric | vDotMeReauthRequest. .SetDynamicDescriptor (dynamic_descriptor); |

Sample VdotMePreAuth

```

using System;
namespace Moneris
{
class TestCanadaVdotMePreauth
{
public static void Main(string[] args)
{
string store_id = "store2";
string api_token = "yesguy";
string amount = "5.00";
string crypt_type = "7";
string order_id = "VmeOrder" + DateTime.Now.ToString("yyyyMMddhhmmss");
string call_id = "2336392495138357172";
string cust_id = "my customer id";
string processing_country_code = "CA";
bool status_check = false;
VdotMePreauth vMePreauthRequest = new VdotMePreauth();
vMePreauthRequest.SetOrderId(order_id);
vMePreauthRequest.SetAmount(amount);
vMePreauthRequest.SetCallId(call_id);
vMePreauthRequest.SetCustId(cust_id);
vMePreauthRequest.SetCryptType(crypt_type);
HttpsPostRequest mpgReq = new HttpsPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(vMePreauthRequest);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
Receipt receipt = mpgReq.GetReceipt();
Console.WriteLine("CardType = " + receipt.GetCardType());
Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
}
}
}

```

Sample VdotMePreAuth

```

Console.WriteLine("TransType = " + receipt.GetTransType());
Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
Console.WriteLine("ISO = " + receipt.GetISO());
Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
Console.WriteLine("Message = " + receipt.GetMessage());
Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
Console.WriteLine("TransTime = " + receipt.GetTransTime());
Console.WriteLine("Ticket = " + receipt.GetTicket());
Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
Console.WriteLine("\r\nPress the enter key to exit");
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
}

```

16.7 Visa Checkout Completion

The `VdotMeCompletion` transaction is used to secure the funds locked by a `VdotMePreAuth` transaction.

You may also perform this transaction at \$0.00 (zero dollars) to reverse a `VdotMePreauth` transaction that you are unable to fulfill.

VdotMeCompletion transaction object definition

```
VdotMeCompletion vmecompletion = new VdotMeCompletion();
```

HttpPostRequest object for VdotMeCompletion transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
```

```
mpgReq.SetTransaction(vmecompletion);
```

VdotMeCompletion transaction object values

Table 1 VdotMeCompletion transaction object mandatory values

| Value | Type | Limits | Set Method |
|----------------------|--------|---|--|
| Order ID | String | 50-character alpha-numeric | <code>vmecompletion.SetOrderId(order_id);</code> |
| Transaction number | String | 255-character alpha-numeric | <code>vmecompletion.SetTxnNumber(txn_number);</code> |
| Completion amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | <code>vmecompletion.SetCompAmount(comp_amount);</code> |
| E-commerce indicator | String | 1-character alpha-numeric | <code>vmecompletion.SetCryptType(crypt);</code> |

Table 2 VdotMeCompletion transaction object optional values

| Value | Type | Limits | Set Method |
|--------------------|--------|----------------------------|--|
| Customer ID | String | 50-character alpha-numeric | <code>vmecompletion.SetCustId(cust_id);</code> |
| Dynamic descriptor | String | 20-character alpha-numeric | <code>vmecompletion.SetDynamicDescriptor(dynamic_descriptor);</code> |

Sample VdotMeCompletion

```
using System;
namespace Moneris
{
    class TestCanadaVdotMeCompletion
    {
        public static void Main(string[] args)
        {
            string store_id = "store2";
            string api_token = "yesguy";
            string order_id = "VmeOrder20150626023358";
            string txn_number = "737541-0_10";
            string comp_amount = "1.00";
        }
    }
}
```

Sample VdotMeCompletion

```

string ship_indicator = "P";
string crypt_type = "7";
string cust_id = "mycustomerid";
string dynamic_descriptor = "inv 123";
string processing_country_code = "CA";
bool status_check = false;
VdotMeCompletion vmecompletion = new VdotMeCompletion();
vmecompletion.SetOrderId(order_id);
vmecompletion.SetTxnNumber(txn_number);
vmecompletion.SetAmount(comp_amount);
vmecompletion.SetCryptType(crypt_type);
vmecompletion.SetDynamicDescriptor(dynamic_descriptor);
vmecompletion.SetCustId(cust_id);
vmecompletion.SetShipIndicator(ship_indicator);
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(vmecompletion);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("CardType = " + receipt.GetCardType());
    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
    Console.WriteLine("TransType = " + receipt.GetTransType());
    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("ISO = " + receipt.GetISO());
    Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Ticket = " + receipt.GetTicket());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
    Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
    Console.WriteLine("\r\nPress the enter key to exit");
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}
}

```

16.8 Visa Checkout Purchase Correction

`VdotMePurchaseCorrection` is used to cancel a `VdotMeCompletion` or `VdotMePurchase` transaction that was performed in the current batch. No other transaction types can be corrected using this

method.

No amount is required because it is always for 100% of the original transaction.

VdotMePurchaseCorrection transaction object definition

```
VdotMePurchaseCorrection vDotMePurchaseCorrection = new
VdotMePurchaseCorrection();
```

HttpPostRequest object for VdotMePurchaseCorrection transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(vDotMePurchaseCorrection);
```

VdotMePurchaseCorrection transaction object values

Table 1 VdotMePurchaseCorrection transaction object mandatory values

| Value | Type | Limits | Set Method |
|--------------------|--------|-----------------------------|---|
| Order ID | String | 50-character alpha-numeric | <code>vDotMePurchaseCorrection.SetOrderId(order_id);</code> |
| Transaction number | String | 255-character alpha-numeric | <code>vDotMePurchaseCorrection.SetTxnNumber(txn_number);</code> |

Table 2 VdotMePurchaseCorrection transaction object optional values

| Value | Type | Limits | Set Method |
|--------------|---------|----------------------------|---|
| Customer ID | String | 50-character alpha-numeric | <code>vDotMePurchaseCorrection.SetCustId(cust_id);</code> |
| Status check | Boolean | true/false | <code>mpgReq.SetStatusCheck(status_check);</code> |

Sample VdotMePurchaseCorrection

```
using System;
using Moneris;
namespace ACME
{
    class TestCanadaVdotMePurchaseCorrection
    {
        public static void Main(string[] args)
        {
            string store_id = "store2";
            string api_token = "yesguy";
            string order_id = "VmeOrder20150626022834";
            string txn_number = "737534-0_10";
            string crypt_type = "7";
            string cust_id = "my customer id";
```

Sample VdotMePurchaseCorrection

```

string processing_country_code = "CA";
bool status_check = false;
VdotMePurchaseCorrection vDotMePurchaseCorrection = new VdotMePurchaseCorrection();
vDotMePurchaseCorrection.SetOrderId(order_id);
vDotMePurchaseCorrection.SetCustId(cust_id);
vDotMePurchaseCorrection.SetTxnNumber(txn_number);
vDotMePurchaseCorrection.SetCryptType(crypt_type);
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetProcCountryCode(processing_country_code);
mpgReq.SetTestMode(true); //false or comment out this line for production transactions
mpgReq.SetStoreId(store_id);
mpgReq.SetApiToken(api_token);
mpgReq.SetTransaction(vDotMePurchaseCorrection);
mpgReq.SetStatusCheck(status_check);
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("CardType = " + receipt.GetCardType());
    Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
    Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
    Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
    Console.WriteLine("TransType = " + receipt.GetTransType());
    Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
    Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
    Console.WriteLine("ISO = " + receipt.GetISO());
    Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
    Console.WriteLine("Message = " + receipt.GetMessage());
    Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
    Console.WriteLine("Complete = " + receipt.GetComplete());
    Console.WriteLine("TransDate = " + receipt.GetTransDate());
    Console.WriteLine("TransTime = " + receipt.GetTransTime());
    Console.WriteLine("Ticket = " + receipt.GetTicket());
    Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
    Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
    Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
    Console.WriteLine("\r\nPress the enter key to exit");
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}

```

16.9 Visa Checkout Refund

VdotMeRefund will credit a specified amount to the cardholder's credit card and update their Visa Checkout transaction history. A refund can be sent up to the full value of the original VdotMeCompletion or VdotMePurchase.

VdotMeRefund transaction object definition

```
VdotMeRefund vDotMeRefundRequest = new VdotMeRefund();
```

HttpPostRequest object for VdotMeRefund transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(vDotMeRefundRequest);
```

VdotMeRefund transaction object values**Table 1 VdotMeRefund transaction object mandatory values**

| Value | Type | Limits | Set Method |
|----------------------|--------|---|--|
| Order ID | String | 50-character alphanumeric | vDotMeRefundRequest. .SetOrderId(order_id); |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | vDotMeRefundRequest.SetAmount(amount); |
| Transaction number | String | 255-character alphanumeric | vDotMeRefundRequest. .SetTxnNumber(txn_number); |
| E-commerce indicator | String | 1-character alphanumeric | vDotMeRefundRequest. .SetCryptType(crypt); |

Table 2 VdotMeRefund transaction object optional values

| Value | Type | Limits | Set Method |
|--------------------|---------|---------------------------|--|
| Customer ID | String | 50-character alphanumeric | vDotMeRefundRequest.SetCustId(cust_id); |
| Dynamic descriptor | String | 20-character alphanumeric | vDotMeRefundRequest. .SetDynamicDescriptor(dynamic_descriptor); |
| Status check | Boolean | true/false | mpgReq.SetStatusCheck(status_check); |

Sample VdotMeRefund

```
using System;
using Moneris;
```

Sample VdotMeRefund

```
namespace ACME
{
    class TestCanadaVdotMeRefund
    {
    public static void Main(string[] args)
    {
        string store_id = "store2";
        string api_token = "yesguy";
        string order_id = "VmeOrder20150626023725";
        string txn_number = "737545-0_10";
        string amount = "1.00";
        string crypt_type = "7";
        string dynamic_descriptor = "inv 123";
        string cust_id = "my customer id";
        string processing_country_code = "CA";
        bool status_check = false;
        VdotMeRefund vDotMeRefundRequest = new VdotMeRefund();
        vDotMeRefundRequest.SetOrderId(order_id);
        vDotMeRefundRequest.SetAmount(amount);
        vDotMeRefundRequest.SetCustId(cust_id);
        vDotMeRefundRequest.SetTxnNumber(txn_number);
        vDotMeRefundRequest.SetCryptType(crypt_type);
        vDotMeRefundRequest.SetDynamicDescriptor(dynamic_descriptor);
        HttpsPostRequest mpgReq = new HttpsPostRequest();
        mpgReq.SetProcCountryCode(processing_country_code);
        mpgReq.SetTestMode(true); //false or comment out this line for production transactions
        mpgReq.SetStoreId(store_id);
        mpgReq.SetApiToken(api_token);
        mpgReq.SetTransaction(vDotMeRefundRequest);
        mpgReq.SetStatusCheck(status_check);
        mpgReq.Send();
        try
        {
            Receipt receipt = mpgReq.GetReceipt();
            Console.WriteLine("CardType = " + receipt.GetCardType());
            Console.WriteLine("TransAmount = " + receipt.GetTransAmount());
            Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber());
            Console.WriteLine("ReceiptId = " + receipt.GetReceiptId());
            Console.WriteLine("TransType = " + receipt.GetTransType());
            Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum());
            Console.WriteLine("ResponseCode = " + receipt.GetResponseCode());
            Console.WriteLine("ISO = " + receipt.GetISO());
            Console.WriteLine("BankTotals = " + receipt.GetBankTotals());
            Console.WriteLine("Message = " + receipt.GetMessage());
            Console.WriteLine("AuthCode = " + receipt.GetAuthCode());
            Console.WriteLine("Complete = " + receipt.GetComplete());
            Console.WriteLine("TransDate = " + receipt.GetTransDate());
            Console.WriteLine("TransTime = " + receipt.GetTransTime());
            Console.WriteLine("Ticket = " + receipt.GetTicket());
            Console.WriteLine("TimedOut = " + receipt.GetTimedOut());
            Console.WriteLine("StatusCode = " + receipt.GetStatusCode());
            Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
            Console.WriteLine("\r\nPress the enter key to exit");
            Console.ReadLine();
        }
        catch (Exception e)
        {
            Console.WriteLine(e);
        }
    }
}
```


Sample VdotMeRefund

```
}
}
}
```

16.10 Visa Checkout Information

VdotMeInfo will get customer information from their Visa Checkout wallet. The details returned are dependent on what the customer has stored in Visa Checkout.

VdotMeInfo transaction object definition

```
VdotMeInfo vmeinfo = new VdotMeInfo();
```

HttpPostRequest object for VdotMeInfo transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();
mpgReq.SetTransaction(vmeinfo);
```

VdotMeInfo transaction object values

Table 1 VdotMeInfo transaction object mandatory values

| Value | Type | Limits | Set Method |
|---------|--------|----------------------|-----------------------------|
| Call ID | String | 20-character numeric | vmeinfo.SetCallId(call_id); |

Sample VdotMeInfo

```
using System;
using System.Collections.Generic;
using System.Text;
namespace Moneris
{
    public class TestCanadaVdotMeInfo
    {
        public static void Main(string[] args)
        {
            string store_id = "store2";
            string api_token = "yesguy";
            string call_id = "5840726785406561048";
            string processing_country_code = "CA";
            bool status_check = false;
            VdotMeInfo vmeinfo = new VdotMeInfo();
            vmeinfo.SetCallId(call_id);
            HttpPostRequest mpgReq = new HttpPostRequest();
            mpgReq.SetProcCountryCode(processing_country_code);
            mpgReq.SetTestMode(true); //false or comment out this line for production transactions
            mpgReq.SetStoreId(store_id);
            mpgReq.SetApiToken(api_token);
            mpgReq.SetTransaction(vmeinfo);
            mpgReq.SetStatusCheck(status_check);
        }
    }
}
```

Sample VdotMeInfo

```
mpgReq.Send();
try
{
    Receipt receipt = mpgReq.GetReceipt();
    Console.WriteLine("Response Code: " + receipt.GetResponseCode());
    Console.WriteLine("Response Message: " + receipt.GetMessage());
    Console.WriteLine("Currency Code: " + receipt.GetCurrencyCode());
    Console.WriteLine("Payment Totals: " + receipt.GetPaymentTotal());
    Console.WriteLine("User First Name: " + receipt.GetUserFirstName());
    Console.WriteLine("User Last Name: " + receipt.GetUserLastName());
    Console.WriteLine("Username: " + receipt.GetUserName());
    Console.WriteLine("User Email: " + receipt.GetUserEmail());
    Console.WriteLine("Encrypted User ID: " + receipt.GetEncUserId());
    Console.WriteLine("Creation Time Stamp: " + receipt.GetCreationTimeStamp());
    Console.WriteLine("Name on Card: " + receipt.GetNameOnCard());
    Console.WriteLine("Expiration Month: " + receipt.GetExpirationDateMonth());
    Console.WriteLine("Expiration Year: " + receipt.GetExpirationDateYear());
    Console.WriteLine("Last 4 Digits: " + receipt.GetLastFourDigits());
    Console.WriteLine("Bin Number (6 Digits): " + receipt.GetBinSixDigits());
    Console.WriteLine("Card Brand: " + receipt.GetCardBrand());
    Console.WriteLine("Card Type: " + receipt.GetVdotMeCardType());
    Console.WriteLine("Billing Person Name: " + receipt.GetPersonName());
    Console.WriteLine("Billing Address Line 1: " + receipt.GetBillingAddressLine1());
    Console.WriteLine("Billing City: " + receipt.GetBillingCity());
    Console.WriteLine("Billing State/Province Code: " + receipt.GetBillingStateProvinceCode());
    Console.WriteLine("Billing Postal Code: " + receipt.GetBillingPostalCode());
    Console.WriteLine("Billing Country Code: " + receipt.GetBillingCountryCode());
    Console.WriteLine("Billing Phone: " + receipt.GetBillingPhone());
    Console.WriteLine("Billing ID: " + receipt.GetBillingId());
    Console.WriteLine("Billing Verification Status: " + receipt.GetBillingVerificationStatus());
    Console.WriteLine("Partial Shipping Country Code: " + receipt.GetPartialShippingCountryCode());
    Console.WriteLine("Partial Shipping Postal Code: " + receipt.GetPartialShippingPostalCode());
    Console.WriteLine("Shipping Person Name: " + receipt.GetShippingPersonName());
    Console.WriteLine("Shipping Address Line 1: " + receipt.GetShipAddressLine1());
    Console.WriteLine("Shipping City: " + receipt.GetShippingCity());
    Console.WriteLine("Shipping State/Province Code: " + receipt.GetShippingStateProvinceCode());
    Console.WriteLine("Shipping Postal Code: " + receipt.GetShippingPostalCode());
    Console.WriteLine("Shipping Country Code: " + receipt.GetShippingCountryCode());
    Console.WriteLine("Shipping Phone: " + receipt.GetShippingPhone());
    Console.WriteLine("Shipping Default: " + receipt.GetShippingDefault());
    Console.WriteLine("Shipping ID: " + receipt.GetShippingId());
    Console.WriteLine("Shipping Verification Status: " + receipt.GetShippingVerificationStatus());
    Console.WriteLine("isExpired: " + receipt.GetIsExpired());
    Console.WriteLine("Base Image File Name: " + receipt.GetBaseImageFileName());
    Console.WriteLine("Height: " + receipt.GetHeight());
    Console.WriteLine("Width: " + receipt.GetWidth());
    Console.WriteLine("Issuer Bid: " + receipt.GetIssuerBid());
    Console.WriteLine("Risk Advice: " + receipt.GetRiskAdvice());
    Console.WriteLine("Risk Score: " + receipt.GetRiskScore());
    Console.WriteLine("AVS Response Code: " + receipt.GetAvsResponseCode());
    Console.WriteLine("CVV Response Code: " + receipt.GetCvvResponseCode());
    Console.WriteLine("\r\nPress the enter key to exit");
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
```

17 Testing a Solution

- 17.1 About the Merchant Resource Center
- 17.2 Logging In to the QA Merchant Resource Center
- 17.3 Test Credentials for Merchant Resource Center
- 17.4 Getting a Unique Test Store ID and API Token
- 17.5 Processing a Transaction
- 17.6 Testing INTERAC® Online Payment Solutions
- 17.7 Testing MPI Solutions
- 17.8 Testing Visa Checkout
- 1 Test Cards
- 17.10 Simulator Host

17.1 About the Merchant Resource Center

The Merchant Resource Center is the user interface for Moneris Gateway services. There is also a QA version of the Merchant Resource Center site specifically allocated for you and other developers to use to test your API integrations with the gateway.

You can access the Merchant Resource Center in the test environment at:

<https://esqa.moneris.com/mpg> (Canada)

The test environment is generally available 24/7, but 100% availability is not guaranteed. Also, please be aware that other merchants are using the test environment in the Merchant Resource Center. Therefore, you may see transactions and user IDs that you did not create. As a courtesy to others who are testing, we ask that you use only the transactions/users that you created. This applies to processing Refund transactions, changing passwords or trying other functions.

17.2 Logging In to the QA Merchant Resource Center

To log in to the QA Merchant Resource Center for testing purposes:

1. Go to the Merchant Resource Center QA website at <https://esqa.moneris.com/mpg>
2. Enter your username and password, which are the same email address and password you use to log in to the Developer Portal
3. Enter your Store ID, which you obtained from the Developer Portal's My Testing Credentials as described in Test Credentials for Merchant Resource Center (page 387)

17.3 Test Credentials for Merchant Resource Center

For testing purposes, you can either use the pre-existing test stores in the Merchant Resource Center, or you can create your own unique test store where you will only see your own transactions. If you want to use the pre-existing stores, use the test credentials provided in the following tables with the corresponding lines of code, as in the examples below.

Example of Corresponding Code For Canada:

```
string store_id = "store5";
string api_token = "yesguy";
string processing_country_code = "CA";
mpgReq.SetTestMode(true);
```

Table 102: Test Server Credentials - Canada


| store_id | api_token | Username | Password | Other Information |
|------------|-------------|----------|----------|---|
| store1 | yesguy | demouser | password | |
| store2 | yesguy | demouser | password | |
| store3 | yesguy | demouser | password | |
| store4 | yesguy | demouser | password | |
| store5 | yesguy | demouser | password | |
| monca00392 | yesguy | demouser | password | Use this store to test Convenience Fee transactions |
| moncaqagt1 | mgtokenguy1 | demouser | password | Use this store to test Token Sharing |
| moncaqagt2 | mgtokenguy2 | demouser | password | Use this store to test Token Sharing |
| moncaqagt3 | mgtokenguy3 | demouser | password | Use this store to test Token Sharing |
| monca01428 | mcmpguy | demouser | password | Use this store to test MasterCard MasterPass |

Alternatively, you can create and use a unique test store where you will only see your own transactions. For more on this, see [Getting a Unique Test Store ID and API Token \(page 389\)](#)

17.4 Getting a Unique Test Store ID and API Token

Transactions requests via the API will require you to have a Store ID and a corresponding API token. For testing purposes, you can either use the pre-existing test stores in the Merchant Resource Center, or you can create your own unique test store where you will only see your own transactions.

To get your unique Store ID and API token:

1. Log in to the Developer Portal at <https://developer.moneris.com>
2. In the My Profile dialog, click the Full Profile  button
3. Under My Testing Credentials, select Request Testing Credentials
4. Enter your Developer Portal password and select your country
5. Record the Store ID and API token that are given, as you will need them for logging in to the Merchant Resource Center (Store ID) and for API requests (API token).

Alternatively, you can use the pre-existing test stores already set up in the Merchant Resource Center as described in Test Credentials for Merchant Resource Center (page 387).

17.5 Processing a Transaction

- 1.1 Overview
- 1.2 HttpRequest Object
- 1.3 Receipt Object

17.5.1 Overview

There are some common steps for every transaction that is processed.

1. Instantiate the transaction object (e.g., Purchase), and update it with object definitions that refer to the individual transaction.
2. Instantiate the HttpRequest connection object and update it with connection information, host information and the transaction object that you created in step 17.5
Section 17.5 (page 391) provides the HttpRequest connection object definition. This object and its variables apply to **every** transaction request.
3. Invoke the HttpRequest object's `send()` method.
4. Instantiate the Receipt object, by invoking the HttpRequest object's `get Receipt` method. Use this object to retrieve the applicable response details.

Some transactions may require steps in addition to the ones listed here. Below is a sample Purchase transaction with each major step outlined. For extensive code samples of other transaction types, refer to the Java API ZIP file.

NOTE: For illustrative purposes, the order in which lines of code appear below may differ slightly from the same sample code presented elsewhere in this document.

| | |
|--|---|
| <pre>using System; using System.Collections.Generic; using System.Text; using Moneris; string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss"); string amount = "5.00"; string pan = "4242424242424242"; string expdate = "1901"; //YYMM format string crypt = "7"; string processing_country_code = "CA";</pre> | Include all necessary classes. |
| <pre>string store_id = "store5"; string api_token = "yesguy";</pre> | Define all mandatory values for the connection object properties. |
| <pre>Purchase purchase = new Purchase(); purchase.SetOrderId(order_id); purchase.SetAmount(amount); purchase.SetPan(pan); purchase.SetExpdate(expdate); purchase.SetCryptType(crypt); purchase.SetDynamicDescriptor("2134565");</pre> | Instantiate the transaction object and assign values to properties. |

| | |
|---|---|
| <pre> HttpsPostRequest mpgReq = new HttpsPostRequest(); mpgReq.SetProcCountryCode(processing_country_code); mpgReq.SetTestMode(true); //false or comment out this line for production transactions mpgReq.SetStoreId(store_id); mpgReq.SetApiToken(api_token); mpgReq.SetTransaction(purchase); mpgReq.SetStatusCheck(status_check); try { Receipt receipt = mpgReq.GetReceipt(); Console.WriteLine("CardType = " + receipt.GetCardType()); Console.WriteLine("TransAmount = " + receipt.GetTransAmount()); Console.WriteLine("TxnNumber = " + receipt.GetTxnNumber()); Console.WriteLine("ReceiptId = " + receipt.GetReceiptId()); Console.WriteLine("TransType = " + receipt.GetTransType()); Console.WriteLine("ReferenceNum = " + receipt.GetReferenceNum()); Console.WriteLine("ResponseCode = " + receipt.GetResponseCode()); Console.WriteLine("ISO = " + receipt.GetISO()); Console.WriteLine("BankTotals = " + receipt.GetBankTotals()); Console.WriteLine("Message = " + receipt.GetMessage()); Console.WriteLine("AuthCode = " + receipt.GetAuthCode()); Console.WriteLine("Complete = " + receipt.GetComplete()); Console.WriteLine("TransDate = " + receipt.GetTransDate()); Console.WriteLine("TransTime = " + receipt.GetTransTime()); Console.WriteLine("Ticket = " + receipt.GetTicket()); Console.WriteLine("TimedOut = " + receipt.GetTimedOut()); Console.WriteLine("IsVisaDebit = " + receipt.GetIsVisaDebit()); Console.ReadLine(); } catch (Exception e) { Console.WriteLine(e); } } } } </pre> | <p>Instantiate connection object and assign values to properties, including the transaction object you just created.</p> <p>Instantiate the Receipt object and use its get methods to retrieve the desired response data.</p> |
|---|---|

17.5.2 HttpsPostRequest Object

The transaction object that you instantiate becomes a property of this object when you call its set transaction method.

HttpsPostRequest Object Definition

```

HttpsPostRequest mpgReq = new HttpsPostRequest();

```

After instantiating the HttpsPostRequest object, update its mandatory and optional values as outlined in the following values tables.

Table 103: HttpsPostRequest object mandatory values

| Value | Type | Limits | Set method |
|-------------------------|---|---------------------------|---|
| | Description | | |
| Processing country code | String | 2-character alphabetic | <code>mpgReq.setProcCountryCode (processing_country_code);</code> |
| | CA for Canada, US for USA. | | |
| Test mode | Boolean | true/false | <code>mpgReq.setTestMode (true);</code> |
| | Set to <code>true</code> when in test mode. Set to <code>false</code> (or comment out entire line) when in production mode. | | |
| Store ID | String | 10-character alphanumeric | <code>mpgReq.setStoreId (store_id);</code> |
| | Unique identifier provided by Moneris upon merchant account set up. See 17.1 About the Merchant Resource Center for test environment details. | | |
| API Token | String | 20-character alphanumeric | <code>mpgReq.setApiToken (api_token);</code> |
| | Unique alphanumeric string assigned upon merchant account activation. To locate your production API token, refer to the Merchant Resource Center Admin Store Settings. See 17.3 Test Credentials for Merchant Resource Center for test environment details. | | |
| Transaction | Object | Not applicable | <code>mpgReq.setTransaction (transaction);</code> |
| | This argument is one of the numerous transaction types discussed in the rest of this manual. (Such as Purchase, Refund and so on.) This object is instantiated in step 1 above. | | |

Table 1 HttpsPostRequest object optional values

| Value | Type | Limits | Set method |
|---|---|------------|--|
| | Description | | |
| Status Check | Boolean | true/false | <code>mpgReq.setStatusCheck (status_check);</code> |
| | See Appendix A Definitions of Request Fields. | | |
| <p>NOTE: while this value belongs to the HttpsPostRequest object, it is only supported by some transactions. Check the individual transaction definition to find out whether Status Check can be used.</p> | | | |

17.5.3 Receipt Object

After you send a transaction using the HttpsPostRequest object's send method, you can instantiate a receipt object.

Receipt Object Definition

```
Receipt receipt = mpgReq.GetReceipt();
```

For an in-depth explanation of Receipt object methods and properties, see Appendix B Definitions of Response Fields.

17.6 Testing INTERAC® Online Payment Solutions

Acxsys has two websites where merchants can post transactions for testing the fund guarantee porting of INTERAC® Online Payment transactions. The test `IDEBIT_MERCHNUM` value is provided by Moneris after registering in the test environment.

After registering, the following two links become accessible:

- Merchant Test Tool
- Certification Test Tool

Merchant Test Tool

https://merchant-test.interacdebit.ca/gateway/merchant_test_processor.do

This URL is used to simulate the transaction response process, to validate response variables, and to properly integrate your checkout process.

When testing INTERAC® Online Payment transactions, you are forwarded to the INTERAC® Online Payment Merchant Testing Tool. A screen appears where certain fields need to be completed.

For an approved response, do not alter any of the fields except for the ones listed here.

IDEBIT_TRACK2

To form a track2 when testing with the Moneris Gateway, use one of these three numbers:

3728024906540591206=01121122334455000

5268051119993326=01121122334455000000

453781122255=011211223344550000000000

IDEBIT_ISSNAME

RBC

IDEBIT_ISSCONF

123456

For a declined response, provide any other value as the `IDEBIT_TRACK2`. Click **Post to Merchant**.

Whether the transaction is approved or declined, do **not** click **Validate Data**. This will return validation errors.

Certification Test Tool

https://merchant-test.interacdebit.ca/gateway/merchant_certification_processor.do

This URL is used to complete the required INTERAC® Online Payment Merchant Front-End Certification test cases, which are outlined in Appendix E (page 464) and Appendix F (page 468).

To confirm the fund that was guaranteed above, an INTERAC® Online Payment Purchase must be sent to the Moneris Gateway QA using the following test store information:

Host: esqa.moneris.com

Store ID: store3

API Token: yesguy

You can always log into the Merchant Resource Center to check the results using the following information:

URL: <https://esqa.moneris.com/mpg>

Store ID: store3

Note that all response variables that are posted back from the IOP gateway in step 5.4 of 5.4 must be validated for length of field, permitted characters and invalid characters.

17.7 Testing MPI Solutions

When testing your implementation of the Moneris MPI, you can use the Visa/MasterCard/Amex PIT (production integration testing) environment. The testing process is slightly different than a production environment in that when the inline window is generated, it does not contain any input boxes. Instead, it contains a window of data and a **Submit** button. Clicking **Submit** loads the response in the testing window. The response will not be displayed in production.

NOTE: MasterCard SecureCode and Amex SafeKey may not be directly tested within our current test environment. However, the process and behavior tested with the Visa test cards will be the same for MCSC and SafeKey.

When testing you may use the following test card numbers with any future expiry date. Use the appropriate test card information from the tables below: Visa and MasterCard use the same test card information, while Amex uses unique information.

Table 104: MPI test card numbers (Visa and MasterCard only)

| Card Number | VERes | PARes | Action |
|--------------------------------------|-------|-------|--|
| 4012001037141112 4242424242424242 | Y | true | TXN – Call function to create inLine window. ACS – Send CAVV to Moneris Gateway using either the Cavv Purchase or the Cavv Pre-Authorization transaction. |
| 4012001038488884 | U | NA | Send transaction to Moneris Gateway using either the basic Purchase or the basic Pre-Authorization transaction. Set crypt_type = 7. |

Table 104: MPI test card numbers (Visa and MasterCard only) (continued)

| Card Number | VERes | PARes | Action |
|------------------|-------|-------|---|
| 4012001038443335 | N | NA | Send transaction to Moneris Gateway using either the basic Purchase or the basic Pre-Authorization transaction. Set crypt_type = 6. |
| 4012001037461114 | Y | false | Card failed to authenticate. Merchant may chose to send transaction or decline transaction. If transaction is sent, use crypt type = 7. |

Table 105: MPI test card numbers (Amex only)

| Card Number | VERes | Password | | Action |
|-----------------|-------|--------------------|-------|--|
| | | Required? | PARes | |
| 375987000000062 | U | Not required | N/A | TXN – Call function to create inLine window. ACS – Send CAVV to Moneris Gateway using either the Cavv Purchase or the Cavv Pre-Authorization transaction. Set crypt_type = 7. |
| 375987000000021 | Y | Yes: test13fail | false | Card failed to authenticate. Merchant may chose to send transaction or decline transaction. If transaction is sent, use crypt type = 7. |
| 375987000000013 | N | Not required | N/A | Send transaction to Moneris Gateway using either the basic Purchase or the basic Pre-Authorization transaction. Set crypt_type = 6. |
| 374500261001009 | Y | Yes: test09 | true | Card failed to authenticate. Merchant may choose to send transaction or decline transaction. Set crypt_type = 5. |

VERes

The result U, Y or N is obtained by using getMessage().

PARes

The result “true” or “false” is obtained by using getSuccess().

To access the Merchant Resource Center in the test environment go to <https://esqa.moneris.com/mpg>.

Transactions in the test environment should not exceed \$11.00.

17.8 Testing Visa Checkout

In order to test Visa Checkout you need to:

1. Create a Visa Checkout configuration profile in the Merchant Resource Center QA environment at <https://esqa.moneris.com/mpg>. To learn more about this, see "Creating a Visa Checkout Configuration for Testing" below.
2. Obtain a Lightbox API key to be used for Lightbox integration. To learn more about this, see "Integrating Visa Checkout Lightbox" on page 372.
3. For test card numbers specifically for use when testing Visa Checkout, see "Test Cards for Visa Checkout" on the next page

17.8.1 Creating a Visa Checkout Configuration for Testing

Once you have a test store created, you need to activate Visa Checkout in the QA environment.

To activate Visa Checkout in QA:

1. Log in to the the QA environment at <https://esqa.moneris.com/mpg>
2. In the Admin menu, select Visa Checkout
3. Complete the applicable fields
4. Click Save.

17.9 Test Card Numbers

Because of security and compliance reasons, the use of live credit and debit card numbers for testing is strictly prohibited. Only test credit and debit card numbers are to be used.

To test general transactions, use the following test card numbers:

Table 106: General test card numbers

| Card Plan | Card Number |
|------------|--|
| Mastercard | 5454545454545454 |
| Visa | 4242424242424242 |
| Amex | 373599005095005 |
| JCB | 3566007770015365 |
| Diners | 36462462742008 |
| Track2 | 5258968987035454=06061015454001060101? |
| Discover | 6510000000000182 |
| UnionPay | 6250944000000771 |

17.9.1 Test Card Numbers for Level 2/3

When testing Level 2/3 transactions, use the card numbers below.

| Card Brand | Test Card Number |
|------------|------------------|
| Mastercard | 5454545442424242 |
| Visa | 4242424254545454 |
| Amex | 373269005095005 |

17.9.2 Test Cards for Visa Checkout

Table 1 Test Cards Numbers – Visa Checkout

| Card Plan | Card Number |
|------------------|-------------------------------------|
| Visa | 4005520201264821 (without card art) |
| Visa | 4242424242424242 (with card art) |
| MasterCard | 5500005555555559 |
| American Express | 340353278080900 |
| Discover | 6011003179988686 |

17.10 Simulator Host

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

The test environment approves and declines transactions based on the penny value of the amount sent. For example, a transaction made for the amount of \$9.00 or \$1.00 is approved because of the .00 penny value.

Transactions in the test environment must not exceed \$11.00.

For a list of all current test environment responses for various penny values, please see the Test Environment Penny Response Table available at <https://developer.moneris.com>.

NOTE: These responses may change without notice. Check the Moneris Developer Portal (<https://developer.moneris.com>) regularly to access the latest documentation and downloads.

18 Moving to Production

- 18.1 Activating a Production Store Account
- 18.2 Configuring a Store for Production
- 18.3 Receipt Requirements
- 1 Getting Help

18.1 Activating a Production Store Account

The steps below outline how to activate your production account so that you can process production transactions.

1. Obtain your activation letter/fax from Moneris.
2. Go to `[[[Undefined variable URLs.ActivationCanada]]]`.
3. Input your store ID and merchant ID from the letter/fax and click **Activate**.
4. Follow the on-screen instructions to create an administrator account. This account will grant you access to the Merchant Resource Center.
5. Log into the Merchant Resource Center at <https://www3.moneris.com/mpg> using the user credentials created in step 18.1.
6. Proceed to **ADMIN** and then **STORE SETTINGS**.
7. Locate the API token at the top of the page. You will use this API token along with the store ID that you received in your letter/fax and to send any production transactions through the API.

When your production store is activated, you need to configure your store so that it points to the production host. To learn how do to this, see [Configuring a Store for Production \(page 401\)](#)

NOTE: For more information about how to use the Merchant Resource Center, see the [Moneris Gateway Merchant Resource Center User's Guide](https://developer.moneris.com), which is available at <https://developer.moneris.com>.

18.2 Configuring a Store for Production

After you have completed your testing and have activated your production store, you are ready to point your store to the production host.

To configure a store for production:

1. Change the test mode set method from `true` to `false`.
2. Change the Store ID to reflect the production store ID that you received when you activated your production store. To review the steps for activating a production store, see [Activating a Production Store Account \(page 401\)](#).
3. Change the API token to the production token that you received during activation.
4. If you haven't done so already, change the code to reflect the correct processing country (Canada for most merchants). For more on this, see

The table below illustrates the steps above using the relevant code (and where **x** is an alphanumeric character).

| Step | Code in Testing | Changes for Production |
|------|--|--|
| 1 | <p>No string changes for this item, only set method is altered:</p> <pre>mpgReq.SetTestMode(true);</pre> | <p>Set method for production:</p> <pre>mpgReq.SetTestMode(false);</pre> |
| 2 | <p>String:</p> <pre>string store_id = "store5";</pre> <p>Associated Set Method:</p> <pre>mpgReq.SetStoreId(store_id);</pre> | <p>String for Production:</p> <pre>string store_id = "monXXXXXXXXX";</pre> |
| 3 | <p>String:</p> <pre>string api_token = "yesguy";</pre> <p>Associated Set Method:</p> <pre>mpgReq.SetApiToken(api_token);</pre> | <p>String for Production:</p> <pre>string api_token = "XXXXX";</pre> |

18.2.1 Configuring an INTERAC® Online Payment Store for Production

Before you can process INTERAC® Online Payment transactions through your web site, you need to complete the certification registration process with Moneris, as described below. The production IDEBIT_MERCHNUM value is provided by Moneris after you have successfully completed the certification.

Acxsys' production INTERAC® Online PaymentGateway URL is https://gateway.interaonline.com/merchant_processor.do.

To access the Moneris Moneris Gateway production gateway URL, use the following:

Store ID: Provided by Moneris

API Token: Generated during your store activation process.

Processing country code: CA

The **production** Merchant Resource Center URL is <https://www3.moneris.com/mpg/>

18.2.1.1 Completing the Certification Registration - Merchants

To complete the certification registration, fax or email the information below to our Integration Support helpdesk:

- Merchant logo to be displayed on the INTERAC® Online Payment Gateway page
 - In both French and English
 - 120 × 30 pixels
 - Only PNG format is supported.

- Merchant business name
 - In both English and French
 - Maximum 30 characters.

- List of all referrer URLs. That is, URLs from which the customer may be redirected to the INTERAC® Online Payment gateway.
- List of all URLs that may appear in the IDEBIT_FUNDEDURL field of the https form POST to the INTERAC® Online Payment Gateway.
- List of all URLs that may appear in the IDEBIT_NOTFUNDEDURL field of the https form POST to the INTERAC® Online Payment Gateway.

18.2.1.2 Third-Party Service/Shopping Cart Provider

In your product documentation, instruct your clients to provide the information below to the Moneris Gateway Integration Support helpdesk for certification registration:

- Merchant logo to be displayed on the INTERAC® Online Payment Gateway page
 - In both French and English
 - 120 × 30 pixels
 - Only PNG format is supported.

- Merchant business name
 - In both English and French
 - Maximum 30 characters.

- List of all referrer URLs. That is, URLs from which the customer may be redirected to the INTERAC® Online Payment gateway.
- List of all URLs that may appear in the IDEBIT_FUNDEDURL field of the https form POST to the INTERAC® Online Payment Gateway.
- List of all URLs that may appear in the IDEBIT_NOTFUNDEDURL field of the https form POST to the INTERAC® Online Payment Gateway.

See 5.3.3, page 109 for additional client requirements.

18.3 Receipt Requirements

Visa and MasterCard expect certain details to be provided to the cardholder and on the receipt when a transaction is approved.

Receipts must comply with the standards outlined within the Integration Receipts Requirements. For all the receipt requirements covering all transaction scenarios, visit the Moneris Developer Portal at <https://developer.moneris.com>.

Production of the receipt must begin when the appropriate response to the transaction request is received by the application. The transaction may be any of the following:

- **Sale** (Purchase)
- **Authorization** (PreAuth, Pre-Authorization)
- **Authorization Completion** (Completion, Capture)
- **Offline Sale** (Force Post)
- **Sale Void** (Purchase Correction, Void)
- **Refund**.

The boldface terms listed above are the names for transactions as they are to be displayed on receipts. Other terms used for the transaction are indicated in brackets.

18.3.1 Certification Requirements

Card-present transaction receipts are required to complete certification.

Card-not-present integration

Certification is optional but highly recommended.

Card-present integration

After you have completed the development and testing, your application must undergo a certification process where all the applicable transaction types must be demonstrated, and the corresponding receipts properly generated.

Contact a Client Integration Specialist for the Certification Test checklist that must be completed and returned for verification. (See "Getting Help" on page 1 for contact details.) Be sure to include the application version of your product. Any further changes to the product after certification requires re-certification.

After the certification requirements are met, Moneris will provide you with an official certification letter.

Appendix A Definitions of Request Fields

This appendix deals with values that belong to transaction objects. For information on values that belong to the (HttpPostRequest) connection object, see "Processing a Transaction" on page 391.

NOTE:

Alphanumeric fields allow the following characters: a-z A-Z 0-9 _ - : . @ spaces

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

Note that the values listed in Appendix A are not mandatory for **every** transaction. Check the transaction definition. If it says that a value is mandatory, a further description is found here.

Table 107: Request fields

| Value | Type | Limits | Sample code variable definition |
|-----------------------------------|---|---------------------------|---------------------------------|
| | Description | | |
| General transaction values | | | |
| Order ID | String | 50-character alphanumeric | <code>string order_id;</code> |
| | <p>Merchant-defined transaction identifier that must be unique for every Purchase, PreAuth and Independent Refund transaction. No two transactions of these types may have the same order ID.</p> <p>For Refund, Completion and Purchase Correction transactions, the order ID must be the same as that of the original transaction.</p> <p>The last 10 characters of the order ID are displayed in the "Invoice Number" field on the Merchant Direct Reports. However only letters, numbers and spaces are sent to Merchant Direct.</p> <p>A minimum of 3 and a maximum of 10 valid characters are sent to Merchant Direct. Only the last characters beginning after any invalid characters are sent. For example, if the order ID is 1234-567890, only 567890 is sent to Merchant Direct.</p> <p>If the order ID has fewer than 3 characters, it may display a blank or 0000000000 in the Invoice Number field.</p> | | |

Table 107: Request fields (continued)

| Value | Type | Limits | Sample code variable definition |
|--------------------|--|---|----------------------------------|
| | Description | | |
| Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div style="border: 1px solid black; background-color: #e0ffe0; padding: 5px; display: inline-block;"> EXAMPLE: 1234567.89 </div> | <code>string amount;</code> |
| | Transaction amount. Used in a number of transactions. Note that this is different from the amount used in a Completion transaction, which is an alphanumeric value. This must contain at least 3 digits, two of which are penny values. The minimum allowable value is \$0.01, and the maximum allowable value is 9999999.99. Transaction amounts of \$0.00 are not allowed. | | |
| Credit card number | String | 20-character numeric (no spaces or dashes) | <code>string pan;</code> |
| | Most credit card numbers today are 16 digits, but some 13-digit numbers are still accepted by some issuers. This field has been intentionally expanded to 20 digits in consideration for future expansion and potential support of private label card ranges. | | |
| Expiry date | String | 4-character numeric (YYMM format) | <code>string expiry_date;</code> |
| | Note: This is the reverse of the date displayed on the physical card, which is MMY. | | |

Table 107: Request fields (continued)

| Value | Type | Limits | Sample code variable definition |
|----------------------|---|---------------------------|---------------------------------|
| | Description | | |
| E-Commerce indicator | String | 1-character alpha-numeric | <code>string crypt;</code> |
| | <p>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 5: Authenticated e-commerce transaction (VbV/MCSC/SafeKey) 6: Non-authenticated e-commerce transaction (VbV/MCSC/SafeKey) 7: SSL-enabled merchant 8: Non-secure transaction (web- or email-based) 9: SET non-authenticated transaction</p> <div style="border: 1px solid black; padding: 10px; margin-top: 20px;"> <p>NOTE: When processing a Cavv Purchase or Pre-Authorization for Apple Pay or Android Pay transactions whereby the merchant is using their own API to decrypt the payload, this field is mandatory.</p> <p>For Apple Pay or Android Pay, send the value returned in the <code>eciIndicator</code> or <code>3dsEciIndicator</code> respectively. If the value is not present, please send the value as 5. If you get a 2-character value (e.g., .05 or 07) from the payload, remove the initial 0 and just send us the 2nd character.</p> <p>Supported values for Apple Pay and Android Pay are:</p> <ul style="list-style-type: none"> 5: Authenticated e-commerce transaction 7: SSL-enabled merchant </div> | | |

Table 107: Request fields (continued)

| Value | Type | Limits | Sample code variable definition |
|---------------------------------|---|---|-------------------------------------|
| | Description | | |
| Completion Amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div style="border: 1px solid black; background-color: #e0f0e0; padding: 5px; display: inline-block;"> EXAMPLE: 1234567.89 </div> | <code>string comp_amount;</code> |
| | Amount of a Completion transaction. This may not be equal to the amount value (described on page 405), which appeared in the original Pre-Authorization transaction. | | |
| Shipping Indicator ¹ | String | 1-character alpha-numeric | <code>string ship_indicator;</code> |
| | Used to identify completion transactions that require multiple shipments, also referred to as multiple completions. By default, if the shipping indicator is not passed, all completions are listed as final completions. To indicate that the completion is to be left open by the issuer as supplemental shipments or completions are pending, a value of P is submitted. Possible values: P = Partial F = Final | | |

¹Available to Canadian integrations only.

Table 107: Request fields (continued)

| Value | Type | Limits | Sample code variable definition |
|-------------------------------|--|-----------------------------|----------------------------------|
| | Description | | |
| Transaction number | String | 255-character alphanumeric | <code>string txn_number;</code> |
| | <p>Used when performing follow-on transactions. (That is, Completion, Purchase Correction or Refund.) This must be the value that was returned as the transaction number in the response of the original transaction.</p> <p>When performing a Completion, this value must reference the Pre-Authorization. When performing a Refund or a Purchase Correction, this value must reference the Completion or the Purchase.</p> | | |
| Authorization code | String | 8-character alphanumeric | <code>string auth_code;</code> |
| | <p>Authorization code provided in the transaction response from the issuing bank. This is required for Force Post transactions.</p> | | |
| ECR number | String | 8-character alphanumeric | <code>string ecr_no;</code> |
| | <p>Electronic cash register number, also referred to as TID or Terminal ID.</p> | | |
| MPI transaction values | | | |
| XID | String | 20-character alphanumeric | <code>string xid;</code> |
| | <p>Can also be used as your order ID when using Moneris Gateway. Fixed length — must be exactly 20 characters.</p> | | |
| MD (Merchant Data) | String | 1024-character alphanumeric | <code>string MD;</code> |
| | <p>Information to be echoed back in the response.</p> | | |
| Merchant URL | String | Variable length | <code>string merchantUrl;</code> |
| | <p>URL to which the MPI response is to be sent.</p> | | |
| Accept | String | Variable length | <code>string accept;</code> |
| | <p>MIME types that the browser accepts</p> | | |
| User Agent | String | Variable length | <code>string userAgent;</code> |
| | <p>Browser details</p> | | |
| PAREs | String | Variable length | (Not shown) |
| | <p>Value passed back to the API during the TXN, and returned to the MPI when an ACS request is made.</p> | | |

Table 107: Request fields (continued)

| Value | Type | Limits | Sample code variable definition |
|---|---|---------------------------|---------------------------------|
| | Description | | |
| Cardholder Authentication Verification Value (CAVV) | String | 50-character alphanumeric | <code>string cavv;</code> |
| | Value provided by the Moneris MPI or by a third-party MPI. It is part of a Verified by Visa/MasterCard SecureCode/American Express SafeKey transaction. | | |
| NOTE: For Apple Pay and Android Pay Caw Purchase and Caw Pre-Authorization transactions, CAVV field contains the decrypted cryptogram. | | | |
| Vault transaction values | | | |
| Data key | String | 28-character alphanumeric | <code>string data_key;</code> |
| | Profile identifier that all future financial Vault transactions (that is, they occur after the profile was registered by a Vault Add Credit Card- ResAddCC, Vault Encrypted Add Credit Card - EncResAddCC, Vault Tokenize Credit Card - ResTokenizeCC, Vault Add Temporary Token - ResTempAdd or Vault Add Token - ResAddToken transaction) will use to associate with the saved information. The data key is generated by Moneris, and is returned to the merchant (via the Receipt object) when the profile is first registered. | | |
| Duration | String | 3-character numeric | <code>string duration;</code> |
| | Amount of time the temporary token should be available, up to 900 seconds. | | |

Table 107: Request fields (continued)

| Value | Type | Limits | Sample code variable definition |
|-------------------------------------|--|---------------------------|--------------------------------------|
| | Description | | |
| Data key format ¹ | String | 2-character alpha-numeric | <code>string data_key_format;</code> |
| | <p>This field will specify the data key format being returned. If left blank, Data Key format will default to 25-character alphanumeric.</p> <p>Valid values:</p> <p>no value sent or 0 = 25-character alpha-numeric Data Key</p> <p>By using the following values, a unique token is generated specifically for the PAN that is presented for tokenization. Any subsequent tokenization requests for the same PAN will result in the same token</p> <p>0U = 25-character alpha-numeric Data Key, Unique</p> | | |
| Mag Swipe transaction values | | | |
| POS code | String | 20-character numeric | <code>string pos_code;</code> |
| | <p>Under normal presentment situations, the value is 00.</p> <p>If a Pre-Authorization transaction was card-present and keyed-in, then the POS code for the corresponding Completion transaction is 71.</p> <p>In an unmanned kiosk environment where the card is present, the value is 27.</p> <p>If the solution is not “merchant and cardholder present”, contact Moneris for the proper POS code.</p> | | |
| Track2 data | String | 40-character alphanumeric | <code>string track2;</code> |
| | Retrieved from the mag stripe of a credit card by swiping it through a card reader, or the "fund guarantee" value returned by the INTERAC® Online Payment system. | | |
| Encrypted track2 data | String | Variable length | <code>string enc_track2;</code> |
| | String that is retrieved by swiping or keying in a credit card number through a Moneris-provided encrypted mag swipe card reader. It is part of an encrypted keyed or swiped transaction only. This string must be retrieved by a specific device. (See below for the list of current available devices.) | | |

¹Available to Canadian integrations only.

Table 107: Request fields (continued)

| Value | Type | Limits | Sample code variable definition |
|-------------|---|----------------------------|----------------------------------|
| | Description | | |
| Device type | String | 30-character alpha-numeric | <code>string device_type;</code> |
| | <p>Type of encrypted mag swipe reader that was read the credit card. This must be a Moneris-provided device so that the values are properly encrypted and decrypted.</p> <p>This field is case-sensitive. Available values are:</p> <p>"idtech_bdk"</p> | | |

Note that the values listed in Appendix A are not supported by **every** transaction. Check the transaction definition. If it says that a value is optional, a further description is found here.

Table 108: Optional transaction values

| Value | Type | Limits | Sample code variable definition |
|-----------------------------------|---|---------------------------|---|
| | Description | | |
| General transaction values | | | |
| Customer ID | String | 30-character alphanumeric | <code>string cust_id;</code> |
| | This can be used for policy number, membership number, student ID, invoice number and so on. This field is searchable from the Moneris Merchant Resource Center. | | |
| Status Check | String | true/false | <code>string status_check;</code> |
| | See . | | |
| Dynamic descriptor | String | 20-character alphanumeric | <code>string dynamic_descriptor;</code> |
| | Combined with merchant's business name cannot exceed 25 characters. Merchant-defined description sent on a per-transaction basis that will appear on the credit card statement appended to the merchant's business name. | | |

Table 108: Optional transaction values (continued)

| Value | Type | Limits | Sample code variable definition |
|---------------------------------|---|---------------------------|---------------------------------------|
| | Description | | |
| Wallet indicator ¹ | String | 3-character alphanumeric | <code>string wallet_indicator;</code> |
| | <p>Optional value to indicate when the credit card details were collected from a wallet such as Apple Pay, Android Pay, Visa Checkout, MasterCard MasterPass.</p> <p>This field is applicable to Apple Pay and Android Pay transactions whereby the merchant is using their own API to decrypt the payload. This is a mandatory field for these types of Apple Pay and Android Pay transactions.</p> <ul style="list-style-type: none"> • Apple Pay and Android Pay wallet indicator is applicable to Cavv Purchase – Apple Pay and Cavv Pre-Authorization – Apple Pay • Visa Checkout and MasterCard MasterPass wallet indicator is applicable to basic Purchase and Pre-Authorization <p>Possible values are:</p> <ul style="list-style-type: none"> • APP = Apple Pay In-App • APW = Apple Pay on the Web • ANP = Android Pay In-App • VCO = Visa Checkout • MMP = MasterCard MasterPass <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: Please note that if this field is included to indicate Apple Pay or Android Pay, then Convenience Fee is not supported.</p> </div> | | |
| Vault transaction values | | | |
| Phone number | String | 30-character alphanumeric | <code>string phone;</code> |
| | Phone number of the customer. Can be sent in when creating or updating a Vault profile. | | |
| Email address | String | 30-character alphanumeric | <code>string email;</code> |
| | Email address of the customer. Can be sent in when creating or updating a Vault profile. | | |
| Additional notes | String | 30-character alphanumeric | <code>string note;</code> |
| | This optional field can be used for supplementary information to be sent in with the transaction. This field can be sent in when creating or updating a Vault profile. | | |

For information about Customer Information request fields see 14 Customer Information

¹Available to Canadian integrations only.

For information about Address Verification Service (AVS) request fields see 9.1 Address Verification Service

For information about Card Validation Digits (CVD) request fields see

For information about Recurring Billing request fields see Appendix A Recurring Billing.

For information about Convenience Fee request fields see Appendix A Convenience Fee.

For information about Level 2/3 Visa, Level 2/3 MasterCard and Level 2/3 American Express, see A.3 Definition of Request Fields for Level 2/3 - Visa, A.5 Definition of Request Fields for Level 2/3 - Amex

A.1 Definitions of Request Fields – Credential on File

| Variable Name | Type | Limits | Description |
|---|--------|--|---|
| Issuer ID <div style="border: 1px solid black; padding: 5px; background-color: #e0f2f1;"> NOTE: This variable is required for all merchant-initiated transactions following the first one; upon sending the first transaction, the Issuer ID value is received in the transaction response and then used in subsequent transaction requests. </div> | String | 15-character alphanumeric Variable length | Unique identifier for the cardholder's stored credentials Sent back in the response from the card brand when processing a Credential on File transaction If the cardholder's credentials are being stored for the first time, you must save the Issuer ID on your system to use in subsequent Credential on File transactions (applies to merchant-initiated transactions only) |
| Payment Indicator | String | 1-character alphabetic | Indicates the intended or current use of the credentials Possible values for first transactions: C - unscheduled credential on file (first transaction only) R - recurring Possible values for subsequent transactions: R - recurring U - unscheduled merchant-initiated transaction Z - unscheduled cardholder-initiated transaction |
| Payment Information | String | 1-character numeric | Describes whether the transaction is the first or subsequent in the series Possible values are: 0 - first transaction in a series (storing payment details provided by the cardholder) 2 - subsequent transactions (using previously stored payment details) |

A.2 Definition of Request Fields – Recurring

Recurring Billing Info Object Request Fields

| Variable and Field Name | Type and Limits | Description |
|----------------------------------|--|---|
| Number of Recurs num_rekurs | <i>String</i> numeric, 1-99 | The number of times that the transaction must recur |
| Period period | <i>String</i> numeric, 1-999 | Number of recur units that must pass between recurring billings |
| Start Date start_date | <i>String</i> YYYY/MM/DD | Date of the first future recurring billing transaction This value must be a date in the future If an additional charge is to be made immediately, the value of Start Now must be set to true |
| Start Now start_now | <i>String</i> true/false | If a single charge is to be made against the card immediately, set this value to true; the amount to be billed immediately may differ from the amount billed on a regular basis thereafter If the billing is to start in the future, set this value to false When set to false, use Card Verification prior to sending the Purchase with Recur and Credential on File objects |
| Recurring Amount recur_amount | <i>String</i> 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89 | Amount of the recurring transaction This is the amount that will be billed on the Start Date and then billed repeatedly based on the interval defined by Period and Recur Unit |

| Variable and Field Name | Type and Limits | Description |
|--------------------------|--|---|
| Recur Unit recur_unit | <i>String</i> day, week, month or eom | Unit to be used as a basis for the interval Works in conjunction with Period to define the billing frequency Possible values are: day week month eom (end of month) |

A.3 Definition of Request Fields for Level 2/3 - Visa

Table 1 Visa - Corporate Card Common Data - Level 2 Request Fields

| Req* | Field Name | Limits | Set Method | Description |
|------|--|----------------------------|--|---|
| Y | National Tax | 12-character decimal | TRANSACTIONNAME .SetNationalTax (national_tax); | Must reflect the amount of National Tax (GST or HST) appearing on the invoice. Minimum - 0.01 Maximum - 999999.99. Must have 2 decimal places. |
| Y | Merchant VAT Registration/Single Business Reference Number | 20-character alpha-numeric | TRANSACTIONNAME .SetMerchantVatNo (merchant_vat_no); | Merchant's Tax Registration Number must be provided if tax is included on the invoice <div style="border: 1px solid black; padding: 5px; width: fit-content;"> NOTE: Must not be all spaces or all zeroes </div> |

| Req* | Field Name | Limits | Set Method | Description |
|------|--|---------------------------|--|---|
| C | Local Tax | 12-character decimal | TRANSACTIONNAME .SetLocalTax (local_tax); | <p>Must reflect the amount of Local Tax (PST or QST) appearing on the invoice</p> <p>If Local Tax included then must not be all spaces or all zeroes; Must be provided if Local Tax (PST or QST) applies</p> <p>Minimum = 0.01</p> <p>Maximum = 999999.99</p> <p>Must have 2 decimal places</p> |
| C | Local Tax (PST or QST) Registration Number | 15-character alphanumeric | TRANSACTIONNAME .SetLocalTaxNo (local_tax_no); | <p>Merchant's Local Tax (PST/QST) Registration Number</p> <p>Must be provided if tax is included on the invoice; If Local Tax included then must not be all spaces or all zeroes</p> <p>Must be provided if Local Tax (PST or QST) applies</p> |
| C | Customer VAT Registration Number | 13-character alphanumeric | TRANSACTIONNAME .SetCustomerVatNo (customer_vat_no); | <p>If the Customer's Tax Registration Number</p> |

| Req* | Field Name | Limits | Set Method | Description |
|------|---|---------------------------|---|---|
| | | | | appears on the invoice to support tax exempt transactions it must be provided here |
| C | Customer Code/Customer Reference Identifier (CRI) | 16-character alphanumeric | TRANSACTIONNAME .SetCri(cri); | Value which the customer may choose to provide to the supplier at the point of sale – must be provided if given by the customer |
| N | Customer Code | 17-character alphanumeric | TRANSACTIONNAME .SetCustomerCode(customer_code); | Optional customer code field that will not be passed along to Visa, but will be included on Moneris reporting |
| N | Invoice Number | 17-character alphanumeric | TRANSACTIONNAME .SetInvoiceNumber(invoice_number); | Optional invoice number field that will not be passed along to Visa, but will be included on Moneris reporting |

*Y = Required, N = Optional, C = Conditional

Table 2 Visa - Corporate Card Common Data- Level 2 Request Fields (VSPurcha)

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------|------------|---------------------------|--|
| C* | Buyer Name | buyer_name | 30-character alphanumeric | Buyer/Recipient Name *only required by CRA if transaction is >\$150 |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|-------------------------------|--------------------|---------------------|---|
| C* | Local tax rate | local_tax_rate | 4-character decimal | <p>Indicates the detailed tax rate applied in relationship to a local tax amount</p> <div style="border: 1px solid black; background-color: #e0ffe0; padding: 5px; width: fit-content;"> <p>EXAMPLE: 8% PST should be 8.0.</p> </div> <p>maximum 99.99</p> <p>*Must be provided if Local Tax (PST or QST) applies.</p> |
| N | Duty Amount | duty_amount | 9-character decimal | <p>Duty on total purchase amount</p> <p>A minus sign means 'amount is a credit', plus sign or no sign means 'amount is a debit'</p> <p>maximum without sign is 999999.99</p> |
| N | Invoice Discount Treatment | discount_treatment | 1-character numeric | <p>Indicates how the merchant is managing discounts</p> <p>Must be one of the following values:</p> <p>0 - if no invoice level discounts apply for this invoice</p> <p>1 - if Tax was calculated on Post-Discount totals</p> <p>2 - if Tax was calculated on Pre-Discount totals</p> |
| N | Invoice Level Discount Amount | discount_amt | 9-character decimal | <p>Amount of discount (if provided at the invoice level according to the</p> |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|----------------------------------|--------------------|---------------------------|---|
| | | | | <p>Invoice Discount Treatment)</p> <p>Must be non-zero if Invoice Discount Treatment is 1 or 2</p> <p>Minimum amount is 0.00 and maximum is 999999.99</p> |
| C* | Ship To Postal Code / Zip Code | ship_to_pos_code | 10-character alphanumeric | <p>The postal code or zip code for the destination where goods will be delivered</p> <p>*Required if shipment is involved</p> <p>Full alpha postal code - Valid ANA<space>NAN format required if shipping to an address within Canada</p> |
| C | Ship From Postal Code / Zip Code | ship_from_pos_code | 10-character alphanumeric | <p>The postal code or zip code from which items were shipped</p> <p>For Canadian addresses, requires full alpha postal code for the merchant with Valid ANA<space>NAN format</p> |
| C* | Destination Country Code | des_cou_code | 2-character alphanumeric | <p>Code of country where purchased goods will be delivered</p> <p>Use ISO 3166-1 alpha-2 format</p> |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------------------------------|----------------|---------------------------|---|
| | | | | <div style="border: 1px solid black; padding: 5px;"> <p>NOTE: Required if it appears on the invoice for an international transaction</p> </div> |
| Y | Unique VAT Invoice Reference Number | vat_ref_num | 25-character alphanumeric | <p>Unique Value Added Tax Invoice Reference Number</p> <p>Must be populated with the invoice number and this cannot be all spaces or zeroes</p> |
| Y | Tax Treatment | tax_treatment | 1-character numeric | <p>Must be one of the following values:</p> <p>0 = Net Prices with tax calculated at line item level;</p> <p>1 = Net Prices with tax calculated at invoice level;</p> <p>2 = Gross prices given with tax information provided at line item level;</p> <p>3 = Gross prices given with tax information provided at invoice level;</p> <p>4 = No tax applies (small merchant) on the invoice for the transaction</p> |
| N | Freight/Shipping Amount (Ship Amount) | freight_amount | 9-character decimal | <p>Freight charges on total purchase</p> <p>If shipping is not provided as a line item it must be provided here, if applicable</p> <p>Signed monetary</p> |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|------------------------|------------------------|---------------------|--|
| | | | | amount: minus sign means 'amount is a credit', plus sign or no sign means 'amount is a debit', maximum without sign is 999999.99 |
| C | GST HST Freight Rate | gst_hst_freight_rate | 4-character decimal | <p>Rate of GST (excludes PST) or HST charged on the shipping amount (in accordance with the Tax Treatment)</p> <p>If Freight/Shipping Amount is provided then this (National GST or HST) tax rate must be provided.</p> <p>Monetary amount, maximum is 99.99. Such as 13% HST is 13.00</p> |
| C | GST HST Freight Amount | gst_hst_freight_amount | 9-character decimal | <p>Amount of GST (excludes PST) or HST charged on the shipping amount</p> <p>If Freight/Shipping Amount is provided then this (National GST or HST) tax amount must be provided if taxTreatment is 0 or 2</p> <p>Signed monetary amount: maximum without sign is 999999.99.</p> |

Table 3 Visa - Line Item Details - Level 3 Request Fields (VSPurchI)

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|----------------------|------------------|---------------------------|---|
| C | Item Commodity Code | item_com_code | 12-character alphanumeric | Line item Commodity Code (if this field is not sent, then productCode must be sent) |
| Y | Product Code | product_code | 12-character alphanumeric | <p>Product code for this line item – merchant’s product code, manufacturer’s product code or buyer’s product code</p> <p>Typically this will be the SKU or identifier by which the merchant tracks and prices the item or service</p> <p>This should always be provided for every line item</p> |
| Y | Item Description | item_description | 35-character alphanumeric | Line item description |
| Y | Item Quantity | item_quantity | 12-character decimal | <p>Quantity invoiced for this line item</p> <p>Up to 4 decimal places supported, whole numbers are accepted</p> <p>Minimum = 0.0001</p> <p>Maximum = 999999999999</p> |
| Y | Item Unit of Measure | item_uom | 2-character alphanumeric | <p>Unit of Measure</p> <p>Use ANSI X-12 EDI Allowable Units of Measure and Codes</p> |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|--------------------|---------------------|----------------------|--|
| Y | Item Unit Cost | unit_cost | 12-character decimal | Line item cost per unit 2-4 decimal places accepted Minimum = 0.0001 Maximum = 999999.9999 |
| N | VAT Tax Amount | vat_tax_amt | 12-character decimal | Any value-added tax or other sales tax amount Must have 2 decimal places Minimum = 0.01 Maximum = 999999.99 |
| N | VAT Tax Rate | vat_tax_rate | 4-character decimal | Sales tax rate <div style="border: 1px solid black; padding: 5px; background-color: #e0f0e0; display: inline-block;"> EXAMPLE: 8% PST should be 8.0 </div> maximum 99.99 |
| Y | Discount Treatment | discount_treatmentL | 1-character numeric | Must be one of the following values: 0 if no invoice level discounts apply for this invoice 1 if Tax was calculated on Post-Discount totals 2 if Tax was calculated on Pre-Discount totals. |
| C | Discount Amount | discount_amtL | 12-character decimal | Amount of discount, if provided for this line item according to the Line Item Discount Treatment Must be non-zero if |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------|------------|-----------|---|
| | | | | Line Item Discount Treatment is 1 or 2 Must have 2 decimal places Minimum = 0.01 Maximum = 999999.99 |

A.4 Definition of Request Fields for Level 2/3 - MasterCard

Table 1 Objects - Level 2/3 MasterCard

| MCCorpais Objects | Description |
|-------------------|----------------------------|
| MCCorpac | Corporate Card Common data |
| MCCorpal | Line Item Details |

Table 2 MasterCard - Corporate Card Common Data (MCCorpac) - Level 2 Request Fields

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------------|-----------------------|----------------------------|---|
| N | AustinTetraNumber | Austin-Tetra Number | 15-character alpha-numeric | Merchant's Austin-Tetra Number |
| N | NaicsCode | NAICS Code | 15-character alpha-numeric | North American Industry Classification System (NAICS) code assigned to the merchant |
| N | CustomerCode | Customer Code | 25-character alpha-numeric | A control number, such as purchase order number, project number, department allocation number or name that the purchaser supplied the merchant. Left-justified; may be spaces |
| N | UniqueInvoiceNumber | Unique Invoice Number | 17-character alpha-numeric | Unique number associated with the individual transaction provided by the merchant |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|-------------------------|-----------------------------------|----------------------------|--|
| N | CommodityCode | Commodity Code | 15-character alpha-numeric | Code assigned by the merchant that best categorizes the item(s) being purchased |
| N | OrderDate | Order Date | 6-character numeric | The date the item was ordered. If present, must contain a valid date in the format YYMMDD. |
| N | CorporationVatNumber | Corporation VAT Number | 20-character alpha-numeric | Contains a corporation's value added tax (VAT) number |
| N | CustomerVatNumber | Customer VAT Number | 20-character alpha-numeric | Contains the VAT number for the customer/cardholder used to identify the customer when purchasing goods and services from the merchant |
| N | FreightAmount | Freight Amount | 12-character decimal | The freight on the total purchase. Must have 2 decimals |
| N | DutyAmount | Duty Amount | 12-character decimal | The duty on the total purchase, Must have 2 decimals |
| N | DestinationProvinceCode | Destination State / Province Code | 3-character alpha-numeric | State or Province of the country where the goods will be delivered. Left justified with trailing spaces. e.g., ONT - Ontario |
| N | DestinationCountryCode | Destination Country Code | 3-character alpha-numeric | The country code where goods will be delivered. Left justified with trailing spaces. e.g., CAN - Canada |
| N | ShipFromPosCode | Ship From Postal Code | 10-character alpha-numeric | The postal code or zip code from which items were shipped |
| N | ShipToPosCode | Destination Postal Code | 10-character alpha-numeric | The postal code or zip code where goods will be delivered |
| N | AuthorizedContactName | Authorized Contact | 36-character alpha- | Name of an individual or company contacted for company |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|----------------------------|-------------------------------|----------------------------|--|
| | | Name | numeric | authorized purchases |
| N | AuthorizedContactPhone | Authorized Contact Phone | 17-character alpha-numeric | Phone number of an individual or company contacted for company authorized purchases |
| N | AdditionalCardAcceptordata | Additional Card Acceptor Data | 40-character alpha-numeric | Information pertaining to the card acceptor |
| N | CardAcceptorType | Card Acceptor Type | 8-character alpha-numeric | <p>Various classifications of business ownership characteristics</p> <p>This field takes 8 characters. Each character represents a different component, as follows:</p> <p>1st character represents 'Business Type' and contains a code to identify the specific classification or type of business:</p> <ol style="list-style-type: none"> 1. Corporation 2. Not known 3. Individual/Sole Proprietorship 4. Partnership 5. Association/Estate/Trust 6. Tax Exempt Organizations (501C) 7. International Organization 8. Limited Liability Company (LLC) 9. Government Agency <p>2nd character represents 'Business Owner Type'. Contains a code to identify specific characteristics about the business owner.</p> |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------|------------|-----------|---|
| | | | | <p>1 - No application classification 2 - Female business owner 3 - Physically handicapped female business owner 4 - Physically handicapped male business owner 0 - Unknown</p> <p>3rd character represents 'Business Certification Type'. Contains a code to identify specific characteristics about the business certification type, such as small business, disadvantaged, or other certification type:</p> <p>1 - Not certified 2 - Small Business Administration (SBA) certification small business 3 - SBA certification as small disadvantaged business 4 - Other government or agency-recognized certification (such as Minority Supplier Development Council) 5 - Self-certified small business 6 - SBA certification as small and other government or agency-recognized certification 7 - SBA certification as small disadvantaged business and other gov-</p> |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------|------------|-----------|--|
| | | | | <p>ernment or agency-recognized certification 8 - Other government or agency-recognized certification and self-certified small business A - SBA certification as 8 (a) B - Self-certified small disadvantaged business (SDB) C - SBA certification as HUBZone 0 - Unknown</p> <p>4th character represents 'Business Racial/Ethnic Type'. Contains a code identifying the racial or ethnic type of the majority owner of the business.</p> <p>1 - African American 2 - Asian Pacific American 3 - Subcontinent Asian American 4 - Hispanic American 5 - Native American Indian 6 - Native Hawaiian 7 - Native Alaskan 8 - Caucasian 9 - Other 0 - Unknown</p> <p>5th character represents 'Business Type Provided Code'</p> <p>Y - Business type is provided. N - Business type was not provided. R - Card acceptor</p> |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|-------------------|----------------------|---------------------------|--|
| | | | | <p>refused to provide business type</p> <p>6th character represents 'Business Owner Type Provided Code'</p> <p>Y - Business owner type is provided. N - Business owner type was not provided. R - Card acceptor refused to provide business type</p> <p>7th character represents 'Business Certification Type Provided Code'</p> <p>Y - Business certification type is provided. N - Business certification type was not provided. R - Card acceptor refused to provide business type</p> <p>8th character represents 'Business Racial/Ethnic Type'</p> <p>Y - Business racial/ethnic type is provided. N - Business racial/ethnic type was not provided. R - Card acceptor refused to provide business racial/ethnic type</p> |
| N | CardAcceptorTaxId | Card Acceptor Tax ID | 20-character alphanumeric | US Federal tax ID number for value added tax (VAT) ID. |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|-----------------------------|--------------------------------|----------------------------|--|
| N | CardAcceptorReferenceNumber | Card Acceptor Reference Number | 25-character alpha-numeric | Code that facilitates card acceptor/corporation communication and record keeping |
| N | CardAcceptorVatNumber | Card Acceptor VAT Number | 20-character alpha-numeric | Value added tax (VAT) number for the card acceptor location used to identify the card acceptor when collecting and reporting taxes |
| C-* | Tax | Tax | up to 6 arrays | <p>Can have up to 6 arrays contains different tax details. See Tax Array below for each field description.</p> <p>*This field is conditionally mandatory — if you use this array, you must fill in all tax array fields as listed in the Tax Array Request Fields below.</p> |

Table 3 MasterCard - Line Item Details (MCCorpal) - Level 3 Request Fields

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------|----------------|----------------------------|---|
| N | CustomerCode | Customer Code | 25-character alpha-numeric | A control number, such as purchase order number, project number, department allocation number or name that the purchaser supplied the merchant. Left-justified; may be spaces |
| N | LineItemDate | Line Item Date | 6-character numeric | The purchase date of the line item referenced in the associated Corporate Card Line Item |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|-----------------|------------------|---------------------------|--|
| | | | | Detail. YYMMDD format |
| N | ShipDate | Ship Date | 6-character numeric | The date the merchandise was shipped to the destination. YYMMDD format |
| N | OrderDate | Order Date | 6-character numeric | The date the item was ordered YYMMDD format |
| Y | ProductCode | Product Code | 12-character alphanumeric | Line item Product Code (if this field is not sent, then itemComCode) If the order has a Freight/Shipping line item, the productCode value has to be "Freight/Shipping" If the order has a Discount line item, the productCode value has to be "Discount" |
| Y | ItemDescription | Item Description | 35-character alphanumeric | Line Item description |
| Y | ItemQuantity | Item Quantity | 12-character alphanumeric | Quantity of line item |
| Y | UnitCost | Unit Cost | 12-character decimal | Line item cost per unit. Must contain a minimum of 2 decimal places, up to 5 decimal places supported. |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|-----------------|----------------------|---------------------------|---|
| | | | | Minimum amount is 0.00001 and maximum is 999999.99999 |
| Y | ItemUnitMeasure | Item Unit Measure | 12-character alphanumeric | The line item unit of measurement code |
| Y | ExtItemAmount | Extended Item Amount | 9-character decimal | Contains the individual item amount that is normally calculated as price multiplied by quantity Must contain 2 decimal places Minimum amount is 0.00 and maximum is 999999.99 |
| N | DiscountAmount | Discount Amount | 9-character decimal | Contains the item discount amount Must contain 2 decimal places Minimum amount is 0.00 and maximum is 999999.99 |
| N | CommodityCode | Commodity Code | 15-character alphanumeric | Code assigned to the merchant that best categorizes the item(s) being purchased |
| C* | Tax | Tax | Up to 6 arrays | Can have up to 6 arrays contains different tax details. See Tax Array below for each field description. *This field is conditionally man- |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------|------------|-----------|--|
| | | | | datory — if you use this array, you must fill in all tax array fields as listed in the Tax Array Request Fields below. |

Table 4 Tax Array Request Fields - MasterCard Level 2/3 Transactions

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------|------------|---------------------------|--|
| M | tax_amount | Tax Amount | 12-character decimal | <p>Contains detail tax amount for purchase of goods or service</p> <p>Must be 2 decimal places</p> <p>Maximum 999999.99</p> |
| M | tax_rate | Tax Rate | 5-character decimal | <p>Contains the detailed tax rate applied in relationship to a specific tax amount</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>EXAMPLE: 5% GST should be '5.0' or 9.975% QST should be '9.975'</p> </div> <p>May contain up to 3 decimals, minimum 0.001, maximum up to 9999.9</p> |
| M | tax_type | Tax Type | 4-character alphanumeric | Contains tax type such as GST,QST,PST,HST |
| M | tax_id | Tax ID | 20-character alphanumeric | Provides an identification number |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|-----------------------|---------------------------------|--------------------------|---|
| | | | | used by the card acceptor with the tax authority in relationship to a specific tax amount such as GST/HST number |
| M | tax_included_in_sales | Tax included in sales indicator | 1-character alphanumeric | <p>This is the indicator used to reflect additional tax capture and reporting.</p> <p>Valid values are:</p> <p>Y = Tax included in total purchase amount</p> <p>N = Tax not included in total purchase amount</p> |

A.5 Definition of Request Fields for Level 2/3 - Amex

Table 1 Amex- Level 2/3 Request Fields - Table 1 - Heading Fields

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------|-----------------------|---------------------------|---|
| C | big04 | Purchase Order Number | 22-character alphanumeric | <p>The cardholder supplied Purchase Order Number, which is entered by the merchant at the point-of-sale</p> <p>This entry is used in the Statement/Reporting process and may include accounting information specific to the client</p> <p>Mandatory if the merchant's customer provides a Purchase Order Number</p> |

| Req | Variable Name | Field Name | Size/Type | Description | | | | | | | | | | | | |
|-----------|-------------------|------------------------|----------------------------|--|-----------|--------------|----|----------------|----|-------------------|----|----------------|----|--------------|----|---------------|
| N | big05 | Release Number | 30-character alpha-numeric | A number that identifies a release against a Purchase Order previously placed by the parties involved in the transaction | | | | | | | | | | | | |
| N | big10 | Invoice Number | 8-character alpha-numeric | Contains the Amex invoice/reference number | | | | | | | | | | | | |
| Y | n101 | Entity Identifier Code | 2-character alpha-numeric | Supported values: 'R6' - Requester (required) 'BG' - Buying Group (optional) 'SF' - Ship From (optional) 'ST' - Ship To (optional) '40' - Receiver (optional) | | | | | | | | | | | | |
| Y | n102 | Name | 40-character alpha-numeric | <table border="1"> <thead> <tr> <th>n101 code</th> <th>n102 meaning</th> </tr> </thead> <tbody> <tr> <td>R6</td> <td>Requester Name</td> </tr> <tr> <td>BG</td> <td>Buying Group Name</td> </tr> <tr> <td>SF</td> <td>Ship From Name</td> </tr> <tr> <td>ST</td> <td>Ship To Name</td> </tr> <tr> <td>40</td> <td>Receiver Name</td> </tr> </tbody> </table> | n101 code | n102 meaning | R6 | Requester Name | BG | Buying Group Name | SF | Ship From Name | ST | Ship To Name | 40 | Receiver Name |
| n101 code | n102 meaning | | | | | | | | | | | | | | | |
| R6 | Requester Name | | | | | | | | | | | | | | | |
| BG | Buying Group Name | | | | | | | | | | | | | | | |
| SF | Ship From Name | | | | | | | | | | | | | | | |
| ST | Ship To Name | | | | | | | | | | | | | | | |
| 40 | Receiver Name | | | | | | | | | | | | | | | |
| N | n301 | Address | 40-character alpha-numeric | Address | | | | | | | | | | | | |
| N | n401 | City | 30-character alpha-numeric | City | | | | | | | | | | | | |
| N | n402 | State or Province | 2-character alpha-numeric | State or Province | | | | | | | | | | | | |

| Req | Variable Name | Field Name | Size/Type | Description | | | | | | | | | | | | |
|------------|---|------------------------------------|----------------------------|--|------------|------------------|----|---|----|--|----|-----|----|-----|----|-----|
| N | n403 | Postal Code | 15-character alpha-numeric | Postal Code | | | | | | | | | | | | |
| Y | ref01 | Reference Identification Qualifier | 2-character alpha-numeric | <p>This element may contain the following qualifiers for the corresponding occurrences of the N1Loop:</p> <table border="1"> <thead> <tr> <th>n101 value</th> <th>ref01 denotation</th> </tr> </thead> <tbody> <tr> <td>R6</td> <td>Supported values: 4C - Shipment Destination Code (mandatory) CR - Customer Reference Number (conditional)</td> </tr> <tr> <td>BG</td> <td>n/a</td> </tr> <tr> <td>SF</td> <td>n/a</td> </tr> <tr> <td>ST</td> <td>n/a</td> </tr> <tr> <td>40</td> <td>n/a</td> </tr> </tbody> </table> | n101 value | ref01 denotation | R6 | Supported values: 4C - Shipment Destination Code (mandatory) CR - Customer Reference Number (conditional) | BG | n/a | SF | n/a | ST | n/a | 40 | n/a |
| n101 value | ref01 denotation | | | | | | | | | | | | | | | |
| R6 | Supported values: 4C - Shipment Destination Code (mandatory) CR - Customer Reference Number (conditional) | | | | | | | | | | | | | | | |
| BG | n/a | | | | | | | | | | | | | | | |
| SF | n/a | | | | | | | | | | | | | | | |
| ST | n/a | | | | | | | | | | | | | | | |
| 40 | n/a | | | | | | | | | | | | | | | |
| Y | ref02 | Reference Identification | 15-character alpha-numeric | <p>VR is the Vendor ID Number, other codes describe the following:</p> <table border="1"> <thead> <tr> <th>ref01 code</th> <th>ref02 denotation</th> </tr> </thead> <tbody> <tr> <td>4C</td> <td>Ship to Zip or Canadian Postal Code (required)</td> </tr> <tr> <td>CR</td> <td>Cardmember Reference Number (optional)</td> </tr> </tbody> </table> | ref01 code | ref02 denotation | 4C | Ship to Zip or Canadian Postal Code (required) | CR | Cardmember Reference Number (optional) | | | | | | |
| ref01 code | ref02 denotation | | | | | | | | | | | | | | | |
| 4C | Ship to Zip or Canadian Postal Code (required) | | | | | | | | | | | | | | | |
| CR | Cardmember Reference Number (optional) | | | | | | | | | | | | | | | |

Table 2 Amex - Level 2/3 Request Fields - Table 2 - Detail Fields

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------|------------------------------------|--------------------------|---|
| Y | it102 | Line Item Quantity Invoiced | 10-character decimal | Quantity of line item. Up to 2 decimal places supported. Minimum amount is 0.0 and maximum is 9999999999. |
| Y | it103 | Unit or Basis for Measurement Code | 2-character alphanumeric | The line item unit of measurement code Must contain a code that specifies the units in which the value is expressed or the manner in which a measurement is taken <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>EXAMPLE: EA = each, E5=inches</p> </div> See ANSI X-12 EDI Allowable Units of Measure and Codes for the list of codes |
| Y | it104 | Unit Price | 15-character decimal | Line item cost per unit Must contain 2 decimal places Minimum amount is 0.00 and maximum is 999999.99 |
| N | it105 | Basis or Unit Price Code | 2-character alphanumeric | Code identifying the type of unit price for an item |

| Req | Variable Name | Field Name | Size/Type | Description | | | | | | | | |
|---------|---------------------------|------------------------------|---|---|---------------------|----|---------------------------|----|---------------------------|-------|---------------------------|---|
| | | | | <div style="border: 1px solid black; padding: 5px; background-color: #e0f0e0;"> <p>EXAMPLE: DR = dealer, AP = advise price</p> </div> <p>See ASC X12 004010 Element 639 for list of codes</p> | | | | | | | | |
| N | it10618 | Product/Service ID Qualifier | 2-character alphanumeric | <p>Supported values:</p> <ul style="list-style-type: none"> 'MG' - Manufacturer's Part Number 'VC' - Supplier Catalog Number 'SK' - Supplier Stock Keeping Unit Number 'UP' - Universal Product Code 'VP' - Vendor Part Number 'PO' - Purchase Order Number 'AN' - Client Defined Asset Code | | | | | | | | |
| N | it10719 | Product/Service ID | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">it10618</th> <th style="text-align: left;">it10719 - size/type</th> </tr> </thead> <tbody> <tr> <td>VC</td> <td>20-character alphanumeric</td> </tr> <tr> <td>PO</td> <td>22-character alphanumeric</td> </tr> <tr> <td>Other</td> <td>30-character alphanumeric</td> </tr> </tbody> </table> | it10618 | it10719 - size/type | VC | 20-character alphanumeric | PO | 22-character alphanumeric | Other | 30-character alphanumeric | <p>Product/Service ID corresponds to the preceding qualifier defined in it10618</p> <p>The maximum length depends on the qualifier defined in it10618</p> |
| it10618 | it10719 - size/type | | | | | | | | | | | |
| VC | 20-character alphanumeric | | | | | | | | | | | |
| PO | 22-character alphanumeric | | | | | | | | | | | |
| Other | 30-character alphanumeric | | | | | | | | | | | |
| C | txi01 | Tax Type code | 2-character alphanumeric | <p>Supported values:</p> <ul style="list-style-type: none"> 'CA' - City Tax (optional) 'CT' - County/Tax (optional) 'EV' - Environmental Tax (optional) 'GS' - Good and Services Tax (GST) | | | | | | | | |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------|-----------------|---------------------|--|
| | | | | <p>(optional)</p> <p>'LS' – State and Local Sales Tax (optional)</p> <p>'LT' – Local Sales Tax (optional)</p> <p>'PG' – Provincial Sales Tax (PST) (optional)</p> <p>'SP' – State/Provincial Tax a.k.a. Quebec Sales Tax (QST) (optional)</p> <p>'ST' – State Sales Tax (optional)</p> <p>'TX' – All Taxes (required)</p> <p>'VA' – Value-Added Tax a.k.a. Canadian Harmonized Sales Tax (HST) (optional)</p> |
| C | txi02 | Monetary Amount | 6-character decimal | <p>This element may contain the monetary tax amount that corresponds to the Tax Type Code in txi01</p> <div style="border: 1px solid black; padding: 5px;"> <p>NOTE: If txi02 is used in mandatory occurrence txi01=TX, txi02 must contain the total tax amount applicable to the entire invoice (transaction) If taxes are not applicable for the entire invoice (transaction), txi02 must be 0.00.</p> </div> <p>The maximum value that can be entered in this field is "9999.99", which is \$9,999.99 (CAD)</p> <p>A debit is entered as: 9999.99</p> <p>A credit is entered</p> |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------|-----------------|--------------------------|---|
| | | | | as: -9999.99 |
| C | txi03 | Percent | 10-character decimal | <p>Contains the tax percentage (in decimal format) that corresponds to the tax type code defined in txi01</p> <p>Up to 2 decimal places supported</p> |
| C | txi06 | Tax Exempt Code | 1-character alphanumeric | <p>This element may contain the Tax Exempt Code that identifies the exemption status from sales and tax that corresponds to the Tax Type Code in txi01</p> <p>Supported values:</p> <ul style="list-style-type: none"> 1 – Yes (Tax Exempt) 2 – No (Not Tax Exempt) 4 – Not Exempt/For Resale A – Labor Taxable, Material Exempt B – Material Taxable, Labor Exempt C – Not Taxable F – Exempt (Goods / Services Tax) G – Exempt (Provincial Sales Tax) L – Exempt Local Service R – Recurring Exempt U – Usage Exempt |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------|---------------------------|---------------------------|---|
| Y | pam05 | Line Item Extended Amount | 8-character decimal | <p>Contains the individual item amount that is normally calculated as price multiplied by quantity</p> <p>Must contain 2 decimal places</p> <p>Minimum amount is 0.00 and maximum is 99999.99</p> |
| Y | pid05 | Line Item Description | 80-character alphanumeric | <p>Line Item description</p> <p>Contains the description of the individual item purchased</p> <p>This field pertain to each line item in the transaction</p> |

Table 3 Amex - Level 2/3 Request Fields - Table 3 - Summary Fields

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------|---------------|--------------------------|---|
| C | txi01 | Tax Type code | 2-character alphanumeric | <p>Supported values:</p> <p>'CA' – City Tax (optional)</p> <p>'CT' – County/Tax (optional)</p> <p>'EV' – Environmental Tax (optional)</p> <p>'GS' – Good and Services Tax (GST) (optional)</p> <p>'LS' – State and Local Sales Tax (optional)</p> <p>'LT' – Local Sales Tax (optional)</p> <p>'PG' – Provincial Sales</p> |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------|-----------------|----------------------|--|
| | | | | <p>Tax (PST) (optional)</p> <p>'SP' – State/Provincial Tax a.k.a. Quebec Sales Tax (QST) (optional)</p> <p>'ST' – State Sales Tax (optional)</p> <p>'TX' – All Taxes (required)</p> <p>'VA' – Value-Added Tax a.k.a. Canadian Harmonized Sales Tax (HST) (optional)</p> |
| C | txi02 | Monetary Amount | 6-character decimal | <p>This element may contain the monetary tax amount that corresponds to the Tax Type Code in txi01</p> <div style="border: 1px solid black; padding: 5px;"> <p>NOTE: If txi02 is used in mandatory occurrence txi01=TX, txi02 must contain the total tax amount applicable to the entire invoice (transaction) If taxes are not applicable for the entire invoice (transaction), txi02 must be 0.00.</p> </div> <p>The maximum value that can be entered in this field is "9999.99", which is \$9,999.99 (CAD)</p> <p>A debit is entered as: 9999.99</p> <p>A credit is entered as: -9999.99</p> |
| C | txi03 | Percent | 10-character decimal | <p>Contains the tax percentage (in decimal format) that corresponds to the tax type</p> |

| Req | Variable Name | Field Name | Size/Type | Description |
|-----|---------------|-----------------|--------------------------|--|
| | | | | code defined in txi01 Up to 2 decimal places supported |
| C | txi06 | Tax Exempt Code | 1-character alphanumeric | Supported values: 1 – Yes (Tax Exempt) 2 – No (Not Tax Exempt) 4 – Not Exempt/For Resale A – Labor Taxable, Material Exempt B – Material Taxable, Labor Exempt C – Not Taxable F – Exempt (Goods / Services Tax) G – Exempt (Provincial Sales Tax) L – Exempt Local Service R – Recurring Exempt U – Usage Exempt |

A.6 Definition of Request Fields – Offlinx™

Applies to Offlinx™ integration only

| Variable and Field Name | Type and Limits | Description |
|-------------------------|--|--|
| Card Match ID | <i>String</i> 50-character alphanumeric | Corresponds to the Transaction ID used for the Offlinx™ Card Match Pixel Tag, a unique identifier created by the merchant Must be unique value for each transaction |

Appendix B Definitions of Response Fields

Table 109: Receipt object response values

| Value | Type | Limits | Get Method |
|--------------------------------|--|---|---|
| | Description | | |
| General response fields | | | |
| Card type | String | 2-character alphabetic (min. 1) | <code>receipt.GetCardType()</code> ; |
| | Represents the type of card in the transaction, e.g., Visa, Mastercard. Possible values: <ul style="list-style-type: none"> • V = Visa • M = Mastercard • AX = American Express • DC = Diner's Card • NO = Novus/Discover • SE = Sears • D = Debit • C1 = JCB | | |
| Transaction amount | String | 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div style="border: 1px solid black; background-color: #e0f0e0; padding: 5px; display: inline-block;"> EXAMPLE: 1234567.89 </div> | <code>receipt.GetTransAmount()</code> ; |
| | Transaction amount that was processed. | | |
| Transaction number | String | 255-character alphanumeric | <code>receipt.GetTxnNumber()</code> ; |
| | Gateway Transaction identifier often needed for follow-on transactions (such as Refund and Purchase Correction) to reference the originally processed transaction. | | |
| Receipt ID | String | 50-character alphanumeric | <code>receipt.GetReceiptId()</code> ; |
| | Order ID that was specified in the transaction request. | | |

Table 109: Receipt object response values (continued)

| Value | Type | Limits | Get Method |
|------------------|--|--------------------------|---|
| | Description | | |
| Transaction type | String | 2-character alphanumeric | <code>receipt.GetTransType();</code> |
| | <ul style="list-style-type: none"> • 0 = Purchase • 1 = Pre-Authorization • 2 = Completion • 4 = Refund • 11 = Void | | |
| Reference number | String | 18-character numeric | <code>receipt.GetReferenceNum();</code> |
| | <p>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.</p> <p>This information is to be stored by the merchant.</p> <p>Example: 660123450010690030</p> <ul style="list-style-type: none"> • 66012345: Terminal ID • 001: Shift number • 069: Batch number • 003: Transaction number within the batch. | | |
| Response code | String | 3-character numeric | <code>receipt.GetResponseCode();</code> |
| | <ul style="list-style-type: none"> • < 50: Transaction approved • ≥ 50: Transaction declined • Null: Transaction incomplete. <p>For further details on the response codes that are returned, see the Response Codes document at https://developer.moneris.com.</p> | | |
| ISO | String | 2-character numeric | <code>receipt.GetISO();</code> |
| | ISO response code | | |
| Bank totals | Object | | <code>receipt.GetBankTotals();</code> |
| | Response data returned in a Batch Close and Open Totals request. See "Definitions of Response Fields" on the previous page. | | |

Table 109: Receipt object response values (continued)

| Value | Type | Limits | Get Method |
|--|---|----------------------------|--|
| | Description | | |
| Message | String | 100-character alphanumeric | <code>receipt.GetMessage()</code> ; |
| | Response description returned from issuer. The message returned from the issuer is intended for merchant information only, and is not intended for customer receipts. | | |
| Authorization code | String | 8-character alphanumeric | <code>receipt.GetAuthCode()</code> ; |
| | Authorization code returned from the issuing institution. | | |
| Complete | String | true/false | <code>receipt.GetComplete()</code> ; |
| | Transaction was sent to authorization host and a response was received | | |
| Transaction date | String | Format: yyyy-mm-dd | <code>receipt.GetTransDate()</code> ; |
| | Processing host date stamp | | |
| Transaction time | String | Format: ##:##:## | <code>receipt.GetTransTime()</code> ; |
| | Processing host time stamp | | |
| Ticket | String | N/A | <code>receipt.GetTicket()</code> ; |
| | Reserved field. | | |
| Timed out | String | true/false | <code>receipt.GetTimedOut()</code> ; |
| | Transaction failed due to a process timing out. | | |
| Is Visa Debit | String | true/false | <code>receipt.GetIsVisaDebit()</code> ; |
| | Indicates whether the card processed is a Visa Debit. | | |
| Batch Close/Open Totals response fields | | | |
| Processed card types | String Array | N/A | <code>receipt.GetCreditCards(ecr)</code> ; |
| | Returns all of the processed card types in the current batch for the terminal ID/ECR Number from the request. | | |
| Terminal IDs | String | 8-character alphanumeric | <code>receipt.GetTerminalIDs()</code> ; |
| | Returns the terminal ID/ECR Number from the request. | | |

Table 109: Receipt object response values (continued)

| Value | Type | Limits | Get Method |
|-------------------|--|----------------------------|--|
| | Description | | |
| Purchase count | String | 4-character numeric | <code>receipt.GetPurchaseCount(ecr, cardType);</code> |
| | Indicates the # of Purchase, Pre-Authorization Completion and Force Post transactions processed. If none were processed in the batch, then the value returned will be 0000. | | |
| Purchase amount | String | 11-character alpha-numeric | <code>receipt.GetPurchaseAmount(ecr, cardType);</code> |
| | Indicates the dollar amount processed for Purchase, Pre-Authorization Completion or Force Post transactions. This field begins with a + and is followed by 10 numbers, the first 8 indicate the amount and the last 2 indicate the penny value. EXAMPLE: +0000000000 = 0.00 and +0000041625 = 416.25 | | |
| Refund count | String | 4-character numeric | <code>receipt.GetRefundCount(ecr, cardType);</code> |
| | Indicates the # of Refund or Independent Refund transactions processed. If none were processed in the batch, then the value returned will be 0000. | | |
| Refund amount | String | 11-character alpha-numeric | <code>receipt.GetRefundAmount(ecr, cardType);</code> |
| | Indicates the dollar amount processed for Refund, Independent Refund or ACH Credit transactions. This field begins with a + and is followed by 10 numbers, the first 8 indicate the amount and the last 2 indicate the penny value. Example, +0000000000 = 0.00 and +0000041625 = 416.25 | | |
| Correction count | String | 4-character numeric | <code>receipt.GetCorrectionCount(ecr, cardType);</code> |
| | Indicates the # of Purchase Correction transactions processed. If none were processed in the batch, then the value returned will be 0000. | | |
| Correction amount | String | 11-character alpha-numeric | <code>receipt.GetCorrectionAmount(ecr, cardType);</code> |
| | Indicates the dollar amount processed for Purchase Correction transactions. This field begins with a + and is followed by 10 numbers, the first 8 indicate the amount and the last 2 indicate the penny value. EXAMPLE: +0000000000 = 0.00 and +0000041625 = 416.25 | | |

Recurring Billing Response Fields (see Appendix A, page 1)

Table 109: Receipt object response values (continued)

| Value | Type | Limits | Get Method |
|--|---|--------------------------|--|
| | Description | | |
| Recurring billing success | String | true/false | <code>receipt.GetRecurSuccess()</code> ; |
| | Indicates whether the recurring billing transaction has been successfully set up for future billing. | | |
| Recur update success | String | true/false | <code>receipt.GetRecurUpdateSuccess()</code> ; |
| | Indicates recur update success. | | |
| Next recur date | String | yyyy-mm-dd | <code>receipt.GetNextRecurDate()</code> ; |
| | Indicates next recur billing date. | | |
| Recur end date | String | yyyy-mm-dd | <code>receipt.GetRecurEndDate()</code> ; |
| | Indicates final recur billing date. | | |
| Status Check response fields (see) | | | |
| Status code | String | 3-character alphanumeric | <code>receipt.GetStatusCode()</code> ; |
| | <ul style="list-style-type: none"> • < 50: Transaction found and successful • ≥ 50: Transaction not found and not successful <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> NOTE: the status code is only populated if the connection object's Status Check property is set to true. </div> | | |
| Status message | String | found/not found | <code>receipt.GetStatusMessage()</code> ; |
| | <ul style="list-style-type: none"> • Found: $0 \leq \text{Status Code} \leq 49$ • Not Found or null: $50 \leq \text{Status Code} \leq 999$. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> NOTE: The status message is only populated if the connection object's Status Check property is set to true. </div> | | |
| AVS response fields (see 9.1, page 291) | | | |
| AVS result code | String | 1-character alphanumeric | <code>receipt.GetAvsResultCode()</code> ; |
| | Indicates the address verification result. For a full list of possible response codes refer to Section Appendix B. | | |
| CVD response fields (see) | | | |

Table 109: Receipt object response values (continued)

| Value | Type | Limits | Get Method |
|--|---|----------------------------|---|
| | Description | | |
| CVD result code | String | 2-character alpha-numeric | <code>receipt.GetCvdResultCode()</code> ; |
| | Indicates the CVD validation result. The first byte is the numeric CVD indicator sent in the request; the second byte is the response code. Possible response codes are shown in Appendix B | | |
| MPI response fields (see "MPI" on page 1) | | | |
| Type | String | 99-character alpha-numeric | |
| | VERes, PARes or error defines what type of response you are receiving . | | |
| Success | Boolean | true/false | <code>receipt.GetMpiSuccess()</code> ; |
| | True if attempt was successful, false if attempt was unsuccessful. | | |
| Message | String | 100-character alphabetic | <code>receipt.GetMpiMessage()</code> ; |
| | <p>MPI TXN transactions can produce the following values:</p> <ul style="list-style-type: none"> • Y: Create VBV verification form popup window. • N: Send purchase or preauth with crypt type 6 • U: Send purchase or preauth with crypt type 7. <p>MPI ACS transactions can produce the following values:</p> <ul style="list-style-type: none"> • Y or A: (Also <code>receipt.getMpiSuccess()=true</code>) Proceed with cavv purchase or cavv preauth. • N: Authentication failed or high-risk transaction. It is recommended that you do not to proceed with the transaction. Depending on a merchant’s risk tolerance and results from other methods of fraud detection, transaction may proceed with crypt type 7. • U or time out: Send purchase or preauth as crypt type 7. | | |
| Term URL | String | 255-character alphanumeric | |
| | URL to which the PARes is returned | | |

Table 109: Receipt object response values (continued)

| Value | Type | Limits | Get Method |
|---|---|-----------------------------|---|
| | Description | | |
| MD | String | 1024-character alphanumeric | |
| | Merchant-defined data that was echoed back | | |
| ACS URL | String | 255-character alphanumeric | |
| | URL that will be for the generated pop-up | | |
| MPI CAVV | String | 28-character alphanumeric | <code>receipt.GetMpiCavv();</code> |
| | VbV/MCSC/American Express SafeKey authentication data | | |
| MPI E-Commerce Indicator | String | 1-character alphanumeric | |
| CAVV result code | String | 1-character alphanumeric | <code>receipt.GetCavvResultCode();</code> |
| | <p>Indicates the Visa CAVV result. For more information, see 8.6.7 Cavv Result Codes for Verified by Visa.</p> <ul style="list-style-type: none"> • 0 = CAVV authentication results invalid • 1 = CAVV failed validation; authentication • 2 = CAVV passed validation; authentication • 3 = CAVV passed validation; attempt • 4 = CAVV failed validation; attempt • 7 = CAVV failed validation; attempt (US issued cards only) • 8 = CAVV passed validation; attempt (US issued cards only) • The CAVV result code indicates the result of the CAVV validation. | | |
| MPI inline form | | | <code>receipt.GetInLineForm();</code> |
| | | | |
| Vault response fields (see 4.1, page 53) | | | |
| Data key | String | 28-character alphanumeric | <code>receipt.GetDataKey();</code> |
| | <p>The data key response field is populated when you send a Vault Add Credit Card – ResAddCC (page 55), Vault Encrypted Add Credit Card – EncResAddCC (page 59), Vault Tokenize Credit Card – ResTokenizeCC (page 82), Vault Temporary Token Add – ResTempAdd (page 62) or Vault Add Token – ResAddToken (page 78) transaction. It is the profile identifier that all future financial Vault transactions will use to associate with the saved information.</p> | | |

Table 109: Receipt object response values (continued)

| Value | Type | Limits | Get Method |
|------------------------------|---|----------------------------|---|
| | Description | | |
| Vault payment type | String | cc | <code>receipt.GetPaymentType();</code> |
| | Indicates the payment type associated with a Vault profile | | |
| Expiring card's Payment type | String | cc | <code>receipt.GetExpPaymentType();</code> |
| | Indicates the payment type associated with a Vault profile. Applicable to Vault Get Expiring transaction type. | | |
| Vault masked PAN | String | 20-character numeric | <code>receipt.GetResMaskedPan();</code> |
| | Returns the first 4 and/or last 4 of the card number saved in the profile. | | |
| Expiring card's Masked PAN | String | 20-character numeric | <code>receipt.GetExpMaskedPan();</code> |
| | Returns the first 4 and/or last 4 of the card number saved in the profile. Applicable to Vault Get Expiring transaction type. | | |
| Vault success | String | true/false | <code>receipt.GetResSuccess();</code> |
| | Indicates whether Vault transaction was successful. | | |
| Vault customer ID | String | 30-character alpha-numeric | <code>receipt.GetResDataCustId();</code> |
| | Returns the customer ID saved in the profile. | | |
| Expiring card's customer ID | String | 30-character alpha-numeric | <code>receipt.GetExpCustId();</code> |
| | Returns the customer ID saved in the profile. Applicable to Vault Get Expiring transaction type. | | |
| Vault phone number | String | 30-character alpha-numeric | <code>receipt.GetResDataPhone();</code> |
| | Returns the phone number saved in the profile. | | |

Table 109: Receipt object response values (continued)

| Value | Type | Limits | Get Method |
|--------------------------------------|--|----------------------------|---|
| | Description | | |
| Expiring card's phone number | String | 30-character alpha-numeric | <code>receipt.GetExpPhone();</code> |
| | Returns the phone number saved in the profile. Applicable to Vault Get Expiring transaction type. | | |
| Vault email address | String | 30-character alpha-numeric | <code>receipt.GetResDataEmail();</code> |
| | Returns the email address saved in the profile. | | |
| Expiring card's email address | String | 30-character alpha-numeric | <code>receipt.GetExpEmail();</code> |
| | Returns the email address saved in the profile. Applicable to Vault Get Expiring transaction type. | | |
| Vault note | String | 30-character alpha-numeric | <code>receipt.GetResDataNote();</code> |
| | Returns the note saved in the profile. | | |
| Expiring card's note | String | 30-character alpha-numeric | <code>receipt.GetExpNote();</code> |
| | Returns the note saved in the profile. Applicable to Vault Get Expiring transaction type. | | |
| Vault expiry date | String | 4-character numeric | <code>receipt.GetResDataExpdate();</code> |
| | Returns the expiry date of the card number saved in the profile. YYYYMM format. | | |
| Expiring card's expiry date | String | 4-character numeric | <code>receipt.GetExpExpdate();</code> |
| | Returns the expiry date of the card number saved in the profile. YYYYMM format. Applicable to Vault Get Expiring transaction type. | | |
| Vault E-commerce indicator | String | 1-character numeric | <code>receipt.GetResDataCryptType();</code> |
| | Returns the e-commerce indicator saved in the profile. | | |
| Expiring card's E-commerce indicator | String | 1-character numeric | <code>receipt.GetExpCryptType();</code> |
| | Returns the e-commerce indicator saved in the profile. Applicable to Vault Get Expiring transaction type. | | |

Table 109: Receipt object response values (continued)

| Value | Type | Limits | Get Method |
|-----------------------------------|---|----------------------------|---|
| | Description | | |
| Vault AVS street number | String | 19-character alpha-numeric | <code>receipt.GetResDataAvsStreetNumber();</code> |
| | Returns the AVS street number saved in the profile. If no other AVS street number is passed in the transaction request, this value will be submitted along with the financial transaction to the issuer. | | |
| Expiring card's AVS street number | String | 19-character alpha-numeric | <code>receipt.GetExpAvsStreetNumber();</code> |
| | Returns the AVS street number saved in the profile. If no other AVS street number is passed in the transaction request, this value will be submitted along with the financial transaction to the issuer. Applicable to Vault Get Expiring transaction type. | | |
| Vault AVS street name | String | 19-character alpha-numeric | <code>receipt.GetResDataAvsStreetName();</code> |
| | Returns the AVS street name saved in the profile. If no other AVS street number is passed in the transaction request, this value will be submitted along with the financial transaction to the issuer. | | |
| Expiring card's AVS street name | String | 19-character alpha-numeric | <code>receipt.GetExpAvsStreetName();</code> |
| | Returns the AVS street name saved in the profile. If no other AVS street number is passed in the transaction request, this value will be submitted along with the financial transaction to the issuer. Applicable to Vault Get Expiring transaction type. | | |
| Vault AVS ZIP code | String | 9-character alpha-numeric | <code>receipt.GetResDataAvsZipcode();</code> |
| | Returns the AVS zip/postal code saved in the profile. If no other AVS street number is passed in the transaction request, this value will be submitted along with the financial transaction to the issuer. | | |
| Expiring card's AVS ZIP code | String | 9-character alpha-numeric | <code>receipt.GetExpAvsZipcode();</code> |
| | Returns the AVS zip/postal code saved in the profile. If no other AVS street number is passed in the transaction request, this value will be submitted along with the financial transaction to the issuer. Applicable to Vault Get Expiring transaction type. | | |
| Vault credit card number | String | 20-character numeric | <code>receipt.GetResPan();</code> |
| | Returns the full credit card number saved in the Vault profile. Applicable to Vault Lookup Full transaction only. | | |

Table 109: Receipt object response values (continued)

| Value | Type | Limits | Get Method |
|---|--|---------------------------|--|
| | Description | | |
| Corporate card | String | true/false | <code>receipt.GetCorporateCard();</code> |
| | Indicates whether the card associated with the Vault profile is a corporate card. | | |
| Encrypted Mag Swipe response fields (see 6, page 120) | | | |
| Masked credit card number | String | 20-character alphanumeric | <code>receipt.GetMaskedPan();</code> |
| | | | |
| Convenience Fee response fields (see Appendix A, page 1) | | | |
| Convenience fee success | String | true/false | <code>receipt.GetCfSuccess();</code> |
| | Indicates whether the Convenience Fee transaction processed successfully. | | |
| Convenience fee status | String | 2-character alphanumeric | <code>receipt.GetCfStatus();</code> |
| | <p>Indicates the status of the merchant and convenience fee transactions. The CfStatus field provides details about the transaction behavior and should be referenced when contacting Moneris Customer Support.</p> <p>Possible values are:</p> <ul style="list-style-type: none"> • 1 or 1F – Completed 1st purchase transaction • 2 or 2F – Completed 2nd purchase transaction • 3 – Completed void transaction • 4A or 4D – Completed refund transaction • 7 or 7F – Completed merchant independent refund transaction • 8 or 8F – Completed merchant refund transaction • 9 or 9F – Completed 1st void transaction • 10 or 10F – Completed 2nd void transaction • 11A or 11D – Completed refund transaction | | |
| Convenience fee amount | String | 9-character decimal | <code>receipt.GetFeeAmount();</code> |
| | The expected Convenience Fee amount. This field will return the amount submitted by the merchant for a successful transaction. For an unsuccessful transaction, it will return the expected convenience fee amount | | |

Table 109: Receipt object response values (continued)

| Value | Type | Limits | Get Method |
|----------------------|--|---------------------|------------------------------------|
| | Description | | |
| Convenience fee rate | String | 9-character decimal | <code>receipt.GetFeeRate();</code> |
| | The convenience fee rate that has been defined on the merchant's profile. For example: 1.00 – a fixed amount or 10.0 - a percentage amount | | |
| Convenience fee type | String | AMT/PCT | <code>receipt.GetFeeType();</code> |
| | The type of convenience fee that has been defined on the merchant's profile. Available options are: AMT – fixed amount PCT – percentage | | |

Table 110: Financial transaction response codes

| Code | Description |
|------|--|
| < 50 | Transaction approved |
| ≥ 50 | Transaction declined |
| NULL | Transaction was not sent for authorization |

For more details on the response codes that are returned, see the Response Codes document available at <https://developer.moneris.com>

Table 111: Vault Admin Responses

| Code | Description |
|------|--|
| 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 | Cannot find previous |

| Code | Description |
|------|----------------------------|
| 986 | Incomplete: timed out |
| 987 | Invalid transaction |
| 988 | Cannot find expiring cards |
| Null | Error: Malformed XML |

Appendix C Error Messages

Error messages that are returned if the gateway is unreachable

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. The 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. This may be because they are offline or because you are unable to connect to the internet.

A 'NULL' can also be returned when a transaction message is improperly formatted.

Error messages that are returned in the Message field of the response

XML Parse Error in Request: <System specific detail>

An improper XML document was sent from the API to the servlet.

XML Parse Error in Response: <System specific detail>

An improper XML document was sent back from the servlet.

Transaction Not Completed Timed Out

Transaction timed out before the host responds to the gateway.

Request was not allowed at this time

The host is disconnected.

Could not establish connection with the gateway: <System specific detail>

Gateway is not accepting transactions or server does not have proper access to internet.

Input/Output Error: <System specific detail>

Servlet is not running.

The transaction was not sent to the host because of a duplicate order id

Tried to use an order id which was already in use.

The transaction was not sent to the host because of a duplicate order id

Expiry Date was sent in the wrong format.

Vault error messages

Can not find previous

Data key provided was not found in our records or profile is no longer active.

Invalid Transaction

Transaction cannot be performed because improper data was sent.

or

Mandatory field is missing or an invalid SEC code was sent.

Malformed XML

Parse error.

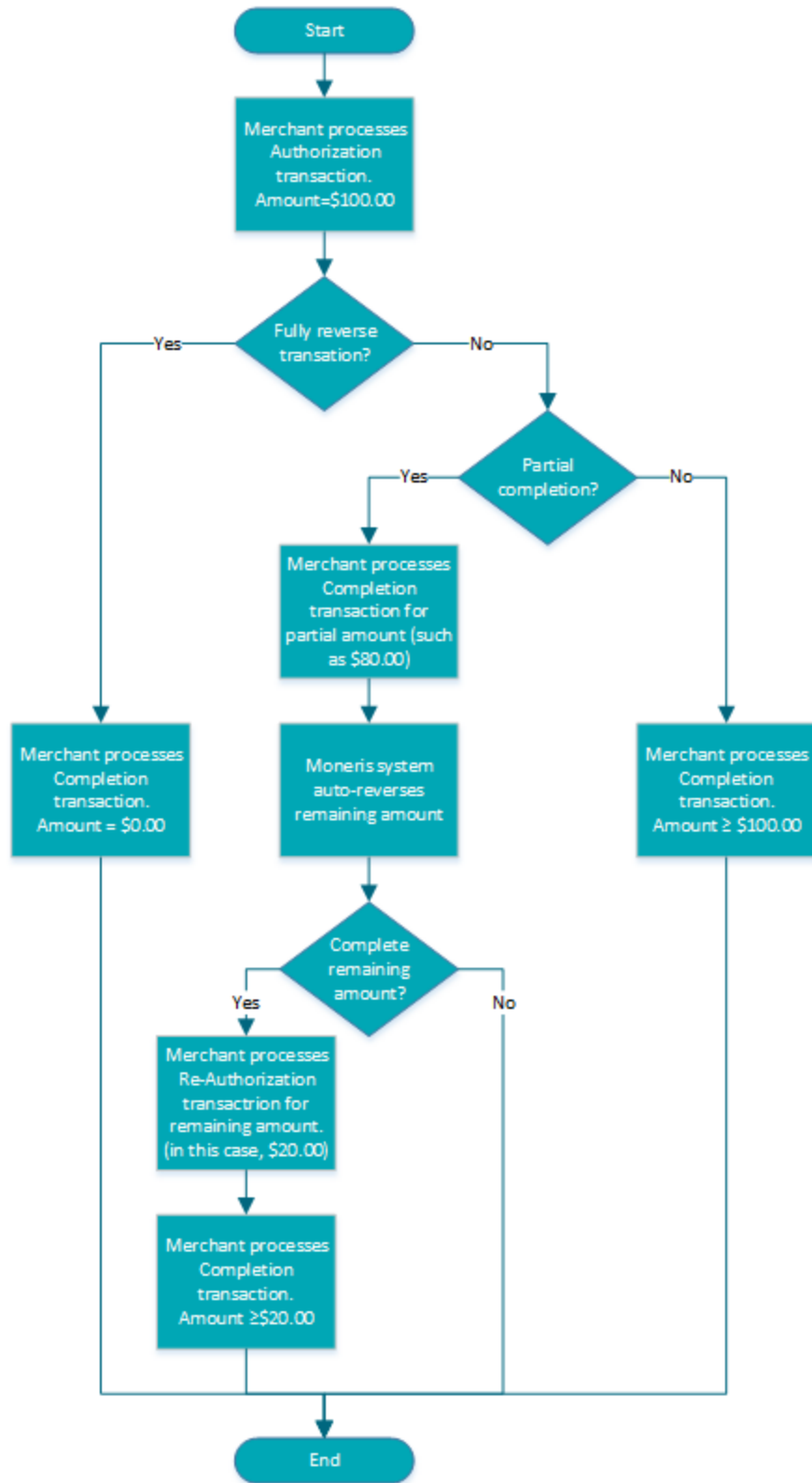
Incomplete

Timed out.

or

Cannot find expiring cards.

Appendix D Process Flow for Basic Pre-Auth, Re-Auth and Completion Transactions



Appendix E Merchant Checklists for INTERAC® Online Payment Certification Testing

Merchant Information

| | | |
|--|------------------------------------|--|
| Name and URL | Merchant Name (English) | |
| | Homepage URL (English) | |
| | Merchant Name (French) | |
| | Homepage URL (French) | |
| Number | Merchant Number | |
| Transaction fee category (Circle one) | Government Education General | |

Checklist for Front-End Tests

| Case # | Date Completed | Remarks |
|--------|----------------|---------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |

| Case # | Date Completed | Remarks |
|--------|----------------|---------|
| 16 | | |
| 17 | | |
| 18 | | |
| 19 | | |
| 20 | | |
| 21 | | |
| 22 | | |
| 23 | | |
| 24 | | |
| 25 | | |
| 26 | | |
| 27 | | |
| 28 | | |
| 29 | | |
| 30 | | |
| 31 | | |
| 32 | | |
| 33 | | |
| 34 | | |
| 35 | | |
| 36 | | |
| 37 | | |
| 38 | | |
| 39 | | |

Merchant Requirements

Table 112: Checklist for web display requirements

| Done | Requirement |
|------|---------------|
| | Checkout page |

Table 112: Checklist for web display requirements (continued)

| Done | Requirement |
|--|--|
| | Displays the INTERAC Online design (logo), wordmark (text "INTERAC Online) or both |
| Design and Wordmark Requirements (any page) | |
| | <p>Other payment option logos:</p> <ul style="list-style-type: none"> • Displays the INTERAC Online design (logo) if the merchant displays the trademarks or logos of other payment options. • Design is equal in size and no less prominent than other payment option trademarks. |
| | <p>INTERAC wordmark:</p> <ul style="list-style-type: none"> • INTERAC is always either in capital letters or italics (as in "the INTERAC Online service") • In the first use of the INTERAC Online wordmark, INTERAC is followed by the ® notation in superscript. For example, "<i>Interac</i>®" (English) or <<<i>Interac</i>^{MD}>> (French). • On the same page as the first occurrence of the wordmark, the following language-appropriate footnote appears: <ul style="list-style-type: none"> • ® Trademark of Interac Inc. Used under licence" • ^{MD} Marque de commerce d'Interac Inc. Utilisée sous licence |
| Version of design | |
| | <p>Uses the two-colour design on the web:</p> <ul style="list-style-type: none"> • Horizontal version—height no shorter than 25 pixels (width-to-height ratio of 2:37:1) • Vertical version—width no narrower than 30 pixels (width-to-height ratio of 1:1:37) |
| "Learn more" information | |
| | Provides consumers with a link to www.interaconline.com/learn (preferably on the checkout page) |
| Confirmation page | |
| | States that the transaction is successful |
| | Displays the financial institution's name and confirmation number |
| | Provides ability to print |

Table 112: Checklist for web display requirements (continued)

| Done | Requirement |
|------------------------|---|
| Error page | |
| | Indicates that payment was unsuccessful |
| | States that the order is cancelled or displays other payment options |
| Timeout message | |
| | Is displayed if consumer has less than 30 minutes to complete payment |
| Payment | |
| | Displays the total in Canadian dollars |

Table 113: Checklist for security/privacy requirements

| Done | Requirement |
|-----------------------------|--|
| Merchant | |
| | Uses no less than 128-bit SSL encryption when collecting personal information |
| | Protects consumer information in accordance with applicable federal and provincial privacy legislation |
| | Adheres to the Canadian Code of Practice for Consumer Protection in Electronic Commerce |
| Provided screenshots | |
| | Checkout page (where customer selects INTERAC Online option) |
| | Confirmation page (one of the test case 1, 2, or 3) |
| | Error page (test case 4) |

Appendix F Third-Party Service Provider Checklists for INTERAC® Online Payment Certification Testing

Third-Party Service Provider Information

| | | |
|--------------------------|---------------|--|
| Name | English | |
| | French | |
| Merchant Web Application | Solution Name | |
| | Version | |
| Acquirer | | |

Interaonline.com/Interacengne.com Web Site Listing Information

See http://www.interaonline.com/merchants_thirdparty.php for examples.

| | |
|-----------------------------|---|
| English contact information | 5 lines maximum. 35 characters/line maximum. For example, contact name and title, department, telephone, web site, email. |
| English logo | File type: PNG. Maximum size: 120x120 pixels. |
| French contact information | 5 lines maximum. 35 characters/line maximum. For example, contact name and title, department, telephone, web site, email. |
| French logo | File type: PNG. Maximum size: 120x120 pixels. |

Table 114: Checklist for front-end tests

| Case # | Date Completed | Remarks |
|--------|----------------|---------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |
| 17 | | |
| 18 | | |
| 19 | | |
| 20 | | |
| 21 | | |
| 22 | | |
| 23 | | |
| 24 | | |
| 25 | | |
| 26 | | |
| 27 | | |
| 28 | | |
| 29 | | |

Table 114: Checklist for front-end tests

| Case # | Date Completed | Remarks |
|--------|----------------|---------|
| 30 | | |
| 31 | | |
| 32 | | |
| 33 | | |
| 34 | | |
| 35 | | |
| 36 | | |
| 37 | | |
| 38 | | |
| 39 | | |

Merchant Requirements

Table 115: Checklist for web display requirements

| Done | Requirement |
|--|--|
| Checkout page | |
| | Displays the INTERAC Online design (logo), wordmark (text "INTERAC Online) or both |
| Design and Wordmark Requirements (any page) | |
| | <p>Other payment option logos:</p> <ul style="list-style-type: none"> • Displays the INTERAC Online design (logo) if the merchant displays the trademarks or logos of other payment options. • Design is equal in size and no less prominent than other payment option trademarks. |

Table 115: Checklist for web display requirements (continued)

| Done | Requirement |
|---------------------------------|---|
| | <p>INTERAC wordmark:</p> <ul style="list-style-type: none"> • INTERAC is always either in capital letters or italics (as in "the INTERAC Online service") • In the first use of the INTERAC Online wordmark, INTERAC is followed by the ® notation in superscript. For example, "<i>Interac</i>[®]" (English) or <<<i>Interac</i>^{MD}>> (French). • On the same page as the first occurrence of the wordmark, the following language-appropriate footnote appears: <ul style="list-style-type: none"> • ® Trademark of Interac Inc. Used under licence" • ^{MD} Marque de commerce d'Interac Inc. Utilisée sous licence |
| Version of design | |
| | <p>Uses the two-colour design on the web:</p> <ul style="list-style-type: none"> • Horizontal version—height no shorter than 25 pixels (width-to-height ratio of 2:37:1) • Vertical version—width no narrower than 30 pixels (width-to-height ratio of 1:1:37) |
| "Learn more" information | |
| | <p>Provides consumers with a link to www.interaconline.com/learn (preferably on the checkout page)</p> |
| Confirmation page | |
| | <p>States that the transaction is successful</p> |
| | <p>Displays the financial institution's name and confirmation number</p> |
| | <p>Provides the ability to print</p> |
| Error page | |
| | <p>Indicates that payment was unsuccessful</p> |
| | <p>States that the order is cancelled or displays other payment options</p> |
| Timeout message | |
| | <p>Is displayed if consumer has less than 30 minutes to complete payment</p> |
| Payment | |
| | <p>Displays the total in Canadian dollars</p> |

Table 116: Checklist for security/privacy requirements

| Done | Requirement |
|-----------------|--|
| Merchant | |
| | Uses no less than 128-bit SSL encryption when collecting personal information |
| | Protects consumer information in accordance with applicable federal and provincial privacy legislation |
| | Adheres to the Canadian Code of Practice for Consumer Protection in Electronic Commerce |

Table 117: Checklist for required screenshots

| Done | Requirement |
|-----------------------------|--|
| Provided screenshots | |
| | Checkout page (where customer selects INTERAC Online option) |
| | Confirmation page (one of the test case 1, 2, or 3) |
| | Error page (test case 4) |

Appendix G Merchant Checklists for INTERAC® Online Payment Certification

Merchant Information

| | | |
|---|------------------------------------|--|
| Name and URL | Merchant Name (English) | |
| | Homepage URL (English) | |
| | Merchant Name (French) | |
| | Homepage URL (French) | |
| Number | Merchant Number | |
| Transaction fee category (Circle one) | Government Education General | |
| Third-party service provider | Company name | |
| Service provider's merchant web application | Solution name | |
| | Version | |

Merchant Requirements

Table 118: Checklist for web display requirements

| Done | Requirement |
|---|--|
| Checkout page | |
| | Displays the INTERAC Online design (logo), wordmark (text "INTERAC Online) or both |
| Design and Wordmark Requirements (any page) | |
| | <p>Other payment option logos:</p> <ul style="list-style-type: none"> • Displays the INTERAC Online design (logo) if the merchant displays the trademarks or logos of other payment options. • Design is equal in size and no less prominent than other payment option trademarks. |

Table 118: Checklist for web display requirements (continued)

| Done | Requirement |
|--------------------------|--|
| | INTERAC wordmark: <ul style="list-style-type: none"> • INTERAC is always either in capital letters or italics (as in "the INTERAC Online service") • In the first use of the INTERAC Online wordmark, INTERAC is followed by the ® notation in superscript. For example, "<i>Interac</i>[®]" (English) or <<<i>Interac</i>^{MD}>> (French). • On the same page as the first occurrence of the wordmark, the following language-appropriate footnote appears: <ul style="list-style-type: none"> • ® Trademark of Interac Inc. Used under licence" • ^{MD} Marque de commerce d'Interac Inc. Utilisée sous licence |
| Version of design | |
| | Uses the two-colour design on the web: <ul style="list-style-type: none"> • Horizontal version—height no shorter than 25 pixels (width-to-height ratio of 2:37:1) • Vertical version—width no narrower than 30 pixels (width-to-height ratio of 1:1:37) |
| "Learn more" information | |
| | Provides consumers with a link to www.interaconline.com/learn (preferably on the checkout page) |
| Confirmation page | |
| | States that the transaction is successful |
| | Displays the financial institution's name and confirmation number |
| | Provides ability to print |
| Error page | |
| | Indicates that payment was unsuccessful |
| | States that the order is cancelled or displays other payment options |
| Timeout message | |
| | Is displayed if consumer has less than 30 minutes to complete payment |
| Payment | |
| | Displays the total in Canadian dollars |

Table 119: Checklist for security/privacy requirements

| Done | Requirement |
|-----------------------------|--|
| Merchant | |
| | Uses no less than 128-bit SSL encryption when collecting personal information |
| | Protects consumer information in accordance with applicable federal and provincial privacy legislation |
| | Adheres to the Canadian Code of Practice for Consumer Protection in Electronic Commerce |
| Provided screenshots | |
| | Checkout page (where customer selects INTERAC Online option) |
| | Confirmation page (one of the test case 1, 2, or 3) |
| | Error page (test case 4) |

Appendix H INTERAC® Online Payment Certification

Test Case Detail

- H.1 Common Validations
- H.2 Test Cases
- H.3 Merchant front-end test case values

H.1 Common Validations

The Merchant sends a request to the INTERAC Online Merchant Test Tool, which validates the fields as follows:

- All mandatory fields are present.
- All fields are valid according to their definition in the *INTERAC Online Functional Specifications* (including field lengths, valid characters and so on).
- Merchant number is that of a valid registered merchant.
- Funded URL matches one of the merchant's registered funded URLs that were provided during merchant registration.
- The not funded URL matches one of the merchant's registered Not Funded URLs that were provided during merchant registration.
- No additional fields are present.

H.2 Test Cases

Table 120: Cases 1-3

| | |
|------------------------|---|
| Objective | To test that the merchant can do all of the following: <ul style="list-style-type: none"> • Send a valid request to the Gateway page • Receive a valid confirmation of funding from the Issuer Online Banking application • Issue a request for purchase completion to the acquirer • Receive an approved response from the acquirer. |
| Pre-requisites | None |
| Configuration | Merchant sends form posts to the Merchant Test Tool, which in turn responds to either the Funded or Not Funded URL. The Merchant is connected to an acquirer emulator, which can be set to confirm any request for payment confirmation. (That is, the back-end process of sending a 0200 Message to the issuer is emulated to always accept the purchase request). |
| Special tools required | None |

Table 120: Cases 1-3 (continued)

| | |
|--------------------------------|---|
| <p>Input data requirements</p> | <p>Acquirer must have registered the merchant using the administration system, and have supplied the following:</p> <ul style="list-style-type: none"> • IDEBIT_FUNDEDURL(S) • IDEBIT_NOTFUNDEDURL(S) • HTTP REFERERURL(S) <p>Data will be provided by the Merchant Test Tool.</p> |
| <p>Execution strategy</p> | <p>Initiate a payment at the merchant. The two least significant digits of the dollar amount must be equal to the test case number. For example, if you are executing test case 3, the format of the amount must be ### #03.##.</p> |
| <p>Expected outcome</p> | <p>The merchant indicates to the customer that the purchase was completed and presents a confirmation screen that includes (depending on the test case) the correct amount, the issuer name and the issuer confirmation number.</p> <p>Test case 1</p> <ul style="list-style-type: none"> • Issuer name: 123Bank • Issuer confirmation number: CONF#123 <p>Test case 2</p> <ul style="list-style-type: none"> • Issuer name: Bank Éâëï#\$.,-/?@' • Issuer confirmation number: #\$.,-/?@'UPdn9 <p>Test case 3</p> <ul style="list-style-type: none"> • Issuer name: B • Issuer confirmation number: C |
| <p>Applicable logs</p> | <ul style="list-style-type: none"> • Merchant Test Tool logs • Screen capture of the merchant's confirmation page. |

Table 121: Case 4

| | |
|-----------------------|---|
| <p>Objective</p> | <p>To test that the merchant handles a rejection in response to the acquirer</p> |
| <p>Pre-requisites</p> | <p>None</p> |
| <p>Configuration</p> | <p>Same as test cases 1-3 except that the acquirer emulator must be set to decline the request for payment confirmation. (That is, to emulate the scenario in which an issuer sends a decline in the 0210 response to the acquirer's 0200 message.)</p> |

Table 121: Case 4 (continued)

| | |
|-------------------------|---|
| Special tools required | None |
| Input data requirements | <p>Acquirer must have registered the merchant using the administration system, and have supplied the following:</p> <ul style="list-style-type: none"> • IDEBIT_FUNDEDURL(S) • IDEBIT_NOTFUNDEDURL(S) • HTTP REFERERURL(S) <p>Data will be provided by the Merchant Test Tool.</p> |
| Execution strategy | Initiate a payment at the merchant for any amount where the two least significant dollar digits are 04. (That is, of the form #### ## #04.##.) |
| Expected outcome | The merchant indicates to the customer that the purchase was declined. Neither the issuer name nor the issuer confirmation number are displayed. |
| Applicable logs | Merchant Test Tool logs |

Table 122: Cases 5-22

| | |
|-------------------------|---|
| Objective | To test that a merchant safely handles redirections to the Funded URL with invalid data, and treats the transaction as funded. |
| Pre-requisites | None |
| Configuration | <p>None.</p> <p>The acquirer emulator is not needed because the merchant does not submit any requests for payment confirmation.</p> |
| Special tools required | None |
| Input data requirements | <p>Acquirer must have registered the merchant using the administration system, and have supplied the following:</p> <ul style="list-style-type: none"> • IDEBIT_FUNDEDURL(S) • IDEBIT_NOTFUNDEDURL(S) • HTTP REFERERURL(S) <p>Data will be provided by the Merchant Test Tool.</p> |
| Execution strategy | Initiate a payment at the merchant. The two least significant digits of the dollar amount must be equal to the test case number. For example, if you are executing test case 13, the format of the amount must be #### ## #13.##. |

Table 122: Cases 5-22 (continued)

| | |
|------------------|--|
| Expected outcome | The merchant indicates to the customer that the purchase was declined. Neither the issuer name nor the issuer confirmation number are displayed. |
| Applicable logs | Merchant Test Tool logs |

Table 123: Case 23

| | |
|-------------------------|---|
| Objective | To test that a merchant can receive a valid redirection from the issuer that indicates the payment was not funded. |
| Pre-requisites | None |
| Configuration | None. The acquirer emulator is not needed because the merchant does not submit any requests for payment confirmation. |
| Special tools required | None |
| Input data requirements | Acquirer must have registered the merchant using the administration system, and have supplied the following: <ul style="list-style-type: none"> • IDEBIT_FUNDEDURL(S) • IDEBIT_NOTFUNDEDURL(S) • HTTP REFERERURL(S) <p>Data is provided by the Merchant Test Tool.</p> |
| Execution strategy | Initiate a payment at the merchant for any amount where the two least significant dollar digits are 23. (That is, of the form #### ## #23.##.) |
| Expected outcome | The merchant indicates to the customer that the purchase was declined. Neither the issuer name nor the issuer confirmation number are displayed. |
| Applicable logs | Merchant Test Tool logs |

Table 124: Cases 24-39

| | |
|----------------|--|
| Objective | To test that a merchant safely handles redirections to the Not Funded URL with invalid data, and treats the transaction as not funded. |
| Pre-requisites | None |
| Configuration | None. The acquirer emulator is not needed because the merchant does not submit any requests for payment confirmation. |

Table 124: Cases 24-39 (continued)

| | |
|-------------------------|--|
| Special tools required | None |
| Input data requirements | <p>Acquirer must have registered the merchant using the administration system, and have supplied the following:</p> <ul style="list-style-type: none"> • IDEBIT_FUNDEDURL(S) • IDEBIT_NOTFUNDEDURL(S) • HTTP REFERERURL(S) <p>Data is provided by the Merchant Test Tool.</p> |
| Execution strategy | Initiate a payment at the merchant. The two least significant digits of the dollar amount must be equal to the test case number. For example, if you are executing test case 27, the format of the amount must be ### #### #27.##. |
| Expected outcome | The merchant indicates to the customer that the purchase was declined. Neither the issuer name nor the issuer confirmation number are displayed. |
| Applicable logs | Merchant Test Tool logs |

H.3 Merchant front-end test case values

These values are automatically sent by the INTERAC Online Merchant Test Tool. They are provided here for reference only.

Table 125: Test cases 1 and 4—Funded URL

| | |
|-----------------|---------------------------------------|
| Redirection URL | Funded |
| ISSLANG | en |
| TRACK2 | 3728024906540591206=12010123456789XYZ |
| ISSCONF | CONF#123 |
| ISSNAME | 123Bank |
| INVOICE | (Same as supplied by merchant) |
| MERCHDATA | (Same as supplied by merchant) |
| VERSION | 1 |

Table 126: Test case 2—Funded URL

| | |
|-----------------|--------|
| Redirection URL | Funded |
| ISSLANG | en |

Table 126: Test case 2—Funded URL

| | |
|-----------|--------------------------------------|
| TRACK2 | 5268051119993326=2912999999999999000 |
| ISSCONF | #\$.,-/=?'UPdn9 |
| ISSNAME | 987Bank Éàêëï#\$.,-/=?'Àòùüÿç |
| INVOICE | (Same as supplied by merchant) |
| MERCHDATA | (Same as supplied by merchant) |
| VERSION | 1 |

Table 127: Test case 3—Funded URL

| | |
|-----------------|---------------------------------------|
| Redirection URL | Funded |
| ISSLANG | fr |
| TRACK2 | 453781122255=1001ABC11223344550000000 |
| ISSCONF | C |
| ISSNAME | B |
| INVOICE | (Same as supplied by merchant) |
| MERCHDATA | (Same as supplied by merchant) |
| VERSION | 123 |

Table 128: Test cases 5-22—invalid fields, Funded URL

| Test case | Purpose | Field | Value |
|-----------|---------------|---|-----------|
| 5 | missing field | IDEBIT_INVOICE | (missing) |
| 6 | missing field | IDEBIT_MERCHDATA | (missing) |
| 7 | missing field | IDEBIT_ISSLANG | (missing) |
| 8 | missing field | IDEBIT_TRACK2 | (missing) |
| 9 | missing field | IDEBIT_ISSCONF | (missing) |
| 10 | missing field | IDEBIT_ISSNAME | (missing) |
| 11 | missing field | IDEBIT_VERSION | (missing) |
| 12 | missing field | IDEBIT_TRACK2, IDEBIT_ISSCONF, IDEBIT_ISSNAME | (missing) |
| 13 | wrong value | IDEBIT_INVOICE | XXX |
| 14 | wrong value | IDEBIT_MERCHDATA | XXX |

Table 128: Test cases 5-22—invalid fields, Funded URL (continued)

| Test case | Purpose | Field | Value |
|-----------|---------------------|----------------|--|
| 15 | invalid value | IDEBIT_ISSLANG | de |
| 16 | value too long | IDEBIT_TRACK2 | 3728024906540591206=12010123456789XYZA |
| 17 | invalid check digit | IDEBIT_TRACK2 | 3728024906540591207=12010123456789XYZ |
| 18 | field too long | IDEBIT_ISSCONF | Too long confirm |
| 19 | invalid character | IDEBIT_ISSCONF | CONF<123 |
| 20 | field too long | IDEBIT_ISSNAME | Very, very, very long issuer name |
| 21 | invalid character | IDEBIT_ISSNAME | 123<Bank |
| 22 | invalid value | IDEBIT_VERSION | 2 |

Table 129: Test case 23—valid data, Not Funded URL

| | |
|-----------------|--------------------------------|
| Redirection URL | Not funded |
| ISSLANG | en |
| INVOICE | (Same as supplied by merchant) |
| MERCHDATA | (Same as supplied by merchant) |
| VERSION | 1 |

Table 130: Test cases 5-22—invalid fields, Funded URL

| Test case | Purpose | Field | Value |
|-----------|-------------------------------------|------------------|---------------------------------------|
| 24 | missing field | IDEBIT_INVOICE | (missing) |
| 25 | missing field | IDEBIT_MERCHDATA | (missing) |
| 26 | missing field | IDEBIT_ISSLANG | (missing) |
| 27 | IDEBIT_TRACK2 is present and valid | IDEBIT_TRACK2 | 3728024906540591206=12010123456789XYZ |
| 28 | IDEBIT_ISSCONF is present and valid | IDEBIT_ISSCONF | CONF#123 |
| 29 | IDEBIT_ISSNAME is present and valid | IDEBIT_ISSNAME | 12Bank |
| 30 | missing field | IDEBIT_VERSION | (missing) |

Table 130: Test cases 5-22—invalid fields, Funded URL (continued)

| Test case | Purpose | Field | Value |
|-----------|-----------------------------------|------------------|--|
| 31 | wrong value | IDEBIT_INVOICE | XXX |
| 32 | invalid value | IDEBIT_INVOICE | invalid </html> tricky data |
| 33 | wrong value | IDEBIT_MERCHDATA | XXX |
| 34 | invalid value | IDEBIT_MERCHDATA | <2000 characters in the range hex 20-7E |
| 35 | invalid value | IDEBIT_ISSLANG | de |
| 36 | invalid IDEBIT_TRACK2 is present | IDEBIT_TRACK2 | INVALIDTRACK2, incorrect format and too long |
| 37 | invalid IDEBIT_ISSCONF is present | IDEBIT_ISSCONF | Too long confirm |
| 38 | invalid IDEBIT_ISSNAME is present | IDEBIT_ISSNAME | Very, very, very long issuer name |
| 39 | invalid value | IDEBIT_VERSION | 2 |

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