



BE PAYMENT READY

Moneris Gateway API - Integration Guide – .NET

Version: 1.3.0

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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 v1.3.0

- Removed wording about testing only with Visa cards in About Credential on File topic
- Removed differentiation between supported card brands in regards to AVS and CVD in Card Verification
- Added information about American Express support in Card Verification with AVS and CVD and Card Verification with Vault
- Removed the Re-Authorization transaction type and information related to it
- Removed the Mag Swipe transaction set section
- Added Response Codes reference
- Added new supported currencies to MCP Currency Codes
- Added transaction type definitions to Visa Checkout topics
- Added information about dynamic descriptor behaviour in Pre-Authorization transactions to all Pre-Authorization and Pre-Authorization Completion topics
- Added missing dynamic descriptor field information to Purchase with 3-D Secure transaction topic
- Added information about payment indicator and e-commerce indicator field values, including new topic Payment Indicator and E-Commerce Indicator Values
- Reorganized information for Convenience Fee, including new topics Supported Transactions for Convenience Fee and Convenience Fee Info Object
- Renamed Convenience Fee transaction type topics to emphasize that Purchase is the base transactions and Convenience Fee is an additional feature
- Reorganized Definition of Request Fields by feature sets; Mag Swipe request fields removed
- New request field definition topics for connection fields, core fields, Vault, MPI, and Convenience Fee

Previous version changes

Changes in v1.2.12

- Added warnings about 3-D Secure implementations using frames to MPI section and 3-D Secure related transaction type topics

Changes in v1.2.11

- Added information about Google Pay™ and removed references to Android Pay
- Separated out transaction process flows into two separate topics for Apple Pay and Google Pay™, Apple Pay Transaction Process Overview and Google Pay™ Transaction Process Overview

Changes in v1.2.10

- Added missing request fields in MCP Purchase with Vault

Changes in v1.2.9

- Corrected sample code for some financial transactions (to remove old method of MCP processing)

Changes in v1.2.8

- Added section about Multi-Currency Pricing (MCP) transactions
- Added new conceptual topics in Credential on File:
 - Merchant- vs. Cardholder-Initiated COF Transactions
 - COF With Previously Stored Credentials
- Discover test card number has been changed to 6011000992927602
- Amended electronic commerce indicator description in Definition of Response Fields to remove deprecated allowable values (8 and 9)

Changes in v1.2.7

Missing limits for request variables amount, completion amount and transaction amount were replaced

Changes in v1.2.6

Electronic commerce Indicator (crypt_type) request variable's value of '7' amended to reflect that it also represents an American ExpressSafeKey non-authenticated transaction

Changes in v1.2.5

Purchase transaction amended to include Customer ID variable

Changes in v1.2.4

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

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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Getting Help

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

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

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

1 About This Documentation

1.1 Purpose

This document describes the transaction information for using the Moneris .NET 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 Google Pay™ integrations
- Transaction Risk Management Tool
- Convenience fee
- Visa Checkout
- Level 2/3 Transactions

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 .NET programming language.

System Requirements

- .NET or above
- Port 443 open for bi-directional communication
- Web server with a SSL certificate

2 Basic Transaction Set

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

2.1 Purchase

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

Purchase transaction object definition

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

HttpPostRequest object for Purchase transaction

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

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

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	<i>String</i> N/A	<code>mpgReq.SetStoreId(store_id);</code>
API token	<i>String</i> N/A	<code>mpgReq.SetApiToken(api_token);</code>

Optional connection object field

Variable Name	Type and Limits	Set Method
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck(status_check);</code>

Purchase transaction request fields – Required

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric	<code>purchase.SetOrderId(order_id);</code>
amount	<i>String</i> 10-character decimal Up to 7 digits (dollars) +	<code>purchase.SetAmount(amount);</code>

Variable Name	Type and Limits	Set Method
	decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89	
credit card number	<i>String</i> 20-character alphanumeric	<code>purchase.SetPan (pan) ;</code>
expiry date	<i>String</i> 4-character alphanumeric (YYMM format)	<code>purchase.SetExpdate (expiry_date) ;</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>purchase.SetCryptType (crypt) ;</code>

Purchase transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 50-character alphanumeric	<code>purchase.SetCustId (cust_id) ;</code>
card match ID	<i>String</i> 50-character alphanumeric NOTE: Applies to Offlinx™ only; must be unique value for each transaction	<code>purchase.SetCmId (transaction_id) ;</code>
Customer Information	<i>Object</i> N/A	<code>purchase.SetCustInfo (customer) ;</code>
AVS Information	<i>Object</i> N/A	<code>purchase.SetAvsInfo (avsCheck) ;</code>
CVD Information	<i>Object</i> N/A NOTE: When storing cre-	<code>purchase.SetCvdInfo (cvdCheck) ;</code>

Variable Name	Type and Limits	Set Method
<p>dentials 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>		
<p>Convenience Fee Information</p> <p>NOTE: This variable does not apply to Credential on File transactions.</p>	<p><i>Object</i></p> <p>N/A</p>	<pre>purchase.SetConvFeeInfo(convFeeInfo);</pre>
Recurring Billing	<p><i>Object</i></p> <p>N/A</p>	<pre>purchase.SetRecur(recurring_ cycle);</pre>
dynamic descriptor	<p><i>Object</i></p> <p>20-character alphanumeric</p>	<pre>purchase .SetDynamicDescriptor(dynamic_descriptor);</pre>
<p>wallet indicator</p> <p>NOTE: For basic Purchase and Preauthorization, the wallet indicator applies to Visa Checkout and MasterCard MasterPass only. For more, see Definition of Request Fields.</p>	<p><i>String</i></p> <p>3-character alphanumeric</p>	<pre>purchase.SetWalletIndicator(wallet_indicator);</pre>
<p>Credential on File Info</p> <p>cof</p> <p>NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. For information about fields in the Credential on File Info object, see Credential on File Info Object and Variables.</p>	<p><i>Object</i></p> <p>N/A</p>	<pre>purchase.SetCofInfo(cof);</pre>

Credential on File Info object request fields

Variable Name	Type and 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.	<i>String</i> 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 Definition of Request Fields – Credential on File
payment indicator NOTE: In Credential on File transactions where the request field e-commerce indicator is also being sent, the acceptable values for e-commerce indicator are dependent on the value sent for payment indicator; see request field definitions for more information.	<i>String</i> 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 Definition of Request Fields – Credential on File
payment information	<i>String</i> 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 Definition of Request Fields – Credential on File

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");

```

Sample Purchase

```

string store_id = "store5";
string api_token = "yesguy";
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)

```

Sample Purchase

```

{
    Console.WriteLine(e);
}
}
}
}

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";
            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("168451306048014");
            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);

            //purchase.SetCmId("8nAK8712sGaKls56"); //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(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());
            }
        }
    }
}

```

Sample Purchase

```

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

```

2.2 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 Pre-Authorization Completion transaction must be performed. A Pre-Authorization transaction may only be "completed" once.

Things to Consider:

- If a Pre-Authorization transaction is not followed by a Pre-Authorization Completion transaction, it must be reversed via a Pre-Authorization Completion transaction for 0.00. See 2.3 Pre-Authorization Completion
- A Pre-Authorization transaction may only be "completed" once

Pre-Authorization transaction object definition

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

HttpRequest object for Pre-Authorization transaction

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

```
mpgReq.SetTransaction(preauth);
```

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	<i>String</i> N/A	<code>mpgReq.SetStoreId(store_id);</code>
API token	<i>String</i> N/A	<code>mpgReq.SetApiToken(api_token);</code>

Optional connection object field

Variable Name	Type and Limits	Set Method
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck(status_check);</code>

Pre-Authorization transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric	<code>preauth.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>EXAMPLE: 1234567.89</div>	<code>preauth.SetAmount(amount);</code>
credit card number	<i>String</i> max 20-character alphanumeric	<code>preauth.SetPan(pan);</code>
expiry date	<i>String</i>	<code>preauth.SetExpdate(expiry_</code>

Variable Name	Type and Limits	Set Method
	4-character alphanumeric YYMM	date) ;
electronic commerce indicator	<i>String</i> 1-character alphanumeric	preauth.SetCryptType(crypt) ;

Pre-Authorization transaction request fields – Optional

Variable Name	Type and Limits	Set Method
dynamic descriptor NOTE: For Pre-Authorization transactions: the value in the dynamic descriptor field will only be carried over to a Pre-Authorization Completion when executing the latter via the Merchant Resource Center; otherwise, the value for dynamic descriptor must be sent again in the Pre-Authorization Completion	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	preauth.SetDynamicDescriptor(dynamic_descriptor) ;
card match ID NOTE: Applies to Offlinx™ only; must be unique value for each transaction	<i>String</i> 50-character alphanumeric	preauth.SetCmId(transaction_id) ;
Customer Information	<i>Object</i> N/A	preauth.SetCustInfo(customer) ;
AVS Information	<i>Object</i> N/A	preauth.SetAvsInfo(avsCheck) ;
CVD Information NOTE: When storing credentials on the initial transaction, the CVD object must be sent; for subsequent transactions using stored cre-	<i>Object</i> N/A	preauth.SetCvdInfo(cvdCheck) ;

Variable Name	Type and Limits	Set Method
<p>dentials, CVD can be sent with cardholder-initiated transactions only—merchants must not store CVD information.</p>		
customer ID	<i>String</i> 30-character alphanumeric	<code>preauth.SetCustId(cust_id);</code>
wallet indicator <p>NOTE: For basic Purchase and Preauthorization, the wallet indicator applies to Visa Checkout and MasterCard MasterPass only. For more, see Definition of Request Fields.</p>	<i>String</i> 3-character alphanumeric	<code>preauth.SetWalletIndicator(wallet_indicator);</code>
Credential on File Info	<i>Object</i>	<code>cof.SetCofInfo(cof);</code>
cof	N/A	
<p>NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. For information about fields in the Credential on File Info object, see Credential on File Info Object and Variables.</p>		

Credential on File Info object request fields

Variable Name	Type and Limits	Set Method
issuer ID <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</p>	<i>String</i> 15-character alphanumeric variable length	<code>cof.SetIssuerId("VALUE_FOR_ISSUER_ID");</code> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definition of Request Fields – Credential on File</p>

Variable Name	Type and Limits	Set Method
then used in subsequent transaction requests.		
payment indicator NOTE: In Credential on File transactions where the request field e-commerce indicator is also being sent, the acceptable values for e-commerce indicator are dependent on the value sent for payment indicator; see request field definitions for more information.	<i>String</i> 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 Definition of Request Fields – Credential on File
payment information	<i>String</i> 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 Definition 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");
            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();

```


Sample Pre-Authorization

```

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
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(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);
}
}
}
}
using System;
using System.Collections.Generic;
using System.Text;
using Moneris;
namespace CanadaPurchaseConsoleTest
{
    class CanadaPreauthTest
    {

```

Sample Pre-Authorization

```

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);
    //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());
        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("IssuerId = " + receipt.GetIssuerId());
        Console.ReadLine();
    }
    catch (Exception e)
    {
    }
}

```

Sample Pre-Authorization
<pre> Console.WriteLine(e); } } } } </pre>

2.3 Pre-Authorization Completion

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

Things to Consider:

- A Pre-Authorization transaction can only be completed once
- To reverse the full amount of a Pre-Authorization transaction, use the Pre-Authorization 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

Pre-Authorization Completion transaction object

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

HttpRequest object for Pre-Authorization Completion transaction

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

```
mpgReq.SetTransaction(completion);
```

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	String N/A	mpgReq.SetStoreId(store_id);
API token	String N/A	mpgReq.SetApiToken(api_token);

Optional connection object field

Variable Name	Type and Limits	Set Method
status check	Boolean	mpgReq.SetStatusCheck(status_check);

Variable Name	Type and Limits	Set Method
	true/false	

Pre-Authorization Completion transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>completion.SetOrderId(order_id);</code>
completion amount	<i>String</i> 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div>EXAMPLE: 1234567.89</div>	<code>completion.SetCompAmount(comp_amount);</code>
transaction number	<i>String</i> 255-character, alphanumeric, hyphens or under-scores variable length	<code>completion.SetTxnNumber(txn_number);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>completion.SetCryptType(crypt);</code>

Pre-Authorization Completion transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>completion.SetCustId(cust_id);</code>

Variable Name	Type and Limits	Set Method
dynamic descriptor	<i>String</i> max 20-character alpha-numeric total of 22 characters including your merchant name and separator	completion .SetDynamicDescriptor (dynamic_descriptor);
NOTE: For Pre-Authorization transactions: the value in the dynamic descriptor field will only be carried over to a Pre-Authorization Completion when executing the latter via the Merchant Resource Center; otherwise, the value for dynamic descriptor must be sent again in the Pre-Authorization Completion		
shipping indicator	<i>String</i> 1-character alphanumeric	completion.SetShipIndicator (ship_indicator);

Sample 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
            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();
        }
    }
}

```

Sample Pre-Authorization Completion

```
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);
}
}
```

2.4 Force Post

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

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

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

Force Post transaction object definition

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

HttpPostRequest object for Force Post transaction

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

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	<i>String</i> N/A	<code>mpgReq.SetStoreId(store_id);</code>
API token	<i>String</i> N/A	<code>mpgReq.SetApiToken(api_token);</code>

Optional connection object field

Variable Name	Type and Limits	Set Method
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck(status_check);</code>

Force Post transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>forcepost.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>EXAMPLE: 1234567.89</div>	<code>forcepost.SetAmount(amount);</code>

Variable Name	Type and Limits	Set Method
credit card number	<i>String</i> max 20-character alpha-numeric	<code>forcepost.SetPan(pan);</code>
expiry date	<i>String</i> 4-character alphanumeric YYMM	<code>forcepost.SetExpdate(expiry_date);</code>
authorization code	<i>String</i> 8-character alphanumeric	<code>forcepost.SetAuthCode(auth_code);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>forcepost.SetCryptType(crypt);</code>

Force Post transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>forcepost.SetCustId(cust_id);</code>
dynamic descriptor	<i>String</i> max 20-character alpha-numeric total of 22 characters including your merchant name and separator	<code>forcepost .SetDynamicDescriptor (dynamic_descriptor);</code>

Sample 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";
        }
    }
}

```


Sample Force Post

```

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);
forcepost.SetExpDate(expdate);
forcepost.SetAuthCode(auth_code);
forcepost.SetCryptType(crypt);
forcepost.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(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);
}
}

```

2.5 Purchase Correction

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

This transaction can be used against a Purchase or Pre-Authorization 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.

Things to Consider:

- 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);
```

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	String N/A	mpgReq.SetStoreId(store_id);
API token	String N/A	mpgReq.SetApiToken(api_token);

Optional connection object field

Variable Name	Type and Limits	Set Method
status check	Boolean true/false	mpgReq.SetStatusCheck(status_check);

Purchase Correction transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>purchasecorrection .SetOrderId(order_id);</code>
transaction number	<i>String</i> 255-character, alpha- numeric, hyphens or under- scores variable length	<code>purchasecorrection .SetTxnNumber(txn_number);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>purchasecorrection .SetCryptType(crypt);</code>

Purchase Correction transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>purchasecorrection.SetCustId (cust_id);</code>
dynamic descriptor	<i>String</i> max 20-character alpha- numeric total of 22 characters includ- ing your merchant name and separator	<code>purchasecorrection .SetDynamicDescriptor (dynamic_descriptor);</code>

Sample Purchase Correction
<pre> namespace Moneris { using System; public class TestCanadaPurchaseCorrection { public static void Main(string[] args) { string store_id = "store5"; string api_token = "yesguy"; string order_id = "Test20150723031154"; string txn_number = "165745-0_10"; string crypt = "8"; } } } </pre>

Sample Purchase Correction

```

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);
}
}
}

```

2.6 Refund

Restores all or part of the funds from a Purchase, Pre-Authorization 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.

For processing refunds on a different card than the one used in the original transaction, the Independent Refund transaction should be used instead.

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);
```

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	<i>String</i> N/A	<code>mpgReq.SetStoreId(store_id);</code>
API token	<i>String</i> N/A	<code>mpgReq.SetApiToken(api_token);</code>

Optional connection object field

Variable Name	Type and Limits	Set Method
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck(status_check);</code>

Refund transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>refund.SetOrderId(order_id);</code>
amount	<i>String</i> 10-character decimal Up to 7 digits (dollars) +	<code>refund.SetAmount(amount);</code>

Variable Name	Type and Limits	Set Method
	decimal point (.) + 2 digits (cents) after the decimal point EXAMPLE: 1234567.89	
transaction number	<i>String</i> 255-character, alpha-numeric, hyphens or under-scores variable length	<code>refund.SetTxnNumber(txn_number);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>refund.SetCryptType(crypt);</code>

Sample Refund

```

namespace Moneris
{
    using System;
    public class TestCanadaRefund
    {
        public static void Main(string[] args)
        {
            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);
            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(refund);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try

```

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

2.7 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.

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);
```

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	<i>String</i> N/A	<code>mpgReq.SetStoreId(store_id);</code>
API token	<i>String</i> N/A	<code>mpgReq.SetApiToken(api_token);</code>

Optional connection object field

Variable Name	Type and Limits	Set Method
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck(status_check);</code>

Independent Refund transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>indrefund.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>EXAMPLE: 1234567.89</div>	<code>indrefund.SetAmount(amount);</code>
credit card number	<i>String</i> max 20-character alphanumeric	<code>indrefund.SetPan(pan);</code>

Variable Name	Type and Limits	Set Method
expiry date	<i>String</i> 4-character alphanumeric YYMM	<code>indrefund.SetExpdate(expiry_date);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>indrefund.SetCryptType(crypt);</code>

Independent Refund transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>indrefund.SetCustId(cust_id);</code>
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	<code>indrefund. .SetDynamicDescriptor (dynamic_descriptor);</code>

Sample Independent Refund
<pre> 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); } } } </pre>

Sample Independent Refund

```

indrefund.SetExpdate(expdate);
indrefund.SetCryptType(crypt);
indrefund.SetDynamicDescriptor("123456");
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(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);
}
}

```

2.8 Card Verification with AVS and CVD

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.

Things to Consider:

- The Card Verification transaction is only supported by Visa, Mastercard, Discover and American Express

- 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
- 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 transaction object definition

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

HttpPostRequest object for Card Verification transaction

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

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

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	<i>String</i> N/A	<code>mpgReq.SetStoreId(store_id);</code>
API token	<i>String</i> N/A	<code>mpgReq.SetApiToken(api_token);</code>

Optional connection object field

Variable Name	Type and Limits	Set Method
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck(status_check);</code>

Card Verification transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric	<code>cardVerification.SetOrderId(order_id);</code>

Variable Name	Type and Limits	Set Method
	a-Z A-Z 0-9 _ - : . @ spaces	
credit card number	<i>String</i> max 20-character alpha-numeric	<code>cardVerification.SetPan(pan);</code>
expiry date	<i>String</i> 4-character alphanumeric YYMM	<code>cardVerification.SetExpdate(expiry_date);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>cardVerification.SetCryptType(crypt);</code>
AVS Information	<i>Object</i> N/A	<code>cardVerification.SetAvsInfo(avsCheck);</code>
CVD Information	<i>Object</i> N/A	<code>cardVerification.SetCvdInfo(cvdCheck);</code>
<div> <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>		

Card Verification transaction request fields – Optional

Variable Name	Type and Limits	Set Method
Credential on File Info cof	<i>Object</i> N/A	<code>cardVerification.SetCofInfo(cof);</code>
<div> <p>NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. For information about fields in the Credential on File Info object, see Cre-</p> </div>		

Variable Name	Type and Limits	Set Method
credential on File Info Object and Variables.		

Credential on File Info object request fields

Variable Name	Type and 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.	<i>String</i> 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 Definition of Request Fields – Credential on File
payment indicator NOTE: In Credential on File transactions where the request field e-commerce indicator is also being sent, the acceptable values for e-commerce indicator are dependent on the value sent for payment indicator; see request field definitions for more information.	<i>String</i> 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 Definition of Request Fields – Credential on File
payment information	<i>String</i> 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 Definition of Request Fields – Credential on File

Sample Card Verification

```
namespace Moneris
{
    using System;
```

Sample Card Verification

```

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;
        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());
        }
    }
}

```

Sample Card Verification

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

2.9 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 11 pm Eastern Time.

Batch Close transaction object definition

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

HttpPostRequest object for Batch Close transaction

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

```
mpgReq.SetTransaction(batchclose);
```

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	<i>String</i> N/A	<code>mpgReq.SetStoreId(store_id);</code>
API token	<i>String</i> N/A	<code>mpgReq.SetApiToken(api_token);</code>

Optional connection object field

Variable Name	Type and Limits	Set Method
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck(status_check);</code>

Batch Close transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
ECR (electronic cash register) number	<i>String</i> 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);
            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(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());
                    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
            {

```


Sample Batch Close

```

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);
}
}
}
}

```

2.10 Open Totals

Returns the details about the currently open batch.

Similar to the Batch Close; the difference is that it does not close the batch for settlement.

Open Totals transaction object definition

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

HttpPostRequest object for Open Totals transaction

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

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

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	<i>String</i> N/A	mpgReq.SetStoreId(store_id);

Variable Name	Type and Limits	Set Method
API token	<i>String</i> N/A	<code>mpgReq.SetApiToken(api_token);</code>

Open Totals transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
ECR (electronic cash register) number	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);
            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(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());
                }
            }
        }
    }
}
```

Sample Open Totals

```

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);
}
}
}
}

```

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
- 3.5 Initial Transactions in Credential on File
- 3.9 Credential on File and Converting Temporary Tokens
- 3.8 Vault Tokenize Credit Card and Credential on File
- 3.10 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.

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.

Credential on File Info Object:

cof

Variables in the cof object:

Payment Indicator
Payment Information
Issuer ID

For more information, see Definition 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
- MCP Purchase
- MCP Pre-Authorization
- MCP Pre-Authorization Completion
- MCP Purchase with Vault
- MCP Pre-Authorization with Vault

3.4 Merchant- vs. Cardholder-Initiated COF Transactions

Transactions defined as Credential on File (COF) can be initiated one of two ways: by a merchant or by a cardholder. The initiator of a transaction is important because it determines which Credential on File indicator fields need to be sent in the transaction request.

Merchant-initiated Credential on File transactions: transactions in which the merchant intends to store cardholder credentials or use credentials that have already been stored. This includes sending the Credential on File Info object in the transaction request, and including all three of its fields: **issuer ID**, **payment indicator** and **payment information**.

Cardholder-initiated Credential on File transactions: transactions which are triggered by some action by the cardholder. For cardholder-initiated transactions, only the **payment indicator** and **payment information** fields are required.

For simplicity in developing your integration, the Moneris Gateway also allows cardholder-initiated transactions to be processed according to the same Credential on File rules as apply to merchant-initiated transactions. Technically, the **issuer ID** indicator is not required for cardholder-initiated transactions, but for convenience, if it is included in the transaction request, the Moneris Gateway will just ignore it when forwarding the request to the host.

3.5 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

3.6 COF With Previously Stored Credentials

When processing a transaction with cardholder information that was already stored **prior to** the implementation of Credential on File requirements, you must:

- Include the Credential on File Info object in the transaction request, and
- Send the **payment information** value as 2, and
- Store the **issuer ID** returned in the transaction and associate it with the cardholder credentials for future use

Once the **issuer ID** has been stored and associated with the cardholder credentials, send it in all subsequent transactions going forward. **Issuer ID** is only required when sending merchant-initiated transactions.

3.7 Payment Indicator and E-Commerce Indicator Values

When sending Credential on File information in transaction requests that also include the **e-commerce indicator** request field (in code, referred to as `crypt_type`), acceptable values for the e-commerce indicator are dependent upon the value being sent for the **payment indicator**.

If Payment Indicator Value is:	Allowable e-commerce indicator values are:
R	2 – Mail Order / Telephone Order—Recurring 5 – Authenticated e-commerce transaction (3-D Secure) 6 – Non-authenticated e-commerce transaction (3-D Secure)
C	1 – Mail Order / Telephone Order—Single 5 – Authenticated e-commerce transaction (3-D Secure) 6 – Non-authenticated e-commerce transaction (3-D Secure) 7 – SSL-enabled merchant
U	1 – Mail Order / Telephone Order—Single 7 – SSL-enabled merchant
Z	1 – Mail Order / Telephone Order—Single

If Payment Indicator Value is:	Allowable e-commerce indicator values are:
	5 – Authenticated e-commerce transaction (3-D Secure)
	6 – Non-authenticated e-commerce transaction (3-D Secure)
	7 – SSL-enabled merchant

3.8 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.

3.9 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 it is necessary to send Credential on File information.

For Vault 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.

3.10 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 Definition 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 2.8 Card Verification with AVS and CVD.

3.10.1 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

3.10.2 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.

3.10.3 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.

3.10.4 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.

3.10.5 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 (with Recurring Billing object field **start now** = true)

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 Billing 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 7 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

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.

Vault Add Credit Card transaction object definition

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

HttpPostRequest object for Vault Add Credit Card transaction

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

```
mpgReq.SetTransaction(resaddcc);
```

Vault Add Credit Card transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
credit card number	<i>String</i> max 20-character alpha-numeric	<code>resaddcc.SetPan (pan) ;</code>
expiry date	<i>String</i> 4-character alphanumeric YYMM	<code>resaddcc.SetExpdate (expiry_date) ;</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>resaddcc.SetCryptType (crypt) ;</code>
Credential on File Info cof	<i>Object</i> N/A	<code>resaddcc.SetCofInfo (cof) ;</code>
<div> <p>NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. For information about fields in the Credential on File Info object, see Credential on File Info Object and Variables.</p> </div>		

Vault Add Credit Card transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>resaddcc.SetCustId (cust_id) ;</code>
email address	<i>String</i> 30-character alphanumeric	<code>resaddcc.SetEmail (email) ;</code>
phone number	<i>String</i> 30-character alphanumeric	<code>resaddcc.SetPhone (phone) ;</code>

Variable Name	Type and Limits	Set Method
note	<i>String</i> 30-character alphanumeric	<code>resaddcc.SetNote (note) ;</code>
data key format	<i>String</i> 2-character alphanumeric	<code>resaddcc.SetDataKeyFormat (data_key_format) ;</code>
AVS Information	<i>Object</i> N/A	<code>resaddcc.SetAvsInfo (avsCheck) ;</code>

Credential on File Info object request fields

Variable Name	Type and Limits	Set Method
issuer ID <div> 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>	<i>String</i> 15-character alphanumeric variable length	<code>cof.SetIssuerId ("VALUE_FOR_ISSUER_ID") ;</code> <div> NOTE: For a list and explanation of the possible values to send for this variable, see Definition of Request Fields – Credential on File </div>

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";
            string cust_id = "customer1";
            string crypt_type = "7";

```

Sample Vault Add Credit Card

```

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);
}
}

```

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 474).

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 60), Vault Encrypted Add Credit Card – EncResAddCC (page 64), Vault Tokenize Credit Card – ResTokenizeCC (page 87), Vault Temporary Token Add – ResTempAdd (page 67) or Vault Add Token – ResAddToken (page 83) 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 request fields – Required

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

Variable Name	Type and Limits	Set Method
(missing or bad snippet)	<i>String</i> (missing or bad snippet)	encresaddcc.SetEncTrack2(enc_track2);
(missing or bad snippet)	<i>String</i> (missing or bad snippet)	encresaddcc.SetDeviceType(device_type);
electronic commerce indicator	<i>String</i> 1-character alphanumeric	encresaddcc.SetCryptType(crypt);

Vault Encrypted Add Credit Card transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>encresaddcc.SetCustId(cust_id);</code>
AVS Information	<i>Object</i> N/A	<code>encresaddcc.SetAvsInfo(avsCheck);</code>
email address	<i>String</i> 30-character alphanumeric	<code>encresaddcc.SetEmail(email);</code>
phone number	<i>String</i> 30-character alphanumeric	<code>encresaddcc.SetPhone(phone);</code>
note	<i>String</i> 30-character alphanumeric	<code>encresaddcc.SetNote(note);</code>
data key format	<i>String</i> 2-character alphanumeric	<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)
        {
            /***** 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);
        }
    }
}

```

Sample Vault Encrypted Add Credit Card

```

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());
    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 \(page 474\)](#).

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();
```

HttpPostRequest object for Vault Temporary Token Add transaction

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

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

Vault Temporary Token Add transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
credit card number	<i>String</i> max 20-character alphanumeric	<code>resTempAdd.SetPan(pan);</code>
expiry date	<i>String</i> 4-character alphanumeric YYMM	<code>resTempAdd.SetExpdate(expiry_date);</code>
duration	<i>String</i> 3-character numeric maximum 900 seconds	<code>resTempAdd.SetDuration(duration);</code>
electronic commerce indicator	<i>String</i>	<code>resTempAdd.SetCryptType(crypt);</code>

Variable Name	Type and Limits	Set Method
---------------	-----------------	------------

1-character alphanumeric

Vault Temporary Token Add transaction request fields – Optional

Variable Name	Type and Limits	Set Method
data key format	<i>String</i> 2-character alphanumeric	resTempAdd.SetDataKeyFormat (data_key_format);

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);
            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());
            }
        }
    }
}
```

Sample Vault Temporary Token Add

```
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 474).

4.3.3 Vault Update Credit Card – ResUpdateCC

Updates an existing Vault profile (referencing the profile's unique **data key**) with cardholder information.

Information contained within a credit card profile is updated as indicated by the submitted fields; if any field representing an item of cardholder information is not sent in this request, that item will remain unchanged in the profile.

If the Vault profile is being updated with a new credit card number, then you first need to send a Purchase, Pre-Authorization or Card Verification transaction, with the Credential on File Info object included, before performing Vault Update Credit Card. If the credit card number is not one of the profile items being updated, this step is not required.

Things to Consider:

- To update a specific element in the profile, set that element using the corresponding set method
- When updating a credit card number, first send a Purchase, Pre-Authorization, or Card Verification with the Credential on File Info object before sending this transaction; send the issuer ID received in the response in the subsequent Vault Update Credit Card request
- If the credit card number is not one of the profile items being updated, the Credential on File info object is not required

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 request fields – Required

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

Variable Name	Type and Limits	Set Method
data key	<i>String</i> 25-character alphanumeric	<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.

Vault Update Credit Card transaction request fields – Optional

Variable Name	Type and Limits	Set Method
credit card number	<i>String</i> 20-character alphanumeric	<code>resUpdateCC.SetPan(pan);</code>
expiry date	<i>String</i> 4-character alphanumeric YYMM	<code>resUpdateCC.SetExpdate(expiry_date);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>resUpdateCC.SetCryptType(crypt);</code>
customer ID	<i>String</i> 30-character alphanumeric	<code>resUpdateCC.SetCustId(cust_id);</code>
email address	<i>String</i> 30-character alphanumeric	<code>resUpdateCC.SetEmail(email);</code>
phone number	<i>String</i> 30-character alphanumeric	<code>resUpdateCC.SetPhone(phone);</code>

Variable Name	Type and Limits	Set Method
note	<i>String</i> 30-character alphanumeric	<code>resUpdateCC.SetNote (note) ;</code>
AVS Information	<i>Object</i> N/A	<code>resUpdateCC.SetAvsInfo (avsCheck) ;</code>
Credential on File Info cof	<i>Object</i> N/A	<code>resUpdateCC.SetCofInfo (cof) ;</code>
<p>NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. For information about fields in the Credential on File Info object, see Credential on File Info Object and Variables.</p>		

Credential on File Info object request fields

Variable Name	Type and Limits	Set Method
issuer ID	<i>String</i> 15-character alphanumeric variable length	<code>cof.SetIssuerId ("VALUE_FOR_ISSUER_ID") ;</code>
<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> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definition of Request Fields – Credential on File</p>		

Sample Vault Update Credit Card

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

Sample Vault Update Credit Card

```

{
    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());
        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());
    }
}

```


Sample Vault Update Credit Card

```
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 474).

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 request fields – Required

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

Variable Name	Type and Limits	Set Method
data key	<i>String</i> 25-character alphanumeric	<code>encresupdatecc.SetData(data_key);</code>
(missing or bad snippet)	<i>String</i> (missing or bad snippet)	<code>encresupdatecc.SetEncTrack2(enc_track2);</code>
(missing or bad snippet)	<i>String</i> (missing or bad snippet)	<code>encresupdatecc.SetDeviceType(device_type);</code>

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.

Vault Encrypted Update CC transaction request fields – Optional

Variable Name	Type and Limits	Set Method
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>encresupdatecc.SetCryptType(crypt);</code>
customer ID	<i>String</i> 30-character alphanumeric	<code>encresupdatecc.SetCustId(cust_id);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>encresupdatecc.SetCryptType(crypt);</code>
email address	<i>String</i> 30-character alphanumeric	<code>encresupdatecc.SetEmail(email);</code>
phone number	<i>String</i> 30-character alphanumeric	<code>encresupdatecc.SetPhone(phone);</code>
note	<i>String</i> 30-character alphanumeric	<code>encresupdatecc.SetNote(note);</code>

Sample Vault Encrypted Update CC

```
namespace Moneris
{
    using System;
    public class TestCanadaEncResUpdateCC
    {
        public static void Main(string[] args)
        {
            /***** REQUEST VARIABLES *****/
            string store_id = "store5";
            string api_token = "yesguy";
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string cust_id = "nqa";
```

Sample Vault Encrypted Update CC

```

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

```

Sample Vault Encrypted Update CC

```
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 474).

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);
```

HttpRequest object for Vault Delete transaction

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

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

Vault Delete transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
data key	<i>String</i> 25-character alphanumeric	resDelete.SetData(data_key);

Sample Vault Delete

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

Sample Vault Delete

```
{
    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);
    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(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 474).

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 request fields – Required

Variable Name	Type and Limits	Set Method
data key	<i>String</i> 25-character alphanumeric	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());
                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());
            }
        }
    }
}
```

Sample Vault Lookup Full

```

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 474).

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 request fields – Required

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

Variable Name	Type and Limits	Set Method
data key	<i>String</i> 25-character alphanumeric	resLookupMasked.SetData (data_key);

Sample Vault Lookup Masked

```

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

```

Sample Vault Lookup Masked

```
{
    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 474).

4.3.7 Vault Get Expiring – ResGetExpiring

Vault Get Expiring transaction object definition

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


HttpsPostRequest object for Vault Get Expiring transaction

```
HttpsPostRequest mpgReq = new HttpsPostRequest();

mpgReq.SetTransaction(resGetExpiring);
```

Vault Get Expiring transaction request fields – Required

This transaction has no required request fields.

Sample Vault Get Expiring

```
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();
            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(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));
                    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));
                }
            }
        }
    }
}
```

Sample Vault Get Expiring

```

    }
    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 474).

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 request fields – Required

Variable Name	Type and Limits	Set Method
data key	String 25-character alphanumeric	resIsCorporateCard.SetData (data_key);

Sample Vault Is Corporate Card

```

namespace Moneris
{
    using System;
    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 = "eLqsADfwgHDxIpJG9vLnELx01";

```

Sample Vault Is Corporate Card

```

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 474).

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 request fields – Required

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

Variable Name	Type and Limits	Set Method
data key	<i>String</i> 25-character alphanumeric	<code>resAddToken.SetData(data_key);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>resAddToken.SetCryptType(crypt);</code>
Credential on File Info <code>cof</code>	<i>Object</i> 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. For information about fields in the Credential on File Info object, see Credential on File Info Object and Variables.

Vault Add Token transaction request fields – Optional

Table 1: Vault Add Token transaction optional values

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>resAddToken.SetCustId(cust_id);</code>
AVS Information	<i>Object</i> N/A	<code>resAddToken.SetAvsInfo(avsCheck);</code>
email address	<i>String</i> 30-character alphanumeric	<code>resAddToken.SetEmail(email);</code>
phone number	<i>String</i> 30-character alphanumeric	<code>resAddToken.SetPhone(phone);</code>
note	<i>String</i> 30-character alphanumeric	<code>resAddToken.SetNote(note);</code>
data key format	<i>String</i> 2-character alphanumeric	<code>resAddToken.SetDataKeyFormat(data_key_format);</code>

Credential on File Info object request fields

Variable Name	Type and Limits	Set Method
issuer ID <div> 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>	<i>String</i> 15-character alphanumeric variable length	<code>cof.SetIssuerId("VALUE_FOR_ISSUER_ID");</code> <div> NOTE: For a list and explanation of the possible values to send for this variable, see Definition of Request Fields – Credential on File </div>

Sample Vault Add Token

namespace Moneris

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 = "0000000000";
        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());

```

Sample Vault Add Token

```

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 474).

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 :

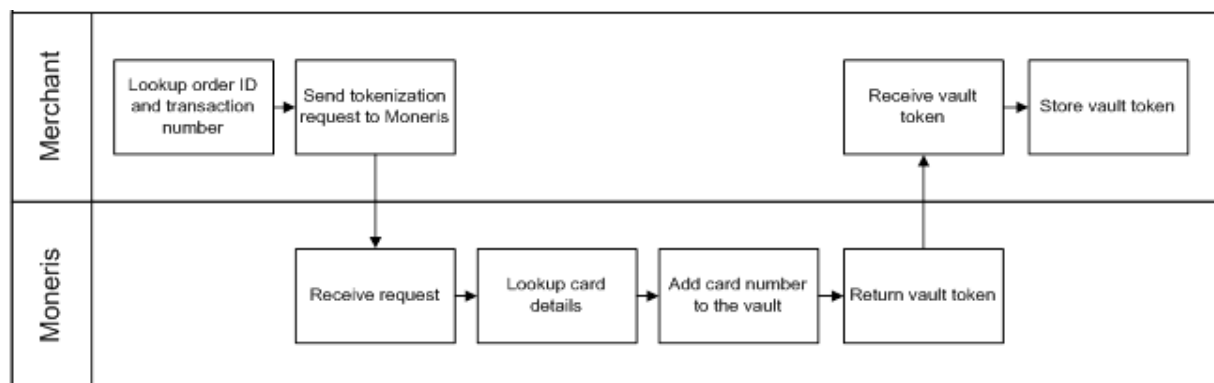


Figure 1: Tokenize process diagram

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 request fields – Required

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.

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>resTokenizeCC.SetOrderId(order_id);</code>
transaction number	<i>String</i> 255-character, alpha-numeric, hyphens or under-scores variable length	<code>resTokenizeCC.SetTxnNumber(txn_number);</code>

Vault Tokenize Credit Card transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>resTokenizeCC.SetCustId(cust_id);</code>
email address	<i>String</i> 30-character alphanumeric	<code>resTokenizeCC.SetEmail(email);</code>
phone number	<i>String</i> 30-character alphanumeric	<code>resTokenizeCC.SetPhone(phone);</code>
note	<i>String</i> 30-character alphanumeric	<code>resTokenizeCC.SetNote(note);</code>

Variable Name	Type and Limits	Set Method
AVS Information	<i>Object</i> N/A	<code>resTokenizeCC.SetAvsInfo (avsCheck) ;</code>
data key format	<i>String</i> 2-character alphanumeric	<code>resTokenizeCC .SetDataKeyFormat (data_key_ format) ;</code>
Credential on File Info <code>cof</code>	<i>Object</i> 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. For information about fields in the Credential on File Info object, see Credential on File Info Object and Variables.		

Credential on File Info object request fields

Variable Name	Type and 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 Definition of Request Fields – Credential on File

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());
                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());
            }
        }
    }
}

```

Sample Vault Tokenize Credit Card

```

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 474).

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 2: 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
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 request fields – Required

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

Variable Name	Type and Limits	Set Method
data key	<i>String</i> 25-character alphanumeric	<code>resPurchaseCC.SetData(data_key);</code>
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>resPurchaseCC.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>EXAMPLE: 1234567.89</div>	<code>resPurchaseCC.SetAmount(amount);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>resPurchaseCC.SetCryptType(crypt);</code>
Credential on File Info cof	<i>Object</i> N/A <div>NOTE: This is a nested object within the transaction, and required when storing or using the cus-</div>	<code>cof.SetCofInfo(cof);</code>

Variable Name	Type and Limits	Set Method
<div> <p>customer's stored credentials. For information about fields in the Credential on File Info object, see Credential on File Info Object and Variables.</p> </div>		

Purchase with Vault transaction request fields – Optional

Variable Name	Type and Limits	Set Method
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck(status_check);</code>
expiry date	<i>String</i> 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	<i>String</i> 30-character alphanumeric	<code>resPurchaseCC.SetCustId(cust_id);</code>
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	<code>resPurchaseCC.SetDynamicDescriptor(dynamic_descriptor);</code>
Customer Information	<i>Object</i> N/A	<code>resPurchaseCC.SetCustInfo(customer);</code>
AVS Information	<i>Object</i> N/A	<code>resPurchaseCC.SetAvsInfo(avsCheck);</code>
CVD Information	<i>Object</i>	<code>resPurchaseCC.SetCvdInfo(cvdCheck);</code>

Variable Name	Type and Limits	Set Method
<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>	N/A	
Recurring Billing	<i>Object</i> N/A	<pre>resPurchaseCC.SetRecur (recurring_cycle);</pre>

Credential on File Info object request fields

Variable Name	Type and Limits	Set Method
issuer ID <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> 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 Definition of Request Fields – Credential on File</p>
payment indicator <p>NOTE: In Credential on File transactions where the request field e-commerce indicator is also being sent, the acceptable values for e-commerce indicator are dependent on the value sent for payment indicator; see request field definitions for more information.</p>	<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 Definition of Request Fields – Credential on File</p>
payment information	<i>String</i> 1-character numeric	<pre>cof.SetPaymentInformation ("PAYMENT_INFO_VALUE");</pre>

Variable Name	Type and Limits	Set Method
		<div> NOTE: For a list and explanation of the possible values to send for this variable, see Definition of Request Fields – Credential on File </div>

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 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
            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(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());
            }
        }
    }
}

```

Sample Purchase with Vault

```

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();
}
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 474).

4.4.3 Pre-Authorization with Vault – ResPreauthCC

Pre-Authorization with Vault transaction object definition

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

HttpRequest object for Pre-Authorization with Vault transaction

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

```
mpgReq.SetTransaction(resPreauthCC);
```


Pre-Authorization with Vault transaction request fields – Required

Variable Name	Type and Limits	Set Method
data key	<i>String</i> 25-character alphanumeric	<code>resPreauthCC.SetData (data_key);</code>
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>resPreauthCC.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>EXAMPLE: 1234567.89</div>	<code>resPreauthCC.SetAmount (amount);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>resPreauthCC.SetCryptType (crypt);</code>
Credential on File Info cof	<i>Object</i> N/A <div>NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. For information about fields in the Credential on File Info object, see Credential on File Info Object and Variables.</div>	<code>resPreauthCC.SetCofInfo (cof);</code>

Pre-Authorization with Vault transaction request fields – Optional

Value	Limits	Set method
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck (status_check);</code>

Value	Limits	Set method
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	<pre>resPreauthCC .SetDynamicDescriptor (dynamic_descriptor);</pre>
NOTE: For Pre-Authorization transactions: the value in the dynamic descriptor field will only be carried over to a Pre-Authorization Completion when executing the latter via the Merchant Resource Center; otherwise, the value for dynamic descriptor must be sent again in the Pre-Authorization Completion		
expiry date	<i>String</i> 4-character alphanumeric YYYYMM	<pre>resPreauthCC.SetExpdate (expiry_date);</pre>
customer ID	<i>String</i> 30-character alphanumeric	<pre>resPreauthCC.SetCustId(cust_ id);</pre>
Customer Information	<i>Object</i> N/A	<pre>resPreauthCC.SetCustInfo (customer);</pre>
AVS Information	<i>Object</i> N/A	<pre>resPreauthCC.SetAvsInfo (avsCheck);</pre>
CVD Information	<i>Object</i> N/A	<pre>resPreauthCC.SetCvdInfo (cvdCheck);</pre>
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 Info object request fields

Variable Name	Type and 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.	<i>String</i> 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 Definition of Request Fields – Credential on File
payment indicator NOTE: In Credential on File transactions where the request field e-commerce indicator is also being sent, the acceptable values for e-commerce indicator are dependent on the value sent for payment indicator; see request field definitions for more information.	<i>String</i> 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 Definition of Request Fields – Credential on File
payment information	<i>String</i> 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 Definition of Request Fields – Credential on File

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";
        }
    }
}

```

Sample Pre-Authorization with Vault

```

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 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.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(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());
    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 Pre-Authorization 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 474).

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 Definition of Request Fields.

Variable Name	Type and Limits	Set Method
data key	<i>String</i> 25-character alphanumeric	<code>resIndRefundCC.SetData(data_key);</code>
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>resIndRefundCC.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	<code>resIndRefundCC.SetAmount(amount);</code>

Variable Name	Type and Limits	Set Method
	<div>EXAMPLE: 1234567.89</div>	
electronic commerce indicator	<i>String</i> 1-character alphanumeric	resIndRefundCC.SetCryptType(crypt);

Vault Independent Refund transaction request fields – Optional

Value	Limits	Set method
customer ID	<i>String</i> 30-character alphanumeric	resIndRefundCC.SetCustId(cust_id);
expiry date	<i>String</i> 4-character alphanumeric YYMM	resIndRefundCC.SetExpdate(expiry_date);
status check	<i>Boolean</i> true/false	mpgReq.SetStatusCheck(status_check);
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	resIndRefundCC. SetDynamicDescriptor(dynamic_descriptor);

Sample Vault Independent Refund

```

namespace Moneris
{
    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");

```

Sample Vault Independent Refund

```

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);
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(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());
    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 474).

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 request fields – Required

Variable Name	Type and Limits	Set Method
amount	<i>String</i> 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div>EXAMPLE: 1234567.89</div>	resForcePostCC.SetAmount(amount);
data key	<i>String</i> 25-character alphanumeric	resForcePostCC.SetData(data_key);
authorization code	<i>String</i> 8-character alphanumeric	resForcePostCC.SetAuthCode(auth_code);
electronic commerce indicator	<i>String</i> 1-character alphanumeric	resForcePostCC.SetCryptType(crypt);

Force Post with Vault transaction object definition

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i>	resForcePostCC.SetCustId(cust_id);

Variable Name	Type and Limits	Set Method
	30-character alphanumeric	
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	<pre>resForcePostCC .SetDynamicDescriptor (dynamic_descriptor);</pre>
status check	<i>Boolean</i> true/false	<pre>mpgReq.SetStatusCheck(status_ check);</pre>

Sample Force Post with Vault

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

Sample Force Post with Vault

```

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, American Express 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 request fields – Required

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

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>rescardverify.SetOrderId(order_id);</code>
data key	<i>String</i> 25-character alphanumeric	<code>rescardverify. .SetDataKeyFormat(data_key_ format);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>rescardverify.SetCryptType(crypt);</code>
AVS Information	<i>Object</i> N/A	<code>rescardverify.SetAvsInfo(avsCheck);</code>
CVD Information	<i>Object</i> N/A	<code>rescardverify.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.**

Variable Name	Type and Limits	Set Method
Credential on File Info <code>cof</code>	<i>Object</i> N/A	<code>rescardverify.SetCofInfo (cof);</code>

NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. For information about fields in the Credential on File Info object, see Credential on File Info Object and Variables.

Credential on File Info object request fields

Variable Name	Type and 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.	<i>String</i> 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 Definition of Request Fields – Credential on File
payment indicator NOTE: In Credential on File transactions where the request field e-commerce indicator is also being sent, the acceptable values for e-commerce indicator are dependent on the value sent for payment indicator; see request field definitions for more information.	<i>String</i> 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 Definition of Request Fields – Credential on File
payment information	<i>String</i> 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,

Variable Name	Type and Limits	Set Method
		see Definition of Request Fields – Credential on File

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;
            /***** 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);

            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(rescardverify);
            mpgReq.SetStatusCheck(status_check);
            mpgReq.Send();
            try
            {
                Receipt receipt = mpgReq.GetReceipt();
            }
        }
    }

```

Sample Card Verification with Vault

```

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);
}
}
} // 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 at

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 Processing a Transaction.

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 503) and "Third-Party Service Provider Checklists for INTERAC® Online Payment Certification Testing" on page 507 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 515) 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 503) or Appendix F (page 507) 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 111). 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 512). They will **not** be required to complete any of the test cases.

Your clients must also complete the Merchant Requirement checklist (Appendix G, page 512). 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 3 may experience delays in the certification or registration process of up to 7 days.

Table 3: 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

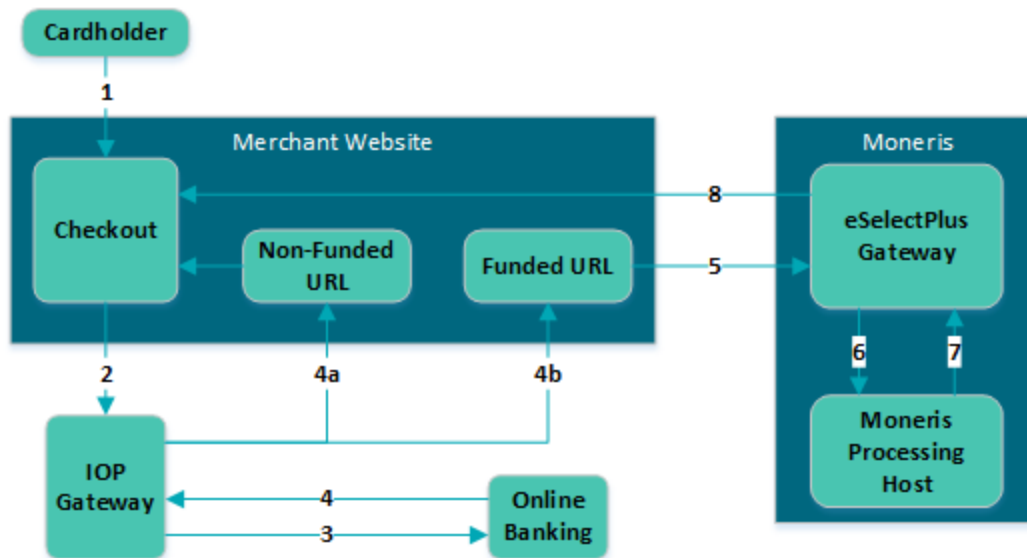


Figure 2: INTERAC® Online Payment transaction flow diagram

- 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 121) 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 4: 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 121):

- 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 Definition of Request Fields.

Table 5: INTERAC® Online Payment transaction object mandatory values

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

Table 6: INTERAC® Online Payment Purchase transaction optional values

Value	Type	Limits	Set method
Customer ID	String	50-character alphanumeric	<code>IOP_Txn.SetCustId(cust_id);</code>
Dynamic descriptor	String	20-character alphanumeric	<code>IOP_Txn.SetDynamicDescriptor(dynamic_descriptor);</code>
Customer information	Object	Not applicable. Click here See Section 14 (page 386).	<code>IOP_Txn.SetCustInfo(customer);</code>

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.SetIddebitTrack2(track2);
IOP_Txn.SetCustInfo(customer);
//IOP_Txn.SetDynamicDescriptor("dynamicdescriptor1");
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(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 Definition of Request Fields.

Table 7: 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 <div>EXAMPLE: 1234567.89</div>	<code>refund.SetAmount(amount);</code>
Transaction number	String	255-character alpha-numeric	<code>refund.SetTxnNumber(txn_number);</code>

Table 8: 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

```

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);
        }
    }
}

```


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 9: 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 9: 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 Ç È É Ê Ë Ì Í Î Ï Ñ Ò Ó Ô Õ Ö Ç à á â ã ä å æ ç è é ê ë ì í î ï ò ó ô õ ö ÷ ç• Spaces• # \$. , - / = ? @ ' 	
	Optional field Can be the Order ID when used with Moneris Gateway fund confirmation trans- actions.		
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 9: Field Definitions (continued)

Value	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 • ; / ? : @ & = + \$, - _ . ! ~ * ' () % <p>Https address to which the issuer redirects cardholders after failing or canceling the online banking process.</p>
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 Å Æ Ç È É Ê Ë Ì Í Î Ï Ñ Ò Ó Ô Õ Ö × à á â ã ä å è é ê ë ì í î ï ò ó ô õ ö ü ý ç • Spaces • # \$. , - / = ? @ ' " <p>Confirmation number returned from the issuer to be displayed on the merchant's confirmation page and on the receipt.</p>
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 Å Æ Ç È É Ê Ë Ì Í Î Ï Ñ Ò Ó Ô Õ Ö × à á â ã ä å è é ê ë ì í î ï ò ó ô õ ö ü ý ç • Spaces • # \$. , - / = ? @ • ' " <p>Issuer name to be displayed on the merchant's confirmation page and on the receipt.</p>

6 Level 2/3 Transactions

- 6.1 About Level 2/3 Transactions
- 6.2 Level 2/3 Visa Transactions
- 6.3 Level 2/3 MasterCard Transactions
- 6.4 Level 2/3 American Express Transactions

6.1 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 20).

6.2 Level 2/3 Visa Transactions

- 6.2.1 Level 2/3 Transaction Types for Visa
- 6.2.2 Level 2/3 Transaction Flow for Visa
- 6.2.3 VS Completion
- 6.2.5 VS Force Post
- 6.2.4 VS Purchase Correction
- 6.2.6 VS Refund
- 6.2.7 VS Independent Refund
- 6.2.8 VS Corpais

6.2.1 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 13).

- 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.

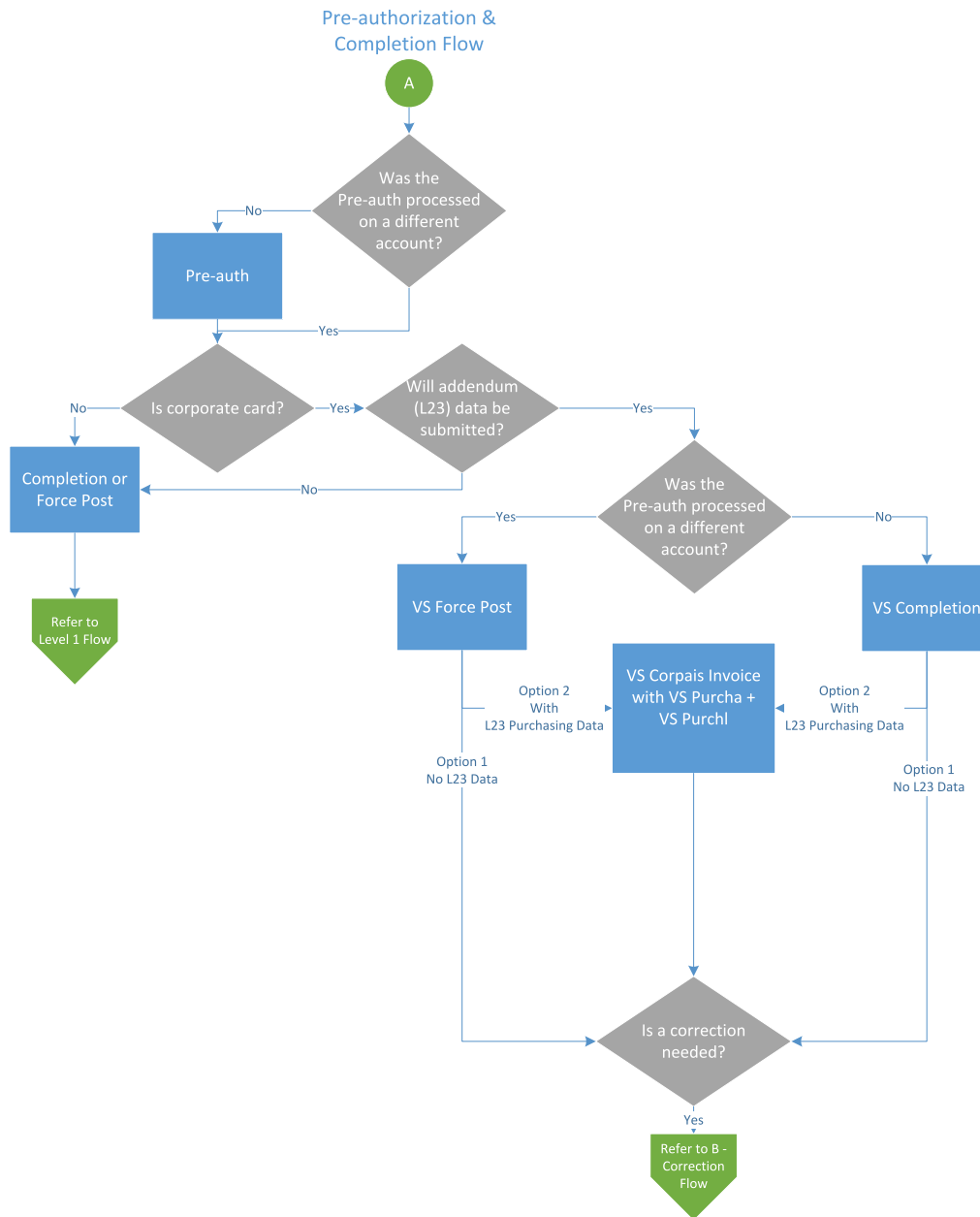
VS Corpais – (Level 2/3 Data)

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.

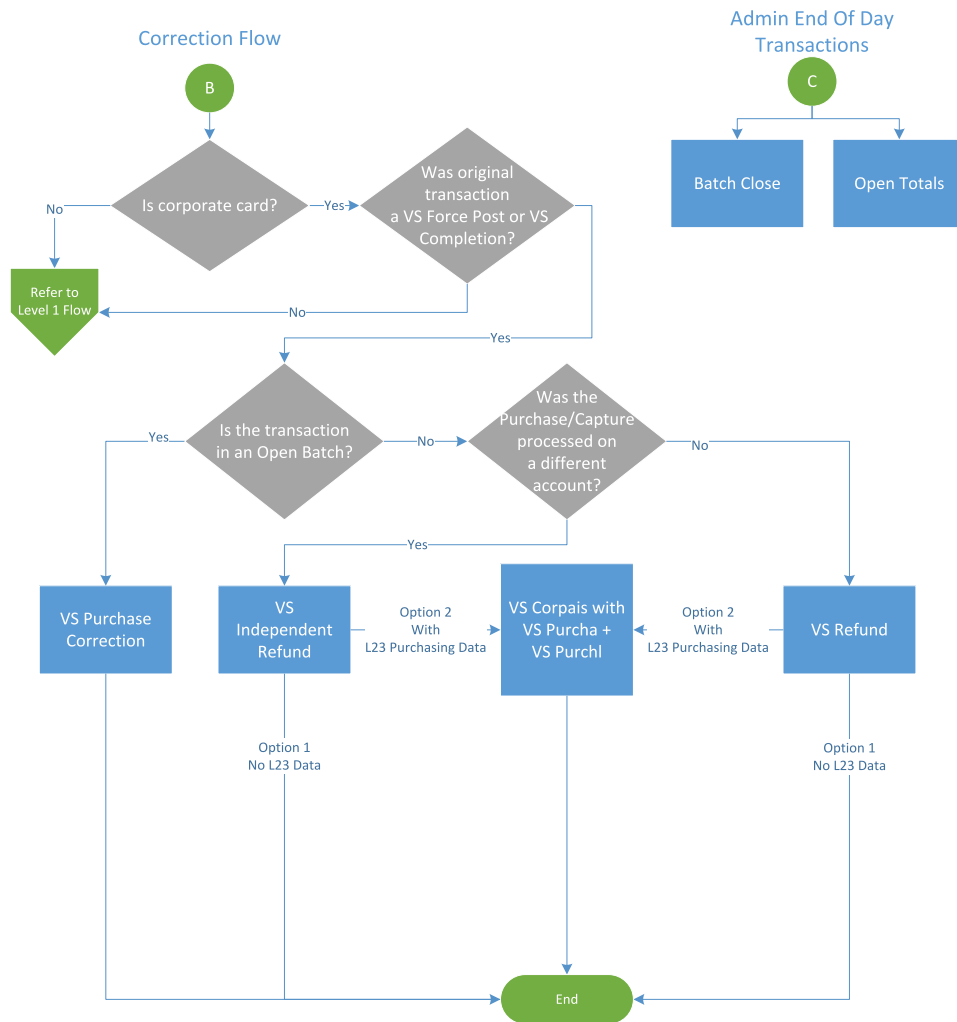
* A VS Purchase Correction can be performed against a transaction as long as the batch that contains the original transaction remains open. When using the automated closing feature, the batch close occurs daily between 10–11 pm EST.

6.2.2 Level 2/3 Transaction Flow for Visa

Pre-authorization/Completion Transaction Flow



Purchase Correction Transaction Flow



6.2.3 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	vsCompletion .SetNationalTax (national_tax);	<p>Must reflect the amount of National Tax (GST or HST) appearing on the invoice.</p> <p>Minimum - 0.01 Maximum - 999999.99. Must have 2 decimal places.</p>
Y	Merchant VAT Registration/Single Business Reference	20-character alpha-numeric	vsCompletion .SetMerchantVatNo (merchant_vat_no);	<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	vsCompletion .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>

Req*	Value	Limits	Set Method	Description
				<p>Maximum = 999999.99</p> <p>Must have 2 decimal places</p>
C	Local Tax (PST or QST) Registration Number	15-character alpha-numeric	<code>vsCompletion .SetLocalTaxNo (local_tax_no);</code>	<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 alpha-numeric	<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 alpha-numeric	<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

Req*	Value	Limits	Set Method	Description
N	Customer Code	17-character alpha-numeric	<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 alpha-numeric	<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 = "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";
            VsCompletion vsCompletion = new VsCompletion();
            vsCompletion.SetOrderId(order_id);
            vsCompletion.SetCompAmount(comp_amount);
        }
    }
}

```

Sample VS Completion

```

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);
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(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());
    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);
}
}
}
}

```

6.2.4 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);
```

Sample VS Purchase Correction

```

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);
}
}
}
}

```

6.2.5 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 EXAMPLE: 1234567.89	<code>vsForcePost.SetAmount(amount);</code>
Credit card number	String	20-character numeric	<code>vsForcePost.SetPan(pan);</code>
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.

Req*	Value	Limits	Set Method	Description
				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>	<p>Merchant's Tax Registration Number</p> <p>must be provided if tax is included on the invoice</p> <div> NOTE: Must not be all spaces or all zeroes </div>
C	Local Tax	12-character decimal	<code>vsForcePost .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)	15-character alpha-	<code>vsForcePost .SetLocalTaxNo</code>	Merchant's

Req*	Value	Limits	Set Method	Description
	Registration Number	numeric	<code>(local_tax_no);</code>	<p>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	<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

Req*	Value	Limits	Set Method	Description
				along to Visa, but will be included on Moneris reporting
N	Invoice Number	17-character alphanumeric	vsForcePost .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 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);

```

Sample VS Force Post

```

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);
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(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());
    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);
}
}
}
}

```

6.2.6 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();
```

HttpPostRequest object for VS Refund transaction

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

```
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

Req*	Value	Limits	Set Method	Description
				<p>(GST or HST) appearing on the invoice.</p> <p>Minimum - 0.01 Maximum - 999999.99.</p> <p>Must have 2 decimal places.</p>
Y	Merchant VAT Registration/Single Business Reference	20-character alpha-numeric	<pre>vsRefund .SetMerchantVatNo (merchant_vat_no);</pre>	<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; margin-top: 10px;"> <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</p>

Req*	Value	Limits	Set Method	Description
				decimal places
C	Local Tax (PST or QST) Registration Number	15-character alpha-numeric	<code>vsRefund .SetLocalTaxNo (local_tax_no);</code>	<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 alpha-numeric	<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 alpha-numeric	<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 alpha-numeric	<code>vsRefund .SetCustomerCode</code>	Optional cus-

Req*	Value	Limits	Set Method	Description
			(customer_code);	customer code field that will not be passed along to Visa, but will be included on Moneris reporting
N	Invoice Number	17-character alphanumeric	vsRefund .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 Refund
<pre> 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); </pre>

Sample VS Refund

```

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);
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(vsRefund);
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);
}
}
}

```

6.2.7 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>	<p>Must reflect the amount of National Tax (GST or HST) appearing on the invoice.</p> <p>Minimum - 0.01 Maximum - 999999.99. Must have 2 decimal places.</p>
Y	Merchant VAT Registration/Single Business Reference	20-character alpha-numeric	<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 =</p>

Req*	Value	Limits	Set Method	Description
				0.01 Maximum = 999999.99 Must have 2 decimal places
C	Local Tax (PST or QST) Registration Number	15-character alpha-numeric	<code>vsIndependentRefund .SetLocalTaxNo (local_tax_no);</code>	Merchant's Local Tax (PST/QST) Registration Number Must be provided if tax is included on the invoice; If Local Tax included then must not be all spaces or all zeroes Must be provided if Local Tax (PST or QST) applies
C	Customer VAT Registration Number	13-character alpha-numeric	<code>vsIndependentRefund .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 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

Req*	Value	Limits	Set Method	Description
				provided if given by the customer
N	Customer Code	17-character alpha-numeric	vsIndependentRefund.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 alpha-numeric	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

```

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";
        }
    }
}

```

Sample VS Independent Refund

```

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);
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);
}
}

```

6.2.8 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 alpha-numeric	<code>vsCorpais.SetOrderId(order_id);</code>
Transaction number	String	255-character alpha-numeric	<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	<pre>VsPurcha vsPurcha = new VsPurcha();</pre> <pre>vsCorpais.SetVsPurch(vsPurcha, vsPurchl);</pre>
vsPurchl For a list of the variables that appear in this object, see the table below	Object	n/a	<pre>VsPurchl vsPurchl = new VsPurchl();</pre> <pre>vsCorpais.SetVsPurch(vsPurcha, vsPurchl);</pre>

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

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

Req*	Value	Limits	Set Method	Description
				<p>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	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; margin: 10px 0;"> <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</p>

Req*	Value	Limits	Set Method	Description
				<p>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	2-character alpha-numeric	<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; margin-top: 10px;"> <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 alpha-numeric	<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</p>

Req*	Value	Limits	Set Method	Description
				<p>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)	9-character decimal	<code>vsPurcha .SetFreightAmount (freight_amount);</code>	<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	<code>vsPurcha .SetGstHstFreightRate (gst_hst_freight_rate);</code>	<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>

Req*	Value	Limits	Set Method	Description
C	GST HST Freight Amount	9-character decimal	vsPurcha .SetGstHstFreightAmount (gst_hst_freight_amount);	Amount of GST (excludes PST) or HST charged on the shipping amount If Freight/Shipping Amount is provided then this (National GST or HST) tax amount must be provided if taxTreatment is 0 or 2 Signed monetary amount: maximum without sign is 999999.99.

6.2.8.2 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 - VSPurchl

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	2-character alpha-	item_uom	Unit of measure

Req*	Value	Limits	Variable/Field	Description
	Measure	numeric		Use ANSI X-12 EDI Allowable Units of Measure and 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>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

Req*	Value	Limits	Variable/Field	Description
				<p>for this line item according to the Line Item Discount 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>

6.2.8.3 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"}; </pre>

Sample VS Corpais

```

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"};
//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());
}

```


Sample VS Corpais

```
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);
}
}
}
```

6.3 Level 2/3 MasterCard Transactions

- 6.3.1 Level 2/3 Transaction Types for MasterCard
- 6.3.2 Level 2/3 Transaction Flow for MasterCard
- 6.3.3 MC Completion
- 6.3.4 MC Force Post
- 6.3.5 MC Purchase Correction
- 6.3.6 MC Refund
- 6.3.7 MC Independent Refund
- 6.3.8 MC Corpais - Corporate Card Common Data with Line Item Details

6.3.1 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 13).

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 13).

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.

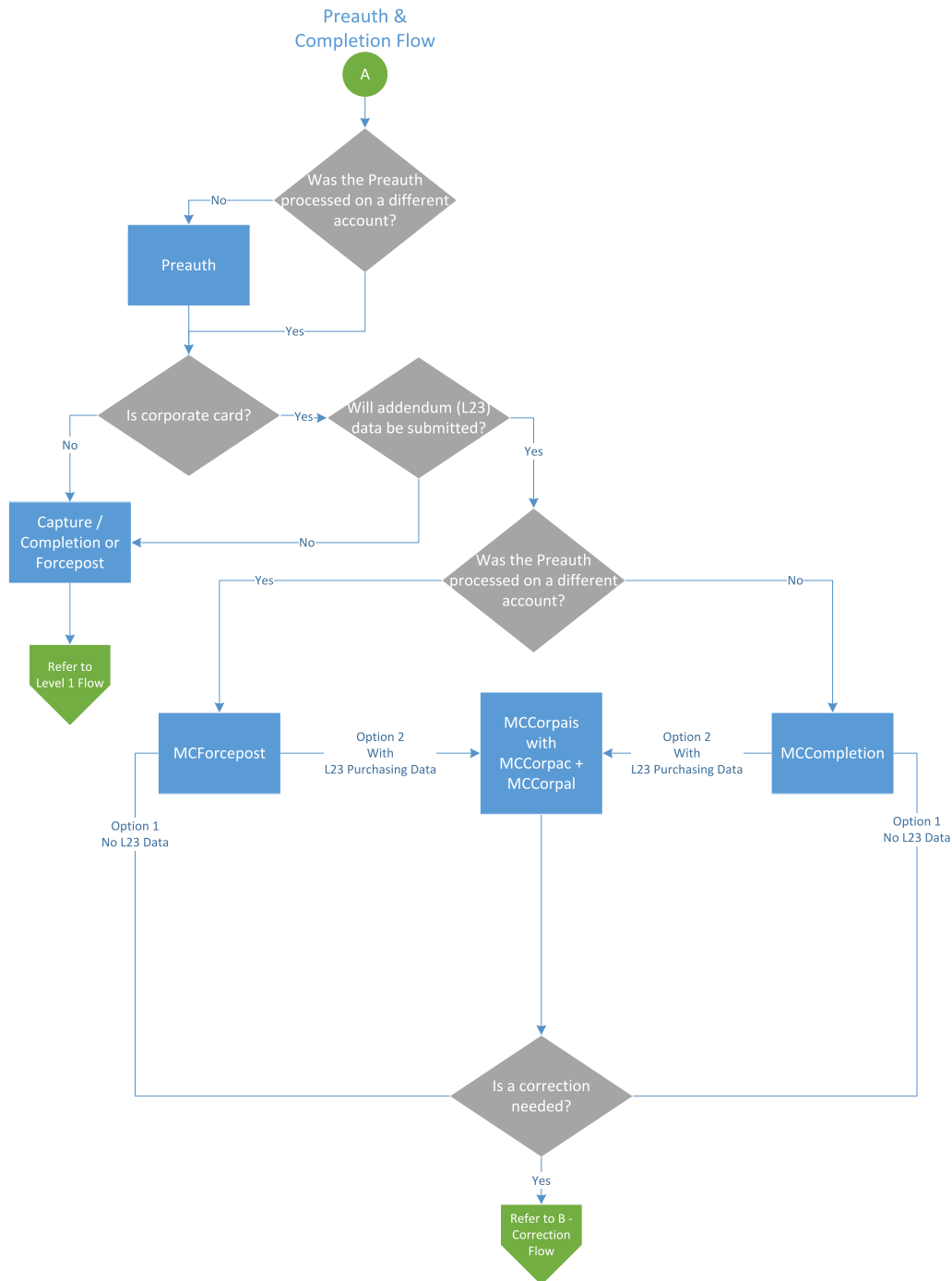
MC Corpais Common Line Item – (Level 2/3 Data)

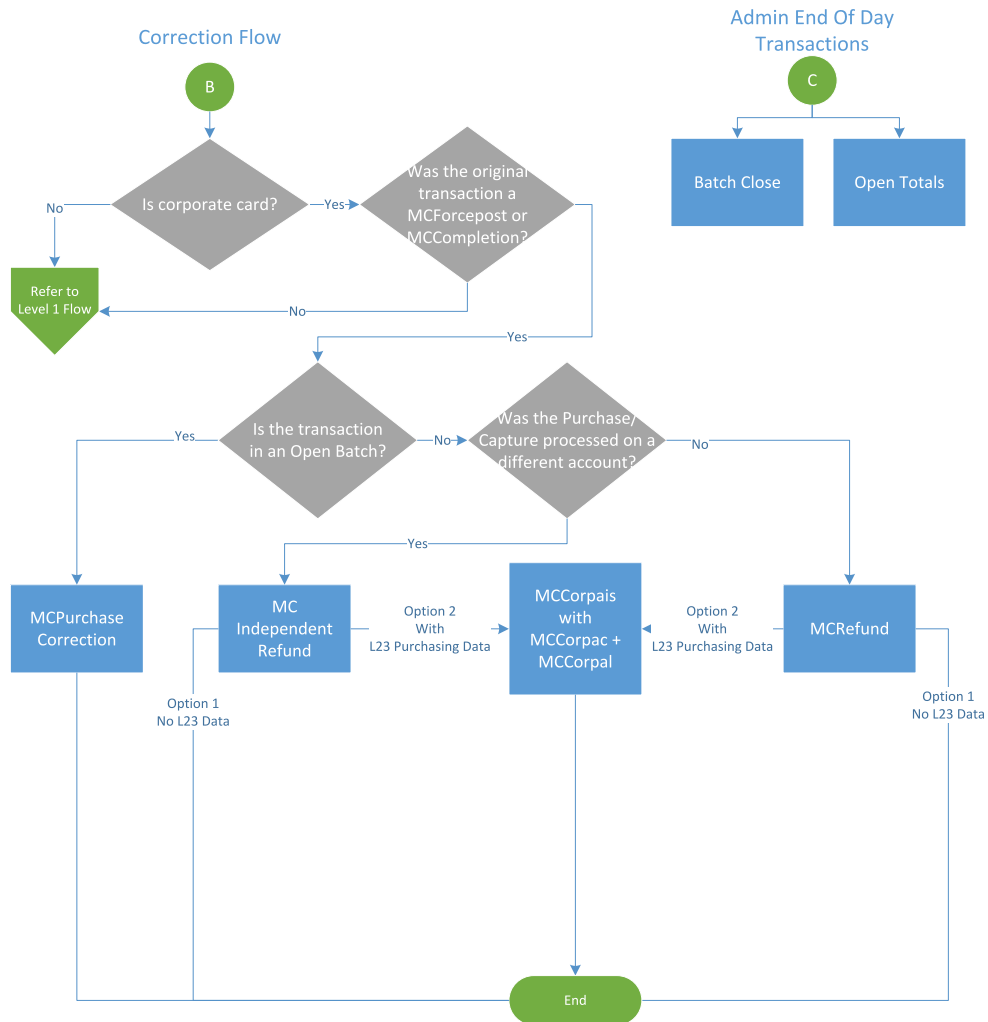
MC Corpais Common Line Item will contain the entire required and optional data field for Level 2/3 data. MCCorpais Common Line Item data can be sent when the card has been identified in the transaction request as being a corporate card. This transaction supports multiple data types and combinations:

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

6.3.2 Level 2/3 Transaction Flow for MasterCard

Pre-authorization/Completion Transaction Flow



Purchase Correction Transaction Flow

6.3.3 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 <div>EXAMPLE: 1234567.89</div>	<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);
            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);
            }
        }
    }
}

```

Sample MC Completion
<pre> } } } </pre>

6.3.4 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 <div>EXAMPLE: 1234567.89</div>	<code>mcforcepost.SetAmount(amount);</code>
Credit card number	String	20-character alpha-numeric	<code>mcforcepost.SetPan(pan);</code>
Expiry date	String	4-character alpha-	<code>mcforcepost.SetExpdate(expiry_date);</code>

Value	Type	Limits	Set Method
		numeric (YYMM format)	
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);
        }
    }

```


Sample MC Force Post

```

mcforcepost.SetAuthCode(auth_code);
mcforcepost.SetCryptType(crypt);
mcforcepost.SetMerchantRefNo(merchant_ref_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(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());
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}

```

6.3.5 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();
```

HttpPostRequest object for MC Purchase Correction transaction

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

Sample MC Purchase Correction

```

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);
}
}
}
}

```

6.3.6 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 alpha-numeric	<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 <div>EXAMPLE: 1234567.89</div>	<code>mcRefund.SetAmount(amount);</code>
Transaction number	String	255-character alpha-numeric	<code>mcRefund.SetTxnNumber(txn_number);</code>
E-commerce indicator	String	1-character alpha-numeric	<code>mcRefund.SetCryptType(crypt);</code>
Merchant reference number	String	19-character alpha-numeric	<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";

```

Sample MC Refund

```

McRefund mcRefund = new McRefund();
mcRefund.SetOrderId(order_id);
mcRefund.SetAmount(amount);
mcRefund.SetTxnNumber(txn_number);
mcRefund.SetCryptType(crypt);
mcRefund.SetMerchantRefNo(merchant_ref_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(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);
}
}
}
}

```

6.3.7 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 MonerisCustomer 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 <div>EXAMPLE: 1234567.89</div>	<code>mcindrefund.SetAmount(amount);</code>
E-commerce indicator	String	1-character alpha-numeric	<code>mcindrefund.SetCryptType(crypt);</code>

Value	Type	Limits	Set Method
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)
        {
            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);
        }
    }

```

Sample MC Independent Refund

```

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);
}
}
}
}

```

6.3.8 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 Preau-

thorization 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 6.3.8.3 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 449).

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(mcCorpai);</code>

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

6.3.8.1 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	<code>mcCorpac .SetAustinTetraNumber (austin_tetra_number);</code>	The Austin-Tetra Number assigned to the card acceptor
N	NAICS Code	15-character alpha-numeric	<code>mcCorpac.SetNaicsCode (naics_code);</code>	North American Industry Classification System (NAICS) code assigned to the card acceptor
N	Customer Code	25-character alpha-numeric	<code>mcCorpac.SetCustomerCode1 (customer_code1_c);</code>	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	<code>mcCorpac .SetUniqueInvoiceNumber (unique_invoice_number_c);</code>	Unique number associated with the individual transaction provided by the merchant
N	Commodity Code	15-character alpha-numeric	<code>mcCorpac.SetCommodityCode (commodity_code);</code>	Code assigned by the merchant that best categorizes the item(s) being purchased
N	Order Date	6-character numeric YYMMDD format	<code>mcCorpac.SetOrderDate (order_date_c);</code>	The date the item was ordered NOTE: If present, must contain a valid date
N	Corporation VAT Number	20-character alpha-numeric	<code>mcCorpac .SetCorporationVatNumber (corporation_vat_number_c);</code>	Contains a corporation's value added tax (VAT) number

Re-q*	Value	Limits	Set Method	Description
N	Customer VAT Number	20-character alpha-numeric	<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>	The freight on the total purchase Must have 2 decimals Minimum = 0.00 Maximum = 999999.99
N	Duty Amount	12-character decimal	<code>mcCorpac.SetDutyAmount1 (duty_amount_c);</code>	The duty on the total purchase Must have 2 decimals Minimum = 0.00 Maximum = 999999.99
N	Destination State / Province Code	3-character alpha-numeric	<code>mcCorpac .SetDestinationProvinceCode (destination_province_code);</code>	State or Province of the country where the goods will be delivered Left justified with trailing spaces EXAMPLE: ONT = Ontario
N	Destination Country Code	3-character alpha-numeric ISO 3166-1 alpha-3 format	<code>mcCorpac .SetDestinationCountryCode (destination_country_code);</code>	The country code where goods will be delivered Left justified with trailing spaces ISO 3166-1 alpha-3 format EXAMPLE: CAN = Canada
N	Ship From Postal Code	10-character alpha-numeric	<code>mcCorpac.SetShipFromPosCode (ship_from_pos_code);</code>	The postal code or zip code from which items were shipped

Re-q*	Value	Limits	Set Method	Description
		ANA NAN format		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>	<p>The postal code or zip code where goods will be delivered</p> <p>Full alpha postal code - Valid ANA<space>NAN format if shipping to an address within Canada</p>
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>	<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 Pro-

Re-q*	Value	Limits	Set Method	Description
				<p>prietorship</p> <ol style="list-style-type: none"> 4. Partnership 5. Asso- ciation/Estate/Trust 6. Tax Exempt Organ- izations (501C) 7. International Organ- ization 8. Limited Liability Com- pany (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 business certification type, such as small business, disadvantaged, or other certification type:</p> <ol style="list-style-type: none"> 1 - Not certified 2 - Small Business Administration (SBA)

Re-q*	Value	Limits	Set Method	Description
				<p>certification small business</p> <p>3 - SBA certification as small disadvantaged business</p> <p>4 - Other government or agency-recognized certification (such as Minority Supplier Development Council)</p> <p>5 - Self-certified small business</p> <p>6 - SBA certification as small and other government or agency-recognized certification</p> <p>7 - SBA certification as small disadvantaged business and other government or agency-recognized certification</p> <p>8 - Other government or agency-recognized certification and self-certified small business</p> <p>A - SBA certification as 8(a)</p> <p>B - Self-certified small disadvantaged business (SDB)</p> <p>C - SBA certification as HUBZone</p> <p>0 - Unknown</p>

Re-q*	Value	Limits	Set Method	Description
				<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 Provided Code'</p> <p>Y - Business owner type is provided. N - Business owner type was not provided.</p>

Re-q*	Value	Limits	Set Method	Description
				<p>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 Tax ID	20-character alpha-numeric	<code>mcCorpac .SetCardAcceptorTaxTd(card_acceptor_tax_id_c);</code>	US federal tax ID number or value-added tax (VAT) ID
N	Card Acceptor Reference Number	25-character alpha-numeric	<code>mcCorpac .SetCardAcceptorReferenceNumber(card_acceptor_reference_number);</code>	Code that facilitates card acceptor/corporation communication and record keeping

Req*	Value	Limits	Set Method	Description
N	Card Acceptor VAT Number	20-character alpha-numeric	<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.

6.3.8.2 MC Corpal - Line Item Details

MC Corpal Object - Line Item Details

```
mcCorpac.SetMcCorpac(customer_code1_l[0], line_item_date_l[0], ship_date_l[0],
order_date1_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_code1_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]);
```

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

Req*	Value	Limits	Variable	Description
N	Customer Code	25-character alpha-numeric	<code>customer_code1_l</code>	A control number, such as purchase order number, project number, department allocation number or name that the purchaser supplied the merchant
N	Line Item Date	6-character numeric YYMMDD format	<code>line_item_date_l</code>	The purchase date of the line item ref-

Req*	Value	Limits	Variable	Description
				<p>erenced in the associated Corporate Card Line Item Detail</p> <p>Fixed length 6 Numeric, in YYMMDD format</p>
N	Ship Date	6-character numeric YYMMDD format	ship_date_1	<p>The date the merchandise was shipped to the destination</p> <p>Fixed length 6 Numeric, in YYMMDD format</p>
N	Order Date	6-character numeric YYMMDD format	order_date1_11	<p>The date the item was ordered</p> <p>Fixed length 6-character numeric, in YYMMDD format</p>
Y	Product Code	12-character alphanumeric	product_code1_11	<p>Line item Product Code</p> <p>Contains the non-fuel related product code of the individual item purchased</p>
Y	Item Description	35-character alphanumeric	item_description_11	<p>Line Item description</p> <p>Contains the description of the individual item purchased</p>
Y	Item Quantity	12-character alphanumeric	item_quantity_11	Quantity of line item

Req*	Value	Limits	Variable	Description
				<p>Up to 5 decimal places supported</p> <p>Minimum amount is 0.0 and maximum is 9999999.99999</p>
Y	Unit Cost	12-character decimal	unit_cost_ll	<p>Line item cost per unit.</p> <p>Must contain a minimum of 2 decimal places, up to 5 decimal places supported.</p> <p>Minimum amount is 0.00001 and maximum is 999999.99999</p>
Y	Item Unit Measure	12-character alphanumeric	item_unit_measure_ll	<p>The line item unit of measurement code</p> <p>ANSI X-12 EDI Allowable Units of Measure and Codes</p>
Y	Extended Item Amount	9-character decimal	ext_item_amount_ll	<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 999999.99</p>
N	Discount Amount	9-character decimal	discount_amount_ll	<p>Contains the item discount amount</p> <p>Must contain 2</p>

Req*	Value	Limits	Variable	Description
				decimal places Minimum amount is 0.00 and maximum is 999999.99
N	Commodity Code	15-character alpha-numeric	commodity_code_ll	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.

6.3.8.3 Tax Array Object - MC Corpais

The tax array object is used when you use the Tax field of both MC Corpac and MC Corpai. 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_1 = {"0.52", "1.48"};
```

```
string[] tax_rate_1 = {"13.0", "13.0"};
```

```
string[] tax_type_1 = {"HST", "HST"};
```

```
string[] tax_id_1 = {"hst1298", "hst1298"};
```

```
string[] tax_included_in_sales_1 = {"Y", "Y"};
```

```
McTax[] tax_1 = new McTax[2];
```

```
tax_1[1].SetTax(tax_amount_1[1], tax_rate_1[1], tax_type_1[1], tax_id_1[1],  
tax_included_in_sales_1[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_1	<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_1	<p>Contains the detailed tax rate applied in relationship to a specific tax amount</p> <div> <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>
Y	Tax Type	4-character alphanumeric	tax_type_c/tax_type_1	<p>Contains tax type, such as GST,QST,PST,HST</p>

Req*	Value	Limits	Variable	Description
Y	Tax ID	20-character alpha-numeric	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 alpha-numeric	tax_included_in_sales_c/tax_included_in_sales_l	<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>

6.3.8.4 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; string order_id="ord-200916-13:29:27"; string txn_number="66011731632016264132927986-0_11"; string customer_code_l_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"; </pre>

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

```

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 = {"pcl1", "pcl2"};
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);
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 McCorpall
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]);

```

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

```
//Create and set McCorpal for each item
McCorpal mcCorpal = new McCorpal();
mcCorpal.SetMcCorpal(customer_code1_l[0], line_item_date_l[0], ship_date_l[0], order_date1_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_code1_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]);
mcCorpal.SetMcCorpal(customer_code1_l[1], line_item_date_l[1], ship_date_l[1], order_date1_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_code1_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.SetMcCorpal(mcCorpal);
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());
Console.ReadLine();
}
catch (Exception e)
{
Console.WriteLine(e);
}
}
}
```


6.4 Level 2/3 American Express Transactions

- 6.4.1 Level 2/3 Transaction Types for Amex
- 6.4.2 Level 2/3 Transaction Flow for Amex
- 6.4.4 AX Completion
- 6.4.5 AX Force Post
- 6.4.6 AX Purchase Correction
- 6.4.7 AX Refund
- 6.4.8 AX Independent Refund

6.4.1 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 13).

- 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 13).

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.

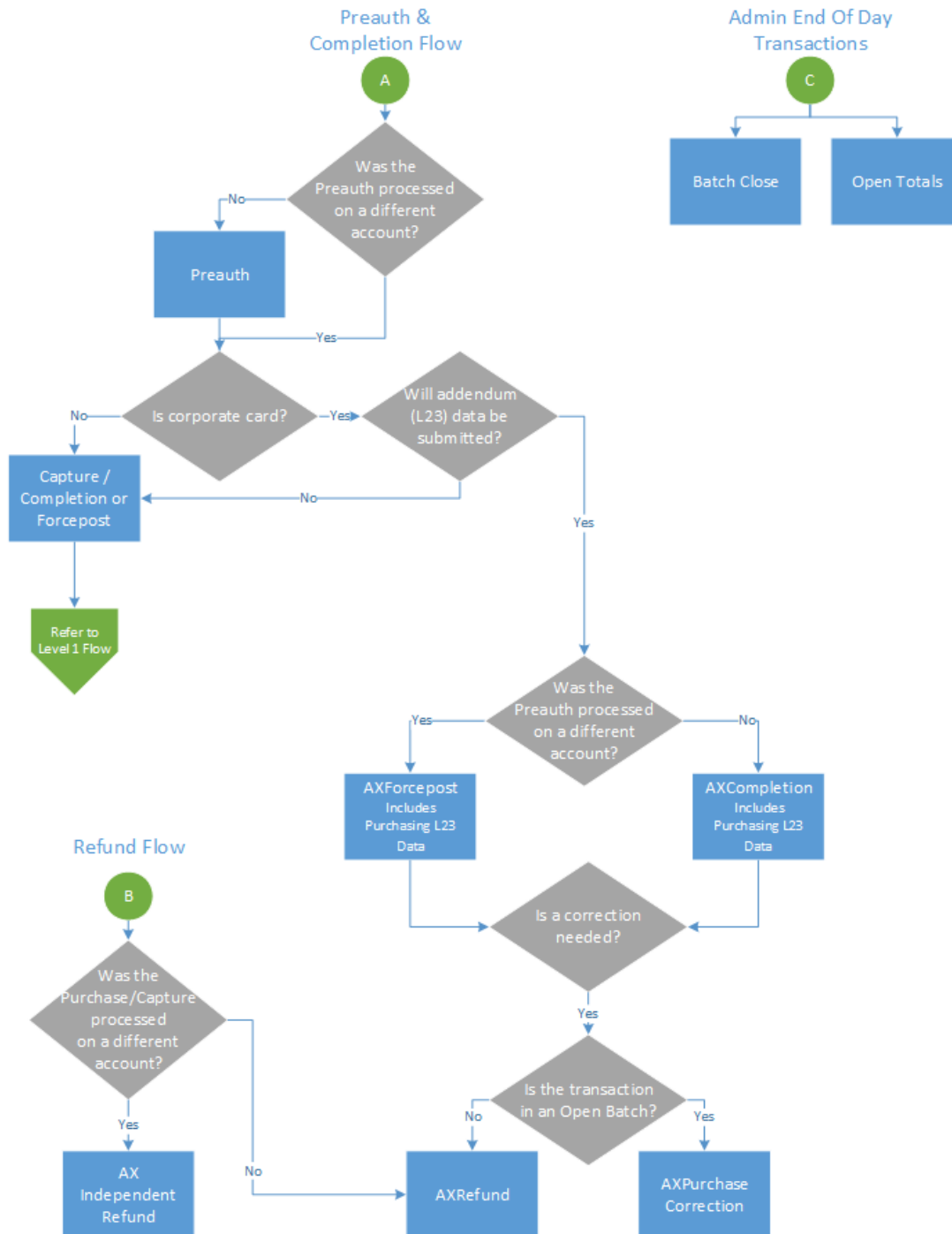
AX Refund – (Credit)

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.

6.4.2 Level 2/3 Transaction Flow for Amex



6.4.3 Level 2/3 Data Objects in Amex

- 6.4.3.1 About the Level 2/3 Data Objects for Amex
- 6.4.3.2 Defining the AxLevel23 Object
 - Table 1 Object
 - Table 2 Object
 - Table 3 Object

6.4.3.1 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.

6.4.3.2 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	<code>table1.SetBig05(big05);</code>	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	<code>table1.SetBig10(big10);</code>	Contains the Amex invoice/reference number
N	N1Loop	Object	<code>table1.SetN1Loop(n1Loop)</code>	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><tr><th>n101 code</th><th>n102 meaning</th></tr><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></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	AxRef axRef1 = new AxRef ();	<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	<div>This element may contain the following qualifiers for the corresponding occurrences of the N1Loop:</div> <table><tr><th>n101 value</th><th>ref01 denotation</th></tr><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></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><tr><th>ref01 value</th><th>ref02 denotation</th></tr><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><p>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.</p><p>This information may be displayed in the statement/reporting process and may include client-specific accounting information.</p></td></tr></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):	<p>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.</p> <p>This information may be displayed in the statement/reporting process and may include client-specific accounting information.</p>
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):	<p>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.</p> <p>This information may be displayed in the statement/reporting process and may include client-specific accounting information.</p>									

*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> EXAMPLE: EA = each, E5=inches </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 alpha-numeric	it105	<p>Code identifying the type of unit price for an item</p> <div> EXAMPLE: DR = dealer, AP = advise price </div> <p>See ASC X12 004010 Element 639 for list of codes</p>
N	Axlt106s	object	it106s	Refer below for further breakdown and definition of object details.
N	AxTxi	object	txi	Refer below for further breakdown and definition of

Req*	Value	Limits	Variable	Description
				<p>object details</p> <p>A maximum of 12 AxTxi (tax information data sets) may be defined</p> <div> <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	<pre>it106s [0].SetIt10618 (it10618[0]); it106s [1].SetIt10618 (it10618[1]);</pre>	<p>Supported values:</p> <p>MG - Manufacturer's Part Number</p> <p>VC - Supplier Catalog Number</p> <p>SK - Supplier Stock Keeping Unit Number</p> <p>UP - Universal Product Code</p> <p>VP – Vendor Part Number</p> <p>PO – Purchase Order Number</p> <p>AN – Client Defined Asset Code</p>								
N	Product/Service ID	<table><tr><th>it10618</th><th>it10719 - size/type</th></tr><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></table>	it10618	it10719 - size/type	VC	20-character alphanumeric	PO	22-character alphanumeric	Other	30-character alphanumeric	<pre>it106s [0].SetIt10719 (it10719[0]); it106s [1].SetIt10719 (it10719[1]);</pre>	<p>Product/Service ID corresponds to the preceding qualifier defined by 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											

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

Table 2 - Setting the AxTxI Object

Table 2 AxITxi 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	<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,</p>

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> <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; margin-top: 10px;"> 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 AxTxi 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 - AxTxi 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> <p>NOTE:</p> <p>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> <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> </div>
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> <p>4 – Not Exempt/For Resale</p> <p>A – Labor Taxable, Material Exempt</p>

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

6.4.4 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 <div>EXAMPLE: 1234567.89</div>	<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 nl01 = "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

```

itl06s[4].SetItl0618(itl0618[4]);
itl06s[4].SetItl0719(itl0719[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(itl02[0], itl03[0], itl04[0], itl05[0], itl06s[0], txi[0], pam05[0], pid05[0]);
itlLoop.SetItlLoop(itl02[1], itl03[1], itl04[1], itl05[1], itl06s[1], txi[1], pam05[1], pid05[1]);
itlLoop.SetItlLoop(itl02[2], itl03[2], itl04[2], itl05[2], itl06s[2], txi[2], pam05[2], pid05[2]);
itlLoop.SetItlLoop(itl02[3], itl03[3], itl04[3], itl05[3], itl06s[3], txi[3], pam05[3], pid05[3]);
itlLoop.SetItlLoop(itl02[4], itl03[4], itl04[4], itl05[4], itl06s[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);
}
}
```

6.4.5 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 <div>EXAMPLE: 1234567.89</div>	<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(crypt);</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
AxItl06s[] itl06s = {new AxItl06s(), new AxItl06s(), new AxItl06s(), new AxItl06s(), new AxItl06s
()};

itl06s[0].SetItl0618(itl0618[0]);
itl06s[0].SetItl0719(itl0719[0]);

itl06s[1].SetItl0618(itl0618[1]);
itl06s[1].SetItl0719(itl0719[1]);

itl06s[2].SetItl0618(itl0618[2]);
itl06s[2].SetItl0719(itl0719[2]);

itl06s[3].SetItl0618(itl0618[3]);
itl06s[3].SetItl0719(itl0719[3]);

itl06s[4].SetItl0618(itl0618[4]);
itl06s[4].SetItl0719(itl0719[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(itl02[0], itl03[0], itl04[0], itl05[0], itl06s[0], txi[0], pam05[0], pid05[0]);
itlLoop.SetItlLoop(itl02[1], itl03[1], itl04[1], itl05[1], itl06s[1], txi[1], pam05[1], pid05[1]);
itlLoop.SetItlLoop(itl02[2], itl03[2], itl04[2], itl05[2], itl06s[2], txi[2], pam05[2], pid05[2]);
itlLoop.SetItlLoop(itl02[3], itl03[3], itl04[3], itl05[3], itl06s[3], txi[3], pam05[3], pid05[3]);
itlLoop.SetItlLoop(itl02[4], itl03[4], itl04[4], itl05[4], itl06s[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);
}
}
}
}

```

6.4.6 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);
}
}
}

```

6.4.7 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 <div>EXAMPLE: 1234567.89</div>	<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.SetAxLevel23(level23);</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 nl01 = "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

```

itl06s[4].SetItl0618(itl0618[4]);
itl06s[4].SetItl0719(itl0719[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(itl02[0], itl03[0], itl04[0], itl05[0], itl06s[0], txi[0], pam05[0], pid05[0]);
itlLoop.SetItlLoop(itl02[1], itl03[1], itl04[1], itl05[1], itl06s[1], txi[1], pam05[1], pid05[1]);
itlLoop.SetItlLoop(itl02[2], itl03[2], itl04[2], itl05[2], itl06s[2], txi[2], pam05[2], pid05[2]);
itlLoop.SetItlLoop(itl02[3], itl03[3], itl04[3], itl05[3], itl06s[3], txi[3], pam05[3], pid05[3]);
itlLoop.SetItlLoop(itl02[4], itl03[4], itl04[4], itl05[4], itl06s[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);
}
}
```

6.4.8 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 <div>EXAMPLE: 1234567.89</div>	<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);
}
}
```

7 MPI

- 7.1 About MPI Transactions
- 7.2 3-D Secure Implementations (VbV, MCSC, SafeKey)
- 7.3 Activating 3-D Secure Functionality
- 7.4 Activating Amex SafeKey
- 7.5 Transaction Flow for MPI
- 7.6 MPI Transactions

7.1 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
- Mastercard SecureCode
- American Express SafeKey

7.2 3-D Secure Implementations (VbV, MCSC, SafeKey)

Verified by Visa (VbV), Mastercard SecureCode (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:

- Address Verification Service
- Card Validation Digits (CVD)

7.3 Activating 3-D Secure Functionality

To activate Verified by Visa, Mastercard SecureCode and/or American Express SafeKey transaction functionality, call Moneris Sales Support to have Moneris enroll you in the program(s) and enable the functionality on your account.

For American Express SafeKey you also have to enroll in the SafeKey program with American Express. For more information, see 7.4 Activating Amex SafeKey.

7.4 Activating Amex SafeKey

To activate American Express 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.

7.5 Transaction Flow for MPI

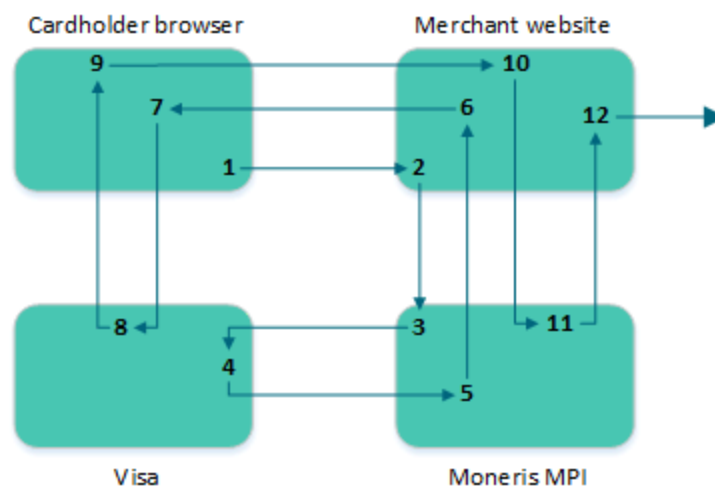


Figure 3: Transaction flow diagram

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 MPI TXN Request (page 237).
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 attempted with an ECI value of 6; if this response is "N" for American Express SafeKey, the ECI value will be 7.

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.

7.6 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 Processing a Transaction.

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 27) 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 Google Pay™ transactions. For further details on how to process these wallet transactions, please refer to 10 Apple Pay and Google Pay™ Integrations.

7.6.1 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 10: 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 11: VERes response definitions

VERes Response	Response Definition
N	The card/issuer is not enrolled. Sent as a normal Purchase/Pre-Authorization transaction with a crypt type of 6, except for American Express SafeKey, which will use crypt type of 7.
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 12: 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 13: 3-D Secure/CAVV transaction handling

Step 1: VERes Cardholder/issuer enrolled?	Step 2: PAREs 3-D Secure 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

Table 13: 3-D Secure/CAVV transaction handling (continued)

Step 1: VERes Cardholder/issuer enrolled?	Step 2: PAREs 3-D Secure InLine window response	Step 3: Transaction Are you protected?
N	n/a	Send a regular transaction with a crypt type of 6, or for American Express SafeKey, send with crypt type of 7

7.6.2 MPI TXN Request

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.

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 Definition of Request Fields.

Table 14: 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	<code>mpiTxn.SetAmount(amount);</code>

Value	Type	Limits	Set method
		<div>EXAMPLE: 1234567.89</div>	
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

```
namespace Moneris
{
    using System;
    using System.Text;
    public class TestCanadaMpiTxn
    {
        public static void Main(string[] args)
        {
            string store_id = "moneris";
            string api_token = "hurgle";
            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();
            //string MD = xid + "mycardinfo" + amount;
            string MD = "xid=99999999999999999999999999999999&pan=4242424242424242&expiry=1511&amount=1.00";
            string merchantUrl = "https://YOUR_MPI_RESPONSE_URL";
            string accept = "text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8";
            string userAgent = "Mozilla/5.0 (Windows NT 6.1; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/43.0.2357.130 Safari/537.36";
            string processing_country_code = "CA";
            string pan = "4242424242424242";
            string expdate = "1511";
            bool status_check = false;
            MpiTxn mpiTxn = new MpiTxn();
            mpiTxn.SetXid(xid);
            mpiTxn.SetPan(pan);
            mpiTxn.SetExpDate(expdate);
            mpiTxn.SetAmount(amount);
            mpiTxn.SetMD(MD);
            mpiTxn.SetMerchantUrl(merchantUrl);
        }
    }
}
```

Sample MpiTxn Request

```

mpiTxn.SetAccept(accept);
mpiTxn.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(mpiTxn);
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

```

7.6.2.1 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) or 7 (for American Express SafeKey).

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.

7.6.3 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 Definition of Request Fields.

Table 15: Vault MPI Transaction transaction object mandatory values

Value	Type	Limits	Set method
Data key	String	25-character alpha-numeric	<code>resMpiTxn.SetData(data_key);</code>
XID	String	20-character alpha-numeric	<code>resMpiTxn.SetXid(xid);</code>
Amount	String	10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div>EXAMPLE: 1234567.89</div>	<code>resMpiTxn.SetAmount(amount);</code>
MD	String	1024-character alpha-numeric	<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 alpha-numeric (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();
            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*****
            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(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);
            }
        }
    }
}

```

Sample Vault MPI Transaction

```

}
} // 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 474).

7.6.4 MPI ACS Request

Passes the PAREs (received in the response to the MPI TXN transaction) to the Moneris MPI API.

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 Definition of Request Fields.

Table 16: 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>

Table 16: MPI ACS Request transaction object mandatory values (continued)

Value	Type	Limits	Set method
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();
            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);
            }
        }
    }
}

```

7.6.4.1 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.
    }
}
```

7.6.5 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 third-party MPI may be used.

In addition to 3-D Secure transactions, this transaction can also be used to process Apple Pay and Google Pay™ transactions. This transaction is applicable only if choosing to integrate directly to Apple Wallet or Google Wallet (if not using the Moneris Apple Pay or Google Pay™ SDKs).

Refer to Apple or Google developer portals for details on integrating directly to their wallets to retrieve the payload data.

WARNING: Moneris strongly discourages the use of frames as part of a 3-D Secure implementation, and cannot guarantee their reliability when processing transactions in the production environment.

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);
```

Purchase with 3-D Secure transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<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 <div>EXAMPLE: 1234567.89</div>	<code>cavvPurchase.SetAmount (amount) ;</code>
credit card number	<i>String</i> max 20-character alphanumeric	<code>cavvPurchase.SetPan (pan) ;</code>
expiry date	<i>String</i> 4-character alphanumeric YYMM	<code>cavvPurchase.SetExpdte (expiry_date) ;</code>
Cardholder Authentication Verification Value (CAVV)	<i>String</i> 50-character alphanumeric <div>NOTE: For Apple Pay and Google Pay™ Cavv Purchase and Cavv Pre-Authorization transactions, CAVV field contains the decrypted cryptogram. For more, see Appendix A Definition of Request Fields.</div>	<code>cavvPurchase.SetCavv (cavv) ;</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric <div>NOTE: For Apple Pay and Google Pay™ Cavv Purchase and Cavv Pre-Authorization transactions, the e-commerce indicator is a man-</div>	<code>cavvPurchase.SetCryptType (crypt) ;</code>

Variable Name	Type and Limits	Set Method
<p>datory 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 Definition of Request Fields.</p>		

Following fields are required for Apple Pay and Google Pay only:

Variable Name	Type and Limits	Set Method
<p>network</p> <p>NOTE: This request variable is mandatory for INTERAC® e-Commerce transactions conducted via Apple Pay or Google Pay™ only, and is not for use with credit card transactions.</p>	<p><i>String</i></p> <p>alphabetic</p>	<pre>cavvPurchase.setNetwork(network);</pre>
<p>data type</p> <p>NOTE: This request variable is mandatory for INTERAC® e-Commerce transactions conducted via Apple Pay or Google Pay™ only, and is not for use with credit card transactions.</p>	<p><i>String</i></p> <p>3-character alphanumeric</p>	<pre>cavvPurchase.setDataType(data_type);</pre>

Purchase with 3-D Secure transaction request fields – Optional

Value	Limits	Set Method
status check	<p><i>Boolean</i></p> <p>true/false</p>	<pre>mpgReq.SetStatusCheck(status_check);</pre>
customer ID	<i>String</i>	<pre>cavvPurchase.SetCustId(cust_</pre>

Value	Limits	Set Method
	30-character alphanumeric	id);
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	cavvPurchase. .SetDynamicDescriptor(dynamic_ descriptor);
card match ID	<i>String</i> 50-character alphanumeric <div> NOTE: Applies to Off-linx™ only; must be unique value for each transaction </div>	cavvPurchase.SetCmId(transaction_id);
Customer Information	<i>Object</i> N/A	cavvPurchase.SetCustInfo(customer);
AVS Information	<i>Object</i> N/A	cavvPurchase.SetAvsInfo(avsCheck);
CVD Information	<i>Object</i> N/A <div> 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. </div>	cavvPurchase.SetCvdInfo(cvdCheck);
Convenience Fee Information	<i>Object</i> N/A <div> NOTE: Not applicable when processing Apple Pay or Google Pay transactions. </div>	cavvPurchase.SetConvFeeInfo(convFeeInfo);

Value	Limits	Set Method
Recurring Billing <i>recur</i> <div> NOTE: For sample code for a Purchase with 3-D Secure including the Recurring Billing Info Object, see 7.6.5.1 Purchase with 3-D Secure and Recurring Billing. </div>	<i>Object</i> N/A	<code>cavvPurchase.SetRecur(recurring_cycle);</code>
wallet indicator <div> NOTE: For Cavv Purchase and Cavv Pre-Authorization, wallet indicator applies to Apple Pay or Google Pay™ only. For more, see Appendix A Definition of Request Fields. </div>	<i>String</i> 3-character alphanumeric	<code>cavvPurchase.SetWalletIndicator(wallet_indicator);</code>
Credential on File Info <i>cof</i> <div> NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. For information about fields in the Credential on File Info object, see Credential on File Info Object and Variables. </div>	<i>Object</i> N/A	<code>cavvPurchase.SetCofInfo(cof);</code>

Credential on File Info object request fields

Variable Name	Type and Limits	Set Method
issuer ID	<i>String</i> 15-character alphanumeric	<code>cof.SetIssuerId("VALUE_FOR_ISSUER_ID");</code>

Variable Name	Type and Limits	Set Method
<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>	variable length	<p>NOTE: For a list and explanation of the possible values to send for this variable, see Definition of Request Fields – Credential on File</p>
<p>payment indicator</p> <p>NOTE: In Credential on File transactions where the request field e-commerce indicator is also being sent, the acceptable values for e-commerce indicator are dependent on the value sent for payment indicator; see request field definitions for more information.</p>	<p><i>String</i></p> <p>1-character alphabetic</p>	<p><code>cof.SetPaymentIndicator("PAYMENT_INDICATOR_VALUE");</code></p> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definition of Request Fields – Credential on File</p>
payment information	<p><i>String</i></p> <p>1-character numeric</p>	<p><code>cof.SetPaymentInformation("PAYMENT_INFO_VALUE");</code></p> <p>NOTE: For a list and explanation of the possible values to send for this variable, see Definition of Request Fields – Credential on File</p>

Recurring Billing Info Object Request Fields

Variable Name	Type and Limits	Description
<p>number of recurs</p> <p><code>num_rekurs</code></p>	<p><i>String</i></p> <p>numeric</p> <p>1-99</p>	The number of times that the transaction must recur
<p>period</p> <p><code>period</code></p>	<p><i>String</i></p> <p>numeric</p> <p>1-999</p>	Number of recur unit intervals that must pass between recurring billings

Variable Name	Type and Limits	Description
start date start_date	<i>String</i> YYMMDD format	Date of the first future recurring billing transaction; this must be a date in the future If an additional charge will be made immediately, the start now variable must be set to true
start now start_now	<i>String</i> true/false	Set to true if a charge will be made against the card immediately; otherwise set to false When set to false, use Card Verification prior to sending the Purchase with Recurring Billing and Credential on File objects <div> NOTE: Amount to be billed immediately can differ from the subsequent recurring amounts </div>
recurring amount recur_amount	<i>String</i> 10-character decimal, minimum three digits Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div> EXAMPLE: 1234567.89 </div>	Dollar amount of the recurring transaction This amount 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 the period variable to define the billing frequency

Sample Purchase with 3-D Secure – cavvPurchase

```
namespace Moneris
{
    using System;
```

Sample Purchase with 3-D Secure – cavvPurchase

```

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 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.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("8nAK8712sGaAks56"); //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());
            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());
        }
    }
}

```

Sample Purchase with 3-D Secure – cavvPurchase

```

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);
}
}
}
}

```

7.6.5.1 Purchase with 3-D Secure and Recurring Billing

WARNING: Moneris strongly discourages the use of frames as part of a 3-D Secure implementation, and cannot guarantee their reliability when processing transactions in the production environment.

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 = "AAABBJg0VhI0VniQEjRWAAAAA=";
            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
            string start_now = "true";
            string start_date = "2018/02/25";
        }
    }
}

```

Purchase with 3-D Secure and Recurring Billing

```

string num_recur = "12";
string period = "1";
string recur_amount = "30.00";
/***** 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);
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());
Console.WriteLine("Complete = " + receipt.GetComplete());
Console.WriteLine("TransDate = " + receipt.GetTransDate());
}

```

Purchase with 3-D Secure and Recurring Billing

```

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);
}
}
}
}

```

7.6.6 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 Request 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 third-party MPI may be used.

In addition to 3-D Secure transactions, this transaction can also be used to process Apple Pay and Google Pay™ transactions. This transaction is applicable only if choosing to integrate directly to Apple Wallet or Google Wallet (if not using the Moneris Apple Pay or Google Pay™ SDKs).

Refer to Apple or Google developer portals for details on integrating directly to their wallets to retrieve the payload data.

WARNING: Moneris strongly discourages the use of frames as part of a 3-D Secure implementation, and cannot guarantee their reliability when processing transactions in the production environment.

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 request fields – Required

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

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<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>EXAMPLE: 1234567.89</div>	<code>cavvPreauth.SetAmount (amount) ;</code>
credit card number	<i>String</i> max 20-character alphanumeric	<code>cavvPreauth.SetPan (pan) ;</code>
Cardholder Authentication Verification Value (CAVV) <div>NOTE: For Apple Pay and Google Pay™ Cavv Purchase and Cavv Pre-Authorization transactions, CAVV field contains the decrypted cryptogram. For more, see Appendix A Definition of Request Fields.</div>	<i>String</i> 50-character alphanumeric	<code>cavvPreauth.SetCavv (cavv) ;</code>
expiry date	<i>String</i> 4-character alphanumeric YYYYMM	<code>cavvPreauth.SetExpdate (expiry_date) ;</code>
electronic commerce indicator <div>NOTE: For Apple Pay and Google Pay™ Cavv Purchase and Cavv Pre-Authorization transactions, the e-commerce indicator is a man-</div>	<i>String</i> 1-character alphanumeric	<code>cavvPreauth.SetCryptType (crypt) ;</code>

Variable Name	Type and Limits	Set Method
<div> <p>datory 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 Definition of Request Fields.</p> </div>		

Following fields are required for Apple Pay and Google Pay only:

Variable Name	Type and Limits	Set Method
network <div> <p>NOTE: This request variable is mandatory for INTERAC® e-Commerce transactions conducted via Apple Pay or Google Pay™ only, and is not for use with credit card transactions.</p> </div>	<i>String</i> alphabetic	<code>cavvPurchase.setNetwork(network);</code>
data type <div> <p>NOTE: This request variable is mandatory for INTERAC® e-Commerce transactions conducted via Apple Pay or Google Pay™ only, and is not for use with credit card transactions.</p> </div>	<i>String</i> 3-character alphanumeric	<code>cavvPurchase.setDataType(data_type);</code>

Pre-Authorization with 3-D Secure transaction request fields – Optional

Variable Name	Type and Limits	Set Method
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck(status_check);</code>
customer ID	<i>String</i>	<code>cavvPreauth.SetCustId(cust_</code>

Variable Name	Type and Limits	Set Method
	30-character alphanumeric	<code>id);</code>
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	<code>cavvPreauth</code> <code>.SetDynamicDescriptor</code> <code>(dynamic_descriptor);</code>
NOTE: For Pre-Authorization transactions: the value in the dynamic descriptor field will only be carried over to a Pre-Authorization Completion when executing the latter via the Merchant Resource Center; otherwise, the value for dynamic descriptor must be sent again in the Pre-Authorization Completion		
card match ID	<i>String</i> 50-character alphanumeric	<code>cavvPreauth.SetCmId</code> <code>(transaction_id);</code>
NOTE: Applies to Offlinx™ only; must be unique value for each transaction		
AVS Information	<i>Object</i> N/A	<code>cavvPreauth.SetAvsInfo</code> <code>(avsCheck);</code>
CVD Information	<i>Object</i> N/A	<code>cavvPreauth.SetCvdInfo</code> <code>(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.		
wallet indicator	<i>String</i> 3-character alphanumeric	<code>cavvPreauth</code> <code>.SetWalletIndicator(wallet_</code> <code>indicator);</code>
NOTE: For Cavv Purchase and Cavv Pre-Authorization, wallet indicator applies to Apple Pay or Google Pay™ only. For more, see Appendix A Definition of Request Fields.		

Variable Name	Type and Limits	Set Method
Credential on File Info cof	Object N/A	cavvPreauth.SetCofInfo(cof);
NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. For information about fields in the Credential on File Info object, see Credential on File Info Object and Variables.		

Credential on File Info object request fields

Variable Name	Type and 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.	<i>String</i> 15-character alphanumeric variable length	cof.SetIssuerId("VALUE_FOR_ISSUER_ID"); NOTE: For a list and explanation of the possible values to send for this variable, see Definition of Request Fields – Credential on File
payment indicator NOTE: In Credential on File transactions where the request field e-commerce indicator is also being sent, the acceptable values for e-commerce indicator are dependent on the value sent for payment indicator; see request field definitions for more information.	<i>String</i> 1-character alphabetic	cof.SetPaymentIndicator("PAYMENT_INDICATOR_VALUE"); NOTE: For a list and explanation of the possible values to send for this variable, see Definition of Request Fields – Credential on File
payment information	<i>String</i> 1-character numeric	cof.SetPaymentInformation("PAYMENT_INFO_VALUE"); NOTE: For a list and explanation of the possible values to send for this variable,

Variable Name	Type and Limits	Set Method
		see Definition of Request Fields – Credential on File

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
            string cavv = "AAABBJg0VhI0VniQEjRWAAAAA=";
            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.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());
            }
        }
    }
}

```

Sample Pre-Authorization with 3-D Secure – cavvPreauth

```

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);
}
}
}
}

```

7.6.7 CAVV Result Codes for Verified by Visa

Code	Message	Significance to Merchants
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)

Code	Message	Significance to Merchants
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)	<p>Please check that you are following the VbV process correctly and passing the correct data in your transactions.</p> <p>Provided that you have implemented the VbV process correctly the liability for this transaction should be the same as an attempted transaction (ECI 6)</p>
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)	<p>Please check that you are following the VbV process correctly and passing the correct data in our transactions.</p> <p>Provided that you have implemented the VbV process correctly the liability for this transaction should be the same as an attempted transaction (ECI 6)</p>
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.
C	CAVV was not verified — attempted authentication	If 3-D Secure Authentication Results Code value is 07 in the CAVV and the issuer did not return a CAVV results code in the authorization response
D	CAVV was not verified — cardholder authentication	If 3-D Secure Authentication Results Code value is 00 in the CAVV and the issuer did not return a CAVV results code in the authorization response

7.6.8 Purchase with Vault and 3-D Secure

WARNING: Moneris strongly discourages the use of frames as part of a 3-D Secure implementation, and cannot guarantee their reliability when processing transactions in the production environment.

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 request fields – Required

Variable Name	Type and Limits	Set Method
data key	<i>String</i> 25-character alphanumeric	<code>resCavvPurchaseCC.SetData(data_key);</code>
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>resCavvPurchaseCC.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>EXAMPLE: 1234567.89</div>	<code>resCavvPurchaseCC.SetAmount(amount);</code>
Cardholder Authentication Verification Value (CAVV)	<i>String</i> 50-character alphanumeric	<code>resCavvPurchaseCC.SetCavv(cavv);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>resCavvPurchaseCC.SetCryptType(crypt);</code>

Vault Cavv Purchase transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>resCavvPurchaseCC.SetCustId(cust_id);</code>
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck(status_check);</code>
expiry date	<i>String</i> 4-character alphanumeric YYMM	<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 = "4INQRlA8ocxD0oafSz50LADXY";
            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
            {

```


Sample Vault Cavv Purchase

```

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);
}
}
}
}

```

7.6.9 Pre-Authorization with Vault & 3-D Secure

WARNING: Moneris strongly discourages the use of frames as part of a 3-D Secure implementation, and cannot guarantee their reliability when processing transactions in the production environment.

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 request fields – Required

Variable Name	Type and Limits	Set Method
data key	<i>String</i> 25-character alphanumeric	<code>resCavvPreauthCC.SetData(data_key);</code>
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>resCavvPreauthCC.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>EXAMPLE: 1234567.89</div>	<code>resCavvPreauthCC.SetAmount(amount);</code>
Cardholder Authentication Verification Value (CAVV)	<i>String</i> 50-character alphanumeric	<code>resCavvPreauthCC.SetCavv(cavv);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>resCavvPreauthCC.SetCryptType(crypt);</code>

Vault Cavv Pre-Authorization transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>resCavvPreauthCC.SetCustId(cust_id);</code>
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name <div>NOTE: For Pre-Authorization transactions: the value in the dynamic descriptor field will only be carried over to a Pre-</div>	<code>resCavvPreauthCC.SetDynamicDescriptor(dynamic_descriptor);</code>

Variable Name	Type and Limits	Set Method
---------------	-----------------	------------

Authorization Completion when executing the latter via the Merchant Resource Center; otherwise, the value for dynamic descriptor must be sent again in the Pre-Authorization Completion

and separator

status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck(status_check);</code>
expiry date	<i>String</i> 4-character alphanumeric YYMM	<code>resCavvPreauthCC.SetExpdate(expiry_date);</code>

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
            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);
        }
    }
}
```

Sample Vault Cavv Pre-Authorization

```

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);
}
}
}
}

```

8 Multi-Currency Pricing (MCP)

- 8.1 About Multi-Currency Pricing (MCP)
- 8.2 Methods of Processing MCP Transactions
- 8.3 MCP Get Rate
- 8.4 MCP Purchase
- 8.5 MCP Pre-Authorization
- 8.6 MCP Pre-Authorization Completion
- 8.7 MCP Purchase Correction
- 8.8 MCP Refund
- 8.9 MCP Independent Refund
- 8.10 MCP Purchase with Vault
- 8.11 MCP Pre-Authorization with Vault
- 8.12 MCP Independent Refund with Vault
- 8.13 MCP Currency Codes
- 8.14 MCP Error Codes

8.1 About Multi-Currency Pricing (MCP)

Multi-currency pricing (MCP) is a financial service which allows businesses to price goods and services in a variety of foreign currencies, while continuing to receive settlement and reporting in Canadian dollars. MCP allows cardholders to shop, view prices and pay in the currency of their choice.

MCP is only available when processing Visa and Mastercard transactions.

NOTE: Use MCP only when processing transactions that involve foreign currency exchange; for transactions strictly in Canadian dollars, use the basic financial transaction requests

8.2 Methods of Processing MCP Transactions

There are two methods of processing multi-currency pricing transactions via the Moneris Gateway:

1. **Using the MCP Get Rate transaction** – this method is used to obtain a foreign exchange rate and locks that specific rate in for a limited time, and is applied in a subsequent transaction
2. **Without using MCP Get Rate** – this method sends a MCP transaction without performing the Get Rate request, and the foreign exchange rate is obtained at processing time

8.3 MCP Get Rate

Performs a foreign currency exchange rate look-up, and secures that exchange rate for use in a subsequent MCP financial transaction.

The exchange rate retrieved by this transaction request is represented in the response as the **RateToken**, and the underlying exchange rate is locked in for a limited time period.

MCP Get Rate transaction object definition

```
MCPGetRate mcpGetRate = new MCPGetRate();
```

HttpPostRequest object for MCP Get Rate transaction

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

```
mpgReq.SetTransaction(mcpGetRate);
```

MCP Get Rate transaction request fields – Required

Variable Name	Type and Limits	Set Method
MCP version number	<i>String</i> numeric current version is 1.0	<code>mcpGetRate.SetMCPVersion("MCP_VERSION_NUM");</code>
rate transaction type	<i>String</i> 1-character alphabetic	<code>mcpGetRate.SetMCPRateTxnType("TRANSACTION_TYPE_VALUE");</code>
MCP Rate Info	<i>Object</i> N/A	<code>mcpGetRate.SetMCPRateInfo(rate);</code>

MCP Rate Info object request fields

At least one of the following variables must be sent:

Variable Name	Type and Limits	Set Method
add cardholder amount	<i>String array</i> 12-character numeric, 3-character numeric (smallest discrete unit of foreign currency, currency code)	<code>rate.AddCardholderAmount("FOREIGN_AMT", "FOREIGN_CURRENCY_CODE");</code>
add merchant settlement amount	<i>String array</i> 12-character numeric, 3-	<code>rate.AddMerchantSettlementAmount</code>

Variable Name	Type and Limits	Set Method
	character numeric (amount in CAD pennies, currency code)	("CAD_AMOUNT", "FOREIGN_CURRENCY_CODE");

Sample MCP Get Rate

```

namespace Moneris
{
    using System;
    using System.Text;
    using System.Collections;
    public class TestCanadaMCPGetRate
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string processing_country_code = "CA";
            bool status_check = false;
            MCPGetRate mcpGetRate = new MCPGetRate();
            mcpGetRate.SetMCPVersion("1.0"); //MCP Version number. Should always be 1.0
            mcpGetRate.SetMCPRateTxnType("P"); //P or R are valid values (Purchase or Refund)
            MCPRate rate = new MCPRate();
            rate.AddCardholderAmount("500", "840");
            rate.AddMerchantSettlementAmount("500", "840");
            mcpGetRate.SetMCPRateInfo(rate);
            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(mcpGetRate);
            mpgReq.Send();
            try
            {

                Receipt receipt = mpgReq.GetReceipt();
                Console.WriteLine("RateTxnType = " + receipt.GetRateTxnType());
                Console.WriteLine("MCPRateToken = " + receipt.GetMCPRateToken());

                Console.WriteLine("RateInqStartTime = " + receipt.GetRateInqStartTime()); //The time (unix UTC) of
                when the rate is requested
                Console.WriteLine("RateInqEndTime = " + receipt.GetRateInqEndTime()); //The time (unix UTC) of when
                the rate is returned
                Console.WriteLine("RateValidityStartTime = " + receipt.GetRateValidityStartTime()); //The time (unix
                UTC) of when the rate is valid from
                Console.WriteLine("RateValidityEndTime = " + receipt.GetRateValidityEndTime()); //The time (unix
                UTC) of when the rate is valid until
                Console.WriteLine("RateValidityPeriod = " + receipt.GetRateValidityPeriod()); //The time in minutes
                this rate is valid for

                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());
            }
        }
    }
}

```

```
//RateData
for (int index = 0; index < receipt.GetRatesCount(); index++)
{
    Console.WriteLine("MCPRate = " + receipt.GetMCPRate(index));
    Console.WriteLine("MerchantSettlementCurrency = " + receipt.GetMerchantSettlementCurrency(index));
    Console.WriteLine("MerchantSettlementAmount = " + receipt.GetMerchantSettlementAmount(index));
    //Domestic (CAD) amount
    Console.WriteLine("CardholderCurrencyCode = " + receipt.GetCardholderCurrencyCode(index));
    Console.WriteLine("CardholderAmount = " + receipt.GetCardholderAmount(index)); //Foreign amount

    Console.WriteLine("MCPErrorStatusCode = " + receipt.GetMCPErrorStatusCode(index));
    Console.WriteLine("MCPErrorMessage = " + receipt.GetMCPErrorMessage(index));
}
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
```

8.4 MCP Purchase

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

This transaction request is the multi-currency pricing (MCP) enabled version of the equivalent financial transaction.

MCP Purchase transaction object definition

```
MCPPurchase mcpPurchase = new MCPPurchase();
```

HttpRequest object for MCP Purchase transaction

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

```
mpgReq.SetTransaction(mcpPurchase);
```

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	String N/A	mpgReq.SetStoreId(store_id);
API token	String N/A	mpgReq.SetApiToken(api_token);

MCP Purchase transaction request fields – Required

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>mcpPurchase.SetOrderId (order_id);</code>
credit card number	<i>String</i> max 20-character alpha- numeric	<code>mcpPurchase.SetPan (pan) ;</code>
expiry date	<i>String</i> 4-character alphanumeric YYMM	<code>mcpPurchase.SetExpdate (expiry_date);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>mcpPurchase.SetCryptType (crypt);</code>

MCP-specific request fields – Required

Variable Name	Type and Limits	Set Method
MCP version number	<i>String</i> numeric current version is 1.0	<code>mcpPurchase.SetMCPVersion ("MCP_VERSION_NUM");</code>
cardholder amount	<i>String</i> 12-character numeric smallest discrete unit of foreign currency	<code>mcpPurchase .SetCardholderAmount ("CARDHOLDER_AMOUNT");</code>
cardholder currency code	<i>String</i> 3-character numeric	<code>mcpPurchase .SetCardholderCurrencyCode ("CARDHOLDER_CURRENCY_CODE");</code>

MCP Purchase transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i>	<code>mcpPurchase.SetCustId (cust_</code>

Variable Name	Type and Limits	Set Method
	30-character alphanumeric	<code>id);</code>
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	<code>mcpPurchase</code> <code>.SetDynamicDescriptor</code> <code>(dynamic_descriptor);</code>
wallet indicator	<i>String</i> 3-character alphanumeric	<code>mcpPurchase</code> <code>.SetWalletIndicator(wallet_</code> <code>indicator);</code>
Credential on File Info <code>cof</code>	<i>Object</i> N/A	<code>mcpPurchase.SetCofInfo(cof);</code>
NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. For information about fields in the Credential on File Info object, see Credential on File Info Object and Variables.		
AVS Information	<i>Object</i> N/A	<code>mcpPurchase.SetAvsInfo</code> <code>(avsCheck);</code>
CVD Information	<i>Object</i> N/A	<code>mcpPurchase.SetCvdInfo</code> <code>(cvdCheck);</code>

MCP-specific request fields – Optional

Variable Name	Type and Limits	Set Method
MCP rate token	<i>String</i> N/A	<code>mcpPurchase.SetMCPRateToken</code> <code>("MCP_RATE_TOKEN");</code>

Sample MCP Purchase

```
using System;
using System.Collections.Generic;
using System.Text;
```

```
using Moneris;
namespace CanadaMCPPurchaseConsoleTest
{
    class CanadaMCPPurchaseTest
    {
    public static void Main(string[] args)
    {
        string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
        string store_id = "store5";
        string api_token = "yesguy";
        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("168451306048014");
        MCPPurchase mcpPurchase = new MCPPurchase();
        mcpPurchase.SetOrderId(order_id);
        mcpPurchase.SetAmount(amount);
        mcpPurchase.SetPan(pan);
        mcpPurchase.SetExpDate("2011");
        mcpPurchase.SetCryptType(crypt);
        mcpPurchase.SetDynamicDescriptor("2134565");
        //mcpPurchase.SetWalletIndicator(""); //Refer to documentation for details
        mcpPurchase.SetCofInfo(cof);

        //MCP Fields
        mcpPurchase.SetMCPVersion("1.0");
        mcpPurchase.SetCardholderAmount("500");
        mcpPurchase.SetCardholderCurrencyCode("840");
        //mcpPurchase.SetMCPRateToken("P1538681661706745");
        //mcpPurchase.SetCmId("8nAK8712sGaAkls56"); //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(mcpPurchase);
        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("IssuerId = " + receipt.GetIssuerId());
Console.WriteLine("MerchantSettlementAmount = " + receipt.GetMerchantSettlementAmount());
Console.WriteLine("CardholderAmount = " + receipt.GetCardholderAmount());
Console.WriteLine("CardholderCurrencyCode = " + receipt.GetCardholderCurrencyCode());
Console.WriteLine("MCPRate = " + receipt.GetMCPRate());
Console.WriteLine("MCPErrorStatusCode = " + receipt.GetMCPErrorStatusCode());
Console.WriteLine("MCPErrorMessage = " + receipt.GetMCPErrorMessage());
Console.WriteLine("HostId = " + receipt.GetHostId());
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}
}

```

8.5 MCP 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 Pre-Authorization Completion transaction must be performed. A Pre-Authorization transaction may only be "completed" once.

This transaction request is the multi-currency pricing (MCP) enabled version of the equivalent financial transaction.

MCP Pre-Authorization transaction object definition

```
MCPPreAuth mcpPreauth = new MCPPreAuth();
```

HttpPostRequest object for MCP Pre-Authorization transaction

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

```
mpgReq.SetTransaction(mcpPreauth);
```

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	<i>String</i> N/A	mpgReq.SetStoreId(store_id);
API token	<i>String</i> N/A	mpgReq.SetApiToken(api_token);

MCP Pre-Authorization transaction request fields – Required

Variable Name	Type and Limits	Set Method
order ID	<i>String</i>	mcpPreauth.SetOrderId(order_

Variable Name	Type and Limits	Set Method
	50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>id);</code>
credit card number	<i>String</i> max 20-character alphanumeric	<code>mcpPreauth.SetPan(pan);</code>
expiry date	<i>String</i> 4-character alphanumeric YYMM	<code>mcpPreauth.SetExpdate(expiry_date);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>mcpPreauth.SetCryptType(crypt);</code>

MCP-specific request fields – Required

Variable Name	Type and Limits	Set Method
MCP version number	<i>String</i> numeric current version is 1.0	<code>mcpPreauth.SetMCPVersion("MCP_VERSION_NUM");</code>
cardholder amount	<i>String</i> 12-character numeric smallest discrete unit of foreign currency	<code>mcpPreauth .SetCardholderAmount("CARDHOLDER_AMOUNT");</code>
cardholder currency code	<i>String</i> 3-character numeric	<code>mcpPreauth .SetCardholderCurrencyCode("CARDHOLDER_CURRENCY_CODE");</code>

MCP Pre-Authorization transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>mcpPreauth.SetCustId(cust_id);</code>
dynamic descriptor	<i>String</i>	<code>mcpPreauth</code>

Variable Name	Type and Limits	Set Method
NOTE: For Pre-Authorization transactions: the value in the dynamic descriptor field will only be carried over to a Pre-Authorization Completion when executing the latter via the Merchant Resource Center; otherwise, the value for dynamic descriptor must be sent again in the Pre-Authorization Completion	max 20-character alphanumeric	<code>.SetDynamicDescriptor (dynamic_descriptor) ;</code>
	total of 22 characters including your merchant name and separator	
wallet indicator	<i>String</i> 3-character alphanumeric	<code>mcpPreauth .SetWalletIndicator (wallet_ indicator) ;</code>
Credential on File Info <code>cof</code>	<i>Object</i> N/A	<code>mcpPreauth.SetCofInfo (cof) ;</code>
NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. For information about fields in the Credential on File Info object, see Credential on File Info Object and Variables.		
AVS Information	<i>Object</i> N/A	<code>mcpPreauth.SetAvsInfo (avsCheck) ;</code>
CVD Information	<i>Object</i> N/A	<code>mcpPreauth.SetCvdInfo (cvdCheck) ;</code>

MCP-specific request fields – Optional

Variable Name	Type and Limits	Set Method
MCP rate token	<i>String</i> N/A	<code>mcpPreauth.SetMCPRateToken ("MCP_RATE_TOKEN") ;</code>

Sample MCP 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");
            MCPPreAuth mcpPreauth = new MCPPreAuth();
            mcpPreauth.SetOrderId(order_id);
            mcpPreauth.SetAmount(amount);
            mcpPreauth.SetPan(pan);
            mcpPreauth.SetExpDate(expdate);
            mcpPreauth.SetCryptType(crypt);
            //mcpPreauth.SetWalletIndicator(""); //Refer to documentation for details
            mcpPreauth.SetCofInfo(cof);
            //MCP Fields
            mcpPreauth.SetMCPVersion("1.0");
            mcpPreauth.SetCardholderAmount("500");
            mcpPreauth.SetCardholderCurrencyCode("840");
            //mcpPreauth.SetMCPRateToken("P1538681661706745");
            //mcpPreauth.SetCmId("8nAK8712sGaAkls56"); //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(mcpPreauth);
            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("IssuerId = " + receipt.GetIssuerId());

Console.WriteLine("MerchantSettlementAmount = " + receipt.GetMerchantSettlementAmount());
Console.WriteLine("CardholderAmount = " + receipt.GetCardholderAmount());
Console.WriteLine("CardholderCurrencyCode = " + receipt.GetCardholderCurrencyCode());
Console.WriteLine("MCPRate = " + receipt.GetMCPRate());
Console.WriteLine("MCPErrorStatusCode = " + receipt.GetMCPErrorStatusCode());
Console.WriteLine("MCPErrorMessage = " + receipt.GetMCPErrorMessage());
Console.WriteLine("HostId = " + receipt.GetHostId());
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}
}

```

8.6 MCP Pre-Authorization Completion

Retrieves funds that have been locked by an MCP Pre-Authorization transaction, and prepares them for settlement into the merchant's account.

This transaction request is the multi-currency pricing (MCP) enabled version of the equivalent financial transaction.

MCP Pre-Authorization Completion transaction object definition

```
MCPCompletion mcpCompletion = new MCPCompletion();
```

HttpRequest object for MCP Pre-Authorization Completion transaction

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

```
mpgReq.SetTransaction(mcpCompletion);
```

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	String N/A	mpgReq.SetStoreId(store_id);
API token	String N/A	mpgReq.SetApiToken(api_token);

MCP Pre-Authorization Completion transaction request fields – Required

Variable Name	Type and Limits	Set Method
order ID	String 50-character alphanumeric	mcpCompletion.SetOrderId(order_id);

Variable Name	Type and Limits	Set Method
transaction number	<i>a-Z A-Z 0-9 _ - : . @ spaces</i> <i>String</i> 255-character, alpha-numeric, hyphens or under-scores variable length	<code>mcpCompletion.SetTxnNumber(txn_number);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>mcpCompletion.SetCryptType(crypt);</code>

MCP-specific request fields – Required

Variable Name	Type and Limits	Set Method
MCP version number	<i>String</i> numeric current version is 1.0	<code>mcpCompletion.SetMCPVersion("MCP_VERSION_NUM");</code>
cardholder amount	<i>String</i> 12-character numeric smallest discrete unit of foreign currency	<code>mcpCompletion .SetCardholderAmount("CARDHOLDER_AMOUNT");</code>
cardholder currency code	<i>String</i> 3-character numeric	<code>mcpCompletion .SetCardholderCurrencyCode("CARDHOLDER_CURRENCY_CODE");</code>

MCP Pre-Authorization Completion transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>mcpCompletion.SetCustId(cust_id);</code>
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters includ-	<code>mcpCompletion .SetDynamicDescriptor(dynamic_descriptor);</code>

NOTE: For Pre-Authorization transactions: the value in the dynamic descriptor field will

Variable Name	Type and Limits	Set Method
<div>only be carried over to a Pre-Authorization Completion when executing the latter via the Merchant Resource Center; otherwise, the value for dynamic descriptor must be sent again in the Pre-Authorization Completion</div>	ing your merchant name and separator	

MCP-specific request fields – Optional

Variable Name	Type and Limits	Set Method
MCP rate token	String N/A	mcpcCompletion .SetMCPRateToken("MCP_RATE_TOKEN");

Sample MCP Pre-Authorization Completion

```

namespace Moneris
{
    using System;
    public class TestCanadaMCPCompletion
    {
        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;
            MCPCompletion mcpcCompletion = new MCPCompletion();
            mcpcCompletion.SetOrderId(order_id);
            mcpcCompletion.SetCompAmount(amount);
            mcpcCompletion.SetTxnNumber(txn_number);
            mcpcCompletion.SetCryptType(crypt);
            mcpcCompletion.SetCustId(cust_id);
            mcpcCompletion.SetDynamicDescriptor(dynamic_descriptor);
            //mcpcCompletion.SetShipIndicator(ship_indicator); //optional
            //MCP Fields
            mcpcCompletion.SetMCPVersion("1.0");
            mcpcCompletion.SetCardholderAmount("500");
            mcpcCompletion.SetCardholderCurrencyCode("840");
            mcpcCompletion.SetMCPRateToken("P1538681661706745");
            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(mcpcCompletion);
        }
    }
}

```

```
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("MerchantSettlementAmount = " + receipt.GetMerchantSettlementAmount());
    Console.WriteLine("CardholderAmount = " + receipt.GetCardholderAmount());
    Console.WriteLine("CardholderCurrencyCode = " + receipt.GetCardholderCurrencyCode());
    Console.WriteLine("MCPRate = " + receipt.GetMCPRate());
    Console.WriteLine("MCPErrorStatusCode = " + receipt.GetMCPErrorStatusCode());
    Console.WriteLine("MCPErrorMessage = " + receipt.GetMCPErrorMessage());
    Console.WriteLine("HostId = " + receipt.GetHostId());
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
```

8.7 MCP Purchase Correction

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

This transaction can be used against a Purchase or Pre-Authorization Completion transaction that occurred same day provided that the batch containing the original transaction remains open.

MCP processing uses the automated closing feature, and Batch Close occurs daily between 10 and 11 pm Eastern Time.

This transaction request is the multi-currency pricing (MCP) enabled version of the equivalent financial transaction.

MCP Purchase Correction transaction object definition

```
MCPPurchaseCorrection mcpPurchaseCorrection = new MCPPurchaseCorrection();
```

HttpPostRequest object for MCP Purchase Correction transaction

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

```
mpgReq.SetTransaction(mcpPurchaseCorrection);
```

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	<i>String</i> N/A	<code>mpgReq.SetStoreId(store_id);</code>
API token	<i>String</i> N/A	<code>mpgReq.SetApiToken(api_token);</code>

MCP Purchase Correction transaction request fields – Required

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alpha-numeric-Z A-Z 0-9 _-: . @ spaces	<code>mcpPurchaseCorrection.SetOrderId(order_id);</code>
transaction number	<i>String</i> 255-character, alpha-numeric, hyphens or under-scores variable length	<code>mcpPurchaseCorrection.SetTxnNumber(txn_number);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>mcpPurchaseCorrection.SetCryptType(crypt);</code>

MCP Purchase Correction transaction request fields – Optional

Variable Name	Type and Limits	Description
dynamic descriptor	<i>String</i> max 20-character alpha-numeric total of 22 characters including your merchant name and separator	<code>mcpPurchaseCorrection.SetDynamicDescriptor(dynamic_descriptor);</code>
customer ID	<i>String</i> 30-character alphanumeric	<code>mcpPurchaseCorrection.SetCustId(cust_id);</code>

Sample MCP Purchase Correction

```
namespace Moneris
{
    using System;
    public class TestCanadaMCPPurchaseCorrection
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string order_id = "Test20190426094615";
            string txn_number = "421047-0_14";
            string crypt = "7";
            string dynamic_descriptor = "123456";
            string processing_country_code = "CA";
            bool status_check = false;
            MCPPurchaseCorrection mcpPurchaseCorrection = new MCPPurchaseCorrection();
            mcpPurchaseCorrection.SetOrderId(order_id);
            mcpPurchaseCorrection.SetTxnNumber(txn_number);
            mcpPurchaseCorrection.SetCryptType(crypt);
            mcpPurchaseCorrection.SetDynamicDescriptor(dynamic_descriptor);
            mcpPurchaseCorrection.SetCustId("my customer id");
            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(mcpPurchaseCorrection);
            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("MerchantSettlementAmount = " + receipt.GetMerchantSettlementAmount());
                Console.WriteLine("CardholderAmount = " + receipt.GetCardholderAmount());
                Console.WriteLine("CardholderCurrencyCode = " + receipt.GetCardholderCurrencyCode());
                Console.WriteLine("MCPRate = " + receipt.GetMCPRate());
                Console.WriteLine("MCPErrorStatusCode = " + receipt.GetMCPErrorStatusCode());
                Console.WriteLine("MCPErrorMessage = " + receipt.GetMCPErrorMessage());
                Console.WriteLine("HostId = " + receipt.GetHostId());
                Console.ReadLine();
            }
            catch (Exception e)
            {
                Console.WriteLine(e);
            }
        }
    }
}
```

```
}
}
```

8.8 MCP Refund

Restores all or part of the funds from a MCP Purchase or MCP Pre-Authorization Completion transaction to the cardholder's card.

Unlike a MCP Purchase Correction, there is a record of both the initial charge and the refund on the cardholder's statement.

For processing refunds on a different card than the one used in the original transaction, the MCP Independent Refund transaction should be used instead.

This transaction request is the multi-currency pricing (MCP) enabled version of the equivalent financial transaction.

MCP Refund transaction object definition

```
MCPRefund mcpRefund = new MCPRefund();
```

HttpPostRequest object for MCP Refund transaction

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

```
mpgReq.SetTransaction(mcpRefund);
```

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	<i>String</i> N/A	<code>mpgReq.SetStoreId(store_id);</code>
API token	<i>String</i> N/A	<code>mpgReq.SetApiToken(api_token);</code>

MCP Refund transaction request fields – Required

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alpha- numerica-Z A-Z 0-9 _ - : . @ spaces	<code>mcpRefund.SetOrderId(order_id);</code>
transaction number	<i>String</i> 255-character, alpha- numeric, hyphens or under-	<code>mcpRefund.SetTxnNumber(txn_number);</code>

Variable Name	Type and Limits	Set Method
	scores	
	variable length	
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>mcpRefund.SetCryptType(crypt);</code>

MCP-specific request fields – Required

Variable Name	Type and Limits	Set Method
MCP version number	<i>String</i> numeric current version is 1.0	<code>mcpRefund.SetMCPVersion("MCP_VERSION_NUM");</code>
cardholder amount	<i>String</i> 12-character numeric smallest discrete unit of foreign currency	<code>mcpRefund.SetCardholderAmount("CARDHOLDER_AMOUNT");</code>
cardholder currency code	<i>String</i> 3-character numeric	<code>mcpRefund. .SetCardholderCurrencyCode("CARDHOLDER_CURRENCY_CODE");</code>

MCP Refund transaction request fields – Optional

Variable Name	Type and Limits	Description
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	<code>mcpRefund. .SetDynamicDescriptor(dynamic_descriptor);</code>
customer ID	<i>String</i> 30-character alphanumeric	<code>mcpRefund.SetCustId(cust_id);</code>

MCP-specific request fields – Optional

Variable Name	Type and Limits	Set Method
MCP rate token	<i>String</i> N/A	mcpRefund.SetMCPRateToken ("MCP_RATE_TOKEN");

Sample MCP Refund

```

namespace Moneris
{
    using System;
    public class TestCanadaMCPRefund
    {
        public static void Main(string[] args)
        {
            string store_id = "store5";
            string api_token = "yesguy";
            string amount = "2.00";
            string crypt = "7";
            string dynamic_descriptor = "123456";
            string custid = "mycust9";
            string order_id = "Test20190426104211";
            string txn_number = "421264-0_14";
            string processing_country_code = "CA";
            bool status_check = false;
            MCPRefund mcpRefund = new MCPRefund();
            mcpRefund.SetTxnNumber(txn_number);
            mcpRefund.SetOrderId(order_id);
            mcpRefund.SetAmount(amount);
            mcpRefund.SetCryptType(crypt);
            mcpRefund.SetCustId(custid);
            mcpRefund.SetDynamicDescriptor(dynamic_descriptor);
            //MCP Fields
            mcpRefund.SetMCPVersion("1.0");
            mcpRefund.SetCardholderAmount("500");
            mcpRefund.SetCardholderCurrencyCode("840");
            //mcpRefund.SetMCPRateToken("P1538681661706745");
            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(mcpRefund);
            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("MerchantSettlementAmount = " + receipt.GetMerchantSettlementAmount());
Console.WriteLine("CardholderAmount = " + receipt.GetCardholderAmount());
Console.WriteLine("CardholderCurrencyCode = " + receipt.GetCardholderCurrencyCode());
Console.WriteLine("MCPRate = " + receipt.GetMCPRate());
Console.WriteLine("MCPErrorStatusCode = " + receipt.GetMCPErrorStatusCode());
Console.WriteLine("MCPErrorMessage = " + receipt.GetMCPErrorMessage());
Console.WriteLine("HostId = " + receipt.GetHostId());
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}
}

```

8.9 MCP 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.

This transaction request is the multi-currency pricing (MCP) enabled version of the equivalent financial transaction.

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.

MCP Independent Refund transaction object definition

```
MCPIndependentRefund mcpIndrefund = new MCPIndependentRefund();
```

HttpPostRequest object for MCP Independent Refund transaction

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

```
mpgReq.SetTransaction(mcpIndrefund);
```

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	String N/A	mpgReq.SetStoreId(store_id);

Variable Name	Type and Limits	Set Method
API token	<i>String</i> N/A	<code>mpgReq.SetApiToken (api_token);</code>

MCP Independent Refund transaction request fields – Required

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alpha-numeric-Z A-Z 0-9 _ - : . @ spaces	<code>mcpIndrefund.SetOrderId (order_id);</code>
credit card number	<i>String</i> max 20-character alpha-numeric	<code>mcpIndrefund.SetPan (pan);</code>
expiry date	<i>String</i> 4-character alphanumeric YYMM	<code>mcpIndrefund.SetExpdate (expiry_date);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>mcpIndrefund.SetCryptType (crypt);</code>

MCP-specific request fields – Required

Variable Name	Type and Limits	Set Method
MCP version number	<i>String</i> numeric current version is 1.0	<code>mcpIndrefund.SetMCPVersion ("MCP_VERSION_NUM");</code>
cardholder amount	<i>String</i> 12-character numeric smallest discrete unit of foreign currency	<code>mcpIndrefund .SetCardholderAmount ("CARDHOLDER_AMOUNT");</code>
cardholder currency code	<i>String</i> 3-character numeric	<code>mcpIndrefund .SetCardholderCurrencyCode ("CARDHOLDER_CURRENCY_CODE");</code>

MCP Independent Refund transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>mcpIndrefund.SetCustId(cust_id);</code>
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	<code>mcpIndrefund .SetDynamicDescriptor (dynamic_descriptor);</code>

MCP-specific request fields – Optional

Variable Name	Type and Limits	Set Method
MCP rate token	<i>String</i> N/A	<code>mcpIndrefund.SetMCPRateToken ("MCP_RATE_TOKEN");</code>

Sample MCP Independent Refund

```

namespace Moneris
{
    using System;
    public class TestCanadaMCPIndependentRefund
    {
        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;
            MCPIndependentRefund mcpIndrefund = new MCPIndependentRefund();
            mcpIndrefund.SetOrderId(order_id);
            mcpIndrefund.SetCustId(cust_id);
            mcpIndrefund.SetAmount(amount);
            mcpIndrefund.SetPan(pan);
            mcpIndrefund.SetExpDate(expdate);
            mcpIndrefund.SetCryptType(crypt);
            mcpIndrefund.SetDynamicDescriptor("123456");
            //MCP Fields
            mcpIndrefund.SetMCPVersion("1.0");
            mcpIndrefund.SetCardholderAmount("500");
        }
    }
}

```

```

mcpIndrefund.SetCardholderCurrencyCode("840");
//mcpIndrefund.SetMCPRateToken("P1538681661706745");
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(mcpIndrefund);
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("MerchantSettlementAmount = " + receipt.GetMerchantSettlementAmount());
    Console.WriteLine("CardholderAmount = " + receipt.GetCardholderAmount());
    Console.WriteLine("CardholderCurrencyCode = " + receipt.GetCardholderCurrencyCode());
    Console.WriteLine("MCPRate = " + receipt.GetMCPRate());
    Console.WriteLine("MCPErrorStatusCode = " + receipt.GetMCPErrorStatusCode());
    Console.WriteLine("MCPErrorMessage = " + receipt.GetMCPErrorMessage());
    Console.WriteLine("HostId = " + receipt.GetHostId());
    Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}

```

8.10 MCP Purchase with Vault

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

The data key may be a temporary one generated used Hosted Tokenization, or may be a permanent one from the Vault.

This transaction request is the multi-currency pricing (MCP) enabled version of the equivalent financial transaction.

MCP Purchase with Vault transaction object definition

```
MCPResPurchaseCC mcpResPurchaseCC = new MCPResPurchaseCC();
```

HttpPostRequest object for MCP Purchase with Vault transaction

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

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	<i>String</i> N/A	<code>mpgReq.SetStoreId(store_id);</code>
API token	<i>String</i> N/A	<code>mpgReq.SetApiToken(api_token);</code>

MCP Purchase with Vault transaction request fields – Required

Variable Name	Type and Limits	Set Method
data key	<i>String</i> 25-character alphanumeric	<code>mcpResPurchaseCC.SetData(data_key);</code>
order ID	<i>String</i> 50-character alphanumeric-Z A-Z 0-9 _ - : . @ spaces	<code>mcpResPurchaseCC.SetOrderId(order_id);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>mcpResPurchaseCC.SetCryptType(crypt);</code>

MCP-specific request fields – Required

Variable Name	Type and Limits	Set Method
MCP version number	<i>String</i> numeric current version is 1.0	<code>mcpResPurchaseCC.SetMCPVersion("MCP_VERSION_NUM");</code>
cardholder amount	<i>String</i> 12-character numeric	<code>mcpResPurchaseCC.SetCardholderAmount("CARDHOLDER_AMOUNT");</code>

Variable Name	Type and Limits	Set Method
	smallest discrete unit of foreign currency	
cardholder currency code	<i>String</i> 3-character numeric	<code>mcpResPurchaseCC .SetCardholderCurrencyCode ("CARDHOLDER_CURRENCY_CODE");</code>

MCP Purchase with Vault transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>mcpResPurchaseCC.SetCustId (cust_id);</code>
Credential on File Info cof	<i>Object</i> N/A	<code>mcpResPurchaseCC.SetCofInfo (cof);</code>
NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. For information about fields in the Credential on File Info object, see Credential on File Info Object and Variables.		
AVS Information	<i>Object</i> N/A	<code>mcpResPurchaseCC.SetAvsInfo (avsCheck);</code>
CVD Information	<i>Object</i> N/A	<code>mcpResPurchaseCC.SetCvdInfo (cvdCheck);</code>

MCP-specific request fields – Optional

Variable Name	Type and Limits	Set Method
MCP rate token	<i>String</i> N/A	<code>mcpResPurchaseCC .SetMCPRateToken("MCP_RATE_TOKEN");</code>

Sample MCP Purchase with Vault

```
namespace Moneris
{
```

```

using System;
using System.Text;
using System.Collections;
public class TestCanadaMCPResPurchaseCC
{
    public static void Main(string[] args)
    {
        string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
        string store_id = "store5";
        string api_token = "yesguy";
        string data_key = "rS7DbroQHJmJxdBfXFXiauQc4";
        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 descriptor = "my descriptor";
        string processing_country_code = "CA";
        bool status_check = false;
        CofInfo cof = new CofInfo();
        cof.SetPaymentIndicator("U");
        cof.SetPaymentInformation("2");
        cof.SetIssuerId("168451306048014");
        MCPResPurchaseCC mcpResPurchaseCC = new MCPResPurchaseCC();
        mcpResPurchaseCC.SetDataKey(data_key);
        mcpResPurchaseCC.SetOrderId(order_id);
        mcpResPurchaseCC.SetCustId(cust_id);
        mcpResPurchaseCC.SetAmount(amount);
        mcpResPurchaseCC.SetCryptType(crypt_type);
        mcpResPurchaseCC.SetDynamicDescriptor(descriptor);
        mcpResPurchaseCC.SetCofInfo(cof);
        //mcpResPurchaseCC.SetExpDate("1511"); //optional - use for temp token only
        //MCP Fields
        mcpResPurchaseCC.SetMCPVersion("1.0");
        mcpResPurchaseCC.SetCardholderAmount("500");
        mcpResPurchaseCC.SetCardholderCurrencyCode("840");
        //mcpResPurchaseCC.SetMCPRateToken("P1538681661706745");
        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(mcpResPurchaseCC);
        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.WriteLine("MerchantSettlementAmount = " + receipt.GetMerchantSettlementAmount());
Console.WriteLine("CardholderAmount = " + receipt.GetCardholderAmount());
Console.WriteLine("CardholderCurrencyCode = " + receipt.GetCardholderCurrencyCode());
Console.WriteLine("MCPRate = " + receipt.GetMCPRate());
Console.WriteLine("MCPErrorStatusCode = " + receipt.GetMCPErrorStatusCode());
Console.WriteLine("MCPErrorMessage = " + receipt.GetMCPErrorMessage());
Console.WriteLine("HostId = " + receipt.GetHostId());
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}

```

8.11 MCP Pre-Authorization with Vault

This transaction uses the data key to identify a previously registered credit card profile in Vault. The details saved within the profile are then submitted to perform a Pre-Authorization transaction.

The data key may be a temporary one generated used Hosted Tokenization, or may be a permanent one from the Vault.

This transaction request is the multi-currency pricing (MCP) enabled version of the equivalent financial transaction.

MCP Pre-Authorization with Vault transaction object definition

```
MCPResPreauthCC mcpResPreauthCC = new MCPResPreauthCC();
```

HttpRequest object for MCP Pre-Authorization with Vault transaction

```

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

```

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	String N/A	mpgReq.SetStoreId(store_id);
API token	String	mpgReq.SetApiToken(api_token);

Variable Name	Type and Limits	Set Method
N/A		

MCP Pre-Authorization with Vault transaction request fields – Required

Variable Name	Type and Limits	Set Method
data key	<i>String</i> 25-character alphanumeric	<code>mcpResPreauthCC.SetData(data_key);</code>
order ID	<i>String</i> 50-character alphanumeric-Z A-Z 0-9 _ - : . @ spaces	<code>mcpResPreauthCC.SetOrderId(order_id);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>mcpResPreauthCC.SetCryptType(crypt);</code>

MCP-specific request fields – Required

Variable Name	Type and Limits	Set Method
MCP version number	<i>String</i> numeric current version is 1.0	<code>mcpResPreauthCC.SetMCPVersion("MCP_VERSION_NUM");</code>
cardholder amount	<i>String</i> 12-character numeric smallest discrete unit of foreign currency	<code>mcpResPreauthCC. .SetCardholderAmount("CARDHOLDER_AMOUNT");</code>
cardholder currency code	<i>String</i> 3-character numeric	<code>mcpResPreauthCC. .SetCardholderCurrencyCode("CARDHOLDER_CURRENCY_CODE");</code>

MCP Pre-Authorization with Vault transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i>	<code>mcpResPreauthCC.SetCustId(cust_id);</code>

Variable Name	Type and Limits	Set Method
dynamic descriptor	30-character alphanumeric <i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	<pre>mcpResPreauthCC .SetDynamicDescriptor (dynamic_descriptor);</pre>
<div> NOTE: For Pre-Authorization transactions: the value in the dynamic descriptor field will only be carried over to a Pre-Authorization Completion when executing the latter via the Merchant Resource Center; otherwise, the value for dynamic descriptor must be sent again in the Pre-Authorization Completion </div>		
Credential on File Info cof	<i>Object</i> N/A	<pre>mcpResPreauthCC.SetCofInfo (cof);</pre>
<div> NOTE: This is a nested object within the transaction, and required when storing or using the customer's stored credentials. For information about fields in the Credential on File Info object, see Credential on File Info Object and Variables. </div>		
AVS Information	<i>Object</i> N/A	<pre>mcpResPreauthCC.SetAvsInfo (avsCheck);</pre>
CVD Information	<i>Object</i> N/A	<pre>mcpResPreauthCC.SetCvdInfo (cvdCheck);</pre>

MCP-specific request fields – Optional

Variable Name	Type and Limits	Set Method
MCP rate token	<i>String</i> N/A	<pre>mcpResPreauthCC .SetMCPRateToken ("MCP_RATE_ TOKEN");</pre>

Sample MCP Pre-Authorization with Vault

```
namespace Moneris
{
```

```

using System;
using System.Text;
using System.Collections;
public class TestCanadaMCPResPreauthCC
{
    public static void Main(string[] args)
    {
        string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
        string store_id = "store5";
        string api_token = "yesguy";
        string data_key = "rS7DbroQHJmJxdBfXFXiauQc4";
        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("168451306048014");
        MCPResPreauthCC mcpResPreauthCC = new MCPResPreauthCC();
        mcpResPreauthCC.SetDataKey(data_key);
        mcpResPreauthCC.SetOrderId(order_id);
        mcpResPreauthCC.SetCustId(cust_id);
        mcpResPreauthCC.SetAmount(amount);
        mcpResPreauthCC.SetCryptType(crypt_type);
        mcpResPreauthCC.SetDynamicDescriptor(dynamic_descriptor);
        mcpResPreauthCC.SetCofInfo(cof);
        //MCP Fields
        mcpResPreauthCC.SetMCPVersion("1.0");
        mcpResPreauthCC.SetCardholderAmount("500");
        mcpResPreauthCC.SetCardholderCurrencyCode("840");
        //mcpResPreauthCC.SetMCPRateToken("P1538681661706745");
        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(mcpResPreauthCC);
        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.WriteLine("MerchantSettlementAmount = " + receipt.GetMerchantSettlementAmount());
Console.WriteLine("CardholderAmount = " + receipt.GetCardholderAmount());
Console.WriteLine("CardholderCurrencyCode = " + receipt.GetCardholderCurrencyCode());
Console.WriteLine("MCPRate = " + receipt.GetMCPRate());
Console.WriteLine("MCPErrorStatusCode = " + receipt.GetMCPErrorStatusCode());
Console.WriteLine("MCPErrorMessage = " + receipt.GetMCPErrorMessage());
Console.WriteLine("HostId = " + receipt.GetHostId());
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
}
}
}

```

8.12 MCP Independent Refund with Vault

This transaction uses the data key to identify a previously registered credit card profile in Vault. The details saved within the profile are then submitted to perform an Independent Refund transaction.

This transaction request is the multi-currency pricing (MCP) enabled version of the equivalent financial transaction.

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.

MCP Independent Refund with Vault transaction object definition

```
MCPResIndRefundCC mcpResIndRefundCC = new MCPResIndRefundCC();
```

HttpPostRequest object for MCP Independent Refund with Vault transaction

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

```
mpgReq.SetTransaction(mcpResIndRefundCC);
```

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Set Method
store ID	<i>String</i>	<code>mpgReq.SetStoreId(store_id);</code>

Variable Name	Type and Limits	Set Method
	N/A	
API token	String N/A	<code>mpgReq.SetApiToken(api_token);</code>

MCP Independent Refund with Vault transaction request fields – Required

Variable Name	Type and Limits	Set Method
data key	String 25-character alphanumeric	<code>mcpResIndRefundCC.SetData(data_key);</code>
order ID	String 50-character alphanumeric-Z A-Z 0-9 _ - : . @ spaces	<code>mcpResIndRefundCC.SetOrderId(order_id);</code>
electronic commerce indicator	String 1-character alphanumeric	<code>mcpIndrefund.SetCryptType(crypt);</code>

MCP-specific request fields – Required

Variable Name	Type and Limits	Set Method
MCP version number	String numeric current version is 1.0	<code>mcpResIndRefundCC.SetMCPVersion("MCP_VERSION_NUM");</code>
cardholder amount	String 12-character numeric smallest discrete unit of foreign currency	<code>mcpResIndRefundCC.SetCardholderAmount("CARDHOLDER_AMOUNT");</code>
cardholder currency code	String 3-character numeric	<code>mcpResIndRefundCC.SetCardholderCurrencyCode("CARDHOLDER_CURRENCY_CODE");</code>

MCP Independent Refund with Vault transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>mcpResIndRefundCC.SetCustId(cust_id);</code>

MCP-specific request fields – Optional

Variable Name	Type and Limits	Set Method
MCP rate token	<i>String</i> N/A	<code>mcpResIndRefundCC .SetMCPRateToken("MCP_RATE_TOKEN");</code>

Sample MCP Independent Refund with Vault

```

namespace Moneris
{
    using System;
    using System.Text;
    using System.Collections;
    public class TestCanadaMCPResIndRefundCC
    {
        public static void Main(string[] args)
        {
            string order_id = "Test" + DateTime.Now.ToString("yyyyMMddhhmmss");
            string store_id = "store5";
            string api_token = "yesguy";
            string data_key = "rS7DbroQHJmJxdBfXFXiauQc4";
            string amount = "1.00";
            string cust_id = "customer1";
            string crypt_type = "1";
            string processing_country_code = "CA";
            bool status_check = false;
            MCPResIndRefundCC mcpResIndRefundCC = new MCPResIndRefundCC();
            mcpResIndRefundCC.SetOrderId(order_id);
            mcpResIndRefundCC.SetCustId(cust_id);
            mcpResIndRefundCC.SetAmount(amount);
            mcpResIndRefundCC.SetCryptType(crypt_type);
            mcpResIndRefundCC.SetDataKey(data_key);
            //MCP Fields
            mcpResIndRefundCC.SetMCPVersion("1.0");
            mcpResIndRefundCC.SetCardholderAmount("500");
            mcpResIndRefundCC.SetCardholderCurrencyCode("840");
            //mcpResIndRefundCC.SetMCPRateToken("P1538681661706745");
            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(mcpResIndRefundCC);
            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.WriteLine("MerchantSettlementAmount = " + receipt.GetMerchantSettlementAmount());
Console.WriteLine("CardholderAmount = " + receipt.GetCardholderAmount());
Console.WriteLine("CardholderCurrencyCode = " + receipt.GetCardholderCurrencyCode());
Console.WriteLine("MCPRate = " + receipt.GetMCPRate());
Console.WriteLine("MCPErrorStatusCode = " + receipt.GetMCPErrorStatusCode());
Console.WriteLine("MCPErrorMessage = " + receipt.GetMCPErrorMessage());
Console.WriteLine("HostId = " + receipt.GetHostId());
Console.ReadLine();
}
catch (Exception e)
{
    Console.WriteLine(e);
}
}
```

8.13 MCP Currency Codes

For currency symbols, see <https://justforex.com/education/currencies>

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Numeric Currency Code (ISO)	Currency Name/Acronym
008	Albanian Lek (ALL)
012	Algerian Dinar (DZD)
032	Argentine Peso (ARS)
036	Australian Dollar (AUD)
048	Bahraini Dinar (BHD)
050	Bangladeshi Taka (BDT)
052	Barbados Dollar (BBD)
060	Bermudian Dollar (BMD)
064	Bhutan Ngultrum (BTN)
068	Bolivia Boliviano (BOB)
084	Belize Dollar (BZD)
090	Solomon Islands Dollar (SBD)
096	Brunei Dollar (BND)
108	Burundi Franc (BIF)
132	Cabo Verde Escudo (CVE)
136	Cayman Islands Dollar (KYD)
144	Sri Lanka Rupee (LKR)
152	Chilean Peso (CLP)
156	Chinese Yuan (CNY)
170	Colombian Peso (COP)
174	Comorian Franc (KMF)
188	Costa Rican Colon (CRC)
191	Croatian Kuna (HRK)

Numeric Currency Code (ISO)	Currency Name/Acronym
192	Cuban Peso (CUP)
203	Czech Koruna (CZK)
208	Danish Krone (DKK)
214	Dominican Republic Peso
222	Salvadoran Colon (SVC)
242	Fijian Dollar (FJD)
262	Djiboutian Franc (DJF)
270	Gambian Dalasi (GMD)
292	Gibraltar Pound (GIP)
320	Guatemala Quetzal (GTQ)
324	Guinean Franc (GNF)
328	Guyanese Dollar (GYD)
332	Haitian Gourde (HTG)
340	Honduran Lempira (HNL)
344	Hong Kong Dollar (HKD)
348	Hungarian Forint (HUF)
352	Iceland Krona (ISK)
356	Indian Rupee (INR)
360	Indonesian Rupiah (IDR)
376	Israeli Shekel (ILS)
388	Jamaican Dollar (JMD)
392	Japanese Yen (JPY)
398	Kazakh Tenge (KZT)

Numeric Currency Code (ISO)	Currency Name/Acronym
400	Jordanian Dinar (JOD)
404	Kenyan Shilling (KES)
410	South Korean Won (KRW)
414	Kuwaiti Dinar (KWD)
418	Laotian Kip (LAK)
426	Lesotho Loti (LSL)
430	Liberian Dollar (LRD)
446	Macanese Pataca (MOP)
454	Malawian Kwacha (MWK)
458	Malaysian Ringgit (MYR)
462	Maldivian Rufiyaa (MVR)
480	Mauritius Rupee (MUR)
484	Mexican Peso (MXN)
498	Moldovan Leu (MDL)
504	Moroccan Dirham (MAD)
512	Omani Rial (OMR)
516	Namibian Dollar (NAD)
524	Nepalese Rupee (NPR)
532	Netherlands Antillean Guilder (ANG)
533	Aruban Guilder (AWG)
548	Vanuatu Vatu (VUV)
554	New Zealand Dollar (NZD)
558	Nicaraguan Cordoba (NIO)

Numeric Currency Code (ISO)	Currency Name/Acronym
566	Nigerian Naira (NGN)
578	Norwegian Krone (NOK)
586	Pakistan Rupee (PKR)
598	Papua New Guinean Kina (PGK)
600	Paraguayan Guarani (PYG)
604	Peruvian Nuevo Sol (PEN)
608	Philippine Peso (PHP)
634	Qatari Rial (QAR)
643	Russian Ruble (RUB)
646	Rwandan Franc (RWF)
654	Saint Helena Pound (SHP)
682	Saudi Riyal (SAR)
690	Seychelles Rupee (SCR)
694	Sierra Leonean Leone (SLL)
702	Singapore Dollar (SGD)
704	Vietnamese Dong (VND)
710	South African Rand (ZAR)
748	Swaziland Lilangeni (SZL)
752	Swedish Krona (SEK)
756	Swiss Franc (CHF)
764	Thai Baht (THB)
780	Trinidad & Tobago Dollar (TTD)
784	UAE Dirham (AED)

Numeric Currency Code (ISO)	Currency Name/Acronym
788	Tunisian Dinar (TND)
800	Ugandan Shilling (UGX)
807	Macedonian Denar (MKD)
818	Egyptian Pound (EGP)
826	UK Pound Sterling (GBP)
834	Tanzanian Shilling (TZS)
840	US Dollar (USD)
858	Uruguayan Peso (UYU)
860	Uzbekistani Sum (UZS)
882	Samoa Tala (WST)
901	New Taiwan Dollar (TWD)
929	Mauritanian Ouguiya (MRU)
933	Belarusian Ruble (BYN)
934	Turkmenistan Manat (TMT)
941	Serbian Dinar (RSD)
943	Mozambique Metical (MZN)
944	Azerbaijani Manat (AZN)
946	Romanian New Leu (RON)
949	New Turkish Lira (TRY)
951	East Caribbean Dollar (XCD)
952	West African CFA Franc BCEAO (XOF)
953	CFP Franc (XPF)
967	Zambian Kwacha (ZMW)

Numeric Currency Code (ISO)	Currency Name/Acronym
968	Surinamese Dollar (SRD)
969	Malagasy Ariary (MGA)
971	Afghan Afghani (AFN)
972	Tajkistan Somoni (TJS)
973	Angola Kwanza (AOA)
975	Bulgarian Lev (BGN)
977	Bosnia and Herzegovina Convertible Mark (BAM)
978	Euro (EUR)
981	Georgian Lari (GEL)
985	Polish New Zloty (PLN)
986	Brazilian Real (BRL)

8.14 MCP Error Codes

Error Code	Description
200	OK (there will be no value returned in the MCP error message)
500	Upstream error
1000	Invalid JSON format
1003	Invalid txnType detected: <invalid txnType> please enter PURCHASE or REFUND
1005	Invalid rateInquiryId-txnType combination.
1007	Warning: at least one of cardHolderCurrency or merchantSettlementCurrency must be non-zero.
1008	Card-holder amount must be non-zero.
1009	Negative amounts detected

Error Code	Description
1010	Unsupported cardholder currency detected: <unsupported currency>
1015	invalid rateInquiryId
1016	Unsupported merchant id

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);
```

Variable Name	Type and Limits	Set Method	Description
AVS street number	<i>String</i> 19-character alpha-numeric <div> NOTE: this character limit is a combined total allowed for AVS street number and AVS street name </div>	<code>avsCheck.SetAvsStreetNumber("212");</code>	Cardholder street number
AVS street name	<i>String</i> 19-character alpha-numeric <div> NOTE: this character limit is the combined total allowed for AVS street number and AVS street name </div>	<code>avsCheck.SetAvsStreetName("Payton Street");</code>	Cardholder street name
AVS zip/postal code	<i>String</i> 9-character alpha-numeric	<code>avsCheck.SetAvsZipCode("M1M1M1");</code>	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 .
 (missing or bad snippet)

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 2.1 Purchase.

Sample Purchase with AVS information

```
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);
```

9.2 Card Validation Digits (CVD)

- 9.2.1 About Card Validation Digits (CVD)
- 9.2.3 CVD Information 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 Information 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();
$cvdTemplate = array(
'cvd_indicator' => $cvd_indicator,
'cvd_value' => $cvd_value
);
$mpgCvdInfo = new mpgCvdInfo ($cvdTemplate);
```

Transaction object set method

```
transaction.setCvdInfo(cvdCheck);
$mpgTxn->setCvdInfo($mpgCvdInfo);
```

Table 1 CVD Info Object – Required Fields

Variable 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	<code>cvdCheck.SetCvdValue("099");</code>	CVD value located on credit card

Variable Name	Type and Limits	Set Method	Description
---------------	-----------------	------------	-------------

numeric

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.

9.2.4 CVD Result Codes

CVD verification is available for Visa, Mastercard, Discover, American Express, JCB and UnionPay transactions.

Code	Description
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 American Express/JCB only
D	Invalid security code for American Express 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 321)
- Attribute Query (page 328)

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 17: Session Query transaction object mandatory values

Value	Limits		Set method
	Type	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 17: 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 17: Session Query transaction object mandatory values (continued)

Value	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>
	<p>The currency type that the transaction was denominated in. If TransactionAmount is passed, the TransactionCurrency is required.</p> <p>Values to be used are:</p> <ul style="list-style-type: none"> • CAD – 124 • USD – 840 		

Table 18: Session Query transaction object optional values

Value	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 18: 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 18: 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

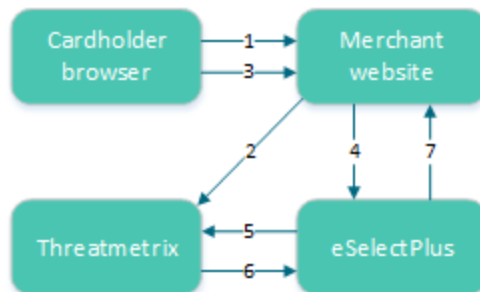


Figure 4: Session Query transaction flow

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 19: 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 19: 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 IP address 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 19: 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

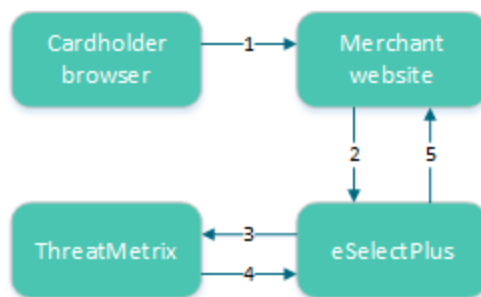


Figure 5: Attribute query transaction flow

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 20: 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 20: 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 333).		
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 21: 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 22: 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 is out of boundary

Value	Definition
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 23 defines the risk scores ranges.

Table 23: 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 24 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 24: 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 24: 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 24: 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 24: Rule names, numbers and messages (continued)

Rule name	Rule number	Rule message
	Rule explanation	
CredtCardDistanceTravelled	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 24: 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 24: 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				
SatellitelISP	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 24: Rule names, numbers and messages (continued)

Rule name	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 24: Rule names, numbers and messages (continued)

Rule name	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 25: 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 332) 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 and Google Pay™ Integrations

- 10.1 About Apple Pay and Google Pay™ Integration
- 10.2 Apple Pay Transaction Process Overview
- 10.3 Google Pay™ Transaction Process Overview
- 10.4 About API Integration of Apple Pay and Google Pay™
- 10.5 Cavv Purchase – Apple Pay and Google Pay™
- 10.6 Cavv Pre-Authorization – Apple Pay & Google Pay™

10.1 About Apple Pay and Google Pay™ Integration

The Moneris Gateway enables merchants to process in-app transactions within applications running on iOS (Apple Pay) or Android (Google Pay™) mobile devices, and in-browser when using the Safari web browser (Apple Pay, using Apple devices only) or the Chrome web browser on (Google Pay™).

Moneris Solutions offers two integration methods for processing Apple Pay and Google Pay™ transactions. Merchants can choose to use one of two methods:

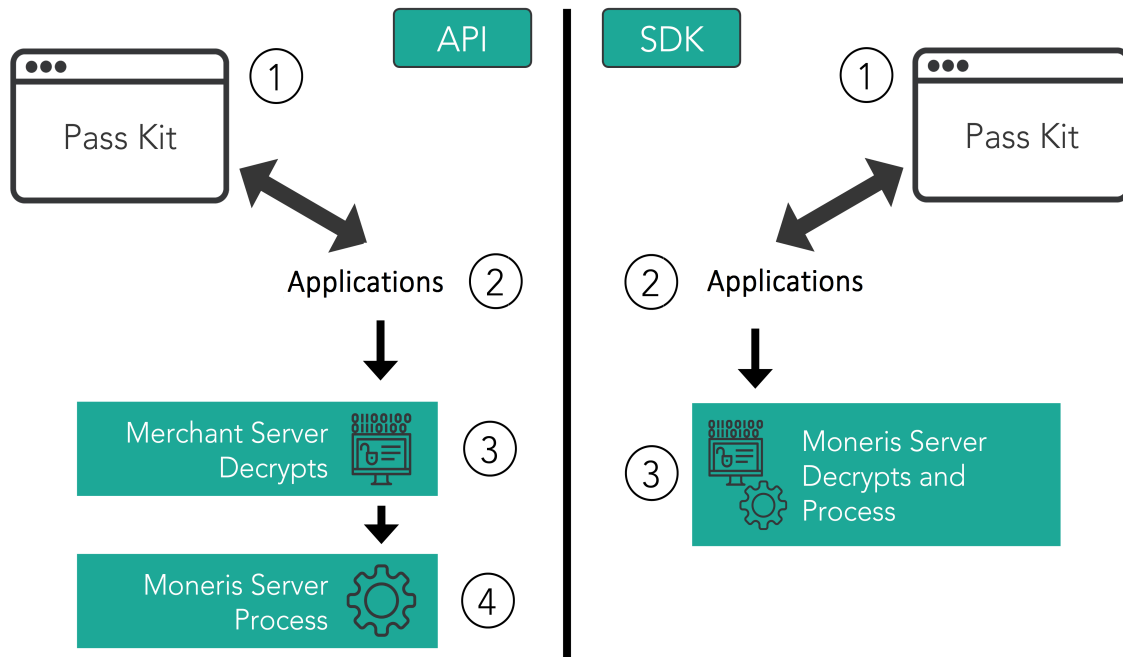
- Software Development Kit (SDK), or
- API method (where decryption of the transaction payload is handled by merchants)

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 Apple Pay Transaction Process Overview

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 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 and Google Pay™ or "Cavv Pre-Authorization – Apple Pay & Google Pay™" on page 358transaction
 - 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

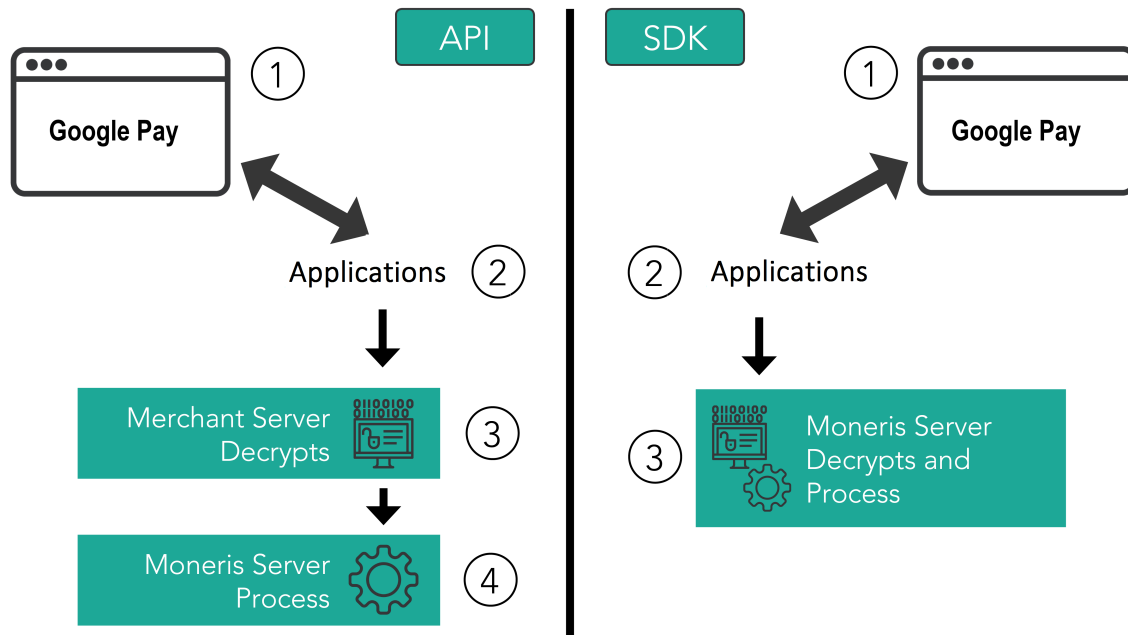
1. Merchant's mobile application or web page requests and receives the encrypted payload
2. Encrypted payload is sent from the merchant's server to the Moneris Gateway, and the payload is decrypted and processed

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>.

10.3 Google Pay™ Transaction Process Overview

For both API and SDK methods of integration, the merchant's app or website uses the Google Pay™ Framework to request and receive encrypted payment details from Google. 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.

NOTE: In the API scenario where merchant's server is responsible for decrypting the payload, merchants must sign agreement with Google directly. Google can then provide you with the keys to decrypt the payload.



Steps in the Google Pay™ payment process

API

1. Merchant's app 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 and Google Pay™ or "Cavv Pre-Authorization – Apple Pay & Google Pay™" on page 358transaction
 - a. Please ensure the wallet indicator is properly populated with the correct value (GPP for Google Pay™ In-App or GPW for Google Pay™ 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

10.4 About API Integration of Apple Pay and Google Pay™

An API integration works to provide a communication link between your merchant server and Moneris' server. APIs are required to complete any transaction, and therefore the APIs for Apple Pay and Google Pay™ are also included in SDK integration.

If the merchant chooses to use the API-only integration method, the merchant must decrypt payload information themselves before sending the decrypted information to the Moneris Gateway to be processed. Because this process is complicated, Moneris recommends only businesses with expertise and a previously integrated payment processing system use the API integration method; all other merchants should use the Moneris Apple Pay or Google Pay™ SDK as the integration method.

10.4.1 Transaction Types Used for Apple Pay and Google Pay™

In the Moneris Gateway API, there are two transaction types that allow you to process decrypted transaction payload information from Apple Pay and Google Pay™:

- 10.5 Cavv Purchase – Apple Pay and Google Pay™
- 10.6 Cavv Pre-Authorization – Apple Pay & Google 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
- Pre-Authorization Completion
- Purchase Correction

10.5 Cavv Purchase – Apple Pay and Google Pay™

The Cavv Purchase for Apple Pay and Google Pay™ transaction follows a 3-D Secure model but it does not require an MPI. Once the transaction payload has been decrypted, this transaction 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 third-party MPI may be used.

In addition to 3-D Secure transactions, this transaction can also be used to process Apple Pay and Google Pay™ transactions. This transaction is applicable only if choosing to integrate directly to Apple Wallet or Google Wallet (if not using the Moneris Apple Pay or Google Pay™ SDKs).

Refer to Apple or Google developer portals for details on integrating directly to their wallets to retrieve the payload data.

WARNING: Moneris strongly discourages the use of frames as part of a 3-D Secure implementation, and cannot guarantee their reliability when processing transactions in the production environment.

Cavv Purchase for Apple Pay & Google Pay™ transaction object definition

```
CavvPurchase cavvPurchase = new CavvPurchase();
```

HttpPostRequest object for Cavv Purchase for Apple Pay & Google Pay™ transaction

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

```
mpgReq.SetTransaction(cavvPurchase);
```

Cavv Purchase for Apple Pay & Google Pay™ transaction request fields – Required

Variable Name	Type and Limits	Set Method
order ID	String 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	cavvPurchase.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	cavvPurchase.SetAmount (amount);
credit card number	String max 20-character alphanumeric	cavvPurchase.SetPan (pan);
expiry date	String 4-character alphanumeric YYMM	cavvPurchase.SetExpdate (expiry_date);
Cardholder Authentication Verification Value (CAVV)	String 50-character alphanumeric	cavvPurchase.SetCavv (cavv);

Variable Name	Type and Limits	Set Method
<p>NOTE: For Apple Pay and Google Pay™ Cavv Purchase and Cavv Pre-Authorization transactions, CAVV field contains the decrypted cryptogram. For more, see Appendix A Definition of Request Fields.</p>		
electronic commerce indicator	<p><i>String</i></p> <p>1-character alphanumeric</p>	<code>cavvPurchase.SetCryptType(crypt);</code>
<p>NOTE: For Apple Pay and Google 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 Definition of Request Fields.</p>		

Following fields are required for Apple Pay and Google Pay only:

Variable Name	Type and Limits	Set Method
<p>network</p> <p>NOTE: This request variable is mandatory for INTERAC® e-Commerce transactions conducted via Apple Pay or Google Pay™ only, and is not for use with credit card transactions.</p>	<p><i>String</i></p> <p>alphabetic</p>	<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 or</p>	<p><i>String</i></p> <p>3-character alphanumeric</p>	<code>cavvPurchase.setDataType(data_type);</code>

Variable Name	Type and Limits	Set Method
---------------	-----------------	------------

Google Pay™ only, and is not for use with credit card transactions.

Cavv Purchase for Apple Pay & Google Pay™ transaction request fields – Optional

Variable Name	Type and Limits	Set Method
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck(status_check);</code>
customer ID	<i>String</i> 30-character alphanumeric	<code>cavvPurchase.SetCustId(cust_id);</code>
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	<code>cavvPurchase.SetDynamicDescriptor(dynamic_descriptor);</code>
card match ID	<i>String</i> 50-character alphanumeric	<code>cavvPurchase.SetCmId(transaction_id);</code>
<div> NOTE: Applies to Offlinx™ only; must be unique value for each transaction </div>		
Customer Information	<i>Object</i> N/A	<code>cavvPurchase.SetCustInfo(customer);</code>

Sample Cavv Purchase for Apple Pay & Google Pay™

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

Sample Cavv Purchase for Apple Pay & Google Pay™

```

{
    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 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.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("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());
        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 Cavv Purchase for Apple Pay & Google Pay™

```

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

```

10.6 Cavv Pre-Authorization – Apple Pay & Google Pay™

The Cavv Pre-Authorization for Apple Pay and Google Pay™ transaction follows a 3-D Secure model but it does not require an MPI. Once the transaction payload has been decrypted, this transaction 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.

To perform the 3-D Secure authentication, the Moneris MPI or any third-party MPI may be used.

In addition to 3-D Secure transactions, this transaction can also be used to process Apple Pay and Google Pay™ transactions. This transaction is applicable only if choosing to integrate directly to Apple Wallet or Google Wallet (if not using the Moneris Apple Pay or Google Pay™ SDKs).

Refer to Apple or Google developer portals for details on integrating directly to their wallets to retrieve the payload data.

NOTE: INTERAC® e-Commerce functionality is currently available using the Cavv Purchase transaction type only.

WARNING: Moneris strongly discourages the use of frames as part of a 3-D Secure implementation, and cannot guarantee their reliability when processing transactions in the production environment.

Cavv Pre-Authorization for Apple Pay & Google Pay™ transaction object definition

```
CavvPreAuth cavvPreauth = new CavvPreAuth();
```

HttpPostRequest object for Cavv Pre-Authorization for Apple Pay & Google Pay™ transaction

```

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

```

Cavv Pre-Authorization for Apple Pay&Google Pay™ transaction request fields – Required

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<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>EXAMPLE: 1234567.89</div>	<code>cavvPreauth.SetAmount (amount);</code>
credit card number	<i>String</i> max 20-character alphanumeric	<code>cavvPreauth.SetPan (pan);</code>
Cardholder Authentication Verification Value (CAVV)	<i>String</i> 50-character alphanumeric <div>NOTE: For Apple Pay and Google Pay™ Cavv Purchase and Cavv Pre-Authorization transactions, CAVV field contains the decrypted cryptogram. For more, see Appendix A Definition of Request Fields.</div>	<code>cavvPreauth.SetCavv (cavv);</code>
expiry date	<i>String</i> 4-character alphanumeric YYMM	<code>cavvPreauth.SetExpdate (expiry_date);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric <div>NOTE: For Apple Pay and Google Pay™ Cavv Purchase and Cavv Pre-Authorization</div>	<code>cavvPreauth.SetCryptType (crypt);</code>

Variable Name	Type and Limits	Set Method
<p>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 Definition of Request Fields.</p>		

Cavv Pre-Authorization for Apple Pay & Google Pay™ transaction request fields – Optional

Variable Name	Type and Limits	Set Method
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck(status_check);</code>
customer ID	<i>String</i> 30-character alphanumeric	<code>cavvPreauth.SetCustId(cust_id);</code>
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	<code>cavvPreauth.SetDynamicDescriptor(dynamic_descriptor);</code>
card match ID	<i>String</i> 50-character alphanumeric	<code>cavvPreauth.SetCmId(transaction_id);</code>
network	<i>String</i> alphabetic	<code>cavvPurchase.setNetwork(network);</code>

Variable Name	Type and Limits	Set Method
<p>NOTE: This request variable is mandatory for INTERAC® e-Commerce transactions conducted via Apple Pay or Google Pay™ only, and is not for use with credit card transactions.</p>		
data type	String	cavvPurchase.setDataType(data_type);
<p>NOTE: This request variable is mandatory for INTERAC® e-Commerce transactions conducted via Apple Pay or Google Pay™ only, and is not for use with credit card transactions.</p>		
	3-character alphanumeric	

Sample Cavv Pre-Authorization for Apple Pay & Google 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";
            string expdate = "1911"; //YYMM format
            string cavv = "AAABBJg0VhI0VniQEjRWAAAAA=";
            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);
        }
    }
}
```

Sample Cavv Pre-Authorization for Apple Pay & Google Pay™

```

cavvPreauth.SetCryptType(crypt_type); //Mandatory for AMEX cards only
//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);

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);
}
}
}
}

```

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 and Google Pay™
- Cavv Pre-Authorization – Apple Pay & Google Pay™

12 Convenience Fee

- 12.1 About Convenience Fee
- 12.3 Purchase with Convenience Fee
- 12.4 Purchase with Customer Info and Convenience Fee
- 12.5 Purchase with 3-D Secure and Convenience Fee

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 Convenience Fee Information Object

Any transaction that supports Convenience Fee has an available set method for the Convenience Fee Information object.

The Convenience Fee Information object contains one request field, **convenience fee amount**.

Convenience Fee Info object definition

```
ConvFeeInfo convFeeInfo = new ConvFeeInfo();
```

Convenience Fee Info object set method

```
<transaction>.SetConvFeeInfo(convFeeInfo);
```

Convenience Fee Information object request fields

Variable Name	Type and Limits	Description
Convenience Fee Information	<i>Object</i> N/A	Contains fields related to the Convenience Fee feature
convenience fee amount	<i>String</i> 9-character decimal	Dollar amount charged to the customer as a convenience fee

12.3 Purchase with Convenience Fee

Information below describes a Purchase transaction request that also includes the Convenience Fee Info object.

Purchase with Convenience Fee transaction object definition

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

HttpPostRequest object for Purchase with Convenience Fee transaction

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

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

Purchase with Convenience Fee transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
Convenience Fee Information	<i>Object</i> N/A	<code>purchase.SetConvFeeInfo(convFeeInfo);</code>
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>purchase.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>EXAMPLE: 1234567.89</div>	<code>purchase.SetAmount(amount);</code>
credit card number	<i>String</i> max 20-character alphanumeric	<code>purchase.SetPan(pan);</code>
expiry date	<i>String</i> 4-character alphanumeric YYMM	<code>purchase.SetExpdate(expiry_date);</code>

Variable Name	Type and Limits	Set Method
electronic commerce indicator	String 1-character alphanumeric	<code>purchase.SetCryptType(crypt);</code>
NOTE: In Credential on File transactions where the request field e-commerce indicator is also being sent, the acceptable values for e-commerce indicator are dependent on the value sent for payment indicator; see request field definitions for more information.		
convenience fee amount	String 9-character decimal	<code>.SetConvFeeInfo(convfee_amount);</code>

Purchase with Convenience Fee transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	String 30-character alphanumeric	<code>purchase.SetCustId(cust_id);</code>
dynamic descriptor	String max 20-character alphanumeric total of 22 characters including your merchant name and separator	<code>purchase.SetDynamicDescriptor(dynamic_descriptor);</code>
AVS Information	Object N/A	<code>purchase.SetAvsInfo(avsCheck);</code>
CVD Information	Object N/A	<code>purchase.SetCvdInfo(cvdCheck);</code>

Sample Purchase with Convenience Fee

```
namespace Moneris
{
```

Sample Purchase with Convenience Fee

```

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);
        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();
        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());
            //Console.WriteLine("StatusMessage = " + receipt.GetStatusMessage());
            Console.ReadLine();
        }
    }
}

```

Sample Purchase with Convenience Fee

```

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

```

12.4 Purchase with Customer Info and Convenience Fee

Information below is a Purchase transaction request that also includes the Convenience Fee Info and Customer Information objects.

Purchase with Customer Info and Convenience Fee transaction object definition

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

HttpRequest object for Purchase with Customer Info and Convenience Fee transaction

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

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

Purchase with Customer Info and Convenience Fee transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
Convenience Fee Information	Object N/A	purchase.SetConvFeeInfo(convFeeInfo);
order ID	String 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	purchase.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	purchase.SetAmount(amount);

Variable Name	Type and Limits	Set Method
credit card number	<i>String</i> max 20-character alpha-numeric	<code>purchase.SetPan(pan);</code>
expiry date	<i>String</i> 4-character alphanumeric YYMM	<code>purchase.SetExpdate(expiry_date);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>purchase.SetCryptType(crypt);</code>
convenience fee amount	<i>String</i> 9-character decimal	<code>purchase.SetConvFeeInfo(convfee_amount);</code>

Purchase with Customer Info and Convenience Fee transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>purchase.SetCustId(cust_id);</code>
dynamic descriptor	<i>String</i> max 20-character alpha-numeric total of 22 characters including your merchant name and separator	<code>purchase .SetDynamicDescriptor(dynamic_descriptor);</code>
Customer Information	<i>Object</i> N/A	<code>purchase.SetCustInfo(customer);</code>
AVS Information	<i>Object</i> N/A	<code>purchase.SetAvsInfo(avsCheck);</code>
CVD Information	<i>Object</i> N/A	<code>purchase.SetCvdInfo(cvdCheck);</code>

NOTE: When storing cre-

Variable Name	Type and Limits	Set Method
<p>dentials 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>		

Sample Purchase with Customer Info and Convenience Fee

```

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 = "4005554444444403";
            string expdate = "1602"; //YYMM format
            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";
        }
    }
}

```

Sample Purchase with Customer Info and Convenience Fee

```

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);
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("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)

```

Sample Purchase with Customer Info and Convenience Fee

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

12.5 Purchase with 3-D Secure and Convenience Fee

Information below describes a Purchase with 3-D Secure transaction request that also includes the Convenience Fee Info object.

Convenience Fee Purchase with 3-D Secure transaction object definition

```
CavvPurchase cavvPurchase = new CavvPurchase();
```

HttpPostRequest object for Convenience Fee Purchase w/ 3-D Secure transaction

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

```
mpgReq.SetTransaction(cavvPurchase);
```

Convenience Fee Purchase with 3-D Secure transaction request fields – Required

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

Variable Name	Type and Limits	Set Method
Convenience Fee Information	<i>Object</i> N/A	<code>cavvPurchase.SetConvFeeInfo(convFeeInfo);</code>
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<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 <div>EXAMPLE: 1234567.89</div>	<code>cavvPurchase.SetAmount(amount);</code>
credit card number	<i>String</i>	<code>cavvPurchase.SetPan(pan);</code>

Variable Name	Type and Limits	Set Method
	max 20-character alphanumeric	
expiry date	<i>String</i> 4-character alphanumeric YYMM	<code>cavvPurchase.SetExpddate (expiry_date);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>cavvPurchase.SetCryptType (crypt);</code>
Cardholder Authentication Verification Value (CAVV)	<i>String</i> 50-character alphanumeric	<code>cavvPurchase.SetCavv (cavv);</code>
convenience fee amount	<i>String</i> 9-character decimal	<code>.SetConvFeeInfo (convfee_amount);</code>

Purchase with 3-D Secure and Convenience Fee transaction request fields – Optional

Variable Name	Type and Limits	Set Method
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck (status_check);</code>
customer ID	<i>String</i> 30-character alphanumeric	<code>cavvPurchase.SetCustId (cust_id);</code>
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	<code>cavvPurchase .SetDynamicDescriptor (dynamic_descriptor);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>cavvPurchase.SetCryptType (crypt);</code>
Customer Information	<i>Object</i> N/A	<code>cavvPurchase.SetCustInfo (customer);</code>

Variable Name	Type and Limits	Set Method
AVS Information	<i>Object</i> N/A	<code>cavvPurchase.SetAvsInfo (avsCheck);</code>
CVD Information	<i>Object</i> N/A	<code>cavvPurchase.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.**

Sample Purchase with 3-D Secure and Convenience Fee

```

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 = "AAABBJg0VhI0VniQEjRWAAAAA";
            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);
        }
    }
}

```

Sample Purchase with 3-D Secure and Convenience Fee

```

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.SetAvsInfo(avsCheck);
cavvPurchase.SetCvdInfo(cvdCheck);
cavvPurchase.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(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

- 13.1 About Recurring Billing
- 13.2 Purchase with Recurring Billing
- 13.3 Recurring Billing Update
- 13.4 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 Name	Type and Limits	Description
number of recurs num_recur	String numeric 1-99	The number of times that the transaction must recur

Variable Name	Type and Limits	Description
period period	String numeric 1-999	Number of recur unit intervals that must pass between recurring billings
start date start_date	String YYMMDD format	Date of the first future recurring billing transaction; this must be a date in the future If an additional charge will be made immediately, the start now variable must be set to true
start now start_now	String true/false	Set to true if a charge will be made against the card immediately; otherwise set to false When set to false, use Card Verification prior to sending the Purchase with Recurring Billing and Credential on File objects
<div> NOTE: Amount to be billed immediately can differ from the subsequent recurring amounts </div>		
recurring amount recur_amount	String 10-character decimal, minimum three digits Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div> EXAMPLE: 1234567.89 </div>	Dollar amount of the recurring transaction This amount 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	String day, week, month or eom	Unit to be used as a basis for the interval Works in conjunction with the period variable to define the billing frequency

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"; //YYMM 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);
            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());
            }
        }
    }
}

```

Sample Purchase with Recurring Billing

```

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();
```

HttpRequest object for Recurring Billing Update transaction

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

```
mpgReq.SetTransaction(recurUpdate);
```

Recurring Billing Update transaction values

Table 1 Recurring Billing Update – Basic Required Fields

Variable 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 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.setExpiryDate(expiry_date);

Table 3 Recurring Billing Update – Recurring Billing Required Fields

Variable Name	Type and Limits	Set Method	Description
Recurring amount recur_amount	String 10-character decimal; Up to 7 digits (dollars) + decimal point + 2 digits (cents) after the decimal point EXAMPLE: 1234567-.89	recurUpdate.SetRecurAmount(recur_amount);	Changes the amount that is billed recurrently The change takes effect on the next charge

Variable Name	Type and Limits	Set Method	Description
Add number of recurs add_num	<i>String</i> numeric, 1-999	<code>recurUpdate.SetAddNumRecurs(add_num);</code>	<p>Adds to the given number of recurring transactions to the current (remaining) number</p> <p>This can be used if a customer decides to extend a membership or subscription</p> <p>Cannot be used to decrease the current number of recurring transactions; use Change number of recurs instead</p>
Change number of recurs total_num	<i>String</i> numeric, 1-999	<code>recurUpdate.SetTotalNumRecurs(total_num);</code>	<p>Replaces the current (remaining) number of recurring transactions</p>
Hold recurring billing hold	<i>String</i> true/false	<code>recurUpdate.SetHold(hold);</code>	<p>Temporarily pauses recurring billing</p> <p>While a transaction is on hold, it is not billed for the recurring amount; however, the number of remaining recurs continues to be decremented during that time</p>
Terminate recurring transaction terminate	<i>String</i> true/false	<code>recurUpdate.SetTerminate(terminate);</code>	<p>Terminates recurring billing</p> <div> <p>NOTE: After it has been terminated, a recurring transaction cannot be reactivated; a new purchase transaction with recurring billing</p> </div>

Variable Name	Type and Limits	Set Method	Description
			must be submitted.

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.SetAddNumRecurs(add_num);
            //recurUpdate.SetTotalNumRecurs(total_num);
            //recurUpdate.SetHold(hold);
            //recurUpdate.SetTerminate(terminate);
            recurUpdate.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(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());
            }
        }
    }
}

```

Sample Recurring Billing Update

```

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 26 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 26: Recurring Billing response fields

Value	Type	Limits	Get method
	Description		
Transaction object with Recurring Billing response fields			
Response code	String	3-character numeric	<code>receipt.GetResponseCode () ;</code>
	See Table 27: for a description of possible response codes.		
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 27: 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 (with Recurring Billing object field **start now** = true)

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

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:

- Billing/Shipping information
- Miscellaneous customer information properties
- 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 é.
- 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 Customer Info Object – Miscellaneous Properties
- 14.1.2 Customer Info Object – Billing/Shipping Information
- 14.1.3 Customer Info 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 Customer Info 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 28: 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 Customer Info Object – Billing/Shipping Information

Billing and shipping information is stored as part of the Customer Information 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 29: 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"

Table 29: Billing and shipping information values (continued)

Value	Limit	Hash table key
Province/State	30	"province"
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 Customer Info Object – Billing/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 Customer Info Object – Item Information

The Customer Information 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 30: 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 Customer Info 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 Customer Info 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,
```

Sample Purchase with Customer Information – Set method version

```

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");

```

Sample Purchase with Customer Information – Hash table version

```
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

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- 16.2 Integrating Visa Checkout Lightbox
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- 16.6 Visa Checkout Completion
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- 16.9 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 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

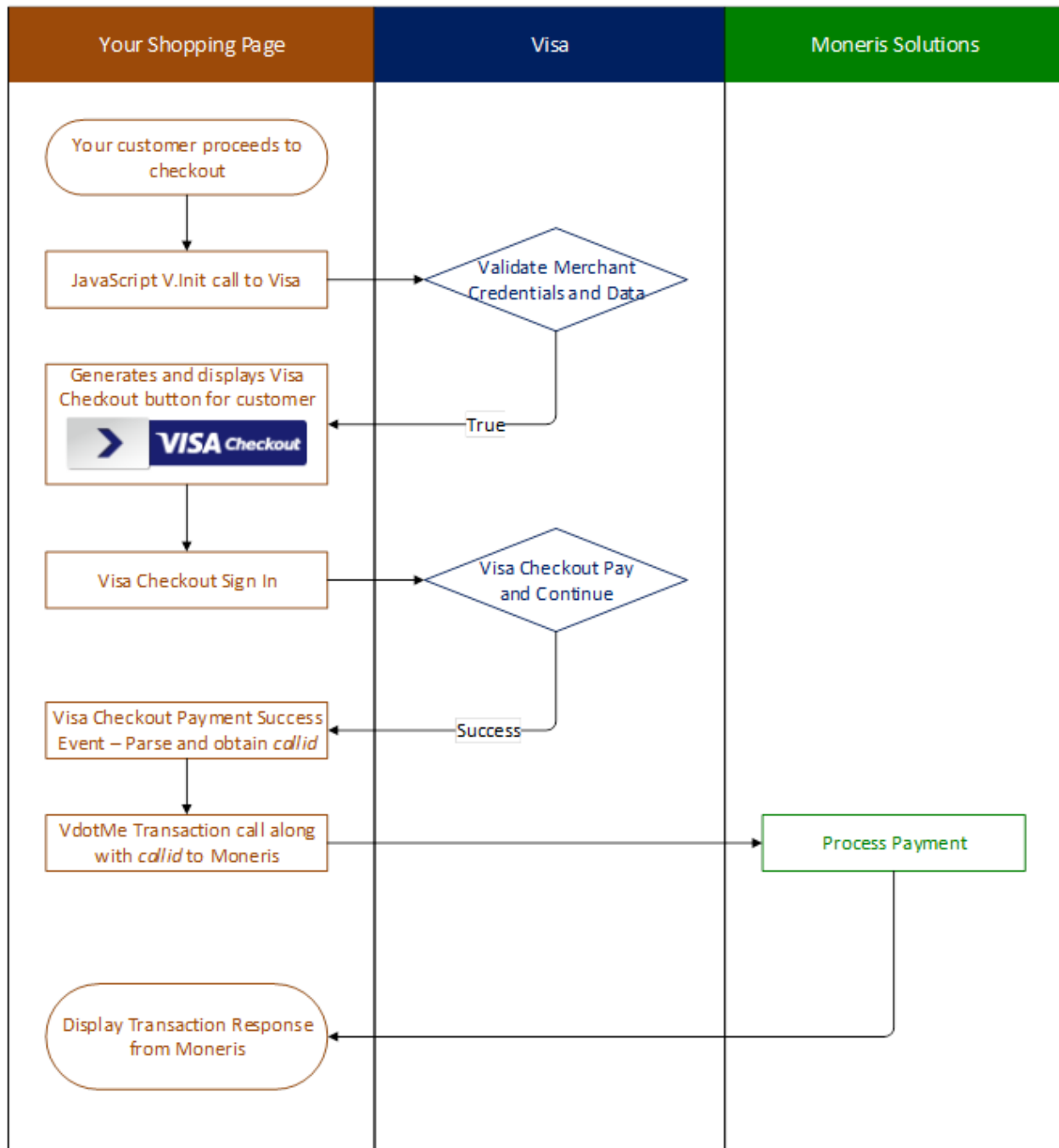
2. If you get a payment success event from the resulting Visa Lightbox JavaScript, you will have to parse and obtain the `callid` from their JSON response. The additional information is obtained using `VdotMeInfo`.

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.

16.3 Transaction Flow for Visa Checkout

VISA Checkout Process – Successful Process



16.4 Visa Checkout Purchase

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.

Visa Checkout Purchase transaction object definition

```
VdotMePurchase vmepurchase = new VdotMePurchase();
```

HttpPostRequest for Visa Checkout Purchase transaction

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

```
mpgReq.SetTransaction(vmepurchase);
```

Visa Checkout Purchase transaction request fields – Required

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>vmepurchase.SetOrderId(order_id);</code>
call ID	<i>String</i> 20-character numeric	<code>vmepurchase.SetCallId(call_id);</code>
amount	<i>String</i> 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div>EXAMPLE: 1234567.89</div>	<code>vmepurchase.SetAmount(amount);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>vmepurchase.SetCryptType(crypt);</code>

Visa Checkout Purchase – transaction request fields – Optional

Variable Name	Type and Limits	Set Method
dynamic descriptor	<i>String</i> max 20-character alpha-	<code>vmepurchase.SetDynamicDescriptor(dynamic_descriptor);</code>

Variable Name	Type and Limits	Set Method
	numeric total of 22 characters including your merchant name and separator	
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck(status_check);</code>

Sample Visa Checkout Purchase

```

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);
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(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());
}
}
}

```


Sample Visa Checkout Purchase

```

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);
}
}
}
}

```

16.5 Visa Checkout Pre-Authorization – VdotMePreAuth

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.

`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).

Visa Checkout Pre-Authorization transaction object definition

```
VdotMePreauth vMePreauthRequest = new VdotMePreauth();
```

HttpPostRequest object for Visa Checkout Pre-Authorization transaction

```

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

```

Visa Checkout Pre-Authorization – transaction request fields – Required

Variable Name	Type and Limits	Set Method
amount	<i>String</i>	vDotMeReauthRequest

Variable Name	Type and Limits	Set Method
	10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div>EXAMPLE: 1234567.89</div>	<code>.SetAmount (amount) ;</code>
call ID	<i>String</i> 20-character numeric	<code>vDotMeReauthRequest</code> <code>.SetCallId (call_id) ;</code>
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>vDotMeReauthRequest</code> <code>.SetOrderId (order_id) ;</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>vDotMeReauthRequest</code> <code>.SetCryptType (crypt) ;</code>

Visa Checkout Pre-Authorization – transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>vMePreauthRequest.SetCustId (cust_id) ;</code>
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator <div> NOTE: For Pre-Authorization transactions: the value in the dynamic descriptor field will only be carried over to a Pre-Authorization Completion when executing the latter via the Merchant Resource Center; otherwise, the value for dynamic descriptor must be sent again in the Pre-Authorization Completion </div>	<code>vMePreauthRequest</code> <code>.SetDynamicDescriptor (dynamic_descriptor) ;</code>

Sample Visa Checkout Pre-Authorization

```

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());
            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);
        }
    }
}

```

16.6 Visa Checkout Completion

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.

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.

Visa Checkout Completion transaction object definition

```
VdotMeCompletion vmecompletion = new VdotMeCompletion();
```

HttpPostRequest object for Visa Checkout Completion transaction

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

```
mpgReq.SetTransaction(vmecompletion);
```

Visa Checkout Completion transaction request fields – Required

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>vmecompletion.SetOrderId(order_id);</code>
transaction number	<i>String</i> 255-character, alpha-numeric, hyphens or under-scores variable length	<code>vmecompletion.SetTxnNumber(txn_number);</code>
completion amount	<i>String</i> 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div>EXAMPLE: 1234567.89</div>	<code>vmecompletion.SetCompAmount(comp_amount);</code>

Variable Name	Type and Limits	Set Method
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>vmecompletion.SetCryptType(crypt);</code>

Visa Checkout Completion – transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>vmecompletion.SetCustId(cust_id);</code>
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	<code>vmecompletion.SetDynamicDescriptor(dynamic_descriptor);</code>

NOTE: For Pre-Authorization transactions: the value in the dynamic descriptor field will only be carried over to a Pre-Authorization Completion when executing the latter via the Merchant Resource Center; otherwise, the value for dynamic descriptor must be sent again in the Pre-Authorization Completion

Sample Visa Checkout Completion

```
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";
            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);
```

Sample Visa Checkout Completion

```

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);
}
}
}
}

```

16.7 Visa Checkout 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.

`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.

Visa Checkout Purchase Correction transaction object definition

```
VdotMePurchaseCorrection vDotMePurchaseCorrection = new
VdotMePurchaseCorrection();
```

HttpPostRequest object for Visa Checkout Purchase Correction transaction

```
HttpPostRequest mpgReq = new HttpPostRequest();

mpgReq.SetTransaction(vDotMePurchaseCorrection);
```

Visa Checkout Purchase Correction transaction request fields – Required

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>vDotMePurchaseCorrection .SetOrderId(order_id);</code>
transaction number	<i>String</i> 255-character, alpha- numeric, hyphens or under- scores variable length	<code>vDotMePurchaseCorrection .SetTxnNumber(txn_number);</code>

Visa Checkout Purchase Correction transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>vDotMePurchaseCorrection .SetCustId(cust_id);</code>
status check	<i>Boolean</i> <i>String</i>	<code>mpgReq.SetStatusCheck(status_ check);</code>

Sample Visa Checkout Purchase Correction

```
using System;
using Moneris;
namespace ACME
{
    class TestCanadaVdotMePurchaseCorrection
    {
```

Sample Visa Checkout Purchase Correction

```

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";
    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);
    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(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);
    }
}

```


16.8 Visa Checkout Refund

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.

`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`.

Visa Checkout Refund transaction object definition

```
VdotMeRefund vDotMeRefundRequest = new VdotMeRefund();
```

HttpPostRequest object for Visa Checkout Refund transaction

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

```
mpgReq.SetTransaction(vDotMeRefundRequest);
```

Visa Checkout Refund transaction request fields – Required

Variable Name	Type and Limits	Set Method
order ID	<i>String</i> 50-character alphanumeric a-Z A-Z 0-9 _ - : . @ spaces	<code>vDotMeRefundRequest .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>EXAMPLE: 1234567.89</div>	<code>vDotMeRefundRequest .SetAmount(amount);</code>
transaction number	<i>String</i> 255-character, alpha- numeric, hyphens or under- scores variable length	<code>vDotMeRefundRequest .SetTxnNumber(txn_number);</code>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<code>vDotMeRefundRequest .SetCryptType(crypt);</code>

Visa Checkout Refund transaction request fields – Optional

Variable Name	Type and Limits	Set Method
customer ID	<i>String</i> 30-character alphanumeric	<code>vDotMeRefundRequest.SetCustId(cust_id);</code>
dynamic descriptor	<i>String</i> max 20-character alphanumeric total of 22 characters including your merchant name and separator	<code>vDotMeRefundRequest.SetDynamicDescriptor(dynamic_descriptor);</code>
status check	<i>Boolean</i> true/false	<code>mpgReq.SetStatusCheck(status_check);</code>

Sample Visa Checkout Refund

```
using System;
using Moneris;
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();
        }
    }
}
```

Sample Visa Checkout Refund

```
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 Information

Call to Moneris to obtain cardholder details such as name on card, partial card number, expiry date, shipping and billing 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.

Visa Checkout Information transaction object definition

```
VdotMeInfo vmeinfo = new VdotMeInfo();
```

HttpPostRequest object for Visa Checkout Information transaction

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

```
mpgReq.SetTransaction(vmeinfo);
```

Visa Checkout Information transaction request fields – Required

Variable Name	Type and Limits	Set Method
call ID	<i>String</i>	vmeinfo.SetCallId(call_id);

Variable Name	Type and Limits	Set Method
	20-character numeric	

Sample Visa Checkout Information

```

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);
            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(vmeinfo);
            mpgReq.SetStatusCheck(status_check);
            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());
            }
        }
    }
}

```

Sample Visa Checkout Information

```
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 414)

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 31: 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 416)

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 414).

17.5 Processing a Transaction

- 1.1 Overview
- 1.2 HttpsPostRequest 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 HttpsPostRequest 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 418) provides the HttpsPostRequest connection object definition. This object and its variables apply to **every** transaction request.
3. Invoke the HttpsPostRequest object's `send()` method.
4. Instantiate the Receipt object, by invoking the HttpsPostRequest 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;</pre>	Include all necessary classes.
<pre>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>	Define all mandatory values for the transaction object properties.
<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 32: 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 Definition of Request Fields. 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.		

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 503) and Appendix F (page 507).

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 33: 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 33: 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 34: MPI test card numbers (Amex only)

Card Number	Password			Action
	VERes	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 396.
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:

Card Plan	Test Card Number
Mastercard	5454545454545454
Visa	4242424242424242
Amex	373599005095005
JCB	3566007770015365
Diners	36462462742008
Track2	5258968987035454=06061015454001060101?
Discover	6011000992927602
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

Card Plan	Test 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 <https://www.moneris.com/activate>.
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 428)

NOTE: For more information about how to use the Merchant Resource Center, see the Moneris Gateway Merchant Resource Center User's Guide, 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 428).
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	No string changes for this item, only set method is altered: <code>mpgReq.SetTestMode(true);</code>	Set method for production: <code>mpgReq.SetTestMode(false);</code>
2	String: <code>string store_id = "store5";</code> Associated Set Method: <code>mpgReq.SetStoreId(store_id);</code>	String for Production: <code>string store_id = "monXXXXXXXXX";</code>
3	String: <code>string api_token = "yesguy";</code> Associated Set Method: <code>mpgReq.SetApiToken(api_token);</code>	String for Production: <code>string api_token = "XXXXX";</code>

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 113 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 Definition of Request Fields

This section defines transaction request variables. Not all fields are required — refer to individual transaction type topics for information on whether a field is required or optional.

- A.1 Definition of Request Fields – Connection Fields
- A.2 Definition of Request Fields – Core Fields
- A.3 Definition of Request Fields – Credential on File
- A.4 Definition of Request Fields – Vault
- A.5 Definition of Request Fields for Level 2/3 - Visa
- A.6 Definition of Request Fields for Level 2/3 - Mastercard
- A.7 Definition of Request Fields for Level 2/3 - Amex
- A.8 Definition of Request Fields – MPI
- A.9 Definition of Request Fields – MCP
- A.10 Definition of Request Fields – Offlinx™
- A.11 Definition of Request Fields – Convenience Fee
- A.12 Definition of Request Fields – Recurring

A.1 Definition of Request Fields – Connection Fields

Core connection object fields (all API transactions)

Variable Name	Type and Limits	Description
store ID	String N/A	Unique identifier provided by Moneris upon merchant account setup
API token	String N/A	<p>Unique alphanumeric string assigned by Moneris upon merchant account activation</p> <p>To find your API token, refer to your test or production store's Admin settings in the Merchant Resource Center, at the following URLs:</p> <p>Testing: https://esqa.moneris.com/mpg/</p> <p>Production: https://www3.moneris.com/mpg/</p>

Optional connection object field

Variable Name	Type and Limits	Description
status check	<i>Boolean</i> true/false	<p>Checks whether a previously sent transaction was processed successfully</p> <p>To send a status check request, resend the original transaction with all the same request parameter values, except with status check = true</p> <div> NOTE: Only use once per transaction and within two minutes of the original transaction request; if the status check request times out, do not send again, as additional investigation is required </div>

A.2 Definition of Request Fields – Core Fields

Variable Name	Type and Limits	Description
amount	<i>String</i> 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div> EXAMPLE: 1234567.89 </div>	<p>Transaction dollar amount</p> <p>This must contain at least 3 digits, two of which are penny values</p> <p>Minimum allowable value = \$0.01, maximum allowable value = \$9999999.99</p>
authorization code	<i>String</i> 8-character alphanumeric	<p>An authorization code required to carry out a Force Post; provided in the transaction response from the issuing bank</p>
completion amount	<i>String</i> 10-character decimal Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point <div> EXAMPLE: 1234567.89 </div>	<p>Dollar amount of a Pre-Authorization Completion transaction, which may differ from the original amount authorized in the Pre-Authorization</p>

Variable Name	Type and Limits	Description
credit card number	<i>String</i> max 20-character alpha-numeric	Credit card number, usually 16 digits—field can be maximum 20 digits in support of future expansion of card number ranges.
dynamic descriptor	<i>String</i> max 20-character alpha-numeric total of 22 characters including your merchant name and separator	<p>Merchant-defined description sent on a per-transaction basis that will appear on the credit card statement appended to the merchant's business name</p> <p>Dependent on the card issuer, the statement will typically show the dynamic descriptor appended to the merchant's existing business name separated by the "/" character; additional characters will be truncated</p> <div> <p>NOTE: The 22-character maximum limit must take the "/" into account as one of the characters</p> </div>
electronic commerce indicator	<i>String</i> 1-character alphanumeric	<p>Describes the category of e-commerce transaction being processed. Allowable values are:</p> <ul style="list-style-type: none"> 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 (3-D Secure) 6 – Non-authenticated e-commerce transaction (3-D Secure) 7 – SSL-enabled merchant <p>In Credential on File transactions where the request field e-commerce indicator is also being sent: the allowable values for e-commerce indicator are dependent on the value sent for payment indicator, as follows:</p> <p>if payment indicator = R, then allowable values for e-commerce indicator: 2, 5 or 6</p>

Variable Name	Type and Limits	Description
		<p>if payment indicator = C, then allowable values for e-commerce indicator: 1, 5, 6 or 7</p> <p>if payment indicator = U, then allowable values for e-commerce indicator: 1 or 7</p> <p>if payment indicator = Z, then allowable values for e-commerce indicator: 1, 5, 6 or 7</p> <p>For Apple Pay or Google Pay™ transactions where you are doing decryption: send the value of the eciIndicator or 3dsEciIndicator field returned in the payload</p> <p>If the value is not present in the payload, send the value as 5; if you get a 2-character value (e.g., 05 or 07), remove the initial 0 and just send us the 2nd character</p> <p>Allowable values for Apple Pay and Google Pay™ are:</p> <p>5: Authenticated e-commerce transaction</p> <p>7: SSL-enabled merchant</p>
expiry date	<p><i>String</i></p> <p>4-character alphanumeric</p> <p>YYMM</p>	<p>Expiry date of the credit card, in YYMM format.</p> <div> <p>NOTE: This is the reverse of the MMY date format that is presented on the card.</p> </div>
market indicator	<p><i>String</i></p> <p>1-character alphabetic</p>	<p>Optional field used by B2B merchants when paying invoices using straight-through processing in order to qualify for lower interchange fees</p> <p>Allowable value is always: J</p>
order ID	<p><i>String</i></p> <p>50-character alphanumeric</p> <p>a-Z A-Z 0-9 _ - : . @ spaces</p>	<p>Merchant-defined transaction identifier that must be unique for every Purchase, Pre-Authorization 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</p>

Variable Name	Type and Limits	Description
		must be the same as that of the original transaction.
original order ID	<i>String</i>	Order ID from the original Pre-Authorization transaction, used as a reference to retrieve the original payment details
shipping indicator	<i>String</i> 1-character alphanumeric	<p>Used to identify completion transactions that require multiple shipments, also referred to as multiple completions</p> <p>By default, if shipping indicator is not sent, the Pre-Authorization Completion is listed as final</p> <p>To indicate that the Pre-Authorization Completion is to be left open by the issuer as supplemental shipments or completions are pending, submit shipping indicator with a value of P</p> <p>Possible values:</p> <p>P – Partial</p> <p>F – Final</p>
transaction number	<i>String</i> 255-character, alphanumeric, hyphens or underscores variable length	<p>Used to reference the original transaction when performing a follow-on transaction (i.e., Pre-Authorization Completion, Purchase Correction or Refund)</p> <p>This value is returned in the response of the original transaction</p> <p>Pre-Authorization Completion: references a Pre-Authorization</p> <p>Refund/Purchase Correction: references a Purchase or Pre-Authorization Completion</p>
wallet indicator	<i>String</i> 3-character alphanumeric	Indicates when a card number has been collected via a digital wallet, such as in Apple Pay, Google Pay, Visa Checkout and Mastercard MasterPass.

Variable Name	Type and Limits	Description
		<p>Required for Apple Pay and Google Pay transactions whereby you are using your own API to decrypt the payload</p> <p>Possible values:</p> <p>APP – Apple Pay In-App</p> <p>APW – Apple Pay on the Web</p> <p>GPP – Google Pay™ In-App</p> <p>GPW – Google Pay™ Web</p> <p>VCO – Visa Checkout</p> <p>MMP – Mastercard MasterPass</p> <div> <p>NOTE: Please note that if this field is included to indicate Apple Pay or Google Pay™, then Convenience Fee is not supported.</p> </div>

A.3 Definition of Request Fields – Credential on File

Variable Name	Type and Limits	Description
<p>issuer ID</p> <div> <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>	<p><i>String</i></p> <p>15-character alphanumeric variable length</p>	<p>Unique identifier for the cardholder's stored credentials</p> <p>Sent back in the response from the card brand when processing a Credential on File transaction</p> <p>If the cardholder's credentials are being stored for the first time, and the issuer ID was returned in the response, you must save the issuer ID on your system to use in subsequent Credential on File transactions (applies to merchant-initiated transactions only)</p> <p>The issuer ID must be saved to your systems when returned from Moneris Gateway in the response data, regardless if the value was received or not</p>

Variable Name	Type and Limits	Description
		As a best practice, if the issuer ID is not returned and you received a value of NULL instead, store that value and send it in the subsequent transaction
payment indicator	<i>String</i> 1-character alphabetic	<p>Indicates the current or intended use of the credentials</p> <p>Possible values for first transactions:</p> <p>C - unscheduled Credential on File (first transactions only)</p> <p>R - recurring</p> <p>Possible values for subsequent transactions:</p> <p>R - recurring</p> <p>U - unscheduled merchant-initiated transaction</p> <p>Z - unscheduled customer-initiated transaction</p> <p>In Credential on File transactions where the request field e-commerce indicator is also being sent, the acceptable values for e-commerce indicator are dependent on the value sent for payment indicator, as follows:</p> <p>if payment indicator = R, then allowable values for e-commerce indicator: 2, 5 or 6</p> <p>if payment indicator = C, then allowable values for e-commerce indicator: 1, 5, 6 or 7</p> <p>if payment indicator = U, then allowable values for e-commerce indicator: 1 or 7</p> <p>if payment indicator = Z, then allowable values for e-commerce indicator: 1, 5, 6 or 7</p>
payment information	<i>String</i> 1-character numeric	<p>Describes whether the transaction is the first or subsequent in the series</p> <p>Possible values:</p> <p>0 - first transaction in a series (storing payment details provided by the cardholder)</p> <p>2 - subsequent transactions (using previously stored payment details)</p>

A.4 Definition of Request Fields – Vault

Variable Name	Type and Limits	Description
data key	<i>String</i> 25-character alphanumeric	Unique identifier for a Vault profile, and used in future Vault financial transactions to associate a transaction with that profile Data key is generated by Moneris and returned to you in the Receipt object when the profile is first registered
data key format	<i>String</i> 2-character alphanumeric	Specifies the data key format being returned If left blank, data key format will default to 25-character alphanumeric Possible values: 0 – 25 character alphanumeric data key 0U – unique 25-character alphanumeric data key
duration	<i>String</i> 3-character numeric maximum 900 seconds	Amount of time the temporary token should be available
email address	<i>String</i> 30-character alphanumeric	Customer's email address Can be sent in when creating or updating a Vault profile
note	<i>String</i> 30-character alphanumeric	Used for any supplementary information related to the customer Can be sent in when creating or updating a Vault profile
phone number	<i>String</i> 30-character alphanumeric	Customer's phone number Can be sent in when creating or updating a Vault profile

A.5 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);	<p>Must reflect the amount of National Tax (GST or HST) appearing on the invoice.</p> <p>Minimum - 0.01 Maximum - 999999.99. Must have 2 decimal places.</p>
Y	Merchant VAT Registration/Single Business Reference Number	20-character alpha-numeric	TRANSACTIONNAME .SetMerchantVatNo (merchant_vat_no);	<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	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>

Req*	Field Name	Limits	Set Method	Description
				<p>Maximum = 999999.99</p> <p>Must have 2 decimal places</p>
C	Local Tax (PST or QST) Registration Number	15-character alpha-numeric	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 alpha-numeric	TRANSACTIONNAME .SetCustomerVatNo (customer_vat_no);	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 alpha-numeric	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

Req*	Field Name	Limits	Set Method	Description
N	Customer Code	17-character alpha-numeric	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 alpha-numeric	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 alpha-numeric	Buyer/Recipient Name *only required by CRA if transaction is >\$150
C*	Local tax rate	local_tax_rate	4-character decimal	Indicates the detailed tax rate applied in relationship to a local tax amount <div>EXAMPLE: 8% PST should be 8.0.</div> maximum 99.99 *Must be provided if Local Tax (PST or QST) applies.
N	Duty Amount	duty_amount	9-character decimal	Duty on total purchase amount

Req	Variable Name	Field Name	Size/Type	Description
				<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 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>

Req	Variable Name	Field Name	Size/Type	Description
				Full alpha postal code - Valid ANA<space>NAN format required if shipping to an address within Canada
C	Ship From Postal Code / Zip Code	ship_from_pos_code	10-character alpha-numeric	<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> <div> <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	Must be one of the following values:

Req	Variable Name	Field Name	Size/Type	Description
				<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 amount: minus sign means 'amount is a credit', plus sign or no sign means 'amount is a debit', maximum without sign is 999999.99</p>
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</p>

Req	Variable Name	Field Name	Size/Type	Description
				<p>(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 alpha-numeric	Line item Commodity Code (if this field is not sent, then productCode must be sent)
Y	Product Code	product_code	12-character alpha-numeric	Product code for this line item – merchant's product code, manufacturer's product code or buyer's product code

Req	Variable Name	Field Name	Size/Type	Description
				<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>
Y	Item Unit Cost	unit_cost	12-character decimal	<p>Line item cost per unit</p> <p>2-4 decimal places accepted</p> <p>Minimum = 0.0001</p> <p>Maximum = 999999.9999</p>
N	VAT Tax Amount	vat_tax_amt	12-character decimal	Any value-added tax or other sales tax amount

Req	Variable Name	Field Name	Size/Type	Description
				<p>Must have 2 decimal places</p> <p>Minimum = 0.01</p> <p>Maximum = 999999.99</p>
N	VAT Tax Rate	vat_tax_rate	4-character decimal	<p>Sales tax rate</p> <div>EXAMPLE: 8% PST should be 8.0</div> <p>maximum 99.99</p>
Y	Discount Treatment	discount_treatmentL	1-character numeric	<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>
C	Discount Amount	discount_amtL	12-character decimal	<p>Amount of discount, if provided for this line item according to the Line Item Discount 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>

A.6 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
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-	Contains the VAT number for

Req	Variable Name	Field Name	Size/Type	Description
		ber	numeric	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 Name	36-character alpha-numeric	Name of an individual or company contacted for company 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	Various classifications of business ownership characteristics

Req	Variable Name	Field Name	Size/Type	Description
				<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> <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'. Con-</p>

Req	Variable Name	Field Name	Size/Type	Description
				<p>tains a code to identify specific characteristics about the business 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 as 8 (a) B - Self-certified small disadvantaged business (SDB) C - SBA certification as HUBZone 0 - Unknown

Req	Variable Name	Field Name	Size/Type	Description
				<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 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'</p>

Req	Variable Name	Field Name	Size/Type	Description
				<p>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 alpha-numeric	US Federal tax ID number for value added tax (VAT) ID.
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,</p>

Req	Variable Name	Field Name	Size/Type	Description
				you must fill in all tax array fields as listed in the Tax Array Request Fields below.

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 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 alpha-numeric	Line item Product Code (if this field is not sent, then

Req	Variable Name	Field Name	Size/Type	Description
				<p>itemComCode)</p> <p>If the order has a Freight/Shipping line item, the productCode value has to be “Freight/Shipping”</p> <p>If the order has a Discount line item, the productCode value has to be “Discount”</p>
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	<p>Line item cost per unit.</p> <p>Must contain a minimum of 2 decimal places, up to 5 decimal places supported.</p> <p>Minimum amount is 0.00001 and maximum is 999999.99999</p>
Y	ItemUnitMeasure	Item Unit Measure	12-character alphanumeric	The line item unit of measurement code
Y	ExtItemAmount	Extended Item Amount	9-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>

Req	Variable Name	Field Name	Size/Type	Description
				Minimum amount is 0.00 and maximum is 999999.99
N	DiscountAmount	Discount Amount	9-character decimal	<p>Contains the item discount amount</p> <p>Must contain 2 decimal places</p> <p>Minimum amount is 0.00 and maximum is 999999.99</p>
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	<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 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	Contains detail tax amount for purchase of goods or service

Req	Variable Name	Field Name	Size/Type	Description
				<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> <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 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.7 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 alpha-numeric	<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 State-ment/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>
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	<p>Supported values:</p> <p>'R6' - Requester (required)</p> <p>'BG' - Buying Group (optional)</p> <p>'SF' - Ship From (optional)</p> <p>'ST' - Ship To (optional)</p>

Req	Variable Name	Field Name	Size/Type	Description													
				'40' - Receiver (optional)													
Y	n102	Name	40-character alpha-numeric	<table><tr><th>n101 code</th><th>n102 meaning</th></tr><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></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													
N	n403	Postal Code	15-character alpha-numeric	Postal Code													
Y	ref01	Reference Identification Qualifier	2-character alpha-numeric	This element may contain the following qualifiers for the corresponding occurrences of the N1Loop:													

Req	Variable Name	Field Name	Size/Type	Description												
				<table><tr><th>n101 value</th><th>ref01 denotation</th></tr><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></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><tr><th>ref01 code</th><th>ref02 denotation</th></tr><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></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	<p>Quantity of line item.</p> <p>Up to 2 decimal places supported.</p> <p>Minimum amount is 0.0 and max-</p>

Req	Variable Name	Field Name	Size/Type	Description
				imum is 9999999999.
Y	it103	Unit or Basis for Measurement Code	2-character alphanumeric	<p>The line item unit of measurement code</p> <p>Must contain a code that specifies the units in which the value is expressed or the manner in which a measurement is taken</p> <div>EXAMPLE: EA = each, E5=inches</div> <p>See ANSI X-12 EDI Allowable Units of Measure and Codes for the list of codes</p>
Y	it104	Unit Price	15-character decimal	<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	it105	Basis or Unit Price Code	2-character alphanumeric	<p>Code identifying the type of unit price for an item</p> <div>EXAMPLE: DR = dealer, AP = advise price</div> <p>See ASC X12 004010 Element 639 for list of codes</p>
N	it10618	Product/Service ID	2-character alphanumeric	Supported values:

Req	Variable Name	Field Name	Size/Type	Description								
		Qualifier		'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><tr><th>it10618</th><th>it10719 - size/type</th></tr><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></table>	it10618	it10719 - size/type	VC	20-character alphanumeric	PO	22-character alphanumeric	Other	30-character alphanumeric	Product/Service ID corresponds to the preceding qualifier defined in 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											
C	txi01	Tax Type code	2-character alphanumeric	Supported values: 'CA' – City Tax (optional) 'CT' – County/Tax (optional) 'EV' – Environmental Tax (optional) 'GS' – Good and Services Tax (GST) (optional) 'LS' – State and Local Sales Tax (optional) 'LT' – Local Sales Tax (optional) 'PG' – Provincial Sales Tax (PST) (optional) 'SP' – State/Provincial Tax a.k.a. Quebec Sales								

Req	Variable Name	Field Name	Size/Type	Description
				<p>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 data-bbox="1177 863 1411 1199"> <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 code defined in txi01</p>

Req	Variable Name	Field Name	Size/Type	Description
				Up to 2 decimal places supported
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> <p>1 – Yes (Tax Exempt)</p> <p>2 – No (Not Tax Exempt)</p> <p>4 – Not Exempt/For Resale</p> <p>A – Labor Taxable, Material Exempt</p> <p>B – Material Taxable, Labor Exempt</p> <p>C – Not Taxable</p> <p>F – Exempt (Goods / Services Tax)</p> <p>G – Exempt (Provincial Sales Tax)</p> <p>L – Exempt Local Service</p> <p>R – Recurring Exempt</p> <p>U – Usage Exempt</p>
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</p>

Req	Variable Name	Field Name	Size/Type	Description
				is 0.00 and maximum is 99999.99
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 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>

Req	Variable Name	Field Name	Size/Type	Description
				'VA' – Value-Added Tax a.k.a. Canadian Har- monized Sales Tax (HST) (optional)
C	txi02	Monetary Amount	6-character decimal	<p>This element may contain the mon- etary tax amount that corresponds to the Tax Type Code in txi01</p> <div> <p>NOTE: If txi02 is used in man- datory occurrence txi01=TX, txi02 must contain the total tax amount applicable to the entire invoice (transaction) If taxes are not applic- able 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 code defined in txi01</p> <p>Up to 2 decimal places supported</p>
C	txi06	Tax Exempt Code	1-character alphanumeric	<p>Supported values:</p> <p>1 – Yes (Tax Exempt)</p>

Req	Variable Name	Field Name	Size/Type	Description
				<p>2 – No (Not Tax Exempt)</p> <p>4 – Not Exempt/For Resale</p> <p>A – Labor Taxable, Material Exempt</p> <p>B – Material Taxable, Labor Exempt</p> <p>C – Not Taxable</p> <p>F – Exempt (Goods / Services Tax)</p> <p>G – Exempt (Provincial Sales Tax)</p> <p>L – Exempt Local Service</p> <p>R – Recurring Exempt</p> <p>U – Usage Exempt</p>

A.8 Definition of Request Fields – MPI

Variable Name	Type and Limits	Description
accept	<i>String</i> variable-length alphanumeric	MIME types accepted by the browser
Cardholder Authentication Verification Value (CAVV)	<i>String</i> 50-character alphanumeric	<p>Value provided by the Moneris MPI or by a third-party MPI</p> <p>Sent in all 3-D Secure transactions, including Verified By Visa, MasterCard SecureCode, American Express SafeKey</p> <p>For Purchase and Pre-Authorization transactions with 3-D Secure for Apple Pay and Google Pay, the CAVV field contains the decrypted cryptogram</p>
merchant data (MD)	<i>String</i> 1024-character alpha-	Merchant-defined information to be echoed back in the transaction response

Variable Name	Type and Limits	Description
merchant URL	numeric <i>String</i> variable-length alpha-numeric	The URL to send the MPI response to
PARes	<i>String</i> variable-length alpha-numeric	An encoded string value passed back to the API during the MPI TXN and returned to the MPI when an MPI ACS request is made
user agent	<i>String</i> variable-length alpha-numeric	Browser details
XID	<i>String</i> 20-character alphanumeric fixed length	Can also be used as your order ID when using Moneris Gateway

A.9 Definition of Request Fields – MCP

Variable Name	Type and Limits	Description
MCP version number	<i>String</i> numeric current version is 1.0	Release version number for MCP
cardholder amount	<i>String</i> 12-character numeric smallest discrete unit of foreign currency	Amount, in units of foreign currency, the cardholder will be charged on the transaction
cardholder currency code	<i>String</i> 3-character numeric	ISO code representing the foreign currency of the cardholder

Optional MCP fields

Variable Name	Type and Limits	Description
MCP rate token	<i>String</i> N/A	Token representing a temporarily locked-in foreign exchange rate, obtained in the response of the MCP Get Rate transaction and used in subsequent MCP financial transaction requests in order to redeem that rate

MCP Get Rate transaction request fields

Variable Name	Type and Limits	Description
MCP version number	<i>String</i> numeric current version is 1.0	Release version number for MCP
rate transaction type	<i>String</i> 1-character alphabetic	Value representing the type of subsequent transaction request that the rate token will be used for. Allowable values: P – Purchase R – Refund
MCP Rate Info	<i>Object</i> N/A	Nested object in the MCP Get Rate transaction containing the add cardholder amount and add merchant settlement fields

MCP Rate Info object request fields

At least one of the following variables must be sent:

Variable Name	Type and Limits	Description
add cardholder amount	<i>String array</i> 12-character numeric, 3-character numeric (smallest discrete unit of foreign currency, currency code)	A string array representing: <ul style="list-style-type: none"> the amount, in units of foreign currency, the cardholder will be charged, and the ISO currency code corresponding to the foreign cur-

Variable Name	Type and Limits	Description
		rency of the cardholder
add merchant settlement amount	<i>String array</i> 12-character numeric, 3-character numeric (amount in CAD pennies, currency code)	A string array representing: <ul style="list-style-type: none"> the amount the merchant will receive in the transaction, in Canadian dollars the ISO currency code corresponding to the foreign currency of the cardholder

A.10 Definition of Request Fields – Offlinx™

Applies to Offlinx™ integration only

Variable 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

A.11 Definition of Request Fields – Convenience Fee

Variable Name	Type and Limits	Description
Convenience Fee Information	<i>Object</i> N/A	Contains fields related to the Convenience Fee feature
convenience fee amount	<i>String</i> 9-character decimal	Dollar amount charged to the customer as a convenience fee

A.12 Definition of Request Fields – Recurring

Recurring Billing Info Object Request Fields

Variable Name	Type and Limits	Description
number of recurs num_rekurs	String numeric 1-99	The number of times that the transaction must recur
period period	String numeric 1-999	Number of recur unit intervals that must pass between recurring billings
start date start_date	String YYMMDD format	Date of the first future recurring billing transaction; this must be a date in the future If an additional charge will be made immediately, the start now variable must be set to true
start now start_now	String true/false	Set to true if a charge will be made against the card immediately; otherwise set to false When set to false, use Card Verification prior to sending the Purchase with Recurring Billing and Credential on File objects
recurring amount recur_amount	String 10-character decimal, minimum three digits Up to 7 digits (dollars) + decimal point (.) + 2 digits (cents) after the decimal point	Dollar amount of the recurring transaction This amount will be billed on the start date, and then billed repeatedly based on the interval defined by period and recur unit

NOTE: Amount to be billed immediately can differ from the subsequent recurring amounts

Variable Name	Type and Limits	Description
	<div>EXAMPLE: 1234567.89</div>	
recur unit	String	Unit to be used as a basis for the interval
recur_unit	day, week, month or eom	Works in conjunction with the period variable to define the billing frequency

Appendix B Definitions of Response Fields

Table 35: Receipt object response values

Value	Type	Limits	Get Method
	Description		
General response fields			
Card type	String	2-character alphabetic (min. 1)	receipt.GetCardType() ;
	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>EXAMPLE: 1234567.89</div>	receipt.GetTransAmount() ;
	Transaction amount that was processed.		
Transaction number	String	255-character alphanumeric	receipt.GetTxnNumber() ;
	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	receipt.GetReceiptId() ;
	Order ID that was specified in the transaction request.		

Table 35: 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 35: 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 to come <code>receipt.GetTerminalIDs()</code> ;
	Returns the terminal ID/ECR Number from the request.		

Table 35: 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.		
	<div>EXAMPLE: +0000000000 = 0.00 and +0000041625 = 416.25</div>		
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.		
	<div>EXAMPLE: +0000000000 = 0.00 and +0000041625 = 416.25</div>		
Recurring Billing Response Fields (see Appendix A, page 1)			

Table 35: 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 alpha-numeric	<code>receipt.GetStatusCode()</code> ;
	<ul style="list-style-type: none">• < 50: Transaction found and successful• ≥ 50: Transaction not found and not successful		
	<div>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>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 313)			
AVS result code	String	1-character alpha-numeric	<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 35: 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 35: 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 7.6.7 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 58)			
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 60), Vault Encrypted Add Credit Card – EncResAddCC (page 64), Vault Tokenize Credit Card – ResTokenizeCC (page 87), Vault Temporary Token Add – ResTempAdd (page 67) or Vault Add Token – ResAddToken (page 83) transaction. It is the profile identifier that all future financial Vault transactions will use to associate with the saved information.</p>		

Table 35: 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 35: 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 35: 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 35: 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 Section 1, page 1)			
Masked credit card number	String	20-character alpha-numeric	<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 alpha-numeric	<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 35: 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 36: 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 37: 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

B.1 Definition of Response Fields – MCP

MCP response fields

Variable Name	Description	Get Method
MCP rate	<p>The foreign exchange rate (foreign currency to CAD) that will be used for the transaction</p> <p>If a MCP rate token was used, it will reflect the rate secured by the MCP Get Rate transaction; if no token was used, the rate is the current exchange rate retrieved by the Moneris Gateway</p>	<code>receipt.GetMCPRate();</code>
merchant settlement currency	Currency that the merchant is settling in	<code>receipt.GetMerchantSettlementCurrency();</code>
merchant settlement amount	Amount that will be paid to the merchant, in Canadian dollars	<code>receipt.GetMerchantSettlementAmount();</code>
cardholder currency code	ISO code for the foreign currency the cardholder is using to pay	<code>receipt.GetCardholderCurrencyCode();</code>

Variable Name	Description	Get Method
cardholder amount	Amount, in units of foreign currency, the cardholder will pay on the transaction	<code>receipt.GetCardholderAmount();</code>
MCP error status code	A number representing a MCP error code response	<code>receipt.GetMCPErrorStatusCode();</code>
MCP error message	Message corresponding with an MCP error code	<code>receipt.GetMCPErrorMessage();</code>
host ID	Unique identifier used across the Moneris platform	<code>receipt.GetHostId();</code>

Response fields specific to MCP Get Rate

Variable Name	Description	Get Method
rate transaction type	Reflects the transaction type being sent in the request	<code>receipt.GetRateTxnType();</code>
MCP rate token	Time-limited token representing a temporarily locked in foreign exchange rate for use in financial transactions This field is returned in the response to a MCP Get Rate request	<code>receipt.GetMCPRateToken();</code>
rate inquiry start time	The local time (ISO 8601) when the rate is requested	<code>receipt.GetRateInqStartTime();</code>
rate inquiry end time	The local time (ISO 8601) when the rate is returned	<code>receipt.GetRateInqEndTime();</code>
rate validity start time	The time (unix UTC) of when the rate is valid from	<code>receipt.GetRateValidityStartTime();</code>

Variable Name	Description	Get Method
rate validity end time	The time (unix UTC) of when the rate is valid until	<code>receipt.GetRateValidityEndTime();</code>
rate validity period	The time in minutes this rate is valid for	<code>receipt.GetRateValidityPeriod();</code>

Appendix C Response Codes

Approved Response Codes

Response Code	Messages
000	Approved, Account Balances Included (Balance Inquiry), No Reason to Decline Approved (Balances) File Processed/Successful transaction with fault
001	Approved, Account Balances Not Included Approved – No Balances/Approved or completed successfully VIP Approved (No Balances)/Advice Acknowledged – Financial Liability Accepted
002	Approved, country club
003	Approved, maybe more ID
004	Approved, pending ID (sign paper draft)
005	Approved, blind
006	Approved, VIP
007	Approved, administrative transaction
008	Approved, national NEG file hit OK
009	Approved, commercial
010	Approved for partial amount
023	Amex - credit approval
024	Amex 77 - credit approval
027	Transaction already reversed

Response Code	Messages
028	VIP Credit Approved
029	Credit Response Acknowledgement
900	Global Error
901	Invalid URL
902	Malformed XML

Declined Response Codes

Response Code	Messages
050	Do Not Honor Decline Refer to card issuer ID certification fails Deny – Do not Honour Card not initialized Declined: Deny – Unacceptable Fee Unable to locate original transaction Suspected Fraud Deny – Card Acceptor Call Acquirer’s Security Dep Amount Not Reconciled – Totals Provided ATM/POS terminal number cannot be located MAC failed Declined: MAC failed Reserved Security processing failure No arrears (transaction receipt not printed)

Response Code	Messages
	Invalid File Type No such File File Locked Unsuccessful Incorrect File Length File Decompression Error File Name Error File cannot be received Deny – Do Not Honour
051	Expired Card
052	PIN retries exceeded PIN try limit exceeded Allowable number of PIN tries exceeded
053	No sharing
054	No security module
055	Invalid transaction
056	No Support/Transaction Not Permitted to Acquirer Tran Not Supported by FI/Not Supported by Receiver
057	Lost or stolen card
058	Invalid status
059	Deny (Keep Card) – Restricted Card Restricted Card
060	No Chequing account No Savings Account
061	No PBF

Response Code	Messages
062	PBF update error
063	Invalid authorization type
064	Bad Track 2
065	Adjustment not allowed
066	Invalid credit card advance increment
067	Invalid transaction date
068	PTLF error
069	Bad Message Error/No CVM Results Bad message – edit error/Format error
070	No IDF Invalid Issuer Invalid Issuer/Deny – Issuer/Bank Not Found
071	Invalid route authorization Unable to route/Financial institution or intermediate network facility cannot be found for routing Invalid Rout to Auth /Incorrect IIN
072	Card on National NEG file
073	Invalid route service (destination)
074	Unable to authorize Re-enter Transaction Transaction Cannot be Completed Deny – Security Violation Deny – Violation of Law System problem - ask cardholder to insert card in chip card reader Merchant Link not logged on (Network Management Logon required)
075	Invalid PAN length

Response Code	Messages
076	Low funds
077	Pre-auth full
078	Duplicate transaction Duplicate transaction/Request in progress
079	Maximum online refund reached
080	Maximum offline refund reached
081	Maximum credit per refund reached
082	Number of times used exceeded
083	Maximum refund credit reached
084	Duplicate transaction - authorization number has already been corrected by host
085	Inquiry not allowed
086	Over floor limit
087	Maximum number of refund credit by retailer
088	Place call
089	CAF status inactive or closed
090	Referral file full
091	NEG file problem
092	Advance less than minimum
093	Delinquent
094	Over table limit
095	Amount over maximum Amt Over Max/Transaction amount limit exceeded
096	PIN required

Response Code	Messages
097	Mod 10 check failure
098	Force Post
099	Bad PBF

Referral Response Codes

Response Code	Messages
100	<p>Unable to process transaction</p> <p>Invalid Request. Contact Moneris Client POS Certification for repeat declines.</p> <p>Network Unavailable</p> <p>System Malfunction</p>
101	Place call
102	<p>Refer – Call</p> <p>Expired Card</p> <p>Card Acceptor Contact</p> <p>Call Card Accpt Acq Secur</p>
103	NEG file problem
104	CAF problem
105	Card not supported
106	Amount over maximum
107	Over daily limit
108	CAF Problem
109	Advance less than minimum
110	Number of times used exceeded
111	Delinquent

Response Code	Messages
112	Over table limit
113	Timeout
115	PTLF error
121	Administration file problem
122	Unable to validate PIN: security module down

System Error Response Codes

Response Code	Messages
150	Invalid Service Code/Merchant Merchant Not On File Merchant Not on File/Invalid Merchant
200	Invalid account Invalid Card Number Invalid Account/Deny – No Account Type Requested
201	Incorrect PIN Invalid PIN/Incorrect personal identification number PIN Block Error
202	Advance less than minimum
203	Administrative card needed
204	Amount over maximum
205	Invalid Advance Amount Original Amnt Incorrect Bad message/Invalid Amount Original transaction amount error
206	CAF not found

Response Code	Messages
	Invalid “to” account Invalid “from” account Invalid account
207	Invalid transaction date
208	Invalid expiration date
209	Invalid transaction code
210	PIN key sync error
212	Destination not available
251	Error on cash amount
252	Debit not supported

American Express Response Codes (Declines)

Response Code	Messages
426	AMEX - Denial 12
427	AMEX - Invalid merchant
429	AMEX - Account error
430	AMEX - Expired card
431	AMEX - Call Amex
434	AMEX - Call 03 Note: Invalid CVD (CID)
435	AMEX - System down
436	AMEX - Call 05
437	AMEX - Declined
438	AMEX - Declined

Response Code	Messages
439	AMEX - Service error
440	AMEX - Call Amex
441	AMEX - Amount error

Credit Card Response Codes (Declines)

Response Code	Messages
408	CREDIT CARD - Card use limited - Refer to branch
475	CREDIT CARD - Invalid expiration date
476	CREDIT CARD - Invalid transaction, rejected No Credit Account Invalid transaction/Invalid related transactions Unable to process/Suspected malfunction; related transaction error Unable to Authorize: Cut off is in process Issuer not capable to process Switch system malfunction Issuer response not received by CUPS Unable to Authorize/Illegal Status of Acquirer
477	CREDIT CARD - Refer Call/Invalid Card Number Invalid card number (no such account) Deny – Card Not Found Items not on Bankbook beyond limit, declined/Invalid card number
478	CREDIT CARD - Decline, Pick up card, Call
479	CREDIT CARD - Decline, Pick up card
480	CREDIT CARD - Decline, Pick up card
481	CREDIT CARD - Decline

Response Code	Messages
	Transaction not allowed to be processed by cardholder Low funds/Insufficient Balance Invalid Transaction Transaction not allowed to be processed by merchant
482	CREDIT CARD - Expired Card
483	CREDIT CARD – Refer/Refer to Issuer Deny – Card Acceptor Contact Acquirer
484	CREDIT CARD - Expired card - refer
485	CREDIT CARD - Not authorized
486	CREDIT CARD - CVV Cryptographic error
487	CREDIT CARD - Invalid CVV
489	CREDIT CARD - Invalid CVV
490	CREDIT CARD - Invalid CVV
492	System problem - ask cardholder to insert card in chip card reader Withdrawal count exceeded

System Decline Response Codes

Response Code	Messages
800	Bad format
801	Bad data
802	Invalid Clerk ID
809	Bad close
810	System timeout
811	System error
821	Bad response length

Response Code	Messages
877	Invalid PIN block
878	PIN length error
880	Final packet of a multi-packet transaction
881	Intermediate packet of a multi-packet transaction
889	MAC key sync error
898	Bad MAC value
899	Bad sequence number - resend transaction
900	Capture - PIN Tries Exceeded
901	Capture - Expired Card
902	Capture - NEG Capture
903	Capture - CAF Status 3
904	Capture - Advance < Minimum
905	Capture - Num Times Used
906	Capture - Delinquent
907	Capture - Over Limit Table
908	Capture - Amount Over Maximum Capture - Capture Pick up Card Suspected Fraud Hard Capture Deny – Keep Card: Special Conditions Expired Card Fraud Card Acceptor Call Acquirer's

Response Code	Messages
	Do Not Honour
950	Admin card is not enabled on Merchant profile

Velocity Reject Response Code (Non-RBC Response)

Response Code	Message
959	Decline

Admin Response Codes

Response Code	Messages
960	Initialization Failure - No Match on Merchant ID
961	Initialization Failure - No Match on PED ID
962	Initialization Failure - No match on Printer ID
963	No match on Poll code
964	Initialization Failure - No match on Concentrator ID
965	Invalid software version number
966	Duplicate terminal name
970	Terminal/Clerk table full
983	Clerk Totals Unavailable: selected Clerk IDs do not exist or have zero totals
989	MAC Error on Transaction 95 (Initialization and Handshake), most often, this indicates that the wrong keys have been injected into a device/KMAC Sync Error

EMV Reversal Request Codes

Response Code	Messages
990	Chip card declines a host approved transaction

Response Code	Messages
991	Chip card removed before ICC communications are completed

Appendix D 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 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 38: Checklist for web display requirements

Done	Requirement
	Checkout page

Table 38: 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.interaonline.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 38: 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 39: 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/Interacnlgne.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 40: 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 40: Checklist for front-end tests

Case #	Date Completed	Remarks
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		

Merchant Requirements

Table 41: 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 41: 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	
	Provides consumers with a link to www.interaonline.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 the 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 42: 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 43: 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 44: 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)	
	Other payment option logos: <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 44: 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	
	Provides consumers with a link to www.interaonline.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 45: 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 46: 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 46: Cases 1-3 (continued)

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 3, the format of the amount must be ### #03.##.
Expected outcome	<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 Éàêë#\$,-/=?'@' • Issuer confirmation number: #\$,-/=?'@'UPdn9 <p>Test case 3</p> <ul style="list-style-type: none"> • Issuer name: B • Issuer confirmation number: C
Applicable logs	<ul style="list-style-type: none"> • Merchant Test Tool logs • Screen capture of the merchant's confirmation page.

Table 47: Case 4

Objective	To test that the merchant handles a rejection in response to the acquirer
Pre-requisites	None
Configuration	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.)

Table 47: 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 48: 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 48: 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 49: 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) Data is provided by the Merchant Test Tool.
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 50: 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 50: 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 51: 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 52: Test case 2—Funded URL

Redirection URL	Funded
ISSLANG	en

Table 52: Test case 2—Funded URL

TRACK2	5268051119993326=29129999999999999000
ISSCONF	#\$.,-/?@'UPdn9
ISSNAME	987Bank Éàêëï#\$.,-/?@'Àôùûÿç
INVOICE	(Same as supplied by merchant)
MERCHDATA	(Same as supplied by merchant)
VERSION	1

Table 53: 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 54: 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 54: 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 55: 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 56: 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 56: 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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