



*Setcom Server-to-Server
Implementation Guide*

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Summary of Revisions

Version	Date	Changed By	Changes Made
1.0.0	01 Aug 2001	D Liu - Setcom	Original document created.
1.0.1	12 Sep 2008	D Liu - Setcom	Changed logo and format.
1.0.2	12 Jan 2009	D Liu - Setcom	Added revision history and format.
1.0.3	15 May 2009	D Liu - Setcom	Added C# sample code.
1.0.4	08 Jul 2009	D Liu - Setcom	Revised test account details.

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Server-to-Server Solution

A merchant will host the entire process on their site. The merchant will have a web site, interactive shopping basket, etc, and only need to post credit card information directly to the Setcom Secure Payment Gateway. Setcom does not get involved in the front-end application at all. In this case the merchant will have to have security on their web site. We recommend that a SSL certificate be obtained.

This solution is most suited to merchants who have already developed their own shopping basket or need to collect certain extra information required by their own internal systems that are not catered for by Setcom.

Brief Technical Overview

The Server-to-Server Solution will only collect the following information:

Field Name	Required (Y/N)	Description
Co_ID	Yes	Used for identifying whom the merchant is and that the items in the basket is related to this merchant.
Outlet	Yes	Used for identifying the outlet/shopping basket to use.
Reference	No	Merchant reference to the transaction details.
CC_amount	Yes	Amount to process on the Credit Card. Please include the cent value in decimal format e.g. if the product is R 10 the price field would be 10.00. No other formatting is required for instance R1, 000.00 for the price would be in the price field 1000.00.
CCname	Yes	Name on the Credit Card
CCnumber	Yes	Credit Card number
CCtype	Yes	MasterCard, VISA, American Express or Diners
ExMonth	Yes	Credit Card Expiry month
ExYear	Yes	Credit Card Expiry Year
CCCVV	Yes	Card Verification Value
PayPeriod	No	Used for specifying the budget facility period. Valid for transactions over R300 and only South African cards. Valid periods are: 0 (not on budget) 6, 12, 18, 24, 30, 36, 42, 48 months.
EmailAddress	Yes	Email address of the shopper.
Consistent	No – but recommended	Setcom provides a routine to enable the merchant to encrypt the price and reference of the transaction and pass this encrypted value to our servers. If the encrypted price and reference does not match then information has been altered and the transaction is not processed.

IsVerified	No	Used to determine if Verified by Visa or MasterCard Secure Code authentication data is included in this transaction request. This should be set to 1 even if the card is not enrolled as long as a lookup has been performed and CAVV, xid or eci has been obtained. Valid options are: 1 for Yes 0 for No
cavv	No	The CAVV value from authentication
xid	No	The xid value from authentication
eci_flag	No	The ECI indicator value from authentication

Merchant Requirements

The following requirements are needed from a merchant:

- Entire web development is done by merchant
- A Virtual Merchant account with a bank (Setcom will assist)
- SSL certificate

Server-to-Server Implementation Instruction

Implementation and Responsibilities

Setcom's Server-to-Server solution was specially designed for the Corporate Environment. Giving the merchant full control of their entire payment process. The only section of Setcom's original solution that has been used in the Server-to-Server solution is that of the payment gateway. As merchants can afford to have their own basket designed, the need for a full shopping basket solution would not be appropriate. The Server-to-Server solution allows the client browser to stay with the merchant's web site without being aware that the actual transaction is being processed on the Setcom site.

With the above in mind it will be easier to understand how the Server-to-Server solution actually works, and what the different roles the merchant and Setcom exercise.

Firstly, the merchants part in the Server-to-Server solution – "The Website". The merchant's website holds their entire product catalogue, business portfolios etc. All calculations on amounts to bill the client, such as; taxes, shipping, billing and credit card information will be gathered on the merchant's website. The merchant then needs to format all the information for the Setcom server to transact.

We provide our merchants with a DLL called ASPTear; with this DLL installed on the merchant's server they will be able to post the transaction information to us securely.

NT Installation Steps

Here follows the information required for setting up the Windows NT solution for the Server-to-Server solution to send transactions to Setcom for processing. The ASPTear DLL's sole function is to perform an HTTP post to the Setcom servers.

1. Create a directory on the server where this DLL will be used.
2. Save the file called "asptear.dll" in this newly create directory.
3. Run the following command "regsvr32 AspTear.dll" from where the DLL was saved to.
4. To make the DLL work you will need to use ASP codes in your purchase page to send transactions to Setcom's payment server.

Unix Installation Steps

Please call Setcom's Technical Support Department for instructions.

Notes

You have to remember your site will maintain the complete order information; which may include shipping, billing information, etc.

You will need to have an SSL certificate that can be obtained from Verisign at the following URL: <http://www.verisign.co.za>

Overview on Sending Transactions (Authorisation)

Setcom supports transactions sent in SSL (Secure Socket Layer).

Sending Transactions using SSL

The following lines of ASP code create an SSL transaction:

```
Dim Request_POST
Request_POST=1

Set xobj = CreateObject ("SOFTWING.ASPtear")

strRetval = xobj.Retrieve("https://secure.setcom.co.za/server.cfm",
Request_POST, "CO_ID=" & CO_ID & "&Outlet=" & Outlet & "&Reference=" &
Reference & "&CC_Amount=" & CC_Amount & "&CCname=" & CName & "&CCnumber=" &
CCnumber & "&CCCVV=" & CCCVV & "&CCtype=" & Cctype & "&ExMonth=" & ExMonth &
"&ExYear=" & ExYear & "&PayPeriod=" & PayPeriod & "&EmailAddress=" &
EmailAddress & "", "", "")
```

Once this information is collected and posted through to us, then we start to control the transaction. All the information given to us will be used to process the transaction.

Once the transaction is complete we will post the result back to the merchant server, which will state whether the transaction was approved or declined.

This information can be formatted by the merchant to display anyway the merchant would like the data to presented on screen.

Consistent Field

Before the Consistent field can be used, the seller and Setcom need to agree on a consistent key. The key can be any value, but Setcom will usually generate a 128 bit random key for the seller to use. This key should be kept secret at all times and never be included in the message to Setcom or exposed in any way on your website. The key should only be known to the seller and Setcom.

To generate the value of the Consistent field, the seller needs to concatenate the below fields. The concatenated value needs to be hashed, using the MD5 algorithm. The HASHED value is then included in the request message to Setcom. Once we receive the message, we will build our own version of the consistent value using the request variables passed to us and the consistent key in our database. If the two versions of the consistent fields do not match, we will reject the transaction.

1. Reference
2. CC_Amount
3. Outlet

4. Consistent_Key

SSL Transaction Response

Setcom's payment server will return either a declined or an approved response with the following information comma separated format.

Field	Description
Result	Approved or Declined or Error.
Auth Number / Error Code	Transactions approved by the bank will receive an authorisation number or the error code for the decline or error.
Date	Date of transaction.
Time	Time of transaction.
Order ID	Setcom's reference number for this transaction.
Client Reference number	Merchant's reference number that was passed to Setcom.
Amount	Transaction amount.

SSL Transaction Response Example

Example of an approved transactions response:

Approved,123456,01/05/2000,1:58:04 PM, 386,TC-2, 200.00

Example of a declined transactions response:

Declined,32011,01/05/2000,1:59:12 PM, 387,TC-2, 200.00

Example of an error transactions response:

Error,10101,01/05/2000,1:58:04 PM, 386,TC-2, 200.00

Declined Messages

Transaction declined codes are provided in the second field of the response if the transaction is declined. Below is a list of the most common decline codes:

Code	Description
Transaction Declined Code	
32002	Phone the bank for manual authorisation
32003	Card blocked
32005	Card expired
32008	Card too new
32011	Transaction declined
32013	Hold and call the bank
32024	Invalid card number
32027	Invalid expiry date
32047	Card has been reported lost
32048	Card has been reported stolen
32049	Card has been reported lost or stolen
32051	Unable to connect to the bank. Please call Setcom.
32057	Incorrect card number, please re-type
32063	Connection to the bank timed out. Please retry.
30001	Unable to connect to the Gateway. Please call Setcom.
30006	Connection to the bank timed out. Please retry.

Error Messages

Error codes are provided in the second field of the response if the transaction returns an error. Below is a list of the most common error codes:

Error Code	Description
Type:100	
16001	Invalid transaction type
16002	Invalid storename
16003	Card number or CVV blank/incorrect
16004	Transaction amount zero
30001	Unable to connect to Gateway
30006	Connection to the bank timed out
32002	Phone the bank
32003	Card blocked
32004	Invalid card number or CARD_UNREADABLE
32005	Card expired
32008	Card too new
32011	Transaction declined
32013	Phone the bank
32015	Insufficient Funds.
32023	Invalid card number
32024	Invalid card number
32027	Invalid expiry date
32047	Card has been reported lost
32048	Card has been reported stolen
32049	Card has been reported lost or stolen
32051	Unable to connect to the bank
32051.1	Unable to connect to the bank
32051.2	Unable to connect to the bank
32051.5400	Unable to connect to the bank
32057	Incorrect card number
32060	Invalid CVV entered
32062	Restricted card

32063	Connection to the bank timed out
32065	Exceeds withdrawal frequency limit
32068	No PBF positive balance file
70016	DB file not found
Type:200	
10000	Processing error
10101	One or more compulsory fields missing
10102	The merchant / outlet could not be found on the system
10103	Merchant requires consistent checking to be done
10104	Security failure occurred while performing consistent checking
10105	Payment method not accepted by outlet
10106	Merchant inactive
10107	File missing on server
10108	Missing variable
10109	Unknown error occurred
10201	Transaction amount invalid
10202	Expiry month invalid
10203	Expiry year invalid
10204	PayPeriod invalid
10301	Unable to retrieve order information
10302	Base table not found
10303	Column not found
10304	Syntax error or access violation
10305	Error in assignment
10306	Serialization error occurred
10307	General exception error occurred
10308	Communication link failure
10309	Datasource not found or no default driver specified
10310	Numeric value out of range
10311	Authorization failure
10312	Call to the bank failed.
10401	Invalid Gateway call
Type:300	
33003	Invalid Merchant
33006	Unable to process transaction
33009	Duplicate transaction
33012	Invalid transaction
33015	No such issuer
33030	Format error
33031	Bank not supported by switch
33034	Suspected fraud, capture
33035	Card acceptor contact acquirer
33037	Card acceptor call acquirer security. Capture
33057	Transaction not permitted to cardholder
33058	Transaction not permitted to terminal
33082	No atalla box
33083	No account connected
33084	No PBF positive balance file
33085	PBF update error
33086	Invalid auth type
33088	PTLF Pos transaction log file error
33089	Invalid route service
33090	Cutoff is in progress switch ending a day's business and starting the next. Transaction can be sent again in a few minutes

33092	Financial institution or intermediate network facility cannot be found for routing
33094	Duplicate transmission
33096	System malfunction
330N0	Unable to authorize
330N2	Pre auth fail
330N3	Max online refund reached
330N4	Max offline refund reached
330N5	Max credit per refund
330N6	Max refund credit reached
330N7	Customer selected Neg reason
330N8	Over floor limit
330N9	Max number refund credit
330O0	Referral file failed
330O1	Neg file problem
330O2	Advance less than minimum
330O3	Referral file full
330O4	Over limit table
330O5	Pin required
330O6	Mod 10 check
330O7	Force post
330O8	Bad PBF positive balance file
330O9	Neg file problem
330P0	CAF cardholder authorization file file problem
330P1	Over daily limit
330P2	CAF cardholder authorization positive file not found
330P3	Advance less than minimum
330P4	Number times used
330P5	Delinquent
330P6	Over table limit
330P7	Advance less than minimum
330P8	Admin card needed
330P9	Enter less amount
330Q0	Invalid transaction date
330Q2	Invalid transaction code
330Q3	Advance less than minimum
330Q4	Number of times used
330Q5	Delinquent
330Q6	Over table limit
330Q7	Amount over maximum
330Q8	Admin card not found
330Q9	Admin card not allowed
330R0	Approved admin request / in window
330R1	Approved admin request / out of window
330R2	Approved admin request /any time
330R3	Chargeback / customer file updated
330R4	Chargeback / customer file updated / acquirer not
330R5	Chargeback / incorrect prefix number
330R6	Chargeback / incorrect response code
330R7	Admin transaction not supported
330R8	Card on national negative file
330S4	Ptlf is full
330S7	Accepted, incorrect destination
330S8	Admin file problem
330S9	Unable to validate PIN, security box is down
330T1	Invalid credit card advance increment
330T2	Invalid transaction date

330T3	Card not supported
330T4	Amount over maximum
330T5	CAF status 0 or 9
330T6	Bad UAF usage accumulation file
330T7	Cash back > daily limit

Other System Error Messages

If the results returned by Setcom are not an Approved or Declined or Error message then it must be assumed to be a system error. Please do NOT resubmit to avoid duplicated transactions. You need to report it as an exception and contact Setcom to verify if the transaction has been processed.

Testing

In order to test your implementation, you can use the following:

Test Merchant Account:

CO_ID: testaccount
OUTLET: testaccount

Remember to change this to your actual Co_ID and Outlet before going live

Test credit cards:

CC Type	Name	CC Number	Expiry Month	Expiry Year	CVV
Visa	Test Buyer VS1	4111111111111111	11	2020	111
Visa	Test Buyer VS2	4000000000000002	11	2020	111
MasterCard	Test Buyer MC1	5454545454545454	11	2020	111
MasterCard	Test Buyer MC2	5566556655665566	11	2020	111
American Express	Test Buyer AX1	378282246310005	11	2020	111
American Express	Test Buyer AX2	378734493671000	11	2020	111
Diners	Test Buyer DC1	38520000023237	11	2020	111
Diners	Test Buyer DC2	30569309025904	11	2020	111

Checking for the test transactions:

Once you received a successful transaction response, you can see the details in Setcom's Commerce Manager. To log into the Commerce Manager, please visit <http://manager.setcom.co.za> and login using

Login ID: testaccount
Password: testaccount

PLEASE NOTE:

Test transactions will always return an authorization number of 123456 and a bank transaction key of LoopBack.

Appendix 1: C# Sample Code

```
#region Public Properties
public string CO_ID
{
    get;
    set;
}

public string OUTLET
{
    get;
    set;
}

public string Reference
{
    get;
    set;
}

public string CC_Amount
{
    get;
    set;
}

public string CCName
{
    get;
    set;
}

public string CCNumber
{
    get;
    set;
}

public string CCType
{
    get;
    set;
}

public string ExMonth
{
    get;
    set;
}

public string ExYear
{
    get;
    set;
}

public string PayPeriod
{
    get;
    set;
}

public string CCCVV
```

```

{
    get;
    set;
}

public string EmailAddress
{
    get;
    set;
}

#endregion

public static string SampleWebRequest()
{
    try
    {
        #region Test Variable Values

        CO_ID = "testaccount";
        OUTLET = "testaccount";
        Reference = "TEST-001-001";
        CC_Amount = "10.00";
        CCName = "Test";
        CCNumber = "4111111111111111"; // "5454545454545454";
        CCType = "Visa"; // "MasterCard";
        ExMonth = "11"; // "11";
        ExYear = "2011"; // "2011";
        PayPeriod = "0"; // "0";
        CCCVV = "411"; // "545";
        EmailAddress = "kyler@setcom.com";

        #endregion

        #region Request String Builder

        StringBuilder builder = new StringBuilder();
        builder.Append(string.Format("CO_ID={0}", CO_ID));
        builder.Append(string.Format("&Outlet={0}", OUTLET));
        builder.Append(string.Format("&Reference={0}", Reference));
        builder.Append(string.Format("&CC_Amount={0}", CC_Amount));
        builder.Append(string.Format("&CCname={0}", CCName));
        builder.Append(string.Format("&CCnumber={0}", CCNumber));
        builder.Append(string.Format("&CCCVV={0}", CCCVV));
        builder.Append(string.Format("&CCtype={0}", CCType));
        builder.Append(string.Format("&ExMonth={0}", ExMonth));
        builder.Append(string.Format("&ExYear={0}", ExYear));
        builder.Append(string.Format("&PayPeriod={0}", PayPeriod));
        builder.Append(string.Format("&EmailAddress={0}", EmailAddress));

        #endregion

        #region Web Requesting
        byte[] postData = Encoding.UTF8.GetBytes(builder.ToString());

        WebRequest request =
        WebRequest.Create("https://secure.setcom.co.za/server.cfm");

        request.Method = "POST";
        request.ContentType = "application/x-www-form-urlencoded";
        request.ContentLength = postData.Length;

        Stream data = request.GetRequestStream();
        data.Write(postData, 0, postData.Length);
        data.Close();

        WebResponse response = request.GetResponse();

```

```
data = response.GetResponseStream();

StreamReader reader = new StreamReader(data);

#endregion

#region Finalize String

string serverResponse = reader.ReadToEnd();

reader.Close();
string[] TrimStrings = serverResponse.Split(',');
string ReturnString = string.Empty;

for (int i = 0; i < TrimStrings.Length; i++)
    {
        if (i != TrimStrings.Length - 1)
            ReturnString = ReturnString + TrimStrings[i].Trim() + ",";
        else
            ReturnString = ReturnString + TrimStrings[i].Trim();
    }

#endregion

return ReturnString;
}
catch
{
    return "Error";
}
}
```

Additional Information

For detailed information on each product offering please contact Setcom's Support Department.

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