SAGE PAYMENT SOLUTIONS

GATEWAY

# XML Web Services

**Revised 12/08/2006**

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## Overview – XML Web Services

The Gateway is an ecommerce platform that provides a wide variety of ecommerce functionality. At a systems level, the gateway offers bankcard and virtual check processing.

In the area of bankcard processing, the Gateway supports ecommerce and retail certifications supporting AVS, CVV/CVV2, etc. In addition, several advanced options for managing fraud/risk are available for AVS and CVV.

For virtual check processing, the Gateway supports Prearranged Payment and Deposits (PPD), Cash Concentration or Disbursement (CCD), Accounts Receivable Collection (ARC), Telephone Initiated Entries (TEL), Returned/Dishonored Check (RCK), and Internet (WEB) transaction classes as defined by the National Automated Clearing House Association (NACHA).

For presentation, the primary interface for the Gateway is the Virtual Terminal. The Virtual Terminal provides a wide variety of functionality for the merchant including:

- Manual Bankcard Processing
- Manual Virtual Check Processing
- Recurring Transactions
- Batch Management
- Integrated Shopping Cart Configuration
- Reporting
- Advanced Configuration and User Management

Essentially, transactions are processed from a wide variety of sources, including API, XML Web Services, manual transactions from within the Virtual Terminal, recurring transactions scheduled within the Virtual Terminal, and consumer initiated transactions via the Virtual Terminal Shopping Cart.

All of these transactions are provided in the merchant's current batch and may be reviewed, batched, etc. via the Virtual Terminal.

## Integration with XML Web Services

Since its initial release in 1998, the Gateway has offered an HTTPS public specification for interacting with the Gateway. This specification for both authorizations and response messages has gone through several revisions since inception.

In Fall 2002, XML Web Services were released which simplify the integration process for a variety of Gateway functionality. Specifically, XML Web Services address the following key areas:

- Transaction Processing for Bankcard and Virtual Check
- Batch Management for Bankcard and Virtual Check
- Reporting

The XML Web Services are accessed via a Secure Sockets Layer (SSL) interface and require a unique M_id (Gateway Merchant ID) and M_key (Gateway Merchant Key) pair for accessing the services.

## Bankcard Transaction Processing

The Transaction Processing web service wraps the public specification for HTTPS post transactions as well as adding additional functionality not available from other implementation methods.

The formal WSDL service description for the Transaction Processing Service is located at:

https://www.sagepayments.net/web_services/vterm_extensions/transaction_processing.asmx?WSDL

Bankcard Related Methods:

- BANKCARD_SALE – performs a new SALE transaction.
- BANKCARD_AUTHONLY – performs a new AUTHONLY transaction.
- BANKCARD_PRIOR_AUTH_SALE – converts and existing AUTHONLY from the current batch to a PRIOR AUTH SALE transaction
- BANKCARD_FORCE – performs a new FORCE transaction.
- BANKCARD_CREDIT – performs a new CREDIT transaction on a pre-existing settled transaction
- BANKCARD_VOID – removes an existing transaction from the current batch.

The required data elements and fields for each method vary from method to method but are based on the HTTPS Documentation (See HTTPS Bankcard Documentation)

All Transaction Processing Methods will return an XML document. The document will contain 1 record with fields defined as follows:

| | |
|---|---|
| Approval Indicator | • A = Approved<br>• E=Front-End Error/Non Approved<br>• X = Gateway Error/Non Approved |
| Code | Approval or Error Code |
| Message | Approval or Error Message |

| | |
|---|---|
| Front End Indicator | For Internal Use |
| CVV Indicator | • M = CVV Match<br>• N=CVV No Match<br>• P = Not Processed<br>• S = Merchant Indicated no CVV Data<br>• U = Issuer Not Supported |
| AVS Indicator | • X = Exact Match<br>• Y = Match on Address and Zip<br>• A = Address Match<br>• W = 9 Digit Zip Match<br>• Z = Zip Match<br>• N = No Match<br>• E = Error<br>• R = Retry<br>• S = Service Not Supported<br>• " " = Not Available |
| Reference | Unique Reference ID |
| Order Number | Order Number |

## Virtual Check Transaction Processing

The Transaction Processing web service wraps the public specification for HTTPS post transactions as well as adding additional functionality not available from other implementation methods.

The formal WSDL service description for the Transaction Processing Service is located at:

https://www.sagepayments.net/web_services/vterm_extensions/transaction_processing.asmx?WSDL

Virtual Check Related Methods:

- VIRTUAL_CHECK_PPD_SALE – performs a new SALE transaction.
- VIRTUAL_CHECK_PPD_CREDIT – performs a new CREDIT transaction.
- VIRTUAL_CHECK_CCD_SALE – performs a new SALE transaction.
- VIRTUAL_CHECK_CCD_CREDIT – performs a new CREDIT transaction.
- VIRTUAL_CHECK_WEB_SALE – performs a new SALE transaction.
- VIRTUAL_CHECK_VOID - removes an existing transaction from the current batch.

The required data elements and fields for each method vary from method to method but are based on the HTTPS Documentation (See HTTPS Virtual Check Documentation)

All Transaction Processing Methods will return an XML document. The document will contain 1 record with fields defined as follows:

| | |
|---|---|
| Approval Indicator | • A = Approved<br>• E=Front-End Error/Non Approved<br>• X = Gateway Error/Non Approved |
| Code | Approval or Error Code |
| Message | Approval or Error Message |

| | |
|---|---|
| Reference | Unique Reference ID |
| Order Number | Order Number |

## Batch Management

The Batch Management Processing web service wraps the public specification for HTTPS post transactions related to batch inquiries and batch releases for bankcard and virtual check.

The formal WSDL service description for the Transaction Processing Service is located at:

https://www.sagepayments.net/web_services/vterm_extensions/batch_management.asmx?WSDL

Batch Management Related Methods:

- BANKCARD_BATCH_INQUIRY – performs an INQUIRY for the bankcard items present in the current batch
- BANKCARD_BATCH_SETTLEMENT – performs a RELEASE for the bankcard items present in the current batch.
- VIRTUAL_CHECK_BATCH_INQUIRY – performs an INQUIRY for the virtual check items present in the current batch
- VIRTUAL_CHECK_BATCH_SETTLEMENT – performs a RELEASE for the virtual check items present in the current batch.

Each method required the M_id, M_key pair. In addition, the actual Settlement methods require the current count and net be supplied. If the count and net match the current batch, the RELEASE is processed.

All Batch Management Methods will return an XML document. The document will contain 1 record with fields defined as follows:

| | |
|---|---|
| Approval Indicator | • A = Approved<br>• E=Front-End Error/Non Approved<br>• X = Gateway Error/Non Approved |
| Batch Number | Current Batch Number |
| Batch Message | Batch Approval or Error Message |

| | |
|---|---|
| Batch Reference | Unique Batch Reference ID |
| Batch Net | Batch Net |
| Batch Count | Batch Count |

## Reporting

The Reporting web service is different from the others in that it does not wrap any existing interface. The design and purpose of the Reporting service was to provide all reporting available within the Virtual Terminal User Interface.

The formal WSDL service description for the Reporting Service is located at:

https://www.sagepayments.net/web_services/vterm_extensions/reporting.asmx?WSDL

Reporting Related Methods:

VIEW_CURRENT_BATCH_LISTING – provides listing of all transactions present in the current batch

VIEW_SETTLED_BATCH_SUMMARY_90 – provides a summary listing of all settled batches, bankcard and virtual check, for the past 90 days.

VIEW_BANKCARD_SETTLED_BATCH_LISTING – provides listing of all bankcard transactions present within a previously settled batch.

VIEW_VIRTUAL_CHECK_SETTLED_BATCH_LISTING – provides listing of all virtual check transactions present within a previously settled batch.

VIEW_BANKCARD_TRANSACTION_DETAIL – provides transaction detail for a specific bankcard transaction reference id.

VIEW_VIRTUAL_CHECK_TRANSACTION_DETAIL – provides transaction detail for a specific virtual check transaction reference id.

VIEW_VIRTUAL_CHECK_REJECTS - provides listing of all virtual check rejects from the Federal Reserve for a given transaction/reject date.

VIEW_VIRTUAL_CHECK_ORIGINATOR_LISTING – provides listing of all available originator id's, transaction classes, for a particular merchant account.

BASIC_TRANSACTION_SEARCH_100 – provides a basic transaction search, returning up to 100 rows.

All Reporting Methods will return an XML document. The document varies from method to method depending on the nature of the information being requested. Developers should use the test harness available with the service description to examine the XML schema for the various methods.

## Recurring

The design and purpose of the Recurring web service is to provide merchants the ability to manage recurring schedules, customers, payers, and transactions available within the Virtual Terminal User Interface.

The formal WSDL service description for the Recurring Service is located at:

https://www.sagepayments.net/web_services/vterm_extensions/recurring.asmx?WSDL

Recurring Related Definitions:

CUSTOMER – a recurring customer is an individual or business that will be making a recurring payment. A recurring customer can have one or more recurring payers that are used for processing the actual payments.

PAYER – a recurring payer is an individual that will be making a recurring payment on behalf of a recurring customer. A recurring customer is required before creating a recurring payer.

SCHEDULE – a recurring schedule is either a monthly or daily interval used to control when recurring transactions are processed.

TRANSACTION – a recurring transaction is a scheduled payment using a recurring schedule, recurring customer, and recurring payer.

GROUP – a recurring group is used to group recurring transactions when using reporting.

Recurring Related Methods:

UPDATE_RECURRING_CUSTOMER – updates recurring customer information.

CREATE_RECURRING_MONTHLY_SCHEDULE – creates a new recurring monthly schedule.

UPDATE_RECURRING_BANKCARD_PAYER – updates recurring payer information.

PAYER_BANKCARD_SALE – performs a bankcard sale transaction using recurring payer information.

VIEW_RECURRING_CUSTOMER_LISTING – provides a listing of all recurring customers.

VIEW_RECURRING_TRANSACTION_DETAIL – provides recurring transaction detail.

GET_RECURRING_EXIRATION_REPORT – provides a listing of all active bankcard recurring payers with credit card accounts that are about to expire.

CREATE_RECURRING_BANKCARD_PAYER_AND_TRANSACTION – creates a bankcard recurring payer and recurring transaction.

VIEW_RECURRING_BANKCARD_PROCESSED – provides a listing of bankcard recurring transactions processed within a date range.

VIEW_RECURRING_VIRTUALCHECK_PROCESSED – provides a listing of virtual check recurring transactions processed within a date range.

CREATE_RECURRING_VIRTUALCHECK_PAYER_AND_TRANSACTION – creates a virtual check recurring payer and recurring transaction.

VIEW_RECURRING_PAYER_LISTING – provides a listing of all recurring payers.

CREATE_RECURRING_DAILY_SCHEDULE – creates a new recurring daily schedule.

CREATE_RECURRING_CUSTOMER – creates a new recurring customer.

PAYER_BANKCARD_AUTHONLY – performs a bankcard authorization only transaction using recurring payer information.

CREATE_RECURRING_VIRTUALCHECK_PAYER – creates a new virtual check recurring payer, a bank routing and account number is required.

VIEW_BANKCARD_PROCESSED – provides a listing of bankcard transactions within a date range and having a specific order number.

VIEW_RECURRING_SCHEDULE_LISTING – provides a listing of recurring schedules.

SEARCH_RECURRING_DAILY_SCHEDULE – provides a listing of recurring daily schedules with a specific daily interval and non-business day values.

VIEW_RECURRING_VIRTUALCHECK_PROCESSED – provides a listing of virtual check recurring transactions processed within a date range.

CREATE_RECURRING_TRANSACTION – creates a new recurring transaction based off a recurring schedule, customer, and payer.

SET_RECURRING_START_DATE – updates the start date for ALL recurring transactions that are based on a specific payer.

VIEW_RECURRING_TRANSACTION_LISTING – provides a listing of recurring transactions.

VIEW_RECURRING_GROUP_LISTING – provides a listing of recurring groups.

UPDATE_RECURRING_TRANSACTION – updates recurring transaction information.

SEARCH_RECURRING_MONTHLY_SCHEDULE – provides a listing of recurring monthly schedules with a specific monthly interval, day of month, non-business day, and start offset values.

VIEW_RECURRING_CUSTOMER_DETAIL – provides recurring customer information.

CREATE_RECURRING_GROUP – creates a new recurring group.

CREATE_RECURRING_BANKCARD_PAYER – creates a new virtual check recurring payer, a credit card number and expiration date is required.

DELETE_VT_PAYER – deletes a payer record provided the payer has no existing bankcard or eft history.

All Recurring Methods will return an XML document. The document varies from method to method depending on the nature of the information being requested. Developers should use the test harness available with the service description to examine the XML schema for the various methods.

## Purchase Card Level III

The design and purpose of the Purchase Card web service is to provide merchants the ability to manage their inventory and process Visa/MasterCard Purchase Card Level III transactions also available within the VT3 User Interface.

The formal WSDL service description for the Recurring Service is located at:

https://www.sagepayments.net/web_services/vterm_extensions/purchase_card_level_3.asmx?WSDL

Purchase Card Transaction Related Definitions:

T_NATIONAL_TAX – the national tax included in the transaction amount.

C_VAT_NUMBER – the customer Value Added Tax registration number supplied by the Purchase Card holder.

T_DISCOUNT_AMT – the amount of any discount applied by the merchant.

T_DUTY_AMT – the fee amount associated with the import of the goods.

T_VAT_INVOICE – the invoice number associated with the VAT invoice.

T_VAT_TAX_AMT – the amount of any Value Added Taxes.

T_VAT_TAX_RATE – the tax rate used to calculate T_VAT_TAX_AMOUNT.

C_DEST_COUNTRY_CODE – a 3-digit number that identifies the destination country location.

Purchase Card Addenda Related Definitions:

ITEM_DESCRIPTION – an alpha numeric description of the item being supplied.

PRODUCT_CODE – a merchant defined description code of the item being purchased.

UNIT_OF_MEASURE – a alpha numeric code for units of measurements as used in international trade.

DISCOUNT_AMOUNT – the amount of any discount applied by the merchant associated with the item.

Purchase Card Visa Addenda Related Definitions:

COMMODITY_CODE – a international description code of the individual good or service being supplied.

VAT_TAX_AMOUNT – the amount of Vaule Added Taxes associated with the item.

Purchase Card MasterCard Addenda Related Definitions:

TAX_AMOUNT – the amount of Value Added Taxes associated with the item.

TAX_RATE – the tax rate used to calculate TAX_AMOUNT.

ALTERNATIVE_TAX_IDENTIFIER – the tax identification number of the merchant.

TAX_TYPE_APPLIED – the type of VAT taxes that are being used.

DISCOUNT_INDICATOR – a one character field indicating if a discount was applied to the purchase price of the item. Y = Amount discounted, N = Amount is not discounted, " " = Not supported

NET_GROSS_INDICATOR – a one character field indicating if the EXTENDED_ITEM_AMOUNT includes the tax. Y = Tax is included, N = Tax not included, " " = Not supported

DEBIT_CREDIT_INDICATOR – a one character field representing the EXTENDED_ITEM_AMOUNT sign. C = Amount is a credit, D = Amount is a debit, " " – Not supported

Purchase Card Transaction Related Methods:

BANKCARD_SALE – attempts a purchase card bankcard sale, a purchase card indicator is returned that indicates if the card qualifies as a purchase card.

VISA_PCL3_ADDENDA – appends a Visa Line Item addendum to an approved purchase card transaction.

MASTERCARD_PCL3_ADDENDA – appends a MasterCard Line Item addendum to an approved purchase card transaction.

PURGE_PCL3_ADDENDA – removes all Line Item addendums associated with a purchase card transaction.

VIEW_MC_PCL3_ADDENDA – provides a listing of all MasterCard Line Item addendums associated with an approved purchase card transaction.

VIEW_VISA_PCL3_ADDENDA – provides a listing of all Visa Line Item addendums associated with an approved purchase card transaction.

All Purchase Card Methods will return an XML document. The document varies from method to method depending on the nature of the information being requested. Developers should use the test harness available with the service description to examine the XML schema for the various methods.