Transaction Inquiry Service: Quick Guide

Integrated Payments' transaction inquiry service is an application programming interface (API) that clients can use to retrieve their transactional information stored in the Integrated Payments system.

Once you have configured access to the API, you can retrieve your transaction information at any time by querying the API with information Integrated Payments can use to identify the transaction. Integrated Payments returns data to your system in a single XML query string.

This *Quick Guide* explains common uses of the service, how to obtain access to it, how to query it, and what information is returned in responses.

Note: This guide's examples focus on the HTTP messaging API. If needed, Illumia also offers SOAP and REST web services and can provide the WSDL file your developer will need to invoke the service and transmit XML information between the systems. Most of the information required for these web services is similar to the HTTP messaging; however, the inquiry parameters are slightly different.

Illumia has similar APIs for other reporting services. Please contact your Client Manager for details and additional documentation.

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Common Uses of the Service

Although you may use the transaction inquiry service for various reasons, most clients use it for **eMarket Checkout integration** because certain types of Checkout payment notifications from Integrated Payments do not guarantee delivery.

In these cases, clients develop a program to perform transaction inquiries to verify the transaction information in their systems is accurate and reconcile any missing or erroneous information. See below for an example use case of this scenario.

Example Use Case for eMarket Checkout

1. A customer accesses your institution's or third-party application's site.
2. The customer selects an item and proceeds to checkout.
3. The customer is redirected to your eMarket Checkout in the Integrated Payments system.
4. In the eMarket Checkout, the customer enters his payment information and submits the payment.
5. A receipt is displayed to the customer. The customer signs out and returns to your institution's or third-party application's site.
6. **Your application can query the API to determine the status of the payment made in Integrated Payments.** To do so, your application sends an HTTP request for a transaction with the appropriate transaction number, for example `txno=1441`.
7. The transaction inquiry result is delivered in XML string format to your application, as shown in the response example on page 5, and contains the payment information that your program needs to update and reconcile your student system.

Administrative Requirements

eMarket License

To obtain access to the transaction inquiry API, your institution will need an eMarket Gateway. To configure this Gateway, you may use an available **eMarket license** or purchase an additional one. Alternatively, if you have an existing Gateway, you may use its credentials to call the API, as described below, and do not need to use a separate license.

To determine whether you have an available eMarket license or purchase an additional one, contact your Sales Executive or Client Manager.

How to Query the API

Information Required for All Inquiries

In all transaction inquiry requests, you must include the following information. The next section displays this information in HTTP request syntax.

Table 1: Information Required for Transaction Inquiry Requests

REQUIRED INFORMATION	DETAILS
Gateway Name	The name of your inquiry Gateway, as provided to you by an Illumia representative. In most cases, this will be your Site Name. Depending on the request method (GET or POST), this may be sent as the directory name or in the `virtual` parameter. See the next section for details.
Command	The `command=inquiry` name-value pair to call the transaction inquiry service.
Operator Name	Your Gateway's operator name `operator=Operator ID` as provided to you by an Illumia representative.
Operator Password	Your Gateway operator's associated password `password=XXXXXX` as provided to you by an Illumia representative.
Way to Identify Transaction	One or more parameters to identify the transaction, generally the transaction number `txno=###`, or a Reference Value `refvalue=reference value`, or both. **Note:** You may include other available inquiry parameters (p. 8) to help find the transaction.

HTTP Messaging Inquiry Information

You may send HTTP inquiries through HTTPS POST and GET methods. Request syntax varies slightly depending on method, as shown below.

Note: If you are querying the train environment, please remember to change the URL subdomain to "train" as in `https://train.cashnet.com`.

HTTPS GET Format:

```
https://commerce.cashnet.com/Gateway_Name?
  command=INQUIRY&
  operator=Operator ID&
  password=Password&
<!--One or both of the following parameters to identify the transaction.-->
  txno=Transaction number&
  refvalue=Value of a Reference Type
```

HTTP GET Example:

```
https://commerce.cashnet.com/MyGateway?
  command=INQUIRY&
```

```
  operator=GTWOPER&
  password=secret&
  txno=1234
```

HTTPS POST Format:

```
https://commerce.cashnet.com/404Handler/pageredirpost.aspx?
  virtual=Gateway_Name&
  command=INQUIRY&
  operator=Operator ID&
  password=Password&
<!--One or both of the following parameters to identify the transaction.-->
  txno=Transaction number&
  refvalue=Value of a Reference Type
```

HTTP POST Example:

```
https://commerce.cashnet.com/404Handler/pageredirpost.aspx?
  virtual=MyGateway&
  command=INQUIRY&
  operator=GTWOPER&
  password=secret&
  refvalue=CA
```

Pre-Requisite Integrated Payments-Side Configuration

Before you can use the transaction inquiry service, an Illumia representative will configure your access to the HTTP messaging Gateway by performing these steps.

Note: This section is provided as reference only. An Illumia representative will perform these steps on your behalf once you have decided to use the service.

To configure the transaction inquiry service for a client:

1. Create a "services only" Integrated Payments Operator with a valid password. Set the inquiry permissions to the level required. This may be Department-only or Full Inquiry, if needed.
2. Set a virtual directory for the Gateway. Use the Site Name on the Merchant Code for the client's eMarket. This will be the client's **Gateway Name**.
3. Securely communicate these three values to the client for use with transaction inquiries:
   a) Gateway Name
   b) Operator ID
   c) Password

XML Response Example & Syntax

HTTP XML Response Example

The following XML example presents the structure and syntax of transaction inquiry responses from Integrated Payments.

```
<?xml version="1.0" encoding="utf-8" ?>
<cngateway>
<result>0</result>
<respmessage>SUCCESS</respmessage>
<transactions>
  <transaction>
    <txno>17761</txno>
    <custcode>GUEST</custcode>
    <txstatus>C</txstatus>
    <datestamp>11/18/2015 4:19:04 PM</datestamp>
    <source>WEB</source>
    <totalamount>50.00</totalamount>
    <itemcode>FEE</itemcode>
    <pmtcode>CC</pmtcode>
    <multicustflag>N</multicustflag>
    <multiitemflag>N</multiitemflag>
    <multipmtflag>N</multipmtflag>
    <trefs>
      <tref>
        <reftype>REQUESTID</reftype>
        <refvalue>4630</refvalue>
      </tref>
    </trefs>
    <paiditems>
      <paiditem>
        <itemcode>FEE</itemcode>
        <amount>50</amount>
        <refs></refs>
      </paiditem>
    </paiditems>
    <payments>
      <payment>
        <pmtcode>CC</pmtcode>
        <amount>50</amount>
      </payment>
    </payments>
  </transaction>
</transactions>
</cngateway>
```

Inquiry Response Syntax

Transaction inquiry response data is organized into the XML tags listed below. Tags are presented in the order returned in the XML string.

Table 2: XML Syntax for Inquiry Responses

TAGS	DESCRIPTION
<cngateway>	Encloses the entire response.
<result>	Indicates whether or not the inquiry was successful. 0 indicates success and is returned with a SUCCESS response message. Any non-zero result indicates a failure and is returned with a detailed error response message.
<respmessage>	Either SUCCESS associated with the 0 result or the detailed error response message associated with the numerical error code. For detailed information on these errors, refer to the *eMarket Checkout & Gateway Payment Integration Guide*.
<transactions>	Encloses the transactional information shown in the subsequent tags.
<transaction>	Encloses the information for a specific transaction returned. The following tags are included for each transaction.
<txno>	The Integrated Payments transaction number.
<custcode>	The Customer Code, usually the student ID or a constant value.
<txstatus>	The transaction status, whether closed C, open O, canceled X, pending P, voided V, or memo M. For the definitions of these statuses, see Transaction Status Definitions (p. 7).
<datestamp>	The date stamp identifying when the transaction was processed.
<source>	The originating module, whether eMarket WEB or another module (e.g., Gateway GW).
<totalamount>	Total dollar amount of products and services purchased in the transaction.
<itemcode>	Any Item Codes included in the transaction.
<pmtcode>	Any Payment Codes included in the transaction.
<multicustflag>	Whether or not multiple customers were included, Y or N.
<multiitemflag>	Whether or not multiple Item Codes were included, Y or N.
<multipmtflag>	Whether or not multiple payment methods were included, Y or N.
<trefs>	Encloses the transaction references section, presenting any Reference Types included in the transaction.
<tref>	Encloses information about an individual Reference Type.
<reftype>	The Reference Type name.
<refvalue>	The Reference Type value.
<paiditems>	Encloses the paid items section, presenting information about any items purchased by the customer.

TAGS	DESCRIPTION
<paiditem>	Encloses information about an individual item.
<itemcode>	The Integrated Payments Item Code.
<amount>	The amount charged for the item.
<refs>	Any Reference Types associated with the item.
<payments>	Encloses the payment information section, presenting any payment methods used in the transaction.
<payment>	Encloses information about an individual payment method.
<pmtcode>	The Payment Code.
<amount>	The amount charged to the payment type.

Transaction Status Definitions

The available statuses for transactions in Integrated Payments are listed in the following table. As shown in the Inquiry Response Syntax above, the transaction status will be returned in the XML response.

In addition, you may refine your inquiry to find transactions with a particular status. For details, see the Available Inquiry Request Parameters (p. 8).

Table 3: Integrated Payments Transaction Status Definitions

VALUE	STANDS FOR...	MEANING
C	Closed	The transaction was successfully processed.
X	Canceled	The transaction was canceled before processing and will not process.
O	Open	The transaction is either still in progress or did not process due to an error and will not process.
P	Pending	The transaction has not yet been processed and can be updated to Canceled or Closed. **Note:** Pending only applies to International Funds Transfer (IFT) transactions.
V	Voided	The transaction was voided and should be considered invalid.
M	Memo	No funds were received, but the intent to pay was provided. **Note:** Memo is only used when the option of Purchased Order (PO) is allowed as payment tender. The status never updates from Memo, and the school is responsible for processing the PO payment outside of Integrated Payments.

Available Inquiry Request Parameters

The following table lists all of the parameters that may be sent in an inquiry request, and indicates whether those parameters are required, conditional, or optional.

Note: The first five parameters are for standard use and will work for most transaction inquiry needs.

You may use Wildcard Characters listed on page 9 with these parameters to refine your search.

Table 4: Available Inquiry Request Parameters

PARAMETER	REQUIRED, CONDITIONAL, OR OPTIONAL?	DESCRIPTION	NAME-VALUE PAIR EXAMPLE
`virtual`	Conditional. Only required for POST requests. Not used for GET.	Indicates the name of the Gateway in POST requests.	`virtual=Gateway`
`merchant`	Optional.	Integrated Payments Merchant ID configured for the Gateway. Not required to retrieve information.	`merchant=gtway`
`command` or `resource`	Required.	Indicates the type of call. inquiry indicates a transaction inquiry call.	`command=inquiry`
`operator`	Required.	Integrated Payments operator ID configured for the Gateway, provided to you by Illumia.	`operator=Gateway`
`password`	Required.	Password for the operator ID, provided to you by Illumia.	`password=XXXXXXXX`
`txno`	Conditional. Only required if a `refvalue` parameter is not specified.	Integrated Payments transaction number for a single transaction or range of transactions.	`txno=4112`
`reftype`	Optional.	Integrated Payments Reference Type.	`reftype=SESSIONID`
`refvalue`	Conditional. Only required if a `txno` is not specified.	Integrated Payments Reference Type value.	`refvalue=990000`
`paymentref`	Optional.	Payment-level Reference Type.	`paymentref=110`
`custcode`	Optional.	Integrated Payments customer ID.	`custcode=987654321`
`actualdatefrom`	Optional.	Starting actual date of a transaction range in MM/DD/YYYY format.	`actualdatefrom=1/1/2015`
`actualdateto`	Optional.	Ending actual date of a transaction range in MM/DD/YYYY format.	`actualdateto=12/31/2015`
`busdatefrom`	Optional.	Starting business date of a transaction range in MM/DD/YYYY format.	`busdatefrom=1/1/2015`

PARAMETER	REQUIRED, CONDITIONAL, OR OPTIONAL?	DESCRIPTION	NAME-VALUE PAIR EXAMPLE
busdateto	Optional.	Ending business date of a transaction range in MM/DD/YYYY format.	busdateto=12/31/2015
effdatefrom	Optional.	Starting effective date of a transaction range in MM/DD/YYYY format.	effdatefrom=1/1/2015
effdateto	Optional.	Ending effective date of a transaction range in MM/DD/YYYY format.	effdateto=12/31/2015
status	Optional.	Status of the transaction. Options include closed C, canceled X, open O, pending P, voided V, and memo M. For the definitions of these statuses, see Transaction Status Definitions (p. 7).	status=C
source	Optional.	Module in which the transaction the module was made. This will most likely be WEB for web payments (eMarket) or GW for Gateway.	source=WEB
itemcode	Optional.	Integrated Payments Item Code contained in the transaction(s).	itemcode=APPLFEE

Wildcard Characters

To help refine a query, parameters in transaction inquiries allow the following wildcard characters to be used. These wildcard characters are also known as query-by-example symbols.

Table 5: Integrated Payments Available Wildcard Search Characters

WILDCARD CHARACTER	DESCRIPTION
*	One or more characters
?	A single character
|	Or
=	Equal to (=alone searches for blanks)
>	Greater than
<	Less than
>=	Greater than or equal to
<=	Less than or equal to
<>	Not equal to (may also be expressed by !=)
:	Range of values