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ENCORE SYSTEMS LLC

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Web Development and eCommerce Integration

PayPal SOAP API Class

Library User Guide

WEB DEVELOPMENT AND ECOMMERCE INTEGRATION

# PayPal Class Library User Guide

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The Encore Systems PayPal Class Libraries are wrappers for PayPal's APIs that are designed to simplify PayPal integration with ASP.NET websites and .NET applications. The Encore Class Libraries have a short learning curve and are well documented so that developers can spend their time designing their application and know that the PayPal integration will just work.

Two versions of the Class Library are available: one for the SOAP API and another for the name-value-pair (NVP) API.

This guide is for the SOAP API class library.

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## Overview

*PayPal's SOAP API is the original API for Website Payments Pro.*

**S**OAP web services communicate with applications using XML messages. In .NET development, web services are represented by a collection of classes so that the developer is relieved of working directly with XML. This abstraction makes working with a web service such as PayPal's SOAP API much like working with other objects in the .NET framework. If you prefer object-oriented programming, this is the API to use with .NET.

One of the difficulties of working directly with the SOAP API in .NET is that many classes are nested quite deeply. Each API call requires the developer to create and configure so many objects that it can be very overwhelming. The Encore Class Library simplifies this by encapsulating each API call into a single object. To make an API call, the developer instantiates the associated object, sets the required properties, and calls the `Post()` method.

## Features

- The class library is designed to run under medium trust. This allows use in hosted environments such as GoDaddy, HostMySite, 1and1, RackSpace, etc.
- All often-used properties have built-in defaults that make sense in most situations. These default property values can be overridden globally in the application's configuration file. Every default can be overridden on a per-call basis by setting the property directly on the API call object.
- All authentication credential properties such as Username, Password, Signature, etc. can be globally defaulted in the application's configuration file. For increased security, pass your own credentials function to the credentials delegate and the class library will call your function as necessary.
- Complete Visual Studio Intellisense on all class library members. Each member shows requirements, limitations, possible values, etc. Numeric values are stored as decimal and integer types, instead of string type. Arrays are represented by generic `List<type>` to simplify manipulation.

- All class members are serializable for ability to be stored in session state, profiles, etc. Enumerations, such as country codes, currency codes, state codes, etc., commonly used in the user interface have a `BindingSource` property to allow binding to an `ObjectDataSource`. The `GetTransactionDetails` API response object has a `BindingSource` property which allows it to be bound directly to a `FormView` or `DetailsView` control.
- Includes a complete diagnostic tool with documented source code showing every possible API call. Try any possible combination of property settings on API calls to see what PayPal's response is. Cut and paste the examples to get a quick start on your application.
- Supports Recurring Payments, Reference Transactions, 3rd-party payments, and all PayPal API calls as of Version 53.0. Choose between Live, Sandbox, or Beta Sandbox environments.

## FAQ

Q. Will the class library still work if PayPal updates their API?

A. Yes. The class library was developed for a specific version of the API. As long as that version is used, the class library will continue to work as designed. Newer versions of the API do not break the older versions.

Q. What is the `GetCredentials` function in the example website?

A. This is an example of using the credentials delegate. The `GetCredentials` function returns a `SoapCredentials` class. Any function returning this class may be used as a delegate for setting the API credentials in each API call.

Q. Should I use the supplied `GetCredentials` function?

A. No. The `GetCredentials` function is designed for the online demo site. It stores the API credentials in `Session` so that multiple developers can use the site to test the class library. This would not be a good solution for a production site. Either store the credentials in the `web.config` or create your own delegate function that gets the credentials from a database, for example.

Q. Can I just set the API credentials in the code that sets the rest of the `Request` properties?

A. Yes. But, that would require setting them on every API call. Using the configuration file or a delegate is more efficient.

Q. Why am I getting Error 10501 Invalid Merchant Configuration?

A. This means that Website Payments Pro is not enabled for your account. You need to accept the billing agreement, or contact PayPal customer service to have your account configured correctly.

## Quick Start

Visual Studio templates are provided for getting started quickly on various PayPal integration projects. The class library installation package is a Visual Studio Content Installer file. Just select the appropriate Project template and you will have with a completely configured, running application to give you a quick start. Or, select the appropriate Item template to add the class library to your existing project. The following templates are included:

### Templates

- Example Site (C#) An ASP.NET web application demonstrating every possible API call. Use this C# application to explore the Encore Class Library and the PayPal SOAP API. Every API call can be built interactively from a form providing every possible parameter for that call. The code behind files completely document how each API object is built, configured, and called.
- Example Site (VB) Same as above for Visual Basic.
- Web Site (C#) A single page ASP.NET web site with the class library installed and configured. Use this C# application to start building a PayPal integrated site from scratch, or to see the minimum settings necessary to start one.
- Web Site (VB) Same as above for Visual Basic.
- Web Site Item (C#) Use this C# item template to integrate PayPal into an existing web application.
- Web Site Item (VB) Same as above for Visual Basic.
- Winform Application (C#) A Windows Forms application with the class library installed and configured. Use this C# application to start building a PayPal integrated desktop application from scratch, or to see the minimum settings necessary to start one.
- Winform Application (VB) Same as above for Visual Basic.

- Winform Application Item (C#) Use this C# item template to integrate PayPal into an existing desktop application.
- Winform Application Item (VB) Same as above for Visual Basic.

## Videos

Check out these short videos for a quick start on various tasks.

[Class Library Installation](#)

[Obtain and Install License Keys](#)

## Encore Class Library Reference

The latest documentation for the SOAP API can be found on the PayPal site here: [https://www.paypal.com/en\\_US/pdf/PP\\_APIReference.pdf](https://www.paypal.com/en_US/pdf/PP_APIReference.pdf). The following class library API classes correspond directly to the API calls listed in the PayPal documentation. All classes are prefixed with “Soap” to differentiate them from the Name Value Pair (NVP) class library. This allows both class libraries to be used in the same application without fully qualifying each class.

### API Classes

- SoapAddressVerify returns the status of a PayPal account address, including street and zip code match results. (undocumented, untested, requires special permission)
- SoapBillOutstandingAmount bills any balance due on a recurring payments profile.
- SoapCreateBillingAgreement returns a billing agreement ID that may be used to make reference transactions against a PayPal account. (undocumented, needs special permission)
- SoapCreateRecurringPaymentsProfile creates a recurring payments profile allowing automatic periodic billing.
- SoapDoAuthorization is your request to authorize a customer order that can be fulfilled within 29 days.
- SoapDoCapture is your request to completely or partially settle an order, an authorization, or reauthorization.
- SoapDoDirectPayment charges or authorizes a credit card.
- SoapDoNonReferencedCredit makes a non-referenced credit to a customer’s credit card.
- SoapDoReferenceTransaction makes a payment based on the information provided in a previous Direct Payment, avoiding the need to provide any buyer information.
- SoapSetExpressCheckout indicates to PayPal that you are using Express Checkout to obtain payment from your customer.
- SoapGetExpressCheckoutDetails returns information about the customer, including name and address on file with PayPal.

- SoapDoExpressCheckoutPayment obtains payment through Express Checkout for a final sale or requests authorization for later capture of payment.
- SoapDoReauthorization reauthorizes a previously authorized a transaction and that has passed its settlement period.
- SoapDoVoid voids an order or an authorization.
- SoapGetBalance returns the PayPal account balance of the account whose API credentials are used for the call. (undocumented)
- SoapGetBillingAgreementCustomerDetailsRequest returns information about the customer, including name and address on file with PayPal.
- SoapGetRecurringPaymentsProfileDetails returns the details of a recurring payments profile.
- SoapGetTransactionDetails gets details about a transaction.
- SoapManagePendingTransactionStatus accepts or denies a pending transaction. (undocumented, untested, needs special permission)
- SoapManageRecurringPaymentsProfileStatus allows a recurring payment profile to be cancelled, suspended, or reactivated.
- SoapMassPay processes payments en masse to up to 250 different recipients.
- SoapRefundTransaction refunds a payment.
- SoapSetCustomerBillingAgreementRequest indicates to PayPal that you are using Express Checkout to create billing agreements for your customer.
- SoapTransactionSearch searches transaction history.
- SoapUpdateRecurringPaymentsProfile allows modification of the terms of a recurring payments profile.

## API Object Container Classes

Container classes such as Request, Response, Credentials, Address, Payment, CreditCard, etc. need not be instantiated when creating an API call, but they may be used to create objects that can be used separately from the API calls, stored in session state or profiles, etc. These classes are also prefixed with “Soap” to differentiate them from the NVP classes.

## Special Classes, Constants, and Binding Sources

- `SoapConfig` is a static class that returns all properties defined in the `encore.PayPal.Soop` configuration section of the application's configuration file. Default values are returned for any property not set in the configuration file.
- `SoapCountryCodeType` encapsulates a list of countries, including name and two-character code. Includes a `BindingSource` property to allow binding directly to `DropDownList` objects, and a `Get()` member to allow binding to an `ObjectDataSource`.
- `SoapCredentialsDelegate` The developer can define a function that takes no parameters and has return type `SoapCredentials`, and then pass that function to any API call instead of setting credentials individually. This can increase security by passing the API credentials from an encrypted store of the developer's choice. The delegate function may also be declared in the application's configuration file to make this a global setting.
- `SoapCreditCardTypeType` encapsulates a list of credit card types accepted by PayPal. Includes a `BindingSource` property to allow binding directly to `DropDownList` objects, and a `Get()` member to allow binding to an `ObjectDataSource`.
- `SoapCurrencyCodeType` encapsulates a list of currencies accepted by PayPal, including name and three-character code. Includes a `BindingSource` property to allow binding directly to `DropDownList` objects, and a `Get()` member to allow binding to an `ObjectDataSource`.
- `SoapGetTransactionDetailsResponse.BindingSource` returns a single transaction details record in the form of a generic list that allows binding directly as the data source for a `FormView` or `DetailsView` object.
- `SoapLocaleCodeType` encapsulates a list of countries for which PayPal Express Checkout pages include culture settings. Includes name and two-character code, a `BindingSource` property to allow binding directly to `DropDownList` objects, and a `Get()` member to allow binding to an `ObjectDataSource`.
- `SoapMonthCodeType` encapsulates a list of calendar month constants, including integer value, short name, and long name. Includes a `BindingSource` property to allow binding directly to `DropDownList` objects, and a `Get()` member to allow binding to an `ObjectDataSource`.
- `SoapStateCodeType` encapsulates a list of states and provinces, including name and two-character code. Includes a `BindingSource` property to allow binding directly to `DropDownList` objects, and a `Get()` member to allow binding to an `ObjectDataSource`.
- `SoapYearCodeType` encapsulates a list of calendar year constants from the current year through current year plus eleven. Includes a `BindingSource` property to allow binding directly to `DropDownList` objects, and a `Get()` member to allow binding to an `ObjectDataSource`.
- The `TraceExtension` class captures the XML SOAP envelopes that comprise the raw API request and response data. This allows the developer to see exactly what data is sent to and received from the API – invaluable for troubleshooting.

## PayPal API Analysis Application

Included with the Encore Class Library is a web application that serves many important purposes. This application demonstrates every PayPal API call. The code-behind files for each API call are well documented and show all required and optional parameters. Modular user controls for collecting and presenting PayPal API call parameters are readily available for possible adaption in your own application.

In addition, the example application serves as an analysis tool for the PayPal API. Every parameter can be set interactively when making API calls. This allows the developer to test every possible combination of parameter settings to see what PayPal's response will be.

Enter your live API credentials and the example application becomes an interactive PayPal terminal. Use it to research transactions, capture authorized payments, make refunds, modify recurring payments profiles, check your balance, enter payments for phone orders, etc.

Available only with the SOAP class library: Raw SOAP Envelope display. After making any API call, click a link to open a popup window displaying either the request envelope or the response envelope. See exactly what you're sending to and receiving from the API. This is the most concise way to demonstrate the information that should be included in an API call.