# Oracle® iPayment

Implementation Guide

Release 11*i*

**Part No. A95478-04**

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Oracle iPayment Implementation Guide, Release 11*i*

Part No. A95478-04



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**Oracle iPayment Implementation Guide, Release 11*i***

**Part No. A95478-04**

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# Preface

Welcome to Release 11.5.10 of the Oracle iPayment Implementation Guide. This guide is your primary source of information to implement Oracle iPayment.

This preface contains these topics:

- Audience for this Guide
- How To Use This Guide
- Other Information Sources
- Installation and System Administration
- Other Implementation Documentation
- Training and Support
- Do Not Use Database Tools to Modify Oracle Applications Data
- About Oracle
- Your Feedback

## Audience for this Guide

This guide assumes you have a working knowledge of the following:

- The principles and customary practices of your business area.
- Oracle iPayment

  If you have never used Oracle iPayment, Oracle suggests you attend one or more of the Oracle iPayment training classes available through Oracle University.
- The Oracle Applications graphical user interface.

  To learn more about the Oracle Applications graphical user interface, read the *Oracle Applications User's Guide*.

See Other Information Sources for more information about Oracle Applications product information.

# How To Use This Guide

This document contains the information you need to implement Oracle iPayment.

This manual contains these chapters and appendixes:

### Chapter 1, "Overview"

Chapter 1 describes the important issues that should be considered prior to implementing Oracle iPayment.

### Chapter 2, "Configuring the iPayment Payment Engine"

Chapter 2 describes detailed information on the tasks you should perform to implement Oracle iPayment.

### Chapter 3, "Implementing APIs"

Chapter 3 explains the public APIs used in Oracle iPayment.

### Appendix A, "Risk Management"

Oracle iPayment supports risk management. Electronic commerce applications can incorporate this feature to detect fraudulent payments. Appendix A explains how electronic commerce applications can utilize the risk management functionality of Oracle iPayment.

### Appendix B, "Error Handling"

Oracle iPayment returns a response object to each API that an electronic commerce application calls. Appendix B provides detailed information on the errors that can occur in Oracle iPayment.

### Appendix C, "iPayment PL/SQL APIs"

Appendix C describes the public PL/SQL API used by Oracle iPayment. Electronic commerce applications (EC-Apps) may use these interfaces for processing credit card and bank account transfer payment related operations.

### Appendix D, "Back-End APIs for Gateways"

Appendix D describes the back-end processing APIs used in Oracle iPayment.

**Appendix E, "Extensibility"**

Oracle iPayment can be integrated with a back end payment system by implementing oracle.apps.iby.extend.TxnCustomizer interface. Appendix E explains how to implement this interface.

**Appendix F, "Configuring CyberCash Servlet"**

Appendix F describes how to configure the CyberCash servlet.

**Appendix G, "Configuring Paymentech Servlet"**

Appendix G describes how to configure the Paymentech servlet.

**Appendix H, "Configuring FDC North Servlet"**

Appendix H describes how to configure the FDC North servlet.

**Appendix I, "Implementing Concord EFSnet Servlet"**

Appendix I describes how to implement the Concord EFSnet servlet.

**Appendix J, "Configuring Citibank Credit Card Servlet"**

Appendix J describes how to configure the Citibank credit card servlet.

**Appendix K, "Profile Options"**

Appendix K describes profile options for Oracle iPayment.

## Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For additional information, visit the Oracle Accessibility Program Web site at http://www.oracle.com/accessibility/

### Accessibility of Code Examples in Documentation

JAWS, a Windows screen reader, may not always correctly read the code examples in this document. The conventions for writing code require that closing braces

should appear on an otherwise empty line; however, JAWS may not always read a line of text that consists solely of a bracket or brace.

### Accessibility of Links to External Web Sites in Documentation

This documentation may contain links to Web sites of other companies or organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these Web sites.

# Other Information Sources

You can choose from many sources of information, including online documentation, training, and support services, to increase your knowledge and understanding of Oracle iPayment.

If this guide refers you to other Oracle Applications documentation, use only the Release 11*i* versions of those guides.

## Online Documentation

All Oracle Applications documentation is available online (HTML or PDF).

- **PDF Documentation-** See the Online Documentation CD for current PDF documentation for your product with each release. This Documentation CD is also available on Oracle*MetaLink* and is updated frequently.
- **Online Help -** You can refer to Oracle Applications Help for current HTML online help for your product. Oracle provides patchable online help, which you can apply to your system for updated implementation and end user documentation. No system downtime is required to apply online help.
- **Release Content Document -** See the Release Content Document for descriptions of new features available by release. The Release Content Document is available on Oracle*MetaLink*.
- **About document -** Refer to the About document for information about your release, including feature updates, installation information, and new documentation or documentation patches that you can download. The About document is available on Oracle*MetaLink*.

## Related Documentation

Oracle iPayment shares business and setup information with other Oracle Applications products. Therefore, you may want to refer to other guides when you set up and use Oracle iPayment.

You can read the guides online by choosing Library from the expandable menu on your HTML help window, by reading from the Oracle Applications Document Library CD included in your media pack, or by using a Web browser with a URL that your system administrator provides.

If you require printed guides, you can purchase them from the Oracle Store at http://oraclestore.oracle.com.

## Guides Related to All Products

### Oracle Applications User's Guide

This guide explains how to enter data, query, run reports, and navigate using the graphical user interface (GUI). This guide also includes information on setting user profiles, as well as running and reviewing reports and concurrent processes.

You can access this user's guide online by choosing "Getting Started with Oracle Applications" from any Oracle Applications help file.

## Guides Related to This Product

### Oracle Payables User Guide

This manual describes how accounts payable transactions are created and entered into Oracle Payables. This manual also contains detailed setup information for Oracle Payables and discusses suppliers, banks, invoices, and also explains how to create payments and run reports.

### Oracle Receivables User Guide

This manual describes how accounts receivables transactions are created and entered into Oracle Receivables. This manual also contains detailed setup information for Oracle Payables and discusses customers, banks, invoices, and reporting.

### Oracle iPayment Concepts and Procedures Guide

This manual describes an overview of iPayment and its components, and provides process-oriented, task-based procedures for using the user interface to set up the application and perform essential business tasks. This manual also provides details on the integration of iPayment and Oracle Payables and viewing the key performance metrics such as transaction summaries, payee summaries, and other critical performance indicators.

### Oracle iReceivables Implementation Guide

This manual describes the setup tasks that you need to perform for iReceivables and information you need to configure iReceivables to suit your business requirements.

### Oracle Collections User Guide

This manual explains the key features and process flows in Collections.

### Oracle iStore Implementation and Administration Guide

This manual explains the information needed to implement, administer, and maintain Oracle iStore.

# Installation and System Administration

### Oracle Applications Concepts

This guide provides an introduction to the concepts, features, technology stack, architecture, and terminology for Oracle Applications Release 11*i*. It provides a useful first book to read before an installation of Oracle Applications. This guide also introduces the concepts behind Applications-wide features such as Business Intelligence (BIS), languages and character sets, and Self-Service Web Applications.

### Installing Oracle Applications

This guide provides instructions for managing the installation of Oracle Applications products. In Release 11*i*, much of the installation process is handled using Oracle Rapid Install, which minimizes the time to install Oracle Applications and the Oracle technology stack by automating many of the required steps. This guide contains instructions for using Oracle Rapid Install and lists the tasks you need to perform to finish your installation. You should use this guide in conjunction with individual product user guides and implementation guides.

### Upgrading Oracle Applications

Refer to this guide if you are upgrading your Oracle Applications Release 10.7 or Release 11.0 products to Release 11*i*. This guide describes the upgrade process and lists database and product-specific upgrade tasks. You must be either at Release 10.7 (NCA, SmartClient, or character mode) or Release 11.0, to upgrade to Release 11*i*. You cannot upgrade to Release 11*i* directly from releases prior to 10.7.

### Maintaining Oracle Applications

Use this guide to help you run the various AD utilities, such as AutoUpgrade, AutoPatch, AD Administration, AD Controller, AD Relink, License Manager, and others. It contains how-to steps, screenshots, and other information that you need to run the AD utilities. This guide also provides information on maintaining the Oracle applications file system and database.

### Oracle Applications System Administrator's Guide

This guide provides planning and reference information for the Oracle Applications System Administrator. It contains information on how to define security, customize menus and online help, and manage concurrent processing.

### Oracle Alert User's Guide

This guide explains how to define periodic and event alerts to monitor the status of your Oracle Applications data.

### Oracle Applications Developer's Guide

This guide contains the coding standards followed by the Oracle Applications development staff and describes the Oracle Application Object Library components that are needed to implement the Oracle Applications user interface described in the *Oracle Applications User Interface Standards for Forms-Based Products*. This manual also provides information to help you build your custom Oracle Forms Developer forms so that the forms integrate with Oracle Applications.

### Oracle Applications User Interface Standards for Forms-Based Products

This guide contains the user interface (UI) standards followed by the Oracle Applications development staff. It describes the UI for the Oracle Applications products and how to apply this UI to the design of an application built by using Oracle Forms.Oracle Applications System Administrator's Guide

This guide provides planning and reference information for the Oracle Applications System Administrator. It contains information on how to define security, customize menus and online help, and manage concurrent processing.

## Other Implementation Documentation

### Oracle Applications Product Update Notes

Use this guide as a reference for upgrading an installation of Oracle Applications. It provides a history of the changes to individual Oracle Applications products between Release 11.0 and Release 11*i*. It includes new features, enhancements, and changes made to database objects, profile options, and seed data for this interval.

### Oracle Workflow Administrator's Guide

This guide explains how to complete the setup steps necessary for any Oracle Applications product that includes workflow-enabled processes, as well as how to monitor the progress of runtime workflow processes.

### Oracle Workflow Developer's Guide

This guide explains how to define new workflow business processes and customize existing Oracle Applications-embedded workflow processes. It also describes how to define and customize business events and event subscriptions.

### Oracle Workflow User's Guide

This guide describes how Oracle Applications users can view and respond to workflow notifications and monitor the progress of their workflow processes.

### Oracle Workflow API Reference

This guide describes the APIs provided for developers and administrators to access Oracle Workflow.

### Oracle Applications Flexfields Guide

This guide provides flexfields planning, setup and reference information for the Oracle iPayment implementation team, as well as for users responsible for the ongoing maintenance of Oracle Applications product data. This guide also provides information on creating custom reports on flexfields data.

### Oracle eTechnical Reference Manuals

Each eTechnical Reference Manual (eTRM) contains database diagrams and a detailed description of database tables, forms, reports, and programs for a specific Oracle Applications product. This information helps you convert data from your existing applications, integrate Oracle Applications data with non-Oracle

applications, and write custom reports for Oracle Applications products. Oracle eTRM is available on Oracle*Metalink*

### Oracle Applications Message Manual

This manual describes all Oracle Applications messages. This manual is available in HTML format on the documentation CD-ROM for Release 11*i*.

### Oracle Self–Service Web Applications Implementation Manual

This manual contains detailed information about the overview and architecture and setup of Oracle Self–Service Web Applications. It also contains an overview of and procedures for using the Web Applications Dictionary.

### Oracle Order Management APIs and Open Interfaces Manual

This manual contains up-to-date information about integrating with other Oracle Manufacturing applications and with your other systems. This documentation includes APIs and open interfaces found in Oracle Order Management Suite.

### Other Information Sources

For more information, see the latest versions of the following manuals.

- *iPayment JavaDoc* (Available on Metalink)
- Apache Server Documentation (http://www.apache.com)
- Apache's mod-ssl documentation (http://www.mod-ssl.org/docs)
- Java Developer's Guide (http://www.sun.com)

# Training and Support

## Training

Oracle offers a complete set of training courses to help you and your staff master Oracle iPayment and reach full productivity quickly. These courses are organized into functional learning paths, so you take only those courses appropriate to your job or area of responsibility.

You have a choice of educational environments. You can attend courses offered by Oracle University at any one of our many education centers, you can arrange for our trainers to teach at your facility, or you can use Oracle Learning Network (OLN), Oracle University's online education utility. In addition, Oracle training professionals can tailor standard courses or develop custom courses to meet your needs. For example, you may want to use your organization structure, terminology, and data as examples in a customized training session delivered at your own facility.

## Support

From on-site support to central support, our team of experienced professionals provides the help and information you need to keep Oracle iPayment working for you. This team includes your technical representative, account manager, and Oracle's large staff of consultants and support specialists with expertise in your business area, managing an Oracle server, and your hardware and software environment.

## Do Not Use Database Tools to Modify Oracle Applications Data

***Oracle STRONGLY RECOMMENDS that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle Applications data unless otherwise instructed.***

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL*Plus to modify Oracle Applications data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle Applications tables are interrelated, any change you make using Oracle Applications can update many tables at once. But when you modify Oracle Applications data using anything other than Oracle Applications, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle Applications.

When you use Oracle Applications to modify your data, Oracle Applications automatically checks that your changes are valid. Oracle Applications also keeps track of who changes information. If you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL*Plus and other database tools do not keep a record of changes.

## About Oracle

Oracle develops and markets an integrated line of software products for database management, applications development, decision support, and office automation, as well as Oracle Applications, an integrated suite of more than 160 software modules for financial management, supply chain management, manufacturing, project systems, human resources and customer relationship management.

Oracle products are available for mainframes, minicomputers, personal computers, network computers and personal digital assistants, allowing organizations to integrate different computers, different operating systems, different networks, and even different database management systems, into a single, unified computing and information resource.

Oracle is the world's leading supplier of software for information management, and the world's second largest software company. Oracle offers its database, tools, and applications products, along with related consulting, education, and support services, in over 145 countries around the world.

# Your Feedback

Thank you for using Oracle iPayment and this user guide.

Oracle values your comments and feedback. In this guide is a reader's comment form that you can use to explain what you like or dislike about Oracle iPayment or this user guide. Mail your comments to the following address or call us directly at (650) 506-7000.

Oracle Applications Documentation Manager
Oracle Corporation
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.

Or, send electronic mail to appsdoc_us@oracle.com.

# 1

# Overview

This chapter presents the important issues you should consider prior to implementing Oracle iPayment. Topics include:

- Planning Your Implementation
- Which APIs Should Electronic Commerce Applications Handle?
- Which Bank Account Transfer Operations Should You Implement?
- Which Credit Card and Purchase Card Operations to Implement?
- Which Risk Factors Should You Implement?
- Is Your Merchant Terminal Based or Host Based?
- Does Your Application Need to Present Information in Different Languages?
- Installing Oracle iPayment

# Planning Your Implementation

Before you begin implementing Oracle iPayment, you must make several key business and application decisions.

The following sections help you find answers to these questions. Your answers determine which APIs you should use, which parameters you must pass, and which code samples are relevant to your applications to help you implement Oracle iPayment.

## Which APIs Should Electronic Commerce Applications Handle?

Oracle iPayment provides payment instrument registration APIs for registering payment instruments such as credit cards, bank accounts, and purchase cards. It also provides payment processing APIs that can perform credit card and purchase card operations, such as, authorization, capture, and bank account transfer operations. Risk management APIs are provided to perform risk analysis. Based on your requirements, you have to decide which operations your electronic commerce (EC) applications need to implement.

### Payment Instrument Registration APIs

These APIs are mandatory if you decide to use the offline payment processing feature of Oracle iPayment Payment APIs in your EC application. EC applications can implement registration of payment instruments using Payment Instrument Registration APIs, and instrument identifiers, that are generated, during payment requests with Oracle iPayment.

### Payment Processing APIs

You have to decide whether to

- Implement online or offline payment processing or both
- Accept credit card payments, purchase cards, or bank account transfers or a combination
- Implement the risk functionality to detect fraudulent transactions

### Risk Management APIs

Oracle iPayment provides two Risk management APIs. If you want to perform risk evaluation independently and not as part of the Authorization API, then these independent APIs can be called from your EC application.

The following information describes some of the decisions you have to make in case you are accepting bank account transfer payments or in case you are accepting credit card or purchase card payments.

## Which Bank Account Transfer Operations Should You Implement?

Oracle iPayment only supports offline bank account payment requests. Besides payment requests for bank account transfers, Oracle iPayment also supports modification, cancellation, and inquiry operations. There is no need for any special settlement operations.

## Which Credit Card and Purchase Card Operations to Implement?

Oracle iPayment provides APIs for authorization, settlement, and querying transaction status. You do not have to use all these APIs. You can choose to have your EC application handle only authorization, thus reducing development costs but requiring the payee to do more work for settlement and reconciliation.

The following table compares the authorization only with authorization and settlements.

| Authorization Only | Authorization and Settlement |
|---|---|
| The integration effort is relatively minimal because you have to use no more than two APIs. | The integration effort is significant because you have to use several APIs. |
| The payee has to settle transactions through the native payment system administration tool. (For example, by going to the payment system's web page). | The payee can settle transactions directly through the EC application. |

**Note:** For setting up credit card payments in iStore, see the latest *Oracle iStore and iMarketing Implementation Guides*.

## Which Risk Factors Should You Implement?

Oracle iPayment provides risk management functionality for credit card and purchase card transactions for EC applications for both business-to-business and business-to-consumer models. Oracle iPayment includes a number of built-in risk factors and provides the option to the payees to run or not run the risk evaluation functionality for each payment operation. Payees can also run the risk evaluation for operations which handle amounts exceeding a specified amount.

A risk factor includes any information which a payee wants to use to evaluate the risk of the customer wanting to buy goods or services from the payee. Examples of risk factors are: address verification, time of purchase, payment amount, etc. These risk factors can be configured for each payee (merchant or biller).

Risk management functionality enables payees and EC service providers to manage the risk involved in processing transactions online. It allows businesses to have any number of predefined risk factors to verify the identity of their customers, assess their customer credit rating, and risk rating in a secure environment. For more information, see *Oracle iPayment Concepts and Procedures Guide.*

## Which Payment System Should You Use?

Oracle iPayment requires partnering with a third party payment system for communicating to bank processors and acquirer's banks. Some of the factors which may help you decide are:

- Do you want to use an existing integration or build your own?
- Do you want to integrate with a vendor offering a product or a service?
- Do you want to integrate with a gateway or a processor model payment system?
- Does the payment system support the payment methods that you are implementing, (for example, Concord only supports credit card transactions)?

The following table lists the back-end payment systems and which operations the payment system supports.

| Back End Payment System | Credit Card | Purchase Card | Inbound | Outbound |
|---|---|---|---|---|
| CyberCash* | Yes | No | Yes** | No |
| Paymentech | Yes | Yes | No | No |
| First Data (North) | Yes | Yes | No | No |
| Concord EFS | Yes | No | No | No |
| Citibank Credit Card | Yes | No | No | No |

* CyberCash no longer accepts new customers

** US ACH only

## Is Your Merchant Terminal Based or Host Based?

The choice of being a terminal-based or a host-based merchant is generally determined by the business type, number of transactions per day, and the model supported by the acquiring bank. As a developer of an EC application, you only need to know the type of payee for which you're developing the application, so that you can choose the appropriate APIs.

If your payee is terminal-based, then you may integrate the Close Batch API into the EC application, thus enabling the payee to do close batches through the EC application instead of the payment system's native interface. If your payee is host-based, then you may want to ignore the Close Batch API because the processor automatically closes batches at predetermined intervals.

If the payee is host-based, then payment capture takes care of getting the payment, and reconciliation is not necessary. Therefore, the Close Batch API and the Query Batch Status API are not required for host-based payees.

## Does Your Application Need to Present Information in Different Languages?

If your application needs to present information in different languages or character sets, then you need to know about national language Support (NLS)

### Would Your Application Need National Language Support (NLS)?

Your application may need to use NLS if either of the following is true:

- The EC application and the payment system use different languages or character sets. For example, the EC application may use a Japanese EUC character set while the payment system uses a Japanese Shift-JIS character set.
- Clients of the EC application use different languages. For example, a web site that is expecting customers from all over the world might want to present its EC application in different languages for different customers.

To enable character conversion in all these environments, the EC application and the payment system must convey the language and character set information to Oracle iPayment.

### How Do Applications Convey Language Information to Oracle iPayment?

To communicate information about the language and character set to Oracle iPayment, an EC application and payment system servlet must pass a special parameter (`NlsLang`). This parameter is a part of every API included in this guide.

`NlsLang` is an optional parameter. If your EC application does not need to handle non-Latin1 character set parameters and does not need to communicate to clients or payment systems in different languages, you do not need to use this parameter.

### How does Oracle iPayment Use NlsLang?

If the EC application does not pass the `NlsLang` parameter, Oracle iPayment passes information from the EC application to the payment service servlet without performing any conversion of character sets.

If the EC application does pass a value for `NlsLang` to Oracle iPayment, then Oracle iPayment tries to convert parameters based on the value of `NlsLang` before sending those parameters to the payment system servlet.

To do so, Oracle iPayment first checks its database for the list of preferred and optional languages for that payment system. The information in the database

reflects what the Oracle iPayment administrator entered using the Oracle iPayment administration user interface.

Second, Oracle iPayment does one of the following, depending on what it finds in the database:

- If the database lists a language that matches the value of `NlsLang`, Oracle iPayment keeps the value of `NlsLang` and passes it to the payment system servlet.
- If the database does not list a language matching the value of `NlsLang`, Oracle iPayment uses the language specified as the preferred language for that payment system, thus changing the value of `NlsLang` before sending it to the payment system servlet.

Finally, Oracle iPayment converts the values of other parameters so that they are sent to the payment system servlet in the language specified by `NlsLang`.

This conversion process works only in one direction. From the EC application to the payment system servlet. If the payment system sets up `NlsLang` when it sends the data back, Oracle iPayment uses that information only to store the value of `OapfVendErrmsg` in its database. Oracle iPayment does not convert data sent from the payment system servlet back to the EC application.

### Format of the NLS_LANG Parameter

The value of this parameter follows the same format as Oracle Server's `NLS_LANG` environment variable:

```
language_territory.charset
```

For example, `JAPANESE_JAPAN.JA16EUC` is a valid value for `NlsLang`.

### Format of the Response Body Data From Payment System Servlets

Oracle iPayment does not convert the response received from the payment system servlet in the response body. It only treats the data as binary and sends it directly to the EC application.

However, if any binary information is sent (such as wallet data), then Oracle iPayment converts the character set of the binary data to that specified by the value of `NlsLang`.

# Installing Oracle iPayment

To install Oracle iPayment, see the latest *Installing Oracle Applications 11i.*

# 2

# Configuring the iPayment Payment Engine

This chapter presents detailed information on the tasks you should perform to implement Oracle iPayment. Topics include:

- Overview of Oracle iPayment Implementation Steps
- Creating an Oracle iPayment User
- Overview of iPayment Servlets
- Implementing Field Installable Servlets
- Configuring Oracle iPayment Servlets
- Configuring the ECApp Servlet
- Configuring iPayment Sample Servlet
- Configuring iPayment Loopback Servlet
- Enabling the Scheduler
- Registering Electronic Commerce Applications
- Loading Risky Instruments
- Enabling the XML Framework
- Setting up Oracle iPayment User Interface

# Overview of Oracle iPayment Implementation Steps

This table gives you an overview about the steps that are required for implementing Oracle iPayment in different scenarios.

| Implementation Steps | Standalone new install or 3i standalone implementation upgrading to 11i standalone | Oracle iPayment with other preintegrated Oracle Applications[1] | 3i implementation upgrading to 11i[2] |
|---|---|---|---|
| Creating an Oracle iPayment User | Mandatory | Mandatory | Mandatory |
| Configuring the ECApp Servlet | Mandatory if you are using PL/SQL APIs | Mandatory | Mandatory |
| Configuring iPayment Sample Servlet | Mandatory only if you want to test iPayment installation for a payment gateway. | Mandatory only if you want to test iPayment installation for a payment gateway. | Mandatory only if you want to test iPayment installation for a payment gateway. |
| Configuring iPayment Loopback Servlet | Mandatory only if you want to test iPayment installation for a processor model payment system. | Mandatory only if you want to test iPayment installation for a processor model payment system. | Mandatory only if you want to test iPayment installation for a processor model payment system. |
| Configuring CyberCash Servlet | Mandatory only if you are using Cybercash as a payment system | Mandatory only if you are using Cybercash as a payment system | Mandatory only if you are using Cybercash as a payment system |
| Configuring Paymentech Servlet | Mandatory only if you are using Paymentech as a payment system | Mandatory only if you are using Paymentech as a payment system | Mandatory only if you are using Paymentech as a payment system |
| Configuring FDC North Servlet | Mandatory only if you are using FDC (North) as a payment system | Mandatory only if you are using FDC (North) as a payment system | Mandatory only if you are using FDC (North) as a payment system |
| Implementing Concord EFSnet Servlet | Mandatory only if you are using Concord as a payment system | Mandatory only if you are using Concord as a payment system | Mandatory only if you are using Concord as a payment system |

| Implementation Steps | Standalone new install or 3i standalone implementation upgrading to 11i standalone | Oracle iPayment with other preintegrated Oracle Applications[1] | 3i implementation upgrading to 11i[2] |
|---|---|---|---|
| Configuring Citibank Credit Card Servlet | Mandatory only if you are using Citibank as a payment system | Mandatory only if you are using Citibank as a payment system | Mandatory only if you are using Citibank as a payment system |
| Enabling the Scheduler | Mandatory | Not Necessary | Not Necessary |
| Loading Risky Instruments | Optional | Not Utilized.The integrated applications do not utilize this functionality | Not Applicable |
| Enabling the XML Framework | Mandatory | Mandatory | Mandatory |
| Implementing Electronic Commerce Applications APIs | Mandatory | Not Necessary-has already been implemented | Not Applicable |
| Implementing Back-end Payment System APIs | Mandatory if you are not using an existing integration. | Mandatory if you are not using existing integration. | Implement as a servlet and not as a cartridge |

[1] Preintegrated Oracle Applications include iStore, Order Capture, Telesales, Order Management, Oracle Receivables, Oracle Payables and Collections.

[2] 3i Implementation upgrading to 11i but retaining existing functionality (same as a non-Oracle client).

# Creating an Oracle iPayment User

You can access the Oracle iPayment user interfaces by creating separate users based on the business needs. For example, by using this procedure to create an iPayment administrative user, the Oracle iPayment administrator is separated from the sysadmin user and is allowed better security. You can then log in as this created user. A user can have multiple responsibilities and roles.

> **Note:** The iPayment Administrator User Interface uses Oracle Application's standard OA HTML framework. The new user interface replaces the JTF UI for iPayment administration. To access the daily business close reports, you continue to login using the JTF UI.

## Prerequisites

- Oracle 11i installed.
- Oracle iPayment with responsibility, menu, security roles, and permissions should be installed.

## Steps

1. Access the Oracle iPayment user interface through the Oracle Admin Console at the following URL:

   http://<machine>:<port>/OA_HTML/jtflogin.jsp or

   http://<machine>:<port>/OA_HTML/jtfdefaultlogin.jsp

   Replace the machine and the port with the name of the machine and the port where the Apache server is installed.

2. Login as —

   Username: SYSADMIN

   Password: SYSADMIN

3. Navigate to the Users tabs on the Admin Console, and click on the User Maintenance link in the side navigation bar.
4. Navigate to Security > User. Click Define.
5. Enter the username and password for the application user.

6. Assign the iPayment Payment Administrator responsibility to the application user in the Responsibility tabbed region.
7. Save your work.
8. Use the application user to login and access the new iPayment Administrator UI through the standard Self Service Applications Login page.
9. Log off as sysadmin and login through the Self Service Applications Login page using the new username.

   You can also use this application user to access the daily business close reports that is in the JTF UI. In order to do this, you need to perform the following additional setup steps.

> **Note:** You can link a user to more than one responsibility. For information, on the valid responsibilities in iPayment, see Assigning Roles and Responsibilities to an iPayment User.

### To Access the JTF User Interface

1. In the Define User form, add the "iPayment Daily Business Close User" responsibility for the user you created above.
2. Save your changes.
3. Navigate to Profile > System Profile option in the form.
4. Click User. Type the newly created user name in the field.
5. Search for JTF_PROFILE_DEFAULT% profile option using wildcards.
6. Edit the profile fields for the user id that was created.

   JTF_PROFILE_DEFAULT_APPLICATION: appID (for Oracle iPayment it is 673).

   There are additional, less important profiles which can also be set up (i.e., ICX_ LANGUAGE). If these profiles are not set up, the site's default profiles are used. For a complete list of profile options, see 'System Profile Options' in the latest *CRM Foundation Components Implementation Guide*. For more information, see 'Setting User Responsibilities for an existing AOL User' in the latest *CRM Foundation Components Concepts and Procedures Guide*.
7. Click Save.
8. Exit from Self Service Applications.

9. Login to the Admin Console as SYSADMIN from the following URL:

   http://<machine>:<port>/OA_HTML/jtflogin.jsp

10. Navigate to the Users tabs on the Admin Console.

11. Click on the User Maintenance link in the side navigation bar.

12. Query the user that you created using the Self Service Applications.

13. Click on the user name link to open the User-Details page. Click Roles.

14. Select the roles associated with the responsibility. Move it to the Assigned Roles column.

    For more information on the valid roles for each responsibility in iPayment, see Assigning Roles and Responsibilities to an iPayment User.

15. Click Update.

    For more information, see 'Assigning Roles to the User' in the latest *CRM Foundation Components Implementation Guide*.

16. You have just finished the additional steps required for accessing the JTF UI. Now you may access the daily business close reports UI through the JTF login page with the user.

17. Log off as sysadmin and login through the JTF Login page using the newly created user name to access the iPayment Transaction reporting UI.

    When a user with multiple responsibilities logs in for the first time, the system prompts the user to select a default responsibility.

## Assigning Roles and Responsibilities to an iPayment User

You can assign roles and responsibilities to a new user or to an existing user. To create a user, see Creating an Oracle iPayment User. You can assign multiple responsibilities to a user. For users with "iPayment Daily Business Close User" responsibility, you should link the appropriate role as defined in the table below.

> **Note:** Administrative users can only access the new UIs if they have the iPayment Payment Administrator responsibility assigned to them. For existing administrative users, you need to manually assign this responsibility.

This table lists the seeded iPayment responsibilities and their description.

| Responsibility | Description |
|---|---|
| System Administrator for iPayment | Users with this responsibility has access to "Visibility Configuration" UIs to create and update iPayment Visibility Classes. |
| iPayment Payment Administrator | This is the new responsibility required to access the new UI using the Self Service framework. |
| iPayment for Payroll Clerk | Users with this responsibility can only see the operations screen for outbound bank payments |
| iPayment for Receivables Clerk | Users with this responsibility can only see the operations screen for inbound bank remittances. |
| iPayment Daily Business Close User | Users with this responsibility have access to the iPayment Transaction Reporting UI. |

This table lists the responsibility and the corresponding roles

| Responsibility | Role | Permissions |
|---|---|---|
| iPayment Daily Business Close User | IBY_DBC_ROLE | IBY_DBC_VIEW_PERMISSION |

# Overview of iPayment Servlets

Oracle iPayment provides a complete payment solution. Payment System APIs allow integration with third party payment systems for credit card, purchase card, and bank account transfer processing. The payment systems communicate with the payment processors and the acquires/banks to process payment transactions.

Oracle iPayment packaged integrations with EBusiness suite products only function after you install and configure the ECApp servlet. The ECApp servlet provides an interface to the iPayment engine to process payment related operations such as authorization, capture, and return. The ECApp servlet is primarily used for the PL/SQL APIs provided by iPayment. Click on the following link for steps on configuring the ECApp servlet.

- Configuring the ECApp Servlet

There are three options for integrating with third party payment systems, also known as back end payment systems.

- Use the payment system integration provided by Oracle iPayment. For inbound payments using credit or purchase cards Oracle iPayment provides integration with CyberCash, Paymentech, Concord EFS, Citibank, and First Data (North). Use the following links to guide you to implement the appropriate payment system in your organization.

  ### Sample Servlet

  - Configuring iPayment Sample Servlet
  - Configuring iPayment Loopback Servlet

  ### Credit Card /Purchase Card Servlets

  - Appendix F, "Configuring CyberCash Servlet"
  - Appendix G, "Configuring Paymentech Servlet"
  - Appendix H, "Configuring FDC North Servlet"
  - Appendix I, "Implementing Concord EFSnet Servlet"
  - Appendix J, "Configuring Citibank Credit Card Servlet"

- Use the payment integration provided by the vendor. Many payment system vendors have partnered with Oracle to build integration with Oracle iPayment.

These field installable servlets are available from Oracle's payment system partners.

- Build integration by using the published Payment System APIs for credit cards and purchase cards. See Implementing Back-end Payment System APIs for instructions on how to build your own field installable servlets.

# Implementing Field Installable Servlets

Oracle iPayment supports field-installable servlets. These are payment system servlets not bundled with Oracle iPayment. This feature allows a payee to acquire a new, additional, or upgraded payment system servlet and configure it in the same way as the payment system servlets bundled with Oracle iPayment.

The ability to add field-installable servlets provides payment flexibility and allows new releases of Oracle iPayment and the payment systems to be independent of each other. It also enables electronic commerce applications to customize the payment system for their specific needs and regions.

Field-installable payment system servlets for Oracle iPayment are usually available from Oracle's payment system partners.

# Configuring Oracle iPayment Servlets

Oracle iPayment has several Java Servlets which are not configured as a part of Oracle Applications Rapid Installation process. Follow the instructions given below to configure them.

These instructions assume that you know how to configure Java Servlets with Apache Web Server. In particular, we assume you know where to find Apache and JServ configuration files on the node where the Apache Web Server is installed. For more information, see Apache documentation available at http://www.apache.org.

> **Note:** This guide includes instructions for several platforms. We assume you are familiar with the particular platform you are configuring. For example, environment variables in UNIX look like $ABC/lib. In Windows NT, the environment variables look like %ABC%\lib.

## Logon to Web Server Node

Log on to your Web Server node as the applmgr user and run the environment file to set up the Oracle Applications environment. Your environment should have the following variable defined:

$IBY_TOP refers to the top-level directory of Oracle iPayment installation. In Windows NT or 2000, Oracle iPayment top level directory is located in %APPL_TOP%\iby.

> **Note:** Apache and Jserv may not interpret environment variables in their configuration files. Expand any environment variables of the type $ABC to the values they actually contain on your installation. For example, if $IBY_TOP is defined at /u03/apps/iby/11.5, you need to replace $IBY_TOP with /u03/apps/iby/11.5 in the instructions below.

## Verify That a Common Servlet Zone is Configured in Your Environment.

A servlet zone should already exist in your Apache Web Server installation. Check the jserv.properties file for a line beginning with "zones=". If you see such a line, a servlet zone has been set up. By default this zone is called "root". The root zone is associated with the zone.properties file. It you are using a different zone and not the

root zone, you may have to make the changes listed below in a different <SERVLET_ZONE>.properties file. Similarly, your servlets will be invoked as:

http://<hostname>:<port>/<SERVLET_ZONE>/<servlet_name>

Click the links below to configure the respective servlets:

- Configuring the ECApp Servlet
- Appendix F, "Configuring CyberCash Servlet"
- Appendix G, "Configuring Paymentech Servlet"
- Appendix H, "Configuring FDC North Servlet"
- Appendix I, "Implementing Concord EFSnet Servlet"

### Setting iPayment JVM parameters

iPayment back end servlets may be installed on a different host from iPayment engine. When installed on a different machine, the servlet has no access to the profile values set up in the data base. In such case, you can set the values using the JVM parameters per iPayment instance.

```
-DAFLOG_ENABLED=TRUE
-DAFLOG_LEVEL=<vlue  such as ERROR>
-DAFLOG_MODULE=iby%
-DAFLOG_FILENAME=<file name with path such as /tmp/aferror1.log>
-DIBY_XML_BASE=<value of XML base>
```

You can set these parameters by passing them as command line arguments to the Java executable.

See iPayment Profile Options for more details on the specific profile options that can be set in the database.

### Load Balancing Recommendations

The maximum number of concurrent requests that a servlet can process without blocking is equal to the number of JServ instances running in its servlet zone. You should have a number of JServ instances running equal to the average number of concurrent requests, if not slightly more since, under load balancing, JServ instances are randomly chosen, making it possible that two concurrent requests could be sent to a JServ instance when an idle one is already available.

Running multiple JServ instances within a zone does not significantly add to your CPU load versus running a single instance, but it does add to your memory load as each instance requires its own JVM. On Solaris, each JVM requires over 6MB of

main memory though less than 4MB are actually used, since JVMs share common libraries.

**Note:** With most processors, the online port is never released by iPayment, but must be continuously held. Additionally, most processors impose a limitation of having only a single active connection, often for reasons such as security.

As the online port is never released by iPayment, the recommendation is to have a dedicated JVM for that servlet. Therefore we can have only one servlet per JVM and hence one port. So iPayment processor model servlets do not support load balancing.

# Configuring the ECApp Servlet

An ECApp servlet is the only front-end servlet in iPayment. You need to configure the ECApp servlet in order to use the PL/SQL API of Oracle iPayment and for Oracle iPayment 3i Backward Compatibility API.

### Set up the Virtual Path Mapping for ECApp Servlet

The ECApp Servlet is automatically set up (and named ibyecapp) by Rapid Install. You can use the following instructions to set up the servlet manually, or to confirm that the ECApp servlet is configured properly.

Add the following line to your zone.properties file in the Servlet Aliases section:
servlet.ecapp.code=oracle.apps.iby.ecservlet.ECServlet

This allows the ECAppservlet to be invoked as:
http://<hostname>:<port>/servlet/ecapp

Where <hostname> is the name of the server on which you are running Oracle iPayment. <port> is the port number where ECAppservlet has been installed.

# Configuring iPayment Sample Servlet

The iPayment sample servlet is a gateway model servlet that you can use to test your iPayment implementation without having to register with a real payment system or set up and configure the payment system specific servlet. The sample servlet only supports core iPayment operations such as authorization, capture, and return for credit cards.

You can use the sample servlet to test the integration between your EC application and iPayment. All transactions sent to the sample servlet should succeed, unless the amount matches certain pre-set values, in which case an error is induced. You can use the integration to simulate error scenarios and test error handling in the calling EC application.

This table lists the pre-defined amounts and their associated error codes.

| Amount | Error Message |
|---|---|
| 1001 | Communication error when contacting the gateway. Please try again. |
| 1002 | Given order id used for a previous transactions. |
| 1004 | A parameter to this transactions is either malformed or missing. |
| 1005 | Generic BEP error occurred. Please check error code. |
| 1008 | Transaction. type is not valid or not supported for this merchant. |
| 1016 | Internal BEP failure. Please check error code. |
| 1017 | Account does not have sufficient funds to complete this transaction. |
| 1019 | Invalid credit card number/expiration date. |
| 1020 | Authorization declined. |
| 1021 | Voice authorization code incorrect. |

## Installing the Sample Servlet

Use the following steps to configure the sample servlet.

1. Add the following alias statement to the configuration file of the servlet zone you wish the sample servlet to run in:

   ```
   servlet.oramipp_lop.code=oracle.apps.iby.bep.loop.LoopBackServlet
   ```

**Note:** this line should already be in the properties file after you have installed iPayment. You only need to verify that it exists.

2. In the same configuration file, provide the following servlet parameters:

This table lists the is zone-wide parameters (set by a statement of the form servlet.default.initArgs=).

| Parameter | Example Value | Description |
|---|---|---|
| errorfile | /tmp/error.log | Debug file used to write errors and stack traces to. |
| debugfile | /tmp/debug.log | Log file used to write debugging messages to. |
| debug | true, false | Turns debugging on or off. |

### Configuring Sample Servlet as a Payment System

Once the sample servlet is installed and configured, the servlet must be added as a payment system in order to be used. Login to the iPayment administrative GUI as the administrative user and create a payment system for the sample servlet with the following values:

**Name**: Sample Servlet

**Suffix**: lop

**Payment System Type**: Gateway

**Base URL**: example- http://localhost:8080/servlets

**Administration URL**: http://www.yourcompany.net

**Supported Payment Instrument**: Credit Card

### Adding a Merchant Account

For each payee that uses the sample servlet, enter any value for the payment system identifier:

example - Loop

### Testing the Sample Payment System

To test the sample payment system, create a transaction using the pages on the Operations tab in the iPayment administrative UI. Verify that you have a routing rule which routes the transaction to the sample payment system and that your transaction matches the routing rule. For more information, see Understanding Routing Rules and Managing Operations.

# Configuring iPayment Loopback Servlet

The iPayment loopback servlet is a processor model servlet that you can use to test your iPayment implementation without having to register with a real payment system or set up and configure the payment system specific servlet. The loopback servlet supports core iPayment operations such as authorization, capture, and return for credit cards in addition to inbound and outbound bank payments.

You can use the loopback servlet to test the integration between your EC application and iPayment. All transactions sent to the sample servlet should succeed unless the amount matches certain pre-set values, in which case an error is induced. You can use the integration to simulate error scenarios and thus test error handling in the calling EC application.

The processor model servlet does not connect to any back-end payment system but emulates the behavior of a payment system returning successful responses to requests.

See Understanding Gateway-Model and Processor-Model Payment Systems in the *Oracle iPayment Concepts and Procedures Guide* for more details.

This table lists the pre-defined amounts and their associated error codes for credit card transactions. The loopback servlet should return Success for any credit card transaction with an amount other than the ones specified in the table below.

| Amount | Error Message |
|---|---|
| 10 | Invalid Merchant Account. |
| 20 | Decline - Do not honor |
| 30 | Expired card |
| 40 | Hold call: Pick up card - Lost |
| 50 | Hold call: Pick up card - Stolen |
| 60 | Insufficient funds |
| 70 | Expired Card |

## Installing the Loopback Servlet

The processor model loopback servlet requires no database connectivity and can be installed on a different host from iPayment. To install on a different host, follow these steps:

1. Copy directory $APPL_TOP/java and directory $IBY_TOP/xml to the new machine.
2. Add $APPL_TOP/java to the CLASSPATH of the Jserv instance the servlet will run and set the "xmlbase parameter" to the location of the copied $IBY_TOP/xml. For details on setting the "xmlbase" parameter, see Setting iPayment JVM parameters.
3. Follow the configuration steps.

### Configuration

The following configuration steps are mandatory regardless of whether iPayment and the loopback servlet are on the same machine or not:

1. Add the following alias statement to the configuration file of the servlet zone you wish the Processor Model Loopback Servlet servlet to run in:

```
servlet.oramipp_lpr.code=oracle.apps.iby.bep.proc.loopproc.LoopProcServlet.
```

2. In the same configuration file, provide the following servlet parameters:

   For setting the zone-wide parameters, see Table G–1.

   This table lists parameters particular to the Loopback servlet (set by a statement of the form servlet.oramipp_fdn.initArgs=).

| Parameter | Example Value | Description |
|---|---|---|
| ARCHIVE | /var/archive | Directory where iPayment response files will be written to. If communication between iPayment and the servlet fails in the middle of a transaction and iPayment retries that transaction at a later date, the archive directory will allow the servlet to know the original results of the transaction and so forward those to iPayment instead of re-attempting the request (thus avoiding double billing or double authorization). |
| MAX_ARCHIVE_AGE | 10 | Maximum age (in days) that a response file will be saved in the archive. The FDC North servlet will remove all responses in the archive older than this age every time it starts. |
| LPR_ONLINE_IP | 192.168.0.1 | Please specify any IP address of any valid host machine to which the servlet can establish a connection. This is a technical requirement and no data is sent to this machine. |

| Parameter | Example Value | Description |
|---|---|---|
| LPR_ONLINE_PORT | 8000 | Port number to use along with the above IP address. |
| LOCAL_BATCH_DIR | /tmp/batch | Directory where batch files to are written to. |
| LOCAL_EFT_BATCH_DIR | test/12345 | Directory where inbound and outbound payment files are written. |
| LOCAL_QUERY_DIR | test/data/12345 | Directory where query files are picked up from. |

### Configuring Loopback Servlet as a Payment System

Once the loopback servlet is installed and configured, the servlet must be added as a payment system in order to be used. Login to the iPayment administrative GUI as the administrative user and create a payment system for the loopback servlet with the following values:

**Name**: iPayment Loopback Servlet

**Suffix**: lpr

**Payment System Type**: Processor

**Base URL**: example- http://localhost:8080/servlets

**Administration URL**: http://localhost:8080/servlets

**Supported Payment Instrument**: credit card, bank account (BR and DD), bank payment

### Adding a Processor Model Loopback Servlet Merchant Account

For each payee that will you want to use Processor Model Loopback Servlet, you can enter any value as a Payment System Identifier.

example - Loop

### Enabling the Scheduler

Because the loopback servlet is a processor-model payment servlet, all transactions except authorizations should always be OFFLINE transactions. When a BATCHCLOSE operation is submitted, the iPayment engine picks up and sends the transactions to the loopback servlet. The servlet does not submit these to any

payment system, but the transactions are updated to a successful status emulating the behavior of a real payment system.

The following is a list of valid tasks you may submit form the scheduler:

BATCHCLOSE

BATCHQUERY

EFTBATCHCLOSE

EFTBATCHRETRY

EFTPBATCHRETRY

EFTPBATCHCLOSE

### Testing the Sample Payment System

To test the loopback payment system, create a test credit card transaction using the pages on the Operations tab in the iPayment administrative UI. Verify that you have a routing rule which routes the transaction to the processor model loopback payment system and that your transaction matches this rule. For more information see Routing Rules and Managing Operations in the *Oracle iPayment Concepts and Procedures Guide.*

You can also generate inbound and outbound bank payment test transactions from Oracle Payables and Oracle Receivables and test the iPayment implementation by defining appropriate routing rules.

# Enabling the Scheduler

The iPayment scheduler provides the ability to handle payment transactions that cannot be processed in real-time. Such transactions may be of two kinds - transactions that can be processed some time after they are submitted to iPayment, or transactions where the back-end payment system cannot process requests in real-time. Scheduling is also useful for automating recurrent associated tasks such as batch closes. Batch closes are performed in a processor-model payment system like Paymentech.

The iPayment scheduler can be configured to perform specific tasks with each invocation. The tasks to be performed are specified through task parameters.

For the scheduler to run successfully, ensure that jsdk.jar library and ApacheJServ.jar are in the CLASSPATH of the machine where the scheduler is running.

# Registering Electronic Commerce Applications

All the APIs that an electronic commerce application calls must pass its identifier. This allows Oracle iPayment to track the application from where the requests are coming. The identifier generated during registration must be stored by the application. You need to register only applications that are not part of the Oracle e-Business suite. All electronic commerce application needs to pass the identifier in the API calls. Oracle iPayment provides an ECConfig utility, to add, modify, or list electronic commerce applications.

### Requirements for Setting up and Using the ECConfig Utility

- Java executable in your application environment.
- $APPL_TOP/java in your CLASSPATH environment variable. This is included in the classpath after you set up the applications environment

### Using the EcConfig Utility

- To add an electronic commerce application, use the following command:

```
java-DJTFDBCFILE=<dbc file location>-Dframework.Logging.system.filename=<log
file> -Dservice.Logging.common.filename=<logfile> oracle.apps.iby.ecapp.EcConfig
add "Ec App Name" "Short Name"
Example: java-DJTFDBCFILE=<dbc file
location>-Dframework.Logging.system.filename=<log file>
-Dservice.Logging.common.filename=<logfile> oracle.apps.iby.ecapp.EcConfig add
"my ec application"  "myapp"
```

- To modify a registered electronic commerce application, use the following command:

```
java-DJTFDBCFILE=<dbc file location>-Dframework.Logging.system.filename=<log
file> -Dservice.Logging.common.filename=<logfile> oracle.apps.iby.ecapp.EcConfig
modify <id> 'Ec App Name' 'Short Name'
```

<id> is the identifier of the electronic commerce application that was generated while adding the electronic commerce application. You can also retrieve the identifiers of applications using the list command.

**Example:** java-DJTFDBCFILE=<dbc file location>-Dframework.Logging.system.filename=<log file> -Dservice.Logging.common.filename=<logfile> oracle.apps.iby.ecapp.EcConfig modify 1234 "ec app name" "ecapp"

- To list all the registered electronic commerce applications use the following command:

```
java-DJTFDBCFILE=<dbc file location>-Dframework.Logging.system.filename=<log
file> -Dservice.Logging.common.filename=<logfile> oracle.apps.iby.ecapp.EcConfig
list
```

# Loading Risky Instruments

The Risky Instruments upload utility is a Java application used to store risky payment instruments. It is called RiskyInstrUtil.

### Requirements

- Java executable in your application environment
- apps.zip in the CLASSPATH. The apps.zip is included in the classpath after you set up the applications environment.

### Java Commands

```
java-DJTFDBCFILE=<dbc file location> -Dframework.Logging.system.filename=<log
file> -Dservice.Logging.common.filename=<logfile>
oracle.apps.iby.irisk.admin.RiskyInstrUtil [ADD/DELETE] [filename]
```

This command requires an operation and a filename. It modifies the risky instruments table in the database depending on the entries in the file.

**Or**

```
java-DJTFDBCFILE=<dbc file location>-Dframework.Logging.system.filename=<log
file> -Dservice.Logging.common.filename=<logfile>
oracle.apps.iby.irisk.admin.RiskyInstrUtil DELETE all
```

This command deletes all the risky instruments in the table.

### File Format

- Each line corresponds to one risky instrument.
- The fields are comma separated and are in the following order: Payee identifier, instrument type, and creditcard number. Instrument type has to be a CREDITCARD. For example:

  payee1, CREDITCARD, 4500234023453345
- For the add operation, each risky instrument in the file, that has a valid payee identifier, instrument type, and a new credit card number, is added to the table.
- For the delete operation, each risky instrument that matches the payee identifier, instrument type, and the credit card fields, is deleted from the table.

- The command prints the results of the operation on each risky instrument in the file.

# Enabling the XML Framework

iPayment incorporates a XML framework allowing it to communicate with BEPs using XML. Enabling this framework is mandatory and requires the following steps:

- Oracle's XML parsing libraries (xmlparserv2.jar and sax2.zip) must be in iPayment's CLASSPATH. Please check the relevant properties files for the Jserv instance iPayment is running on. By default, both libraries are included in the Jserv configuration of Oracle's Internet Application Server (IAS).
- The IBY: XML_BASE property (and, optionally, the IBY: JAVA_XML_LOG property) must have correct values. See 'iPayment Properties' in the *Oracle iPayment Concepts and Procedures Guide* for a description of both properties.

# Setting up Oracle iPayment User Interface

To set up Oracle iPayment user interface, see the *Oracle iPayment Concepts and Procedures Guide.*

# 3

# Implementing APIs

This chapter explains the public APIs used in Oracle iPayment. Topics include:

- Overview of Oracle iPayment APIs
- Implementing Electronic Commerce Applications APIs
- Implementing Back-end Payment System APIs
- Overview of Payment System APIs
- Implementing Payment Systems APIs
- Security Considerations
- Setting Up SSL Security for the ECApp Servlet
- Setting Up SSL Security for Payment System Servlet Communication

# Overview of Oracle iPayment APIs

Oracle iPayment provides two sets of APIs which can be implemented.

- Implementing Electronic Commerce Applications APIs: these APIs are mainly used for payment processing.
- Implementing Back-end Payment System APIs: these APIs allow connection to the back-end payment (BEP) systems.

For more information, see Figure C– 1, "iPayment Architecture".

# Implementing Electronic Commerce Applications APIs

Oracle iPayment provides various types of APIs to integrate electronic commerce applications with Oracle iPayment.

Electronic commerce applications can embed the Oracle iPayment functionality within their application. This eliminates the need to access Oracle iPayment as a stand-alone application and hence improves performance and simplifies setup.

This section describes the various APIs that are provided to electronic commerce applications for using the features of Oracle iPayment. The APIs have been categorized into the following categories:

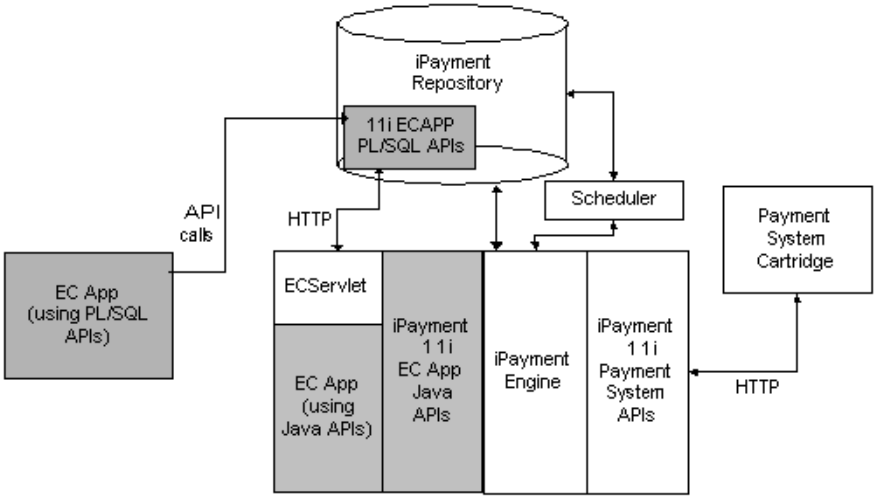
- Payment Instrument Registration APIs
- Payment Processing APIs
- Risk Management APIs
- Credit Card Validation APIs
- Status Update API

Oracle iPayment provides APIs in the following programming languages:

- Java APIs for Electronic Commerce Application
- PL/SQL APIs for Electronic Commerce Applications

The following diagram shows the integration of APIs with Oracle iPayment.

***Figure 3–1 Oracle iPayment integrating with APIs***



## Payment Instrument Registration APIs

Payment Instrument APIs provide the functionality to register a payor's bank, credit card, or purchase card.

### OraInstrAdd

This API is provided to register a user's bank, credit card, or purchase card account information with Oracle iPayment. Oracle iPayment generates a PmtInstId if this registration is successful. This identifier is used for payment transactions or for deleting, modifying, or inquiring about this account. Instrument number (credit card number, purchase card number, or bank account number) and payor identifier together have to be unique.

### OraInstrMod

This API is provided to modify registered payment instrument account information with Oracle iPayment.

### OraInstrDel

This API is provided to delete registered payment instrument account information.

### OraInstrInq

There are two inquiry APIs. One queries instrument information for a single given instrument. The other queries all registered payment instruments for a given payor. The result may contain a mix of credit cards, purchase cards, or bank accounts.

# Payment Processing APIs

These APIs are the transactional APIs that support various payment operations. The electronic commerce applications use these APIs to process various transaction types. For example, authorization of credit cards and purchase cards, transfer of funds from one bank account to another, capture, cancel, return, and others. A list of such APIs are provided below.

### OraPmtReq

When an electronic commerce application is ready to invoke a payment request (possibly due to a user action), it calls this API. If the operation is successful, a transaction identifier is generated by Oracle iPayment and is returned as part of the result. This transaction identifier can be used later by the electronic commerce application to initiate any other operation on a payment.

For example, to modify a payment or capture a payment, the electronic commerce application sends this identifier with other information that is needed to perform the operation requested.

> **Note:** This API supports authorization and authorization with capture for credit card and purchase card payments.

If a payment is either a credit card payment or a purchase card payment, and the request is online, Oracle iPayment can perform risk analysis with the payment request (Authorization).

To enable risk analysis with authorization, either setup the payment request with risk flag set to true in one of its input objects (Refer to Java Documentation for details) or check the Enabled radio button in the Risk Management Status screen for that payee. If any of these two conditions are satisfied, the electronic commerce application will check the Riskresp object that is returned as part of the payment response object to the Payment Request API. Electronic commerce applications can also invoke the Payment Request API to evaluate a specific formula by passing the PaymentRiskInfo object.

This API is also used after a voice authorization is done to enable Oracle iPayment to handle follow-on operations. To use it for a voice authorization, set up the payment request's input objects with the Voice Authorization flag set to true and the Authorization Code variable set to the authorization code issued by the financial institution. See *Oracle iPayment Java Documentation* for details.

### OraPmtCanc

A scheduled payment can be canceled by an electronic commerce application using this API.

### OraPmtQryTrxn

This API provides interface for inquiring the status or history of a payment to electronic commerce application. If a payment has been scheduled and the payment system supports an inquiry operation, the latest status is obtained from the payment system. Otherwise it sends the latest status of the payment as it is in Oracle iPayment. History of a payment can also be obtained.

### OraPmtCapture

When a credit card or purchase card is used as part of a payment request and only an authorization is requested, the electronic commerce application has to capture the payment at a later time. The following APIs allow the electronic commerce application to capture all such payments.

### OraPmtReturn

This API is used for credit card and purchase card specific operations. It allows processing returns from the payor.

Gateway model payment systems process capture operations online. If the capture is still in the Gateway's open batch (that is, the batch has not been closed) you should call OraPmtVoid. If the batch has been closed, you need to call OraPmtReturn. The batch needs to be closed again before the return is processed. This can be confusing since Gateways can be set up to close batches automatically, for example, once per day.

Processor model payment systems process captures offline. If the capture is still in iPayment's open batch, call OraPmtVoid. If the batch has been closed, call OraPmtReturn. The batch needs to be closed again after the return operation for the return to be processed.

### OraPmtInq

This API retrieves the payment related information that was sent at the time of a payment request (OraPmtReq API). This information includes payment instrument, payee, tangible id (bill or order), and payor. If the electronic commerce application does not store the payment information, then this is a useful API to support modification of payment requests. It can retrieve the payment information and display it to the end user for modification.

### OraPmtVoid

This API allows electronic commerce application to void operations submitted earlier. OraPmtVoid API is supported only to void certain credit card and purchase card operations. Oracle iPayment supports both online and offline OraPmtVoid API calls.

Voiding auths electronically is not supported by some processors or gateways. Only a few card-issuing banks supported it while the vast majority did not. Cancelling an authorization could only be done manually (by phone) or by letting the auth expire.

Thus, within iPayment, calling OraPmtVoid for an Online Auth results in the current payment system servlets returning status 8 - Operation not Supported. For an Offline Auth, you can void the Authorization if it is still in the iPayment open batch and has not yet been sent to the payment system.

### OraPmtCredit

This API provides credit and Electronic Fund Transfer (EFT) operations. Electronic commerce applications can use this API to give stand-alone credit to the customer. If the operation is successful, a transaction identifier is generated by Oracle iPayment. This Identifier is used later to initiate any other operation on the payment. For example, to cancel the credit, electronic commerce application sends this identifier with other information that is needed to perform the cancellation.

### OraPmtCloseBatch

The Close Batch API allows a payee or an electronic commerce application to close a batch of previously performed credit card or purchase card transactions. The transaction types that are included in a batch are: capture, return, and credit. This operation is mandatory for a terminal-based merchant.

A host-based merchant may not have to explicitly close the batch because the batch is generally closed at predetermined intervals automatically by the processor. An electronic commerce application has to get this information from its merchant's acquirer.

### OraPmtQueryBatch

This API provides an interface to the electronic commerce application to query the status of an existing batch and a closed batch.

## Risk Management APIs

These APIs allow electronic commerce applications to do risk analysis independently. These APIs together can evaluate any risk formula that is configured for a payee.

A risk formula can contain any number of risk factors with different weights associated with them. When Risk API 1 is called, it evaluates all the factors configured in the formula except the AVS Code risk factor. If a risk formula has an AVS Code risk factor, then, Risk API 1, in the response object, indicates that the formula has an AVS Code risk factor. This allows electronic commerce applications to completely or partially check the risk formula and decide whether to perform an authorization or not.

If the response of the first Risk API 1 indicates that the payment is not risky, then electronic commerce application can perform the authorization and complete the rest of the evaluation by calling Risk API 2.

Electronic commerce applications can call Risk API 2 by passing the same payee id, the formula name, and the AVS code that was returned during the authorization response and the risk score that was returned as part of the response in Risk API 1. The response object of Risk API 2 contains the finally evaluated risk score.

### Risk API 1

This API evaluates the risk formula associated with the payee id passed as part of the input object, PmtRiskInfo. This API can evaluate a specific formula or the implicit formula depending on the input object. After evaluation, this API constructs the response object indicating if the AVS Code risk factor is a part of the formula or not by setting the flag, AVSCodeFlag. If this flag is set to true, then electronic commerce applications need to call the Risk API 2 to complete the risk evaluation of the formula.

### Risk API 2

This API needs to be called when the AVSCodeFlag in RiskAPI 1 response object indicates that the formula contains AVS Code factor. When this API is called, it only evaluates the AVS code factor. The input object of this API contains the same payee id and the formula name that was passed in Risk API 1 and the AVS Code that was returned by the payment system for the payment request. The response object that this API returns, contains the final risk score of the formula.

# Credit Card Validation APIs

The Credit Card Validation APIs provide methods for determining the credit card type of a credit card number and for doing basic authentication. Since most credit card types specify the number of digits and a prefix for all valid credit card accounts in their company name, it is possible to determine the credit card types of most credit card numbers. Also, since the digits of most credit card types must (using a special algorithm) be evenly divisible by 10, it is possible to determine if a credit card number is valid or not. These APIs do not perform some of the more advanced credit card verification techniques available to back end payment systems, such as billing address verification. These APIs allow many common errors to be caught, such as wrongly typed or truncated credit card digits. By allowing common errors to be caught by the electronic commerce application, performance is improved, since the cost of calling these APIs is much less than sending a request to the back end payment system.

The Credit Card Validation APIs are created as part of the `IBY_CC_VALIDATE` package and this package is installed in the APPS schema.

## Main Methods of Credit Card Validation APIs

The Credit Card Validation APIs consist of three main methods.

1. Method `StripCC` is used to format a raw credit card number input by the customer. `StripCC` removes common filler characters such as hyphens and spaces until it produces a credit card number consisting only of digits. `StripCC` must be called before the credit card number is passed to the other methods.
2. Method `GetCCType` returns the credit card type of a credit card number, where each credit card type, including values for invalid and unknown types is a constant in the package.
3. Method `ValidateCC`, which takes both a credit card number and date. It returns a boolean value indicating whether the credit card can still be used or not.

---

**Note:** The IN parameters `p_api_version` and `p_init_msg_list` and the OUT parameters `x_msg_count` and `x_msg_data` are ignored. If an unexpected error occurs, `x_return_status` will be set to `FND_API.G_RET_STS_UNEXP_ERROR`. This will happen if the credit card number has invalid characters in it.

---

```
DECLARE
-- each character specifies a possible filler characters in the credit
-- card number; i.e. a character that can safely be stripped away
p_fill_chars VARCHAR(3) := '* -#';
p_cc_number VARCHAR(20) := '4111*1111 1111-1111#';
p_api_version NUMBER := 1.0;
p_init_msg_list VARCHAR2(2000) := ' ';
x_return_status VARCHAR2(2000);
x_msg_count NUMBER;
x_msg_data VARCHAR2(2000);
-- will hold the credit card number stripped of all characters except
-- digits; credit card numbers must be of this form for the GetCCType
-- and ValidateCC methods
v_clean_cc VARCHAR(20);
-- variable to be set by GetCCType method
v_cc_type IBY_CC_VALIDATE.CCType;
-- variable set by ValidateCC method; indicates if the credit card is
-- still usable
v_cc_valid BOOLEAN;

-- credit card expr date; rolled to the end of the month
-- by the ValidateCC method
v_expr_date DATE := SYSDATE();
BEGIN
-- the credit card number must first be stripped of all non-digits!!
IBY_CC_VALIDATE.StripCC( p_api_version, p_init_msg_list, p_cc_number,
p_fill_chars, x_return_status, x_msg_count, x_msg_data,
v_clean_cc );
-- check that illegal characters were not found
IF x_return_status != FND_API.G_RET_STS_UNEXP_ERROR THEN
  IBY_CC_VALIDATE.GetCCType( p_api_version, p_init_msg_list, v_clean_cc,
x_return_status, x_msg_count, x_msg_data, v_cc_type);
 IF x_return_status != FND_API.G_RET_STS_UNEXP_ERROR THEN
   IF v_cc_type=IBY_CC_VALIDATE.c_InvalidCC THEN
DBMS_OUTPUT.PUT_LINE('Credit card number not a valid one.');
   ELSE
DBMS_OUTPUT.PUT_LINE('Credit card number OK.');
   END IF;
   IBY_CC_VALIDATE.ValidateCC( p_api_version, p_init_msg_list, v_clean_cc,
v_expr_date, x_return_status, x_msg_count, x_msg_data, v_cc_valid);
   IF v_cc_valid THEN
DBMS_OUTPUT.PUT_LINE('Credit card is valid.');
   ELSE
DBMS_OUTPUT.PUT_LINE('Credit card number invalid or has expired.');
   END IF;
```

```
END IF;
END;
```

**Note:** An overloaded version of the StripCC method exists. It takes all the same arguments as the version used above except `p_fill_chars`. It gets its filler characters from the package constant `c_FillerChars`, which allows spaces and hyphens to be interspersed within the credit card number.

## Status Update API

Oracle iPayment has defined a PL/SQL API that must be implemented by electronic commerce applications when offline payment processing is performed. This API allows the electronic commerce application to receive a status update. This API must be defined in a package. The naming convention of the package and signature of the API are defined below. Electronic commerce applications must implement the package according to the syntax defined and create the package in the APPS schema if they have offline payments.

The package name has to be of the format <application_short_name>_ecapp_pkg. The application_short_name is a three-letter short name that was given in electronic commerce application registration. The package should have defined update_status procedure with the following signature:

```
PROCEDURE UPDATE_STATUS(
totalRows                IN        NUMBER,
txn_id_Tab               IN        APPS.JTF_VARCHAR2_TABLE_100,
req_type_Tab             IN        APPS.JTF_VARCHAR2_TABLE_100,
Status_Tab               IN        APPS.JTF_NUMBER_TABLE,
updatedt_Tab             IN        APPS.JTF_DATE_TABLE,
refcode_Tab              IN        APPS.JTF_VARCHAR2_TABLE_100,
o_status                 OUT       VARCHAR2,
o_errcode                OUT       VARCHAR2,
o_errmsg                 OUT       VARCHAR2,
o_statusindiv_Tab IN OUT APPS.JTF_VARCHAR2_TABLE_100);
```

The following list describes the field names in the above signature:

1. **totalRows**: total number of rows being passed for the update.
2. **txn_id_Tab:** table of transaction identifiers for which the update is sent.
3. **req_type_Tab:** table of request types corresponding to the Transaction Identifier. For each transaction, there might be a req_type associated with it and the electronic commerce application has to update the correct transaction, based on txn_id and req_type. The reason for having a req-type is to uniquely identify the transaction. For the same transaction identifiers, there can be multiple transactions. e.g. Authorization and Capture. Electronic commerce applications can uniquely identify the transaction based on the values in trxnid and req_ type.

   This table lists the various kinds of request types and their descriptions.

| req_type | Description |
|---|---|
| ORAPMTCAPTURE | Capture transaction |
| ORAPMTCREDIT | Credit transaction |
| ORAPMTREQ | Authorize transaction |
| ORAPMTRETURN | Return transaction |
| ORAPMTVOID | Void transaction |

4. **Status_Tab:** table of statuses corresponding to each transaction.

   This table lists the various values and their statuses.

| Value | Status |
|---|---|
| 0 | Paid |
| 5 | Payment failed |
| 13 | Scheduled |
| 15 | Failed |
| 17 | Unpaid |
| 18 | Submitted |

> **Note:** Please refer to Table D-15 for a complete list of values and their statuses.

5. **updatedt_Tab:** table for the last update date for each transaction.
6. **refcode_Tab:** table for the reference code for each transaction.
7. **o_status:** the overall status of the procedure. If there are errors in trying to execute the procedure, electronic commerce application should set up an appropriate value in this field.
8. **o_errcode:** the error code for any errors which might have occurred during processing.
9. **o_errmsg:** the error message for the error.

10. **o_statusindiv_Tab:** table of status values which have been updated. If the status value has been updated by the electronic commerce application for a particular transaction, it should set the value to TRUE for that transaction, otherwise, it should set the value to FALSE.

---

**Note:** In the above procedure, for each transaction there will be an entry in the table parameters. If there were ten transactions of this electronic commerce application, whose status has changed, there will be ten entries in each table parameters.

---

### When Does the Scheduler Invoke the API?

The Scheduler picks up all the offline payment transactions to be scheduled every time it is run. After all the offline payment transactions are processed either successfully or unsuccessfully, the Scheduler has to update the status changes, if any, of each transaction, to the appropriate electronic commerce application. To update the electronic commerce application, the Scheduler calls the PL/SQL API, which is implemented by that electronic commerce application.

### Pseudo Code for Implementing the PL/SQL API by Electronic Commerce Application

For each row update, the status is based on the request type and the transaction identifier. If the update is successful, then set up the status value appropriately.

```
for i in 1..totalRows
;update the tables with status,  updatedate, and refinfo information
update tables using status_Tab[i],  updatedt_Tab[i], refCode_Tab[i] for
   the transaction with id txn_id_Tab[i] and req_type_tab[i]
if update is successful
    o_statusindiv_Tab[i] := 'TRUE'
else
    o_statusindiv_Tab[i] := 'FALSE'
end for;
return
```

# Java APIs for Electronic Commerce Application

All administration and inbound payment processing functionalities are provided via the Java PaymentService interface. The following information describes how to access and use Java APIs. Refer to Oracle iPayment JavaDoc for more details.

> **Note:** Guest user properties need to be setup in the database before any operation can be performed. Please refer to the Setup Document provided by CRM Foundation for more details.

## Obtaining /Releasing the Payment Service Handle

The OraPmt class offers convenient ways to obtain Payment Service handle (PaymentService) for the user. The application can call various APIs using this handle.

- To obtain the payment service handle, use the following method:

```
static public PaymentService init() throws PSException
```

  This API provides Payment Service handle to the user and takes care of all the necessary session initialization steps.

- To release a Payment Service handle with the session, use the following method:

```
static public void end() throws PSException
```

### Sample code

The following code gives an example of how these APIs are used.

```
public static void main(String[] args) {
try {
     PaymentService paymentService =  OraPmt.init();
     // now you can call all kinds of APIs
     //PSResult result = paymentService.OraPmtReq(...);

} catch (PSException pe) {
     // exception handling
     System.out.println("Error code is: " + pe.getCode());
     System.out.println("Error message is: " + pe.getMessage());
     }
```

```
    finally {
                try {
                      OraPmt.end();
                } catch (PSException pe) {
                      // exception handling
                      System.out.println("Error code is: " + pe.getCode());
                      System.out.println("Error message is: " +
                                          pe.getMessage());
                }
              }
    }
```

### Checking Returned Result from Payment Service API

PSResult is the returned object of all PaymentService APIs. To obtain the status of the operation, use the following API:

```
public String getStatus();

This API returns one of the following constants:
PSResult.IBY_SUCCESS// action succeeded
PSResult.IBY_WARNING// action succeeded with warning
PSResult.IBY_INFO// not yet in use
PSResult.IBY_FAILURE// action failed
```

If SUCCESS or WARNING is invoked, a result object can always be obtained by using the following API:

```
 public Object getResult();
```

If FAILURE is invoked, a result object may be returned for payment operation APIs, if this failure occurred with back- end payment system.

The actual object returned varies with each API. It could be an integer or one of the payment response objects. You need to clearly cast it. For a list of castings, refer to the Oracle iPayment Java Documentation for the PaymentService interface.

If WARNING or FAILURE is invoked, a warning or error message is returned. Use the following two APIs to retrieve error codes and error messages.

```
public String getCode();// get the error code 'IBY_XXXXXX'
public String getMessage(); // get the error message text
```

The following sample code illustrates the behavior of PSResult object.

```
public Object checkResult(PSResult pr) {
```

```
    String status = pr.getStatus();
    if (status.equals(PSResult.IBY_FAILURE)) {
        // in case of failure, only error message is expected
        System.out.println("error code is : " + pr.getCode());
        System.out.println("error message is : " + pr.getMessage());
        Object res=pr.getResult();
        if (res!=null) System.out.printIn ("failure occured with backend
Payment system");
        return res;
  }

  if (status.equals(PSResult.IBY_SUCCESS)) {
     // in case of success, only result object is expected
     Object res = pr.getResult();
     return res;  // you need cast this to specific object
     // based on the APIs you called
 }

  if (status.equals(PSResult.IBY_WARNING)) {
      // in case of warning, both result object and message are
      // expected
      // warning is returned only for Payment APIs in case of
      // offline scheduling
      System.out.println("warning code is : " + pr.getCode());
      System.out.println("warning message is : " + pr.getMessage());
      Object res = pr.getResult();
      return res; // you need cast it here too
  }

  // currently IBY_INFO is not yet returned by any PaymentService API
  System.out.println("Illegal status VALUE in PSResult! " +
  pr.getStatus());
  return null;
}
```

## Using Payment Service API

After a payment service handle is obtained via the OraPmt class, you can call any of the following APIs in Payment Service interface. For details, refer to JavaDoc.

Here is some sample codes for Payment Instrument API, and Payment Processing APIs. These codes use the checkResult call.

### Registering a Credit Card

```
public void instrAPISample(PaymentService paymentService,
```

```
                              int ecappId)    {
     PSResult pr;
     Object obj;
     CreditCard cc;
     Address addr;
     int instrid_cc;
     String payerid = "payer1";

     addr = new Address("Line1", "Line2", "Line3", "Redwood Shores",
                        "San Mateo", "CA", "US", "94065");

     // credit card
     cc = new CreditCard();
     cc.setName("My Credit Card");
     cc.setFIName("CitiBank");
     cc.setInstrBuf("This is my credit card description.");
     cc.setInstrNum("4111111111111111"); // the credit card number
     cc.setCardType(Constants.CCTYPE_VISA); // the credit card type, should
     // match the credit card number, if set
     cc.setExpDate(new java.sql.Date(101, 0, 10)); // Jan 10, 2001
     cc.setHolderName("Mary Smith");
     cc.setHolderAddress(addr);

     // add the credit card
     pr = paymentService.oraInstrAdd(ecappId, payerid, cc);
     obj = checkResult(pr);
     if (obj ==  null) return; // registration failure
     instrid_cc = ((Integer) obj).intValue();

     System.out.println("Credit card registered successfully " +
                        "with instrument id " + instrid_cc);
}
```

## Sending a Credit Card Authorization Request

```
// perform an ONLINE credit card authorization with payment service
public void paymentAPISample(PaymentService paymentService, int ecAppId) {
     Bill t;
     CoreCreditCardReq reqTrxn;
     CreditCard cc;
     PSResult pr;
     CoreCreditCardAuthResp resp;

     // set up the tangible object
```

```
        t = new Bill();
        t.setId("orderId1");
        t.setAmount(new Double(21.00));
        t.setCurrency("USD");
        t.setRefInfo("refInfo");
        t.setMemo("memo");
        t.setUserAccount("userAcct");

        // set up the transaction object
        reqTrxn = new CoreCreditCardReq();
        reqTrxn.setNLSLang("American_America.US7ASCII");
        reqTrxn.setMode(Transaction.ONLINE);
        reqTrxn.setSchedDate(new java.sql.Date(100, 5, 10)); //June 10, 2000
        reqTrxn.setAuthType(Constants.AUTHTYPE_AUTHONLY);

        // set up the payment instrument
        cc = new CreditCard();
        cc.setId(100);  // assuming we have previously registered credit
                        // card with instrument id 100

        pr = // assuming payee1 has already been configured with the payment
             // service
             paymentService.oraPmtReq(ecAppId, "payee1", "", cc, t,
             reqTrxn);

        resp = (CoreCreditCardAuthResp) checkResult(pr);
        if (resp == null) return;
        System.out.println("Request finished with transaction id: " +
        resp.getTID());

}
```

## Registering a Purchase Card

```
        public void instrAPISample(PaymentService paymentService,
                                   int ecappId)    {
          PSResult pr;
          Object obj;
          PurchaseCard pc;
          Address addr;
          int instrid_pc;
          String payerid = "payer1";

          addr = new Address("Line1", "Line2", "Line3",
                             "Redwood Shores", "San Mateo", "CA",
```

```
                                "US", "94065");

    // purchase card
    pc = new PurchaseCard();
    pc.setName("My Purchase Card");
    pc.setFIName("CitiBank");
    pc.setInstrBuf("This is my purchase card description.");
    pc.setInstrNum("4111111111111111"); // the purchase card
                                        // number
    pc.setCardType("Constants.CCTYPE_VISA"); // the purchase
    // card type, should match the purchase card number, if
    // set
    pc.setCardSubtype("P");
    pc.setExpDate(new java.sql.Date(101, 0, 10));
                                  // Jan 10, 2001
    pc.setHolderName("Mary Smith");
    pc.setHolderAddress(addr);

    // add the purchase card
    pr = paymentService.oraInstrAdd(ecappId, payerid, pc);
    obj = checkResult(pr);
    if (obj == null) return; // registration failure
    instrid_pc = ((Integer) obj).intValue();

    System.out.println("Purchase Card registered " +
                       "successfully with instrument id " +
                       instrid_pc);
}
```

## Sending a Purchase Card Authorization Request

```
// perform an ONLINE purchase card authorization with
          // payment service
          public void paymentAPISample(PaymentService paymentService,
                                       int ecAppId)   {
    Bill t;
    PurchaseCardReq reqTrxn;
    PurchaseCard pc;
    PSResult pr;
    CoreCreditCardAuthResp resp; // since purchase card
    // authorization responses are identical to credit card
    // responses. See javadoc for details.

    // set up the tangible object
    t = new Bill();
```

```
  t.setId("orderId1");
  t.setAmount(new Double(21.00));
  t.setCurrency("USD");
  t.setRefInfo("refInfo");
  t.setMemo("memo");
  t.setUserAccount("userAcct");

  // set up the transaction object
  reqTrxn = new PurchaseCardReq();
  reqTrxn.setNLSLang("American_America.US7ASCII");
  reqTrxn.setMode(Transaction.ONLINE);
  reqTrxn.setSchedDate(new java.sql.Date(100, 5, 10));
                                      // June 10, 2000
  reqTrxn.setAuthType(Constants.AUTHTYPE_AUTHONLY);
  reqTrxn.setPONum("PONum");
  reqTrxn.setTaxAmount("1.50");
  reqTrxn.setShipToZip("94065");
  reqTrxn.setShipFromZip("94404");

  // set up the payment instrument
  pc = new PurchaseCard();
  pc.setId(100); // assuming we have previously registered
                 // purchase card with instrument id 100

  pr = // assuming payee1 has already been configured with
       // the payment service
       paymentService.oraPmtReq(ecAppId, "payee1", "", pc,
                                t, reqTrxn);

  resp = (CoreCreditCardAuthResp) checkResult(pr);
  if (resp == null) return;
  System.out.println("Request finished with " +
                     "transaction id: " + resp.getTID());
}
```

## PL/SQL APIs for Electronic Commerce Applications

Oracle iPayment provides PL/SQL APIs to those electronic commerce applications that require or prefer PL/SQL interfaces for processing payment operations. There is an additional HTTP call when PL/SQL APIs are called. When electronic commerce applications invoke these PL/SQL APIs, the APIs in return, call the electronic commerce servlet through HTTP.

Oracle iPayment PL/SQL APIs provide all payment related processing and two Risk APIs. The functionality of these APIs is the same as the Java APIs.

PL/SQL APIs are created as part of IBY_PAYMENT_ADAPTER_PUB package and these packages are installed in the APPS schema.

### Requirements

1. PL/SQL Package **IBY_PAYMENT_ADAPTER_PUB** must be installed in the APPS schema.
2. An administrator must set up Oracle iPayment URL property to Oracle iPayment electronic commerce servlet's URL using the iPayment administration user interface before invoking the APIs.

The following PL/SQL code helps you to understand how Oracle iPayment PL/SQL APIs can be invoked. This example code invokes the Payment Request API using a credit card. It also passes risk related information for risk evaluation.

```
DECLARE
   p_api_version      NUMBER := 1.0;

   --To initialize message list.
   p_init_msg_list VARCHAR2(2000)  := FND_API.G_TRUE;
   p_commit               VARCHAR2(2000)  := FND_API.G_FALSE;
   p_validation_level   NUMBER  := FND_API.G_VALID_LEVEL_FULL;
   p_ecapp_id             NUMBER := 0;
   p_payee_rec           IBY_PAYMENT_ADAPTER_PUB.Payee_rec_type;
   p_payer_rec           IBY_PAYMENT_ADAPTER_PUB.Payer_rec_type;
   p_pmtinstr_rec   IBY_PAYMENT_ADAPTER_PUB.PmtInstr_rec_type;
   p_tangible_rec        IBY_PAYMENT_ADAPTER_PUB.Tangible_rec_type;
   p_pmtreqtrxn_rec   IBY_PAYMENT_ADAPTER_PUB.PmtReqTrxn_rec_type;
   p_riskinfo_rec        IBY_PAYMENT_ADAPTER_PUB.RiskInfo_rec_type;
   x_return_status      VARCHAR2(2000);
                                       -- output/return status
   x_msg_count         NUMBER;
                                       -- output message count
```

```
   x_msg_data           VARCHAR2(2000);
                                    -- reference string for getting output
message text
   x_reqresp_rec       IBY_PAYMENT_ADAPTER_PUB.ReqResp_rec_type;
                                    -- request specific output response
object
   l_msg_count         NUMBER;
   l_msg_data           VARCHAR2(2000);

BEGIN
  p_ecapp_id := 66;        -- iPayment generated ECAppID
  p_payee_rec.Payee_ID := 'ipay-payee1';    -- payee's ID
  p_payer_rec.Payer_ID   := 'ipay-cust1';      -- payer's ID
  p_payer_rec.Payer_Name  := 'Cust1';         -- Payer's (Customer's name)
  p_pmtreqtrxn_rec.PmtMode := 'ONLINE';
                                                  -- Payment mode (Can be
ONLINE/OFFLINE)
  p_tangible_rec.Tangible_ID  := 'tangible_id1';  -- Tangible ID / order ID
  p_tangible_rec.Tangible_Amount := 25.50; -- Amount for the transaction
  p_tangible_rec.Currency_code := 'USD';   -- Currency for the transaction
  p_tangible_rec.RefInfo := 'test_refinfo3';
  p_pmtreqtrxn_rec.Auth_Type := upper('authonly');    -- request type
  p_pmtinstr_rec.CreditCardInstr.CC_Type := 'Visa';
                                                                          --
payment instrument type
  p_pmtinstr_rec.CreditCardInstr.CC_Num := '4111111111111111';
                                                                        --
payment instrument number
  p_pmtinstr_rec.CreditCardInstr.CC_ExpDate := to_char(sysdate+300);
                                                                        --
payment instr. Expiration date

 --5. RISK INPUTS
  p_riskinfo_rec.Formula_Name := 'test3';     -- Risk formula name
  p_riskinfo_rec.ShipToBillTo_Flag := 'TRUE';
                                -- Flag showing if ship to address same as Bill
to address
  p_riskinfo_rec.Time_Of_Purchase := '08:45';
                                 -- Time of purchase

   IBY_PAYMENT_ADAPTER_PUB.OraPmtReq
 ( p_api_version,
p_init_msg_list,
p_commit,
p_validation_level,
```

```
                p_ecapp_id ,
                p_payee_rec,
                p_payer_rec,
                p_pmtinstr_rec,
                p_tangible_rec,
                p_pmtreqtrxn_rec,
                p_riskinfo_rec ,
                x_return_status,
                x_msg_count ,
                x_msg_data  ,
                x_reqresp_rec);
END;
Payment Request Related Response. Printing Only If Status Is Success
  If(Char(X_Reqresp_Rec.Response.Status = 'S') Then

         -- Offline Mode Related Response
        If P_Pmtreqtrxn_Rec.Pmtmode = 'OFFLINE' Then
            Dbms_Output.Put_Line('Transaction ID = ' || To_Char(X_Reqresp_
Rec.Trxn_ID));
            Dbms_Output.Put_Line (' X_Reqresp_
Rec.Offlineresp.Earliestsettlement_Date = ' ||
                                                To_Char(X_Reqresp_
Rec.Offlineresp.Earliestsettlement_Date));
            Dbms_Output.Put_Line('X_Reqresp_Rec.Offlineresp.Scheduled_Date = '
||
To_Char(X_Reqresp_Rec.Offlineresp.Scheduled_Date));
        Else
            Dbms_Output.Put_Line('Transaction ID = ' || To_Char(X_Reqresp_
Rec.Trxn_ID));
            Dbms_Output.Put_Line('X_Reqresp_Rec.Authcode = ' || X_Reqresp_
Rec.Authcode);
            Dbms_Output.Put_Line('X_Reqresp_Rec.Avscode = ' || X_Reqresp_
Rec.Avscode);
            Dbms_Output.Put_Line('-----------------------------------------');
            -- Risk Related Response
            If(X_Reqresp_Rec.Riskrespincluded = 'YES') Then
                  Dbms_Output.Put_
Line('-----------------------------------------');
               Dbms_Output.Put_Line(' X_Reqresp_Rec.Riskresponse.Risk_Score=
'|| X_Reqresp_Rec.Riskresponse.Risk_Score );
                Dbms_Output.Put_Line('X_Reqresp_Rec.Riskresponse.Risk_
Threshold_Val=   '||
                                                    X_Reqresp_
Rec.Riskresponse.Risk_Threshold_Val);
            Endif;
```

```
      Endif;
End If;
```

# Implementing Back-end Payment System APIs

iPayment provides a set of APIs for interfacing with the payment system servlets, including APIs for authorization, capture, return, void, close batch, query batch status, and query transaction status. iPayment makes requests to these APIs using HTTP.

When communicating with Gateway model payment processor servlets, iPayment engine will send payment data to the servlet as name-value pairs. For more details on this, please refer to Appendix D, "Back-End APIs for Gateways".

When communicating with Processor model payment systems, iPayment engine will send a HTTP Post request with the XML payment data in the body of the request. For more details on the DTDs used for generating the XML body of the request.

The DTD for credit card and purchase card back end APIs are present in

**$IBY_TOP/xml/orc115/api/creditcard**

The DTD for inbound bank remittance APIs are present in

**$IBY_TOP/xml/orc115/api/bankaccount**

The DTD for outbound bank payment APIs are present in

**$IBY_TOP/xml/orc115/api/bankpayment**

# Overview of Payment System APIs

Oracle iPayment provides a complete payment solution. Payment System APIs allow integration with third party payment systems for credit card, purchase card, and bank account transfer processing. The payment systems communicate with the payment processors and the acquirers/banks to process payment transactions.

There are three options for integrating with third party payment systems, also known as back end payment systems.

- Use the payment system integration provided by Oracle iPayment. Oracle iPayment provides payment integration with CyberCash, Paymentech, Concord EFS and First Data (North). Use the following links to guide you to implement the appropriate payment system in your organisation.
  - Configuring the ECApp Servlet
  - Configuring CyberCash Servlet
  - Configuring Paymentech Servlet
  - Configuring FDC North Servlet
  - Implementing Concord EFSnet Servlet
- Use the payment integration provided by the vendor. Many payment system vendors have partnered with Oracle to build integration with Oracle iPayment. These field installable servlets are available from Oracle's payment system partners.
- Build integration by using the published Payment System APIs for credit cards and purchase cards. See Back-End APIs for Gateways for instructions on how to build your own field installable servlets.

# Implementing Payment Systems APIs

Oracle iPayment supports field-installable servlets. These are payment system servlets not bundled with Oracle iPayment. This feature allows a payee to acquire a new, additional, or upgraded payment system servlet and configure it in the same way as the payment system servlets bundled with Oracle iPayment.

The ability to add field-installable servlets provides payment flexibility and allows new releases of Oracle iPayment and the payment systems to be independent of each other. It also enables electronic commerce applications to customize the payment system for their specific needs and regions.

Field-installable payment system servlets for Oracle iPayment are usually available from Oracle's payment system partners.

# Security Considerations

Oracle iPayment is architected to send credit card details in clear text encoded into the URL. This architecture requires the logging levels on Apache to be lowered from the default to prevent the credit card information from appearing in the log files.

In the httpds.conf file, change:

LogFormat "%h %l %u %t \"%r\" %>s %b" common

to:

LogFormat "%h %l %u %t \"%U\" %>s %b" common

## Setting Up SSL Security for the ECApp Servlet

If the ECAPP servlet is located at an HTTPS URL, then you must set these two wallet profile options: IBY: Wallet Location and IBY: Wallet Password. See iPayment Profile Options for more details.

The public certificate of the web server which hosts the ECAPP servlet must have been imported as a trusted certificate into the Oracle wallet. See Using Oracle Wallet Manager in the *Oracle Advanced Security Administration Guide*.

# Setting Up SSL Security for Payment System Servlet Communication

When Oracle iPayment communicates with payment system servlets, the information exchanged may be sensitive information such as credit card numbers. If the communication is not secure, it poses a security risk.

The security risk increases in the following circumstances:

- If Oracle iPayment and the payment systems are installed on separate machines
- If Oracle iPayment is running outside your firewall

## Steps

- To set up a back end payment system servlet with secured sockets layer follow the procedures in Apache's mod-ssl documentation (http://www.mod-ssl.org/docs). Make sure that your SSL server has a complete certificate chain to the root certificate. SSL's client toolkit requires it.
- Set up the BASE URL parameter of back end payment system using https as the protocol.

## Setting Up SSL Runtime for Oracle iPayment

Oracle iPayment requires a set of runtime libraries for supporting SSL communication. These runtime SSL libraries are included with the Oracle 8*i* distribution, but are not installed on an applications tier by default. If you are using Oracle iPayment, you must follow these steps to manually configure SSL on your web server.

**To configure the SSL:**

1. Copy SSL runtime libraries to $JAVA_TOP.
2. Log on to your web server as the applmgr user and run the environment file for the appropriate product group.
3. Go to the $JAVA_TOP directory, create a subdirectory "ssl", and enter that subdirectory. For example:

   % cd $JAVA_TOP

   % mkdir ssl

   % cd ssl
4. Copy the following three files from any 8*i* installation to the current directory:

$ORACLE_HOME/jlib/javax-ssl-1_1.jar

$ORACLE_HOME/jlib/jssl-1_1.jar

$ORACLE_HOME/lib/libnjssl8.so

**Note:** $ORACLE_HOME in this case refers to your 8*i* directory, not the default Oracle Home, which is based on 8.0.6.

**Note:** If you do not have an 8*i* installation on your web server, you can copy these files from your database server using the ftp command.

5. Set up runtime environment variables.

   If you are building your electronic commerce application as a servlet and JServ is set up to start automatically, you need to modify CLASSPATH and LD_LIBRARY_PATH in your servlet engine's configuration.

   If your JServ is set up to start manually, you need to modify the CLASSPATH and LD_LIBRARY_PATH in your shell environment variables, or in the script used to start JServ (for example, jservctl).

   Here is an example for modifying these variables in the Apache servlet engine (JServ) configuration file. For Apache JServ, you have to edit the jserv.properties file to set the CLASSPATH and LD_LIBRARY_PATH environment variables. To add the two SSL jar files from step 1 to the CLASSPATH, add the following lines to jserv.properties:

   wrapper.classpath=$JAVA_TOP/ssl/javax-ssl-1_1.jar

   wrapper.classpath=$JAVA_TOP/ssl/jssl-1_1.jar

   To add the shared library from step 1 to the LD_LIBRARY_PATH, you must find the line in jserv.properties that begins with:

   wrapper.env=LD_LIBRARY_PATH=

   and add the following to the end of that line:

   $JAVA_TOP/ssl

**Note:** Use a colon to separate the directory you are adding from the ones that are already present.

If there is no such LD_LIBRARY_PATH line, create one by adding the following line to jserv.properties:

wrapper.env=LD_LIBRARY_PATH=$JAVA_TOP/ssl

If you have a stand-alone application, you need to modify CLASSPATH and LD_LIBRARY_PATH. Append:$JAVA_TOP/ssl/javax-ssl-1_1.jar: $JAVA_TOP/ssl/javax-ssl-1_1.jar to CLASSPATH and append:$JAVA_TOP/ssl to LD_LIBRARY_PATH environment variable.

**Note:** You may not have defined $JAVA_TOP environment variable in your environment. In that case, you should include the fully qualified physical path.

# A

# Risk Management

This appendix explains risk management functionality. Topics in this section include:

- Utilizing Risk Management
- Risk Management Test Scenarios

# Utilizing Risk Management

iPayment supports risk management functionality. Electronic commerce applications can incorporate this feature and detect fraudulent payments. The following information describes how electronic commerce applications can utilize the risk management functionality of iPayment.

## Risk Factors and Risk Formulas

iPayment is bundled with a set of risk factors. Payees can configure these factors depending on their business model. The payees can create multiple formulas using different factors and weights depending on their specific requirements. The ability to create multiple formulas provides flexibility to payees to accommodate different business scenarios. Each formula must be set up so that the sum of the weights is equal to 100. If a risk factor value is missing at the time of risk evaluation, the risk for the missing factor is considered very high in the formula.

iPayment also defines an implicit formula for each payee with default factors and weights. Administrators have the flexibility to modify the implicit formula. The following information describes how and where the implicit formula is used.

### Process Flow of Risk Evaluation

1. To enable risk analysis during authorization, either set up the explicit risk flag in the input transaction object or check Enabled radio button in the Risk Management Status screen for that payee.
2. When an electronic commerce application makes a Payment Request API call, iPayment first checks the risk flag and depending on its value, decides if the payee involved in the payment request is risk enabled or not. If the risk analysis field indicates that iPayment should perform risk analysis, or if a default value is added in the field and a payee is risk enabled, iPayment evaluates either the risk formula passed in the Payment Request API or the implicit formula associated with that payee.
3. Electronic commerce application can pass a specific risk formula name by calling the overloaded Payment Request API. This API takes PmtRiskInfo object in which electronic commerce application can set up the formula name and additional information. If PmtRiskInfo object is not passed and the payee is risk enabled, iPayment evaluates the implicit formula of that payee.
4. iPayment returns the Risk Response (RiskResp) object as part of the payment response. If risk evaluation is done successfully, Risk Response object contains

the risk score obtained after evaluation and the threshold value that is set up with the payee. Based on the risk score and the threshold value, the electronic commerce application can decide whether a payment can be accepted or not

5. If the risk score is more than the threshold value, the payment request is risky.

## Process Flow of Independent Risk APIs

**Risk API 1**

1. When an electronic commerce application invokes Risk API 1, iPayment evaluates the risk formula sent in the request or the implicit formula associated with that payee.
2. iPayment evaluates all the risk factors that are configured as part of this formula, except the AVS Code risk factor.
3. After evaluation, iPayment returns Risk response (RiskResp) object as a response to this API. This response object contains, the status of the API call, AVSCodeFlag indicating if AVS Code risk factor was part of the formula or not, risk score, and the risk threshold value that is setup for the payee. Depending on the AVSCodeFlag value, it is be decided whether to call Risk API 2 or not.

> **Note:** Partial risk score is returned if AVS Code risk factor is part of the risk formula.

**Risk API 2**

1. Electronic commerce applications need to call this API with the same PayeeID and formula name that were used to call Risk API 1. The risk score that was returned as part of the Risk API 1 response also needs to be sent. When electronic commerce applications call this API, iPayment checks again if the formula has AVS Code risk factor configured in it or not. If it is configured, iPayment evaluates the AVS Code risk factor.
2. After evaluating the AVS Code risk factor, iPayment calculates the final risk score of the formula using the previous risk score that was sent and the AVS Code risk factor score. This risk score is sent back to the electronic commerce application as part of the response object of this API.

# Risk Management Test Scenarios

The following are three business scenarios that describe how a merchant can use the Risk Management functionality.

## Merchant Selling Books and Low Priced Goods

In a small business, accepting risky instruments is a critical factor. If a customer is using a stolen credit card, the merchant should consider this transaction risky and assign this risk factor a higher weight than the other risk factors. Ship to/bill to address matching and payment history are also important risk factors. To include AVS Code risk factor, a merchant can set up a formula with weights as shown in Weight B column in the Risk Formula Setup-First Case table. The total of all the weights should be 100. For a formula that a merchant would set up in this case, see Risk Formula Setup for the First Case.

### Risk Formula Setup for the First Case

This table shows the risk formula setup for a merchant selling books and low priced goods.

| Factors | Weight A | Weight B |
|---|---|---|
| Risky Instruments | 30 | 30 |
| Payment Amount Limit | 15 | 15 |
| Transaction Amount | 15 | 15 |
| Ship to/Bill to | 20 | 10 |
| Payment History | 20 | 10 |
| AVS Code | 0 | 20 |

### Risk Factor Setup

- Payment Amount Limit

  This table shows the risk levels and the associated payment amounts.

| Risk Levels | Greater than or Equal To |
|---|---|
| Low | 0 |

| Risk Levels | Greater than or Equal To |
|---|---|
| Low medium | 100 |
| Medium | 200 |
| Medium high | 300 |
| High | 400 |

- Transaction Amount

  A transaction is high risk if the transaction amount exceeds 500 in one week. Otherwise there is no risk.

- Payment History

  This table shows the risk levels and the number of payments made in the last six months by a particular customer.

| Risk Levels | Greater than or Equal To |
|---|---|
| Low | 6 |
| Low medium | 4 |
| Medium | 3 |
| Medium high | 2 |
| High | 0 |

- AVS Code

  This table shows the risk levels and the associated AVS Codes. AVS Code risk factor evaluation is useful only for customers in the United States.

| Risk Level | AVS Code |
|---|---|
| No risk | S,Y,U,X,R,E |
| Low | A,Z,W |
| Low medium | |
| Medium | |
| Medium high | |
| High | N |

- Ship To/bill To and Risky Instruments

  These risk factors do not require any setup. The evaluation will be done with the data already existing in the database.

- Risk Score

  A typical threshold value would be between medium and medium high risk score. Risk Management module evaluates the payment request and returns an overall risk score. If an overall risk score exceeds the threshold value set up by the merchant, then the merchant has to decide whether to process the request or to block the request.

## Merchant Selling Electronic Goods

Risky instruments is a critical factor in this case. If a customer is using a stolen credit card, the merchant should consider this transaction risky and assign it a higher weight.

Frequency of purchase is the next important risk factor. Usually customers do not buy electronic goods frequently, and if they do, the purchases could be a fraudulent.

In this scenario, time of purchase is also should be considered as an important risk factor. If someone buys many goods after 2:00 AM, it might be a fraudulent purchase.

To include an AVS Code risk factor, a merchant can sets up a formula with weights as shown in column Weight B in Risk Formula Setup-Second Case table. The total of all the weights are 100. The AVS Code risk factor evaluation will be useful only for customers in the United States.

### Risk Formula Setup for the Second Case

This table shows the risk formula set up for a merchant selling electronic goods.

| Factor | Weight A | Weight B |
|---|---|---|
| Risky Instruments | 30 | 30 |
| Ship to/Bill to | 15 | 12 |
| Time of Purchase | 15 | 12 |
| Frequency of Purchase | 20 | 10 |
| Payment Amount | 10 | 8 |

| Factor | Weight A | Weight B |
|---|---|---|
| Transaction Amount Limit | 10 | 8 |
| AVS Code | 0 | 20 |

### Risk Factor Setup

- Payment Amount Limit

  This table shows the risk levels and the associated payment amounts.

| Risk Levels | Greater Than or Equal To |
|---|---|
| Low | 500 |
| Low medium | 1000 |
| Medium | 1500 |
| Medium high | 2000 |
| High | 2500 |

- Transaction Amount

  This risk factor is considered high risk if the amount exceeds 2,500 in one week. Otherwise there is no risk.

- Frequency of Purchase

  This risk factor is considered high risk if the frequency of purchase exceeds ten times in the previous one week.

- AVS Codes

  This table shows the risk levels and the associated AVS codes. AVS codes risk factor evaluation is only useful for customers in the United States.

| Risk Level | AVS Code (Comma Separated) |
|---|---|
| No risk | S,Y,U,X,R,E |
| Low | A,Z,W |
| Low medium | |
| Medium | |
| Medium high | |

| Risk Level | AVS Code (Comma Separated) |
|---|---|
| High | N |

- Ship To/Bill To and Risky Instruments

  These risk factors do not require any setup. The evaluation will be done through the data already existing in the database.

- Risk Score

  A typical threshold value is to be between medium and medium high risk score.

  The risk management module evaluates the payment request and returns an overall risk score. If an overall risk score exceeds the threshold value set up by the merchant, the merchant has to decide whether to process the request or to block the request.

## Business to Business Customer

In a business to business scenario, a merchant has an established relationship with his customer. In this scenario, the Oracle Receivables risk factors take higher precedence. The merchant is interested in the customer's payment history, his credit rating, etc. All Oracle Receivables risk factors are set up through Oracle Receivables interface.

### Risk Formula Setup in the Third Case

This table shows a Risk Formula setup for a business to business customer.

| Factors | Weight |
|---|---|
| Overall Credit Limit | 30 |
| Transaction Credit Limit | 30 |
| Risk Codes | 15 |
| Credit Rating Codes | 15 |
| Payment History | 10 |

### Risk Factor Setup

- Overall Credit Limit: 100,000

- Transaction Credit Limit: 50,000
- Risk Codes are set up through Oracle Receivables codes.

  This table shows the risk codes and the associated risk scores set up through iPayment administration user interface.

| Risk Codes | Risk Score |
|---|---|
| Low | Low |
| Average | Medium |
| Excellent | No risk |

- Credit Rating Codes are set up through Oracle Receivables interface

  This table shows the set up of credit rating codes and the associated risk scores.

| Credit Rating Codes | Risk Score |
|---|---|
| Low | Low |
| Average | Medium |
| Poor | High |
| Excellent | No risk |

- Risk Score

  A typical threshold value is between medium and medium high.

  Risk management module evaluates the payment request and returns an overall risk score. If an overall risk score exceeds the threshold value set up by the merchant, then the merchant decides whether to process the request or block it.

# B

# Error Handling

This appendix explains error handling and describes the most common errors. Topics in this section include:

- Error Handling During Payment Processing

# Error Handling During Payment Processing

iPayment returns a response object to each API that an electronic commerce application calls. If the operation fails, then the response object contains status value (IBY_FAILURE), indicating that there was a failure while processing the request. In these cases, the electronic commerce application can get more information about the failure by checking the error code and the error message. Errors can happen in iPayment for various reasons. For example, wrong or duplicate data passed by the electronic commerce application, time out while communicating with Payment Systems, etc. All the errors that can occur in iPayment can be categorized in these groups:

- Common Errors
- Errors Due to Invalid or Duplicate Data
- Communication Errors
- Configuration Errors

## Common Errors

This table describes the most common errors.

| Error Code | Description |
|---|---|
| IBY_0001 | Communications error. The payment system, the processor, or iPayment electronic commerce servlet is not accessible. You should resubmit the request at a later time. |
| IBY_0002 | Duplicate order identifier. |
| IBY_0003 | Duplicate batch identifier. |
| IBY_0004 | Mandatory fields are required. |
| IBY_0005 | Payment system specific error. Check BEPErrCode and BEPErrMsg in response objects for more information. |
| IBY_0006 | Batch partially succeeded. Some transactions in the batch failed and some were processed correctly. |
| IBY_0007 | The batch failed. You should correct the problem and resubmit the batch. |
| IBY_0008 | Requested action is not supported by the payment system. |
| IBY_0017 | Insufficient funds. |

| Error Code | Description |
|---|---|
| IBY_0019 | Invalid credit card or bank account number. |

## Errors Due to Invalid or Duplicate Data

In each payment request, a payment instrument from which the money is transferred to the payee's account is involved. Generally this information is given by the end user of the electronic commerce application. Sometimes the end user might enter wrong instrument number or an instrument number that does not have enough funds. To detect these errors, iPayment provides two error codes that help electronic commerce applications to prompt the end user for correct information.

The error codes due to invalid or duplicate data and their descriptions are given in this table.

| Error Code | Description |
|---|---|
| IBY_0017 | Insufficient funds |
| IBY_0019 | Invalid credit card/bank account number |

## Communication Errors

Since payment processing requests involve a number of different components connected over networks, time-out errors or communication errors are possible. For example, a processor successfully processes a payment request, but the network connection between the payment system and iPayment, or the network connection between iPayment's PL/SQL API package and iPayment electronic commerce servlet break down, causing the electronic commerce application not to receive the result. In some cases, electronic commerce application might crash before receiving a response. Before the crash, payment processing may have completed. Therefore, when electronic commerce application calls the API with the same information, iPayment considers this a duplicate request and raises an error. To recover from such errors, iPayment provides two approaches.

In the first approach, which is applicable to OraPmtReq and OraPmtCredit, the electronic commerce application can try the request with the retry flag set up to TRUE. This makes iPayment retry the request if it has not processed the request. Otherwise iPayment sends the same response that was sent when this request was first made.

In the second approach, which is applicable to all other operations except OraPmtReq and OraPmtCredit, the electronic commerce application needs to find

out if the transactions went through successfully to re-execute any lost transactions. To enable the merchant or business to query the status of a transaction, you need to integrate the Query Transaction Status API in the electronic commerce application. This API returns all existing records for a particular transaction identifier on a payment system.

This table describes the communication error code and its description.

| Error Code | Description |
|---|---|
| IBY_0001 | The payment system, the processor, or iPayment's electronic commerce servlet is not accessible. You should resubmit the request at a later time. |

## Configuration Errors

These errors occur if payees or payment systems are not configured properly. Make sure that the URLs are entered correctly and the payee's payment system identifiers are configured properly.

# C

# iPayment PL/SQL APIs

This appendix explains the iPayment PL/SQL API's.

# Electronic Commerce PL/SQL APIs

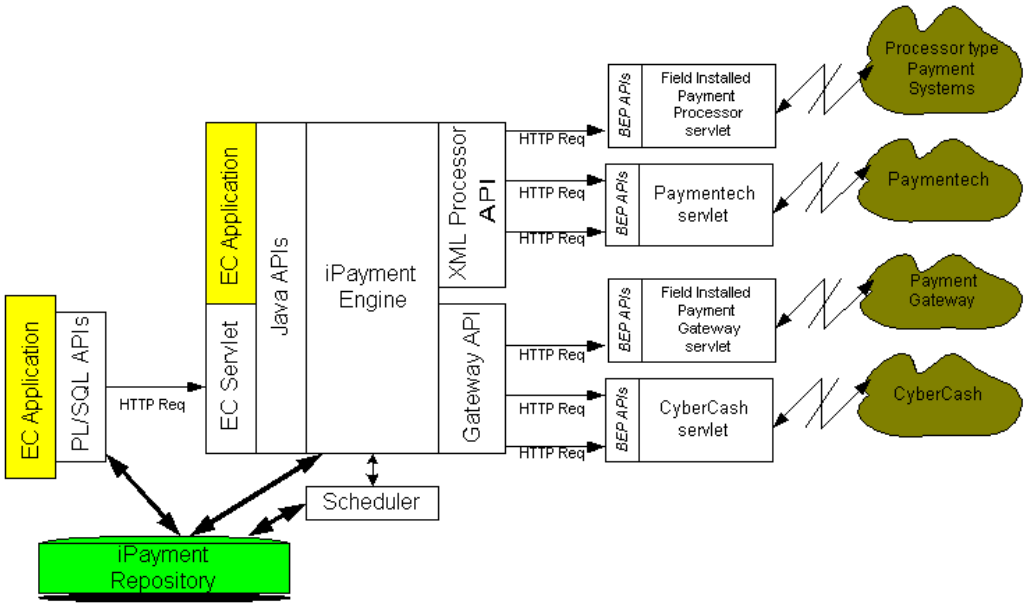
This section describes iPayment 11i PL/SQL API specifications for electronic commerce applications (EC-Apps) that require/prefer PL/SQL interfaces for processing credit card and bank account transfer payment related operations. These APIs could be invoked by EC-Apps with appropriate values to perform payment operations.

The following sections contain architectural overview of iPayment PL/SQL APIs, the signatures of each API, and definitions for each in/out parameters.

# Architectural Overview

The following diagram shows the overall architecture of iPayment 11i and where the PL/SQL APIs fit inside this architecture.

***Figure C– 1 iPayment Architecture***




PL/SQL based EC-Apps can invoke the PL/SQL APIs which are stored in the applications database. These APIs in turn pass the payment related request, via HTTP, to the iPayment middle tier through iPayment, receives the response and passes this response to the calling application through response records.

EC-Apps can invoke the APIs either in an offline or online mode depending on the requirements of the applications.

For more information on different modes of payment, please see Understanding Offline and Online Payments in the *Oracle iPayment Concepts and Procedures Guide*. For the offline requests, the scheduler is invoked periodically to send appropriate requests to the back end payment systems and the status returned is passed back to the ECApp. For more information on how scheduler and offline operations work, see How the Scheduling System Works in *Oracle iPayment Concepts and Procedures*

*Guide*. For more information on how status is updated, please refer to Status Update API.

# PL/SQL APIs Procedure Definitions

This section consists of the iPayment PL/SQL APIs which are supported in the 11i release. All the procedures described below are declared public and are stored as part of the applications database. All these procedures share some common IN and OUT parameters.

This table describes the common IN parameters.

| | | | |
|---|---|---|---|
| p_api_version | IN | NUMBER | This parameter is to conform to the Oracle applications API standard. It is the version to be used for the API. The current supported version is 1.0 and so use 1.0 |
| p_init_msg_list | IN | VARCHAR2 | This parameter is to conform to the Oracle Applications API standard. Use FND_API.G_ FALSE which is also the default value. |
| p_commit | IN | VARCHAR2 | This parameter is to conform to the Oracle Applications API standard and hasn't been implemented for these APIs. Use FND_API.G_ FALSE which is also the default value. |
| p_validation_level | IN | NUMBER | This parameter is to conform to the Oracle Applications API standard. Use FND_API.G_ VALID_LEVEL_FULL which is also the default value. |
| p_ecapp_id | IN | NUMBER | The id of EC-App which is invoking the API. |

This table describes the common OUT parameters.

| | | | |
|---|---|---|---|
| x_return_status | OUT | VARCHAR2 | Used to indicate the return status of the procedure. This parameter is to conform to the Oracle applications API standard. |
| x_msg_count | OUT | NUMBER | The error message count holds the number of error messages in the API message list. This parameter is to conform to the Oracle applications API standard |
| x_msg_data | OUT | VARCHAR2 | Contains the error messages. This parameter is to conform to the Oracle applications API standard |

**Note:** These APIs return a single x_return_status as 'S' for overall success, and 'U' for any type of errors (both API internal errors and iPayment processing errors included).

If the value of x_return_status is not 'S', then the calling program needs to check both the API message list parameter x_msg_data and the iPayment response objects to identify whether it is an API implementation error or an iPayment related error. The API message list messages will hold all API implementation errors, while the API response objects will hold iPayment related success/errors.

The error message from iPayment may include messages from the back end payment systems in special response object fields (BEPErrCode, BEPErrMessage, ErrLocation). Hence the error messages from iPayment are not added into the message list, consistent with the Java APIs.

The PL/SQL APIs provided by iPayment are of two types:

- Payment Processing APIs
- Payment Instrument Registration APIs

## Payment Processing APIs

These APIs are the transactional APIs that support various payment operations. The electronic commerce applications use these APIs to process various transaction types. For example, authorization of credit cards and purchase cards, transfer of funds from one bank account to another, capture, cancel, return, and others. A list of such APIs are provided below. All the procedures described below are declared public and are stored in the PL/SQL Package IBY_PAYMENT_ADAPTER_PUB as part of the applications database.

The following PL/SQL APIs are described in this section:

- OraPmtReq
- OraPmtMod
- OraPmtCanc
- OraPmtCapture
- OraPmtReturn
- OraPmtVoid
- OraPmtCredit
- OraPmtQryTrxn
- OraPmtCloseBatch
- OraPmtQueryBatch
- OraPmtInq
- OraRiskEval

For more information on Error Codes and their meaning, see Error Handling.

For all the APIs, for description of the PL/SQL records with possible values, see "PL/SQL Record/Table Types Definitions" in this appendix.

### OraPmtReq

API type: Public

Prerequisites for calling the API: None

Function(s) performed by the API:

This API handles new Payment requests from EC-Apps. EC-Apps can make an offline or online payment requests by setting "PmtMode" attribute in "p_ pmtreqtrxn_rec" "OFFLINE" or "ONLINE". If the attribute of the record is not set explicitly then, by default, payment is considered as "ONLINE" request. If "PmtMode" is set to "OFFLINE", then attribute "Settlement_date" in "p_ pmtreqtrxn_rec" must be set to proper value.

Sometimes credit card processing networks decline transactions with a referral message indicating that the merchant must call the cardholder's issuing bank to complete the transaction. The payment information in such cases is submitted over the phone. If the transaction is approved, the merchant is provided with an authorization code for the transaction. To facilitate follow-on transactions through iPayment for this voice authorization (for example, capture or void), OraPmtReq API provides voice authorization support.

This API returns a transaction ID if payment request is processed successfully, which can be used later to initiate follow on operation on the payment. For example, to modify a payment or capture the payment, the EC-App will need to pass this transaction ID along with other information that is needed to perform the operation requested.

Response object of the API contains risk response if the payee involved in the payment(on-line) request is risk enabled. EC-Apps can check RiskRespIncluded field in the response to verify if there is a Risk response from iPayment, and if so, check the RiskResponse record for details. This API also accepts additional OPTIONAL risk-related input parameters for evaluating risk of an on-line payment request.

For more information on using Risk Management, see Utilizing Risk Management.

In summary, this API can be used to:

- Authorize credit transactions
- Transfer funds from a bank account
- Do risk analysis
- Schedule payments to be made in future (Offline payments)

**Note:** This API is also available in an overloaded form, without the Risk related input parameter to enable EC-Apps that may not need risk evaluation functionality to call the OraPmtReq API directly without any Risk related input. All the other inputs and outputs are identical to the above API. Only the input parameter p_riskinfo_rec is absent in the overloaded API's signature definition.

### Signature

```
Procedure OraPmtReq (p_api_version  IN   NUMBER,
                     p_init_msg_list IN  VARCHAR2:=FND_API.G_FALSE
                     p_commit       IN   VARCHAR2:=FND_API.G_FALSE
                     p_validation_level IN NUMBER:=FND_API.G_VALID
                                          LEVEL_FULL
                     p_ecapp_id     IN   NUMBER,
                     p_payee_rec    IN   Payee_rec_type,
                     p_payer_rec    IN   Payer_rec_type,
                     p_pmtinstr_rec IN   PmtInstr_rec_type,
                     p_tangible_rec IN   Tangible_rec_type,
                     p_pmtreqtrxn_rec IN PmtReqTrxn_rec_type,
                     p_riskinfo_rec IN   RiskInfo_rec_type,
                     x_return_status OUT VARCHAR2,
                     x_msg_count    OUT  NUMBER,
                     x_msg_data     OUT  VARCHAR2,
                     x_reqresp_rec  OUT  ReqResp_rec_type)
```

### Overloaded API Signature (without risk objects):

```
Procedure OraPmtReq (p_api_version  IN   NUMBER,
                     p_init_msg_list IN  VARCHAR2:=FND_API.G_FALSE,
                     p_commit       IN   VARCHAR2:=FND_API.G_FALSE,
                     p_validation_level IN NUMBER:=FND_API.G_VALID_
```

```
                                    LEVEL_FULL,
p_ecapp_id          IN              NUMBER,
p_payee_rec         IN              Payee_rec_type,
p_payer_rec         IN              Payer_rec_type,
p_pmtinstr_rec      IN              PmtInstr_rec_type,
p_tangible_rec      IN              Tangible_rec_type,
p_pmtreqtrxn_rec    IN              PmtReqTrxn_rec_type,
x_return_status     OUT             VARCHAR2,
x_msg_count         OUT             NUMBER,
x_msg_data          OUT             VARCHAR2,
x_reqresp_rec       OUT             ReqResp_rec_type)
```

### Parameters

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | - | Required |
| p_init_msg_list | IN | VARCHAR2 | - | Optional |
| p_commit | IN | VARCHAR2 | - | Optional |
| p_validation_level | IN | NUMBER | - | Optional |
| p_ecapp_id | IN | NUMBER | - | Required |
| p_payee_rec | IN | Payee_rec_type | | Required |
| | | Payee_ID | VARCHAR2 | Required |
| p_payer_rec | IN | Payer_rec_type | - | Optional |
| | | Payer_ID | VARCHAR2 | Optional |
| p_pmtinstr_rec | IN | PmtInstr_rec_type | - | Required |
| | | 1. PmtInstr_ID | NUMBER | Mandatory if 2, 3 and 4 are null |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| **Note**: Address record is optional overall, but if passed, then the 4 fields Addr1, City, State, Postal Code (1,2,3,4)* are together Mandatory. | | 2. CreditCardInstr | CreditCardInstr_ rec_type | Mandatory if 1, 3 and 4 are null |
| | | | CC_Num | Required |
| | | | CC_ExpDate | Required |
| | | | 1.CC_ BillingAddr.Address1 | Optional* |
| | | | 2.CC_ BillingAddr.City | Optional* |
| | | | 3.CC_ BillingAddr.State | Optional* |
| | | | 4.CC_ BillingAddr.Postal Code | Optional* |
| | | | 5.CC_ BillingAddr.Address2 | Optional |
| | | | 6. CC_ BillingAddr.Address3 | Optional |
| | | | 7.CC_ BillingAddr.County | Optional |
| | | | 8.CC_ BillingAddr.Country | Optional |
| | | | 9. CC_Type | Optional |
| | | | 10.CC_ HolderName | Optional |
| | | | 11. FIName | Optional |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| **Note**: Address record is optional overall, but if passed, then the 4 fields Addr1, City, State, Postal Code (1,2,3,4)* are together Mandatory. | | 3.PurchasetCardInstr | PurchaseCardInstr_rec_type | Mandatory if 1 and 2 are null |
| | | | PC_Num | Required |
| | | | PC_ExpDate | Required |
| | | | 1.PC_ BillingAddr.Address1 | Optional* |
| | | | 2.PC_ BillingAddr.City | Optional* |
| | | | 3.PC_ BillingAddr.State | Optional* |
| | | | 4.PC_ BillingAddr.Postal Code | Optional* |
| | | | 5.PC_ BillingAddr.Address2 | Optional |
| | | | 6. PC_ BillingAddr.Address3 | Optional |
| | | | 7.PC_ BillingAddr.County | Optional |
| | | | 8.PC_ BillingAddr.Country | Optional |
| | | | 9. PC_Type | Optional |
| | | | 10.PC_ HolderName | Optional |
| | | | 11. FIName | Optional |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| | | | 12. PC_SubType | Mandatory |
| | | 5. PmtInstr_ ShortName | VARCHAR2 | Optional |
| p_tangible_rec | IN | Tangible_rec_type | | Required |
| | | 1. Tangible_ID | VARCHAR2 | Required |
| | | 2. Tangible_ Amount | NUMBER | Required |
| | | 3. Currency_Code | VARCHAR2 | Required |
| | | 4. RefInfo | VARCHAR2 | Optional |
| | | 5. Memo | VARCHAR2 | Optional |
| | | 6. Acct_Num | VARCHAR2 | Optional |
| p_pmtreqtrxn_rec | IN | PmtReqTrxn_rec_ type | | Required |
| | IN | PmtMode | VARCHAR2 | Required |
| | IN | CVV2 | VARCHAR2 | Optional |
| | IN | Settlement_Date | DATE | Mandatory for PmtMode = OFFLINE |
| | IN | Check_Flag | VARCHAR2 | Optional with default value = 'TRUE' for PmtMode = OFFLINE |
| | IN | Auth_Type | VARCHAR2 | Mandatory for Credit Card where value is AUTHONLY, AUTHCAPTURE, or AUTHANDCAPTURE |
| | IN | Retry_Flag | VARCHAR2 | Optional |
| | IN | Org_ID | NUMBER | Optional |
| | IN | NLS_LANG | VARCHAR2 | Optional |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| | IN | PONum | NUMBER | Mandatory for Purchase Card |
| | IN | TaxAmount | NUMBER | Optional |
| | IN | ShipFromZip | VARCHAR2 | Optional |
| | IN | ShipToZip | VARCHAR2 | Optional |
| | IN | AnalyzeRisk | VARCHAR2 | Optional |
| | IN | Retail Data_rec_ type | | Optional |
| p_riskinfo_rec | IN | RiskInfo_rec_type | | Optional |
| | | Formula_Name | VARCHAR2 | Optional |
| | | ShipToBillTo_Flag | VARCHAR2 | Optional |
| | | Time_Of_Purchase | VARCHAR2 | Optional |
| | | Customer_Acct_ Num | VARCHAR2 | Optional |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |
| x_reqresp_rec | OUT | ReqResp_rec_type | | |
| (GENERIC PAYMENT SERVER RESPONSE) | OUT | Response:<br>Status<br>ErrCode<br>ErrMessage<br>NLS_LANG | Response_rec_ type:<br>NUMBER<br>VARCHAR2<br>VARCHAR2<br>VARCHAR2 | |
| | OUT | Trxn_ID | NUMBER | |
| | OUT | RefCode | VARCHAR2 | |
| | OUT | ErrorLocation | NUMBER | |
| | OUT | BEPErrCode | VARCHAR2 | |
| | OUT | BEPErrMessage | VARCHAR2 | |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| (OPERATION RELATED RESPONSE) | | | | |
| | OUT | Trxn_Type | NUMBER | |
| | OUT | Trxn_Date | DATE | |
| | OUT | Authcode | VARCHAR2 | |
| | OUT | AVSCode | VARCHAR2 | |
| | OUT | PmtInstr_Type | VARCHAR2 | |
| | OUT | Acquirer | VARCHAR2 | |
| | OUT | VpsBatch_ID | VARCHAR2 | |
| | OUT | AuxMsg | VARCHAR2 | |
| (RISK RELATED RESPONSE) | OUT | RiskRespIncluded | VARCHAR2 | |
| | | RiskResponse | RiskResp_rec_type | |
| | | Status | NUMBER | |
| | | ErrCode | VARCHAR2 | |
| | | ErrMessage | VARCHAR2 | |
| | | Additional_ ErrMessage | VARCHAR2 | |
| | | Risk_Score | NUMBER | |
| | | Risk_ Threshold_ Val | NUMBER | |
| | | Risk_Flag | VARCHAR2 | |
| (OFFLINE MODE RELATED RESPONSE) | OUT | OffLineResp | | |
| | | EarliestSettlement_Date | DATE | |
| | | Scheduled_ Date | DATE | |

### OraPmtMod

API type: Public

Prerequisites for calling the API: Existing scheduled Off-line payment request

Function(s) performed by the API:

This API handles modifications to existing Payment request. A payment that was requested earlier by an EC-App can be modified using this API. Payment modification is relevant in case of Scheduled (i.e., OFFLINE) payments. Users may decide to modify a payment before it is sent to the payment system.

The payee and tangible_id cannot be modified. The payment instrument can be modified, but the modified/new payment instrument should be of the same type as the original request. (If original instrument is a credit card, the modified instrument should be a credit card.)

### Signature

```
Procedure OraPmtMod (p_api_version IN      NUMBER,
                     p_init_msg_list  IN   VARCHAR2 := FND_API.G_FALSE,
                     p_commit         IN   VARCHAR2 := FND_API.G_FALSE,
                     p_validation_level IN NUMBER := FND_API.G_VALID_
                                           LEVEL_FULL,
                     p_ecapp_id       IN   NUMBER,
                     p_payee_rec      IN   Payee_rec_type,
                     p_payer_rec      IN   Payer_rec_type,
                     p_pmtinstr_rec   IN   PmtInstr_rec_type,
                     p_tangible_rec   IN   Tangible_rec_type,
                     p_modtrxn_rec    IN   ModTxn_rec_type,
                     x_return_status  OUT  VARCHAR2,
                     x_msg_count      OUT  NUMBER,
                     x_msg_data       OUT  VARCHAR2,
                     x_modresp_rec    OUT  ModResp_rec_type)
```

### Parameters

| Parameter | IN/ OUT | Data Type | Sub Type | Required/ Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | - | Required |
| p_init_msg_list | IN | VARCHAR2 | - | Optional |
| p_commit | IN | VARCHAR2 | - | Optional |
| p_validation_level | IN | NUMBER | - | Optional |
| p_ecapp_id | IN | NUMBER | - | Required |
| p_payee_rec | IN | Payee_rec_type | | Required |
| | | Payee_ID | VARCHAR2 | Required |
| p_payer_rec | IN | Payer_rec_type | | Optional |
| | | Payer_ID | VARCHAR2 | Optional |
| | | Payer_Name | VARCHAR2 | Optional |
| p_pmtinstr_rec | IN | PmtInstr_rec_type | | Required |
| | | 1. PmtInstr_ID | NUMBER | Mandatory if 2, 3 and 4 are null |
| **Note**: Address record is optional overall, but if passed, then the 4 fields Addr1, City, State, Postal Code (1,2,3,4)* are together Mandatory. . | | 2. CreditCardInstr | CreditCardInstr_rec_type | Mandatory if 1, 3 and 4 are null |
| | | | CC_Num | Required |
| | | | CC_ExpDate | Required |
| | | | 1.CC_ BillingAddr.Address1 | Optional* |

| Parameter | IN/ OUT | Data Type | Sub Type | Required/ Optional |
|---|---|---|---|---|
| | | | 2.CC_BillingAddr.City | Optional* |
| | | | 3.CC_BillingAddr.State | Optional* |
| | | | 4.CC_ BillingAddr.PostalCode | Optional* |
| | | | 5.CC_ BillingAddr.Address2 | Optional |
| | | | 6. CC_ BillingAddr.Address3 | Optional |
| | | | 7.CC_ BillingAddr.County | Optional |
| | | | 8.CC_ BillingAddr.Country | Optional |
| | | | 9. CC_Type | Optional |
| | | | 10.CC_HolderName | Optional |
| | | | 11. FIName | Optional |
| **Note**: Address record is optional overall, but if passed, then the 4 fields Addr1, City, State, Postal Code (1,2,3,4)* are together Mandatory. | | 3.PurchasetCardInstr | PurchaseCardInstr_rec_ type | Mandator y if 1 and 2 are null |
| | | | PC_Num | Required |
| | | | PC_ExpDate | Required |
| | | | 1.PC_ BillingAddr.Address1 | Optional* |
| | | | 2.PC_BillingAddr.City | Optional* |
| | | | 3.PC_BillingAddr.State | Optional* |
| | | | 4.PC_ BillingAddr.PostalCode | Optional* |

| Parameter | IN/ OUT | Data Type | Sub Type | Required/ Optional |
|---|---|---|---|---|
| | | | 5.PC_ BillingAddr.Address2 | Optional |
| | | | 6. PC_ BillingAddr.Address3 | Optional |
| | | | 7.PC_ BillingAddr.County | Optional |
| | | | 8.PC_ BillingAddr.Country | Optional |
| | | | 9. PC_Type | Optional |
| | | | 10.PC_HolderName | Optional |
| | | | 11. FIName | Optional |
| | | | 12. PC_SubType | Mandatory |
| | | 5. PmtInstr_ ShortName | VARCHAR2 | Optional |
| p_tangible_rec | IN | Tangible_rec_type | | Required |
| | | 1.Tangible_ID | VARCHAR2 | Required |
| | | 2 Tangible_Amount | NUMBER | Required |
| | | 3.Currency_Code | VARCHAR2 | Required |
| | | 4.RefInfo | VARCHAR2 | Optional |
| | | 5. Memo | VARCHAR2 | Optional |
| | | 6. Acct_Num | VARCHAR2 | Optional |
| p_modtrxn_rec | IN | ModTrxn_rec_type | | Required |
| | | PmtMode | VARCHAR2 | Required |
| | | Trxn_ID | NUMBER | Required |
| | | Auth_Type | VARCHAR2 | Mandatory for CreditCard |

| Parameter | IN/ OUT | Data Type | Sub Type | Required/ Optional |
|---|---|---|---|---|
| | | Settlement_Date | DATE | Mandatory for PmtMode = OFFLINE |
| | | Check_Flag | VARCHAR2 | Optional with default value = 'TRUE' for PmtMode = OFFLINE |
| | IN | PONum | NUMBER | Mandatory for Purchase Card |
| | IN | TaxAmount | NUMBER | Optional |
| | IN | ShipFromZip | VARCHAR2 | Optional |
| | IN | ShipToZip | VARCHAR2 | Optional |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |
| x_modresp_rec | OUT | ModResp_rec_type | | |
| (GENERIC PAYMENT SERVER RESPONSE) | OUT | Response | Response_rec_type | |
| | | Status | NUMBER | |
| | | ErrCode | VARCHAR2 | |
| | | ErrMessage | VARCHAR2 | |
| | | NLS_LANG | VARCHAR2 | |
| | OUT | Trxn_ID | NUMBER | |

| Parameter | IN/ OUT | Data Type | Sub Type | Required/ Optional |
|---|---|---|---|---|
| (OFFLINE MODE RELATED RESPONSE) | OUT | OffLineResp | | |
| | | EarliestSettlement_ Date | DATE | |
| | | Scheduled_Date | DATE | |

## OraPmtCanc

API type: Public

Prerequisites for calling the API: Existing scheduled Offline payment operation that should be canceled. The payment operations that can be canceled are payment request, capture etc.

Function(s) performed by the API:

This API handles cancellations of offline payment operations. For offline operations, since the operation information is maintained in the database, this API can cancel the entire operation before it gets to reach the payment system. If the payment operation is already submitted to the payment system, then cancellation will not happen.

### Signature

```
Procedure OraPmtCanc (p_api_version      IN    NUMBER,
                      p_init_msg_list    IN    VARCHAR2 := FND_API.G_FALSE,
                      p_commit           IN    VARCHAR2 := FND_API.G_FALSE,
                      p_validation_level IN    NUMBER := FND_API.G_VALID_
                                               LEVEL_FULL,
                      p_ecapp_id         IN    NUMBER,
                      p_canctrxn_rec     IN    CancelTrxn_rec_type,
                      x_return_status    OUT   VARCHAR2,
                      x_msg_count        OUT   NUMBER,
                      x_msg_data         OUT   VARCHAR2,
                      x_cancresp_rec     OUT   CancelResp_rec_type)
```

### Parameters

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | - | Required |
| p_init_msg_list | IN | VARCHAR2 | - | Optional |
| p_commit | IN | VARCHAR2 | - | Optional |
| p_validation_level | IN | NUMBER | - | Optional |
| p_ecapp_id | IN | NUMBER | - | Required |
| p_canctrxn_rec | IN | CancelTrxn_rec_type | | Required |
| | IN | Trxn_ID | NUMBER | Required |
| | | Req_Type | VARCHAR2 | Required |
| | IN | NLS_LANG | VARCHAR2 | Optional |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |
| x_cancresp_rec | OUT | CancelResp_rec_type | | |
| (GENERIC PAYMENT SERVER RESPONSE) | OUT | Response | Response_rec_type | |
| | | Status | NUMBER | |
| | | ErrCodeErr | VARCHAR2 | |
| | | Message | VARCHAR2 | |
| | | NLS_LANG | VARCHAR2 | |
| (CANCEL OPERATION RELATED RESPONSE) | | | | |
| | OUT | Trxn_ID | NUMBER | |
| | OUT | ErrorLocation | NUMBER | |
| | OUT | BEPErrCode | VARCHAR2 | |
| | OUT | BEPErrMessage | VARCHAR2 | |

### OraPmtCapture

API type: Public

Prerequisites for calling the API: Previously authorized payment request operation.

Function(s) performed by the API:

The Capture API is invoked by the EC-App to perform a capture of a previously authorized operation. The captured amount may or may not be the same as the authorized amount. An authorized operation can only be captured once.

Each authorization operation is valid for a limited time (3-30 days depending on the cardholder's bank) before expiring. If capture cannot be performed before the authorization expires, the merchant must reauthorize the payment, with a different tangible_id.

#### Signature

```
Procedure OraPmtCapture (p_api_version  IN   NUMBER,
                         p_init_msg_list IN  VARCHAR2 := FND_API.G_FALSE,
                         p_commit        IN  VARCHAR2 := FND_API.G_FALSE,
                         p_validation_levelIN NUMBER :=FND_API.G_VALID_
                                             LEVEL_FULL,
                         p_ecapp_id      IN  NUMBER,
                         p_capturetrxn_rec IN CaptureTrxn_rec_type,
                         x_return_status OUT VARCHAR2,
                         x_msg_count     OUT NUMBER,
                         x_msg_data      OUT VARCHAR2,
                         x_capresp_rec   OUT CaptureResp_rec_type)
```

#### Parameters

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | - | Required |
| p_init_msg_list | IN | VARCHAR2 | - | Optional |
| p_commit | IN | VARCHAR2 | - | Optional |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| p_validation_ level | IN | NUMBER | - | Optional |
| p_ecapp_id | IN | NUMBER | - | Required |
| p_capturetrxn_ rec | IN | CaptureTrxn_rec_type | | Required |
| | | Trxn_ID | NUMBER | Required |
| | | PmtMode | VARCHAR2 | Required |
| | | Settlement_Date | DATE | Mandatory if PmtMode is OFFLINE |
| | | Currency | VARCHAR2 | Required |
| | | Price | NUMBER | Required |
| | | NLS_LANG | VARCHAR2 | Optional |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |
| x_capresp_rec | OUT | CaptureResp_rec_type | | |
| (GENERIC PAYMENT SERVER RESPONSE) | OUT | Response | Response_rec_type | |
| | | Status | NUMBER | |
| | | ErrCode | VARCHAR2 | |
| | | ErrMessage | VARCHAR2 | |
| | | NLS_LANG | VARCHAR2 | |
| (CAPTURE OPERATION RELATED RESPONSE) | | | | |
| | OUT | Trxn_ID | NUMBER | |
| | OUT | Trxn_Type | NUMBER | |
| | OUT | Trxn_Date | DATE | |
| | OUT | PmtInstr_Type | VARCHAR2 | |
| | OUT | RefCode | VARCHAR2 | |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| | OUT | ErrorLocation | NUMBER | |
| | OUT | BEPErrCode | VARCHAR2 | |
| | OUT | BEPErrMessage | VARCHAR2 | |
| (OFFLINE MODE RELATED RESPONSE) | OUT | OffLineResp | | |
| | | EarliestSettlement_Date | DATE | |
| | | Scheduled_Date | DATE | |

### OraPmtReturn

API type: Public

Prerequisites for calling the API: Previous payment capture operation

Function(s) performed by the API:

This API is invoked by the EC-App to credit a customer account in the case where a customer returns goods purchased through a previously captured payment operation. Only one return can be applied against each order, subsequent returns must be treated as standalone credits. The operation takes in the transaction ID of the initial payment operation, and returns the same transaction ID as part of the output.

#### Signature

```
Procedure OraPmtReturn (p_api_version      IN   NUMBER,
                        p_init_msg_list    IN   VARCHAR2 := FND_API.G_FALSE,
                        p_commit           IN   VARCHAR2 := FND_API.G_FALSE,
                        p_validation_level IN   NUMBER := FND_API.G_VALID_
                                                LEVEL_FULL,
                        p_ecapp_id         IN   NUMBER,
                        p_returntrxn_rec   IN   ReturnTrxn_rec_type,
                        x_return_status    OUT  VARCHAR2,
                        x_msg_count        OUT  NUMBER,
                        x_msg_data         OUT  VARCHAR2,
```

x_retresp_rec OUT ReturnResp_rec_type)

### Parameters

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | - | Required |
| p_init_msg_list | IN | VARCHAR2 | - | Optional |
| p_commit | IN | VARCHAR2 | - | Optional |
| p_validation_level | IN | NUMBER | - | Optional |
| p_ecapp_id | IN | NUMBER | - | Required |
| p_returntrxn_rec | IN | ReturnTrxn_rec_type | | Required |
| | | Trxn_ID | NUMBER | Required |
| | | PmtMode | VARCHAR2 | Required |
| | | Settlement_Date | DATE | Mandatory if PmtMode is OFFLINE |
| | | Currency | VARCHAR2 | Required |
| | | Price | NUMBER | Required |
| | | NLS_LANG | VARCHAR2 | Optional |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |
| x_returnresp_rec | OUT | ReturnResp_rec_type | | |
| (GENERIC PAYMENT SERVER RESPONSE) | OUT | Response | Response_rec_type | |
| | | Status | NUMBER | |
| | | ErrCode | VARCHAR2 | |
| | | ErrMessage | VARCHAR2 | |
| | | NLS_LANG | VARCHAR2 | |
| (RETURN OPERATION RELATED RESPONSE) | | | | |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| | OUT | Trxn_ID | NUMBER | |
| | OUT | Trxn_Type | NUMBER | |
| | OUT | Trxn_Date | DATE | |
| | OUT | PmtInstr_Type | VARCHAR2 | |
| | OUT | RefCode | VARCHAR2 | |
| | OUT | ErrorLocation | NUMBER | |
| | OUT | BEPErrCode | VARCHAR2 | |
| | OUT | BEPErrMessage | VARCHAR2 | |
| (OFFLINE MODE RELATED RESPONSE) | OUT | OffLineResp | | |
| | | EarliestSettlement_Date | DATE | |
| | | Scheduled_Date | DATE | |

## OraPmtVoid

API type: Public

Prerequisites for calling the API:Existing payment operations

Function(s) performed by the API:

The Void API voids a capture or return operation for an order before the operation is settled. It takes in the transaction ID of the initial payment request and returns the same transaction ID as part of the output. Void Operations can be performed on "Capture", "Return" and "Credit" Operations for all back-end Payment Systems, and on "Authorization" operations for certain back-end payment systems.

The Void operation has to be used to void the most recent operation for the designated Order ID. For example, you perform a capture and then a return operation for a particular Order ID, if you try to void the capture, it'll result in an error.

### Signature

```
Procedure OraPmtVoid (p_api_version      IN   NUMBER,
                      p_init_msg_list    IN   VARCHAR2 := FND_API.G_FALSE,
```

```
p_commit          IN   VARCHAR2 := FND_API.G_FALSE,
p_validation_level IN  NUMBER := FND_API.G_VALID_
                       LEVEL_FULL,
p_ecapp_id        IN   NUMBER,
p_voidtrxn_rec    IN   VoidTrxn_rec_type,
x_return_status   OUT  VARCHAR2,
x_msg_count       OUT  NUMBER,
x_msg_data        OUT  VARCHAR2,
x_voidresp_rec    OUT  VoidResp_rec_type)
```

### Parameters

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | - | Required |
| p_init_msg_list | IN | VARCHAR2 | - | Optional |
| p_commit | IN | VARCHAR2 | - | Optional |
| p_validation_level | IN | NUMBER | - | Optional |
| p_ecapp_id | IN | NUMBER | - | Required |
| p_voidtrxn_rec | IN | VoidTrxn_rec_type | | Required |
| | | Trxn_ID | NUMBER | Required |
| | | PmtMode | VARCHAR2 | Required |
| | | Settlement_Date | DATE | Mandatory if PmtMode is OFFLINE |
| | | Trxn_Type | VARCHAR2 | Required |
| | | NLS_LANG | VARCHAR2 | Optional |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |
| x_voidresp_rec | OUT | VoicResp_rec_type | | |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| (GENERIC PAYMENT SERVER RESPONSE) | OUT | Response | Response_rec_type | |
| | | Status | NUMBER | |
| | | ErrCode | VARCHAR2 | |
| | | ErrMessage | VARCHAR2 | |
| | | NLS_LANG | VARCHAR2 | |
| (VOID OPERATION ONLINE MODE RELATED RESPONSE) | | | | |
| | OUT | Trxn_ID | NUMBER | |
| | OUT | Trxn_Type | NUMBER | |
| | OUT | Trxn_Date | DATE | |
| | OUT | PmtInstr_Type | VARCHAR2 | |
| | OUT | RefCode | VARCHAR2 | |
| | OUT | ErrorLocation | NUMBER | |
| | OUT | BEPErrCode | VARCHAR2 | |
| | OUT | BEPErrMessage | VARCHAR2 | |
| (OFFLINE MODE RELATED RESPONSE) | OUT | OffLineResp | | |
| | | EarliestSettlement_Date | DATE | |
| | | Scheduled_Date | DATE | |

### OraPmtCredit

API type: Public

Prerequisites for calling the API: None

Function(s) performed by the API:

This API is invoked by the EC-App to credit a customer account in the case that the merchant wants to issue a "standalone credit"(i.e., a credit not associated with any previous order). It returns the transaction ID as part of the output.

The OraPmtCredit API is also invoked by EC-App during an EFT transaction.

### Signature

```
Procedure OraPmtCredit (p_api_version      IN   NUMBER,
                        p_init_msg_list    IN   VARCHAR2 := FND_API.G_FALSE,
                        p_commit           IN   VARCHAR2 := FND_API.G_FALSE,
                        p_validation_level IN   NUMBER := FND_API.G_VALID_
                                                LEVEL_FULL,
                        p_ecapp_id         IN   NUMBER,
                        p_payee_rec        IN   Payee_rec_type,
                        p_pmtinstr_rec     IN   PmtInstr_rec_type,
                        p_tangible_rec     IN   Tangible_rec_type,
                        p_credittrxn_rec   IN   CreditTrxn_rec_type,
                        x_return_status    OUT  VARCHAR2,
                        x_msg_count        OUT  NUMBER,
                        x_msg_data         OUT  VARCHAR2,
                        x_creditresp_rec   OUT  CreditResp_rec_type)
```

### Parameters

| Parameter | IN/ OUT | Data Type | Sub Type | Required/ Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | - | Required |
| p_init_msg_list | IN | VARCHAR2 | - | Optional |
| p_commit | IN | VARCHAR2 | - | Optional |
| p_validation_ level | IN | NUMBER | - | Optional |
| p_ecapp_id | IN | NUMBER | - | Required |
| p_payee_rec | IN | Payee_rec_type | | Required |
| | | Payee_ID | VARCHAR2 | Required |
| p_pmtinstr_rec | IN | PmtInstr_rec_type | | Required |

| Parameter | IN/ OUT | Data Type | Sub Type | Required/ Optional |
|---|---|---|---|---|
| | | 1. PmtInstr_ID | NUMBER | Mandatory if 2, 3 and 4 are null |
| **Note**: Address record is optional overall, but if passed, then the 4 fields Addr1, City, State, Postal Code (1,2,3,4)* are together Mandatory. | | 2. CreditCardInstr | CreditCardInstr_rec_type | Mandatory if 1, 3 and 4 are null |
| | | | CC_Num | Required |
| | | | CC_ExpDate | Required |
| | | | 1.CC_BillingAddr.Address1 | Optional* |
| | | | 2.CC_BillingAddr.City | Optional* |
| | | | 3.CC_BillingAddr.State | Optional* |
| | | | 4.CC_ BillingAddr.PostalCode | Optional* |
| | | | 5.CC_BillingAddr.Address2 | Optional |
| | | | 6. CC_ BillingAddr.Address3 | Optional |
| | | | 7.CC_BillingAddr.County | Optional |
| | | | 8.CC_BillingAddr.Country | Optional |
| | | | 9. CC_Type | Optional |
| | | | 10.CC_HolderName | Optional |
| | | | 11. FIName | Optional |

| Parameter | IN/ OUT | Data Type | Sub Type | Required/ Optional |
|---|---|---|---|---|
| **Note**: Address record is optional overall, but if passed, then the 4 fields Addr1, City, State, Postal Code (1,2,3,4)* are together Mandatory. | | 3.PurchasetCardInstr | PurchaseCardInstr_rec_type | Mandatory if 1 and 2 are null |
| | | | PC_Num | Required |
| | | | PC_ExpDate | Required |
| | | | 1.PC_BillingAddr.Address1 | Optional* |
| | | | 2.PC_BillingAddr.City | Optional* |
| | | | 3.PC_BillingAddr.State | Optional* |
| | | | 4.PC_ BillingAddr.PostalCode | Optional* |
| | | | 5.PC_BillingAddr.Address2 | Optional |
| | | | 6. PC_BillingAddr.Address3 | Optional |
| | | | 7.PC_BillingAddr.County | Optional |
| | | | 8.PC_BillingAddr.Country | Optional |
| | | | 9. PC_Type | Optional |
| | | | 10.PC_HolderName | Optional |
| | | | 11. FIName | Optional |
| | | | 12. PC_SubType | Mandatory |
| | | 5. PmtInstr_ ShortName | VARCHAR2 | Optional |
| p_tangible_rec | IN | Tangible_rec_type | | Required |
| | | 1.Tangible_ID | VARCHAR2 | Required |
| | | 2 Tangible_Amount | NUMBER | Required |
| | | 3.Currency_Code | VARCHAR2 | Required |

| Parameter | IN/ OUT | Data Type | Sub Type | Required/ Optional |
|---|---|---|---|---|
| | | 4.RefInfo | VARCHAR2 | Optional |
| | | 5. Memo | VARCHAR2 | Optional |
| | | 6. Acct_Num | VARCHAR2 | Optional |
| p_credittrxn_rec | IN | CreditTrxn_rec_type | | Required |
| | IN | PmtMode | VARCHAR2 | Required |
| | | Settlement_Date | DATE | Mandatory for PmtMode= OFFLINE |
| | | Org_ID | NUMBER | Optional |
| | | NLS_LANG | VARCHAR2 | Optional |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |
| x_creditresp_rec | OUT | CreditResp_rec_type | | |
| (GENERIC PAYMENT SERVER RESPONSE) | OUT | Response | Response_rec_type | |
| | | Status | NUMBER | |
| | | ErrCode | VARCHAR2 | |
| | | ErrMessage | VARCHAR2 | |
| | | NLS_LANG | VARCHAR2 | |
| (CREDIT OPERATION RELATED RESPONSE) | | | | |
| | OUT | Trxn_ID | NUMBER | |
| | OUT | Trxn_Type | NUMBER | |
| | OUT | Trxn_Date | DATE | |
| | OUT | PmtInstr_Type | VARCHAR2 | |
| | OUT | RefCode | VARCHAR2 | |

| Parameter | IN/ OUT | Data Type | Sub Type | Required/ Optional |
|---|---|---|---|---|
| | OUT | ErrorLocation | NUMBER | |
| | OUT | BEPErrCode | VARCHAR2 | |
| | OUT | BEPErrMessage | VARCHAR2 | |
| (OFFLINE MODE RELATED RESPONSE) | OUT | OffLineResp | | |
| | | EarliestSettlement_ Date | DATE | |
| | | Scheduled_Date | DATE | |

### OraPmtQryTrxn

API type: Public

Prerequisites for calling the API:None

Function(s) performed by the API:

This API provides an interface for querying payment operations details. This API will return either all the operations performed on the queried transaction id or the latest operation, based on the value of the History_Flag which is one of the input parameters. Payment Mode is always 'ONLINE' for this operation.

#### Signature

```
Procedure OraPmtQryTrxn (p_api_version IN    NUMBER,
                         p_init_msg_list IN  VARCHAR2 := FND_API.G_FALSE,
                         p_commit        IN  VARCHAR2 := FND_API.G_FALSE,
                         p_validation_levelIN NUMBER := FND_API.G_VALID_
                                             LEVEL_FULL,
                         p_ecapp_id      IN  NUMBER,
                         p_querytrxn_rec IN  QueryTrxn_rec_type,
                         x_return_status OUT VARCHAR2,
                         x_msg_count     OUT NUMBER,
                         x_msg_data      OUT VARCHAR2,
```

x_qrytrxnrespsum_rec OUT QryTrxnRespSum_rec_type,
x_qrytrxnrespdet_tbl OUT QryTrxnRespDet_tbl_type)

### Parameters

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | - | Required |
| p_init_msg_list | IN | VARCHAR2 | - | Optional |
| p_commit | IN | VARCHAR2 | - | Optional |
| p_validation_level | IN | NUMBER | - | Optional |
| p_ecapp_id | IN | NUMBER | - | Required |
| p_querytrxn_rec | IN | QueryTrxn_rec_type | | Required |
| | | Trxn_ID | NUMBER | Required |
| | | History_Flag | VARCHAR2 | Required |
| | | NLS_LANG | VARCHAR2 | Optional |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |
| x_qrytrxnrespsum_rec | OUT | QryTrxnRespSum_rec_ type | | |
| | OUT | Response | Response_rec_type | |
| | | Status | NUMBER | |
| | | ErrCode | VARCHAR2 | |
| | | ErrMessag | VARCHAR2 | |
| | | NLS_LANG | VARCHAR2 | |
| | OUT | ErrorLocation | NUMBER | |
| | OUT | BEPErrCode | VARCHAR2 | |
| | OUT | BEPErrMessage | VARCHAR2 | |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| x_qrytrxnrespdet_tbl N.B.: All detail records name-value pairs will have '-n' suffixed to show the index value 'n' | OUT | QryTrxnRespDet_tbl_ type | | |
| | OUT | Status | NUMBER | |
| | OUT | StatusMsg | VARCHAR2 | |
| | OUT | Trxn_ID | NUMBER | |
| | OUT | Trxn_Type | NUMBER | |
| | OUT | Trxn_Date | DATE | |
| | OUT | PmtInstr_Type | VARCHAR2 | |
| | OUT | Currency | VARCHAR2 | |
| | OUT | Price | NUMBER | |
| | OUT | RefCode | VARCHAR2 | |
| | OUT | AuthCode | VARCHAR2 | |
| | OUT | AVSCode | VARCHAR2 | |
| | OUT | Acquirer | VARCHAR2 | |
| | OUT | VpsBatch_ID | VARCHAR2 | |
| | OUT | AuxMsg | VARCHAR2 | |
| | OUT | ErrorLocation | NUMBER | |
| | OUT | BEPErrCode | VARCHAR2 | |
| | OUT | BEPErrMessage | VARCHAR2 | |

### OraPmtCloseBatch

API type: Public

Prerequisites for calling the API: Existing current batch of operations

Function(s) performed by the API:

This API allows a merchant or business to close a batch of previously performed operations. The operation types that can be included in a batch are capture, return, and credit. This operation is mandatory for a terminal-based merchant; a host-based merchant may not need to explicitly close the batch since the batch is generally closed at predetermined intervals automatically by the processor.

For more information on terminal-based merchant, please refer to "Understanding Terminal Based Merchant" in the *Oracle iPayment Concepts and Procedures Guide*.

### Signature

```
Procedure OraPmtCloseBatch (p_api_version IN     NUMBER,
                            p_init_msg_list  IN  VARCHAR2 := FND_API.G_
                                                 FALSE,
                            p_commit         IN  VARCHAR2 := FND_API.G_
                                                 FALSE,
                            p_validation_levelIN NUMBER := FND_API.G_VALID_
                                                 LEVEL_FULL,
                            p_ecapp_id       IN  NUMBER,
                            p_batchtrxn_rec  IN  BatchTrxn_rec_type,
                            x_return_status  OUT VARCHAR2,
                            x_msg_count      OUT NUMBER,
                            x_msg_data       OUT VARCHAR2,
                        x_closebatchrespsum_rec OUT BatchRespSum_rec_type,
                        x_closebatchrespdet_tbl OUT BatchRespDet_tbl_type
```

### Parameters

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | - | Required |
| p_init_msg_list | IN | VARCHAR2 | - | Optional |
| p_commit | IN | VARCHAR2 | - | Optional |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| p_validation_level | IN | NUMBER | - | Optional |
| p_ecapp_id | IN | NUMBER | - | Required |
| p_batchtrxn_rec | IN | BatchTrxn_rec_type | | Required |
| | IN | PmtMode | VARCHAR2 | Required |
| | | PmtType | VARCHAR2 | Optional |
| | IN | Settlement_Date | DATE | Required if PmtMode is OFFLINE |
| | IN | Payee_ID | VARCHAR2 | Required |
| | IN | MerchBatch_ID | VARCHAR2 | Required |
| | IN | BEP_Suffix | VARCHAR2 | Required |
| | IN | BEP_Account | VARCHAR2 | Required |
| | IN | NLS_LANG | VARCHAR2 | Optional |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |
| x_closebatchrespsum_rec | OUT | BatchRespSum_rec_type | | |
| | OUT | Response | Response_rec_type | |
| | | Status | NUMBER | |
| | | ErrCode | VARCHAR2 | |
| | | ErrMessage | VARCHAR2 | |
| | | NLS_LANG | VARCHAR2 | |
| (OFFLINE MODE RELATED RESPONSE) | OUT | OffLineResp | OffLineResp_rec_ type | |
| | OUT | EarliestSettlement_Date | DATE | |
| | | Scheduled_Date | DATE | |
| | OUT | NumTrxns | NUMBER | |
| | OUT | MerchBatch_ID | VARCHAR2 | |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| | OUT | BatchState | NUMBER | |
| | OUT | BatchDate | DATE | |
| | OUT | Payee_ID | VARCHAR2 | |
| | OUT | Credit_Amount | NUMBER | |
| | OUT | Sales_Amount | NUMBER | |
| | OUT | Batch_Total | NUMBER | |
| | OUT | Currency | VARCHAR2 | |
| | OUT | VpsBatch_ID | VARCHAR2 | |
| | OUT | GWBatch_ID | VARCHAR2 | |
| | OUT | ErrorLocation | NUMBER | |
| | OUT | BEPErrCode | VARCHAR2 | |
| | OUT | BEPErrMessage | VARCHAR2 | |
| x_closebatchrespdet_tblN.B.: All detail records name-value pairs will have '-n' suffixed to show the index value 'n' | OUT | BatchRespDet_tbl_type | | |
| | OUT | Trxn_ID | NUMBER | |
| | OUT | Trxn_Type | NUMBER | |
| | OUT | Trxn_Date | DATE | |
| | OUT | Status | NUMBER | |
| | OUT | ErrorLocation | NUMBER | |
| | OUT | BEPErrCode | VARCHAR2 | |
| | OUT | BEPErrMessage | VARCHAR2 | |
| | OUT | NLSLANG | VARCHAR2 | |

### OraPmtQueryBatch

API type: Public

Prerequisites for calling the API: None

Function(s) performed by the API:

This API provides an interface to query the status of any previous batch of operations by providing the Batch ID (that is, MerchBatch_ID) as part of the input. Payment Mode is always 'ONLINE' for this operation.

### Signature

```
Procedure OraPmtQueryBatch (p_api_version          IN    NUMBER,
                            p_init_msg_list        IN    VARCHAR2 := FND_API.G_
                                                         FALSE,
                            p_commit               IN    VARCHAR2 := FND_API.G_
                                                         FALSE,
                            p_validation_level     IN    NUMBER :=FND_API.G_
                                                         VALID_LEVEL_FULL,
                            p_ecapp_id             IN    NUMBER,
                            p_batchtrxn_rec        IN    BatchTrxn_rec_type,
                            x_return_status        OUT   VARCHAR2,
                            x_msg_count            OUT   NUMBER,
                            x_msg_data             OUT   VARCHAR2,
                        x_qrybatchrespsum_rec      OUT   BatchRespSum_rec_type,
                        x_qrybatchrespdet_tbl      OUT   BatchRespDet_tbl_type)
```

### Parameters

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | - | Required |
| p_init_msg_list | IN | VARCHAR2 | - | Optional |
| p_commit | IN | VARCHAR2 | - | Optional |
| p_validation_level | IN | NUMBER | - | Optional |
| p_ecapp_id | IN | NUMBER | - | Required |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| p_batchtrxn_rec | IN | BatchTrxn_rec_type | | Required |
| | IN | PmtMode | VARCHAR2 | Required |
| (will be NULL since always PmtMode ='ONLINE') | IN | Settlement_Date | DATE | Mandatory if PmtMode is OFFLINE |
| | IN | Payee_ID | VARCHAR2 | Required |
| | IN | MerchBatch_ID | VARCHAR2 | Required |
| | IN | BEP_Suffix | VARCHAR2 | Required |
| | IN | BEP_Account | VARCHAR2 | Required |
| | IN | NLS_LANG | VARCHAR2 | Optional |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |
| x_qrybatchrespsum_rec | OUT | BatchRespSum_rec_type | | |
| | OUT | Response | Response_rec_type | |
| | | Status | NUMBER | |
| | | ErrCode | VARCHAR2 | |
| | | ErrMessage | VARCHAR2 | |
| | | NLS_LANG | VARCHAR2 | |
| | OUT | NumTrxns | NUMBER | |
| | | MerchBatch_ID | VARCHAR2 | |
| | | BatchState | NUMBER | |
| | | BatchDate | DATE | |
| | | Payee_ID | VARCHAR2 | |
| | | Credit_Amount | NUMBER | |
| | | Sales_Amount | NUMBER | |
| | | Batch_Total | NUMBER | |
| | | Currency | VARCHAR2 | |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| | | VpsBatch_ID | VARCHAR2 | |
| | | GWBatch_ID | VARCHAR2 | |
| | | ErrorLocation | NUMBER | |
| | | BEPErrCode | VARCHAR2 | |
| | | BEPErrMessage | VARCHAR2 | |
| x_qrybatchrespdet_ tblN.B.: All detail records name-value pairs will have '-n' suffixed to show the index value 'n' | OUT | BatchRespDet_tbl_type | | |
| | OUT | Trxn_ID | NUMBER | |
| | OUT | Trxn_Type | NUMBER | |
| | OUT | Trxn_Date | DATE | |
| | OUT | Status | NUMBER | |
| | OUT | ErrorLocation | NUMBER | |
| | OUT | BEPErrCode | VARCHAR2 | |
| | OUT | BEPErrMessage | VARCHAR2 | |
| | OUT | NLS_LANG | VARCHAR2 | |

### OraPmtInq

API type: Public

Prerequisites for calling the API: None

Function(s) performed by the API:

This API provides high-level payment information such as Payee, Payer, Instrument, and Tangible related information. It can be used when all the information regarding a payment is needed. So an EC-App which does not store all the payment related information locally, can invoke this API to find all the information pertaining to the payment operation. Typically used to display the information to the end user for editing in case of OFFLINE operation in an application like internet payments.

It takes in the ECApp ID and the transaction ID as input parameters.

### Signature

```
Procedure OraPmtInq(p_api_version      IN    NUMBER,
                    p_init_msg_list    IN    VARCHAR2 := FND_API.G_FALSE,
                    p_commit           IN    VARCHAR2 := FND_API.G_FALSE,
                    p_validation_level IN    NUMBER := FND_API.G_
                                             VALID_LEVEL_FULL,
                    p_ecapp_id         IN    NUMBER,
                    p_tid              IN    NUMBER,
                    x_return_status    OUT   VARCHAR2,
                    x_msg_count        OUT   NUMBER,
                    x_msg_data         OUT   VARCHAR2,
                    x_inqresp_rec      OUT   InqResp_rec_type)
```

### Parameters

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | - | Required |
| p_init_msg_list | IN | VARCHAR2 | - | Optional |
| p_commit | IN | VARCHAR2 | - | Optional |
| p_validation_level | IN | NUMBER | - | Optional |
| p_ecapp_id | IN | NUMBER | - | Required |
| p_tid | IN | NUMBER | - | Required |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |
| x_inqresp_rec | OUT | InqResp_rec_type | | |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| (GENERIC PAYMENT SERVER RESPONSE) | OUT | Response | Response_rec_type | |
| | | Status | NUMBER | |
| | | ErrCode | VARCHAR2 | |
| | | ErrMessage | VARCHAR2 | |
| | | NLS_LANG | VARCHAR2 | |
| (INQUIRY OPERATION RELATED RESPONSE) | | | | |
| | OUT | Payer | Payer_rec_type | |
| | | Payer_ID | VARCHAR2 | |
| | | Payer_Name | VARCHAR2 | |
| | OUT | Payee | Payee_rec_type | |
| | | Payee_ID | VARCHAR2 | |
| | OUT | Tangible | Tangible_rec_type | |
| | | Tangible_ID | VARCHAR2 | |
| | | Tangible_Amount | NUMBER | |
| | | Currency_Code | VARCHAR2 | |
| | | RefInfo | VARCHAR2 | |
| | | Memo | VARCHAR2 | |
| | | Acct_Num | VARCHAR2 | |

| Parameter | IN/ OUT | DataType | SubType | Required/ Optional |
|---|---|---|---|---|
| | OUT | PmtInstr | PmtInstr_rec_type | |
| | | PmtInstr_ID | | |
| | | PmtInstr_ShortName | | |
| | | CreditCardInstr | CreditCardInstr_rec_type | |
| | | | CC_Num | |
| | | | CC_ExpDate | |
| | | | CC_BillingAddr.Address1 | |
| | | | CC_BillingAddr.Address2 | |
| | | | CC_BillingAddr.Address3 | |
| | | | CC_BillingAddr.City | |
| | | | CC_BillingAddr.County | |
| | | | CC_BillingAddr.State | |
| | | | CC_BillingAddr.Country | |
| | | | CC_BillingAddr.PostalCode | |
| | | | CC_Type | |
| | | | CC_HolderName | |
| | | | FIName | |
| | | BankAcctInstr | BankAcctInstr_rec_type | |
| | | | Bank_ID | |
| | | | BankAcct_Num | |
| | | | BankAcct_Type | |
| | | | Branch_ID | |
| | | | FIName | |
| | | | BankAcct_HolderName | |

### OraRiskEval

API type: Public

Prerequisites for calling the API: None

Function(s) performed by the API:

This API performs risk evaluation without using transactions. For more information on using this API for evaluating risk, please refer to Appendix A: Risk Management.

> **Note:** This API is also available in an overloaded form, with Address Verification System (AVS). The AVS version of the API includes an additional input parameter, p_avs_risk_info. All the other inputs and outputs are identical to the API without AVS.

### Signature

Procedure OraRiskEval (p_api_version IN NUMBER,

p_init_msg_list IN VARCHAR2 := FND_API.G_FALSE,

p_commit IN VARCHAR2 := FND_API.G_FALSE,

p_validation_level IN NUMBER := FND_API.G_VALID_LEVEL_FULL,

p_ecapp_id IN NUMBER,

p_payment_risk_info IN PaymentRiskInfo_rec_type,

x_return_status OUT VARCHAR2,

x_msg_count OUT NUMBER,

x_msg_data OUT VARCHAR2,

x_risk_resp OUT RiskResp_rec_type)

Overloaded API Signature (with AVS information):

Procedure OraRiskEval (p_api_version IN NUMBER,

p_init_msg_list IN VARCHAR2 := FND_API.G_FALSE,

p_commit IN VARCHAR2 := FND_API.G_FALSE,

p_validation_level IN NUMBER := FND_API.G_VALID_LEVEL_FULL,

p_ecapp_id IN NUMBER,

p_avs_risk_info IN AVSRiskInfo_rec_type,

x_return_status OUT VARCHAR2,

x_msg_count OUT NUMBER,

x_msg_data OUT VARCHAR2,

x_risk_resp OUT RiskResp_rec_type)

### Parameters

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | | Required |
| p_init_msg_list | IN | VARCHAR2 | | Optional |
| p_commit | IN | VARCHAR2 | | Optional |
| p_validation_level | IN | NUMBER | | Optional |
| p_ecapp_id | IN | NUMBER | | Required |
| p_avs_risk_info | IN | AVSRiskInfo_rec_type | | Required for Overloaded API |
| | | Formula Name | VARCHAR2 | Optional |
| | | Payee_ID | NUMBER | Required |
| | | Previous_Risk_Score | VARCHAR2 | Required |
| | | AVSCode | VARCHAR2 | Required |
| p_payment_risk_ info | IN | PaymentRiskInfo_rec_ type | | Required |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |
| x_risk_resp | OUT | RiskResp_rec_type | | |

## OraPmtBankPayBatchReq

API type: Public

Prerequisites for calling the API: None

Function(s) performed by the API:

The OraPmtBankPayBatchReq API handles new bank payment batch requests from Oracle Payables. The Oracle Payables application passes the payment batch details as a PmtBankPayBatchReq_Rec_Type record, transaction details as a PmtBankPayBatchTrxn_Tbl_Type table structure and invoice details as a

PmtBankPayInvoice_Tbl_Type table structure to iPayment. This is an OFFLINE batch submission wherein the batch information is stored in the iPayment database.

If the batch payment information is saved in the database successfully, then the OUT status field x_return_status returns a value of FND_API.G_RET_STS_SUCCESS.

### Signature

PROCEDURE OraPmtBankPayBatchReq(

p_api_version IN NUMBER,

p_init_msg_list IN VARCHAR2 DEFAULT FND_API.G_FALSE,

p_commit IN VARCHAR2 DEFAULT FND_API.G_FALSE,

p_validation_level IN NUMBER DEFAULT FND_API.G_VALID_LEVEL_FULL,

p_ecapp_id IN NUMBER,

x_return_status OUT VARCHAR2,

x_msg_count OUT NUMBER,

x_msg_data OUT VARCHAR2,

p_pmt_bs_req_rec IN PmtBankPayBSReq_Rec_Type,

p_pmt_batch_req_rec IN PmtBankPayBatchReq_Rec_Type,

p_pmt_batch_trxn_tbl IN PmtBankPayBatchTrxn_Tbl_Type,

p_pmt_invoice_tbl IN PmtBankPayInvoice_Tbl_Type)

### Parameters

| Parameter | IN/OUT | DataType | Sub Type | Required/Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | | Required |
| p_init_msg_list | IN | VARCHAR2 | | Optional |
| p_commit | IN | VARCHAR2 | | Optional |
| p_validation_level | IN | NUMBER | | Optional |
| p_ecapp_id | IN | NUMBER | | Required |

| Parameter | IN/OUT | DataType | Sub Type | Required/Optional |
|---|---|---|---|---|
| p_pmt_bs_req_rec | IN | PmtBankPayBSReq_Rec_Type | | Required |
| p_pmt_batch_req_rec | IN | PmtBankPayBatchReq_Rec_Type | | Required |
| p_pmt_batch_trxn_tbl | IN | PmtBankPayBatchTrxn_Tbl_Type | | Required |
| p_pmt_invoice_tbl | IN | PmtBankPayInvoice_Tbl_Type | | Required |
| x_return_status | OUT | VARCHAR2 | | Required |
| x_msg_count | OUT | NUMBER | | Required |
| x_msg_data | OUT | VARCHAR2 | | Required |

# Payment Instrument Registration APIs

Instrument registration APIs provide the functionality to register a payor's bank, credit card, or purchase card. All the procedures described below are declared public and are stored in the PL/SQL Package IBY_INSTRREG_PUB as part of the applications database.

The following PL/SQL APIs are described in this section:

- OraInstrAdd
- OraInstrmMod
- OraInstrDel
- OraInstrInq

### OraInstrAdd

API type: Public

Prerequisites for calling the API: None

Function(s) performed by the API:

This API can be used to add an instrument to the iPayment. Only one of Credit Card, Purchase Card or Bank Account can be registered at a time.

If the registration is successful, an Instrument Id is returned. This Instrument Id may be used to submit a payment transaction. For Bank Account transfers, you need to have a registered instrument id to submit a transaction. This APIs will internally call IBY_BANKACCT_PKG. createBankAcct orIBY_CREDITCARD_ PKG.createCard to register a new instrument.

#### Signature

```
Procedure OraInstrAdd (p_api_versionIN      NUMBER,
                       p_init_msg_list IN   VARCHAR2:=FND_API.G_FALSE
                       p_commit        IN   VARCHAR2:=FND_API.G_FALSE
                       p_validation_level IN NUMBER:=FND_API.G_VALID
                                            LEVEL_FULL
                       p_payer_id      IN   VARCHAR2(80),
                       p_pmtInstrRec   IN   PmtInstr_rec_type,
```

```
x_return_status OUT     VARCHAR2,
x_msg_count     OUT     NUMBER,
x_msg_data      OUT     VARCHAR2,
x_instr_id      OUT     NUMBER(15) )
```

### Parameters

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | | Required |
| p_init_msg_list | IN | VARCHAR2 | | Optional |
| p_commit | IN | VARCHAR2 | | Optional |
| p_validation_level | IN | NUMBER | | Optional |
| p_payer_id | IN | VARCHAR2 | | Required |
| p_pmtInstrRec | IN | PmtInstr_rec_type | | Required |
| | | 1. CreditCardInstr | CreditCardInstr_rec_type | Mandatory if 2 and 3 are not passed. |
| | | | 1.Instr_Id | Should NOT be passed. |
| | | | 2.FIName | Optional |
| | | | 3.CC_Type | Optional |
| | | | 4.CC_Num | Required |
| | | | 5.CC_ExpDate | Required |
| | | | 6.CC_ HolderName | Optional |
| | | | 7.Billing_ Address1 | Optional* |
| | | | 8. Billing_ Address2 | Optional |
| | | | 9. Billing_ Address3 | Optional |
| | | | 10.Billing_City | Optional* |

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| | | | 11. Billing_ County | Optional |
| | | | 12. Billing_ State | Optional |
| | | | 13. Billing_ Country | Optional* |
| **Note**: Address record is optional overall, but if passed, then the 3 fields Addr1, City, Country (7,10,13)* are together mandatory. | | | 14. Billing_ PostalCode | Optional |
| | | | 15. CC_Desc | Optional |
| | | 2.PurchasetCardInstr | PurchaseCardInstr_rec_type | Mandatory if 1 and 3 are null |
| | | | 1.Instr_Id | Should NOT be passed. |
| | | | 2.FIName | Optional |
| | | | 3.PC_Type | Optional |
| | | | 4.PC_Num | Required |
| | | | 5.PC_ExpDate | Required |
| | | | 6.PC_ HolderName | Optional |
| | | | 7.Billing_ Address1 | Optional* |
| | | | 8. Billing_ Address2 | Optional |
| | | | 9. Billing_ Address3 | Optional |
| | | | 10.Billing_City | Optional* |
| | | | 11. Billing_ County | Optional |

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| | | | 12. Billing_ State | Optional |
| | | | 13. Billing_ Country | Optional* |
| **Note**: Address record is optional overall, but if passed, then the 3 fields Addr1, City, Country (7,10,13)* are together mandatory. | | | 14. Billing_ PostalCode | Optional |
| | | | 15, PC_Subtype | Required |
| | | | 16. PC_Desc | Optional |
| | | 3. BankAcctInstr | BankAcctInstr_ rec_type | Mandatory if 1 and 2 are both null |
| | | | 1.Instr_Id | Should NOT be passed. |
| | | | 2.FIName | Optional |
| | | | 3. Bank_Id | Required |
| | | | 4. Branch_ID | Optional |
| | | | 5. BankAcct_ Type | Required |
| | | | 6. BankAcct_ Num | Required |
| | | | 7. BankAcct_ HolderName | Required |
| | | | 8. Bank_Desc | Optional |
| | | 4. InstrumentType | VARCHAR2 | Required. |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |
| x_instr_id | OUT | NUMBER | | |

### OraInstrmMod

API type: Public

Prerequisites for calling the API: None

Function(s) performed by the API:

This API can be used to modify an instrument in the iPayment. Only one instrument of type Credit Card, Purchase Card or Bank Account can be modified at a time. This APIs will internally call IBY_BANKACCT_PKG. modifyBankAcc orIBY_CREDITCARD_PKG.modifyCard to modify an existing instrument.

> **Note:** The instrument record in the database is updated with the input parameters on an "as is" basis. Since the default value for all the input parameters (or record type members) is NULL, the record will be updated with null values for parameters (or members) not assigned a value. This means that each time an instrument's information is modified, it is REPLACED with all the information passed in the modification request. That is, all the prior information is overwritten by the data in the modification request, assuming that the data passed is the newest.

#### Signature

```
Procedure OraInstrMod (p_api_versionIN      NUMBER,
                       p_init_msg_list IN   VARCHAR2:=FND_API.G_FALSE
                       p_commit        IN   VARCHAR2:=FND_API.G_FALSE
                       p_validation_level IN NUMBER:=FND_API.G_VALID
                                            LEVEL_FULL
                       p_payer_id      IN   VARCHAR2(80),
                       p_pmtInstrRec   IN   PmtInstr_rec_type,
                       x_return_status OUT  VARCHAR2,
                       x_msg_count     OUT  NUMBER,
                       x_msg_data      OUT  VARCHAR2)
```

### Parameters

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | | Required |
| p_init_msg_list | IN | VARCHAR2 | | Optional |
| p_commit | IN | VARCHAR2 | | Optional |
| p_validation_level | IN | NUMBER | | Optional |
| p_payer_id | IN | VARCHAR2 | | Required |
| p_pmtInstrRec | IN | PmtInstr_rec_type | | Required |
| | | 1. CreditCardInstr | CreditCardInstr_rec_type | Mandatory if 2 and 3 are not passed. |
| | | | 1.Instr_Id | Should NOT be passed. |
| | | | 2.FIName | Optional |
| | | | 3.CC_Type | Optional |
| | | | 4.CC_Num | Required |
| | | | 5.CC_ExpDate | Required |
| | | | 6.CC_ HolderName | Optional |
| | | | 7.Billing_ Address1 | Optional* |
| | | | 8. Billing_ Address2 | Optional |
| | | | 9. Billing_ Address3 | Optional |
| | | | 10.Billing_City | Optional* |
| | | | 11. Billing_ County | Optional |
| | | | 12. Billing_ State | Optional |
| | | | 13. Billing_ Country | Optional* |

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| **Note**: Address record is optional overall, but if passed, then the 3 fields Addr1, City, Country (7,10,13)* are together mandatory. | | | 14. Billing_ PostalCode | Optional |
| | | | 15. CC_Desc | Optional |
| | | 2.PurchasetCardInstr | PurchaseCardI nstr_rec_type | Mandatory if 1 and 3 are null |
| | | | 1.Instr_Id | Should NOT be passed. |
| | | | 2.FIName | Optional |
| | | | 3.PC_Type | Optional |
| | | | 4.PC_Num | Required |
| | | | 5.PC_ExpDate | Required |
| | | | 6.PC_ HolderName | Optional |
| | | | 7.Billing_ Address1 | Optional* |
| | | | 8. Billing_ Address2 | Optional |
| | | | 9. Billing_ Address3 | Optional |
| | | | 10.Billing_City | Optional* |
| | | | 11. Billing_ County | Optional |
| | | | 12. Billing_ State | Optional |
| | | | 13. Billing_ Country | Optional* |

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| **Note**: Address record is optional overall, but if passed, then the 3 fields Addr1, City, Country (7,10,13)* are together mandatory. | | | 14. Billing_ PostalCode | Optional |
| | | | 15, PC_Subtype | Required |
| | | | 16. PC_Desc | Optional |
| | | 3. BankAcctInstr | BankAcctInstr_ rec_type | Mandatory if 1 and 2 are both null |
| | | | 1.Instr_Id | Should NOT be passed. |
| | | | 2.FIName | Optional |
| | | | 3. Bank_Id | Required |
| | | | 4. Branch_ID | Optional |
| | | | 5. BankAcct_ Type | Required |
| | | | 6. BankAcct_ Num | Required |
| | | | 7. BankAcct_ HolderName | Required |
| | | | 8. Bank_Desc | Optional |
| | | 4. InstrumentType | VARCHAR2 | Required. |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |

## OraInstrDel

API type: Public

Prerequisites for calling the API: None

Function(s) performed by the API:

This API can be used to delete an instrument from the iPayment. Only one instrument of type Credit Card, Purchase Card or Bank Account can be deleted at a time. This APIs will finally call IBY_BANKACCT_PKG. deleteBankAcct orIBY_ CREDITCARD_PKG.deleteCreditCard to delete an existing instrument.

> **Note:** This is a soft delete. The record is not removed or deleted physically from the database, the instrument status is made inactive.

### Signature

```
Procedure OraInstrDel (p_api_version  IN   NUMBER,
                       p_init_msg_list IN  VARCHAR2:=FND_API.G_FALSE
                       p_commit        IN  VARCHAR2:=FND_API.G_FALSE
                       p_validation_level IN NUMBER:=FND_API.G_VALID
                                             LEVEL_FULL
                       p_payer_id      IN  VARCHAR2(80),
                       p_instr_id      IN  NUMBER(15),
                       x_return_status OUT VARCHAR2,
                       x_msg_count     OUT NUMBER,
                       x_msg_data      OUT VARCHAR2)
```

### Parameters

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | | Required |
| p_init_msg_list | IN | VARCHAR2 | | Optional |
| p_commit | IN | VARCHAR2 | | Optional |
| p_validation_level | IN | NUMBER | | Optional |
| p_payer_id | IN | VARCHAR2 | | Required |

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| p_instr_id | IN | NUMBER | | Required |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |

## OraInstrInq

API type: Public

Prerequisites for calling the API: None

Function(s) performed by the API:

This API can be used to inquire about an instrument in the iPayment. This API will have 2 overloaded procedures. The provides flexibility to the calling applications. The two available flavours are:

**a.** This inquiry is based on the payer Id and will return all the instruments that are registered for that payer. Three tables, each containing instruments of the same type will be returned as output.

**b.** This inquiry is based on the Instrument Id and will return details for the instrument that is registered for that Instrument Id and the instrument type. UNREGISTERED is returned when the instrument does not exist for the given payer_id and instr_id.

### Signature (with only payer id)

```
Procedure OraInstrInq (p_api_version  IN     NUMBER,
                       p_init_msg_list IN    VARCHAR2:=FND_API.G_FALSE,
                       p_commit        IN    VARCHAR2:=FND_API.G_FALSE,
                       p_validation_level    IN NUMBER:=FND_API.G_VALID
                                                 LEVEL_FULL,
                       p_payer_id            IN     VARCHAR2(80),
                       x_return_status       OUT    VARCHAR2,
                       x_msg_count           OUT    NUMBER,
                       x_msg_data            OUT    VARCHAR2,
```

| | | |
|---|---|---|
| x_creditcard_tbl | OUT | CreditCard_tbl_type, |
| x_purchasecard_tbl | OUT | PurchaseCard_tbl_type, |
| x_bankacct_tbl | OUT | BankAcct_tbl_type) |

### Parameters

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | | Required |
| p_init_msg_list | IN | VARCHAR2 | | Optional |
| p_commit | IN | VARCHAR2 | | Optional |
| p_validation_level | IN | NUMBER | | Optional |
| p_payer_id | IN | VARCHAR2 | | Required |
| x_return_status | OUT | VARCHAR2 | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |
| x_creditcard_tbl | OUT | CreditCard_tbl_type | CreditCardInstr_rec_type<br>1.Instr_Id<br>2.FIName<br>3.CC_Type<br>4.CC_Num<br>5.CC_ExpDate<br>6.CC_ HolderName<br>7.Billing_ Address1<br>8. Billing_ Address2<br>9. Billing_ Address3<br>10.Billing_City | |

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| | | | 11. Billing_ County | |
| | | | 12. Billing_ State | |
| | | | 13. Billing_ Country | |
| | | | 14. Billing_ PostalCode | |
| | | | 15. CC_Desc | |
| x_purchasecard_ tbl | OUT | PurchaseCard_tbl_type | PurchaseCardI nstr_rec_type | |
| | | | 1.Instr_Id | |
| | | | 2.FIName | |
| | | | 3.PC_Type | |
| | | | 4.PC_Num | |
| | | | 5.PC_ExpDate | |
| | | | 6.PC_ HolderName | |
| | | | 7.Billing_ Address1 | |
| | | | 8. Billing_ Address2 | |
| | | | 9. Billing_ Address3 | |
| | | | 10.Billing_City | |
| | | | 11. Billing_ County | |
| | | | 12. Billing_ State | |
| | | | 13. Billing_ Country | |

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| | | | 14. Billing_ PostalCode | |
| | | | 15, PC_Subtype | |
| | | | 16. PC_Desc | |
| x_bankacct_tbl | OUT | BankAcct_tbl_type | BankAcctInstr_ rec_type | |
| | | | 1.Instr_Id | |
| | | | 2.FIName | |
| | | | 3. Bank_Id | |
| | | | 4. Branch_ID | |
| | | | 5. BankAcct_ Type | |
| | | | 6. BankAcct_ Num | |
| | | | 7. BankAcct_ HolderName | |
| | | | 8. Bank_Desc | |

**Overloaded API Signature (using instrument id)**

```
Procedure OraInstrInq (p_api_version          IN    NUMBER,
                       p_init_msg_list        IN    VARCHAR2:=FND_API.G_
                                                    FALSE,
                       p_commit               IN    VARCHAR2:=FND_API.G
                                                    _FALSE,
                       p_validation_level     IN    NUMBER:=FND_API.G
                                                    VALID  LEVEL_FULL,
                       p_payer_id             IN    VARCHAR2(80),
                       p_instr_id             IN    VARCHAR2,
                       x_return_status        OUT   VARCHAR2,
```

| | | |
|---|---|---|
| x_msg_count | OUT | NUMBER, |
| x_msg_data | OUT | VARCHAR2, |
| x_pmtInstrRec | OUT | PmtInstr_rec_type) |

### Parameters

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| p_api_version | IN | NUMBER | | Required |
| p_init_msg_list | IN | VARCHAR2 | | Optional |
| p_commit | IN | VARCHAR2 | | Optional |
| p_validation_level | IN | NUMBER | | Optional |
| p_payer_id | IN | VARCHAR2 | | Required |
| p-instr_id | IN | NUMBER | | |
| x_return_status | OUT | VARCHAR2 | | |
| | | | | |
| x_msg_count | OUT | NUMBER | | |
| x_msg_data | OUT | VARCHAR2 | | |
| x_pmtInstrRec | OUT | PmtInstr_rec_type | | |
| | | 1. CreditCardInstr | CreditCardInstr_rec_type | |
| | | | 1.Instr_Id | |
| | | | 2.FIName | |
| | | | 3.CC_Type | |
| | | | 4.CC_Num | |
| | | | 5.CC_ExpDate | |
| | | | 6.CC_ HolderName | |
| | | | 7.Billing_ Address1 | |
| | | | 8. Billing_ Address2 | |

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| | | | 9. Billing_ Address3 | |
| | | | 10.Billing_City | |
| | | | 11. Billing_ County | |
| | | | 12. Billing_ State | |
| | | | 13. Billing_ Country | |
| | | | 14. Billing_ PostalCode | |
| | | | 15. CC_Desc | |
| | | 2. PurchaseCardInstr | PurchaseCardI nstr_rec_type | |
| | | | 1.Instr_Id | |
| | | | 2.FIName | |
| | | | 3.PC_Type | |
| | | | 4.PC_Num | |
| | | | 5.PC_ExpDate | |
| | | | 6.PC_ HolderName | |
| | | | 7.Billing_ Address1 | |
| | | | 8. Billing_ Address2 | |
| | | | 9. Billing_ Address3 | |
| | | | 10.Billing_City | |
| | | | 11. Billing_ County | |
| | | | 12. Billing_ State | |

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| | | | 13. Billing_ Country | |
| | | | 14. Billing_ PostalCode | |
| | | | 15, PC_Subtype | |
| | | | 16. PC_Desc | |
| | | 3. BankAcct_tbl_type | BankAcctInstr_ rec_type | |
| | | | 1.Instr_Id | |
| | | | 2.FIName | |
| | | | 3. Bank_Id | |
| | | | 4. Branch_ID | |
| | | | 5. BankAcct_ Type | |
| | | | 6. BankAcct_ Num | |
| | | | 7. BankAcct_ HolderName | |
| | | | 8. Bank_Desc | |

| Parameter | IN/ OUT | DataType | SubType | Required/Optional |
|---|---|---|---|---|
| | | 4. Instrument Type | VARCHAR2. Can have following values defined as constants<br>C_ INSTRTYPE_ UNREG,<br>C_ INSTRTYPE_ BANKACCT,<br>C_ INSTRTYPE_ CREDITCARD,<br>C_ INSTRTYPE_ PURCHASECA RD | |

# PL/SQL Record/Table Types Definitions

The following PL/SQL record/table types are defined to store the objects (entities) necessary for the ECApp PL/SQL APIs. For information on Mandatory, Conditionally Mandatory, and Optional fields in these records/tables, please refer to the ensuing API descriptions, where these requirements are tabulated.

## Payments Related Generic Record Types

1. TYPE **Payee_rec_type** IS RECORD (

    Payee_ID VARCHAR2(80)

);

**Payee_ID**: ID of the payee

2. TYPE **Payer_rec_type** IS RECORD (

    Payer_ID VARCHAR2(80),

    Payer_Name VARCHAR2(80)

);

**Payer_ID**: ID of the payer

**Payee_Name**: Name of the payer

3. TYPE **Address_rec_type** IS RECORD (

    Address1 VARCHAR2(80),

    Address2 VARCHAR2(80),

    Address3 VARCHAR2(80),

    City VARCHAR2(80),

    County VARCHAR2(80),

    State VARCHAR2(80),

    Country VARCHAR2(80),

    PostalCode VARCHAR2(40),

    Phone VARCHAR2(40),

    Email VARCHAR2(40)

);

**Address1**: The first line of the street address.

**Address2**: The second line of the street address.

**Address3**: The third line of the street address.

**City**: City in the address

**State**: State in the address

**County**: County in the address

**Country**: Country code in the address.

**Postalcode**: Postal code for the address

**Phone**: Phone for that address. It is for informational purposes only.

**Email**: It is not supported right now.

**4.** TYPE **CreditCardInstr_rec_type** IS RECORD (

| | |
|---|---|
| FIName | VARCHAR2(80), |
| CC_Type | VARCHAR2(80), |
| CC_Num | VARCHAR2(80), |
| CC_ExpDate | DATE, |
| CC_HolderName | VARCHAR2(80), |
| CC_BillingAddr | Address_rec_type |

);

**Financial Institution Name (FIName)**: *Optional*, should be at least of non-trivial length 3.

**CC_Type**: Type of credit card (MASTERCARD, VISA, AMEX, …)

**CC_Num**: For *credit card number*, it should be numeric other than dashes and spaces. However, it will be stored without any spaces or dashes.

**CC_ExpDate**: Credit Card expiration date.

**CC_HolderName**: Credit card holder name

**CC_BillingAddr**: Address type record for the billing address of the credit card.

**5.** TYPE **PurchaseCardInstr_rec_type** IS RECORD (

| | |
|---|---|
| FIName | VARCHAR2(80), |
| PC_Type | VARCHAR2(80), |
| PC_Num | VARCHAR2(80), |
| PC_ExpDate | DATE, |
| PC_HolderName | VARCHAR2(80), |

| | |
|---|---|
| PC_BillingAddr | Address_rec_type, |
| PC_Subtype | VARCHAR2(80) |

);

**Financial Institution Name (FIName)**: *Optional*, should be at least of non-trivial length 3.

**PC_Type**: Type of purchase card (MASTERCARD, VISA, AMEX, …)

**PC_Num**: For *purchase card number*, it should be numeric other than dashes and spaces. However, it will be stored without any spaces or dashes.

**PC_ExpDate**: Purchase Card expiration date.

**PC_HolderName**: Purchase card holder name

**PC_BillingAddr**: Address type record for the billing address of the purchase card.

**PC_Subtype**: The subtype for purchase card. Possible values are ('B'/'C'/'P'/'U') which are for BUSINESS / CORPORATE / PURCHASE / UNKNOWN.

**Financial Institution Name (FIName)**: *Optional*.

**Bank_ID**: Routing number of the bank. Should be at least of non-trivial length 2.

**Branch_ID**: ID of the branch.

**BankAcct_Type**: Should be of at least non-trivial length 3. Such as CHECKING

**BankAcct_Num**: For *bank account number*, should be at least of non-trivial length 3.

**BankAcct_HolderName**: Name of the bank account holder

**6.** TYPE **PmtInstr_rec_type** IS RECORD (

| | |
|---|---|
| PmtInstr_ID | NUMBER, |
| PmtInstr_ShortName | VARCHAR2(80), |
| CreditCardInstrCredit | CardInstr_rec_type, |
| BankAcctInstr | BankAcctInstr_rec_type, |
| PurchaseCardInstr | PurchaseCardInstr_rec_type |

);

**PmtInstr_ID**: The payment instrument ID of an already registered payment instrument.

**PmtInstr_ShortName**: Short name for the payment instrument.

**CreditCardInstr**: Credit card instrument type record. Refer #4 for details.

**BankAcctInstr**: Bank account instrument type record. Refer #6 for details.

**PurchaseCardInstr**: Purchase card instrument type record. Refer #5 for details.

**Note:** The Payment Instrument Type (i.e., CREDITCARD / PURCHASECARD / BANKACCOUNT / UNREGISTERED) is derived from the input data, by verifying which of the input instrument records (i.e., CreditCardInstr, PurchaseCardInstr, BankAcctInstr, PmtInstr_ID) are provided with input values. That particular instrument type and its component fields are then passed to the iPayment11i EC-Servlet. So, either PmtInstr_ID alone is provided for registered instruments, or one of the other three (CreditCardInstr, PurchaseCardInstr, BankAcctInstr) is provided as part of payment instrument input.

**7.** TYPE **Tangible_rec_type** IS RECORD (

| | |
|---|---|
| Tangible_ID | VARCHAR2(80), |
| Tangible_Amount | NUMBER, |
| Currency_Code | VARCHAR2(80), |
| RefInfo | VARCHAR2(80), |
| Memo | VARCHAR2(80), |
| Acct_Num | VARCHAR2(80) |

);

**Tangible_ID**: It is the order id or bill id. It should be unique for a given payee

**Tangible_Amount**: Should be a positive number.

**Currency_Code**: The 3 letter currency code.

**RefInfo**: Reference information for this bill/order

**Memo**: Memo for this bill/order.

**Acct_Num**: Account number of the customer, if applicable.

**8.** SUBTYPE **RetailData_Enum** IS VARCHAR2(10);

**9.** TYPE **RetailData_rec_type** IS RECORD (

Tangible_IDVARCHAR2(80),

| | |
|---|---|
| IsRetail | VARCH2(1), |
| POSEntryMode | RetailData_Enum, |

| | |
|---|---|
| POSCapability | RetailData_Enum, |
| POSAuthSource | RetailData_Enum, |
| POSCardIdMethod | RetailData_Enum, |
| POSSwipeData | VARCHAR2(300) |

IsRetail: Value 'Y' indicates the current transaction is a retail transaction; value 'N' that it is not.

POSEntryMode: Gives the credit card entry mode at the point-of-sale (POS). The following constants are have been enumerated for this field:

C_ENTRYMODE_KEYED: Manual/keyed entry

C_ENTRYMODE_MAGTRACK1: Magnetic reader track 1

C_ENTRYMODE_MAGTRACK2: Magnetic reader track 2

C_ENTRYMODE_MAGTRACKALL: Magnetic reader all tracks (track 1 & 2)

C_ENTRYMODE_SMARTCARD_RDR: Smart card reader/chip reader

C_ENTRYMODE_UNKNOWN: Unknown entry mode

POSCapability: The card reading capabilities at the point-of-sale. This field takes the following enumerated values:

C_CAPABILITY_KEY: Keyed/manual entry-only capability

C_CAPABILITY_MAG_RDR: Magnetic reader capability

C_CAPABILITY_CHIP_RDR: Chip reader capability

C_CAPABILITY_UNKNOWN: Unknown capability

POSAuthSource: The authorization source. This field takes the following enumerated values:

C_AUTHSRC_ISSUER_PROVIDED: Issuer provided authorization source

C_AUTHSRC_REFERRAL: Referral authorization source

C_AUTHSRC_OFFLINE: Off-line authorization

C_AUTHSRC_NONAPPROVED: Non-approved

POSCardIdMethod: The card identification method used at the point-of-sale. The field can have the following enumerated values:

C_CARDID_SIGNATURE: Signature identification

C_CARDID_PIN: PIN-entry identification

C_CARDID_UNATTEND_TERM: Unattended terminal identification

C_CARDID_MAILORDER: Mail order identification

C_CARDID_NONE: No identification

POSSwipeData: Swipe data read by a magnetic or chip reader at the point-of-sale. A calling application that can interface with such a reader may pass this data to iPayment as a (possibly encoded) string.

## Inbound Payment Operations Related Record Types

1. TYPE **PmtReqTrxn_rec_type** IS RECORD (

| | |
|---|---|
| PmtMode | VARCHAR2(30), |
| CVV2 | VARCHAR2(10) := NULL, |
| Settlement _Date | Date:=, |
| Auth_Type | VARCHAR2(80), |
| Check_Flag | VARCHAR2(30), |
| Retry_Flag | VARCHAR2(30), |
| Org_ID | NUMBER, |
| NLS_LANG | VARCHAR2(80), |
| PONum | NUMBER, |
| TaxAmount | NUMBER, |
| ShipFromZip | VARCHAR2(80), |
| ShipToZip | VARCHAR2(80), |
| AnalyzeRisk | VARCHAR2(80) |
| AuthCode | VARCHAR2(255) |
| VoiceAuthFlag | VARCHAR2(30) |

);

**PmtMode**: Its value should be either ONLINE or OFFLINE.

**CVV2:** The Visa CVV2, Mastercard CVC2, or American Express CIP value associated with the credit card is used for this transaction.

**Settlement_Date**: Ignored for all ONLINE requests, required for OFFLINE requests. It is the date by which you wish the operation to be settled.

**Check flag**: Ignored for ONLINE requests, optional for OFFLINE requests. It is meaningful only for OFFLINE Bank Account transfer operations when the user requested settle date is earlier THAN the earliest date it can be settled by the system. When check flag is set to true, the operation will be rejected if it cannot be settled by user specified settle date, otherwise, the operation will get scheduled

with the earliest settle date available by the system, and a warning message will be returned saying unable to meet user specified date.

**Retry flag**: Should be either 'Y' or 'N'.

Applicable for ONLINE Credit Card Request and Credit operations.

You should set this flag to 'Y' when previous request when the same operation may have been processed by the back payment system. For example, when first request returns with a time out status, or when OraPmtQryTrxn failed to retrieve the information. This flag is passed as is to the backend payment system. Check with individual backend payment system for further details.

**Org_ID**: The identifier for the organization submitting the request.

Applicable for new operations (Request, Modify, Credit). Should be a positive integer.

**Auth_Type:** Applicable for credit card authorization(request), modify, and credit operation only. Takes one of the following values:

AUTHONLY: terminal-based/host-based authorization only

AUTHCAPTURE: host-based authorization and capture together

**NLSLang**: The NLS language code

**PONum**: Purchase order number for this transaction

**TaxAmount**: Amount of transaction that is tax

**ShipFromZip**: The ZIP code from which merchandise will be shipped.

**ShipToZip**: The ZIP code to which merchandise will be shipped.

**AnalyzeRisk**: The flag that allows the calling application to request risk analysis. Values are True, False, and Neutral. "True" causes risk analysis to be done and "False" keeps risk analysis from being done. "Neutral" causes iPayment to use the payee level risk enablement setting. This defaults to "neutral" if no value is given.

**AuthCode**: The authorization Code that the financial institution issues after doing a voice authorization. This field is required if the VoiceAuthFlag is set to ‘Y’.

**VoiceAuthFlag**: Should be set up to either Y or N. This indicates whether the current transaction refers to a voice authorization (where the financial institution has already been contacted directly). If this field is set up as ‘Y’, then the AuthCode field is required to have the same value.

**2.** TYPE **ModTrxn_rec_type** IS RECORD (

```
    Trxn_ID             NUMBER,
    PmtMode             VARCHAR2(30),
    Settlement_Date     DATE,
    Check_Flag          VARCHAR2(30),
    Auth_Type           VARCHAR2(80),
    PONum               NUMBER,
    TaxAmount           NUMBER,
    ShipFromZip         VARCHAR2(80),
    ShipToZip           VARCHAR2(80)
);
```

**Trxn_ID**: The transaction id for the operation which has to be modified.

**PmtMode**: Its value should be either ONLINE or OFFLINE.

**Settlement_Date**: Ignored for all ONLINE requests, required for OFFLINE requests. It is the date by which you wish the operation to be settled.
**Check flag**: Ignored for ONLINE requests, optional for OFFLINE requests. It is meaningful only for OFFLINE operations when the user requested settle date is *earlier* than the earliest date it can be settled by the system. When check flag is set to true, the operation will be rejected if it cannot be settled by user specified settle date, otherwise, the operation will get scheduled with the earliest settle date available by the system, and a warning message will be returned saying unable to meet user specified date.

**Auth_Type:** Applicable for credit card authorization(request), modify, and credit operation only. Takes one of the following values:

AUTHONLY: terminal-based/host-based authorization only

AUTHCAPTURE: host-based authorization and capture together

**PONum**: Purchase order number for this transaction

**TaxAmount**: Amount of transaction that is tax

**ShipFromZip**: The ZIP code from which merchandise will be shipped.

**ShipToZip**: The ZIP code to which merchandise will be shipped.

**3.** TYPE **CaptureTrxn_rec_type** IS RECORD (

```
    Trxn_ID             NUMBER,
```

| | |
|---|---|
| PmtMode | VARCHAR2(30), |
| Settlement_Date | DATE, |
| Currency | VARCHAR2(80), |
| Price | NUMBER, |
| NLS_LANG | VARCHAR2(80) |

);

**Trxn_ID**: The transaction id for the operation which has to be captured.

**PmtMode**: Its value should be either ONLINE or OFFLINE.

**Settlement_Date**: Ignored for all ONLINE requests, required for OFFLINE requests. It is the date by which you wish the operation to be settled.

**Currency**: Should be a 3-letter code.

**Price**: Should be a positive amount. The amount of money to be captured.

**NLSLang**: The NLS language code

**4.** TYPE **ReturnTrxn_rec_type** IS RECORD (

| | |
|---|---|
| Trxn_ID | NUMBER, |
| PmtMode | VARCHAR2(30), |
| Settlement_Date | DATE, |
| Currency | VARCHAR2(80), |
| Price | NUMBER, |
| NLS_LANG | VARCHAR2(80) |

);

**Trxn_ID**: The transaction id for the operation which has to be returned.

**PmtMode**: Its value should be either ONLINE or OFFLINE.

**Settlement_Date**: Ignored for all ONLINE requests, required for OFFLINE requests. It is the date by which you wish the operation to be settled.

**Currency**: Should be a 3-letter code.

**Price**: Should be a positive amount. The amount of money to be captured.

**NLSLang**: The NLS language code

5. TYPE **CancelTrxn_rec_type** IS RECORD (

| | |
|---|---|
| Trxn_ID | NUMBER, |
| Req_Type | VARCHAR2, |
| NLS_LANG | VARCHAR2(80) |

);

**Trxn_ID**: The transaction id for the operation which has to be returned.

**Req_Type:** optional field provides the option of canceling other operations (such as Void, Return, etc.), in addition to scheduled payment requests. By Default, this Req_Type field is set to 'ORAPMTREQ' to cancel the authorization operation.

**NLSLang**: The NLS language code

6. TYPE **QueryTrxn_rec_type** IS RECORD (

| | |
|---|---|
| Trxn_ID | NUMBER, |
| History_Flag | VARCHAR2(30), |
| NLS_LANG | VARCHAR2(80) |

);

**Trxn_ID**: The transaction id for the operation which has to be queried.

**History_Flag:** takes in values => 'TRUE' or 'FALSE'. When set to TRUE, it retrieves the entire history, otherwise it retrieves the latest one only.

**NLSLang**: The NLS language code

7. TYPE **VoidTrxn_rec_type** IS RECORD (

| | |
|---|---|
| Trxn_ID | NUMBER, |
| PmtMode | VARCHAR2(30), |
| Settlement_Date | DATE, |
| Trxn_Type | NUMBER, |
| NLS_LANG | VARCHAR2(80) |

);

**Trxn_ID**: The transaction id for the operation which has to be voided. The type of the operation will be specified in Trxn_Type

**PmtMode**: Its value should be either ONLINE or OFFLINE.

**Settlement_Date**: Ignored for all ONLINE requests, required for OFFLINE requests. It is the date by which you wish the operation to be settled.

**NLSLang**: The NLS language code

**Trxn_Type:** takes the following numeric values:

| Lookup Code | Meaning | Description |
|---|---|---|
| 2 | AuthOnly | Online authorization requested for an order |
| 3 | AuthCapture | Online authorization & capture for an order |
| 4 | VoidAuthOnly | Void an order authorized but not captured |
| 5 | Return | Return on an order which is authorized & captured |
| 6 | ECRefund | Refund on a purchase done using EC cash/coin |
| 7 | VoidAuthCapture | Voids a previously authorized & captured trxn |
| 8 | Capture | Capture funds for previously authorized trxn. |
| 9 | MarkCapture | Marked for capture by terminal based system |
| 10 | MarkReturn | Marked for return by terminal based system |
| 11 | Credit | Refund money to customer |
| 13 | VoidCapture | Void operation captured by host based system |
| 14 | VoidMarkCapture | Void operation marked for capture by terminal based system |
| 17 | VoidReturn | Void return operation for host based system |
| 18 | VoidMarkReturn | Void operation marked for return by terminal based system |
| 102 | Batch Admin | Used for open, purge, query, and close batch operations |

**8.** TYPE **CreditTrxn_rec_type** IS RECORD (

| | |
|---|---|
| PmtMode | VARCHAR2(30), |
| Settlement_Date | DATE, |
| Retry_Flag | VARCHAR2(30), |
| Org_ID | NUMBER, |

| | |
|---|---|
| NLS_LANG | VARCHAR2(80) |

);

**PmtMode**: Its value should be either ONLINE or OFFLINE.

**Settlement_Date**: Ignored for all ONLINE requests, required for OFFLINE requests. It is the date by which you wish the operation to be settled.

**Retry flag**: Should be either 'Y' or 'N'.

Applicable for ONLINE Credit Card Request and Credit operations.

You should set this flag to 'Y' when previous request with the same operation may have been processed by the back payment system. For example, when first request returns with a time out status, or when OraPmtQryTrxn failed to retrieve the information. This flag is passed as is to the backend payment system. Check with individual backend payment system for further details.

**Org_ID**: The identifier for the organization submitting the request.

**NLSLang**: The NLS language code

**9.** TYPE **BatchTrxn_rec_type** IS RECORD (

| | |
|---|---|
| PmtMode | VARCHAR2(30), |
| PmtType | VARCHAR2(30), |
| Settlement_Date | DATE, |
| Payee_ID | NUMBER, |
| MerchBatch_ID | VARCHAR2(80), |
| BEP_Suffix | VARCHAR2(80), |
| BEP_Account | VARCHAR2(80), |
| NLS_LANG | VARCHAR2(80) |

);

**PmtMode**: Its value should be either ONLINE or OFFLINE.

**PmtType**: Optional, defaulted to empty string. You need specify it if you wish to operate on a back end payment system rather than the default one.

**Settlement_Date**: Ignored for all ONLINE requests, required for OFFLINE requests. It is the date by which you wish the operation to be settled.

**Payee_ID**: It's the payee identifier for whom the batch operation is performed.

**MerchBatch_ID**: It's the user selected identifier for this operation. Should be a non-empty string, and should be unique across all merchant batch ids from a particular payee.

**BEP_Suffix:** The 3-letter suffix of the payment system that is associated with this batch.

**BEP_Account:** The merchant account the batch is associated with. This is the same value as the payee's payment system identifier for the given back end payment system.

**NLSLang**: The NLS language code

## Outbound Bank Payment Batch Related Record Types

```
TYPE PmtBankPayInvoice_Rec_Type IS RECORD
(
  pmt_batchrequestid NUMBER,
  pmt_trxnid NUMBER,
  inv_number VARCHAR2(50),
  inv_date DATE,
  inv_amount NUMBER,
  pmt_amount NUMBER);
```

**pmt_batchrequestid**: Payment-batch Request ID
**pmt_trxnid**: Transaction ID
**inv_number**: Invoice Number
**inv_date**: Invoice Date
**inv_amount**: Invoice Amount
**pmt_amount**: Actual payment amount after discount deduction.

```
TYPE PmtBankPayInvoice_Tbl_Type IS TABLE OF
PmtBankPayInvoice_Rec_Type INDEX BY BINARY_INTEGER;
TYPE PmtBankPayBatchTrxn_Rec_Type IS RECORD (
 pmt_batchrequestid NUMBER,
 pmt_trxnid NUMBER,
 pmt_loc_country VARCHAR2(10),
 pmt_priority VARCHAR2(10),
 debit_acctno VARCHAR2(30),
 fax_mail_to_name VARCHAR2(80),
 mail_address1 VARCHAR2(35),
 mail_address2 VARCHAR2(35),
```

mail_address3 VARCHAR2(35),
mail_addr_city VARCHAR2(35),
mail_addr_state VARCHAR2(35),
mail_addr_zip VARCHAR2(35),
value_amount NUMBER,
ref_amount NUMBER,
value_date DATE,
charge_details VARCHAR2(6),
vat_amount NUMBER,
wht_amount NUMBER,
pmt_details_1 VARCHAR2(20),
pmt_details_2 VARCHAR2(20),
pmt_details_3 VARCHAR2(20),
pmt_details_4 VARCHAR2(20),
trxn_code_clrid VARCHAR2(6),
bnf_name VARCHAR2(80),
bnf_id VARCHAR2(30),
bnf_address_line1 VARCHAR2(30),
bnf_addr_city VARCHAR2(35),
bnf_addr_state VARCHAR2(35),
bnf_addr_zip VARCHAR2(35),
bnf_addr_phone VARCHAR2(20),
bnf_remarks VARCHAR2(80),
bnf_charge_amt NUMBER,
bnf_adjustment_amt VARCHAR2(30),
bnf_bank_name VARCHAR2(30),
bnf_bank_address VARCHAR2(60),
bnf_bank_addr_state VARCHAR2(35),

bnf_bank_addr_city VARCHAR2(35),

bnf_bank_addr_zip VARCHAR2(20),

bnf_bank_branch_no VARCHAR2(50),

bnf_bank_branch_name VARCHAR2(30),

bnf_bank_branch_type VARCHAR2(25),

bnf_acctno VARCHAR2(30),

bnf_bank_account_name VARCHAR2(80),

bnf_bank_acct_type VARCHAR2(25),

bnf_acct_type VARCHAR2(25),

bnf_faxno_cableaddr VARCHAR2(35),

bnf_site_code VARCHAR2(15),

bnf_swift_code VARCHAR2(30),

bnf_bank_clearing_mtd VARCHAR2(60),

bnf_taxpayer_id VARCHAR2(30),

future_pay_due_date DATE,

cust_ref NUMBER,

intrm_bankcode VARCHAR2(30),

intrm_swiftcode VARCHAR2(30),

intrm_bankname VARCHAR2(60),

intrm_bank_faxno_cbl VARCHAR2(35)}

**pmt_batchrequestid**: Payment-batch Request ID

**pmt_trxnid**: Transaction ID

**pmt_loc_country**: Payment Location ISO Country Code

**pmt_priority**: Payment Priority

**debit_acctno**: Account number to be debited

**fax_mail_to_name**: Fax/Mail to Name - Only required if fax beneficiary advice is required

**mail_address1**: Mail to Address 1 - Only required if fax beneficiary advice is required.

**mail_address2**: Mail to Address 2 - Only required if fax beneficiary advice is required.

**mail_address3**: Mail to Address 3 - Only required if fax beneficiary advice is required.

**mail_addr_city**: Mail to City - Only required if fax beneficiary advice is required.

**mail_addr_state**: Mail to State - Only required if fax beneficiary advice is required.

**mail_addr_zip**: Mail to Postal Code - Only required if fax beneficiary advice is required.

**value_amount**: Amount in the payment document.

**ref_amount**: Amount in the reference currency.

**value_date**: Date in the payment document

**charge_details**: Details of any charges on the invoice.

**vat_amount**: Amount of the value added tax.

**wht_amount**: Withholding tax amount.

**pmt_details_1**: Payment Details 1

**pmt_details_2**: Payment Details 2

**pmt_details_3**: Payment Details 3

**pmt_details_4**: Payment Details 4

**trxn_code_clrid**: Transaction Code/Clearing ID

**bnf_name**: Beneficiary Name

**bnf_id**: Beneficiary ID

**bnf_address_line1**: Beneficiary Address

**bnf_addr_city**: Beneficiary City

**bnf_addr_state**: Beneficiary State

**bnf_addr_zip**: Beneficiary Zip

**bnf_addr_phone**: Beneficiary Phone

**bnf_remarks**: Remarks

**bnf_charge_amt**: Beneficiary Charges Amount

**bnf_adjustment_amt**: Adjustment Amount

**bnf_bank_name**: Beneficiary Bank Name

**bnf_bank_address**: Beneficiary Bank Address

**bnf_bank_addr_state**: Beneficiary Bank State

**bnf_bank_addr_city**: Beneficiary Bank City

**bnf_bank_addr_zip**: Beneficiary Bank Postal Code

**bnf_bank_branch_no**: Beneficiary Bank/Branch No.

**bnf_bank_branch_name**: Beneficiary Bank Branch Name

**bnf_bank_branch_type**: Beneficiary Bank Branch Type

**bnf_acctno**: Beneficiary Bank Account Number

**bnf_bank_account_name**: Beneficiary Bank Account Name

**bnf_bank_acct_type**: Beneficiary Bank Account Type i.e Checking or Saving

**bnf_acct_type**: Bank account type code. Possible values are: INTERNAL or SUPPLIER for banks defined for Oracle Payables.

**bnf_faxno_cableaddr**: Beneficiary Fax No/Cable Address - Only required if fax beneficiary advice is required.

**bnf_site_code**: Beneficiary Site Code

**bnf_swift_code**: Beneficiary Bank (SWIFT Code)

**bnf_bank_clearing_mtd**: Beneficiary Bank Clearing Method

**bnf_taxpayer_id**: Beneficiary Tax ID

**future_pay_due_date**: Future pay date

**cust_ref**: Customer Reference

**intrm_bankcode**: Intermediary Bank Code

**intrm_swiftcode**: Intermediary Bank (SWIFT Code)

**intrm_bankname**: Intermediary Bank Name

**intrm_bank_faxno_cbl**: Intermediary Bank Fax No/Cable Address

```
TYPE PmtBankPayBatchTrxn_Tbl_Type IS TABLE OF
PmtBankPayBatchTrxn_Rec_Type INDEX BY BINARY_INTEGER;
TYPE PmtBankPayBatchReq_Rec_Type IS RECORD(
  pmt_batchrequestid NUMBER,
  pmt_batch_name VARCHAR2(80),
  cust_id   NUMBER,
  cust_name VARCHAR2(60),
  cust_addr1 VARCHAR2(60),
  cust_addr2 VARCHAR2(60),
  cust_addr3 VARCHAR2(60),
  bank_name VARCHAR2(60),
  bank_branch_name VARCHAR2(60),
  bank_acct_name VARCHAR2(60),
  bank_acct_number VARCHAR2(30),
  bank_acct_type VARCHAR2(30),
  orig_country_code VARCHAR2(25),
  pmt_method VARCHAR2(10),
  currency_code VARCHAR2(15),
  ref_currency_code VARCHAR2(15),
  doc_order_lookup_code VARCHAR2(25),
  no_of_trxns NUMBER,
  batch_total NUMBER,
  request_date DATE
);
```

**pmt_batchrequestid**: Payment-batch Request ID

**pmt_batch_name**: Payment-batch name

**cust_id**: Customer ID

**cust_name**: Customer Name

**cust_addr1**: Customer Address line1

**cust_addr2**: Customer Address line2

**cust_addr3**: Customer Address line3

**bank_name**: Originating Bank Name

**bank_branch_name**: Branch name of the originating bank.

**bank_acct_name**: Bank account name specific to the bank and branch.

**bank_acct_number**: Bank account number specific to the bank and branch.

**bank_acct_type**: Bank account type, i.e whether checking or saving

**orig_country_code**: Originating ISO Country Code

**pmt_method**: Payment Method - CHECK/ELECTRONIC/WIRE

**currency_code**: Currency Code

**ref_currency_code**: Reference Currency Code

**doc_order_lookup_code**: Type of payment ordering in a batch

**no_of_trxns**: Total number of transactions in the batch

**batch_total**: Sum total of all the transaction amounts in the batch

**request_date**: Date when the batch has been submitted.

```
TYPE PmtBankPayBSReq_Rec_Type IS RECORD(
  pmt_batchset_id       NUMBER,
  no_of_batches         NUMBER
);
```

**pmt_batchset_id**: Payment batch-set request ID

**no_of_batches**: Total number of payment-batches in the batch-set.

## Risk Management Record Types

1. TYPE **RiskInfo_rec_type** IS RECORD (

| | |
|---|---|
| Formula_Name | VARCHAR2(80), |
| ShipToBillTo_Flag | VARCHAR2(255), |
| Time_Of_Purchase | VARCHAR2(80), |
| Customer_Acct_Num | NUMBER |

);

**Formula_Name**: Name of the formula to be used.

**ShipToBillTo_Flag:** used to notify whether the "Ship_To" and the "Bill_To" addresses match or not ('TRUE'/'FALSE').

**Time_Of_Purchase:** Represents the time duration passed in 'HH:MI' format in 24 Hours notation. For example, 11 pm will be denoted as '23:00'.

**Customer_Acct_Num:** Represents the payer's account number in Oracle Accounts Receivables. This field is needed in AR - risk factors evaluation.

**Note:** For more information on using Risk Management, please refer to the documentation for the "Integrating Risk Management" under the section "Implementing iPayment".

## Inbound Payment Operations Response Record/Table Types

1. TYPE **Response_rec_type** IS RECORD (

| | |
|---|---|
| Status | NUMBER, |
| ErrCode | VARCHAR2(80), |
| ErrMessage | VARCHAR2(255), |
| NLS_LANG | VARCHAR2(80) |

);

**Status**: The status for the request. Possible values are (0,1,2 or 3).

**ErrCode**: The IBY_XXXX error code for the error, if any.

**ErrMessage**: The error message associated with the error.

**NLS_LANG**: The NLS code.

**NOTE**: This record is included in all the responses and the status of the operation can be found by looking at the value of status. Possible values for Status are: (0 => 'Success', 1=> 'Information', 2=> 'Warning', 3=> 'Error').

For more information on Error Codes and their meaning, please refer to "Error Handling during Payment Processing" in this document.

2. TYPE **OffLineResp_rec_type** IS RECORD (

| | |
|---|---|
| EarliestSettlement_Date | DATE, |
| Scheduled_Date | DATE |

);

If the payment operation cannot be settled by the settlement date specified in input, due to lead time of the back end payment system, then

**EarliestSettlement_Date:** Specifies the earliest date by which the operation can be settled

**Scheduled_Date:** Specifies the date on which scheduler will pick up the operation.

The **OffLineResp_rec_type** record outputs can be looked into for payment operations sent in OFFLINE Mode**.**

For more information on how the status values are propagated back to the ECApp, please refer to "Status Update API for Offline Request" in this document.

3. TYPE **RiskResp_rec_type** IS RECORD (

| | |
|---|---|
| Status | NUMBER, |
| ErrCode | VARCHAR2(80), |
| ErrMessage | VARCHAR2(255), |
| Additional_ErrMessage | VARCHAR2(255), |
| Risk_Score | NUMBER, |
| Risk_Threshold_Val | NUMBER, |
| Risky_Flag | VARCHAR2(30) |

);

**Status**: The status for the request. Possible values are (0,1,2 or 3).

**ErrCode**: The IBY_XXXX error code for the error, if any.

**ErrMessage**: The error message associated with the error

**Additional_ErrMessage:** If multiple factors have failed, this field contains additional messages about why the factors failed.

**Risk_Score:** Represents the overall risk score of the payment request.

**Risk_Threshold_Val:** The threshold value that is set for the payee involved in the payment request.

**Risky_Flag:** Indicates whether payment is risky or not.

4. TYPE **ReqResp_rec_type** IS RECORD (

| | |
|---|---|
| Response | Response_rec_type, |
| OffLineResp | OffLineResp_rec_type, |
| RiskRespIncluded | VARCHAR2(30), |
| RiskResponseRisk | Resp_rec_type, |
| Trxn_ID | NUMBER, |
| Trxn_Type | NUMBER, |
| Trxn_Date | DATE, |
| Authcode | VARCHAR2(80), |
| RefCode | VARCHAR2(80), |

```
    AVSCode             VARCHAR2(80),
    PmtInstr_Type       VARCHAR2(80),
    Acquirer            VARCHAR2(80),
    VpsBatch_ID         VARCHAR2(80),
    AuxMsg              VARCHAR2(255),
    ErrorLocation       NUMBER,
    BEPErrCode          VARCHAR2(80),
    BEPErrMessage       VARCHAR2(255)
);
```

**Response**: The response record. Refer #1 for details.

**OffLineResp**: The offline response record. Refer to #2 for details.

**RiskRespIncluded:** Flag used to indicate whether risk response included or not. Possible values ('YES'/'NO')/

**RiskResponse:** The risk response record. Refer to #3 for details.

**Trxn_ID**: The new id generated for this request

**Trxn_Type**: The type of the capture operation. Back-end system may distinguish between Capture and MarkCapture.

**Trxn_Date**: The date of the operation

**AuthCode**: Authorization code that is returned by back end payment system

**RefCode**: Reference code that is returned by back end payment system

**AVSCode**: AVS code that is returned by back end payment system

**PmtInstr_Type**: Credit card type of the operation, such as 'Visa'.

**Acquirer**: Acquirer information that is returned by back end payment system

**VPSBatch_ID**: VPSBatchId that is returned by back end payment system

**AuxMsg**: Auxiliary message that is returned by back end payment system

**ErrorLocation**: The error location, if applicable. It is a number which indicates what place the error has occurred, like middle tier or the back end payment system.

**BEPErrCode**: The error code, if applicable, returned by the back end payment system

**BEPErrMessage**: The error message, if applicable, returned by the back end payment system.

**Note**: RiskRespIncluded is a flag ('YES'/'NO') that tells the ECAPP that the RiskResponse Record contains some valid Risk response information.

**5.** TYPE **ModResp_rec_type** IS RECORD (

| | |
|---|---|
| Response | Response_rec_type, |
| OffLineResp | OffLineResp_rec_type, |
| Trxn_ID | NUMBER |

);

**Response**: The response record. Refer to #1 for details.

**OffLineResp**: The offline response record. Refer to #2 for details.

**Trxn_ID**: The new id generated for this request

**6.** TYPE **VoidResp_rec_type** IS RECORD (

| | |
|---|---|
| Response | Response_rec_type, |
| OffLineResp | OffLineResp_rec_type, |
| Trxn_ID | NUMBER, |
| Trxn_Type | NUMBER, |
| Trxn_Date | DATE, |
| RefCode | VARCHAR2(80), |
| PmtInstr_Type | VARCHAR2(80), |
| ErrorLocation | NUMBER, |
| BEPErrCode | VARCHAR2(80), |
| BEPErrMessage | VARCHAR2(255) |

);

**Response**: The response record. Refer to #1 for details.

**OffLineResp**: The offline response record. Refer to #2 for details.

**Trxn_ID**: The transaction id for this request

**Trxn_Type**: The type of the capture operation. The Back-end system may distinguish between Capture and MarkCapture.

**Trxn_Date**: The date of the operation

**RefCode**: Reference code that is returned by back end payment system

**PmtInstr_Type**: Credit card type of the operation, such as 'Visa'.

**ErrorLocation**: The error location, if applicable. It is a number which indicates what place the error has occurred, like middle tier or the back end payment system.

**BEPErrCode**: The error code, if applicable, returned by the back end payment system

**BEPErrMessage**: The error message, if applicable, returned by the back end payment system.

**7.** TYPE **CancelResp_rec_type** IS RECORD (

| | |
|---|---|
| Response | Response_rec_type, |
| Trxn_ID | NUMBER, |
| ErrorLocation | NUMBER, |
| BEPErrCode | VARCHAR2(80), |
| BEPErrMessage | VARCHAR2(255) |

);

**Response**: The response record. Refer #1 for details.

**Trxn_ID**: The transaction id for this request

**ErrorLocation**: The error location, if applicable. It is a number which indicates what place the error has occurred, like middle tier or the back end payment system.

**BEPErrCode**: The error code, if applicable, returned by the back end payment system.

**BEPErrMessage**: The error message, if applicable, returned by the back end payment system.

**8.** TYPE **CaptureResp_rec_type** IS RECORD (

| | |
|---|---|
| Response | Response_rec_type, |
| OffLineResp | OffLineResp_rec_type, |
| Trxn_ID | NUMBER, |
| Trxn_Type | NUMBER, |
| Trxn_Date | DATE, |

| | |
|---|---|
| PmtInstr_Type | VARCHAR2(80), |
| RefCode | VARCHAR2(80), |
| ErrorLocation | NUMBER, |
| BEPErrCode | VARCHAR2(80), |
| BEPErrMessage | VARCHAR2(255) |

);

**Response**: The response record. Refer to #1 for details.

**OffLineResp**: The offline response record. Refer to #2 for details.

**Trxn_ID**: The transaction id for this request

**Trxn_Type**: The type of the capture operation. Backend system may distinguish between Capture and MarkCapture.

**Trxn_Date**: The date of the operation

**PmtInstr_Type**: Credit card type of the operation, such as 'Visa'.

**ErrorLocation**: The error location, if applicable. It is a number which indicates what place the error has occurred, like middle tier or the back end payment system.

**BEPErrCode**: The error code, if applicable, returned by the back end payment system.

**BEPErrMessage**: The error message, if applicable, returned by the back end payment system.

**9.** TYPE **ReturnResp_rec_type** IS RECORD (

| | |
|---|---|
| Response | Response_rec_type, |
| OffLineResp | OffLineResp_rec_type, |
| Trxn_ID | NUMBER, |
| Trxn_Type | NUMBER, |
| Trxn_Date | DATE, |
| PmtInstr_TypeV | ARCHAR2(80), |
| RefCode | VARCHAR2(80), |
| ErrorLocation | NUMBER, |
| BEPErrCode | VARCHAR2(80), |

BEPErrMessage VARCHAR2(255)

);

**Response**: The response record. Refer #1 for details.

**OffLineResp**: The offline response record. Refer #2 for details.

**Trxn_ID**: The transaction id for this request

**Trxn_Type**: The type of the capture operation. Backend system may distinguish between Capture and MarkCapture.

**Trxn_Date**: The date of the operation

**PmtInstr_Type**: Credit card type of the operation, such as 'Visa'.

**RefCode**: Reference code that is returned by the back end payment system

**ErrorLocation**: The error location, if applicable. It is a number which indicates what place the error has occurred, like middle tier or the back end payment system.

**BEPErrCode**: The error code, if applicable, returned by the back end payment system.

**BEPErrMessage**: The error message, if applicable, returned by the back end payment system.

**10.** TYPE **CreditResp_rec_type** IS RECORD (

Response Response_rec_type,
OffLineResp OffLineResp_rec_type,
Trxn_ID NUMBER,
Trxn_Type NUMBER,
Trxn_Date DATE,
PmtInstr_Type VARCHAR2(80),
RefCode VARCHAR2(80),
ErrorLocation NUMBER,
BEPErrCode VARCHAR2(80),
BEPErrMessage VARCHAR2(255)

);

**Response**: The response record. Refer #1 for details.

**OffLineResp**: The offline response record. Refer #2 for details.

**Trxn_ID**: The transaction id for this request

**Trxn_Type**: The type of the capture operation. Backend system may distinguish between Capture and MarkCapture.

**Trxn_Date**: The date of the operation

**PmtInstr_Type**: Credit card type of the operation, such as 'Visa'.

**RefCode**: Reference code that is returned by the back end payment system

**ErrorLocation**: The error location, if applicable. It is a number which indicates what place the error has occurred, like middle tier or the back end payment system.

**BEPErrCode**: The error code, if applicable, returned by the back end payment system

**BEPErrMessage**: The error message, if applicable, returned by the back end payment system.

**11.** TYPE **InqResp_rec_type** IS RECORD (

| | |
|---|---|
| Response | Response_rec_type, |
| Payer | Payer_rec_type, |
| Payee | Payee_rec_type, |
| Tangible | Tangible_rec_type, |
| PmtInstr | PmtInstr_rec_type |

);

**Response**: The response record. Refer to C.4.4.#1 for details.

**Payer**: The payer record. Refer to C.4.4.#2 for details.

**Payee**: The payee record. Refer to C.4.4.#1 for details.

**Tangible**: The tangible record. Refer to C.4.4.#8 for details.

**PmtInstr**: The pmtinstr record. Refer to C.4.4.#7 for details.

**12.** TYPE **QryTrxnRespSum_rec_type** IS RECORD (

| | |
|---|---|
| Response | Response_rec_type, |
| ErrorLocation | NUMBER, |
| BEPErrCode | VARCHAR2(80), |

BEPErrMessage VARCHAR2(255)

);

**Response**: The response record. Refer #1 for details.

**ErrorLocation**: The error location, if applicable. It is a number which indicates what place the error has occurred, like middle tier or the back end payment system.

**BEPErrCode**: The error code, if applicable, returned by the back end payment system.

**BEPErrMessage**: The error message, if applicable, returned by the back end payment system.

**13.** TYPE **QryTrxnRespDet_rec_type** IS RECORD (

Status NUMBER,
StatusMsg VARCHAR2(255),
Trxn_ID NUMBER,
Trxn_Type NUMBER,
Trxn_Date DATE,
PmtInstr_Type VARCHAR2(80),
Currency VARCHAR2(80),
Price NUMBER,
RefCode VARCHAR2(80),
AuthCode VARCHAR2(80),
AVSCode VARCHAR2(80),
Acquirer VARCHAR2(80),
VpsBatch_ID VARCHAR2(80),
AuxMsg VARCHAR2(255),
ErrorLocation NUMBER,
BEPErrCode VARCHAR2(80),
BEPErrMessage VARCHAR2(255)

);

**Status**: The status for this request

**StatusMsg**: The status message for this request.

**Trxn_ID**: The transaction id for this request

**Trxn_Type**: The type of the capture operation. Backend system may distinguish between Capture and MarkCapture.

**Trxn_Date**: The date of the operation

**PmtInstr_Type**: Credit card type of the operation, such as 'Visa'.

**Currency**: Should be a 3-letter code.

**Price**: Should be a positive amount. The amount of money to be captured.

**RefCode**: Reference code that is returned by back end payment system

**AuthCode**: Authorization code that is returned by back end payment system

**AVSCode**: AVS code that is returned by back end payment system

**Acquirer**: Acquirer information that is returned by back end payment system

**VPSBatch_ID**: VPSBatchId that is returned by back end payment system

**AuxMsg**: Auxiliary message that is returned by back end payment system

**ErrorLocation**: The error location, if applicable. It is a number which indicates what place the error has occurred, like middle tier or the back end payment system.

**BEPErrCode**: The error code, if applicable, returned by the back end payment system

**BEPErrMessage**: The error message, if applicable, returned by the back end payment system.

**14.** TYPE **QryTrxnRespDet_tbl_type** IS TABLE OF QryTrxnRespDet_rec_type INDEX BY BINARY_INTEGER;

## Inbound Batch Payment Operations Response Record/Table Types

1. TYPE **BatchRespSum_rec_type** IS RECORD (

| | |
|---|---|
| Response | Response_rec_type, |
| OffLineResp | OffLineResp_rec_type, |
| NumTrxns | NUMBER, |
| MerchBatch_ID | VARCHAR2(80), |
| BatchState | NUMBER, |
| BatchDate | DATE, |
| Credit_Amount | NUMBER, |
| Sales_Amount | NUMBER, |
| Batch_Total | NUMBER, |
| Payee_ID | VARCHAR2(80), |
| VpsBatch_ID | VARCHAR2(80), |
| GWBatch_ID | VARCHAR2(80), |
| Currency | VARCHAR2(80), |
| ErrorLocation | NUMBER, |
| BEPErrCode | VARCHAR2(80), |
| BEPErrMessage | VARCHAR2(255) |

);

**Response**: The response record. Refer #1 for details.

**OffLineResp**: The offline response record. Refer #2 for details.

**NumTrxns**: Total number of individual operations in this batch

**Merch Batch_ID**: Merchant-specified unique batch id for this batch operation

**BatchState**: The state of the batch operation

**BatchDate**: The date of the batch operation

**Credit_Amount**: Total amount of credits.

**Sales_Amount**: Total amount of charges.

**Batch_Total**: Total amount of the entire batch.

**VPSBatch_ID**: VPSBatchId returned by the backend payment system

**GWBatch_ID**: GWBatchId returned by the backend payment system

**Currency**: The currency code used

**ErrorLocation**: The error location, if applicable. It is a number which indicates what place the error has occurred, like middle tier or the back end payment system.

**BEPErrCode**: The error code, if applicable, returned by the back end payment system

**BEPErrMessage**: The error message, if applicable, returned by the back end payment system.

**2.** TYPE **BatchRespDet_rec_type** IS RECORD (

| | |
|---|---|
| Trxn_ID | NUMBER, |
| Trxn_Type | NUMBER, |
| Trxn_Date | DATE, |
| Status | NUMBER, |
| ErrorLocation | NUMBER, |
| BEPErrCode | VARCHAR2(80), |
| BEPErrMessage | VARCHAR2(255), |
| NLS_LANG | VARCHAR2(80) |

);

**Trxn_ID**: The transaction id for this request

**Trxn_Type**: The type of the capture operation. The Back-end system may distinguish between Capture and MarkCapture.

**Trxn_Date**: The date of the operation

**Status**: The status for this request

**ErrorLocation**: The error location, if applicable. It is a number which indicates what place the error has occurred, like middle tier or the back end payment system.

**BEPErrCode**: The error code, if applicable, returned by the back end payment system

**BEPErrMessage**: The error message, if applicable, returned by the back end payment system.

**NLSLang**: The NLS language code

3. TYPE **BatchRespDet_tbl_type** IS TABLE OF **BatchRespDet_rec_type** INDEX BY BINARY_INTEGER;

## Instrument Registration Related Record Types

This section describes the record/table definitions used in the Instrument Registration API.

> **Note:** **CreditCardInstr_rec_type** and **PurchaseCardInstr_rec_type** defined in this section are different than ones defined in IBY_PAYMENT_ADAPTER_PUB. The record types defined in this section do NOT have Address_rec_type as a member.

1. TYPE **CreditCardInstr_rec_type** IS RECORD (

| | |
|---|---|
| Instr_Id | NUMBER(15), |
| FIName | VARCHAR2(80), |
| CC_Type | VARCHAR2(80), |
| CC_Num | VARCHAR2(80), |
| CC_ExpDate | DATE, |
| CC_HolderName | VARCHAR2(80), |
| CC_Desc | VARCHAR2(240), |
| Billing_Address1 | VARCHAR2(80), |
| Billing_Address2 | VARCHAR2(80), |
| Billing_Address3 | VARCHAR2(80), |
| Billing_City | VARCHAR2(80), |
| Billing_County | VARCHAR2(80), |
| Billing_State | VARCHAR2(80), |
| Billing_Country | VARCHAR2(80), |
| Billing_PostalCode | VARCHAR2(40)); |

**Instr_Id**: Unique identifier for the instrument.

**Financial Institution Name (FIName)**: Optional, should be at least of non-trivial length 3.

**CC_Type**: Type of credit card (MASTERCARD, VISA, AMEX, …)

**CC_Num**: This should be numeric other than dashes and spaces.

**CC_ExpDate**: Credit Card expiration date.

**CC_HolderName**: Credit card holder name

**CC_Desc**: Descriptions/Comments, if any.

**Billing_Address1**: The first line of the street address.

**Billing_Address2**: The second line of the street address.

**Billing_Address3**: The third line of the street address.

**Billing_City**: City in the address

**Billing_State**: State in the address

**Billing_County**: County in the address

**Billing_Country**: Country code in the address.

**Billing_Postalcode**: Postal code for the address

2. TYPE **PurchaseCardInstr_rec_type** IS RECORD (

| | |
|---|---|
| Instr_Id | NUMBER(15), |
| FIName | VARCHAR2(80), |
| PC_Type | VARCHAR2(80), |
| PC_Num | VARCHAR2(80), |
| PC_ExpDate | DATE, |
| PC_HolderName | VARCHAR2(80), |
| PC_Subtype | VARCHAR2(80), |
| PC_Desc | VARCHAR2(240), |
| Billing_Address1 | VARCHAR2(80), |
| Billing_Address2 | VARCHAR2(80), |
| Billing_Address3 | VARCHAR2(80), |
| Billing_City | VARCHAR2(80), |
| Billing_County | VARCHAR2(80), |
| Billing_State | VARCHAR2(80), |
| Billing_Country | VARCHAR2(80), |

Billing_PostalCode VARCHAR2(40));

**Instr_Id**: Unique identifier for the instrument.

**Financial Institution Name (FIName)**: Optional, should be at least of non-trivial length 3.

**PC_Type**: Type of credit card (MASTERCARD, VISA, AMEX, …)

**PC_Num**: This should be numeric other than dashes and spaces.

**PC_ExpDate**: Credit Card expiration date.

**PC_HolderName**: Credit card holder name

**PC_Subtype**: The subtype for purchase card. Possible values are ('B'/'C'/'P'/'U') which are for BUSINESS / CORPORATE / PURCHASE / UNKNOWN.

**PC_Desc:** Descriptions/Comments, if any.

**Billing_Address1**: The first line of the street address.

**Billing_Address2**: The second line of the street address.

**Billing_Address3**: The third line of the street address.

**Billing_City**: City in the address

**Billing_State**: State in the address

**Billing_County**: County in the address

**Billing_Country**: Country code in the address.

**Billing_Postalcode**: Postal code for the address

**3.** TYPE **BankAcctInstr_rec_type** IS RECORD (

Instr_Id NUMBER(15),
FIName VARCHAR2(80),
Bank_Id VARCHAR2(25),
Branch_Id VARCHAR2(30),
BankAcct_Type VARCHAR2(80),
BankAcct_Num VARCHAR2(80),
BankAcct_HolderName VARCHAR2(80),
Bank_Desc VARCHAR2(240));

**Instr_Id**: Unique identifier for the instrument.

**Financial Institution Name (FIName)**: Optional, should be at least of non-trivial length 3.

**Bank_Id**: Routing number of the bank. Should be at least of non-trivial length2. Typically the international bank identification number.

**Branch_Id**: Branch Number of the bank. Typically a national Branch Identification Code ( BIC) number.

**BankAcct_Type**: Should be at least of non-trivial length3. Typical values could be 'CHECKING', 'SAVING'.

**BankAcct_Num**: Account number in the branch of the bank.

**BankAcct_HolderName:** Name of the account holder.

**Bank_Desc:** Descriptions/Comments, if any.

4. TYPE **PmtInstr_rec_type** IS RECORD (

| | |
|---|---|
| InstrumentType | VARCHAR2(80):C_INSTRTYPE_UNREG, |
| CreditCardInstr | CreditCardInstr_rec_type, |
| BankAcctInstr | BankAcctInstr_rec_type, |
| PurchaseCardInstr | PurchaseCardInstr_rec_type) |

I**nstrumentType**: This holds the type of instrument that is passed in the PmtInstr_ rec_type. It should have one of values - 'CREDITCARD', 'PURCHASECARD' and 'BANKACCOUNT', when being passed as input. When this is passed as an output parameter, it may also have the value 'UNREGISTERED' (when the instrument is not registered in iPayment). Use the constants defined to assign values to this.

**CreditCardInstr**: Credit card instrument type record. This is described above.

**BankAcctInstr**: Bank account instrument type record. This is described above.

**PurchaseCardInstr**: Purchase card instrument type. This is described above.

5. TYPE **CreditCard_tbl_type** IS TABLE OF CreditCardInstr_rec_type INDEX BY BINARY_INTEGER.
6. TYPE **PurchaseCard_tbl_type** IS TABLE OF PurchaseCardInstr_rec_type INDEX BY BINARY_INTEGER.
7. TYPE **BankAcct_tbl_type** IS TABLE OF BankAcctInstr_rec_type INDEX BY BINARY_INTEGER.

## Sample PL/SQL Code

The following PL/SQL code helps you in understanding how iPayment PL/SQL APIs can be invoked. This example code invokes the Payment Request API using a credit card. It also passes risk related information for risk evaluation. After invoking the PL/SQL API, it prints out all the elements in the response objects.

```
DECLARE
   p_api_version                NUMBER := 1.0;
   --To initialize message list.
   p_init_msg_list              VARCHAR2(2000) := FND_API.G_TRUE;
   p_commit                     VARCHAR2(2000) := FND_API.G_FALSE;
   p_validation_level           NUMBER := FND_API.G_VALID_LEVEL_FULL;
   p_ecapp_id                   NUMBER := 0;
   p_payee_rec                  IBY_PAYMENT_ADAPTER_PUB.Payee_rec_
type;
   p_payer_rec                  IBY_PAYMENT_ADAPTER_PUB.Payer_rec_
type;
   p_pmtinstr_rec               IBY_PAYMENT_ADAPTER_PUB.PmtInstr_rec_type;
   p_tangible_rec               IBY_PAYMENT_ADAPTER_PUB.Tangible_rec_type;
   p_pmtreqtrxn_rec             IBY_PAYMENT_ADAPTER_PUB.PmtReqTrxn_rec_
                                type;
   p_riskinfo_rec               IBY_PAYMENT_ADAPTER_PUB.RiskInfo_rec_type;
   x_return_status              VARCHAR2(2000);-- output/return status
   x_msg_count                  NUMBER;-- output message count
   x_msg_data                   VARCHAR2(2000);-- reference string for output
                                                  message text
   x_reqresp_rec                IBY_PAYMENT_ADAPTER_PUB.ReqResp_rec_type;
                                                  -- request specific output
                                                  -- response object
```

```
   l_msg_count                NUMBER;
   l_msg_data                 VARCHAR2(2000);
BEGIN
-- Common inputs
p_ecapp_id := 66;-- iPayment generated ECAppID
-- Payee related inputs
p_payee_rec.Payee_ID := 'ipay-payee1';-- payee's ID
-- Payer related inputs
p_payer_rec.Payer_ID := 'ipay-cust1';-- payer's ID
p_payer_rec.Payer_Name := 'Cust1';-- Payer's (Customer's name)
-- Payment request operation related input
p_pmtreqtrxn_rec.PmtMode := 'ONLINE';-- Payment mode (Can be
--ONLINE/OFFLINE)
-- Tangible/Bill related inputs
p_tangible_rec.Tangible_ID := 'tangibleid1';-- Tangible ID / orderID
p_tangible_rec.Tangible_Amount := 25.50; -- Amount for the operation
p_tangible_rec.Currency_code := 'USD'; -- Currency for the operation
p_tangible_rec.RefInfo := 'test_refinfo3';
p_pmtreqtrxn_rec.Auth_Type := upper('authonly');-- request type
-- Payment instrument related inputs
p_pmtinstr_rec.CreditCardInstr.CC_Type := 'Visa';
-- payment instrument type
p_pmtinstr_rec.CreditCardInstr.CC_Num := '4111111111111111';
-- payment instrument number
p_pmtinstr_rec.CreditCardInstr.CC_ExpDate := to_char(sysdate+300);
-- payment instr. Expiration date
-- Risk related inputs
p_riskinfo_rec.Formula_Name := 'test3';-- Risk formula name
```

```
p_riskinfo_rec.ShipToBillTo_Flag := 'TRUE';
-- Flag showing if ship to address same as Bill to address
p_riskinfo_rec.Time_Of_Purchase := '08:45'-- Time of purchase
-- invoking the API
IBY_PAYMENT_ADAPTER_PUB.OraPmtReq(
    p_api_version,
    p_init_msg_list,
    p_commit,
    p_validation_level,
    p_ecapp_id,
    p_payee_rec,
    p_payer_rec,
    p_pmtinstr_rec,
    p_tangible_rec,
    p_pmtreqtrxn_rec,
    p_riskinfo_rec,
    x_return_status,
    x_msg_count,
    x_msg_data,
    x_reqresp_rec);
END;
-- After invoking the API, printing/interpreting the results
-- API status response
-- The status for the API. The value of this status has to be used to
-- find out whether the call was successful or not.
dbms_output.put_line('x_return_status = ' || x_return_status);
-- Payment Request Related Response. Printing Only If Status Is Success
      If(Char(X_Reqresp_Rec.Response.Status = 'S') Then
```

```
-- Offline Mode Related Response
    If P_Pmtreqtrxn_Rec.Pmtmode = 'OFFLINE' Then
        dbms_output.put_line('Transaction ID = ' || To_Char(X_Reqresp_
        Rec.Trxn_ID));
        dbms_output.put_line ('X_Reqresp_Rec.Offlineresp.Earliestsettlement_Date
        = ' || To_Char(X_Reqresp_Rec.Offlineresp.Earliestsettlement_Date));
        dbms_output.put_line( 'X_Reqresp_Rec.Offlineresp.Scheduled_Date = ' ||
        To_Char(X_Reqresp_Rec.Offlineresp.Scheduled_Date));
    Else
        dbms_output.put_line('Transaction ID = ' || To_Char(X_Reqresp_
        Rec.Trxn_ID));
        dbms_output.put_line('X_Reqresp_Rec.Authcode = ' || X_Reqresp_
        Rec.Authcode);
        dbms_output.put_line('X_Reqresp_Rec.Avscode = ' || X_Reqresp_
        Rec.Avscode);
        dbms_output.put_line('-----------------------------------');
-- Risk Related Response
    If(X_Reqresp_Rec.Riskrespincluded = 'YES') Then
        dbms_output.put_line('--------------------------');
        dbms_output.put_line(' X_Reqresp_Rec.Riskresponse.Risk_Score=  '|| X_
        Reqresp_Rec.Riskresponse.Risk_Score );
        dbms_output.put_line(  'X_Reqresp_Rec.Riskresponse.Risk_Threshold_
        Val=  '|| Reqresp_Rec.Riskresponse.Risk_Threshold_Val);
        Endif;
    Endif;
End If;
-- printing the error messages, if any from the API message list.
    for i in 1..x_msg_count loop
        dbms_output.put('msg # '||to_char(i)|| fnd_msg_pub.get(i) );
        dbms_output.new_line();
```

```
end loop;
EXCEPTION
    when others then
        dbms_output.put_line('In When others Exception');
        dbms_output.put_line('SQlerr is :'||substr(SQLERRM,1,200));
    end;
/
```

# D

# Back-End APIs for Gateways

This appendix explains the back-end APIs used by gateway servlets. Topics in this section include:

- Gateway Model Payment System API Overview
- Payment System Servlet Operations
- Authorization API
- Purchase Card Authorization API
- Voice Authorization API
- Authorization API Output Name-Value Pairs
- Capture API
- Void API
- Return/Credit API
- Close Batch API
- Query Transaction Status API
- Query Batch Status API
- Transaction Status and Messages
- Transaction Types and Transaction States

# Gateway Model Payment System API Overview

iPayment provides a set of APIs for interfacing with the payment system servlets, including APIs for authorization, capture, return, void, close batch, query batch status, and query transaction status. iPayment makes requests to these APIs using HTTP.

This section provides information to enable SSL payment system servlet developers (those who perform traditional credit-card processing) to create an interface for communication between iPayment and their payment systems. Also provided is the information that iPayment sends to payment system servlets, and the format and method of passing the data.

## Payment System Servlet Development Prerequisites

Before you build a payment system servlet, you will need a basic understanding of iPayment. For additional information, see *Oracle iPayment Concepts and Procedures Guide* to get an understanding of iPayment and its architecture.

### Test Payment System Servlet

After building a payment system servlet, complete the following steps:

1. Add the payment system to iPayment by following the steps of Creating a New Payment System in the *Oracle iPayment Concepts and Procedures Guide*.
2. Test and refine your servlet.

# Payment System Servlet Operations

To perform the Payment System Servlet API operations, iPayment passes data to the payment system servlet in the form of HTTP name-value pairs.

### Servlet Virtual Path Mapping

The following example shows the name-value pair format:

```
http://host name:port/servlet virtual path
?name-value pair(1)
&name-value pair(2)
&name-value pair(n)
&name-value pair(n+1)
...
```

where:

| | |
|---|---|
| host name | The name of the computer where the payment system is located, for example, payment.com. |
| port | The listener's port number |
| servlet virtual path | The virtual path to the payment system servlet. This must always end in `oramipp_xxx`, where `xxx` is the three letter suffix chosen for this payment system. |

# Authorization API

When the payment system servlet receives the authorization request from iPayment, it formats the request into the payment system's native format and requests that the payment system perform an online authorization. When the payment system returns the authorization result, the payment system servlet will reformat the response into the iPayment's format.

### Authorization API Input Name-Value Pairs

This table describes the authorization API input name-value pairs. To perform the Authorization operation, use the name value pairs listed in this table:

| Name | Value |
|---|---|
| OapfAction | Value=oraauth |
| OapfOrderId | Order number for the transaction. OapfOrderId can contain only letters, numbers, dashes, underlines, and dots. |
| OapfCurr | ISO 4217 three-letter currency code. For example, usd (US Dollar). |
| OapfPrice | Transaction amount in the format prescribed for the three-letter ISO 4217 currency code |
| OapfAuthType | The authorization type for the transaction: AuthOnly or AuthCapture.<br>■ Use AuthOnly transactions when customers purchase "hard goods." The funds for these transactions are not captured until after the goods are shipped.<br>■ Use AuthCapture transactions when customers purchase "soft goods" such as software "downloadable" from a Web page. The funds for these transactions are authorized and captured at the same time. |
| OapfPmtInstrID | Identification (card) number for the selected OapfPmtType |
| OapfPmtInstrExp | Expiration date for the selected OapfPmtType in the format MM/YY or MM/YYYY. The payment system servlet should be able to accept both formats. |
| OapfStoreId | Merchant or business identification. The maximum length is 80 characters. It may consist of an Id and a password in the following format: <StoreId>:<Password> |

| Name | Value |
|---|---|
| In addition to the values above, the following name-value pairs are also required if AVS is required (except for OapfPhone, OapfEmail, and OapfCnty): | |
| OapfCustName | The customer's name |
| OapfAddr1 | The customer's billing address (1st line). The portion of the address before city, state, and zip code. |
| OapfAddr2 | The customer's billing address (2nd line). The portion of the address before city, state, and zip code. |
| OapfAddr3 | The customer's billing address (3rd line). The portion of the address before city, state, and zip code. |
| OapfCity | The customer's city name for billing |
| OapfCnty | The customer's county name for billing |
| OapfState | The customer's state for billing |
| OapfCntry | The customer's country for billing |
| OapfPostalCode | The customer's zip code for billing |
| OapfPhone | The customer's telephone number |
| OapfEmail | The customer's e-mail address |
| OapfRetry | Specifies if this operation is a retry. Values include yes or no. If this flag is incorrectly turned on, then the servlet should attempt this transaction a second time as a non-retry transaction. |
| OapfNlsLang | (Optional) Language and character-set information for the electronic commerce application. The format is the same as for the Oracle Server NLS_LANG environment variable. |

# Purchase Card Authorization API

The Purchase Card Authorization API is the same as the Authorization API, with the addition of a few parameters. To perform the Purchase Card Authorization operation, use name value pairs defined by the Authorization API, and the name value pairs described in this table:

| Name | Value |
|---|---|
| OapfCommCard | The type of card being used for the transaction. Possible values are:<br>■ `P` for Purchase cards<br>■ `C` for Corporate cards<br>■ `B` for Business cards |
| OapfPONum | Purchase Order number |
| OapfTaxAmount | Tax amount |
| OapfShipToZip | The ZIP code to which merchandise is to be shipped |
| OapfShipFromZip | The ZIP code from which merchandise is to be shipped |

# Voice Authorization API

The Voice Authorization API is the same as the Authorization API or Purchase Card Authorization API, except that the value for OapfAction should be 'oravoiceauth' and a new field, OapfAuthCode is mandatory.

This table lists the voice authorization input name-value pairs. To perform a Voice Authorization operation, use name value pairs defined in the Authorization API or Purchase Card Authorization API, with the following changes and additions:

| Name | Value |
|---|---|
| OapfAction | Value= oravoiceauth |
| OapfAuthCode | Authorization Code issued by the financial institution, when the voice authorization is done over the phone. |

# Authorization API Output Name-Value Pairs

Output served by the payment system to iPayment returns in the form of HTTP headers consisting of the name-value pairs listed in this table:

| Name | Value |
|---|---|
| OapfOrderId | Order number for the transaction. OapfOrderId can contain only letters, numbers, dashes, underlines, and dots. |
| OapfTrxnType | The transaction type from the payment system. See "Transaction Types and Transaction States" for a list of values. |
| OapfStatus | The transaction status. See "OapfStatus" for more information. |
| OapfAuthcode | The string for the authorization (approval) code. |
| OapfTrxnDate | The time stamp showing when the transaction is processed in YYYYMMDDHHMMSS format. |
| OapfPmtInstrType | The payment instrument type. For example, Visa or MasterCard. |
| OapfErrLocation | The error location. See "OapfErrLocation" for more information. |
| OapfVendErrCode | The payment system error code. See the payment system documentation for more information. |
| OapfVendErrmsg | The payment system error message. See the payment system documentation for more information. |
| The following name-value pairs are optional: | |
| OapfAcquirer | Name of the acquirer or bank |
| OapfRefcode | The retrieval reference number |
| OapfAVScode | The AVS code |
| OapfAuxMsg | Additional message from the processor |
| OapfNlsLang | Language and character-set information for the electronic commerce application. The format is the same as for the Oracle Server NLS_LANG environment variable. |

**Note:** If an optional field does not have a value, do not include the optional field in the header.

# Capture API

iPayment invokes the Capture API to perform online capture of previously authorized transactions.

### Capture API Input Name-Value Pairs

To perform the Capture operation, use the name-value pairs listed in this table:

| Name | Value |
|---|---|
| OapfAction | Value = oracapture. |
| OapfOrderId | Order number for the transaction. OapfOrderId can contain only letters, numbers, dashes, underlines, and dots. |
| OapfPrice | Transaction amount in the format prescribed for the three-letter ISO 4217 currency code. |
| OapfCurr | ISO 4217 three-letter currency code. For example, usd (US Dollar). |
| OapfStoreId | Merchant or business identification. The maximum length is 26 characters. |
| The following name-value pairs are optional: | |
| OapfRetry | Specifies if this operation is a retry. Values include Yes or No. |
| OapfNlsLang | Language and character-set information for the electronic commerce application. The format is the same as for the Oracle Server NLS_LANG environment variable. |

### Capture API Output Name-Value Pairs

Output served by the payment system to iPayment returns in the form of HTTP headers consisting of the name-value pairs listed in this table:

| Name | Value |
|---|---|
| OapfStatus | The transaction status. See "OapfStatus" for more information. |
| OapfTrxnType | The transaction type from the payment system. See "Transaction Types and Transaction States" for a list of values. |
| OapfTrxnDate | The time stamp for the time when the transaction is processed. This is in YYYYMMDDHHMMSS format. |

| Name | Value |
|---|---|
| OapfErrLocation | The error location. See "OapfErrLocation" for more information. |
| OapfVendErrCode | The payment system error code. See the payment system documentation for more information. |
| OapfVendErrmsg | The payment system error message. See the payment system documentation for more information. |
| The following name-value pairs are optional: | |
| OapfRefcode | The retrieval reference number. |
| OapfNlsLang | Language and character-set information for the electronic commerce application. The format is the same as for the Oracle Server NLS_LANG environment variable. |

### Capture API for Terminal-Based Merchant

For a terminal-based merchant, the Capture operation marks the transaction for capture in the local batch. If the operation completes successfully, it returns the following parameters:

OapfStatus Set to `0000`.

OapfTrxnType Set to `MarkCapture, 9`

OapfTrxnDate Set to the appropriate transaction date.

If the operation fails, it returns the following parameters:

- OapfStatus
- OapfTrxnType
- OapfTrxnDate
- OapfErrLocation
- OapfVendErrCode
- OapfVendErrmsg

### Capture API for Host-Based Merchant

For a host-based merchant, the Capture operation communicates with the processor to capture the transaction. If the operation completes successfully, it returns the following parameters:

| | |
|---|---|
| OapfStatus | Set to `0000`. |
| OapfTrxnType | Set to `MarkCapture, 8` |
| OapfTrxnDate | Set to the appropriate transaction date. |
| OapfRefcode | Set to the appropriate retrieval reference number |

If the operation fails, it returns:

- OapfStatus
- OapfTrxnType
- OapfTrxnDate
- OapfErrLocation
- OapfVendErrCode

# Void API

The Void API allows the merchant or business to void the following transaction types:

- Credit transactions
- Return transactions
- Capture transactions

The Void API voids the most recent transaction type for an order. For example, the merchant or business performs authorization--and later capture-- for a transaction. If the merchant or business performs a void on this order, the capture transaction is voided.

## Void API Input Name-Value Pairs

To perform the Void operation, use the name-value pairs listed in this table:

| Name | Value |
|---|---|
| OapfAction | Value = oravoid. |
| OapfTrxnType | The transaction type to void from the payment system. See "Transaction Types and Transaction States" for a list of values. |
| OapfOrderId | Order number for the transaction. OapfOrderId can contain only letters, numbers, dashes, underlines, and dots. |
| OapfStoreId | Merchant or business identification. The maximum length is 26 characters. |
| The following name-value pairs are optional: | |
| OapfRetry | Specifies if this operation is a retry. Values include Yes or No. |
| OapfNlsLang | Language and character-set information for the electronic commerce application. The format is the same as for the Oracle Server NLS_LANG environment variable. |

**Note:** For a terminal-based merchant, the OapfTrxnType should be set to `MarkCapture (9)` or `MarkReturn (10)`. For a host-based merchant, the OapfTrxnType should be set to `Capture (8)` or `Return (5)`.

### Void API Output Name-Value Pairs

Output served by the payment system to iPayment returns in the form of HTTP headers and consists of the name-value pairs listed in this table:

| Name | Value |
|---|---|
| OapfStatus | The transaction status. See "OapfStatus" for more information. |
| OapfTrxnDate | The time stamp for the time when the transaction is processed. This is in YYYYMMDDHHMMSS format. |
| OapfTrxnType | The transaction type from the payment system. See "Transaction Types and Transaction States" for a list of values. |
| OapfErrLocation | The error location. See "OapfErrLocation" for more information. |
| OapfVendErrCode | The payment system error code. See the payment system documentation for more information. |
| OapfVendErrmsg | The payment system error message. See the payment system documentation for more information. |
| The following name-value pairs are optional: | |
| OapfRefcode | The retrieval reference number. |
| OapfNlsLang | Language and character-set information for the electronic commerce application. The format is the same as for the Oracle Server NLS_LANG environment variable. |

### Void API for Terminal-Based Merchant

For a terminal-based merchant, the Void operation voids the transaction in the local batch. If the Void operation completes successfully, it returns the following parameters:

OapfStatus Set to `0000`.

OapfTrxnType Set to `VoidMarkCapture, 14` or `VoidMarkReturn, 18`

OapfTrxnDate Set to the appropriate transaction date.

If the operation fails, it returns the following parameters:

- OapfStatus
- OapfTrxnType
- OapfTrxnDate

- OapfErrLocation
- OapfVendErrCode
- OapfVendErrmsg

### Void API for Host-Based Merchant

For a host-based merchant, the Void operation communicates with the processor to void the specified transaction. If the Void operation completes successfully, it returns the following parameters:

| | |
|---|---|
| OapfStatus | Set to `0000`. |
| OapfTrxnType | Set to `VoidCapture, 13` or `VoidReturn, 17` |
| OapfTrxnDate | Set to the appropriate transaction date. |
| OapfRefcode | (Optional) Set to the appropriate retrieval reference number. |

If the operation fails, it returns:

- OapfStatus
- OapfTrxnType
- OapfTrxnDate
- OapfErrLocation
- OapfVendErrCode
- OapfVendErrMsg

# Return/Credit API

The electronic commerce application invokes the Return/Credit API when goods are returned. If the authorization and capture transaction records still exist, the merchant or business will use the existing Order ID to perform a return. If there is no previous authorization or capture records, the merchant or business will create a new Order ID and provide the credit card information.

## Return/Credit API Input Name-Value Pairs

To perform the Return/Credit operation, use the name-value pairs listed in this table:

| Name | Value |
|---|---|
| OapfAction | Value = orareturn |
| OapfOrderId | Order number for the transaction. OapfOrderId can contain only letters, numbers, dashes, underlines, and dots. |
| OapfPrice | Transaction amount in the format prescribed for the three-letter ISO 4217 currency code. |
| OapfCurr | ISO 4217 three-letter currency code. For example usd (US Dollar). |
| OapfPmtInstrID | Identification number (card number). OapfPmtInstrID will be supplied only for credits. |
| OapfPmtInstrExp | Expiration date for the selected OapfPmtType in the format MM/YY or MM/YYYY. OapfPmtInstrExp will be supplied only for credits. |
| OapfStoreId | Merchant or business identification. The maximum length is 26 characters. |
| The following name-value pairs are optional: | |
| OapfRetry | Specifies if this operation is a retry. Values include Yes or No. If this flag is incorrectly turned on for a stand-alone retry (i.e., one which includes payment instrument information) the servlet should attempt this transaction a second time as a non-retry transaction. |
| OapfNlsLang | Language and character-set information for the electronic commerce application. The format is the same as for the Oracle Server NLS_LANG environment variable. |

### Return/Credit API Output Name-Value Pairs

Output served by the payment system to iPayment returns in the form of HTTP headers and consists of the name-value pairs listed in this table:

| Name | Value |
|---|---|
| OapfStatus | The transaction status. See "OapfStatus" for more information. |
| OapfTrxnType | The transaction type from the payment system. See "Transaction Types and Transaction States" for a list of values. |
| OapfTrxnDate | The time stamp of when the transaction is processed. This is in YYYYMMDDHHMMSS format. |
| OapfPmtInstrType | The payment instrument type such as Visa or MasterCard |
| OapfErrLocation | The error location. See "OapfErrLocation" for more information. |
| OapfVendErrCode | The payment system error code. See the payment system documentation for more information. |
| OapfVendErrmsg | The payment system error message. See the payment system documentation for more information. |
| The following name-value pairs are optional: | |
| OapfRefcode | The retrieval reference number |
| OapfNlsLang | Language and character-set information for the electronic commerce application. The format is the same as for the Oracle Server NLS_LANG environment variable. |

### Return/Credit API for Terminal-Based Merchant

For a terminal-based merchant, the Return/Credit operation marks the transaction for return in the local batch. If the operation completes successfully, it returns the following parameters:

| | |
|---|---|
| OapfStatus | Set to `0000`. |
| OapfTrxnType | Set to `MarkReturn, 10` |
| OapfTrxnDate | Set to the appropriate transaction date |

If the operation fails, it returns the following parameters:

- OapfStatus
- OapfTrxnType

- OapfTrxnDate
- OapfErrLocation
- OapfVendErrCode
- OapfVendErrmsg

### Return/Credit API for Host-Based Merchant

For a host-based merchant, the Return/Credit operation communicates with the processor to return/credit the transaction. If the operation completes successfully, it returns the following parameters:

| | |
|---|---|
| OapfStatus | Set to `0000`. |
| OapfTrxnType | Set to `Return, 5`. |
| OapfTrxnDate | Set to the appropriate transaction date. |
| OapfPmtInstrType | (Optional) Set to the appropriate payment instrument type. |
| OapfRefcode | (Optional) Set to the appropriate retrieval reference number. |

If the operation fails, it returns the following parameters:

- OapfStatus
- OapfTrxnType
- OapfTrxnDate
- OapfErrLocation
- OapfVendErrCode
- OapfVendErrmsg

# Close Batch API

The merchant or business uses the Close Batch API to close a batch of previously performed transactions. The transaction types that can be included in a close batch are:

- Capture transactions
- Return/Credit transactions

## Close Batch API Input Name-Value Pairs

To perform this operation you need the parameters (name-value pairs) listed in this table:

| Name | Value |
|---|---|
| OapfAction | Value = oraclosebatch |
| OapfStoreId | Merchant or business identification. The maximum length is 26 characters. |
| The following name-value pairs are optional: | |
| OapfRetry | Specifies if this operation is a retry. Values include Yes or No. |
| OapfVpsBatchID | The payment system batch identification |
| OapfNlsLang | Language and character-set information for the electronic commerce application. The format is the same as for the Oracle Server NLS_LANG environment variable. |

## Close Batch API Output Name-Value Pairs

Output served by the payment system to iPayment returns in the form of HTTP headers and consists of the name-value pairs listed in this table:

| Name | Value |
|---|---|
| OapfStatus | The transaction status. See "OapfStatus" for more information. |
| OapfBatchDate | The date for this batch |
| OapfCreditAmount | The credit amount. This is the total outflow including return/credit and void. |
| OapfSalesAmount | The total amount captured |

| Name | Value |
|---|---|
| OapfBatchTotal | The total amount in this batch |
| OapfCurr | ISO 4217 three-letter currency code. For example, usd (US Dollar). |
| OapfNumTrxns | The number of transactions in this batch |
| OapfStoreID | Merchant or business identification. The maximum length is 26 characters. |
| OapfVpsBatchID | The payment system batch identification |
| OapfGWBatchID | The gateway batch identification |
| OapfBatchState | State of the batch. For example, sent, queued, accept, etc. See "OapfBatchState" for more information. |
| OapfErrLocation | The error location. See "OapfErrLocation" for more information. |
| OapfVendErrCode | The payment system error code. See the payment system documentation for more information. |
| OapfVendErrmsg | The payment system error message. See the payment system documentation for more information. |
| OapfNlsLang | (Optional) Language and character-set information for the electronic commerce application. The format is the same as for the Oracle Server NLS_LANG environment variable. |

### Close Batch API Additional Output

Additional output for the Close Batch API includes the status of individual transactions. This output differs based on transaction type. The Capture and Return/Credit transaction types return the following parameters:

- OapfOrderId-count=<>
- OapfTrxnType-count=<>
- OapfStatus-count=<>
- OapfErrLocation-count=<>
- OapfVendCode-count=<>
- OapfVendErrmsg-count=<>

**Note:** OapfErrLocation, OapfVendCode, and OapfVendErrmsg are only returned if the OapfStatus field is non-zero. They are returned when there is some failure for the Order ID during batch close.

The OapfNumTrxns field indicates the number of transactions included in the batch. Each output name-value pair should be appended with a counter to indicate to which transaction it belongs. The counter should start from 0. For example, assume there are two transactions in a batch. The output of this batch is:

```
OapfVpsBatchID: 1234
OapfStatus: PMT-0000
OapfBatchDate: 19970918091000
OapfCreditAmount: 10.00
OapfSalesAmount: 20.00
OapfBatchTotal: 10.00
OapfCurr: usd
OapfNumTrxns: 2
OapfStoreID: abcd
OapfGWBatchID: 5678

OapfOrderId-0=1111
OapfTrxnType-0=8
OapfStatus-0=0000

OapfOrderId-1=2222
OapfTrxnType-1=5
OapfStatus-1=0000
```

**Note:** The OapfTrxnType should be set to `Capture (8)` or `Return (5)`.

### Close Batch API for Terminal-Based Merchant

For a terminal-based merchant, this operation attempts to close out an open batch and cause funds to change hands. If the batch closes successfully, batch summary as well as transaction details should be returned. If the close batch fails, the merchant or business, optionally, fixes offending transactions in the batch and retries. For payment systems that implement retry logic, use OapfRetry and OapfVpsBatchID

for retry. For payment systems that do not include retry logic, this operation attempts to close out the existing open batch again.

### Close Batch API for Host-Based Merchant

For a host-based merchant, if you use the auto close option, this operation returns OapfStatus=0000. If you use the manual close option, the payment system sends the total to the processor. The processor checks against its total and closes the batch. If the batch closes successfully, OapfStatus should be set to 0000 and OapfBatchTotal should be returned. If batch does not close successfully, error messages are returned in OapfStatus and optionally in OapfErrLocation, OapfVendErrCode, and OapfVendErrmsg.

# Query Transaction Status API

The merchant or business uses the Query Transaction Status API to query the status of a transaction. Both the iPayment database and the payment system database maintain a record of completed transactions, and these databases may become out of synch due to a communication link breakdown. Similarly, the electronic commerce application database and the iPayment database may become out of synch due to a similar condition. This API returns all existing records for a particular Order ID on a payment system.

## Query Transaction Status API Input Name-Value Pairs

To perform this operation, use the name-value pairs listed in this table:

| Name | Value |
|---|---|
| OapfAction | Value = oraqrytxstatus |
| OapfOrderId | Order ID to query |
| OapfStoreId | Merchant or business identification. The maximum length is 26 characters. |
| OapfNlsLang | (Optional) Language and character-set information for the electronic commerce application. The format is the same as for the Oracle Server NLS_LANG environment variable. |

## Query Transaction Status API Output Name-Value Pairs

Output from the Query Transaction Status API may consist of multiple records for the same Order ID, depending on the transaction type. OapfNumTrxns provides the number of transactions for this Order ID. The output for various transaction types includes the following parameters:

Auth/AuthCapture:

```
OapfOrderId-count=<>
OapfTrxnType-count=<>
OapfStatus-count=<>
OapfPrice-count=<>
OapfCurr-count=<>
OapfAuthcode-count=<>
OapfRefcode-count=<>
OapfAVScode-count=<>
OapfTrxnDate-count=<>
```

```
OapfPmtInstrType-count=<>
OapfErrLocation-count=<>
OapfVendCode-count=<>
OapfVendErrmsg-count=<>
OapfAcquirer-count=<>
OapfAuxMsg-count=<>
```

Capture:

```
OapfOrderId-count=<>
OapfTrxnType-count=<>
OapfStatus-count=<>
OapfPrice-count=<>
OapfPrice-count=<>
OapfCurr-count=<>
OapfTrxnDate-count=<>
OapfRefcode-count=<>
OapfVpsBatchID-count=<>
OapfErrLocation-count=<>
OapfVendCode-count=<>
OapfVendErrmsg-count=<>
```

Credit/Return:

```
OapfOrderId-count=<>
OapfTrxnType-count=<>
OapfStatus-count=<>
OapfPrice-count=<>
OapfCurr-count=<>
OapfTrxnDate-count=<>
OapfPmtInstrType-count=<>
OapfRefcode-count=<>
OapfVpsBatchID-count=<>
OapfErrLocation-count=<>
OapfVendCode-count=<>
OapfVendErrmsg-count=<>
OapfAuxMsg-count=<> (optional)
```

Void:

```
OapfOrderId-count=<>
OapfTrxnType-count=<>
OapfStatus-count=<>
OapfTrxnDate-count=<>
OapfRefcode-count=<>
OapfErrLocation-count=<>
```

```
OapfVendCode-count=<>
OapfVendErrmsg-count=<>
OapfAuxMsg-count=<>
```

# Query Batch Status API

The merchant or business uses the Query Batch Status API to query the status of an existing batch. Terminal-based merchants also use the Query Batch Status API to verify the transactions for submission to batch close by iPayment. The merchant or business can use the output from the Query Batch Status API to cross-check the transaction records in the merchant or business database.

## Query Batch Status API Input Name-Value Pairs

To perform the Query Batch Status operation, use the name-value pairs listed in this table:

| Name | Value |
|---|---|
| OapfAction | Value = oraqrybatchstatus |
| OapfVpsBatchID | The payment system batch identification if querying for an existing batch. If a value is not included, the output is pending batch transactions. |
| OapfStoreId | Merchant or business identification. The maximum length is 26 characters. |
| OapfNlsLang | (Optional) Language and character-set information for the electronic commerce application. The format is the same as for the Oracle Server NLS_LANG environment variable. |

## Query Batch Status API Output Name-Value Pairs

Output from the Query Batch Status API is similar to the output of the Close Batch API when you provide the OapfVpsBatchID. When you do not provide the OapfVpsBatchID, the output is all transactions for the terminal-based merchant for a subsequent batch close. OapfNumTrxns provides the number of transactions for the batch. The output for transaction types includes the following parameters:

Capture, Return, Credit:

```
OapfOrderId-count=<>
OapfTrxnType-count=<>
OapfPrice-count=<>
OapfCurr-count=<>
OapfTrxnDate-count=<>
```

# Transaction Status and Messages

This section describes the various transaction status codes and error messages returned by iPayment payment system servlet.

Topics include:

- OapfStatus
- OapfErrLocation
- OapfVendErrCode
- OapfVendErrmsg
- OapfBatchState
- OapfOrderId

## OapfStatus

Each transaction (including authorize, capture, return, credit, and void) returns the status in the OapfStatus field. A value of 0000 or 0 indicates a successfully completed transaction. A non-zero value indicates that the transaction failed. OapfErrLocation, OapfVendErrCode, and OapfVendErrmsg provide additional error information.

### SSL Payment System Servlet

SSL payment systems must return the values listed in this table to iPayment in the OapfStatus parameter:

| Value | Definition |
|---|---|
| 0000 | Transaction completed successfully |
| 0001 | Communications error: the payment system or the processor is out of reach. You should resubmit the request at a later time. |
| 0002 | Duplicate Order ID |
| 0003 | Duplicate Batch ID |
| 0004 | Mandatory fields are required. |
| 0005 | Payment system specific error. Refer to OapfVendErrCode and OapfVendErrmsg for more information. |
| 0006 | Batch partially succeeded. Some transactions in the batch failed and some processed correctly. |
| 0007 | The batch failed. You should correct the problem and resubmit the batch. |
| 0008 | Requested action not supported |
| 0017 | Card has insufficient funds |
| 0019 | Invalid credit card |

# OapfErrLocation

The OapfErrLocation parameter contains the values listed in this table:

| Value | Definition |
|---|---|
| 0 | Transaction completed successfully at all levels |
| 1 | Transaction failed at the payment system cartridge code |
| 2 | Transaction failed at the payment system engine or the payment system server code |
| 3 | Transaction failed at the payment system gateway or equivalent to the interface that communicates with the bank |
| 4 | Transaction failed at the acquirer bank gateway or equivalent to the bank interface that communicates with the payment system interface |
| 5 | Transaction failed at the payment system |
| 6 | Transaction failed at iPayment |

## OapfVendErrCode

OapfVendErrCode contains the payment system's error code. See the documentation that came with the payment system for more information. This parameter is required only if the transaction failed at the payment system.

## OapfVendErrmsg

OapfVendErrmsg contains the payment system's message for the error. See the documentation that came with the payment system for more information. This parameter is required only if the transaction failed at the payment system.

## OapfBatchState

The OapfBatchState parameter indicates the state of the batch based on the processor. If the state is set to "sent," the merchant needs to query the batch again to find out if the batch is accepted and also to retrieve transaction details. The OapfBatchState parameter contains the values listed in this table:

| Value | Definition |
|---|---|
| 0 | Batch accepted |
| 1 | Batch sent |
| 2 | Batch queued |
| 3 | Batch rejected. |
| 4 | Batch processed. |
| 5 | Batch error |
| 6 | Batch not found |
| 7 | Batch unknown |

**Note:** The close batch operation returns its status in OapfStatus, and has the following possible values: 0000, 0003, 0006, and 0007. See "OapfStatus" for more information.

# OapfOrderId

iPayment uses the Order ID to uniquely identify each transaction. In the Core API, if the merchant tries to authorize a previously authorized transaction, the payment system will not accept the authorization. The payment system returns the status "Duplicate Order ID."

### How iPayment Uses OapfNlsLang

If the electronic commerce application does not pass the OapfNlsLang parameter, iPayment passes information from the electronic commerce application to the payment service cartridge without performing any conversion of character sets.

If the commerce application does pass a value for OapfNlsLang to iPayment, iPayment tries to convert parameters based on the value of OapfNlsLang before sending those parameters to the payment system cartridge.

To do so, iPayment first checks its database for the list of preferred and optional languages for that payment system. (The information in the database reflects what the iPayment administrator entered using the iPayment Administration user interface.)

Secondly, iPayment does one of the following, depending on what it finds in the database:

- If the database lists a language that matches the value of OapfNlsLang, iPayment keeps the value of OapfNlsLang and passes it to the payment system cartridge.
- If the database does not list a language matching the value of OapfNlsLang, iPayment uses the language specified as the preferred language for that payment system, thus changing the value of OapfNlsLang before sending it to the payment system cartridge.

Finally, iPayment converts the values of other parameters so that they are sent to the payment system cartridge in the language specified by OapfNlsLang.

Notice that this conversion process works in only one direction: from the electronic commerce application to the payment system cartridge. If the payment system sets OapfNlsLang when it sends the data back, iPayment uses that information only to store the value of OapfVendErrmsg in its database. iPayment does not convert data sent from the payment system cartridge back to the electronic commerce application.

### Format of the NLS_LANG Parameter

The value of this parameter follows the same format as Oracle Server's NLS_LANG environment variable:

```
language_territory.charset
```

For example, JAPANESE_JAPAN.JA16EUC is a valid value for OapfNlsLang.

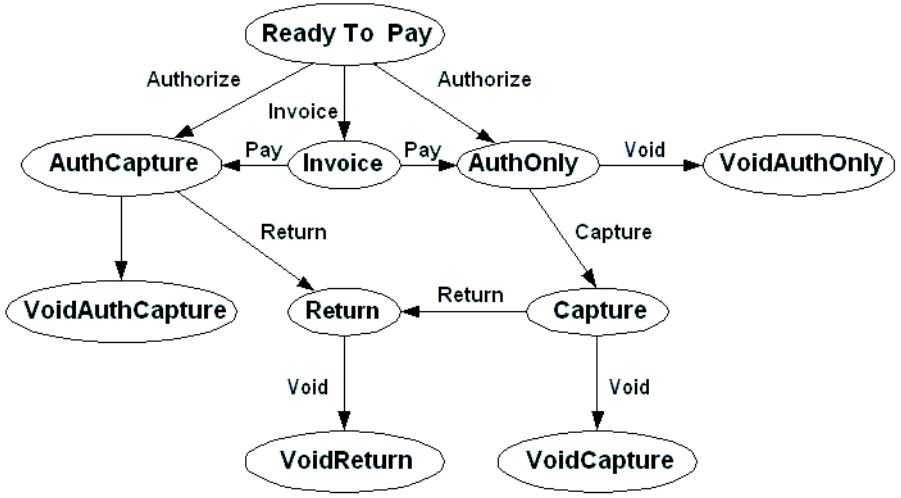
# Transaction Types and Transaction States

This section defines the values for OapfTrxnType and includes a discussion of transaction states.

### Transaction States

A payment transaction goes through a number of states depending on the operations performed on it. The following illustration depicts the state changes of a transaction in a host based system.

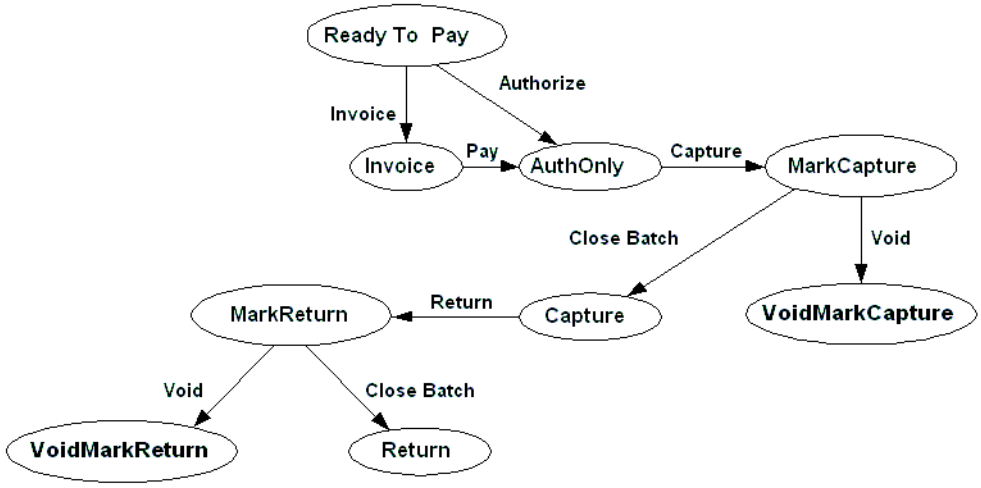
**Transaction State Diagram: Host Based System (SSL and SET Systems)**




When a customer is ready to pay, the transaction is considered to be in the ready to pay state. If the Authorization API is used, the transaction moves to the authcapture or authonly state after the authorization is complete. If the Invoice and Pay APIs are used, the transaction changes to invoice and moves to authonly or authcapture state. A transaction in the authonly state needs to be captured for funds to be transferred. All authcapture, capture and return transactions can be voided.

The following graphic illustrates the state changes that a transaction for a terminal based system may undergo. Capture and return operations in terminal based systems only mark the transaction for capture or return in the local batch. After a successful close batch operation the transaction becomes captured or returned.

**Transaction State Diagram: Terminal Based System (SSL Systems)**



# OapfTrxnType: SSL Transactions and Commerce Applications

iPayment returns OapfTrxnType transaction types for the SSL payment system servlet API. This table lists the OapfTrxnType transaction types (SSL).

| Value | Type | Definition |
|---|---|---|
| 2 | AuthOnly | An authorization only requested for an order. |
| 3 | AuthCapture | An online authorization and capture for an order. |
| 4 | VoidAuthOnly | Void of an order that was successfully authorized but not captured. (Electronic Commerce application API only.) |
| 5 | Return | Perform a return or credit on an order that was successfully authorized and captured online. |
| 6 | ECRefund | Perform a refund on an electronic cash/coin purchase. |
| 7 | VoidAuthCapture | Void a previous authorization and capture online. |
| 8 | Capture | Capture performed by a host-based or a terminal-based (closed batch) processor system. |
| 9 | MarkCapture | Transaction that was marked for capture by a terminal-based processor system. |
| 10 | MarkReturn | Transaction that was marked for return by a terminal-based processor system. |
| 13 | VoidCapture | Void a transaction captured by a host-based or terminal-based (close batch) processor system. |
| 14 | VoidMarkCapture | Void a transaction marked for capture by a terminal-based processor system. |
| 17 | VoidReturn | Void a transaction that was returned by a host-based or terminal-based (close batch) processor system. |
| 18 | VoidMarkReturn | Void a transaction that was marked for return by a terminal-based system. |
| 101 | SplitAuth | A subsequent authorization (Electronic Commerce application API only.) |

# E

# Extensibility

This appendix explains extensibility and how to implement it.

# Overview

Extensibility allows interaction between iPayment and a back-end payment system to be customized. Note that extensibility only exists for Gateway-model payment systems. This can be achieved by implementing the following interface:

`ibyextend.TxnCustomizer_<BEP SUFFIX>`

where <BEP SUFFI X> indicates the 3-letter suffix of the back-end payment system.

Custom parameters may be added to those sent by iPayment before the back end payment system servlet is contacted. After the back end payment system servlet responds, the extensibility implementation may take custom parameters that are returned in the response and store them in the database.

# Implementation

## The Extensibility Interface

To implement extensibility, the Java interface `oracle.apps.iby.extend.TxnCustomizer` must be implemented as class

`ibyextend.TxnCustomizer_<ECAPP ID>.`

**<ECAPP ID>** is the numerical ID of the electronic commerce application that will use extensibility.

The `oracle.apps.iby.extend.TxnCustomizer` interface has the following methods:

- **public void preTxn** (String bep, Connection dbconn, AddOnlyHashtable txn_req) throws PSException;
- **public void postTxn** (String bep, Connection dbconn, ReadOnlyHashtable txn_resp) throws PSException;

The parameter `bep` is the three letter suffix, which is specified during registration in the user interface, of the back end payment system that the request goes to, `dbconn` is a connection open to the APPS schema, and `txn_req/txn_resp` are collections of name-value pairs which represent, respectively, the back end payment system request/response.

> **Note:** Both methods can throw a `PSException`. This allows a transaction to be aborted if a critical error, for example, SQLException, occurs in the extensibility implementation class. Releasing the database connection passed to both methods is the responsibility of iPayment and should not be done by the extensibility class.

## ReadOnlyHashtable, AddOnlyHashtable Classes

The classes `oracle.apps.iby.util.AddOnlyHashtable` and `oracle.apps.iby.util.ReadOnlyHashtable` are passed as parameters to the `preTxn`, `postTxn` methods respectively. `ReadOnlyHashtable` has the following methods, which are the same in signature and behavior as the corresponding methods of the Java Hashtable class:

`keys, containsKey, isEmpty, size, get`

**AddOnlyHashtable**, which is a subclass of **ReadOnlyHashtable**, has the additional method `put`. It differs from the corresponding method in the Java Hashtable class in the way that only keys not already present in the hashtable can be successfully used for insertions. The **AddOnlyHashtable** version of `put` returns a boolean value which is true only if the insertion succeeds.

Both types of hashtables are populated with String name-value pairs from one of the back end payment system APIs. In the case of `preTxn`, these are input name-value pairs. In the case of `postTxn`, these are output name-value pairs. Below is a piece of sample code illustrating how a value is retrieved:

```
String orderId = (String)txn_resp.get("OapfOrderId");
```

See the Back-End Processing APIs section for a complete listing of all names.

### Custom Fields

Custom fields should be prefixed by OapfExtend, which is defined as the constant CUSTOMFIELD_PREFIX in the `oracle.apps.iby.extend.TxnCustomizer` class. This applies to both fields inserted in the back end payment system request during the call to `preTxn`, and the custom fields returned by the back end payment system servlet and processed in `postTxn`. If custom fields do not follow this convention, there is no guarantee that custom fields will be successfully passed through.

### Development, Deployment

To develop extensibility classes, include the location of the APPS.ZIP file containing all of iPayment's classes in the CLASSPATH passed to the compiler.

An extensibility class is deployed by placing it in iPayment's CLASSPATH. Please refer to the local JServ configuration to determine this value.

> **Note:** Since extensibility classes are part of the ibyextend package, the class must be located under a directory called ibyextend.

### Exceptions

An exception may be thrown by either the preTxn or postTxn method in the TxnCustomizer class. This exception is the class `oracle.apps.iby.exception.PSException`

It should be thrown whenever a critical error is encountered in the customizer and the transaction needs to be aborted.

iPayment will take the exception thrown by an extensibility implementation and throw a new PSException based on it with the following error code:

```
IBY_0005
```

The message in the new PSException will have a prefix appended to it, indicating that the error occurred within the extensibility class.

## Sample Implementation

```
package ibyextend;

import java.sql.*;
import java.util.Hashtable;
import java.util.Enumeration;

import oracle.apps.iby.extend.TxnCustomizer;
import oracle.apps.iby.util.AddOnlyHashtable;
import oracle.apps.iby.util.ReadOnlyHashtable;
import oracle.apps.iby.exception.PSException;

public class TxnCustomizer_pay implements TxnCustomizer
{

    static final String EXTEND_QUERY="select a, b from
iby.iby_extend_pre where order_id = ?";

    static final String EXTEND_INSERT="insert into iby.iby_extend_post
values (?,?,?)";

   public void preTxn(String bep, Connection dbconn, AddOnlyHashtable
                      inputs) throws PSException
    { String orderId=(String)inputs.get("OapfOrderId");

      try
          { PreparedStatement
                stmnt=dbconn.prepareStatement(EXTEND_TESTQUERY);
           stmnt.setString(1,orderId);
           ResultSet rset=stmnt.executeQuery();

           for (int count=1; rset.next(); count++)
               {
                 String cust1=rset.getString(1),
                     cust2=rset.getString(2);
                inputs.put( TxnCustomizer.CUSTOMFIELD_PREFIX
+
"ReqA-"+count,cust1);
                inputs.put( TxnCustomizer.CUSTOMFIELD_PREFIX
+
"ReqB-"+count,cust2);
               }
           rset.close();
```

```
            stmnt.close();
            // !! do not close the database connection !!
           }
      catch (SQLException sqle)
           { throw new PSException("IBY_0005",sqle.getMessage(),false); }
    }

    public void postTxn(String bep, Connection dbconn,
                        ReadOnlyHashtable outputs) throws PSException
    { String f1=(String)outputs.get("OapfStatus"),

f2=(String)outputs.get(TxnCustomizer.CUSTOMFIELD_PREFIX+"Resp"),
           f3=(String)outputs.get("OapfTrxnDate");
      try
           { PreparedStatement

stmnt=dbconn.prepareStatement(EXTEND_TESTINSERT);
             stmnt.setString(1,f1);
             stmnt.setString(2,f2);
             stmnt.setString(3,f3);
             stmnt.executeUpdate();
             dbconn.commit();
             stmnt.close();
             // !! do not close the database connection !!
           }
      catch (SQLException sqle)
           { throw new PSException("IBY_0005",sqle.getMessage(),false); }
    }
}
```

# F

# Configuring CyberCash Servlet

This appendix explains how to configure the CyberCash servlet.

# Configuring CyberCash Servlet

CyberCash is a Secure Socket Layer (SSL) payment system supporting credit card transactions using Merchant Connection Kit (MCK) and bank account transfers using CyberCash's PayNow services. It supports all Oracle iPayment core operations.

CyberCash Payment System Servlet is only needed if you are planning to process the credit card and Bank Transfer payments through the CyberCash Service. For more information see 'Payment Systems ' in the latest *Oracle iPayment Concepts and Procedures Guide.*

> **Note:** CyberCash is no longer accepting new customers. If you are not an existing CyberCash customer, consider using one of the other out-of-box integrations or contact Verisign, which has written its own iPayment integration servlet

Oracle iPayment integrates with MCK version 3 which connects to CyberCash. Use the parameters in the Oracle iPayment administration user interface while setting up CyberCash as the payment system.

This table lists the parameters for setting up CyberCash as the payment system.

| Property | Value |
|---|---|
| Name | CyberCash |
| Suffix | cyb (do not use CYB or Cyb) |
| Base URL | http://<machine_name>.com:<port>/servlet<br>*The machine where CyberCash servlet is to be installed, and any active port, for example:*<br>http://www.merchant.com:9997/servlet |
| Admin URL | http://amps.CyberCash.com |

## Installing the CyberCash Servlet

Use the following procedure to configure CyberCash Merchant Connection Kit, also known as MCK to work with Oracle iPayment:

1. Download CyberCash's Merchant Connection Kit (MCK) from http://www.CyberCash.com. Follow CyberCash's instructions to install the MCK.

   **Note:** If your MCK is located inside the firewall and your firewall requires a proxy for outbound communication, then add the following parameters to the MCK merchant_conf file. The merchant_conf file is located in the:

   <MCK_HOME>/<merchant-name>/mck-cgi/conf directory:

   HTTP_PROXY_HOST=<hostname>

   HTTP_PROXY_PORT=<port>

2. Go to the directory where the MCK C libraries are located. The installation directory should be named mck-<version>-<operating system>. For example, if you installed MCK version 3.2.0.6 on Solaris under the /usr/oracle directory, you should do the following:

   % cd /usr/oracle/mck-3.2.0.6-sparc-sun-solaris2.6/c-api/lib

   On Windows NT, the command could be:

   D:\>cd \mck-3.2.0.6-nt\c-api\lib

3. Copy the three MCK libraries mentioned below into the $IBY_TOP/lib (or %IBY_TOP%\lib on Windows NT) directory:

   % cp libCCMck.a $IBY_TOP/lib

   % cp libmckcrypto.a $IBY_TOP/lib

   % cp libmd5hash.a $IBY_TOP/lib

   On Windows NT, the commands will be:

   D:\> copy CCMck.lib %APPL_TOP%\iby\11.5.0\lib

   D:\> copy mckcrypto.lib %APPL_TOP%\iby\11.5.0\lib

   D:\> copy md5hash.lib %APPL_TOP%\iby\11.5.0\lib

   **Note:** The version number 11.5.0 may differ if you have a different version. Replace 11.5.0 with your specific version number.

4. Go to the $IBY_TOP/admin/driver directory:
   % cd $IBY_TOP/admin/driver
   or
   cd %APPL_TOP%\iby\11.5.0\admin\driver (Windows NT/2000)

   **Note:** Edit file ibysub01.drv. Make two lines starting with the comment character active by removing the comment character.

5. Go to the $IBY TOP/lib directory:
   % cd $IBY_TOP/lib.
   or
   cd %APPL_TOP%\iby\11.5.0\lib (on Windows NT/2000).

6. Start AD Administration with its command name.
   For UNIX users: $ adadmin
   For NT users: C:\>adadmin.

   After you answer the AD administration questions, the utility takes you to the main menu. Select "Relink Applications programs."
   Log File: the default AD administration log file name is adadmin.log. It is located in $APPL_TOP/admin/<db_name> is the value of your ORACLE_SID or TWO_TASK variable. NT users will find the log file in %APPL_TOP%\admin\<db_name>\log.

7. If JServ is set up for automatic startup, set up the wrapper.env variable in the file jserv.properties as indicated in the following discussion.

   .properties file are generally located in the etc directory of your top Jserv engine directory (for example, /d1/testcomn/util/apache/1.3.9/Apache/Jserv/etc).

   wrapper.env=LD_LIBRARY_PATH=$IBY_TOP/bin

   In Windows NT and Windows 2000, set:
   wrapper.env=PATH=%APPL_TOP%\iby\11.5.0\bin

   If the file already contains a line for wrapper.env (wrapper.env=LD_LIBRARY_PATH=...), append the location indicated in the preceding instructions as you would append the LD_LIBRARY_PATH environment variable. For example, assume that you have the following line already in the .properties file, line wrapper.env=LD_LIBRARY_PATH=$ABC/lib

   In this case, you should add :$IBY_TOP/bin to the end of the line as shown below:

wrapper.env=LD_LIBRARY_PATH=$ABC/lib:$IBY_TOP/bin

For Windows NT and Windows 2000, wrapper.env should be set as:

wrapper.env=PATH=%ABC%\lib;%APPL_TOP%\iby\11.5.0\bin

If JServ is set up for manual startup, set the appropriate environment variable in your environment shell. This can be done in the jservctl file, or in any other script used to start JServ. The jservctl file is generally located in the bin directory of your top Jserv engine directory (for example, /d1/testcomn/util/apache/1.3.9/Apache/Jserv/bin):

export LD_LIBRARY_PATH=$IBY_TOP/bin

In some shells, you will need to set LD_LIBRARY_PATH as follows:

LD_LIBRARY_PATH=$IBY_TOP/bin

In Windows NT and Windows 2000, set it as follows:

PATH=%APPL_TOP%\iby\11.5.0\bin

If there is already a line setting the LD_LIBRARY_PATH (or PATH in Windows) then append the above location as you would append the LD_LIBRARY_PATH environment variable, using a colon (:) or, in Windows, a semicolon (;).

8. Set up a virtual path mapping for the CyberCash servlet.

   Insert the following line in the zone.properties file, in the Servlet Aliases section.

   servlet.oramipp_cyb.code=oracle.apps.iby.bep.cybercash.CybServlet.

   This allows the servlet to be invoked as:
   http://<hostname>:<port>/servlet/oramipp_cyb.

9. Set the servlet init parameters. There are several initialization parameters that are recognized by the Oracle iPayment CyberCash Servlet. Set these initialization parameters by inserting the following line in the zone property file <SERVLET_ZONE>.properties file in the Aliased Servlet parameters section.

   **Note:** Replace $MCK_HOME with the absolute path of the MCK installation and replace $IBY_TOP with the absolute path of the Oracle iPayment installation.

```
servlet.oramipp_cyb.initArgs=mckhome=$MCK_HOME,debug=false,logfile=$IBY_
```

```
TOP/log/ibycybserv.log
```

In Windows NT, set it to:

```
servlet.oramipp_cyb.initArgs=mckhome=%MCK_HOME%,debug=false,logfile=%APPL_
TOP%\iby\log\ibycybserv.log
```

The following initialization parameters are recognized by the CyberCash Servlet:

- **Mckhome**: This parameter is mandatory. It's the directory path that points to the location where the CyberCash Merchant Connection Kit is installed. For example, if a merchant named, test-mck has been installed in such a way that its associated files can be found under the directory /usr/oracle/mck/test-mck, then mckhome should be set to /usr/oracle/mck. Transaction requests to Oracle iPayment will fail if mckhome is not set correctly.
- **debug**: This parameter is optional. If set to true, then the servlet will print debugging information to the body of its responses in plain text. This information includes the inputs sent to the servlet during the request, and the outputs the servlet sends for its response. If an exception is thrown during the processing of the request, then a stack trace is also printed.
- **logfile:** This parameter is optional. It's a string which specifies the fully qualified path name of the log file location. The input and output values of each transaction are written to this file, and a stack trace if an exception is thrown. If this parameter is not set, logging will be turned off.
- **singlemerch**: This parameter is optional, but may only be set up if the servlet always uses the same CyberCash merchant. The singlemerch parameter helps improve the performance of the CyberCash servlet by eliminating some of the overhead work that is done for multiple merchants. Set up the parameter's value to the CyberCash merchant id. For example, if you are only using the merchant test-mck, use the following initialization argument string:

```
servlet.oramipp_cyb.initArgs=mckhome=$MCK_HOME,debug=false,logfile=$IBY_
TOP/log/ibycybserv.log,singlemerch=test-mck
```

### Performance Considerations for Oracle iPayment CyberCash Servlet

The CyberCash servlet makes calls via JNI to CyberCash's C-implemented Merchant Connection Kit (MCK). The MCK is not thread-safe when multiple Cybercash merchants are used. The CyberCash servlet must synchronize access to the MCK, in effect serializing concurrent requests so that each one begins only after a previous one finishes. To improve performance in the case of a single merchant, i.e. when the servlet always uses the same CyberCash merchant, it is recommended

that you use the singlemerch parameter. To improve the performance in cases of both the single merchant or multiple merchants, it is necessary to take advantage of a new feature in JServ called load balancing. Load balancing allows requests sent to a single servlet zone to be serviced by multiple JServ instances. Since each JServ instance is a separate process, calls to the MCK occur in distinct memory spaces, allowing multiple concurrent requests to the CyberCash servlet to be successfully processed.

### Installing a Load Balanced Servlet Zone

To load balance a servlet zone, make the following changes to your jserv.conf file:

1. For each JServ instance you will reference, include a directive of the form:

   ApJServHost <INSTANCE_NAME> <PROTOCOL>://<HOST>:<PORT>

   For example: ApJServHost PC1 ajpv12://localhost:7777

   **Note:** Only one protocol is allowed within a zone. You should choose the default one, such as ajpv12.

2. Group JServ instances into sets with the following directive:

   ApJServBalance <SET_NAME> <INSTANCE_NAME>

   For example: ApJServBalance set1 PC1

   ApJServBalance set1 SUN1

3. Define the load-balanced servlet zone with the directive:

   ApJServMount <URL> balance://<SET_NAME >/<SERVLET_ZONE_NAME>

   For example: ApJServMount /cybserv balance://set1/cybserv

   **Note:** Each JServ instance within the set must have a servlet zone of the given name defined. Using the example above, each JServ instance must have a cybserv zone.

4. Define the shared memory file used by Apache HTTP listeners to keep track of the status of JServ instances use the directive:
   ApJServShmFile <MEM_FILE>

**Note:** Note that you may wish to over-write the memory file between Apache restarts to flush old status information.

After jserv.conf is modified to reflect your installation, restart Apache and make sure each JServ instance within the load balanced zone is running.

To manually start a JServ instance, do the following steps:

**a.** Make a copy of your jserv.properties file, assumed to be correctly configured for the CyberCash servlet, for each JServ instance you will run in the new zone.

**b.** For each properties file, set port to a value correct for that instance.

**c.** Set your shell environment variables CLASSPATH and LD_LIBRARY_PATH to the values the variables have in your jserv.properties file.

**d.** From the command line run the command:

java -classpath $CLASSPATH org.apache.jserv.JServ <PROPERTY_FILE> <LOG_FILE> 2>&1

The property file is the jserv.properties file you have configured for that particular instance.

### Load Balancing Recommendations

The maximum number of concurrent requests that the CyberCash servlet will be able to process without blocking is equal to the number of JServ instances running in its servlet zone. You should have a number of JServ instances running equal to the average number of concurrent requests, if not slightly more since, under load balancing, JServ instances are randomly chosen, making it possible that two concurrent requests could be sent to a JServ instance when an idle one is already available.

Running multiple JServ instances within a zone will not add significantly to your CPU load versus running a single instance. It will, however, add to your memory load as each instance requires its own JVM. On Solaris, each JVM requires over 6MB of main memory though less than 4MB are actually used since JVMs will share common libraries.

# G

# Configuring Paymentech Servlet

This appendix explains how to configure the Paymentech servlet.

# Configuring Paymentech Servlet

Paymentech is a processor-model credit card and purchase card payment system which offers online authorization and batch-based settlement support. Beginning with release 11.5.6.1, iPayment offers integration with Paymentech through a back end payment system servlet. Though iPayment's payment APIs behave largely the same when Paymentech acts as the back end payment system, there are several differences between the way processor-model and gateway-model payment systems function. Please see 'Understanding Processor-Model and Gateway-Model Payment Systems' in the *Oracle iPayment Concepts and Procedures Guide* for more details.

## Installing the Paymentech Servlet

### Prerequisites

To use Paymentech as an iPayment back end payment system, the following prerequisites must be met:

- The user must have a leased-line connection to Paymentech's payment servers.
- The user must have one or more valid Paymentech merchant accounts with support for both IP socket-based online authorization and FTP-based batch-mode settlement.

Please contact Paymentech for how to go about meeting both prerequisites.

The Paymentech back end payment system servlet requires no database connectivity and can be installed on a different host from iPayment. To install on a different host, follow these steps:

1. Copy directory $APPL_TOP/java and directory $IBY_TOP/xml to the new machine.
2. Add $APPL_TOP/java to the CLASSPATH of the Jserv instance the servlet will run and set the "xmlbase parameter" to the location of the copied $IBY_TOP/xml. For details on setting the "xmlbase" parameter, see Setting iPayment JVM parameters.
3. Follow the configuration steps.

### Configuration

These configuration steps are mandatory regardless of whether iPayment and the Paymentech servlet are on the same machine or not:

1. Add the following alias statement to the configuration file of the servlet zone you wish the Paymentech servlet to run in: servlet.oramipp_ptk.code=oracle.apps.iby.bep.proc.paymentech.PTServlet.
2. In the same configuration file, provide the following servlet parameters:

Table G–1 lists the is zone-wide parameters (set by a statement of the form servlets.default.initArgs=).

***Table G–1 Zone-wide servlet parameters for All Processor Servlets***

| Parameter | Example Value | Description |
|---|---|---|
| IBY_XML_BASE | /appl_top/iby/11.5.0/xml | The location of the XML files needed by iPayment's XML framework. Should point to a directory with the exact same contents as $IBY_TOP/xml. |
| IBY_JAVA_XML_LOG | /tmp/xml.log | Debug file used to write XML documents in. |
| FILELESS_FTP_ENABLED | Y/N | If this flag is set, the servlet will create a batch file in memory only and FTP it to the payment processor. If this not set, the servlet will store the file in local batch directory and then FTP it. We recommend that you set this flag for enhanced security of your payment information.<br>Setting this at this level will affect all iPayment servlets. You can also set this at the individual servlet level. |

Table G–2 lists parameters particular to the Paymentech servlet itself (set by a statement of the form servlet.oramipp_ptk.initArgs=):

*Table G–2 Paymentech-specific servlet parameters*

| Parameter | Example Value | Description |
|---|---|---|
| ARCHIVE | /var/archive | Directory where iPayment response files will be written to. If communication between iPayment and the servlet fails in the middle of a transaction and iPayment retries that transaction at a later date, the archive directory will allow the servlet to know the original results of the transaction and so forward those to iPayment instead of re-attempting the request (thus avoiding double billing or double authorization). |
| MAX_ ARCHIVE_ AGE | 10 | Maximum age (in days) that a response file will be saved in the archive. The Paymentech servlet will remove all responses in the archive older than this age every time it starts. |
| PT_ ONLINE_IP | 192.168.0.1 | IP address of the Paymentech host used for online authorizations. |
| PT_ ONLINE_ PORT | 8000 | Port number to use along with the above IP address. |
| PT_BATCH_ IP | 192.168.0.1 | IP address of the Paymentech host used for batch transactions. |
| PT_BATCH_ PORT | 8000 | Port number to use along with the above IP address. |
| LOCAL_ BATCH_DIR | /tmp/batch | Directory where batch files to Paymentech are temporarily stored. |
| REMOTE_ BATCH_ DROPOFF_ DIR | test/12345 | Directory on the Paymentech batch transaction server where batch files should be uploaded to. |
| REMOTE_ BATCH_ PICKUP_DIR | test/data/123 45 | Directory on the Paymentech batch transaction server where batch response files may be picked up from. |
| FTP_ USERNAME | test | FTP username to login to the Paymentech batch transaction server. |
| FTP_ PASSWORD | test | FTP password to login to the Paymentech batch transaction server. |

*Table G–2 Paymentech-specific servlet parameters*

| Parameter | Example Value | Description |
|---|---|---|
| FTP_MODE | Active | For new connections, Paymentech does not allow FTP connection in the passive mode. This parameter should then be set to "Active" for all new merchant connections to Paymentech. |

## Configuring Paymentech As A Payment System

Once the Paymentech servlet is installed and configured, it must be added as payment system in order to be used. Login to the iPayment administrative GUI as the administrative user and create a payment system for Paymentech with the following values:

Name: Paymentech

Suffix: ptk

Payment System Type: Processor

Base URL: example- http://localhost:8080/servlets

Administration URL: http://www.paymentech.net

Supported Payment Instrument: Purchase Card, Credit Card

## Adding a Paymentech Merchant Account

For each payee that will use Paymentech, enter the following value for their Paymentech payment system identifier:

[merchantName]:[divisionNumber]:[pid]:[pidPassword]:[sid]:[sidPassword]

All of the above fields will be assigned by Paymentech when a valid merchant account is created.

## Enabling the Scheduler

As Paymentech is a processor-model payment system, all transactions except authorizations are stored in the iPayment schema and sent to Paymentech only during a batch close operation. Unless the user wishes to control this process manually by implementing calls to the iPayment batch close APIs, the iPayment scheduler program will have to be enabled with support for at least the following tasks:

BATCHCLOSE

BATCHQUERY

BATCHRETRY

# H

# Configuring FDC North Servlet

This appendix explains how to configure the FDC North servlet.

# Configuring FDC North Servlet

FDC North supports credit card transactions and levels II and III purchase card transactions.

## Prerequisites

To use FDC North as an iPayment back end payment system, the following prerequisites must be met:

- The user must have a leased-line connection to FDC North payment servers.
- The user must have one or more valid FDC North merchant accounts with support for both IP socket-based online authorization and FTP-based batch-mode settlement.

The FDC North back-end payment system servlet requires no database connectivity and can be installed on a different host from iPayment. To install on a different host, follow these steps:

1. Copy directory $APPL_TOP/java and directory $IBY_TOP/xml to the new machine.
2. Add $APPL_TOP/java to the CLASSPATH of the Jserv instance the servlet will run and set the "xmlbase parameter" to the location of the copied $IBY_TOP/xml. For details on setting the "xmlbase" parameter, see Setting iPayment JVM parameters.
3. Follow the configuration steps.

## Configuration

The configuration steps are listed below. These steps are mandatory regardless of whether iPayment and the FDC North servlet are on the same machine or not:

1. Add the following alias statement to the configuration file of the servlet zone in which you wish the FDC North servlet to run in:

   ```
   servlet.oramipp_fdn.code=oracle.apps.iby.bep.proc.fdcnorth.FDCNorthServlet
   ```

2. In the same configuration file, provide the servlet parameters.

   For setting the zone-wide parameters, see Table G–1.

   This table lists parameters particular to the FDC North servlet (set by a statement of the form servlet.oramipp_fdn.initArgs=).

| Parameter | Example Value | Description |
|---|---|---|
| ARCHIVE | /var/archive | Directory where iPayment response files will be written to. If communication between iPayment and the servlet fails in the middle of a transaction and iPayment retries that transaction at a later date, the archive directory will allow the servlet to know the original results of the transaction and so forward those to iPayment instead of re-attempting the request (thus avoiding double billing or double authorization). |
| MAX_ARCHIVE_AGE | 10 | Maximum age (in days) that a response file will be saved in the archive. The FDC North servlet will remove all responses in the archive older than this age every time it starts. |
| FDCNORTH_ONLINE_IP | 192.168.0.1 | IP address of the FDC North host used for online authorizations. |
| FDCNORTH_ONLINE_PORT | 8000 | Port number to use along with the above IP address. |
| FDCNORTH_BATCH_IP | 192.168.0.1 | IP address of the FDC North host used for batch transactions. |
| FDCNORTH_BATCH_PORT | 8000 | Port number to use along with the above IP address. |
| LOCAL_BATCH_DIR | /tmp/batch | Directory where batch files to FDC North are temporarily stored. |
| REMOTE_BATCH_DROPOFF_DIR | test/12345 | Directory on the FDC North batch transaction server where batch files should be uploaded to. |
| REMOTE_BATCH_PICKUP_DIR | test/data/12345 | Directory on the FDC North batch transaction server where batch response files may be picked up from. |
| FTP_USERNAME | test | FTP username to login to the FDC North batch transaction server. |
| FTP_PASSWORD | test | FTP password to login to the FDC North batch transaction server. |

## Configuring FDC North As A Payment System

Once the FDC North servlet is installed and configured, it must be added as payment system in order to be used. Login to the iPayment administrative GUI as

the administrative user and create a payment system for FDC North with the following values:

Name: FDCNorth

Suffix: fdn

Payment System Type: Processor

Base URL: example- http://localhost:8080/servlets

Administration URL: http://www.fdms.com

Supported Payment Instrument: Purchase Card, Credit Card

### Adding a FDC North Merchant Account

For each payee that uses FDC North, enter the following value for their FDC North payment system identifier.

[MerchantAccount]:[TerminalID]:[MCCCode]:[MerchantPostalCode]:[RPSInfo]

A merchant account is the unique 12 digit account number assigned by FDC North for a merchant. RPS Info holds the requested payment service value for the merchant. Merchants using E-Commerce service can specify "EC" while merchants availing the Direct Marketing services can specify "DM". Since FDC North assigns a large number of other merchant specific fields, they will be set in the merchant configuration XML file.

### The Merchant Configuration XML file

Each merchant account (payment system identifier) has its own configuration file to store certain parameters. These parameters are assigned by FDC North. The configuration file should be named <merchant account> _CONFIG.xml and located in the <xml_base>/data/firstdata/north/config/ directory (You might need to create the directory structure if not already present). A sample file SAMPLE_ CONFIG.xml is available in the directory $APPL_ TOP/java/oracle/apps/iby/xml/xml/data/firstdata/north/config directory. This file can be used as a base to create the merchant configuration file.

This table lists the merchant configuration file parameters. Set the parameters in the sample file as listed here.

| Parameter | Remarks |
|---|---|
| MerchantAccount | Twelve digit account number assigned to the merchant outlet by FDC North. It is same as the MerchantAccount in the Payment System Identifier. |
| MerchantID | Four digit merchant identification code assigned to the merchant by FDC North. |
| SecurityCode | Security code assigned by FDC North. |
| MerchantName | Merchant DBA (Doing Business As) name. |
| MerchantCity | City in which the merchant outlet is located. For an EC transaction, this field should contain the customer service telephone number in the format 999-999-9999. |
| CountryCode | For US merchants, this field must contain the existing two-letter state code. A blank must be placed in the third position. For Canadian merchants, this field must contain the two-letter province code with an asterisk in the third position. For all other foreign merchants, this field must contain a three-letter country code. |
| MerchantURL | Merchant URL or E-mail address information for EC transactions. First character cannot be a space. Merchant does not have to include "www". |
| MerchantTaxID | Federal Tax ID number or Social Security Number for unincorporated business. Required for Level 2 and MasterCard, preferred for Visa. |
| MerchantType | A code to define whether the merchant or supplier is an independent contractor; has been certified as a small and/or disadvantaged business entity. Refer First Data specifications for the different codes to be set for this field. Required for Level 2 (MasterCard only). |
| ChargeDescription | The Charge Descriptions that are agreed upon by the client and American Express at the time the Electronic Submission Addendum is completed. |
| SubmissionGDG | Generation Data Group used for uploading the Submission file to the Mainframe Server. |
| AcknowledgmentGDG | Generation Data Group used for retrieving the Acknowledgment file from the Mainframe Server. |

### Enabling the Scheduler

Because FDC North is a processor-model payment system, all transactions except authorizations are stored in the iPayment schema and only sent to FDC North during a batch close operation. Unless the user wants to control this process manually by implementing calls to the iPayment batch close APIs, the iPayment scheduler program needs to be enabled with support for the following tasks:

BATCHCLOSE

BATCHQUERY

BATCHRETRY

# I

# Implementing Concord EFSnet Servlet

This appendix explains how to implement the Concord EFSnet servlet.

# Implementing Concord EFSnet Servlet

Concord EFSnet supports credit card transactions. Purchase card transactions are not supported by Concord EFSnet.

## Prerequisites

To use Concord EFSnet as an iPayment back end payment system, the following prerequisites must be met:

- The user must be able to access Concord EFSnet payment servers using HTTP Protocol.
- The user must have one or more valid Concord EFSnet merchant accounts with support for HTTP based online authorization and settlement.

The Concord EFSnet back end payment system servlet requires no database connectivity and can be installed on a different host from iPayment. To install on a different host, follow these steps:

1. Copy directory $APPL_TOP/java and directory $IBY_TOP/xml to the new machine.
2. Add $APPL_TOP/java to the CLASSPATH of the Jserv instance the servlet will run and set the "xmlbase parameter" to the location of the copied $IBY_TOP/xml. For details on setting the "xmlbase" parameter, see Setting iPayment JVM parameters.
3. Follow the configuration steps.

## Configuration

Please follow the configuration steps listed below. These configuration steps are mandatory regardless of whether iPayment and the Concord EFSnet servlet are on the same machine or not:

1. Add the following alias statement to the configuration file of the servlet zone you wish the Concord servlet to run in:

   ```
   servlet.oramipp_efs.code=oracle.apps.iby.bep.concord.ConcordBEPServlet
   ```

Concord EFSnet uses the SSL protocol. Since the Concord Server requires client authentication, SSL must be configured on the machine, where the Concord Servlet is running. To configure SSL, a wallet must be created and its location and password must be set in the init parameters. For detailed steps on how to create a

wallet, please refer to the section "*Using Oracle Wallet Manager*" in the latest version of *Oracle Advanced Security Administration Guide*.

For setting the zone-wide parameters, see Table G–1, "Zone-wide servlet parameters for All Processor Servlets".

This table provides the parameters particular to the Concord EFSnet servlet (set by a statement of the form servlet.oramipp_efs.initArgs=):

| Parameter | Example Value | Description |
|---|---|---|
| concord_url | https://testefsnet.concordebiz.com/efsnet.dll | The URL where the transaction request should be posted. |
| IBY_HTTP_PROXY | http://www-proxy.us.oracle.com | The proxy used, if any, to connect to the above URL. |
| IBY_WALLET_LOCATION | /opt/oracle/wallet | Absolute location of the wallet. |
| IBY_WALLET_PASSWD | welcome | Password to open the wallet |

### Configuring Concord EFSnet As A Payment System

Once the Concord EFSnet servlet is installed and configured, it must be added as a payment system in order to be used. Login to the iPayment administrative GUI as the administrative user and create a payment system for Concord EFSnet with the following values:

Name: Concord EFSnet

Suffix: efs

Payment System Type: Gateway

Base URL: example- http://localhost:8080/servlets

Administration URL: http://www.concordefsnet.com

Supported Payment Instrument: Credit Card

### Adding a Concord EFSnet Merchant Account

For each payee that will use Concord EFSnet, enter the following values for their Concord payment system identifier:

[StoreID]:[StoreKey]:[ApplicationID]

Concord EFSnet assigns StoreID, StoreKey and Application ID to the merchant.

# J

# Configuring Citibank Credit Card Servlet

This appendix explains how to configure the Citibank credit card servlet.

# Configuring Citibank Credit Card Servlet

Citibank credit card servlet supports only credit card transactions.

## Prerequisites

To use Citibank as an iPayment back end payment system, the following prerequisites must be met:

- The user must have a connection to Citibank payment servers.
- The user must have one or more valid Citibank merchant IDs with support for both IP socket-based online authorization and FTP-based batch-mode settlement.
- Configure a FTP server in the machine where you want to set up the servlet. You must communicate the IP address of this FTP server along with the user name and password to Citibank. Citibank will upload the acknowledgement files to the specified directory of this FTP server.

> **Note:** Ensure that you have write permissions on the directory into which Citibank uploads the files.

The Citibank back end payment system servlet requires no database connectivity and can be installed on a different host from iPayment. To install on a different host, follow these steps:

1. Copy directory $APPL_TOP/java and directory $IBY_TOP/xml to the new machine.
2. Add $APPL_TOP/java to the CLASSPATH of the Jserv instance the servlet will run and set the "xmlbase parameter" to the location of the copied $IBY_TOP/xml. For details on setting the "xmlbase" parameter, see Setting iPayment JVM parameters.
3. Follow the configuration steps.

## Configuration

Please follow the configuration steps listed below. These configuration steps are mandatory regardless of whether iPayment and the Citibank servlet are on the same machine or not:

1. Add the following alias statement to the configuration file of the servlet zone in which you wish the Citibank servlet to run in:

   ```
   servlet.oramipp_cit.code=oracle.apps.iby.bep.proc.citibank.CitiServlet
   ```

2. In the same configuration file, provide the servlet parameters.

   For setting the zone-wide parameters, see Table G–1.

   This table lists parameters particular to the Citibank servlet (set via a statement of the form servlet.oramipp_cit.initArgs=).

| Parameter | Example Value | Description |
|---|---|---|
| ARCHIVE | /var/archive | Directory where iPayment response files will be written to. If communication between iPayment and the servlet fails in the middle of a transaction and iPayment retries that transaction at a later date, the archive directory will allow the servlet to know the original results of the transaction and so forward those to iPayment instead of re-attempting the request (thus avoiding double billing or double authorization). |
| MAX_ARCHIVE_AGE | 10 | Maximum age (in days) that a response file will be saved in the archive. The Citibank servlet will remove all responses in the archive older than this age every time it starts. |
| CITI_ONLINE_IP | 192.168.0.1 | IP address of the Citibank host used for online authorizations. |
| CITI_ONLINE_PORT | 4000 | Port number to use along with the above IP address. |
| CITI_BATCH_IP | 192.168.0.1 | IP address of the Citibank host used for batch transactions. |
| CITI_BATCH_PORT | 21 | Port number to use along with the above IP address. |
| LOCAL_BATCH_DIR | /tmp/batch | Directory where batch files to Citibank are temporarily stored. |
| LOCAL_QUERY_DIR | /tmp/query | This directory contains the acknowledgement files uploaded by Citibank. This should be the home directory of the FTP server. |
| FTP_USERNAME | test | FTP username to login to the Citibank FTP server. |
| FTP_PASSWORD | test | FTP password to login to the Citibank FTP server. |

| Parameter | Example Value | Description |
|---|---|---|
| FTP_PROXY_ USERNAME | test | Username to login to the Citibank proxy server. |
| FTP_PROXY_ PASSWORD | | Password to login to the Citibank proxy server. |

### Configuring Citibank As A Payment System

Once the Citibank servlet is installed and configured, it must be added as payment system in order to be used. Login to the iPayment administrative GUI as the administrative user and create a payment system for Citibank with the following values:

**Name**: Citibank

**Suffix**: cit

**Payment System Type**: Processor

**Base URL**: example- http://hostname:8080/servlets

**Administration URL**: http://www.citicorp.com

**Supported Payment Instrument**: Credit Card

### Adding a Citibank Merchant Account

For each payee that will use Citibank, enter the following value for their Citibank payment system identifier.

[MerchantID]

Since Citibank assigns a large number of merchant fields, the other fields will be set in the merchant configuration XML file.

### The Merchant Configuration XML file

Each merchant account (i.e. Payment System Identifier) will have its own configuration file to store certain parameters. These parameters are assigned by Citibank. The configuration file will be <merchantID>_CONFIG.xml and should be located in the <xml_base>/data/citibank/creditcard/config/ directory. A sample file SAMPLE_CONFIG.xml is available in the $JAVA_ TOP/oracle/apps/iby/xml/xml/data/citibank/creditcard/config/ directory. This file can be used as a base to create the merchant configuration file.

This table lists the merchant configuration file parameters. Set the parameters in the sample file as listed here.

| Parameter | Remarks |
|---|---|
| MerchantID | Assigned by Citibank Merchant Services to uniquely identify each merchant. This is used to provide the proper merchant information for authorization based upon account type. Same as Merchant ID in Payment System Identifier. |
| PresenterID | ID assigned and provided to merchants by Citibank Merchant Services to uniquely identify each presenter to whom services are provided. |
| TerminalID | Terminal ID present at the merchant location. |
| TerminalTimeOffset | Terminal time offset in minutes. The first position must be either '+' or '-'. Example: '+000. |
| AcquiringID | The Acquiring Institution ID Code identifies Citibank Merchant Services to the Interchange. |
| NetworkDestination | Contains the Citibank Merchant Services network destination for the transaction. |
| MCCCode | Merchant Classification Code contains the Standard Industrial Classification (SIC) code of the merchant involved in the transaction. |
| MerchantDBAName | DBA (Doing Business As) Information contains the name of the merchant that defines the point of service in both local and interchange environments. |
| MerchantDBACity | City in which the merchant outlet is located. For an EC transaction, this field should contain the customer service telephone number("800" Number) in the format 999-999-9999. |
| MerchantDBAState | For US merchants, this field must contain the existing two-letter state code. A blank must be placed in the third position. |
| CountryCode | Two-letter Merchant Country Code as specified in ISO 3166. |
| PostalCode | Postal code of the merchant originating the transaction. It should be either 5 or 9 digits in length. |
| XCFPassword | Assigned by Citibank Merchant Services during Merchant setup. |
| XCFRequestCode | Assigned by Citibank Merchant Services during Merchant setup. |

### Enabling the Scheduler

Because Citibank is a processor-model payment system, all transactions except authorizations are stored in the iPayment schema and sent to Citibank only during a batch close operation. Unless the user wishes to control this process manually by implementing calls to the iPayment batch close APIs, the iPayment scheduler program must be enabled with support for the following tasks:

BATCHCLOSE

BATCHQUERY

BATCHRETRY

# K

# Profile Options

This appendix lists the profile options that affect the operation of iPayment. This appendix includes a brief description of each profile option that you or your system administrator can set at the site, application, responsibility, or user levels.

# Profile Options

During implementation, your system administrator sets a value for each user profile option to specify how Oracle Applications controls access to and processes data.

> **See also:** Overview of Setting User Profiles, *Oracle Applications System Administrator's Guide*

## Profile Options Summary

This table indicates whether you can view or update profile options and at which System Administrator levels the profile options can be updated: at the user, responsibility, application, or site levels.

A *Required* profile option requires you to provide a value. An *Optional* profile option already provides a default value which you can change.

The key for this table is:

- **Update** - You can update the profile option
- **View Only** - You can view the profile option but cannot change it
- **No Access** - You cannot view or change the profile option value

| Profile Option | Value | Default | User Access | System Admin Access: User | System Admin Access: Responsibility | System Admin Access: Application | System Admin Access: Site |
|---|---|---|---|---|---|---|---|
| IBY: ECAPP URL | Required | No Default | No Access | No Access | No Access | No Access | Update |
| IBY: HTTP Proxy | Optional | No Default | No Access | No Access | No Access | No Access | Update |
| IBY: No Proxy Domain | Optional | No Default | No Access | No Access | No Access | No Access | Update |
| IBY: XML Base | Required | No Default | No Access | No Access | No Access | No Access | Update |
| IBY: JAVA XML Log File | Optional | No Default | No Access | No Access | No Access | No Access | Update |

| Profile Option | Value | Default | User Access | System Admin Access: User | System Admin Access: Responsibility | System Admin Access: Application | System Admin Access: Site |
|---|---|---|---|---|---|---|---|
| IBY: XML Temp Directory | Optional | No Default | No Access | No Access | No Access | No Access | Update |
| IBY: Outbound Payment Payer ID | Optional | No Default | No Access | No Access | No Access | No Access | Update |
| IBY: Outbound Payment System Suffix | Optional | No Default | No Access | No Access | No Access | No Access | Update |
| IBY: Default Payee for BR Remittance | Optional | No Default | No Access | No Access | No Access | No Access | Update |
| IBY: UI Visibility Class | Optional | No Default | No Access | No Access | No Access | No Access | Update |
| IBY: Wallet Location | Optional | No Default | No Access | No Access | No Access | No Access | Update |
| IBY: Wallet Password | Optional | No Default | No Access | No Access | No Access | No Access | Update |
| IBY: Registered Instrument Encryption | Optional | No | No Access | No Access | No Access | No Access | Update |

# iPayment Profile Options

You can use the System Administrator responsibility to set the iPayment profile options.

### IBY: ECAPP URL

This property contains the following URL:

http://machine:port/<jsp>/ecapp?

Replace the machine and port with the names of the actual machine and the actual port where the iPayment ECServlet is installed. Also, make sure that "?" is present at the end of the URL or append "?" at the end.

This information is mandatory if your EC applications use iPayment PL/SQL APIs or if your application is an Oracle 3i client.

### IBY: HTTP Proxy

This property specifies the proxy-URL. For example, http://www-proxy.us.oracle.com.

To set up this property with an empty value, insert a string starting with <. For example, <none>.

### IBY: No Proxy Domain

This property specifies the domain name for which no proxy is needed. For example, us.oracle.com.

To set up this property with an empty value, insert a string starting with <. For example, <none>.

### IBY: XML Base

This property specifies the location of files required by iPayment's XML framework, such as iPayment DTD files. This property should give the location of the $IBY_TOP/xml directory, where $IBY_TOP is expanded to its fully qualified path name. For example, /usr/appl_top/iby/11.5.0/xml

### IBY: JAVA XML Log File

This optional property gives the full-qualified pathname of the debug file where XML messages should be written. This file is similar in purpose to the iPayment debug file, but has been separated from it since XML messages are much larger

than single debug statements. If no value is specified for this property, then XML logging is disabled.

### IBY: XML Temp Directory

Temporary XML work directory, which must be writable by iPayment's application server. This parameter is optional, but will reduce iPayment's memory usage if provided.

### IBY: Outbound Payment Payer ID

Select from the list of values displayed, the payee in iPayment issuing the payment order to the bank. You can set this only at the site level. You need to define this to send transactions from Oracle Payables to iPayment.

### IBY: Outbound Payment System Suffix

Enter the three-letter suffix of the payment system that will handle your outbound payment instructions.

### IBY: Default Payee for BR Remittance

Select from the list of values displayed, the payee in iPayment remitting the Bills Receivable. You can set this only at the site level. You need to define this to send BR remittance batch from Oracle Receivables to iPayment.

### IBY: UI Visibility Class

You can define the visibility class profile option at different levels. This value will determine what data a user can see in the iPayment Operation UI and what mask is applied to the data before displaying it.

### IBY: Wallet Location

Location of the Oracle Wallet.

### IBY: Wallet Password

Password to open the Oracle Wallet.

### IBY: Registered Instrument Encryption

Determines whether registered payment instruments must be stored in encrypted format; if set to 'Yes', the system security key must have been provided to the iPayment engine in order to register/modify payment instruments; use encrypted registered payment instruments as part of a transaction. The default value is 'No'.

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