

Oracle® Banking Treasury Management Gateway Services User Guide



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Preface

This manual is designed to help you quickly get acquainted with the gateway integration user guide of Oracle Banking Treasury Management modules.

This preface has the following topics:

- [Audience](#)
- [Acronyms and Abbreviations](#)
- [Conventions](#)
- [List of Topics](#)
- [Related Resources](#)
- [Symbols and Icons](#)

Audience

This guide is intended for Back Office Data Entry Clerk, Back Office Managers/ Officers, Product Managers, End of Day Operators, and Financial Controller users.

Acronyms and Abbreviations

The acronyms and abbreviations are listed in this below table:

Table 1 Acronyms and Abbreviations

Abbreviations or Acronyms	Definition
DV	Derivatives
EOD	End of Day
ETD	Exchange Traded Derivatives
EJB	Enterprise Java Beans
FCUBS	Oracle FLEXCUBE Universal Banking
FX	Foreign Exchange
HTTP	Hypertext Transfer Protocol
LCY	Local Currency
MM	Money Market
OBTR	Oracle Banking Treasury Management
OT	Over the Counter Options
SE	Securities
SR	Securities Repo

Table 1 (Cont.) Acronyms and Abbreviations

Abbreviations or Acronyms	Definition
SOAP	Simple Object Access Protocol
XML	Extensible Markup Language
XSD	XML Schema Documents

Conventions

The following text conventions are used in this document:

Table 2 Conventions and Meaning

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
<code>monospace</code>	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

List of Topics

This guide is organized as follows:

Topics	Description
Gateway Functions - An Overview	Explains the overview of Gateway Functions and features of this module.
External System Maintenance	Explains the maintenance of external systems and the various processes involved.
Message Formats	Explains the format of the XML messages defined in Oracle Banking Treasury Management Gateway services.
List of Messages	Explains the list of Messages lists all the messages that you encounter while working with Oracle Banking Treasury Management Gateway services.

Related Resources

For more information, see these Oracle Banking Treasury Management resources:

- *The Procedures User Manual*
- *The Products User Manual*
- *The Messaging User Manual*
- *Core Entities User Manual*
- *Settlements User Manual*

Symbols and Icons

Table 3 Symbols

Icons	Function
	Exit
	Add row
	Delete row
	Option List

The images used in the documentation are of illustration purpose and need to be used only for reference.

1

Overview

1.1 Gateway Functions - An Overview

Integration of different applications and solutions is a key area in today's systems. A variety of specialized applications deployed on disparate platforms and using different infrastructure need to be able to communicate and integrate seamlessly with Oracle Banking Treasury Management in order to exchange data. The Oracle Banking Treasury Management Integration Gateway (referred to as 'Gateway' in the rest of the document) will cater to these integration needs.

The integration needs supported by the Gateway can be broadly categorized from the perspective of the Gateway as follows:

- Inbound application integration – used when any external system needs to add, modify or query information within Oracle Banking Treasury Management.
- Outbound application integration – used when any external system needs to be notified of the various events that occur within Oracle Banking Treasury Management.

This topic has the following sub-topics:

- [Inbound Application Integration](#)
This topic describes the inbound application integration, EJB based synchronous deployment pattern, Web services based synchronous deployment pattern, HTTP servlet based synchronous deployment pattern, and MDB based asynchronous deployment pattern.
- [Outbound Application Integration](#)
This topic describes the outbound application integration.
- [Responsibilities of Integration Gateway](#)
This topic describes the primary responsibilities of Oracle Banking Treasury Management Integration Gateway .
- [Deployment of Oracle Banking Treasury Management Integration Gateway](#)
This topic describes the deployment of Oracle Banking Treasury Management Integration Gateway.
- [Deployment Patterns for Application Integration](#)
This topic describes the deployment patterns for application integration.

1.1.1 Inbound Application Integration

This topic describes the inbound application integration, EJB based synchronous deployment pattern, Web services based synchronous deployment pattern, HTTP servlet based synchronous deployment pattern, and MDB based asynchronous deployment pattern.

Oracle Banking Treasury Management Inbound Application Gateway provides XML based interfaces thus enhancing the need to communicate and integrate with the external systems. The data exchanged between Oracle Banking Treasury Management and the external systems will be in the form of XML messages. These XML messages are defined in OBTR in the form of XML Schema Documents (XSD) and are referred to as 'OBTR formats'.

For more information on OBTR formats refer the Message Formats chapter in this User Manual.

OBTR Inbound Application Integration Gateway uses the Synchronous and Asynchronous Deployment Pattern for addressing the integration needs.

The Synchronous Deployment Pattern is classified into the following:

- Oracle Banking Treasury Management EJB Based Synchronous Inbound Application Integration Deployment Pattern.
- Oracle Banking Treasury Management Web Services Based Synchronous Inbound Application Integration Deployment Pattern.
- Oracle Banking Treasury Management HTTP Servlet Based Synchronous Inbound Application Integration Deployment Pattern.

Asynchronous Deployment Pattern is:

- Oracle Banking Treasury Management MDB Based Asynchronous Inbound Application Integration Deployment Pattern.

This topic has the following sub-topics:

- [EJB Based Synchronous Deployment Pattern](#)
- [Web Services Based Synchronous Deployment Pattern](#)
- [HTTP Servlet Based Synchronous Deployment Pattern](#)
- [MDB Based Asynchronous Deployment Pattern](#)

1.1.1.1 EJB Based Synchronous Deployment Pattern

The Enterprise Java Beans (EJB) deployment pattern will be used in integration scenarios where the external system connecting to Oracle Banking Treasury Management is 'EJB literate', i.e., the external system is capable of interacting with Oracle Banking Treasury Management based upon the EJB interface. In this deployment pattern, the external system will use the RMI/IIOP protocol to communicate with the Oracle Banking Treasury Management EJB.

In this deployment pattern the EJB displayed by Oracle Banking Treasury Management will be a stateless session bean. The actual request will be in the form of an XML message. After the necessary processing is done in Oracle Banking Treasury Management based on the request, the response is returned to the external system as an XML message. The transaction control for the processing will stay with the Oracle Banking Treasury Management EJB.

1.1.1.2 Web Services Based Synchronous Deployment Pattern

The web services deployment pattern will be used in integration scenarios where the external system connecting to Oracle Banking Treasury Management wants to connect using standards-based, interoperable web services.

This deployment pattern is especially applicable to systems which meet the following broad guidelines:

- Systems that are not 'EJB literate', i.e., such systems are not capable of establishing connections with Oracle Banking Treasury Management based upon the EJB interface; and/or
- Systems that prefer to use a standards-based approach.

In this deployment pattern, the external system will use the SOAP (Simple Object Access Protocol) messages to communicate to the Oracle Banking Treasury Management web services.

The services displayed by Oracle Banking Treasury Management are of a 'message based' style, i.e., the actual request will be in the form of an XML message, but the request will be a 'payload' within the SOAP message. After the necessary processing is done in Oracle Banking Treasury Management based on the request, the response is returned to the external system as an XML message which will be a 'payload' within the response SOAP message. The transaction control for the processing will stay with the Oracle Banking Treasury Management.

1.1.1.3 HTTP Servlet Based Synchronous Deployment Pattern

The HTTP servlet deployment pattern will be used in integration scenarios where the external system connecting to Oracle Banking Treasury Management wants to connect to Oracle Banking Treasury Management using simple HTTP messages.

This is especially applicable to systems such as the following:

- Systems that are not 'EJB literate', i.e., are not capable establishing a connections with Oracle Banking Treasury Management based upon the EJB interface; and/or
- Systems that prefer to use a simple http message based approach without wanting to use SOAP as the standard.

In this deployment pattern, the external system will make an HTTP request to the Oracle Banking Treasury Management servlet.

For this deployment pattern, Oracle Banking Treasury Management will display a single servlet. The actual request will be in the form of an XML message. This XML message is embedded into the body of the HTTP request sent to the Oracle Banking Treasury Management servlet.

After the necessary processing is done in Oracle Banking Treasury Management based on the request, the response is returned to the external system as an XML message which is once again embedded within the body of the response HTTP message. The transaction control for the processing will stay with the Oracle Banking Treasury Management.

1.1.1.4 MDB Based Asynchronous Deployment Pattern

The MDB deployment pattern is used in integration scenarios where the external system connecting to Oracle Banking Treasury Management wants to connect to Oracle Banking Treasury Management using JMS queues.

This is especially applicable to systems such as the following:

- Systems that prefer to use JMS queues based approach without wanting to wait for the reply.

Here external system sends messages in XML format to request queue on which an MDB is listening. When a message arrives on the queue, it is picked up for processing. After the necessary processing is done in Oracle Banking Treasury Management, based on the request, the response is sent to the response queue as an XML message

1.1.2 Outbound Application Integration

This topic describes the outbound application integration.

The Outbound Application Integration is also called the Oracle Banking Treasury Management Notify Application Integration layer. This application layer sends out notification messages to the external system whenever events occur in Oracle Banking Treasury Management.

The notification messages generated by OBTR on the occurrence of these events will be XML messages. These XML messages are defined in OBTR in the form of XML Schema Documents (XSD) and are referred to as 'OBTR formats'.

For more information on OBTR formats refer the Message Formats chapter in this module.

1.1.3 Responsibilities of Integration Gateway

This topic describes the primary responsibilities of Oracle Banking Treasury Management Integration Gateway .

The following responsibilities are:

- Authentication
- Duplicate recognition
- Validation
- Routing
- Logging of messages

1.1.4 Deployment of Oracle Banking Treasury Management Integration Gateway

This topic describes the deployment of Oracle Banking Treasury Management Integration Gateway.

Message communication - incoming or outgoing from/to an external system in Oracle Banking Treasury Management will happen only through an Oracle Banking Treasury Management Integration Gateway. Hence, it becomes the first point of contact or last point of contact with the database in message flow. The Oracle Banking Treasury Management Integration Gateway can be deployed to support both the distributed and single schema deployments of Oracle Banking Treasury Management:

- Distributed deployment of OBTR – In this situation the database components of the Gateway are deployed as two or more schema.
 - The messaging schema as part of SMS schema in the SMS and/or HO instance.
 - The business schema(s) in the various branch schema in the branch instance(s).
- Single schema deployment of OBTR – In this situation the database components of the Gateway (messaging and business) are both deployed as part of the single Oracle Banking Treasury Management schema.

1.1.5 Deployment Patterns for Application Integration

This topic describes the deployment patterns for application integration.

Table 1-1 Deployment Patterns

Business Integration Needs	Nature of Integration	Oracle Banking Treasury Management Deployment Pattern	Remarks
Inbound Transactions into Oracle Banking Treasury Management	Synchronous	OBTR EJB	Recommended
		OBTR HTTP Servlet	This can be used if the external system cannot communicate to Oracle Banking Treasury Management using EJB.
		OBTR Web Services	This can be used if the external system chooses to communicate only through Web Services.
	Asynchronous	OBTR MDB	This can be used if the external system chooses to communicate only through JMS queues
Inbound Queries into Oracle Banking Treasury Management	Synchronous	OBTR EJB	Recommended
		OBTR In Servlet	This can be used if the external system cannot communicate to Oracle Banking Treasury Management using EJB.
		OBTR Web Services	This can be used if the external system chooses to communicate only through Web Services.
	Asynchronous	OBTR MDB	This can be used if the external system chooses to communicate only through JMS queues
Handoffs from Oracle Banking Treasury Management	Asynchronous	OBTR Notify	Recommended

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External System Maintenance

Below are the external system maintenance and gateway maintenance required in the Oracle Banking Treasury Management Integration Gateway:

- Access Rights to an External System
- Gateway Password Generation Logic For External Section
- Incoming Message Browser
- Duplicate Message Browser
- Outgoing Message Browser
- Defining Notification Messages
- Defining the Notifications Enroutes
- Maintaining MT Task Details
- Amendment Maintenance
- Gateway Maintenance for Approot Deployment

For more information on the above topic, refer *Chapter: Gateway Maintenance* in [Common Core- Gateway User Guide](#).

3

Message Formats

Data exchanged between Oracle Banking Treasury Management and the external systems will be in the form of XML messages. These XML messages are defined in OBTR in the form of XML Schema Documents (XSD) and are referred to as 'OBTR formats'. An XML Schema is uniquely identified by its Namespace and its Root Element (root node).

The root node for XSDs of gateway messages are generated as per the following pattern:

- `<OPERATION>_<MESSAGE EXCHANGE PATTERN>_REQ`
- `<OPERATION>_<MESSAGE EXCHANGE PATTERN>_RES`

where,

- `<OPERATION>` refers to an Oracle Banking Treasury Management operation like `CREATECUSTACC`
- `<MESSAGE_EXCHANGE_PATTERN>` refers to the request & response message patterns exchanged.

The Message Pattern is of the following types

- **FS (Full Screen)** - This indicates that the payload will contain all the elements on the corresponding Oracle Banking Treasury Management screen.
- **IO (Input Only)** - This indicates that the payload will contain the only input elements on the corresponding Oracle Banking Treasury Management screen.
- **IO (Input Only)** - This indicates that the payload will contain the only input elements on the corresponding Oracle Banking Treasury Management screen.
- **PK (Primary Key)**: This indicates that the payload will contain only the Primary Key elements of the corresponding Oracle Banking Treasury Management screen

. `<MESSAGE_EXCHANGE_PATTERN>` is a combination of message patterns. The `<MESSAGE_EXCHANGE_PATTERN>` available in OBTR is shown below:

- **FSFS** - Full Screen Request and Full Screen Response
- **IOPK** - Input Only Request and Primary Key Response
- **IOFS** - Input Only Request and Full Screen Response

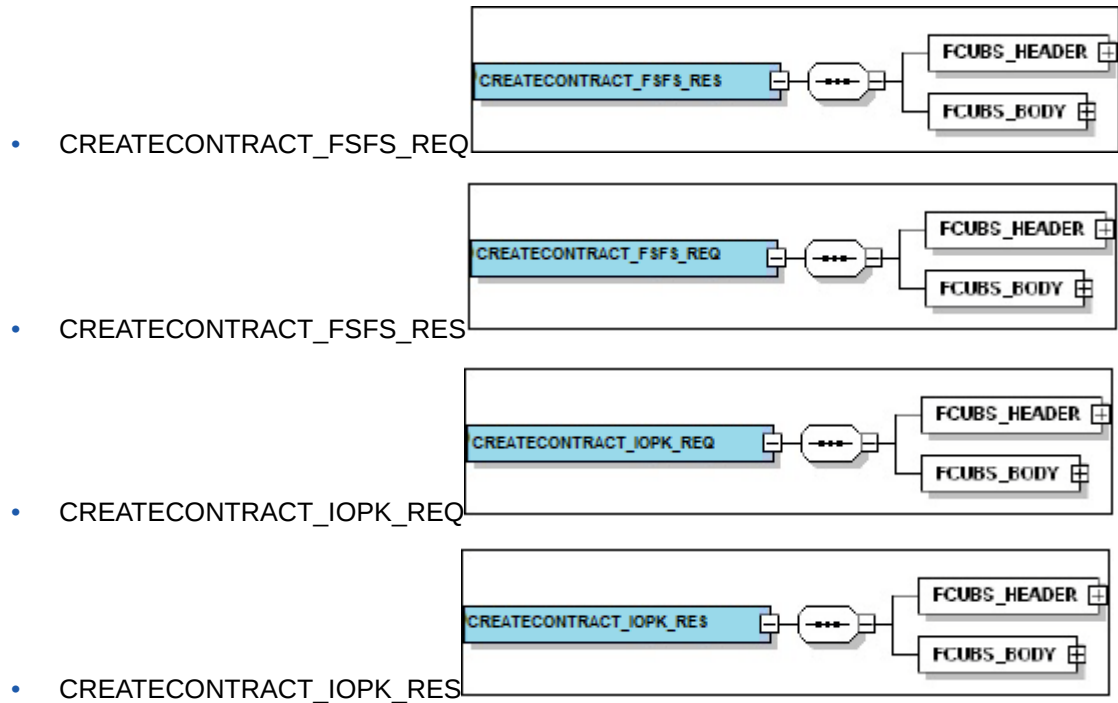
This topic has the following sub-topics:

- [Non-query Formats](#)
This topic describes the non-query and query formats.
- [Oracle Banking Treasury Management Envelope](#)
The OBTR Envelope topic explains the OBTR header and body components.
- [Oracle Banking Treasury Management Notification](#)
This topic describes the generated notification messages.

3.1 Non-query Formats

This topic describes the non-query and query formats.

For example, consider the Operation 'CREATECONTRACT'. The root node of messages under this operation is shown below:

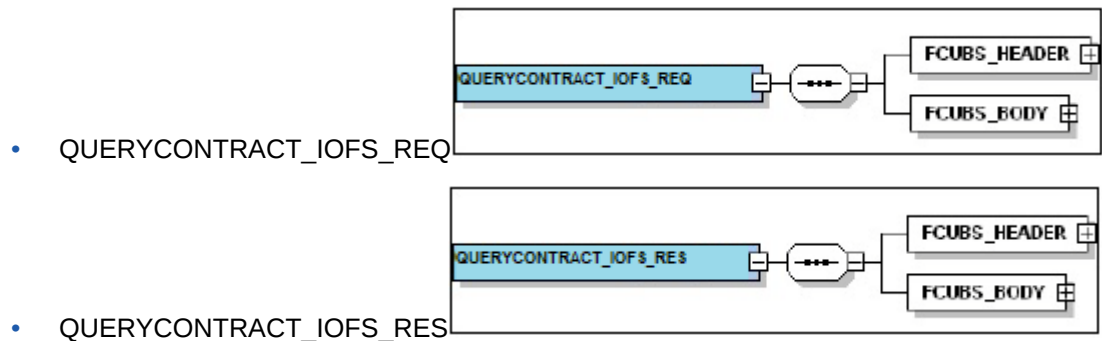


This topic has the following sub-topic:

- [Query Formats](#)

3.1.1 Query Formats

For example, consider the Operation QUERYCONTRACT. The root node of messages under this operation will be as under:



3.2 Oracle Banking Treasury Management Envelope

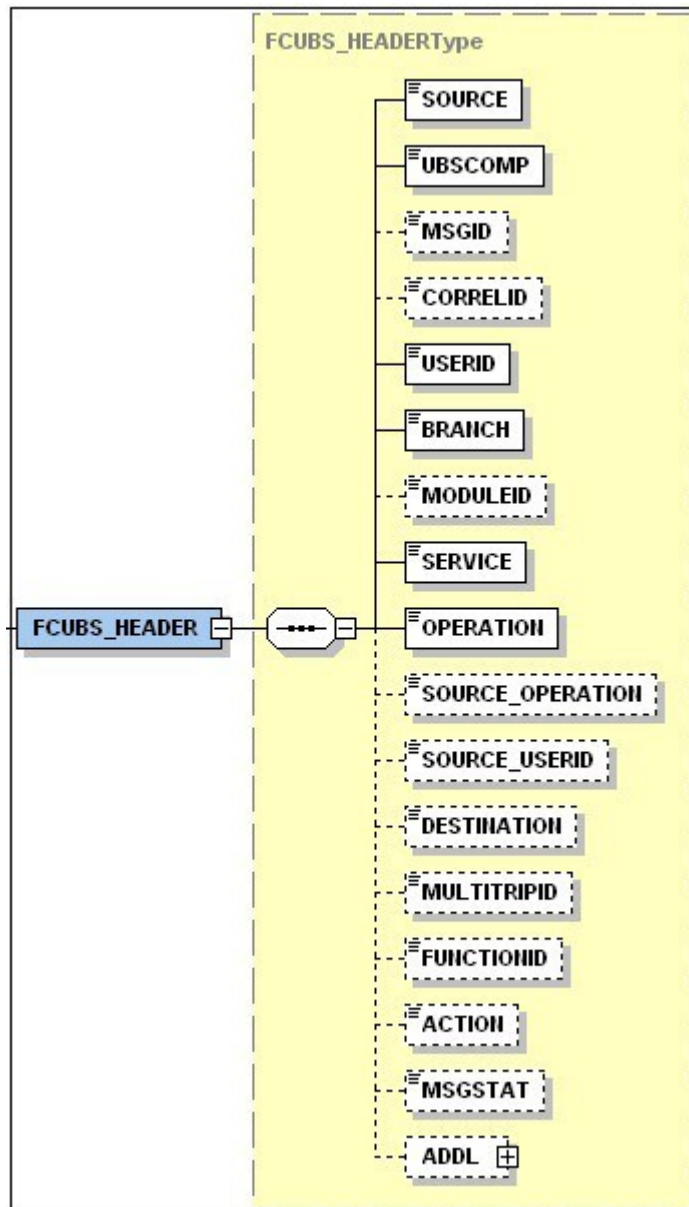
The OBTR Envelope topic explains the OBTR header and body components.

A standard gateway message in the Oracle Banking Treasury Management Envelope contains two main components namely:

- FCUBS_HEADER – This is a node that forms the header of the OBTR Envelope. The tags under the header portion of a message identifies a partner system, a service, an operation, user, branch, etc. These tags are constant across all messages.

- FCUBS_BODY – This node contains the actual payload of a message. The contents of this node varies for each message.

Figure 3-1 HEADER and Types



FCUBS_HEADER

The tags under FCUBS_HEADER have been described below:

Table 3-1 FCUBS Header Tags

Tags	Description
SOURCE	This indicates the name of the External system that is the source of the message.

Table 3-1 (Cont.) FCUBS Header Tags

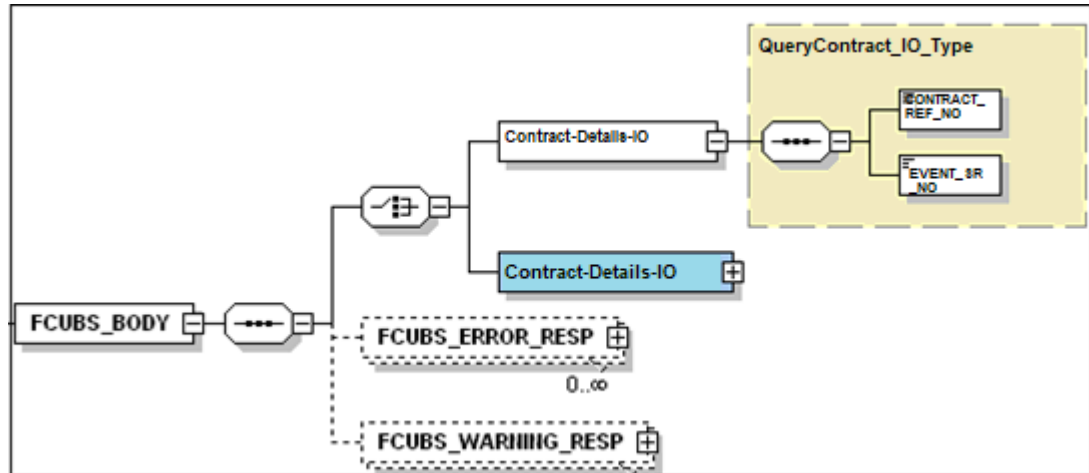
Tags	Description
UBSCOMP	This indicates the Oracle Banking Treasury Management component of the message - whether FCUBS or OBTR.
MSGID	This unique ID identifies each message – incoming or outgoing in Oracle Banking Treasury Management. Every message will have a distinct message ID.
CORRELID	This is the id using which any system which has sent a request to FCUBS can correlate to the response. In the External system maintenance, the Correlation Pattern can be configured for each external system. It can be maintained that either the 'MSGID' or the 'CORRELID' of the request message is returned back as the 'CORRELID' in the response message. Depending on this maintenance, Oracle Banking Treasury Management will set either the 'MSGID' or the 'CORRELID' of the request message in the response message.
USERID	For request messages, this ID is used to submit message requests. Oracle Banking Treasury Management will process this request using this id. For response messages, the value of this will be 'null'.
BRANCH	This indicates the Oracle Banking Treasury Management Branch Code where the request message needs to be processed. If the BRANCH is missing in the header, request message will be transmitted and processed in Head Office branch.
MODULEID	This indicates the module ID.
SERVICE	This provides details on the various services of Oracle Banking Treasury Management. For every incoming message in Oracle Banking Treasury Management, the service name is mandatory.
OPERATION	This indicates the functional operation.
SOURCE_OPERATION	This indicates the functional operation as registered in Oracle Banking Treasury Management.
SOURCE_USERID	This is the User ID with which the request message was invoked from the SOURCE.
DESTINATION	For incoming messages, the destination will be Oracle Banking Treasury Management. For response messages, system will populate the SOURCE of the request message as DESTINATION.
MULTITRIPID	This is a unique id which indicates overrides.
FUNCTIONID	This indicates the Oracle Banking Treasury Management Function ID.
MSGSTAT	This indicates whether the transaction is a SUCCESS or FAILURE.
ADDL	This is used to send additional parameters i.e. parameters not available in Oracle Banking Treasury Management.

FCUBS_BODY

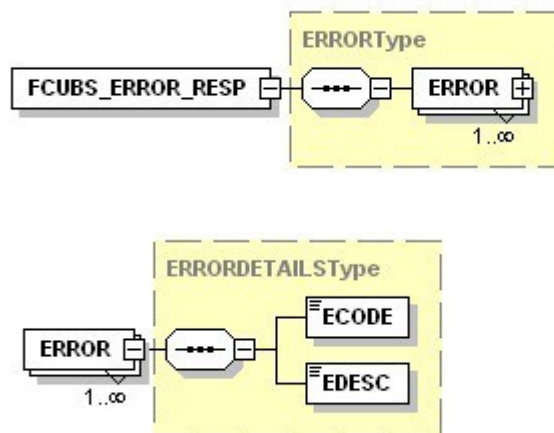
The FCUBS_BODY has the actual payload to perform the respective transaction. The contents of the payload vary for each operation.

The following image shows a sample FCUBS_BODY of QUERYCONTRACT operation.

Figure 3-2 FCUBS_BODY



FCUBS_BODY contain additional nodes for error response and warning response. A diagrammatic representation of the Error response is as shown below:



FCUBS_ERROR_RESPONSE

The error response message has been sent from Oracle Banking Treasury Management when errors are raised in a transaction. The error response have another tag 'ERROR' within it.

ERROR

The 'ERROR' node have tags for error code and error description. The 'ERROR' node is generated for each error raised by OBTR.

FCUBS_WARNING_RESP

The warning response message has been sent when overrides are raised in a transaction. The Warning response will have another tag 'WARNING' within it.

WARNING

This node have tags for warning code and warning description. The 'WARNING' node generated for each override raised by OBTR.

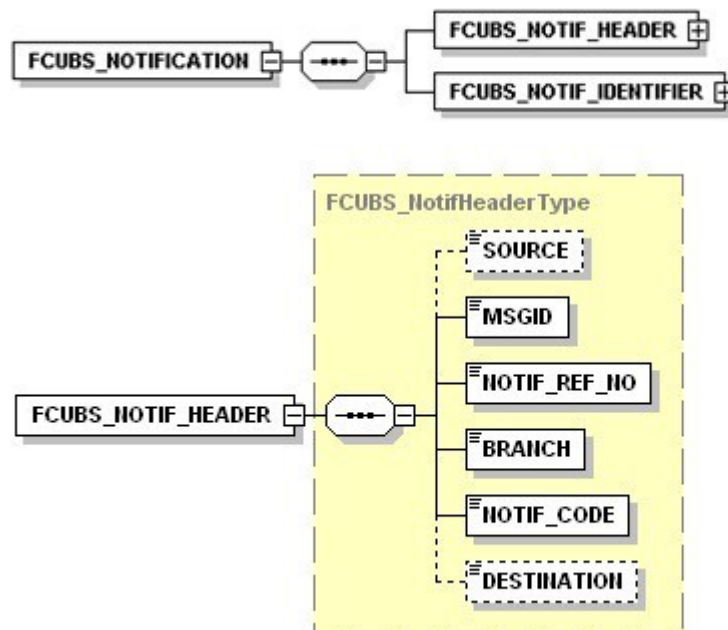
3.3 Oracle Banking Treasury Management Notification

This topic describes the generated notification messages.

The notification messages are generated in a standard format. The notification messages will consist of two main components:

- **FCUBS_NOTIF_HEADER** – This forms the header portion of a notification message. This contains a standard set of tags that can identify a notification. These tags are constant across all notification messages
- **FCUBS_NOTIF_IDENTIFIER** – This will identify the maintenance records based on the information provided under this node. The contents of this node will vary for each notification.

A diagrammatic representation of OBTR NOTIFICATION is as shown below:



This topic has the following sub-topic:

- [FCUBS Notification Header](#)
This topic describes the tags under FCUBS Notification Header.

3.3.1 FCUBS Notification Header

This topic describes the tags under FCUBS Notification Header.

The below table shows the tags used in the FCUBS Notification header.

Table 3-2 FCUBS Notification Header Tags and Description

Tags	Description
Source	This indicates the name of the External system or the source of the message.

Table 3-2 (Cont.) FCUBS Notification Header Tags and Description

Tags	Description
MSGID	his is the unique reference number generated by Oracle Banking Treasury Management.
NOTIF_REF_NO	This unique reference number identifies each notification message generated in Oracle Banking Treasury Management.
BRANCH	This indicates the branch in which notification has been triggered.
NOTIF_CODE	This indicates the code for the notification that has been triggered.
DESTINATION	For incoming messages, the DESTINATION should be Oracle Banking Treasury Management. For response messages, system will populate the SOURCE of the request message as DESTINATION.

**Note:**

Refer to Service Documentation available under Gateway for details about each message.

A

List of Messages

This chapter lists out the various messages that fold under the purview of the following Gateway services:

- Inbound application integration – used when any external system needs to add, modify or query information within Oracle Banking Treasury Management
- Outbound application integration – used when any external system needs to be notified of the various events that occur within Oracle Banking Treasury Management.

Inbound Application Integration – Services

Oracle Banking Treasury Management Inbound Application Gateway provides XML based 'Services'. These services consist of one or more 'Operations'. These operations can be invoked by any external system to perform the relevant operation in Oracle Banking Treasury Management.

For more information on gateway services, refer to [OBTR Integration Gateway](#).