Oracle Banking Digital Experience

Host Integration Guide
Release 18.3.0.0.0

Part No. F12056-01

December 2018

ORACLE

Host Intergration Guide

December 2018

Oracle Financial Services Software Limited

Oracle Park

Off Western Express Highway

Goregaon (East)

Mumbai, Maharashtra 400 063

India

Worldwide Inquiries:

Phone: +91 22 6718 3000

Fax:+91 22 6718 3001

www.oracle.com/financialservices/

Table of Contents

1. Preface

1.1 Intended Audience

This document is intended for the following audience:

- Customers
- Partners

1.2 Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc..

1.3 Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit

http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit

http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

1.4 Structure

This manual is organized into the following categories:

Preface gives information on the intended audience. It also describes the overall structure of the User Manual.

The subsequent chapters describes following details

- Introduction
- Adapter Implementation
- Configuration/ Installation

1.5 Related Information Sources

For more information on Oracle Banking Digital Experience Release 18.3.0.0.0, refer to the following documents:

- Oracle Banking Digital Experience Installation Manuals

2. Introduction

2.1 Overview (OBDX-FCUBS Integration)

This document is intended to outline the integration of OBDX (Oracle Banking Digital Experience) with FCUBS (Oracle FLEXCUBE Universal Banking).

OBDX is the digital banking solution platform that enables single-view of a customer's entire banking world.

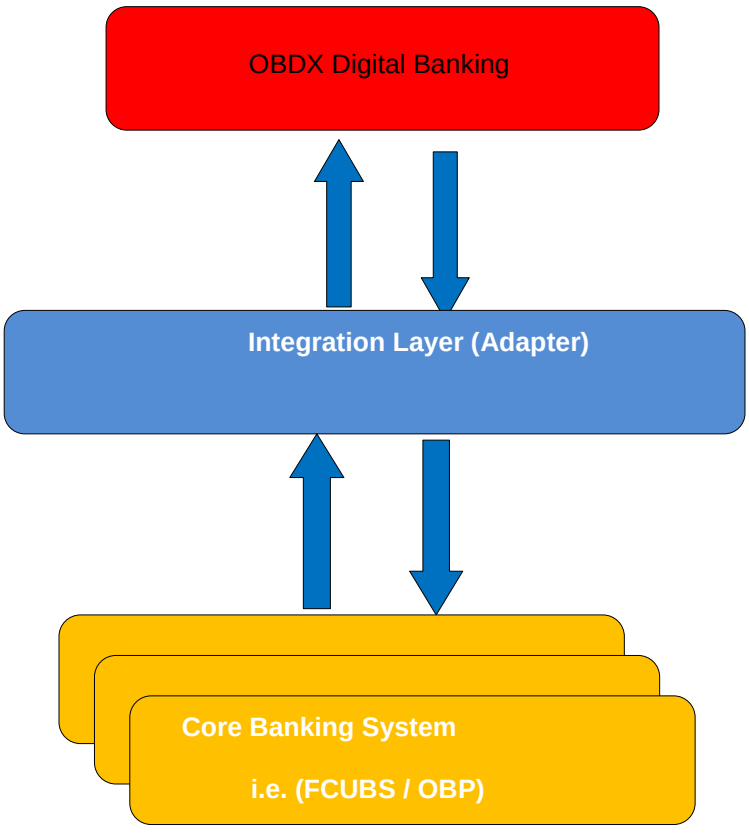
It ensures that the program is closely aligned to the business strategies identified and provides accelerated path towards realizing business value.

It provides the prerequisite operations to be performed on the customer banking world, which is exposed in the form of REST web service API's to decouple presentation and service layer. OBDX needs to be integrated with one of core banking systems to retrieve the customer banking details and execute the set of operations on the core banking system as per the service requirement.

OBDX has adapter layer to integrate with core banking operations. It provides a set of adapter specifications (Java Interfaces) which can be implemented for host specific service invocation. Adapter layer decouples the services from core banking operation. Any number of core banking system can be integrated with OBDX by implementing adapter classes, Adapter layer is responsible for mapping service request /response with host specific request and response.

This document exhibits the integration between core system & OBDX including the basic attributes involved in integration process.

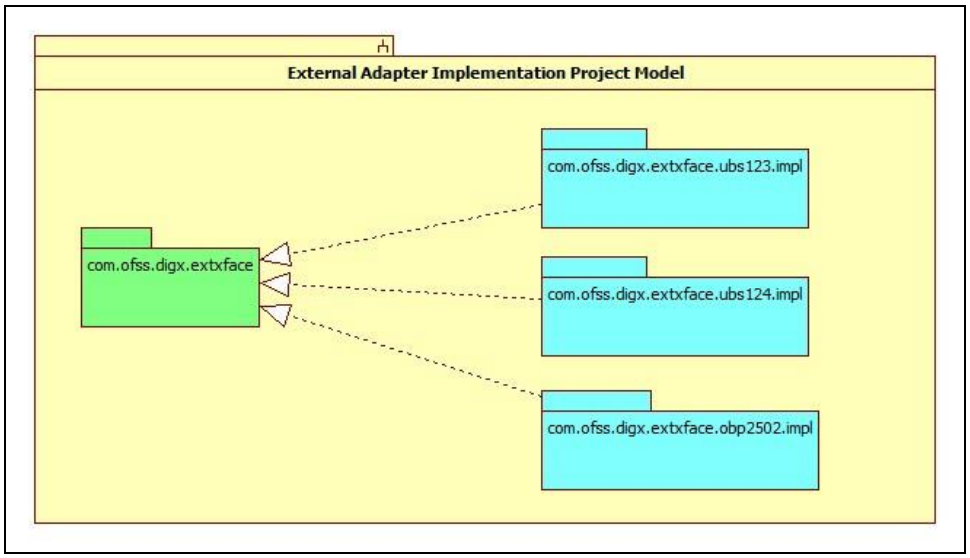
2.2 OBDX Integration Model



2.3 OBDX Adapter Project Model

Above Integration model depicts the OBDX adapter integration with core banking system, Integration can be accomplished by concrete adapter implementations.

Following model illustrates OBDX adapter specifications and its concrete adapter implementation relationship project model.



In above model, project **com.ofss.digx.extxface** contains all the adapter specifications (Java Interface) for external facing adapters. The concrete implementation classes of the adapter interfaces will reside in the host specific adapter implementation project.

Example: To integrate with FCUBS 12.4 core banking system, adapter interfaces should be implemented for host specific service invocation and concrete implementation adapter classes will reside in **com.ofss.digx.extxface.ubs124.impl** project.

Home

3. FCUBS Adapter Implementation

To process the request with FCUBS core banking system, OBDX has set of adapter specifications which would be implemented for host specific services invocation. Concrete implementation adapter classes need to be created by implementing respective adapters interface and interface defining methods should be implemented.

Concrete adapter defining methods may have two types of operation:

- Inquiry Operation
- Transactional Operation

Inquiry operation is process to interchange data between OBDX and FCUBS core banking system without altering customer banking state. It queries on the host system to fetch needed information required for tracking, summarizing the details or processing the transactional operation.

Example: Fetch Customer detail, Accounts detail.

Transactional operation will request to host system for altering/creating end user banking states.

Example: Payments, Account Opening.

3.1 Guideline to Implement Adapter

1. Adapter implementation class must implement the respective interface and provide implementations for all methods defined in the interface.
2. Any exception while invoking core banking services must be translated into OBDX exception (`com.ofss.digx.infra.exceptions.Exception`) and host error code(s) should be mapped to an OBDX error code.

3.2 Inquiry Operation on FCUBS

To inquire data on core banking system, FCUBS provides a set of database view/synonyms object to inquire the required information. A connector schema is required which hosts the required views, synonyms, functions and procedures for querying data in FCUBS. OBDX relies on a middleware API packaged as "com.ofss.extsystem.ubs" which provides host adapters that interact with the connector schema to fetch the required information. To invoke these host adapters, the static Java method `com.ofss.extsystem.ubs.business.extsystems.HostAdapterManager.processRequest(HostRequestDTO)` needs to be invoked from within OBDX adapter implementation. The HostRequestDTO class must be provided with the required request information.

All the FCUBS middleware adapters are configured with unique a request id in the database table `MSTHOSTINTERFACE`. `HostAdapterManager` identifies the adapter class for given request id configured in `MSTHOSTINTERFACE` table and invoke the `processRequest()` method of respective adapter class.

Following steps are required to invoke the host adapter:

1. Create the Request DTO object and fill required fields.
2. Build host request by calling `com.ofss.extsystem.ubs.business.extsystems.HostAdapterHelper.buildHostRequest(RequestDTO)` method.
3. Invoke `HostAdapterManager.processRequest(HostRequestDTO)` with the `HostRequestDTO` created by invoking the method in step 2.

Reference:

```
HostRequestDTO hostRequest= null;

HostResponseDTO hostResponse = null;



AccountDetailsRequest AccountDetailsRequest = new
AccountDetailsRequest();

      AccountDetailsRequest.userContext = new UserContextDTO();

      AccountDetailsRequest.userContext.idEntity = "B001";

      AccountDetailsRequest.userContext.idTxn = "PAR";

      AccountDetailsRequest.userContext.idRequest =
"PARTYACCOUNTREL";

      AccountDetailsRequest.userContext.serviceVersion = 0;

      AccountDetailsRequest.userContext.refIdEntity = "B001";

      AccountDetailsRequest.userContext.userType = "EN1";

      AccountDetailsRequest.account = new AccountNoInputDTO();

      AccountDetailsRequest.account.idCustomer = partyId;

      AccountDetailsRequest.account.acctType = accountType;

 hostRequest =
HostAdapterHelper.buildHostRequest(AccountDetailsRequest);



try {

HostResponse = HostAdapterManager.processRequest (hostRequest);

      } catch (java.lang.Exception e) {

logger.log (Level.SEVERE, formatter.formatMessage ("<exception
```

3.3 Transactional operation on FCUBS

For processing transactional operations, FCUBS core banking system exposes SOAP web services. To invoke the SOAP web services, SOAP client stubs need to be generated with the help of WSDL exposed by FCUBS. The thus generated client stubs should be included in classpath and configure database entries in `DIGX_FW_CONFIG_OUT_WS_CFG_B` table. Create instance of FCUBS Soap client service using `com.ofss.fc.infra.ws.JAXWSFactory.createServiceStub(String, String)` and invoke the respective methods with required request payload.

`com.ofss.fc.infra.ws.JAXWSFactory.createServiceStub(String, String)` method will instantiate the respective SOAP client services by passing the service and operation name. It uses the `DIGX_FW_CONFIG_OUT_WS_CFG_B` database table to retrieve the SOAP WSDL URL, End point service name and proxy services name for instantiating the client services, so all the relevant database entries should be configured in database table for each service operations.

Following step to invoke the soap service:

1. Generate SOAP client stubs from WSDL file.
2. Insert the database entry in `DIGX_FW_CONFIG_OUT_WS_CFG_B` table for the respective service and operation.
3. Get the SOAP client services instance by invoking `com.ofss.fc.infra.ws.JAXWSFactory.createServiceStub(String, String)` method.
4. Create request header instance and fill the mandatory fields.
5. Create request body instance and fill the essential detail.
6. Invoke the respective SOAP method by passing the request parameter containing request header and body.

3.3.1 Create FCUBS SOAP Client Instance

Create an instance of soap client services by invoking `JAXWSFactory.createServiceStub` method by passing service id and operation name arguments to identify the service.

Important: A database entry must be available for respective service and operation in `DIGX_FW_CONFIG_OUT_WS_CFG_B` database table.

```
(FCUBSAccServiceSEI)JAXWSFactory.createServiceStub(WebserviceConstants.
FCUBS_ACCOUNT_SERVICE_SPI, WebserviceConstants.CREATE_TD_ACCOUNT);
```

3.3.2 Get FCUBSHeader Values

Each and every FCUBS soap request requires header object of class FCUBSHeaderType.

The class `com.ofss.digx.ubs.adapter.impl.RequestHeader`, provides all properties to set in FCUBS SOAP request header object.

A `RequestHeader` object should be instantiated by invoking `AbstractAdapterHelper.getRequestHeader` method and set all the required properties in FCUBS soap request header object.

`com.ofss.digx.FCUBS.adapter.impl.AbstractAdapterHelper.getRequestHeader(String, String, String)`

Create the Adapter helper instance and retrieve Request Header Object.

```
AbstractAdapterHelper helper = AbstractAdapterHelper.getInstance();

RequestHeader header = helper.getRequestHeader("IA", "FCUBSAccService",
"ModifyIATDCustAcc");
```

Instantiate the request header and fill the essential details:

```
MODIFYTDCUSTACCFSFSREQ createTDRequest = new MODIFYTDCUSTACCFSFSREQ();



FCUBSHEADERType fcUBSHeaderType = new FCUBSHEADERType();

fcUBSHeaderType.setUSERID(header.getUserid());

fcUBSHeaderType.setCORRELID(header.getCorrelid());

fcUBSHeaderType.setMSGID(header.getMsgid());

fcUBSHeaderType.setDESTINATION(header.getDestination());

fcUBSHeaderType.setMSGSTAT(MsgStatType.fromValue(header.getMsgstat()));

fcUBSHeaderType.setSOURCE(header.getSource());

fcUBSHeaderType.setBRANCH(helper.getHostBranchId(termDeposit.getTermDepo
sitAccountId().getValue()));

fcUBSHeaderType.setUBSCOMP(UBSCOMPType.fromValue(header.getUbscomp()));

fcUBSHeaderType.setMODULEID(header.getModuleid());

fcUBSHeaderType.setSERVICE(header.getService());

fcUBSHeaderType.setOPERATION(header.getOperation());

fcUBSHeaderType.setSOURCEOPERATION(header.getSourceoperation());

createTDRequest.setFCUBSHEADER(fcUBSHeaderType);
```

Invoke the FCUBS SOAP service

```
FCUBSAccServiceSEI clientProcess = (FCUBSAccServiceSEI)
JAXWSFactory.createServiceStub(WebserviceConstants.FCUBS_ACCOUNT_SERVICE
_SPI, WebserviceConstants.CREATE_TD_ACCOUNT);

MODIFYTDCUSTACCFSFSRESresponse =
clientProcess.modifyTDCustAccFS(createTDRequest);
```

Home

4. OBDX-FCUBS Configuration/ Installation

1. To inquire the banking information, FCUBS provides a set of database views/synonyms. These are created on a connector schema which is created at the time of installation of the product.

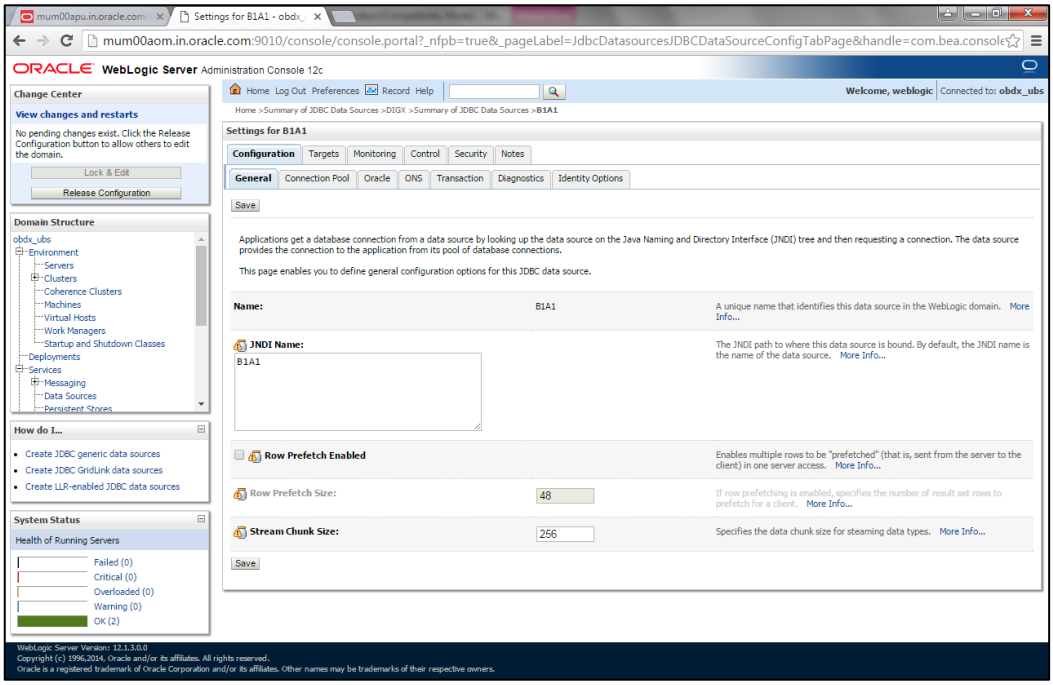
A datasource must be created on the application server where the application has been deployed. The name of the datasource must be specified in the jdbc.poperties file for the property name FCON.A1.JNDI.NAME, FCON.AP.JNDI.NAME and FCON.B1A1.JNDI.NAME.

Below properties should be define in config/jdbc.properties file

```
FCAT.WEBSERVER.ID=ZZ

FCAT.APPSERVER.ID=ZZ

FCAT.ROUTER.DAEMON.NAME=ROUTER

DISPLAY.MESSAGE.ID=N

FCAT.LDB.DATABASE.NAME=ORACLE


FCON.A1.LDB.DRIVER=oracle.jdbc.driver.OracleDriver

FCON.A1.LDB.URL=%%DB_CONNECT_STRING%%

FCON.A1.JNDI.NAME=B1A1

FNDI.A1.ABCD=


FCON.AP.LDB.DRIVER=oracle.jdbc.driver.OracleDriver

FCON.AP.LDB.URL=%%DB_CONNECT_STRING%%

FCON.AP.JNDI.NAME=B1A1

FNDI.AP.ABCD=


B001.A1=B1A1

FNDI.B1A1.ABCD=

FCON.B1A1.JNDI.NAME=B1A1

FCON.B1A1.LDB.DRIVER=oracle.jdbc.driver.OracleDriver

FCON.B1A1.LDB.URL=%%DB_CONNECT_STRING%%
```

4.1 Server Setup

4.1.1 Create Data source with JNDI name as defined in config/jdbc.properties file.



Please note that in case of multi entity scenario, the JNDI name should be in the format <ENTITY_ID>_B1A1. For example, for entity identifier as ‘UBDX_BU’, the JNDI name will be OBDX_BU_B1A1.

4.1.2 Server Arguments

-Dfcat.jvm.id=1

4.2 Deployment

We have FCUBS deployable ear containing all the jar files required to invoke the FCUBS adapter.

Following deployable should be deployed on OBDX server:

obdx.extystem.domain.ear

It contains all the related libraries required to process FCUBS system request.

Home

5. Configuration for Integration of FCUBS Interaction with OBDX Mailbox

Out of the box installation OBDX provided with the mailbox to interact within OBDX i.e. Back Office user of the banks in the OBDX will be able to access the mail send by the customer.

If the OBDX Mails by the customer need to be integrated with the FCUBS Interaction module then the below steps should be taken care of.

Assumption:- Installation of OBDX has been completed and configuration of all the entity requires in the system has been completed.

Execute below scripts in the OBDX Admin Schema to configure entity specific integration of mailbox with interaction module in FCUBS.

Insert into DIGX_FW_CONFIG_ALL_O (PROP_ID,PREFERENCE_NAME,PROP_VALUE,DETERMINANT_VALUE,CREATED_BY,CREATION_DATE,LAST_UPDATED_BY,LAST_UPDATED_DATE) values ('MAILBOX_PROCESSOR','MailboxProcessor','com.ofss.digx.app.collaboration.service.mailbox.message.mail.processor.RemoteMailboxProcessor','**OBDX_BU1**','superadmin',sysdate,'superadmin',sysdate);

Insert into DIGX_FW_CONFIG_ALL_O (PROP_ID,PREFERENCE_NAME,PROP_VALUE,DETERMINANT_VALUE,CREATED_BY,CREATION_DATE,LAST_UPDATED_BY,LAST_UPDATED_DATE) values ('MAIL_REPOSITORY_ADAPTER','RepositoryAdapterFactories','com.ofss.digx.domain.collaboration.entity.mailbox.message.mail.repository.adapter.RemoteMailRepositoryAdapter,com.ofss.digx.domain.collaboration.entity.mailbox.message.mail.repository.adapter.LocalMailRepositoryAdapter','**OBDX_BU1**','superadmin',sysdate,'superadmin',sysdate);

Highlighted values can be varied based on the entity configuration require to be integrated with FCUBS interaction module.

6. Configuration for Attachments in OBDX Mailbox or Interaction Module

By default the mailbox attachment will be integrated to OIPM. If the Bank wants to change this then below are the configuration steps.

1) If bank want to use local database to save uploaded document i.e. other than OIPM then below script need to be executed on OBDX Admin schema. This will point content service to the local data base for mailbox attachment specifically.

UPDATE DIGX_FW_CONFIG_ALL_B SET PROP_VALUE ='**com.ofss.digx.domain.content.entity.repository.adapter.LocalContentRepositoryAdapter**' WHERE PROP_ID = 'IM_CONTENT_REPOSITORY_ADAPTER'

2) If bank want to use OIPM server to manage uploaded document then below script need to be executed on OBDX Admin schema. This will point content service to the OIPM server for mailbox attachment specifically.

UPDATE DIGX_FW_CONFIG_ALL_B SET PROP_VALUE ='**com.ofss.digx.domain.content.entity.repository.adapter.RemoteContentRepositoryAdapter**' WHERE PROP_ID = 'IM_CONTENT_REPOSITORY_ADAPTER'

Home