

Notification Development
Oracle FLEXCUBE Investor Servicing
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1. Preface

This document describes the steps to develop the notification XML and notification trigger using Open Development.

1.1 Audience

The Open Development Notification Development book is intended for the FLEXCUBE Application Developers who perform the following tasks:

- Develop new Notification

To Use this manual, you need conceptual and working knowledge of the below:

Proficiency	Resources
FLEXCUBE IS Development overview	Overview Guide
Interface Getting started	Interface Getting started
Open Development Getting started	Getting Started
Open Development reference	Reference
Web service development to have query web service in place	Web Service Development

1.2 Related Documents

For more information on FLEXCUBE IS environment, refer the following documents

- Overview Guide
- Interface Getting started
- Getting Started
- Reference
- Web Service Development

1.3 Conventions

The following text conventions are used in this document:

Convention Meaning

boldface	Boldface type indicates graphical user interface elements (for example, menus and menu items, buttons, tabs, dialog controls), including options that you select.
<i>italic</i>	Italic type indicates book titles, emphasis, or particular values. placeholder variables for which you supply.

monospace	Monospace type indicates language and syntax elements, directory and file names, URLs, text that appears on the screen, or text that you enter.
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2.1 How to Use this Guide

The information in this guide includes:

- [Chapter 2, “Introduction”](#)
- [Chapter 3, “Notification - Getting started”](#)
- [Chapter 4, “Pre-request for Notification development and Testing”](#)
- [Chapter 5, “Notification Development”](#)

3. Notification - Getting Started

3.1 What is Notification

Notification framework in FLEXCUBE IS is used to communicate the business event happened in FLEXCUBE IS to external systems. Depending upon the event, the XML message is pushed to external systems asynchronous Queues for their consumption.

3.2 Notification Trigger

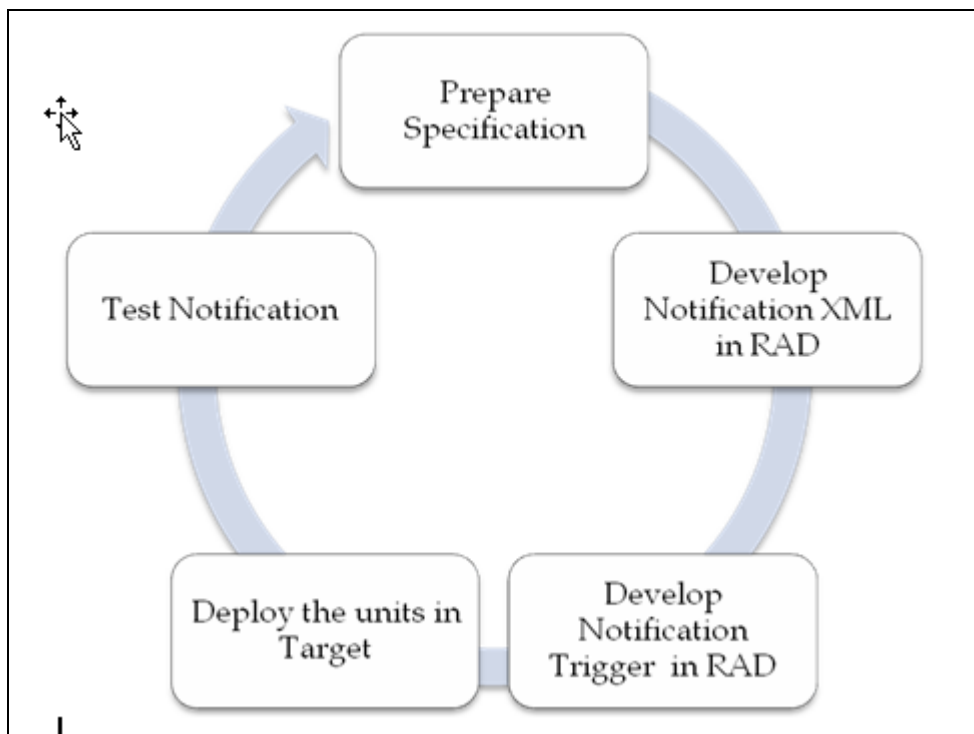
Notification Triggers is developed to recognize the event and then invoke the notification process. This trigger is developed using extensible Open Development Tool.

4. Pre-Request for Notification Development and Testing

Following are pre-request for notification development:

- Target FLEXCUBE Environment with Notification framework installed
- Open Development environment
- Required Query Web services developed and tested

5. Notification Development



5.1 Notification Specification

Identify the notification requirement as below

- What is the Notification function ID name for Open Development XML (Third character should be N)?
- What is the Notification code?
- What is the Base table in FLEXCUBE IS that triggers the notification?
 - What operation at base table triggers (insert/update/delete)?
 - What is the where clause for filter?
- What is the query Web service to be used?
 - What is the operation?
 - What are the tags required?

Example:

- Notification function ID name - STNCUMOD
- Notification code - NOTIF_CA_CUSTACC_MOD
- Base table - STTM_CUST_ACCOUNT
 - Operation – DELETE
 - Filter – Account class type in (S , U)
- Web service to be used - FCUBSAccService
 - Operation - QueryCustAcc

- Request node - Cust-Account-IO

5.2 **Notification XML Development**

Notification Open Development XML development, create the following files:

- Open Development XML
- SPC
- SQL
- Static Data

5.2.1 **Development Steps**

- Login extensible Open Development tool and select “Notification” from browser menu
- Select the Action “New”

The screenshot displays the Oracle Flexcube Management and Integration Console. The main window is titled "Notification Maintenance". At the top, there is a "Browser" menu and a "Save XML Path" field. The "Action" dropdown is set to "New". The "Notification Function" field is empty. Below these, there are several input fields for defining a notification: "Notification Code", "Description", "Operation" (set to "Insert"), "Filter Type" (set to "None"), "Gateway Operation", "Gateway Service", and "Gateway IO Request". To the right, there are fields for "Module", "Module Description", "Base Table", "PK Cols", and "PK Types". There are also checkboxes for "Full Screen Reply" and "HO Only". A "Filter Logic" section contains a text area with the logic: "Set NOTIFY To Y/N & Refer Current Record as CURRENT_RECORD". At the bottom, there is a "Web Service Tags" section with a table that has columns for "Order", "Xsd Filed", "Table Field", and "Data Type". The table is currently empty.

- Provide details as per the specification prepared earlier.



Refer Reference for meaning of each item in screen

Order	Xsd Filed	Table Field	Data Type
1	CUSTOMER_NO	CUSTOMER_NO	VARCHAR2
2	LOCATION	LOCATION	VARCHAR2
3	MEDIA	MEDIA	VARCHAR2

- Save and Generate. Further section explains the files that would be created.

5.2.2 Open Development XML

Open Development XML would be created as Notification Function ID>_Open Development.xml

Example

LDNTRG_Open Development.xml

5.2.3 SPC

Following SPC files would be created

- <module>pkcs_<Notification Function ID>_main.spc
- <module pkcs_<Notification Function ID>_kernel.spc
- <module pkcs_<Notification Function ID>_custom.spc
- <module pkcs_<Notification Function ID>_cluster.spc

Example

- ldpks_ldntrg_main.spc
- ldpks_ldntrg_kernel.spc

- ldpks_ldntrg_custom.spc
- ldpks_ldntrg_cluster.spc

5.2.4 **SQL**

Following SQL files would be created

- <module pks__<Notification Function ID>__main.sql
- <module pks__<Notification Function ID>__kernel.sql
- <module pks__<Notification Function ID>__custom.sql
- <module pks__<Notification Function ID>__cluster.sql

Example

- ldpks_ldntrg_main.sql
- ldpks_ldntrg_kernel.sql
- ldpks_ldntrg_custom.sql
- ldpks_ldntrg_cluster.sql

5.2.5 **Static Data**

Following INC files would be created

- GWTM_NOTIFICATION_TAG_MAP___<Notification Function ID>_.INC
- GWTM_NOTIFICATIONS_MASTER___<Notification Function ID>_.INC
- VARIABLE_MAPPING___<Notification Function ID>_.INC

Example

- GWTM_NOTIFICATION_TAG_MAP__LDNTRG.INC
- GWTM_NOTIFICATIONS_MASTER__LDNTRG.INC
- VARIABLE_MAPPING__LDNTRG.INC

5.2.6 **Verification Log**

Open Development creates the log file <Notification Function ID>_LOG.txt for generation status.

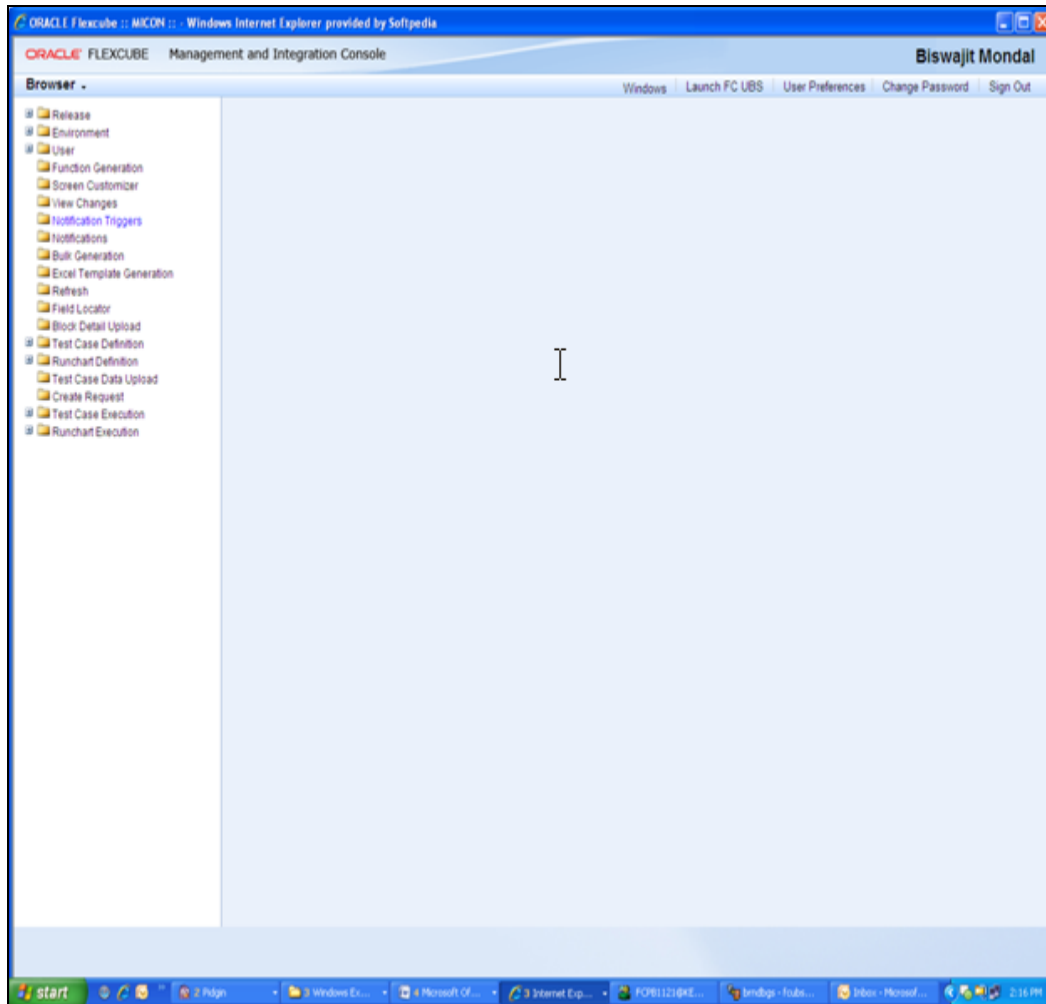
Example:

LDNTRG_LOG.txt

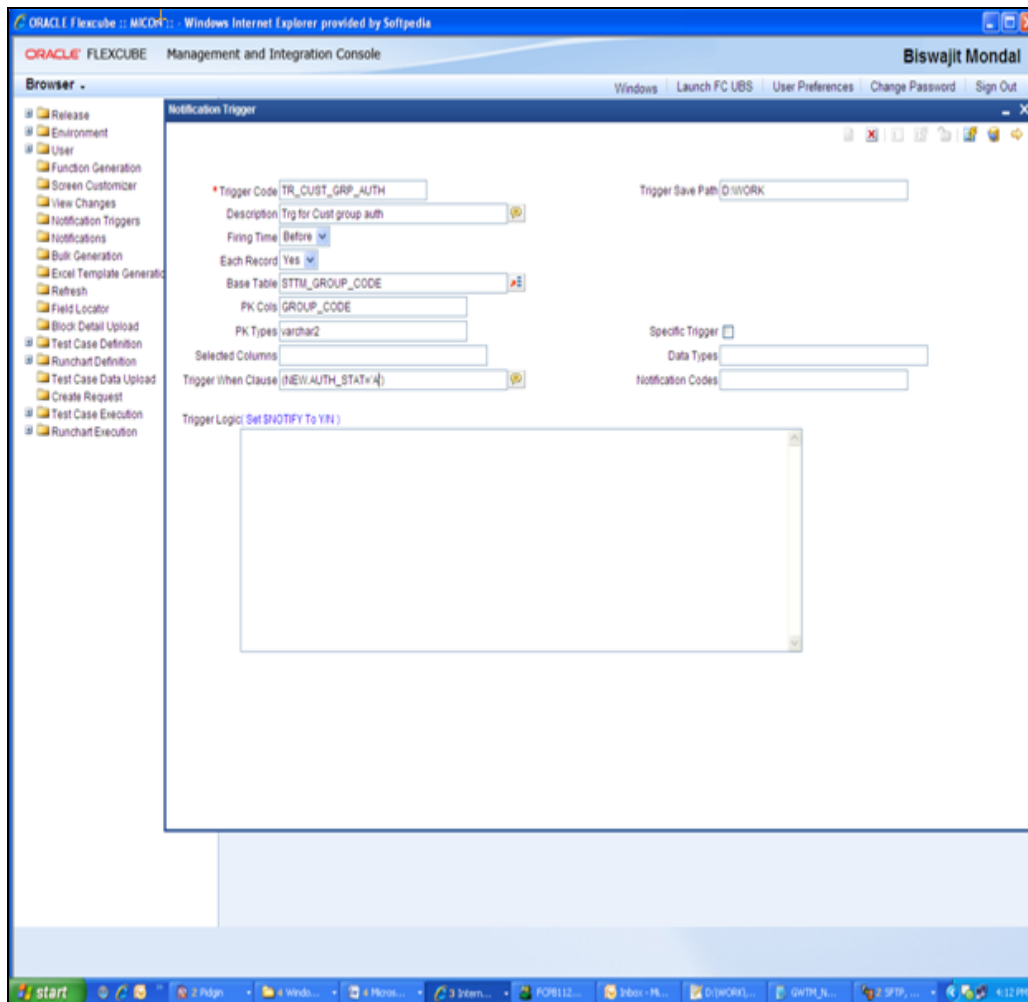
5.3 **Notification Trigger development**

5.3.1 **Development steps**

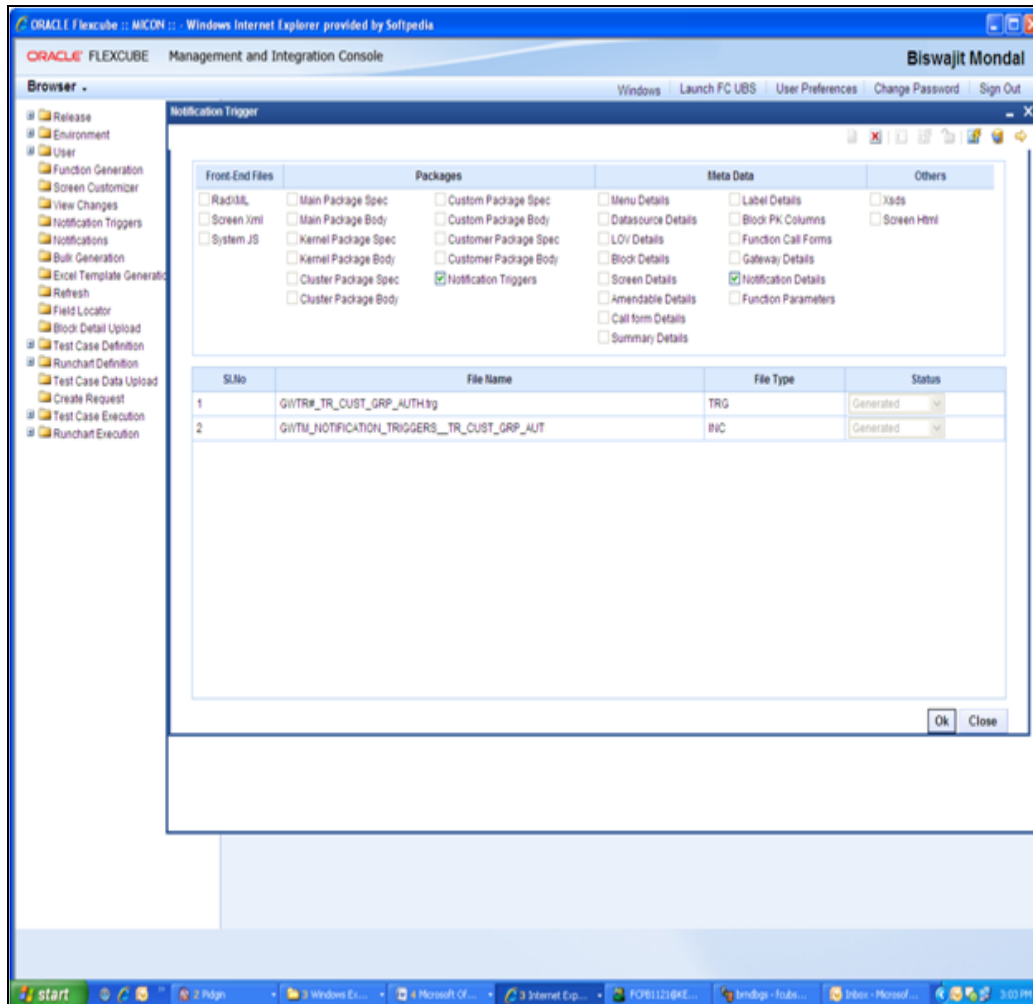
- Launch extensible Open Development and select “Notification Triggers”



- Select New and provide details as per the specification prepared earlier



- Save and generate files



5.3.2 Files

Notification Trigger development would create following files

- GWTM_NOTIFICATION_TRIGGERS__<Notification code>.INC
- GWTR#_<Notification code>.TRG

Example:

- GWTM_NOTIFICATION_TRIGGERS__TRIG_CONTRACT.INC
- GWTR#_TRIG_CONTRACT.TRG

5.4 Deploy Notification

5.4.1 Notification Open Development Related Deployment

Compile the following files in Target FLEXCUBE IS Database schema

- <module>pks_<Notification Function ID>_main.spc
- <module>pks_<Notification Function ID>_kernel.spc

- <module pks_<Notification Function ID>_custom.spc
- <module pks_<Notification Function ID>_cluster.spc
- <module pks__<Notification Function ID>__main.sql
- <module pks__<Notification Function ID>__kernel.sql
- <module pks__<Notification Function ID>__custom.sql
- <module pks__<Notification Function ID>__cluster.sql
- GWTM_NOTIFICATION_TAG_MAP__<Notification Function ID>_.INC
- GWTM_NOTIFICATIONS_MASTER__<Notification Function ID>_.INC
- VARIABLE_MAPPING__<Notification Function ID>_.INC

5.5 **Notification Trigger Deployment**

Compile the following files in Target FLEXCUBE IS Database schema

GWTM_NOTIFICATION_TRIGGERS__TRIG_CONTRACT.INC

GWTR#_TRIG_CONTRACT.TRG

5.6 **Test Notification**

This section explains the run time notification flow and testing steps

5.6.1 **Notification Flow**

The notification process occurs as two parts:

1. Oracle JOBS created using FCJ Scheduler framework that sends data required for notification to an internal JMS queue.
2. Gateway MBD that lists on internal JMS queue, that picks the notification XMLs and prepare full web service response and send to external system queues.

5.6.2 **Scheduler Based Notification**

1. The Notification Process in FLEXCUBE can be done using the jobs scheduler as follows:
2. The trigger generated from Open Development will be inserting key details into a static notification log (STTB_NOTIFICATION)
3. Once Job is triggered, a request is sent to EJB layer from job execution class and the notification log table will be polled for unprocessed records.
4. Each unprocessed record is locked.
5. The record is verified against the notification maintenance and checked whether notification is to be sent or not.
6. If notification is to be sent, pre notification message xml is built and it is sent to internal NOTIFY_QUEUE(JMS queue) configured in Gateway layer.
7. The job is then rescheduled to fire next time based on the previous execution.

Refer Gateway Installation documents on how to setup the Queues

5.6.3 MDB Based Notification Flow

Notification processes in MDB are as follows:

1. Notification MDB listens on the internal NOTIFY_QUEUE(JMS queue)
2. On any message received, the MDB identifies which schema to connect using the JNDI name being present as part of the message xml.
3. Gateway notification processing package is called from MDB to build notifications.
4. In MDB, the notifications built is processed and sent to the destination specified in corresponding notification.
5. In case of exception the transaction is rolled back.
6. If all notifications are successfully processed ,transaction is committed

5.6.4 Triggering Notification and Testing

Follow the below steps to test notification

- Simulate a case where base table under goes data change.
- Check record populated at STTB_NOTIFICATION table
- Check Notification message
GWTBS_NOTIFICATIONS_LOG.NOTIFICATION_MESSAGE



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