

Oracle® Banking Loans Servicing

Administrator Guide

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Oracle Banking Loans Servicing Administrator Guide, Release 2.8.0.0.0

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Contents

Preface	19
Audience	19
Documentation Accessibility	19
Organization of the Guide	19
Related Documents	20
Conventions	21
1 Users Administration	23
1.1 Creating Users in Oracle Identity Manager (OIM)	23
1.2 Creating Roles in Oracle Identity Manager (OIM)	27
1.3 Assigning Roles to Users in OIM	31
1.4 Locking Users in OIM	35
1.5 Unlocking Users in OIM	37
1.6 Resetting User Password in OIM	38
1.7 User Management Using the Admin Application	42
1.8 Unlocking Users in Oracle WebLogic Server (OWS) Administration Console ..	49
1.9 Creation of first time user to access OBLS	54
2 Approvals Management	59
2.1 Discretionary Pricing Assessment (DPA)	59
2.1.1 Setup Details	59
2.1.1.1 Policy Setup in UI	60
2.1.1.2 SOA Composer Rules Setup	65
2.1.1.3 SMS Setup	76
2.1.2 Performing the Transaction	79
2.2 Discretionary Credit Assessment (DCA)	83

2.2.1 Setup Details	84
2.2.1.1 Policy Setup in UI	84
2.2.1.2 SOA Composer Rules Setup	91
2.2.1.3 SMS Setup	91
2.2.2 Performing the Transaction	94
2.3 Enabling Worklist Authorization	96
2.4 BPM Routing Rules Setup	103
3 Defining Task Configuration Rules	119
3.1 Important Rule Artifacts	119
3.1.1 Rules Dictionary	119
3.1.2 Decision Function	120
3.1.3 Rulesets	121
3.2 Inputs to Decision Function	121
3.2.1 Custom Input Attributes	122
3.3 Output from Decision Function	123
3.3.1 List of Configurable Attributes in Rule Outcome	124
3.3.2 List of Functions to Set Rule Outcome	126
4 Data Management	131
4.1 Batch Execution	131
4.1.1 Database Backup	131
4.1.2 Navigate to End of Day Page	131
4.1.3 Cutoff Category Execution	132
4.1.4 End of Day (EOD) Category Execution	134
4.1.5 Internal System EOD Category Execution	136
4.1.6 Beginning of Day (BOD) Category Execution	139
4.1.7 Housekeeping Category Execution	141

4.1.8 Alert Generation Category Execution	143
4.2 Batch Exception Recovery	145
5 Setting Up The Bank And Branch	149
5.1 Common Services Day 0 Setup	149
5.1.1 Core Maintenances	149
5.1.1.1 Head Office Setup	150
5.1.2 Currency Maintenances	150
5.1.3 Calendar Maintenances	150
5.2 Accounting Day 0 Setup	151
5.3 Product Manufacturing Day 0 Setup	152
6 Application Monitoring Using Administration Application	155
6.1 Dynamic Monitoring Service (DMS)	155
6.1.1 Usage	155
6.1.2 Monitoring Application using the OPA001 page	156
6.1.2.1 Monitoring Application Performance (Fast path: OPA001)	156
6.1.2.1.1 Application Performance Summary	156
6.1.2.1.2 Log Level	157
6.1.2.1.3 Application Performance	157
6.2 Batch Performance Monitoring	162
6.2.1 Use Cases	162
6.2.2 Monitoring Batch Performance Using OPA003 page	164
6.2.2.1 Monitor Batch Performance (Fast path: OPA003)	164
6.2.3 Histogram of Shell Attribute Comparison	173
6.3 ODI Batch Handoff Monitoring	173
7 Application Monitoring Using EM Plugin	177
7.1 Monitoring Application Using EM Plugin	177

7.1.1 Oracle Enterprise Manager (EM)	177
7.1.2 UI	178
7.1.3 Host	180
7.1.4 SOA	182
7.1.5 Security Stack (OID and OAM)	182
7.1.6 Document Generation Outbound Components (Documaker, BIP, IPM) ...	183
7.1.7 ATM and POS (Point Of Sales) Channels	184
7.1.8 Outbound OFSAA call	184
7.1.9 Monitoring Views	184
7.1.9.1 Batch Monitoring	185
7.1.9.2 Application Monitoring	187
7.1.9.2.1 Application Services	187
7.1.9.2.2 User Interface	189
7.1.9.2.3 Origination User Interface	191
7.1.9.2.4 Integration	193
8 Configuration Export-Import Operations	197
8.1 Objective	197
8.2 Export	197
8.3 Import	197
8.4 Export All	197
8.5 Import All	199
8.6 Config Compare	200
8.7 Data Store Configuration	201
8.7.1 DB Data Store	201
8.7.2 File Data Store	201
8.7.2.1 Configuration for Export	202

8.7.2.2 Configuration for Import	202
8.8 How to Export Records	202
8.8.1 Exporting Single Record	203
8.8.2 Exporting All Records	209
8.9 How to Import Records	212
8.9.1 Importing Single Record	212
8.9.1.1 Using API Client	212
8.9.2 Importing All Records	214
8.10 Configuration Comparison	216
8.10.1 Compare Business Configuration (Fast Path: OPA005)	216
8.10.2 Usage	217
8.11 Application Configuration	219
8.11.1 Cache Configuration	219
9 Batch Shells in OBLs	221
9.1 Batch Shells Description	221
9.2 Batch Shells Execution Sequence	239
10 Information Lifecycle Management (ILM)	242
10.1 Configuration	242
10.2 Installation	242
10.2.1 Prepare Scripts	242
10.2.2 Create Tablespace	243
10.2.3 Create Partition Script	243
10.2.4 Run Partition Script	246
10.2.5 Create and Register ADO Policies based on Lifecycle Pattern	246
10.2.6 Verify Registered ADO Policies	247
10.3 Policy Execution	247

11 Transparent Data Encryption (TDE)	248
11.1 Configuration	248
11.2 Installation	248
11.2.1 Prepare Scripts to Encrypt Sensitive Data	249
11.2.2 Create TDE Keystore	249
11.2.3 Edit sqlnet.ora file	250
11.2.4 Run Created Alter Script	250
12 Masking Customer Private Data	252
12.1 Configuration	252
12.2 Installation	253
12.2.1 Prepare Scripts to Encrypt Sensitive Data	253
12.2.2 Create Schema for RO and ERO User	253
12.2.3 Execute Created Scripts through Encryption Tool	254
13 Configure ODI for Inbound Document Upload	256
14 Additional Recommendations	260
14.1 SOA Related	260
14.1.1 Enable Auto Purge Job	260
14.1.2 Enable Lazy Loading	260
14.2 BPM Worklist Related	261
14.2.1 Disable Claim Action from Task Details Page	261
14.2.2 Always Open Human Task Details in External Window	262

List of Figures

Figure 1–1 Creating Users in OIM - Log in	23
Figure 1–2 Creating Users in OIM - Manage Section	24
Figure 1–3 Creating Users in OIM - Click Create	25
Figure 1–4 Creating Users in OIM - Enter User Details	26
Figure 1–5 Enter User Details (Continued)	27
Figure 1–6 Creating Roles in OIM - Manage Section	28
Figure 1–7 Creating Roles in OIM - Click Create	29
Figure 1–8 Creating Roles in OIM - Enter Role Details	30
Figure 1–9 Creating Roles in OIM - Role Created Successfully	31
Figure 1–10 Assigning Roles in OIM - Requesting Roles	32
Figure 1–11 Assigning Roles in OIM - Adding to Cart	33
Figure 1–12 Assigning Roles in OIM - Checkout Cart	34
Figure 1–13 Assigning Roles in OIM - Submit Cart	35
Figure 1–14 Locking Users in OIM	36
Figure 1–15 User Locked Successfully	37
Figure 1–16 Unlocking Users in OIM	38
Figure 1–17 Resetting User Password in OIM	39
Figure 1–18 Resetting User Password in OIM - Manually or Auto-generate	40
Figure 1–19 Resetting User Password in OIM - New Password	41
Figure 1–20 Password Reset Successfully	42
Figure 1–21 Adding a User	43
Figure 1–22 Enter Mandatory Details	44
Figure 1–23 Applying Changes	45
Figure 1–24 Adding User to a Group	46

Figure 1–25 Available and Assigned Roles	47
Figure 1–26 Adding User to Assigned Roles Table	48
Figure 1–27 Save Changes	49
Figure 1–28 OWS Log in	50
Figure 1–29 base_domain	51
Figure 1–30 Security tab	52
Figure 1–31 Unlock User	53
Figure 1–32 User Successfully Unlocked	54
Figure 1–33 Log in Oracle Fusion Middleware Control	55
Figure 1–34 Click Application Roles	56
Figure 1–35 Select Administrators Role	56
Figure 1–36 Add Principal	57
Figure 2–1 Log in to OBLs UI to Configure Policies	60
Figure 2–2 Search for SM502 in Fast Path	61
Figure 2–3 Policy Management	62
Figure 2–4 Enter Service for Policy Definition	62
Figure 2–5 Effect of the Policy	63
Figure 2–6 Action of the Policy	64
Figure 2–7 Conditions of the Policy	65
Figure 2–8 Log in to SOA Composer	66
Figure 2–9 Find the Rules for Service	67
Figure 2–10 Filter Rules	68
Figure 2–11 Searching Specific Process	69
Figure 2–12 Creating the Rule	70
Figure 2–13 Selecting Rules File	71
Figure 2–14 Adding Attributes to the Rule File	72

Figure 2–15 Adding Attributes to the Rule File	73
Figure 2–16 Validating Rules File	74
Figure 2–17 Saving Rules File	75
Figure 2–18 Publishing Rules File	76
Figure 2–19 Search for Service Using Entire Service Name	77
Figure 2–20 Select the Service to be Configured	78
Figure 2–21 Severity Tab - Add Severity	79
Figure 2–22 Initiating Transaction	80
Figure 2–23 Fee Negotiation	80
Figure 2–24 Log in to Approval Worklist	81
Figure 2–25 Approve or Reject Work item	82
Figure 2–26 Viewing Status of Work item	83
Figure 2–27 Log in to OBLS UI to Configure Policies	85
Figure 2–28 Search for SM502 in Fast Path	86
Figure 2–29 Policy Management	87
Figure 2–30 Enter Service for Policy Definition	88
Figure 2–31 Effect of the Policy	89
Figure 2–32 Action of the Policy	90
Figure 2–33 Conditions of the Policy	91
Figure 2–34 Search for Service Using Entire Service Name	92
Figure 2–35 Select the Service to be Configured	93
Figure 2–36 Approval Checks tab - MATRIX_AUTH	94
Figure 2–37 Initiating Origination Task Flow	95
Figure 2–38 Approving the Task	96
Figure 2–39 Select the Service to be Configured	97
Figure 2–40 Search for Service using TASK CODE + Search text (in case of non Origination)	98

Figure 2–41 Approval Checks tab - Add Approval Checks	99
Figure 2–42 Dual Control	100
Figure 2–43 Add New Severity	101
Figure 2–44 Save Severity Details	102
Figure 2–45 Update Severity and Save	103
Figure 2–46 Worklist App - Administration Link	104
Figure 2–47 Task Configuration	105
Figure 2–48 Search Task Types	106
Figure 2–49 Task Editing	107
Figure 2–50 Configuring Rules - Edit Icon	108
Figure 2–51 Configuring Rules - Rules tab	109
Figure 2–52 Expand Rule	110
Figure 2–53 Advanced Settings	111
Figure 2–54 Rule Expansion	112
Figure 2–55 Enabling Rule	113
Figure 2–56 Adding New Row of Condition	114
Figure 2–57 Expanding Payload	115
Figure 2–58 Selecting Fact	116
Figure 2–59 Updating Fact Value	117
Figure 2–60 Select Approver Group	118
Figure 3–1 SOA Composer - Open Rules Dictionary Browser	119
Figure 3–2 SOA Composer – Selecting Rules Dictionary	120
Figure 3–3 SOA Composer – Selecting Decision Function	120
Figure 3–4 SOA Composer - Adding Rulesets to Decision Function	121
Figure 3–5 SOA Composer - Viewing a ruleset	121
Figure 3–6 SOA Composer - Viewing inputs to a Decision Function	122

Figure 3–7 SOA Composer – Example Usage of Custom Attributes	123
Figure 3–8 SOA Composer – Viewing Output of a Decision Function	123
Figure 3–9 SOA Composer – Example for adding Stage Participant	125
Figure 3–10 SOA Composer – Example usage of custom attributes	126
Figure 4–1 End of Day (Fast path:EOD10)	132
Figure 4–2 Cutoff Category - Not Started	133
Figure 4–3 Cutoff Category - Start	133
Figure 4–4 Cutoff Category - Complete	134
Figure 4–5 EOD Category - Not Started	135
Figure 4–6 EOD Category - Start	135
Figure 4–7 EOD Category - In Progress	136
Figure 4–8 EOD Category - Complete	136
Figure 4–9 Internal System EOD Category - Not Started	137
Figure 4–10 Internal System EOD Category - Start	138
Figure 4–11 Internal System EOD Category - In Progress	138
Figure 4–12 Internal System EOD Category - Complete	139
Figure 4–13 BOD Category - Not Started	140
Figure 4–14 BOD Category - Started	140
Figure 4–15 BOD Category - In Progress	141
Figure 4–16 BOD Category - Completed	141
Figure 4–17 Housekeeping Category - Not Started	142
Figure 4–18 Housekeeping Category - In Progress	143
Figure 4–19 Housekeeping Category - Completed	143
Figure 4–20 Alert Generation Category - Not Started	144
Figure 4–21 Alert Generation Category - In Progress	145
Figure 4–22 Exception Details	146

Figure 4–23 Exception Record Details	147
Figure 4–24 Exception record in Worklist application	148
Figure 6–1 Developers	155
Figure 6–2 IT Technical Staff	156
Figure 6–3 Monitoring Application Performance	156
Figure 6–4 Application Performance Summary	157
Figure 6–5 Log Level	157
Figure 6–6 Alert State	158
Figure 6–7 Select Task Code	160
Figure 6–8 Selection of Desired Transaction	160
Figure 6–9 Transaction Details	161
Figure 6–10 Transaction Metrics	161
Figure 6–11 Alert and Trend Details	161
Figure 6–12 Failure Events	162
Figure 6–13 Developers	163
Figure 6–14 IT Technical Staff	163
Figure 6–15 IT Technical Staff - Monitor Batch Stats	163
Figure 6–16 Batch Performance Monitoring	164
Figure 6–17 Batch Performance Monitoring - Shell Details	164
Figure 6–18 Batch Performance Monitoring - Relative Performance Summary	165
Figure 6–19 Shell Details	167
Figure 6–20 Shell Details - DDA Standing Instructions	167
Figure 6–21 View of Batch Run	168
Figure 6–22 Stream Based Shells	169
Figure 6–23 Exception Log	169
Figure 6–24 Report Based Shells	170

Figure 6–25 Status of Report Based Shell	171
Figure 6–26 Exception Report	171
Figure 6–27 Sample Report	172
Figure 6–28 Exception Log Table	172
Figure 6–29 Graphs	173
Figure 6–30 Input Parameters for Batch Handoff	174
Figure 6–31 Execution Unit	175
Figure 6–32 Abort Statistics	175
Figure 6–33 Failure Error Description	176
Figure 7–1 Oracle Enterprise Manager	178
Figure 7–2 UI Cluster in EM	179
Figure 7–3 WebLogic Domain for UI	179
Figure 7–4 Metrics Chart	180
Figure 7–5 Host Cluster in EM	181
Figure 7–6 Host Target in EM	181
Figure 7–7 Metrics Chart	182
Figure 7–8 Viewing Process List	182
Figure 7–9 OID WebLogic Domain	183
Figure 7–10 Document Generation Status	183
Figure 7–11 BIP Deployment	184
Figure 7–12 EM Monitoring	184
Figure 7–13 Web Monitoring	184
Figure 7–14 Database Server Info	185
Figure 7–15 Batch Monitoring Status	186
Figure 7–16 Batch Configuration	186
Figure 7–17 WebLogic Service Info	187

Figure 7–18 Application Metrics of Application Services for all servers in cluster ...	188
Figure 7–19 Application Metrics of Application Services for selected server	188
Figure 7–20 Application Metric for all UI servers in cluster	190
Figure 7–21 Application Metrics of UI components for selected server	190
Figure 7–22 Application Metrics of Origination UI Components for all UI servers in cluster	192
Figure 7–23 Application Metrics of Origination UI components for selected server .	192
Figure 7–24 Application Metrics of all outbound services called from all host servers in cluster	194
Figure 7–25 Application Metrics of all outbound services called from selected server	194
Figure 8–1 File Data Store	202
Figure 8–2 Exported Data	211
Figure 8–3 Exported Files	212
Figure 8–4 Importing Data Using SOAP UI - Storing Response	216
Figure 8–5 Entity Comparison	217
Figure 8–6 Entity Comparison Results	217
Figure 8–7 Progress Bar	218
Figure 8–8 Comparison Details	218
Figure 8–9 Attributes Difference	219
Figure 10–1 Partition Script - SQL Statement	245
Figure 10–2 Utility Table Creation Script	246
Figure 10–3 Verify ADO Policies	247
Figure 13–1 Credentials	257
Figure 13–2 Example of premissions	257
Figure 13–3 Connection details	258
Figure 14–1 Auto Purge	260

Figure 14–2 Lazy Loading Settings	261
Figure 14–3 Claim Action	261
Figure 14–4 Enable External Window option	262

List of Tables

Table 2–1 List of Functions for Fee Configuration	59
Table 2–2 List of Functions for UDM Configuration	59
Table 2–3 Facts Required for the MCD Approvals	83
Table 6–1 Alert State	158
Table 6–2 Category Details	165
Table 6–3 Shell Details	166
Table 6–4 Stream Details	168
Table 6–5 Reports Table	170
Table 7–1 Notations in EM	177
Table 7–2 Details of the Application Metrics table of Application Services	188
Table 7–3 Details of the Application Metrics table of UI Components	190
Table 7–4 Details of the Application Metrics table of Origination UI Components ..	192
Table 7–5 Details of the Application Metrics table of all Outbound Services	194
Table 9–1 Shell Description	221
Table 9–2 Shell Execution Sequence	239
Table 10–1 Values for ILM Configuration	242
Table 11–1 TDE Configuration	248
Table 12–1 TDE Configuration	252

Preface

This guide describes how to administer the Oracle Banking Loans Servicing applications environment, including user administration, batch execution, DPA approvals, application monitoring, and bank, branch and channels setup.

Oracle recommends that you review its contents before installing, or working with the product.

This preface contains the following topics:

- [Audience](#)
- [Documentation Accessibility](#)
- [Organization of the Guide](#)
- [Related Documents](#)
- [Conventions](#)

Audience

This guide is intended for the administrators of Oracle Banking Loans Servicing.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/us/corporate/accessibility/index.html>

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Organization of the Guide

This document contains:

[Chapter 1 Users Administration](#)

This chapter describes all user management related activities to be performed by an administrator for Oracle Banking Loans Servicing.

[Chapter 2 Approvals Management](#)

This chapter describes Discretionary Pricing Assessment (DPA) approvals, manual credit decision approvals, worklist authorization related activities, and SOA Composer rules setup to be performed as an administrator.

[Chapter 3 Defining Task Configuration Rules](#)

This chapter describes various configurations that can be done for human tasks.

[Chapter 4 Data Management](#)

This chapter describes data related activities to be performed as an administrator.

[Chapter 5 Setting Up The Bank And Branch](#)

This chapter provides the process of setting up the bank and the branch commonly referred to as the Day 0 setups.

[Chapter 6 Application Monitoring Using Administration Application](#)

This chapter provides an overview on the various monitoring operations performed as an administrator using application screens.

[Chapter 7 Application Monitoring Using EM Plugin](#)

This chapter provides an overview on the various monitoring operations performed as an administrator, using Enterprise Manger (EM) Plugin.

[Chapter 8 Configuration Export-Import Operations](#)

This chapter gives an insight to the Configuration Export-Import operations.

[Chapter 9 Batch Shells in OBLs](#)

This chapter describes the batch shells used in Oracle Banking Loans Servicing and their execution sequence.

[Chapter 10 Information Lifecycle Management \(ILM\)](#)

This chapter describes the configuration, installation, and policy setup of Information Lifecycle Management (ILM).

[Chapter 11 Transparent Data Encryption \(TDE\)](#)

This chapter describes the configuration, installation, and policy setup of Transparent Data Encryption (TDE).

[Chapter 12 Masking Customer Private Data](#)

This chapter describes the configuration, installation, and policy setup to mask customer private data categories as sensitive or Personally Identifiable Information (PII).

[Chapter 13 Configure ODI for Inbound Document Upload](#)

This chapter provides the steps to configure ODI for Inbound Document Upload

[Chapter 14 Additional Recommendations](#)

This chapter provides specific recommendations to be considered for implementation:

Related Documents

For more information, see the following documentation:

- For installation and configuration information, see the Oracle Banking Loans Servicing Installation Guide - Silent Installation.
- For a comprehensive overview of security, see the Oracle Banking Loans Servicing Security Guide.
- For the complete list of Oracle Banking licensed products and the Third Party licenses included with the license, see the Oracle Banking Loans Servicing Licensing Guide.
- For information related to customization and extension, see the Oracle Banking Loans Servicing Extensibility Guides for Host, SOA, and UI.
- For information on the functionality and features, see the respective Oracle Banking Loans Servicing Functional Overview document.

- For recommendations of secure usage of extensible components, see the Oracle Banking Loans Servicing Secure Development Guide.

Conventions

The following text conventions are used in this document:

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.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1 Users Administration

This chapter describes all user management related activities to be performed by an administrator for the application.

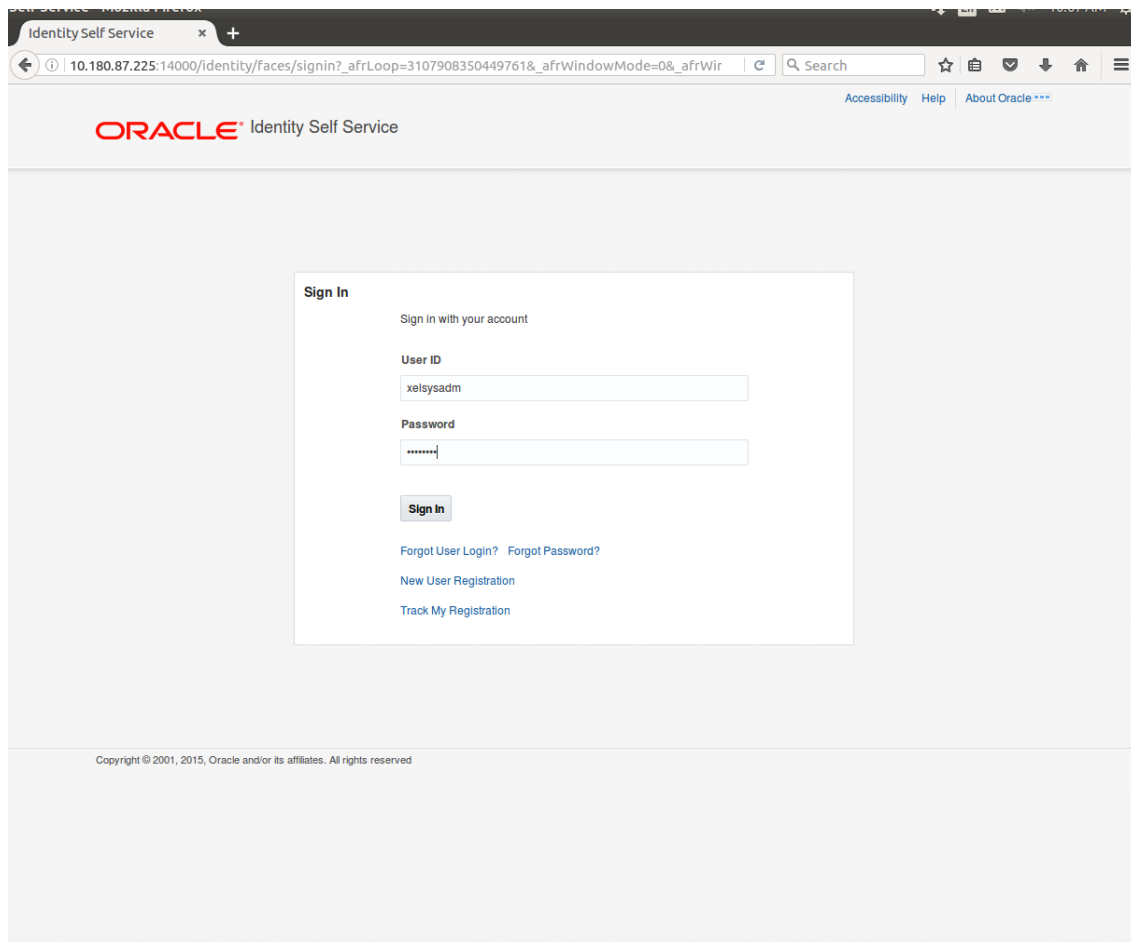
1.1 Creating Users in Oracle Identity Manager (OIM)

This section explains the procedure to create users in Oracle Identity Manager (OIM).

To create users in OIM:

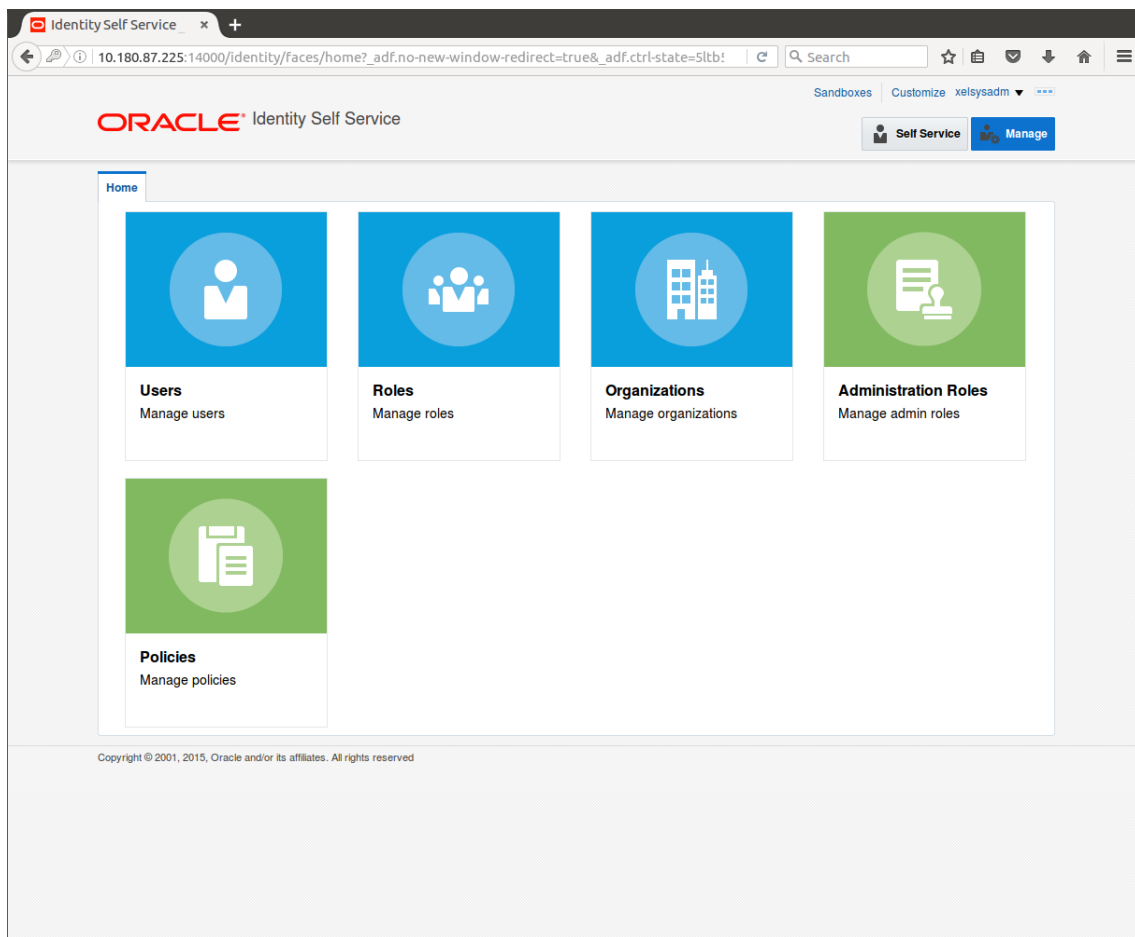
1. Log in to OIM with the User ID as **xelsysadm** and the relevant <Password>.

Figure 1–1 Creating Users in OIM - Log in



2. Click **Users** under the Manage section.

Figure 1–2 Creating Users in OIM - Manage Section



3. In the **Search Users** page, search for existing users. The Search Results appear.
4. Click **Create** in the Search Results section to create a new user.

Figure 1–3 Creating Users in OIM - Click Create

The screenshot shows the Oracle Identity Self Service interface. The main content area is titled 'Users' and contains a table of user records. Above the table, there are search and action controls. The table lists four users: HARRY, OIMINTERNAL, WEBLOGIC, and XELSYSADM.

User Login	Display Name	First Name	Last Name	Organization	Telephone Number	E-mail	Identity Status	Account Status
HARRY	Harry Potter	Harry	Potter	Xellerate Users		Harry@gmail.com	Active	Unlocked
OIMINTERNAL	Internal User	OIMINTERNAL	OIMINTERNAL	Xellerate Users			Active	Unlocked
WEBLOGIC	Weblogic User	WEBLOGIC	WEBLOGIC	Xellerate Users			Active	Unlocked
XELSYSADM	System Administrator	System	Administrator	Xellerate Users		donotreply@ora...	Active	Unlocked

5. In the **Create User** page, enter the required user details.

Figure 1–4 Creating Users in OIM - Enter User Details

The screenshot shows the 'Create User' form in the Oracle Identity Self Service interface. The browser address bar shows the URL: 10.180.87.225:14000/identity/faces/home?_adf.no-new-window-redirect=true&_adf.ctrl-state=ry1k. The page title is 'ORACLE Identity Self Service'. The user is logged in as 'xelsysadm'. The form is titled 'Create User' and has three tabs: 'Home', 'Users', and 'Create User'. The form is divided into several sections:

- Request Information:** Includes 'Effective Date' (calendar icon) and 'Justification' (text area).
- Basic Information:** Includes 'First Name' (Clark), 'Middle Name', 'Last Name' (Kent), 'E-mail', 'Manager' (lookup), 'Organization' (Xellerate Users), 'User Type' (Other), and 'Display Name'.
- Account Settings:** Includes 'User Login' (Clark), 'Password' (masked), and 'Confirm Password' (masked).
- Account Effective Dates:** Includes 'Start Date' and 'End Date' (calendar icons).
- Provisioning Dates:** (Section header only).

At the top right of the form, there are three buttons: 'Submit' (green), 'Save As...' (dropdown), and 'Cancel'.

Figure 1–5 Enter User Details (Continued)

Identity Self Service

10.180.87.225:14000/identity/faces/home?_adf.no-new-window-redirect=true&_adf.ctrl-state=ry1k

Confirm Password

Account Effective Dates

Start Date

End Date

Provisioning Dates

Provisioning Date

Deprovisioning Date

Contact Information

Telephone Number

Home Phone

Fax

Mobile

Pager

Home Postal Address

Postal Address

Postal Code

PO Box

State

Street

Country

Preferences

Locate

Timezone

Other Attributes

Common Name

Department Number

Employee Number

Generation Qualifier

Hire Date

Locality Name

Initials

Title

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6. Click **Submit**.

On completion of this procedure the user gets created in OIM, and gets synced in OID.

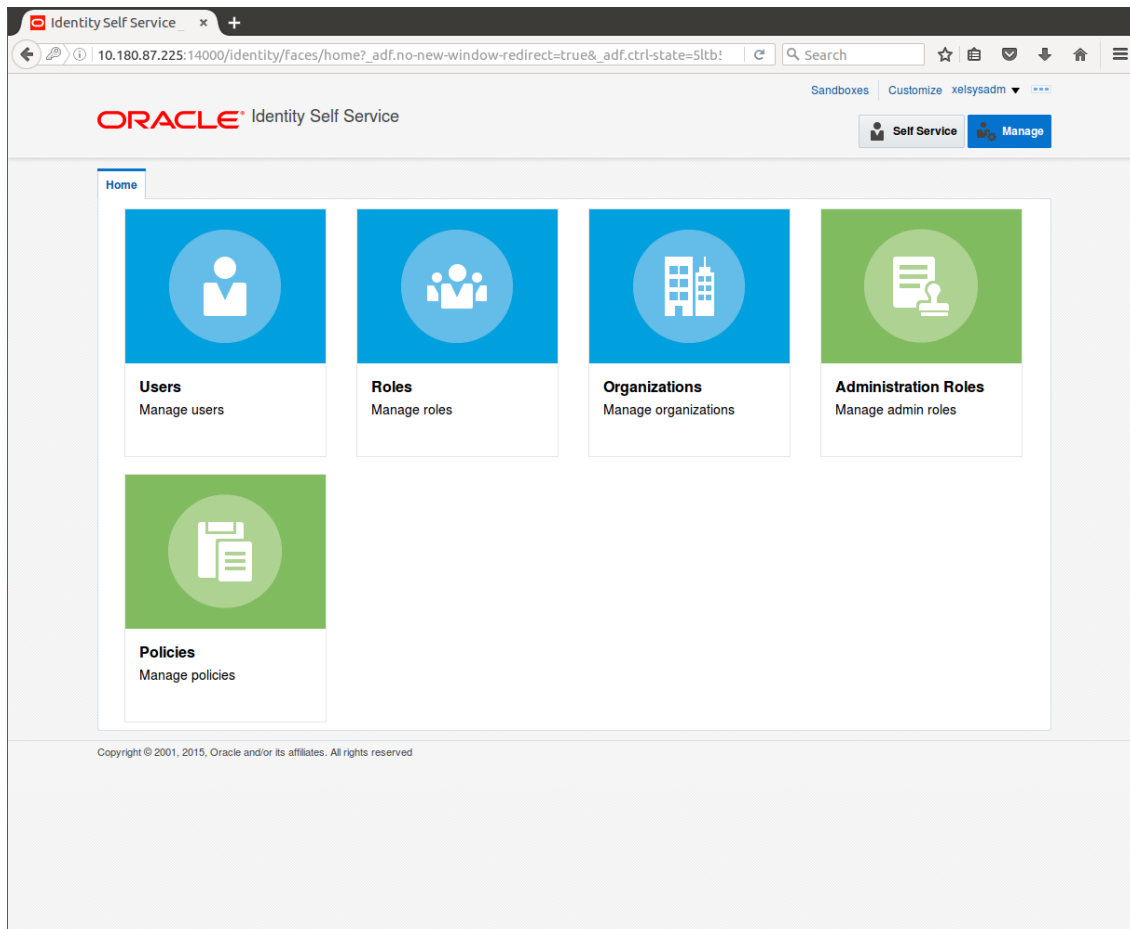
1.2 Creating Roles in Oracle Identity Manager (OIM)

This section explains the procedure to create roles in Oracle Identity Manager (OIM).

To create roles in OIM:

1. Click **Roles** under the Manage section.

Figure 1–6 Creating Roles in OIM - Manage Section



2. In the **Search Roles** page, search for existing roles. The Search Results appear.
3. Click **Create** in the Search Results section to create a new Role.

Figure 1–7 Creating Roles in OIM - Click Create

The screenshot shows the Oracle Identity Self Service interface. The browser address bar indicates the URL is `10.180.87.225:14000/identity/faces/home?_adf.no-new-window-redirect=true&_adf.ctrl-state=5ltb:...`. The page title is "ORACLE Identity Self Service". The user is logged in as "xelsysadm". The main content area is titled "Roles" and includes a search bar with "Name" selected. Below the search bar is an actions bar with buttons for "Create", "Open", "Delete", "Refresh", and "Detach". The "Create" button is highlighted. Below the actions bar is a table with the following data:

Name	Role Description
ALL USERS	Default role for all users
Administrators	Administrators role for SOA
BIReportAd...	Administrators role for BI Publisher Reports
OPERATORS	Operator role
SELF OPER...	Operator role for self registration
SYSTEM AD...	System Administrator role for OIM

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4. Fill the role details.

Figure 1–8 Creating Roles in OIM - Enter Role Details

The screenshot shows the Oracle Identity Self Service interface. The browser address bar displays the URL: 10.180.87.225:14000/identity/faces/home?_adf.no-new-window-redirect=true&_adf.ctrl-state=51tb! . The page title is "ORACLE Identity Self Service". The user is logged in as "xelsysadm". The navigation menu includes "Home", "Roles", and "Create Role". The "Create Role" wizard is active, showing a progress bar with steps: Back, Attributes (current), Hierarchy, Access Policy, Members, Organizations, and Summary. The "Attributes" step is completed. The "General Role Information" section contains the following fields:

- Name: TestFullAccess
- Display Name: TestFullAccess
- Role E-mail: (empty)
- Role Description: TestFullAccess
- Owned By: System Administrator

The "Catalog Attributes" section contains the following fields:

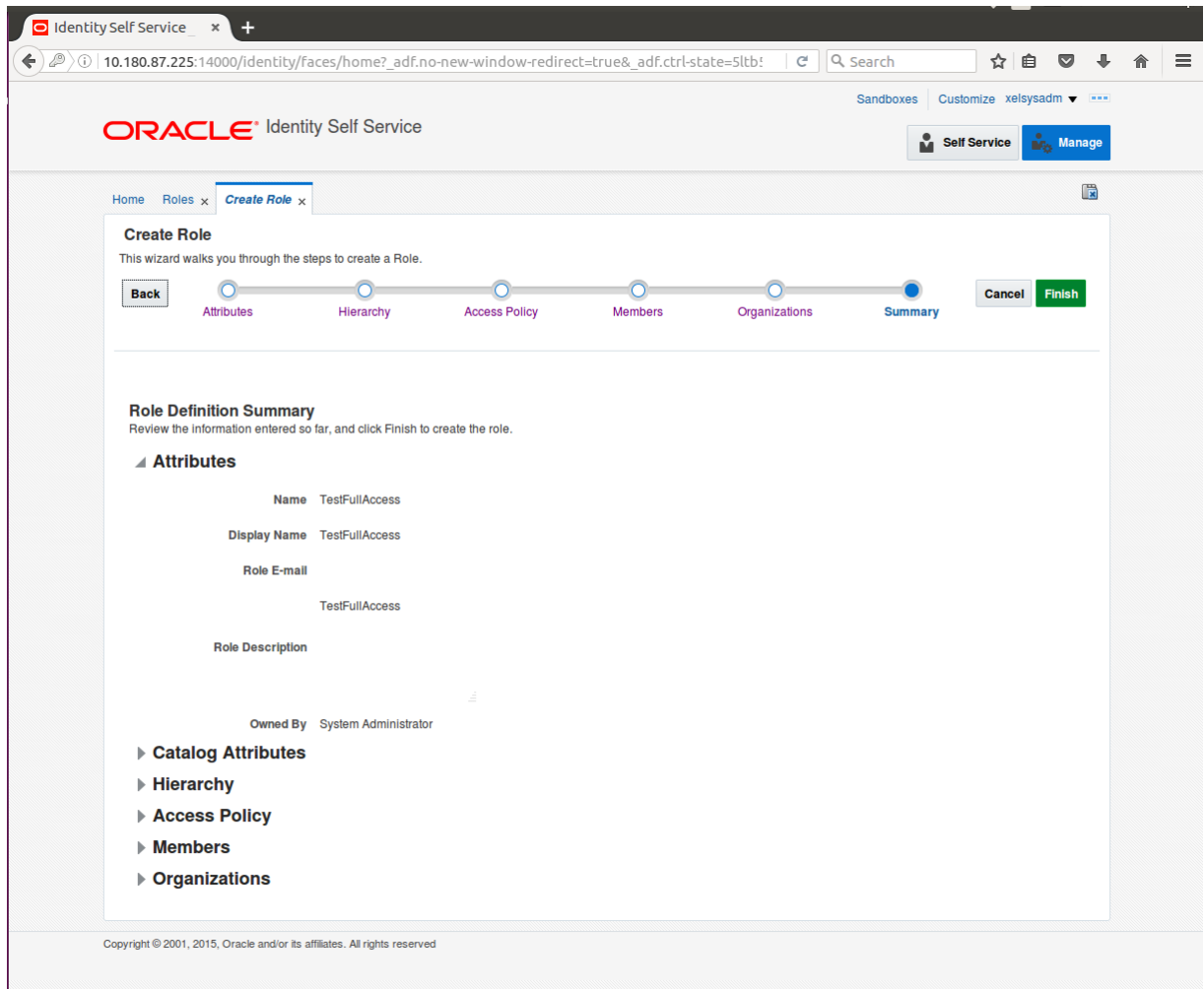
- Category: Role
- Audit Objective: (empty)
- Risk Level: (dropdown menu)
- User Defined Tags: (empty)
- Approver User: (empty)

5. Click **Finish**. The role is created successfully.

This role creates a group in OID.

While running the PIT (Policy Import tool), the Enterprise role (OIM role or OID group in this scenario) is mapped to the Application Role in OES.

Figure 1–9 Creating Roles in OIM - Role Created Successfully



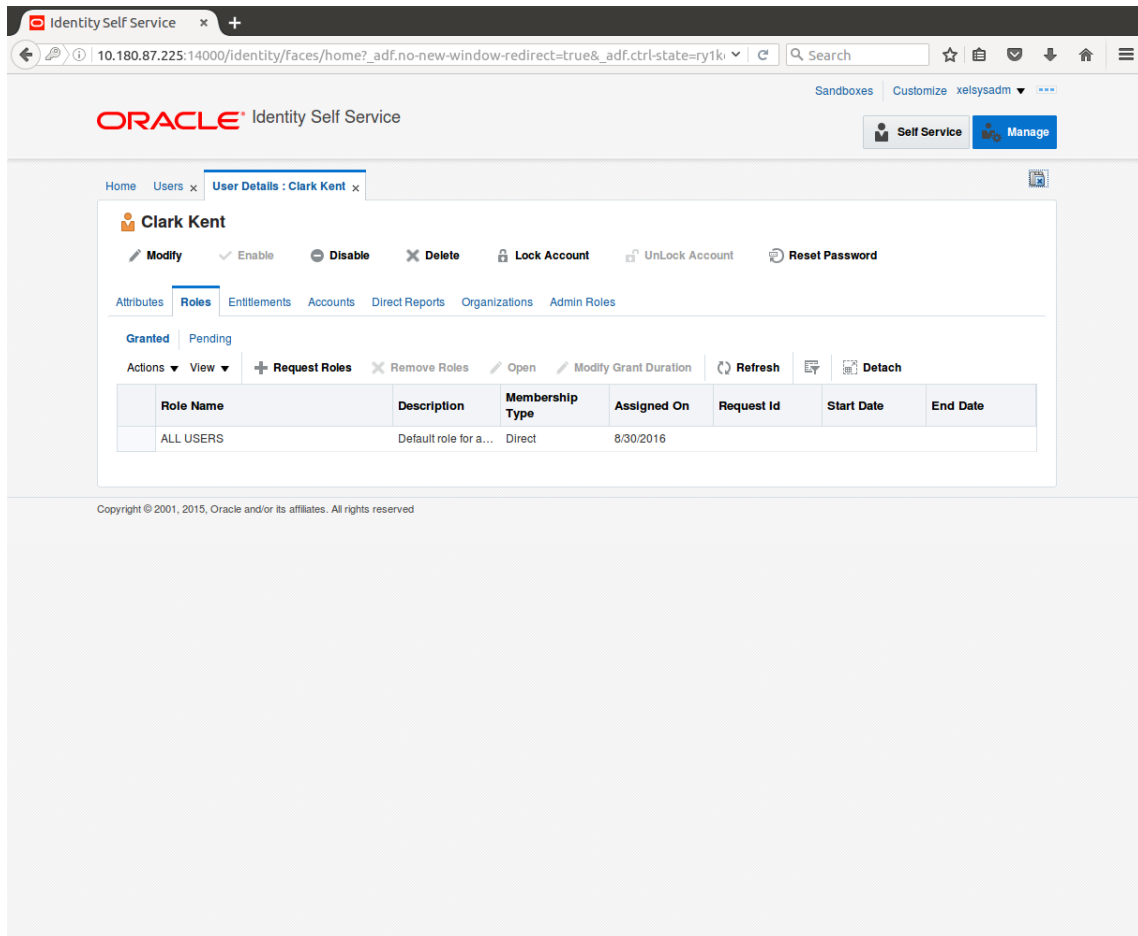
1.3 Assigning Roles to Users in OIM

This section explains how to assign roles to the user in OIM.

To assign a role to a user:

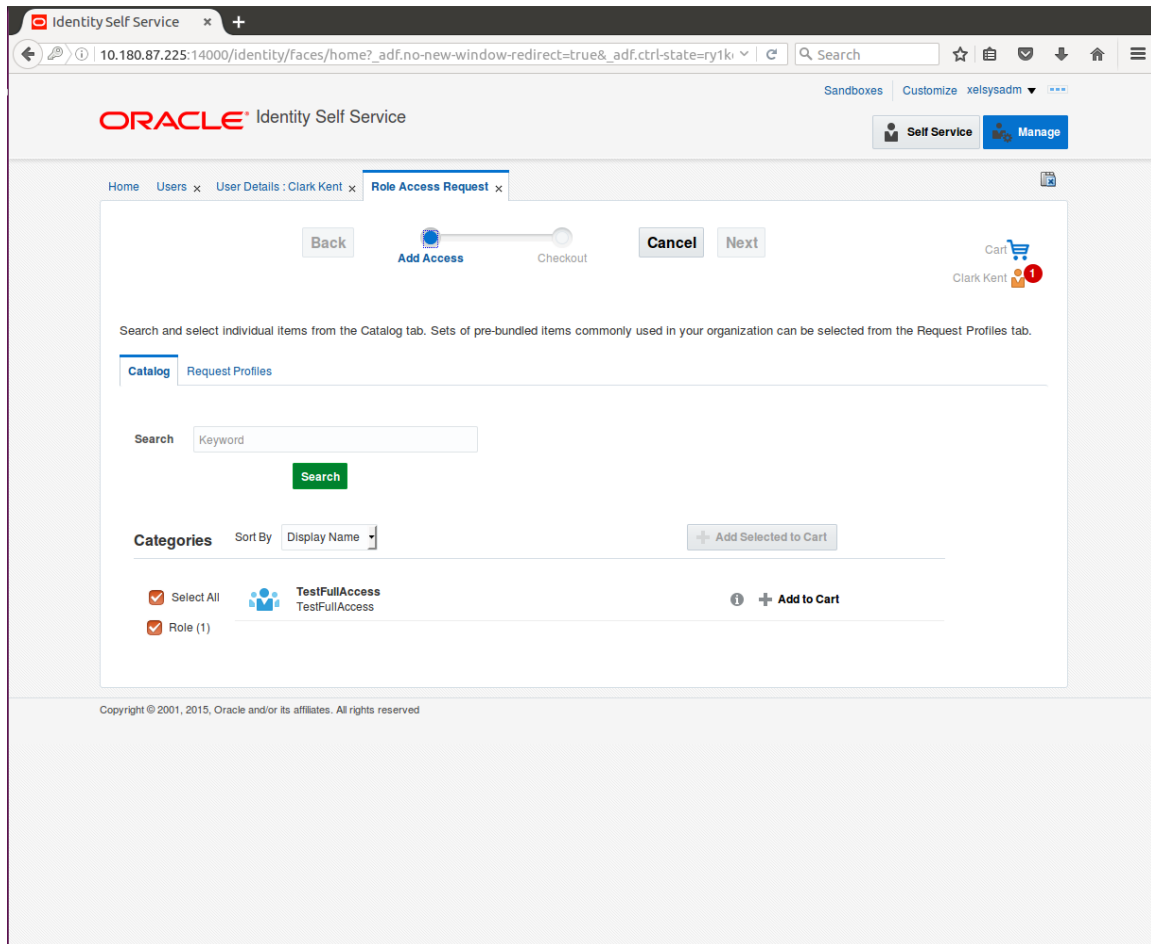
1. Log in to OIM.
2. Navigate to the **Roles Tab** under the User.
3. Click **Request Roles**.

Figure 1–10 Assigning Roles in OIM - Requesting Roles



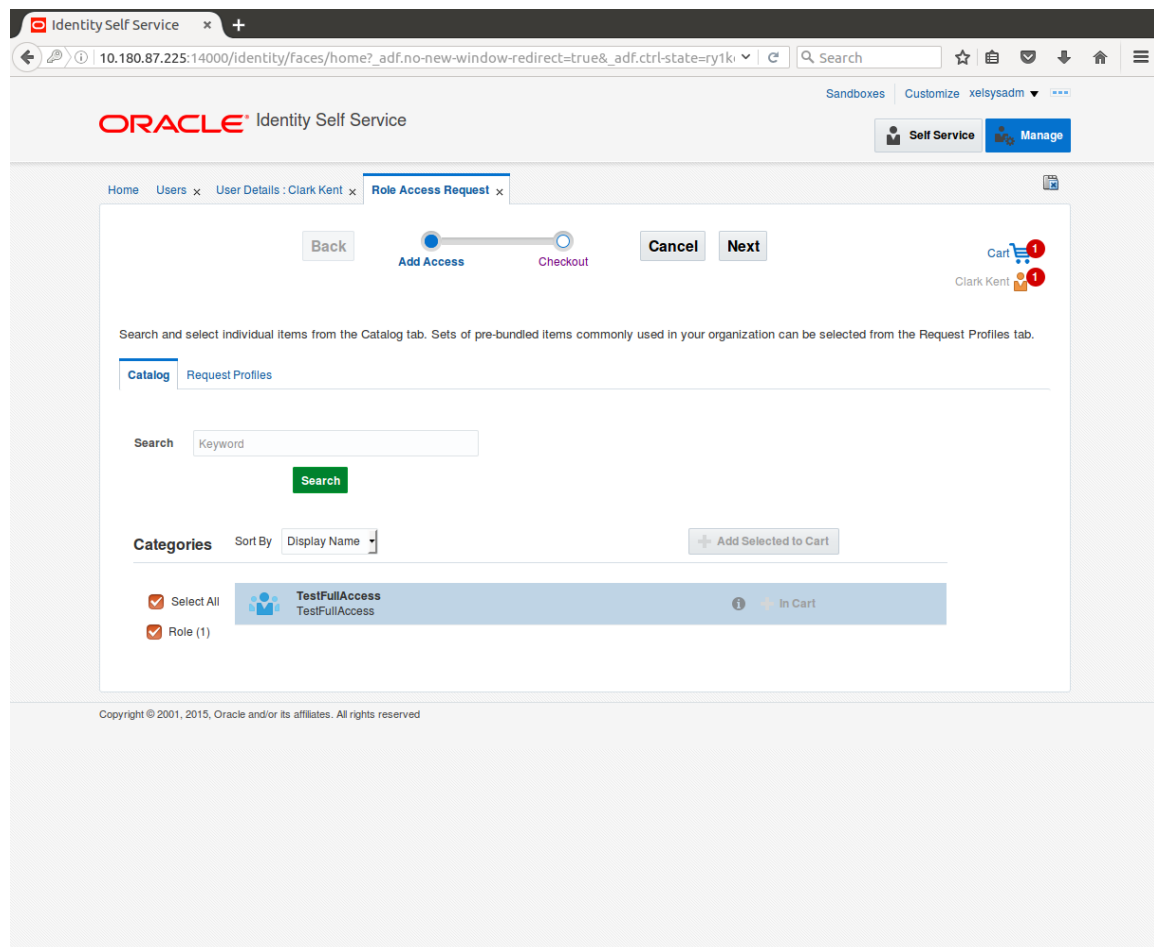
4. In the **Catalog** page, select the required role and click **Add to Cart**. The item gets added to the cart.

Figure 1–11 Assigning Roles in OIM - Adding to Cart



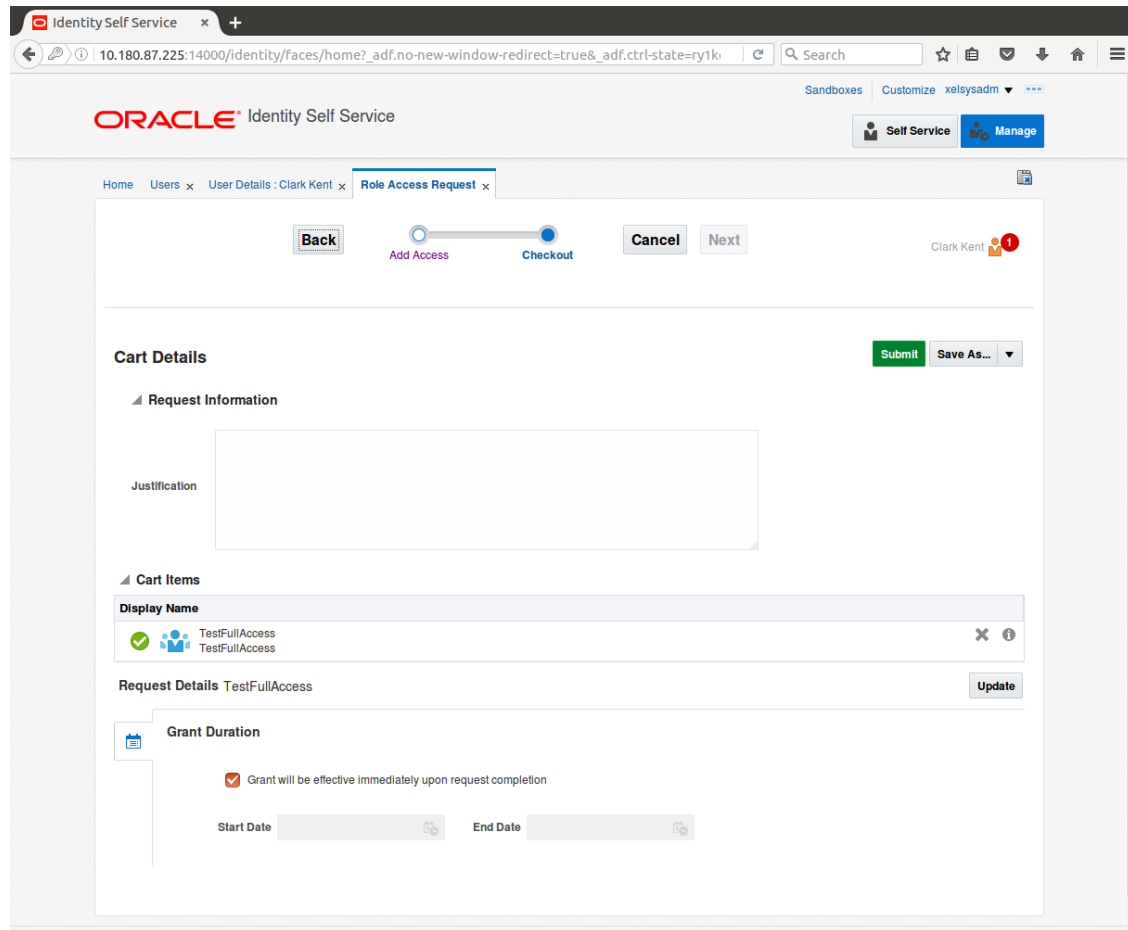
5. Click **Checkout**.

Figure 1–12 Assigning Roles in OIM - Checkout Cart



6. In the **Cart Details** page, click **Submit**.

Figure 1–13 Assigning Roles in OIM - Submit Cart



On completion of this procedure the role gets assigned to the user in OIM.

1.4 Locking Users in OIM

This section explains how to lock the user in OIM.

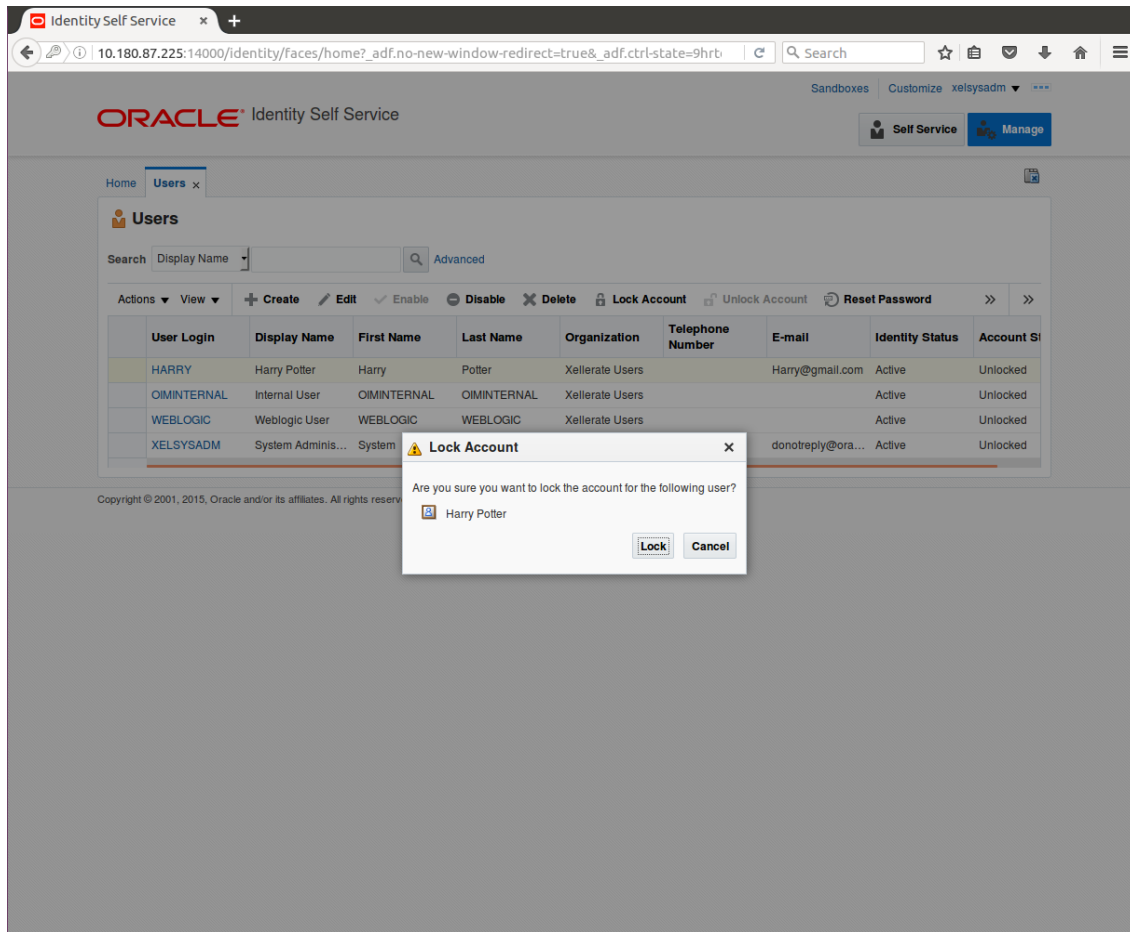
To lock a user:

1. Log in to OIM.
2. Click **Lock Account** to lock a user.

A message appears, Are you sure you want to lock the account for the following user?

3. Click **Lock**.

Figure 1–14 Locking Users in OIM



The user is locked successfully.

Figure 1–15 User Locked Successfully

The screenshot shows the Oracle Identity Self Service interface. At the top, a green message box states "Account locked successfully". Below this, the "Users" section is visible, featuring a search bar and a table of users. The table includes columns for User Login, Display Name, First Name, Last Name, Organization, Telephone Number, E-mail, Identity Status, and Account Status. The user "HARRY" is listed with a status of "Active" and "Locked".

User Login	Display Name	First Name	Last Name	Organization	Telephone Number	E-mail	Identity Status	Account Status
HARRY	Harry Potter	Harry	Potter	Xellerate Users		Harry@gmail.com	Active	Locked
OIMINTERNAL	Internal User	OIMINTERNAL	OIMINTERNAL	Xellerate Users			Active	Unlocked
WEBLOGIC	Weblogic User	WEBLOGIC	WEBLOGIC	Xellerate Users			Active	Unlocked
XELSYSADM	System Adminis...	System	Administrator	Xellerate Users		donotreply@ora...	Active	Unlocked

1.5 Unlocking Users in OIM

This section explains how to unlock the user in OIM.

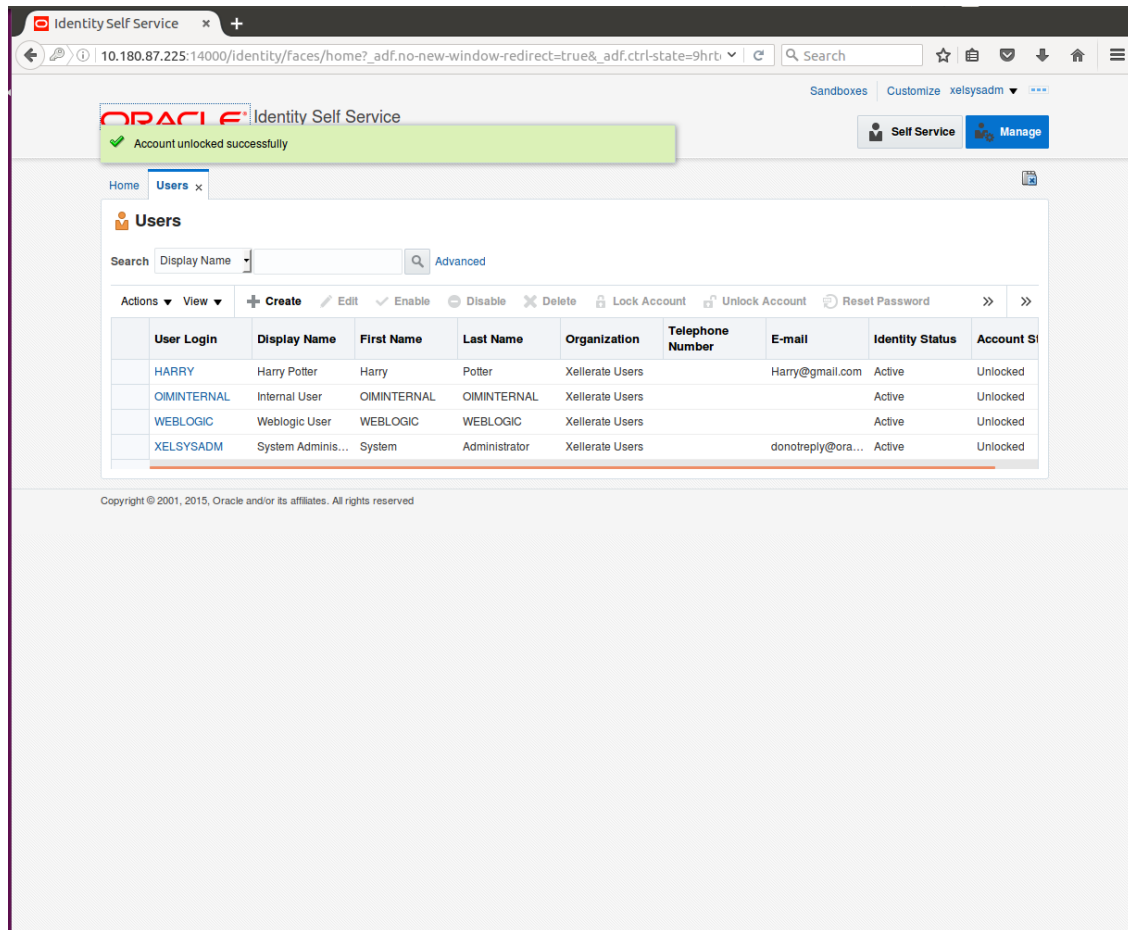
To unlock a user:

1. Log in to OIM.
2. Click **Unlock Account** to unlock a user.

A message appears, Are you sure you want to Unlock these users?

3. Click **Unlock**.

Figure 1–16 Unlocking Users in OIM



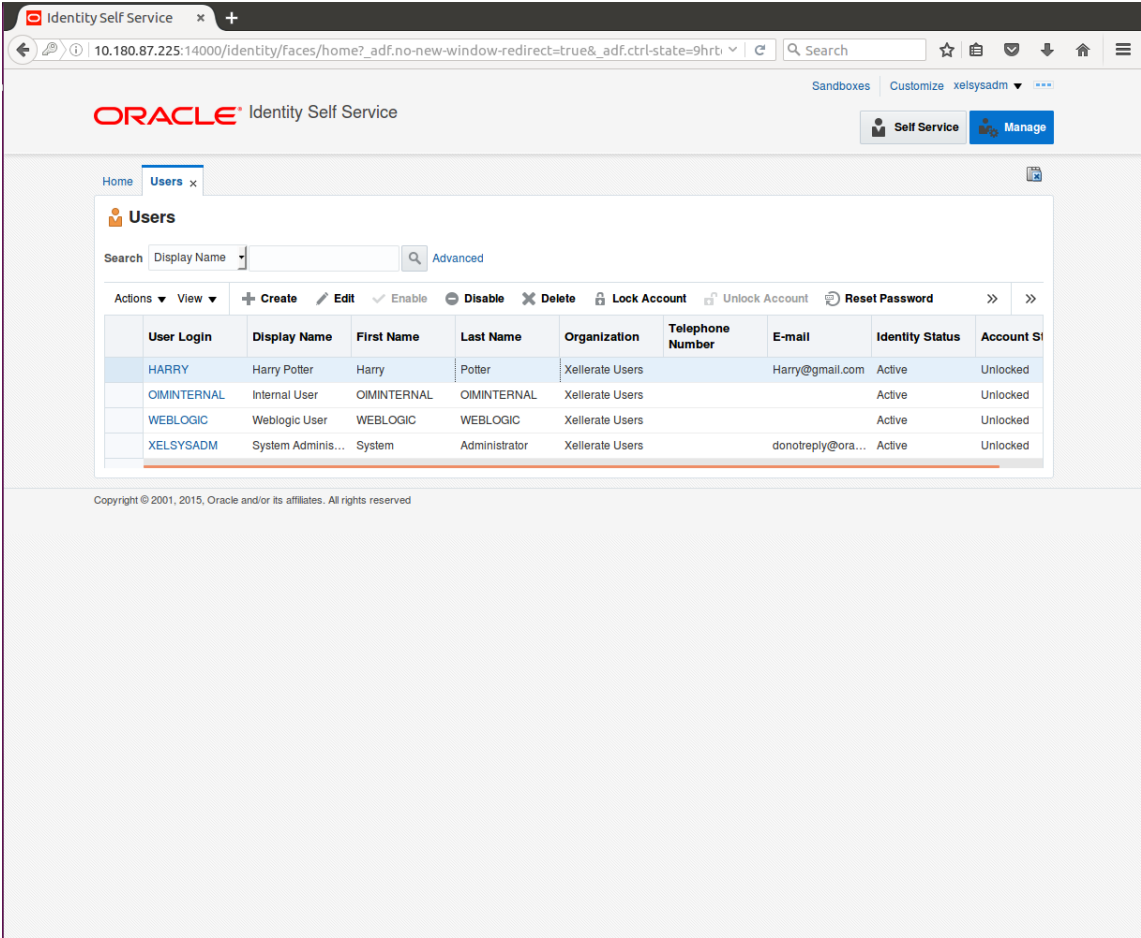
The user is unlocked successfully.

1.6 Resetting User Password in OIM

This section explains how to reset user password in OIM.

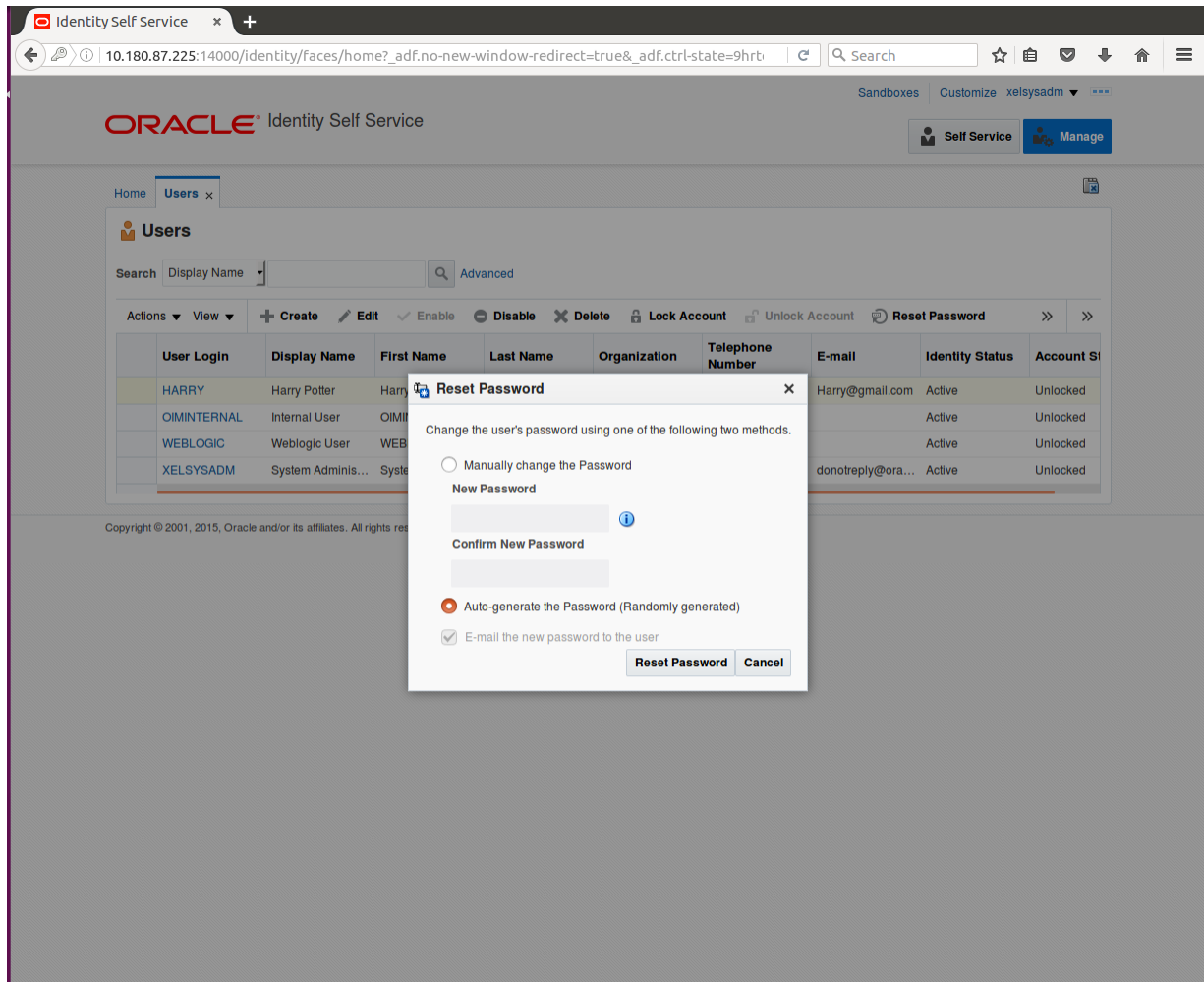
1. Log in to OIM.
2. Click **Reset Password** to reset a user password.

Figure 1–17 Resetting User Password in OIM



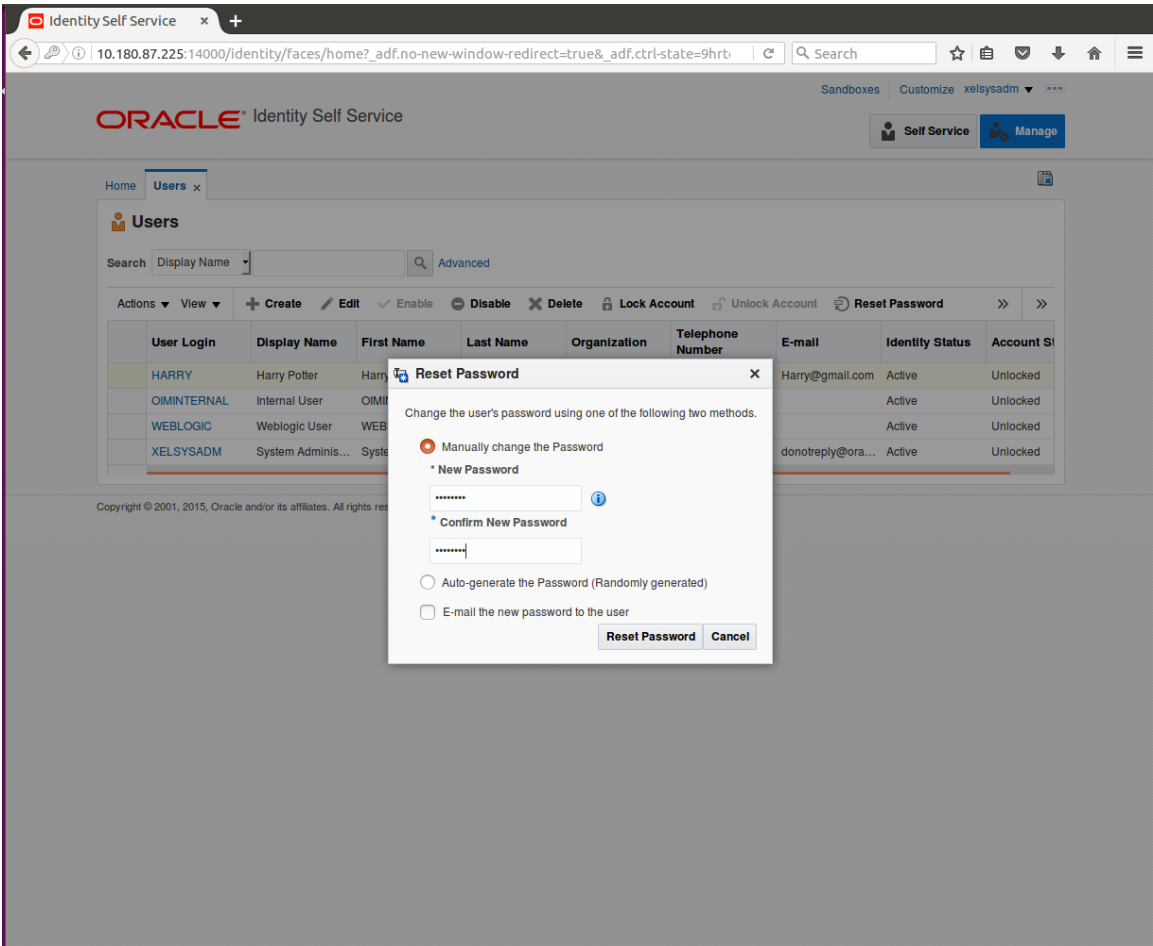
The **Reset Password** dialog box appears.

You can select either **Manually change the Password** option to change the password manually or select the **Auto-generate the password (Randomly generated)** option to enable auto generation of the password.

Figure 1–18 Resetting User Password in OIM - Manually or Auto-generate

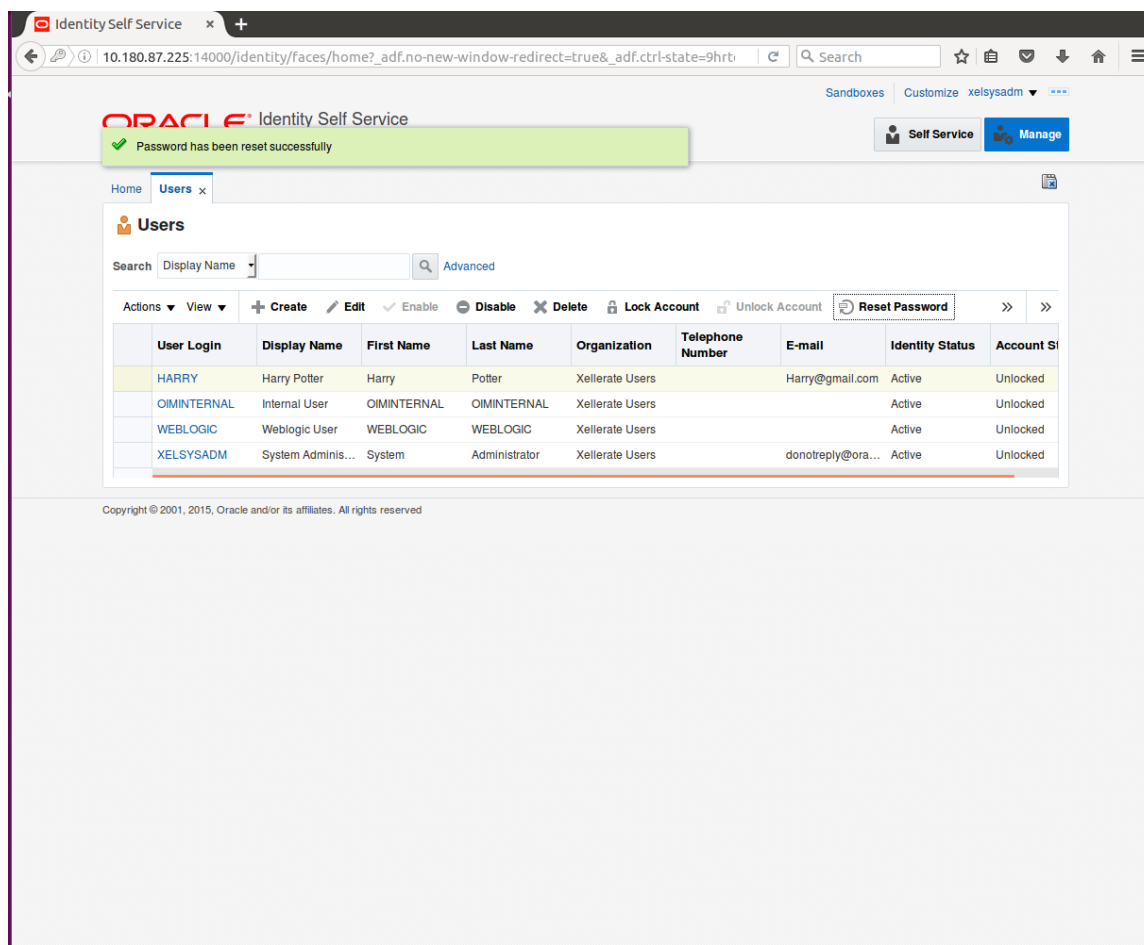
3. If you select the **Manually change the Password** option, enter the new password in the **New Password** and the **Confirm New Password** fields.

Figure 1–19 Resetting User Password in OIM - New Password



The user password is reset successfully.

Figure 1–20 Password Reset Successfully



1.7 User Management Using the Admin Application

The User Management screen is a quick start UI, provided to create initial users and verify the OBLs installation.

<https://<ui-server-name>:<ui-server-port>/com.ofss.fc.ui.view.admin/faces/admin.jspx>

To create initial users and verify the installation, perform the below mentioned steps:

1. Click **Security** tab in **View Admin**.
2. Select **User Management**.
3. Click **+** icon to add a user.

Figure 1–21 Adding a User

The screenshot displays the Oracle Banking Platform Admin Application interface. The browser address bar shows the URL: `https://10.180.84.177:8002/com.ofss.fc.ui.view.admin/faces/admin.jspx?_afrcLoop=31010305172428t`. The page title is "Oracle Banking Platform" and the posting date is "15-Jan-2016".

The main content area is titled "User Management" and includes a search filter section with a "Username" input field and a search button. Below this is a "User Details" section with a table header:

Username	Target Unit	Branch	Delete
----------	-------------	--------	--------

Below the table is a "User Details Form" section with the following fields:

Username	Preferred Language
First Name	Accreditation
Last Name	Brand
Email	2FA Status
Password	Forum Nick Name
Confirm password	Party Id
Home Branch	Last Logged In Date Time
Manager	2FA Inactive Begin Date
Target Unit	2FA Inactive End Date

The form includes "Edit", "Apply changes", and "Assign Roles" buttons.

4. Enter the mandatory fields required for creating a user.

Figure 1–22 Enter Mandatory Details

The screenshot displays the Oracle Banking Platform Admin Application interface. The browser address bar shows the URL: `https://10.180.84.177:8002/com.ofss.Fc.ui.view.admin/faces/admin.jspx?_afrcLoop=320731032202561`. The page title is "Oracle Banking Platform" and the posting date is "15-Jan-2016". The main content area is titled "User Management" and includes a "Search Filter" section with a "Username" input field. Below this is a "User Details" table with columns for "Username", "Target Unit", "Branch", and "Delete". The "User Details Form" section contains various input fields for user information, including "Username" (Harry), "First Name" (Harry), "Last Name" (Potter), "Email" (Harry@gmail.com), "Password", "Confirm password", "Home Branch" (1010), "Manager", "Target Unit" (3LBL_BU_PB), "Preferred Language", "Accreditation", "Brand", "2FA Status", "Forum Nick Name", "Party Id", "Last Logged In Date Time", "2FA Inactive Begin Date", and "2FA Inactive End Date". Buttons for "Edit", "Apply changes", and "Assign Roles" are located at the top right of the form.

5. Click **Apply Changes** to save the user details locally.

Figure 1–23 Applying Changes

The screenshot shows the Oracle Banking Platform Admin Application interface. The browser address bar displays the URL: `https://10.180.84.177:8002/com.ofss.fc.ui.view.admin/faces/admin.jspx?_afrcLoop=32073103220256`. The page title is "Oracle Banking Platform" and the posting date is "15-Jan-2016".

The main content area is titled "User Management" and includes a search filter and a table of users.

Search Filter

Username →

User Details

Username	Target Unit	Branch	Delete
Harry	GLBL_BU_PB	1010	<input type="checkbox"/>

User Details Form

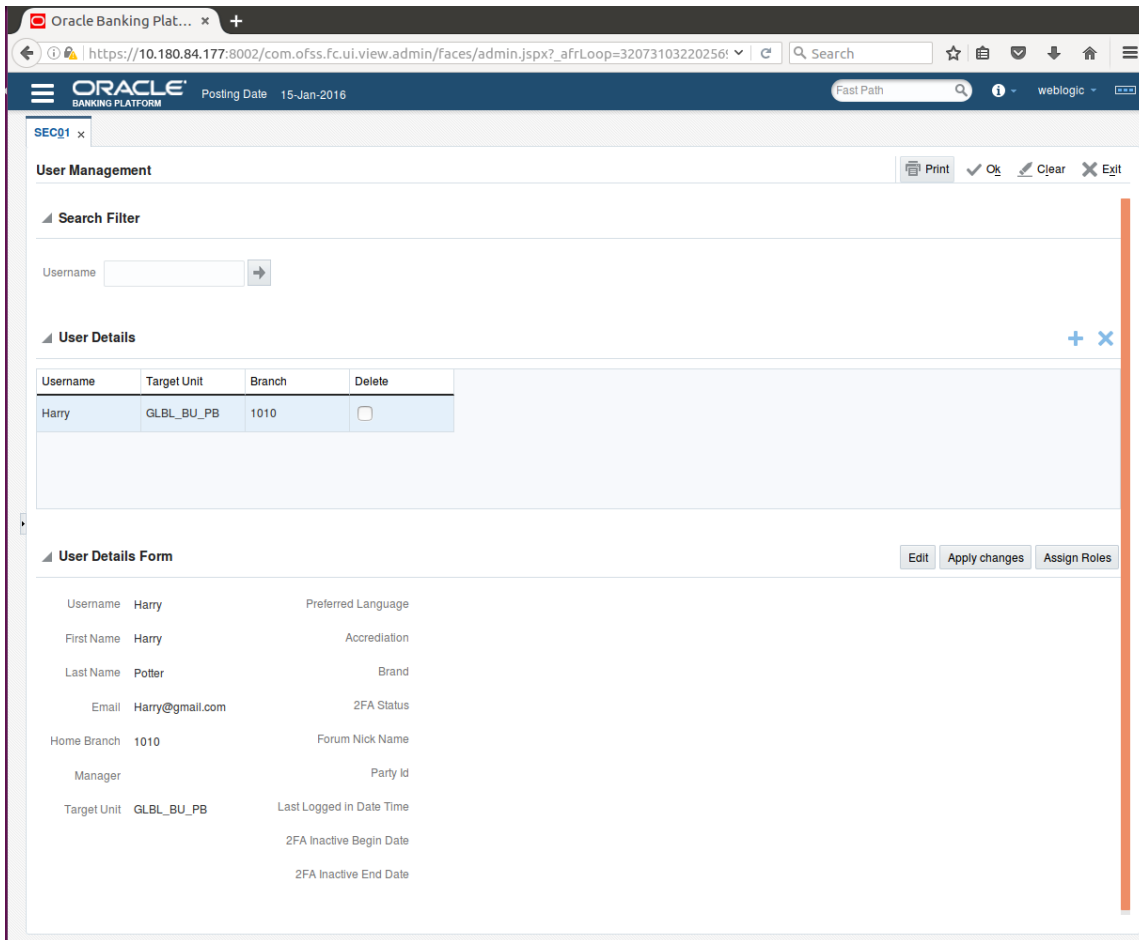
Buttons: Edit, Apply changes, Assign Roles

Fields:

- Username: Harry
- First Name: Harry
- Last Name: Potter
- Email: Harry@gmail.com
- Home Branch: 1010
- Manager:
- Target Unit: GLBL_BU_PB
- Preferred Language
- Accreditation
- Brand
- 2FA Status
- Forum Nick Name
- Party Id
- Last Logged In Date Time
- 2FA Inactive Begin Date
- 2FA Inactive End Date

6. To add a user to a group, select the row containing the user and click **Assign Roles**.

Figure 1–24 Adding User to a Group



The available and assigned roles appear.

Figure 1–25 Available and Assigned Roles

The screenshot displays the Oracle Banking Platform User Management interface. The page title is "User Management" and it includes a search filter for "Username" and a "User Details" section. The "User Details" section shows a table with one user, "Harry", associated with "GLBL_BU_PB" and "1010". Below this, the "Groups" section shows two columns: "All Roles" and "Assigned Roles". The "All Roles" column contains a table with one role, "TestFullAccess". The "Assigned Roles" column is empty, displaying "No data to display.".

Oracle Banking Platform
Posting Date: 15-Jan-2016

SEC01 x

User Management

Search Filter

Username:

User Details

Username	Target Unit	Branch	Delete
Harry	GLBL_BU_PB	1010	<input type="checkbox"/>

Groups

All Roles

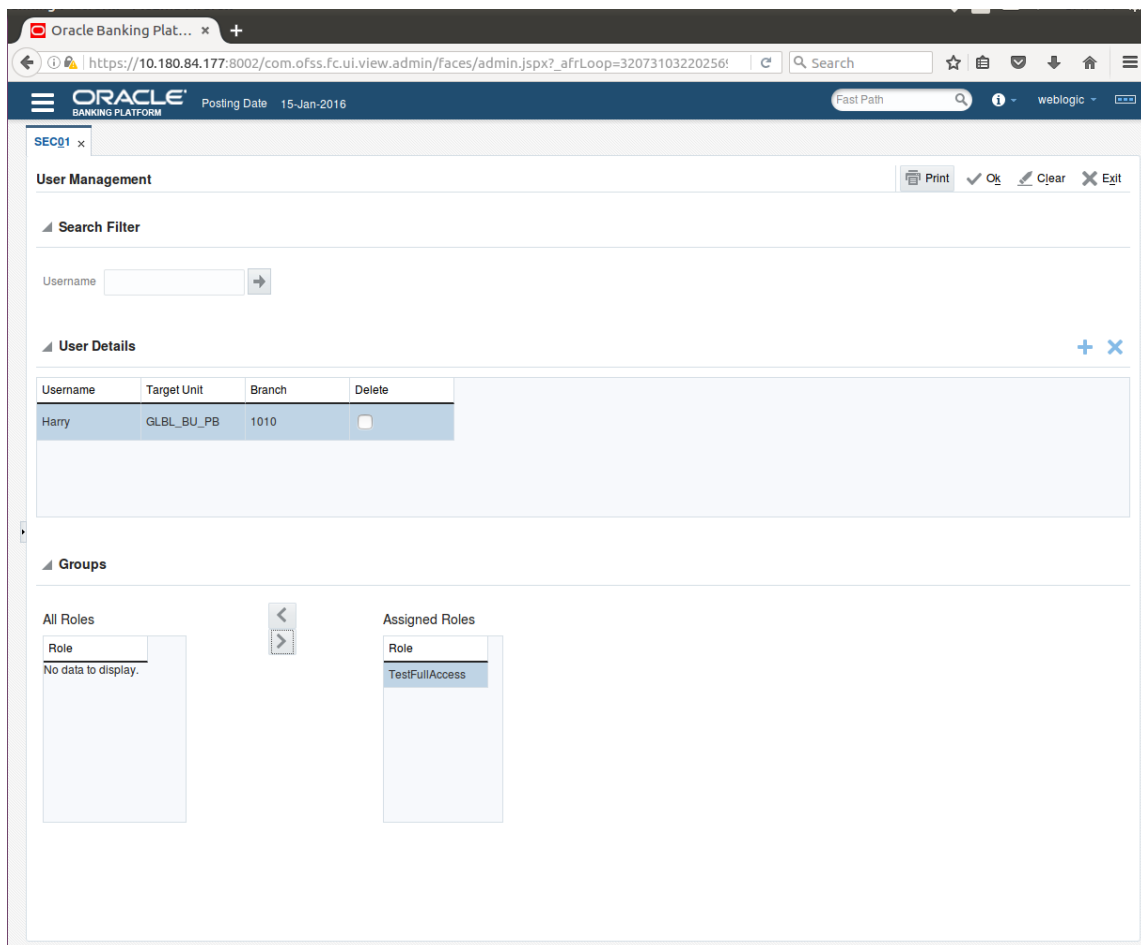
Role
TestFullAccess

Assigned Roles

No data to display.

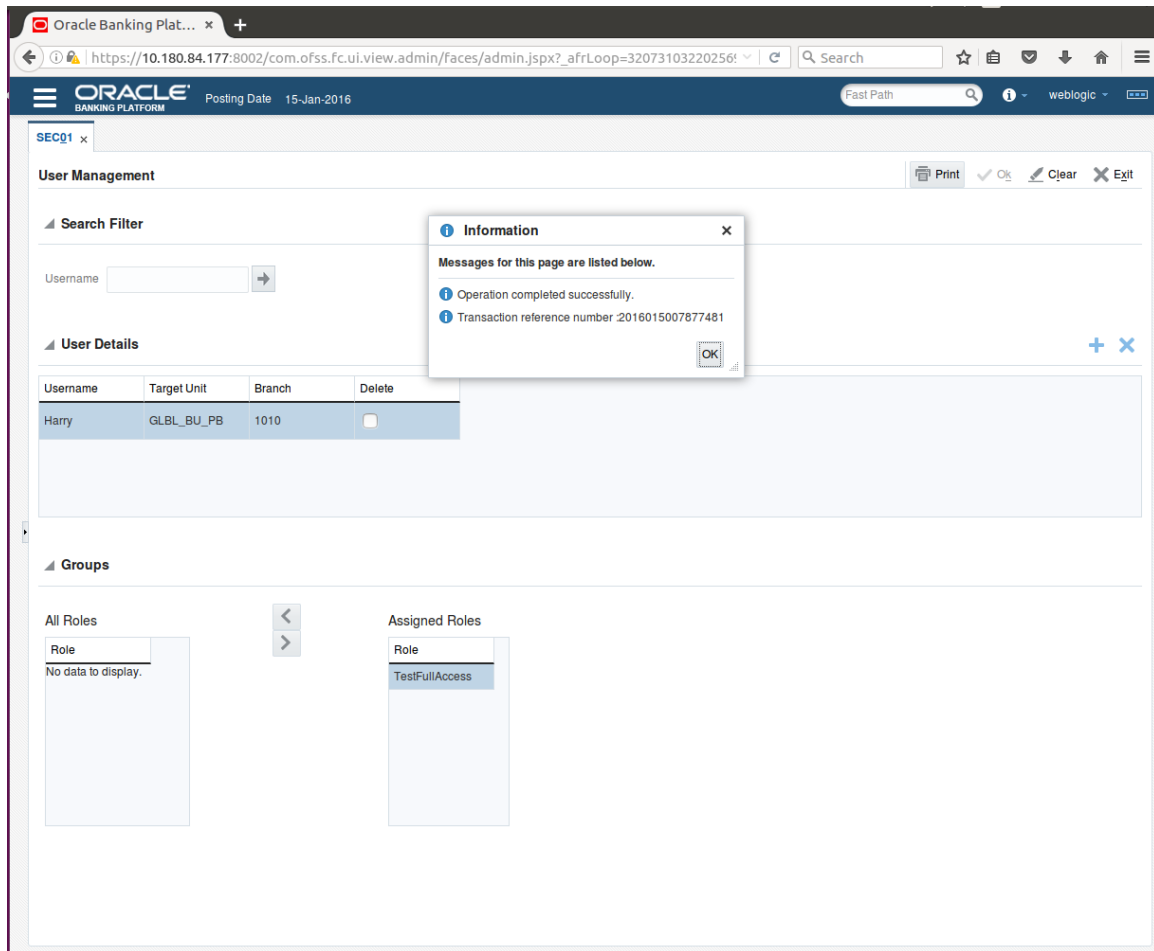
7. Select the group to add user and move it to the **Assigned Roles** table.

Figure 1–26 Adding User to Assigned Roles Table



8. Click **Ok** to save the changes.

Figure 1–27 Save Changes



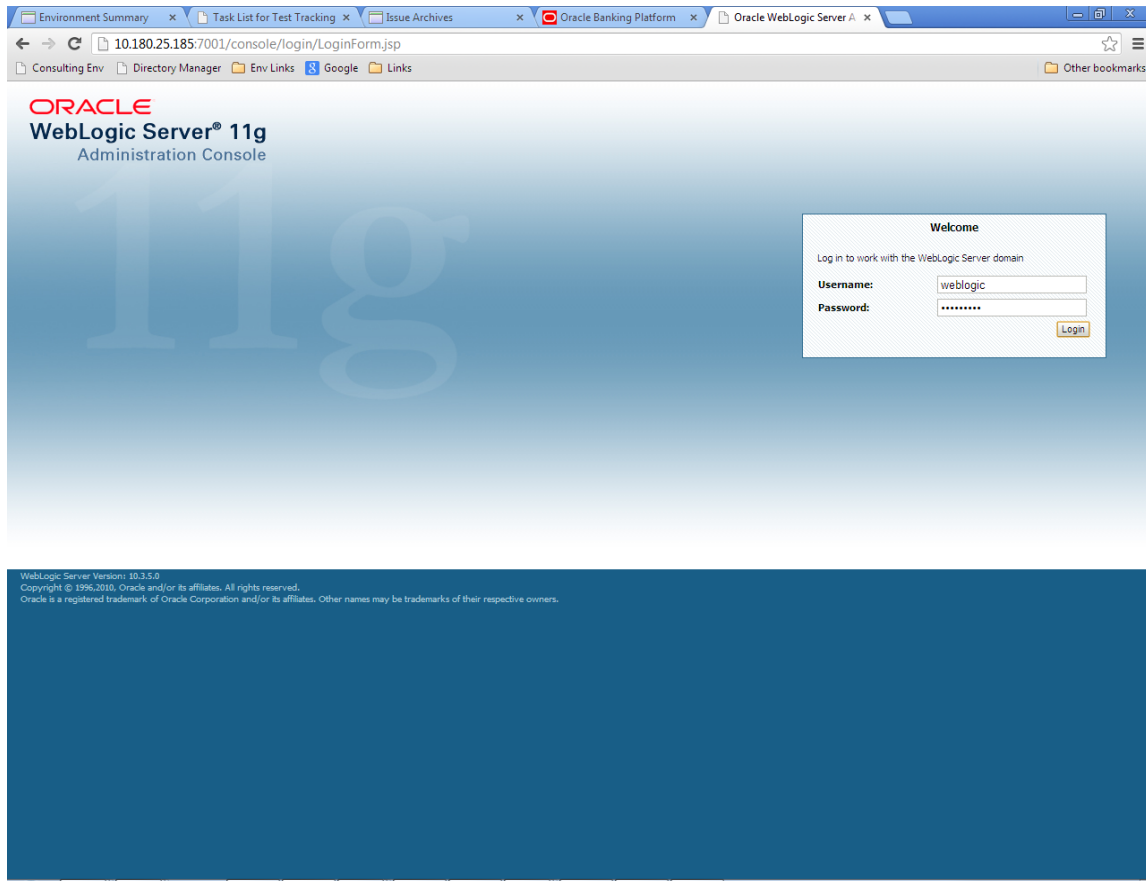
1.8 Unlocking Users in Oracle WebLogic Server (OWS) Administration Console

This section explains the procedure to unlock users in Oracle WebLogic Server (OWS) using Administration Console. If users unsuccessfully attempt to log in to a WebLogic Server instance for more than the configured number of retry attempts, they are locked out of further access. This procedure allows you to unlock locked users so that they can log in again.

To unlock a user in OWS:

1. Log in to OWS. The **Home Page** of OWS Administration Console appears.

Figure 1–28 OWS Log in



2. In the **Domain Structure** section, click the **base_domain** link.

Figure 1–29 base_domain

The screenshot displays the Oracle WebLogic Server Administration Console for the `base_domain`. The browser address bar shows the URL `10.180.25.185:7001/console/console.portal?_nfpb=true&_pageLabel=HomePage1`. The console header includes navigation links like Home, Log Out, Preferences, Record, and Help, along with a search bar and the text "Welcome, weblogic Connected to: base_domain".

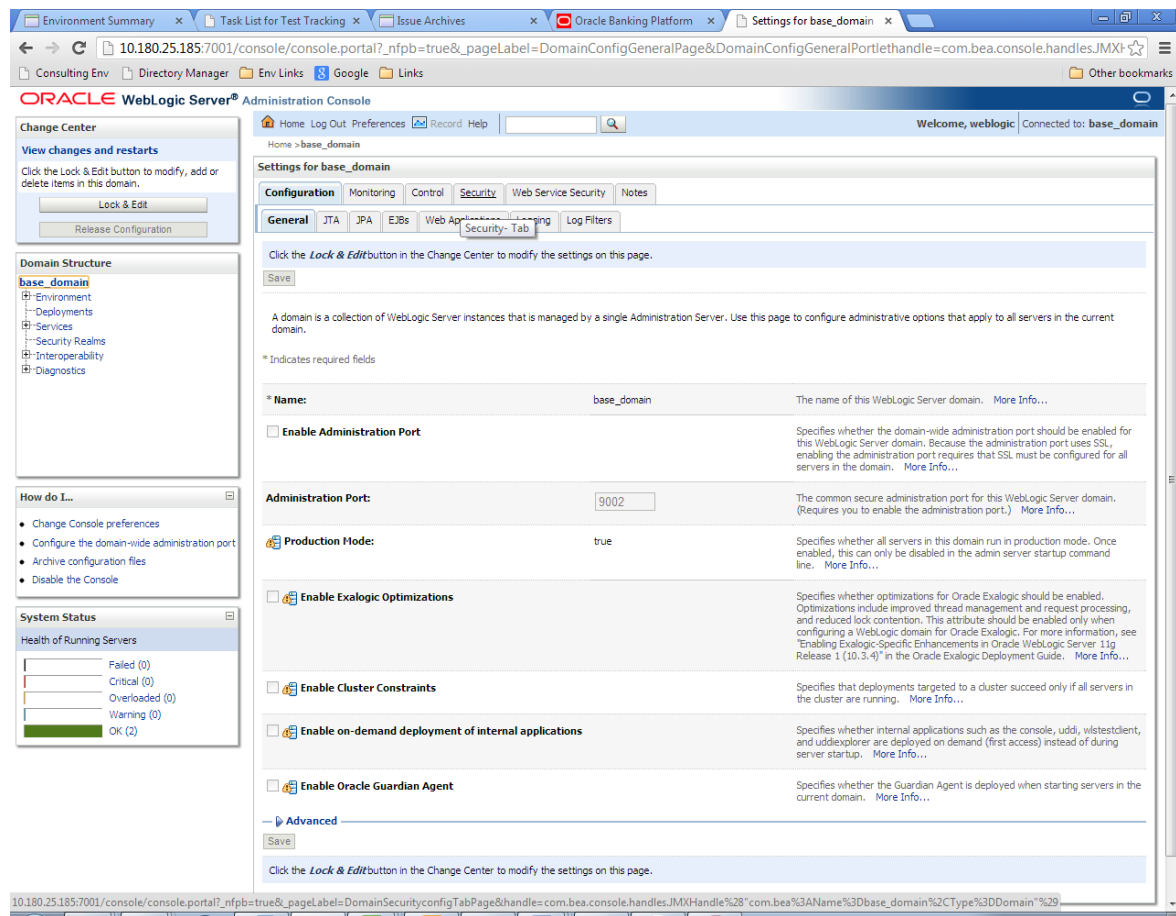
The main content area is divided into several sections:

- Change Center:** Includes "View changes and restarts" with buttons for "Lock & Edit" and "Release Configuration".
- Domain Structure:** A tree view showing the hierarchy: `base_domain` > `base_domain`.
- System Status:** "Health of Running Servers" showing 0 Failed, 0 Critical, 0 Overloaded, 0 Warning, and 2 OK.
- Domain Configurations:**
 - Environment:** Servers, Clusters, Virtual Hosts, Migratable Targets, Coherence Servers, Coherence Clusters, Machines, Work Managers, Startup And Shutdown Classes.
 - Services:** Messaging (JMS Servers, Store-and-Forward Agents, JMS Modules, Path Services, Bridges), Data Sources, Persistent Stores, XML Registries, XML Entity Caches, Foreign JNDI Providers, Work Contexts, JCOM, Mail Sessions, FileT3, JTA.
 - Interoperability:** WTC Servers, Jolt Connection Pools.
 - Diagnostics:** Log Files, Diagnostic Modules, Diagnostic Images, Request Performance, Archives, Context, SNMP.
 - Charts and Graphs:** Monitoring Dashboard.
- Your Deployed Resources:** Deployments.
- Your Application's Security Settings:** Security Realms.

At the bottom, the footer indicates "WebLogic Server Version: 10.3.5.0" and copyright information for Oracle.

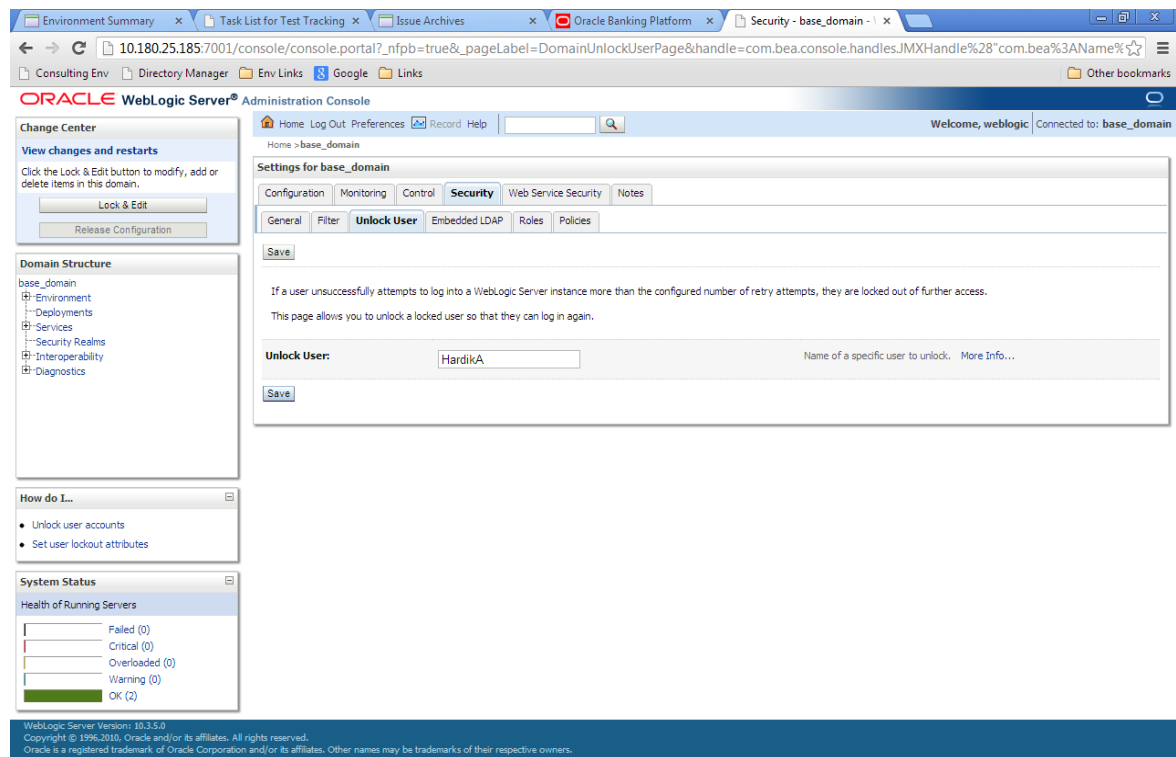
3. In the **Settings for base_domain** page that appears, click the **Security** tab.

Figure 1–30 Security tab



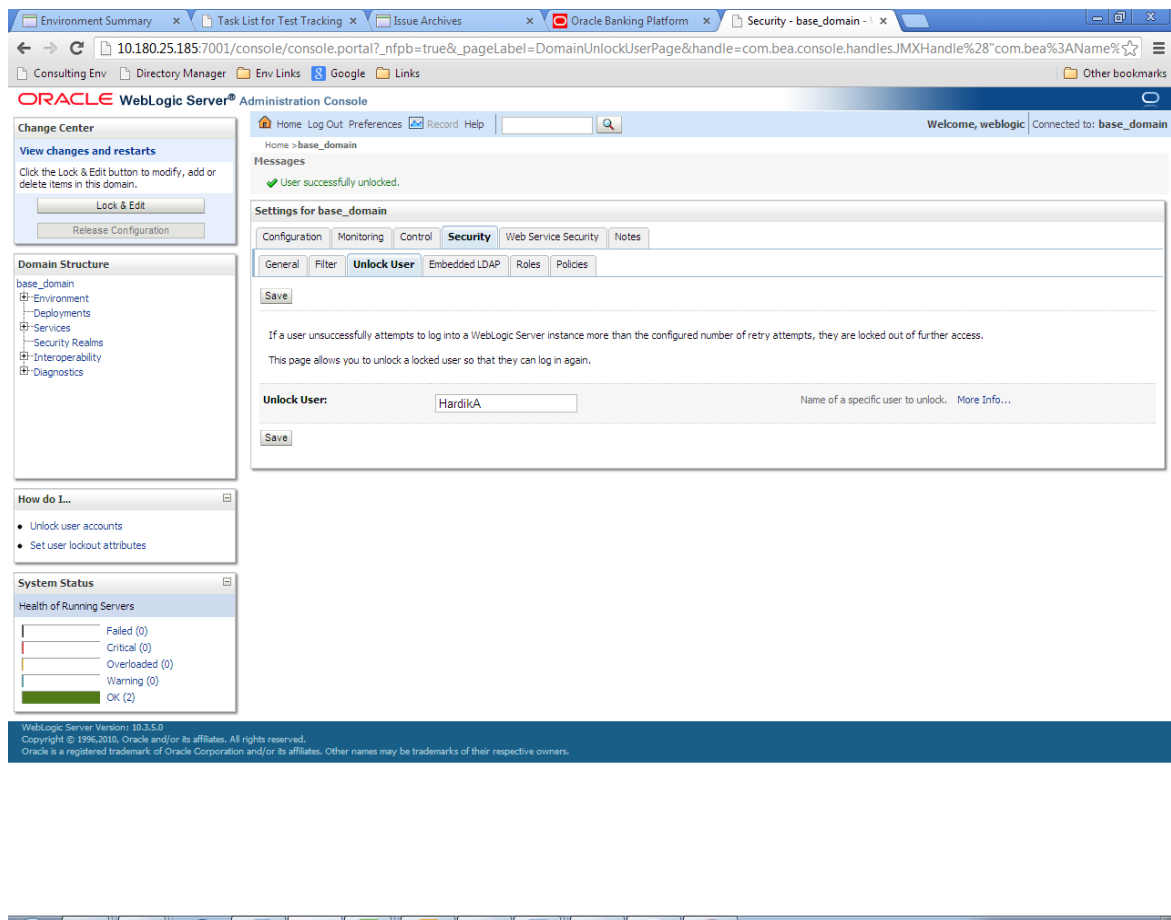
4. Click the **Unlock User** tab.
5. In the **Unlock User** field, enter the User ID to unlock the user.

Figure 1–31 Unlock User



6. Click **Save**. The message *User successfully unlocked* appears.

Figure 1–32 User Successfully Unlocked



On completion of this procedure the user gets unlocked in OWS.

1.9 Creation of first time user to access OBLs

This section explains the procedure to create the first bank user having access to the application.

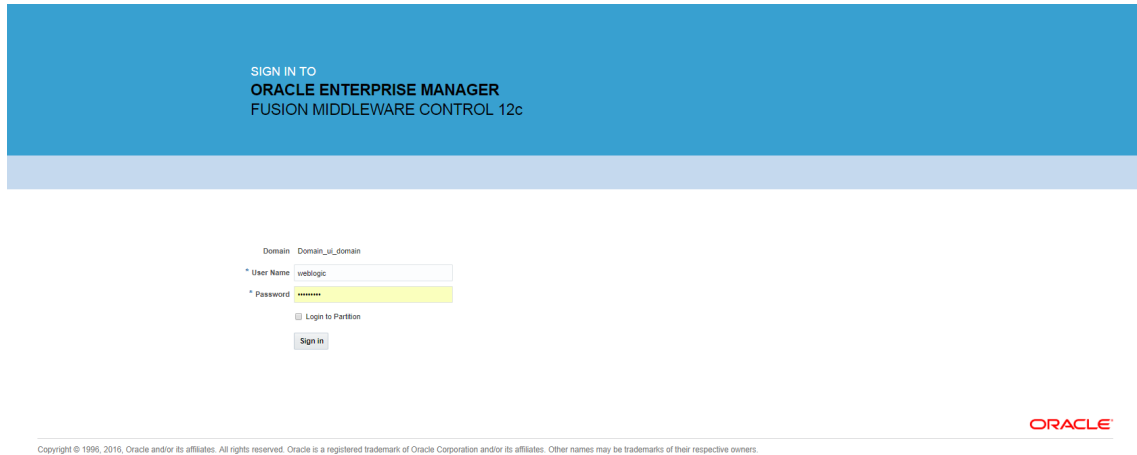
Note

Make the default authenticator as sufficient in host console and reorder it below OID Authenticator. Also change 'cn' attribute to 'uid' in the All Users Filter and User From Name Filter in OID Authenticator provider specific properties.

1. Log in to OIM using the admin user *xelsysadm*. Create a new role in OIM as described in [Section 1.2 Creating Roles in Oracle Identity Manager \(OIM\)](#). For example, Developer. This creates a group in OID (Developer).
2. Log in to admin application using the weblogic user. Create a user as described in [Section 1.7 User Management Using the Admin Application](#). For example, john.doe.

3. Add the user (john.doe) to the Developer.
4. Map the application role Administrators to the Enterprise Group Developer in EM (refer screenshots below). After doing this, the user should have access to all artifacts assigned to the 'Administrators' role. These access rights can be viewed in OES.

Figure 1–33 Log in Oracle Fusion Middleware Control



SIGN IN TO
ORACLE ENTERPRISE MANAGER
FUSION MIDDLEWARE CONTROL 12c

Domain Domain_12_domain

* User Name weblogic

* Password

Login to Partition

Sign in

ORACLE

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1.9 Creation of first time user to access OBLS

Figure 1–34 Click Application Roles

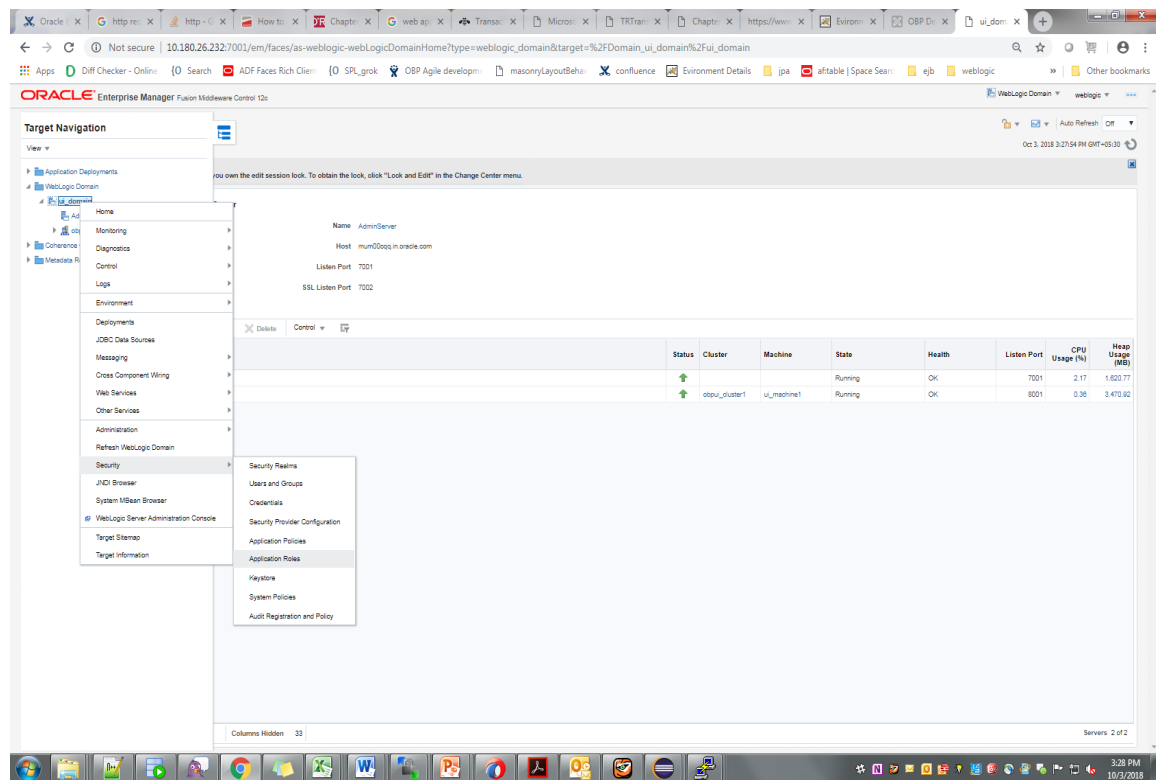


Figure 1–35 Select Administrators Role

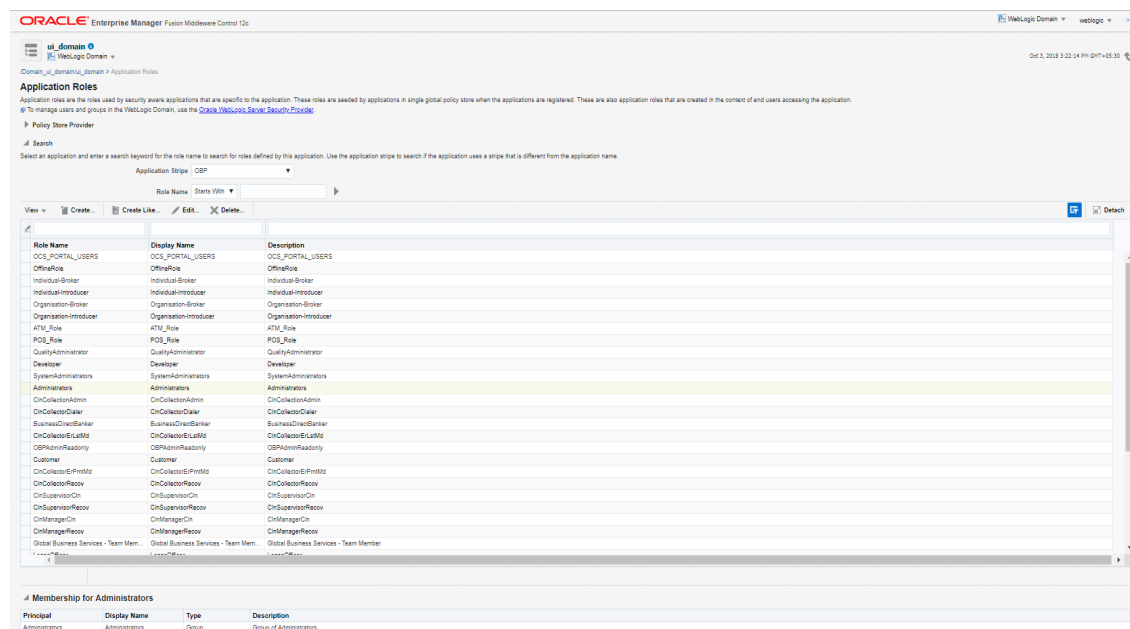
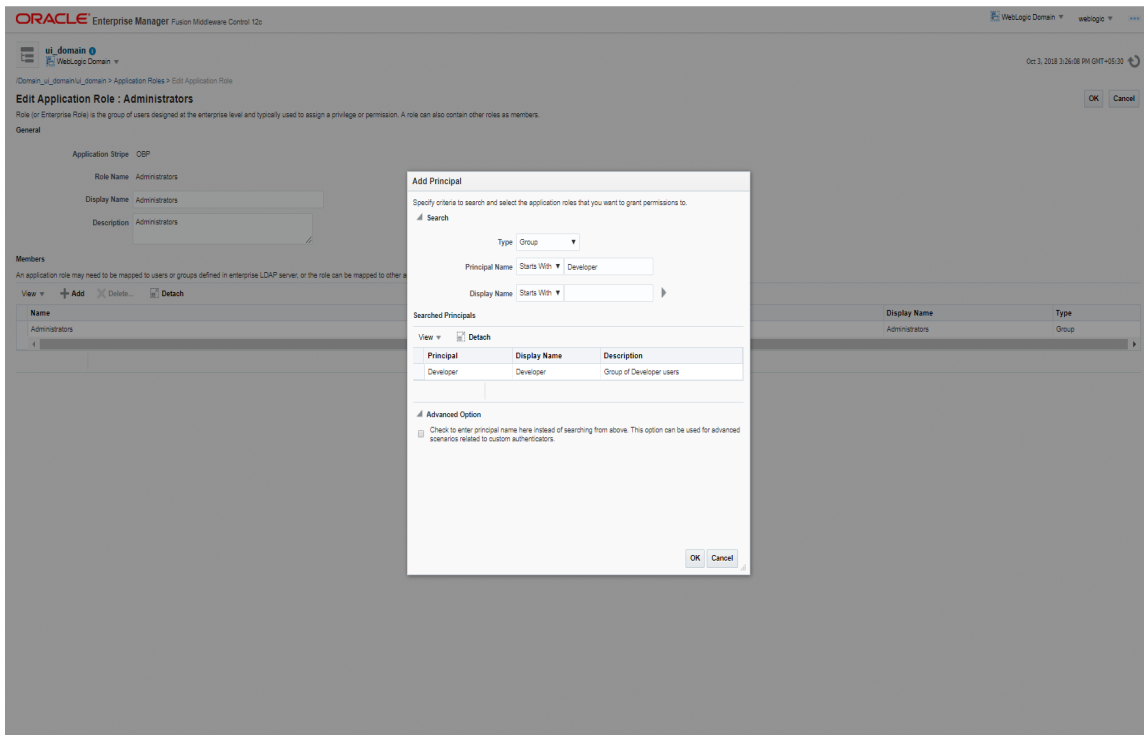


Figure 1–36 Add Principal



2 Approvals Management

This chapter describes Discretionary Pricing Assessment (DPA) approvals, manual credit decision approvals, worklist authorization related activities, and SOA Composer rules setup to be performed as an administrator.

2.1 Discretionary Pricing Assessment (DPA)

This section explains the procedure for Discretionary Pricing Assessment (DPA) approvals.

Overview

DPA can be configured for fee negotiations happening in an account during online transactions as well as for UDM. DPA service is to be called from the respective screens for DPA rule resolution and authorization functionality.

Fee can be configured in following list of modules and functions. DPA service will be called from the following screens:

Table 2–1 List of Functions for Fee Configuration

Sr.No	Function
1	Loan account configuration (New or Amend)
2	CASA account configuration
3	Term deposit account configuration
4	Overdraft account configuration (New or Account)
5	Origination or Application processing Fees

Fee amount applicable for the event is displayed in the fee panel in the respective screens. If there is any negotiation (upward or downward) that happens in the fee panel, the relevant issues have been raised/postponed for the Patch set release.

UDM can be configured in following list of modules and functions. DPA service is called from the following screens:

Table 2–2 List of Functions for UDM Configuration

Sr. No	Function
1	Loan account configuration (New or Amend)
2	CASA account configuration
3	Term deposit account configuration
4	Overdraft account configuration (New or Account)

2.1.1 Setup Details

This section discusses the setup details required to configure the DPA services.

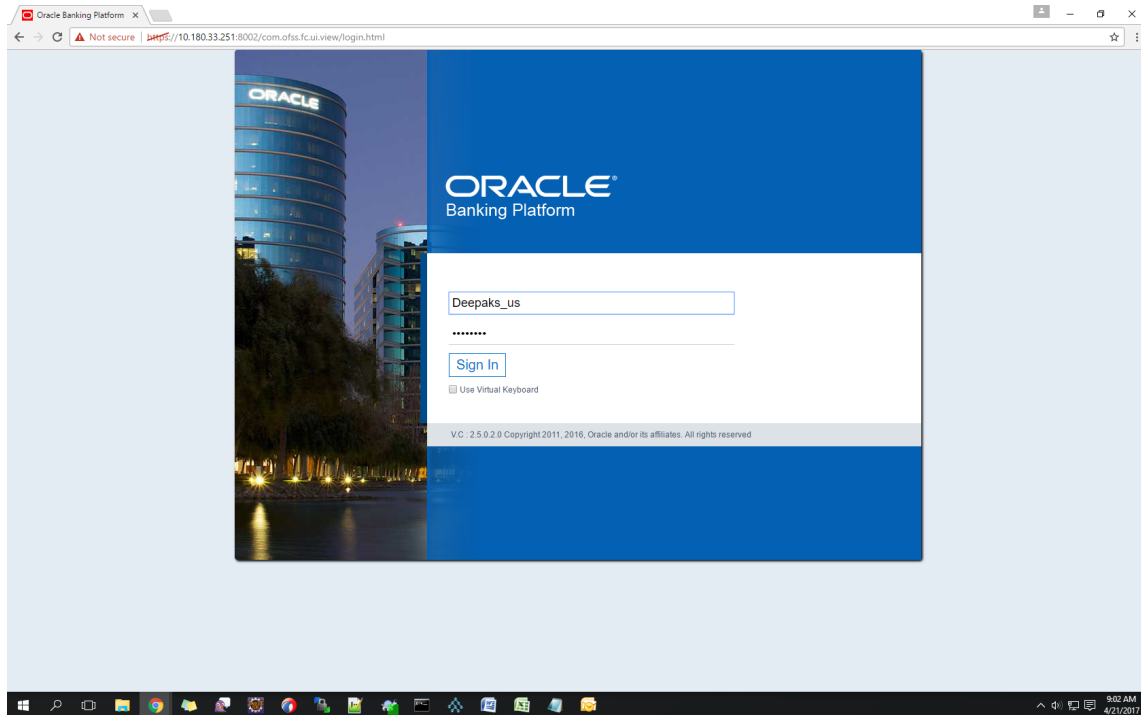
2.1.1.1 Policy Setup in UI

To initiate, the user needs to set up policies in UI for auto approval. This policy specifies which transactions with what data will be auto approved. When the data that is sent from the application matches the policy setup, the transaction is auto approved and if the policy is not matched, then the transaction goes for approval.

Following is the procedure to be followed during OBLS UI policy setup:

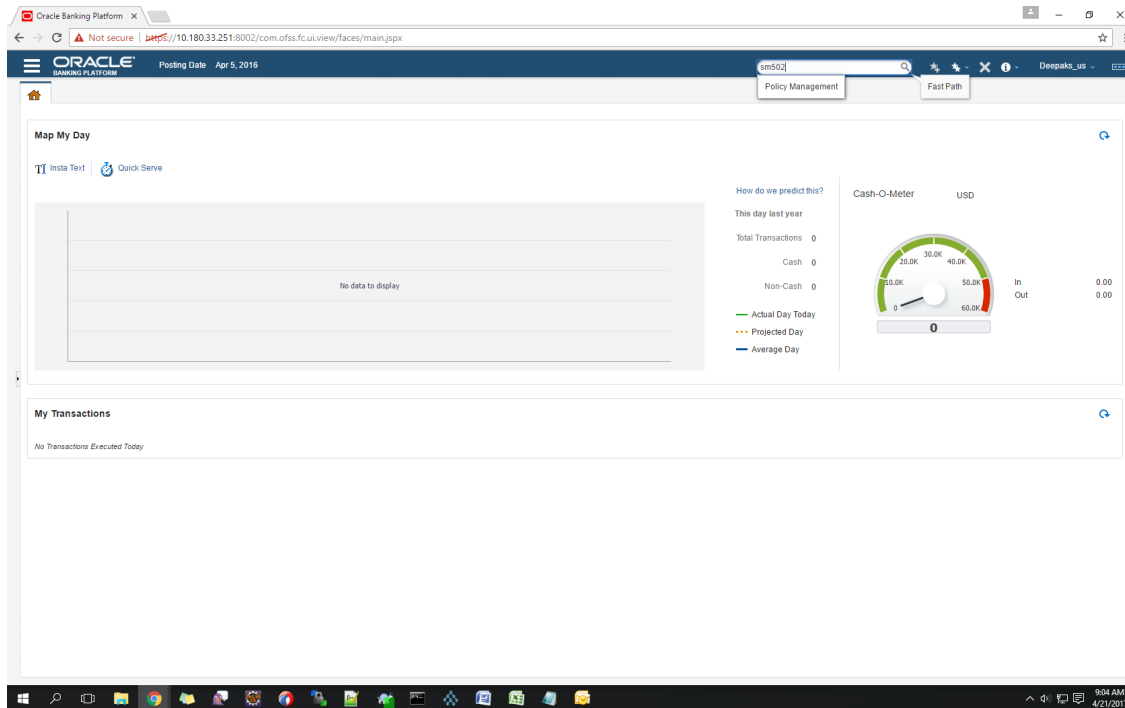
1. Log in to the OBLS UI as a valid user.

Figure 2–1 Log in to OBLS UI to Configure Policies



2. Enter SM502 in the fast path.

Figure 2–2 Search for SM502 in Fast Path



3. Click **Search**. The following screen appears.

Enter the service for which policy needs to be defined.

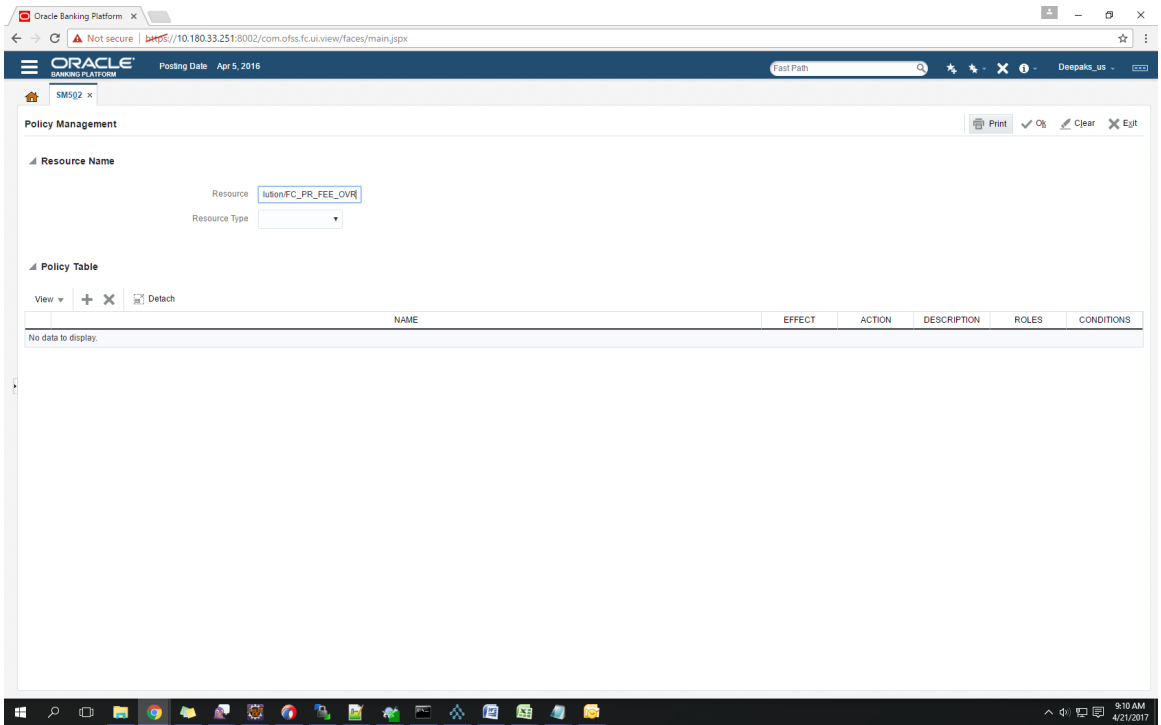
The service needs to be given as [Service_ID]/FC_PR_FEE_OVR or [Service_ID]/FC_PR_UDM_OVR as shown above.

For example,

com.ofss.fc.appx.origination.service.lending.core.application.LendingApplicationServiceSpi.confirmStructureSolution/FC_PR_FEE_OVR

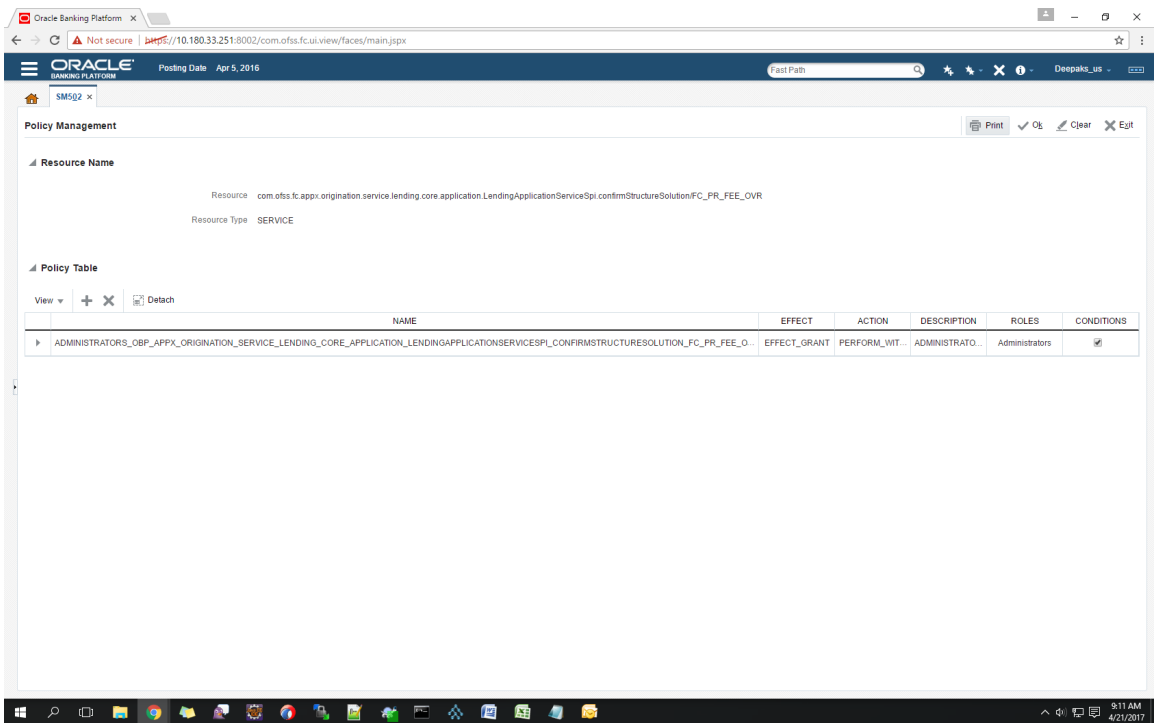
2.1 Discretionary Pricing Assessment (DPA)

Figure 2–3 Policy Management



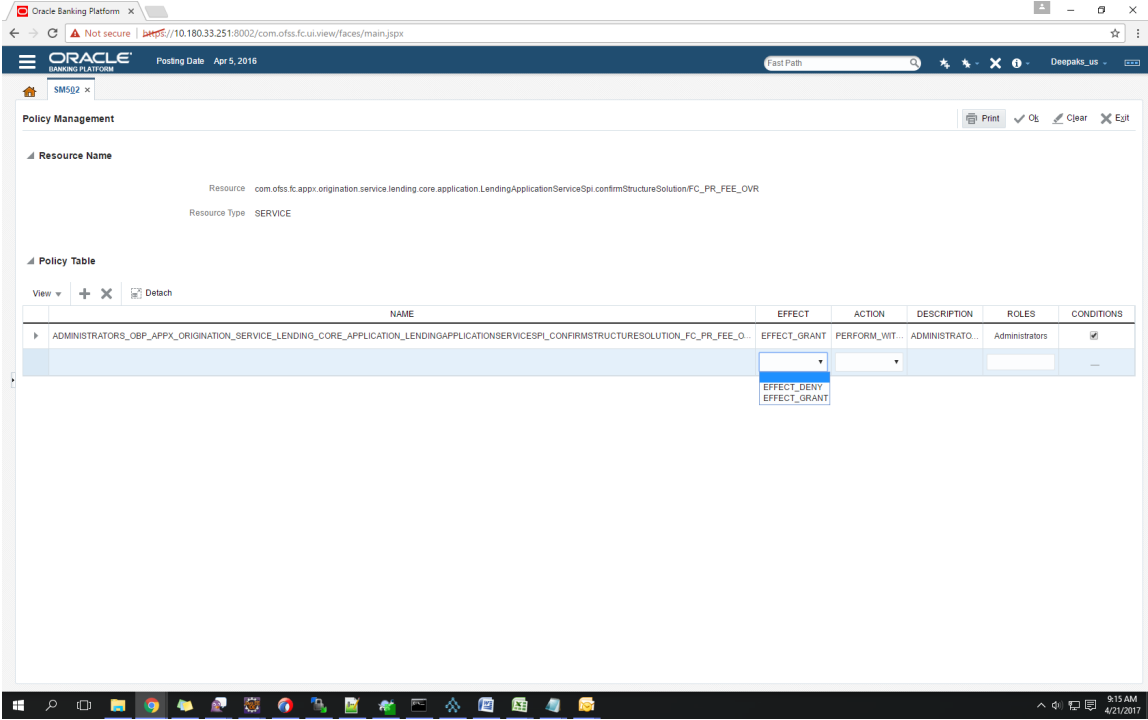
The following screen appears:

Figure 2–4 Enter Service for Policy Definition



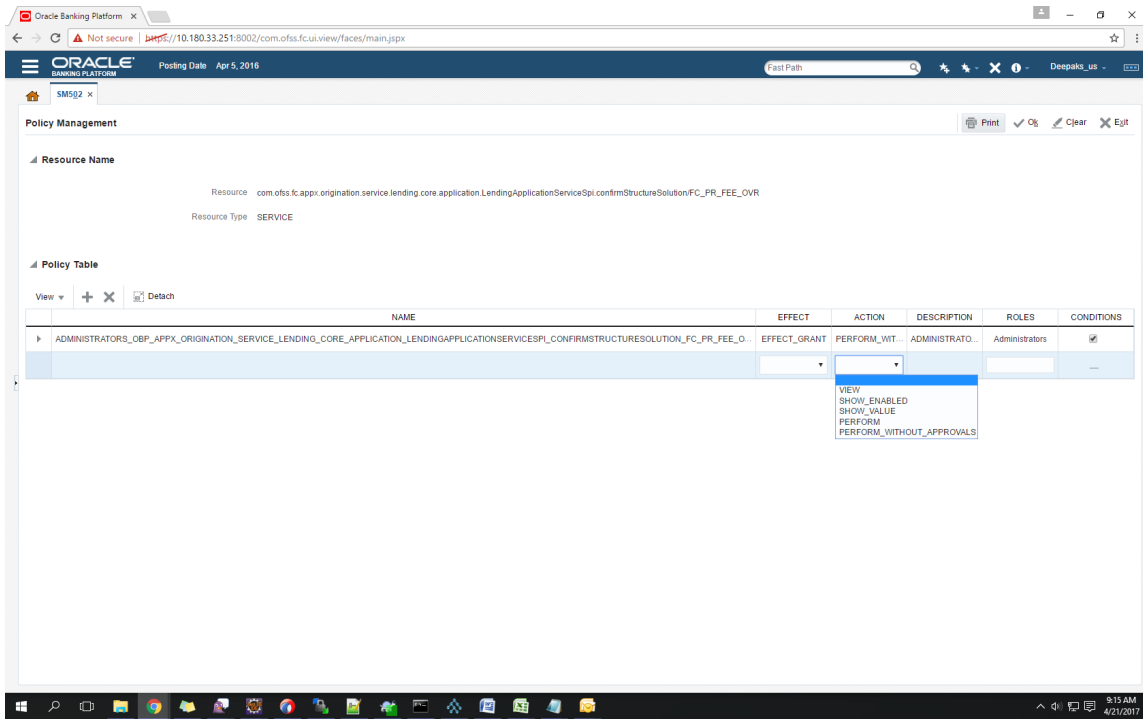
- 4. Click the + sign if you need to add a new policy along with the Role for which the policy is to be enabled.

Figure 2-5 Effect of the Policy



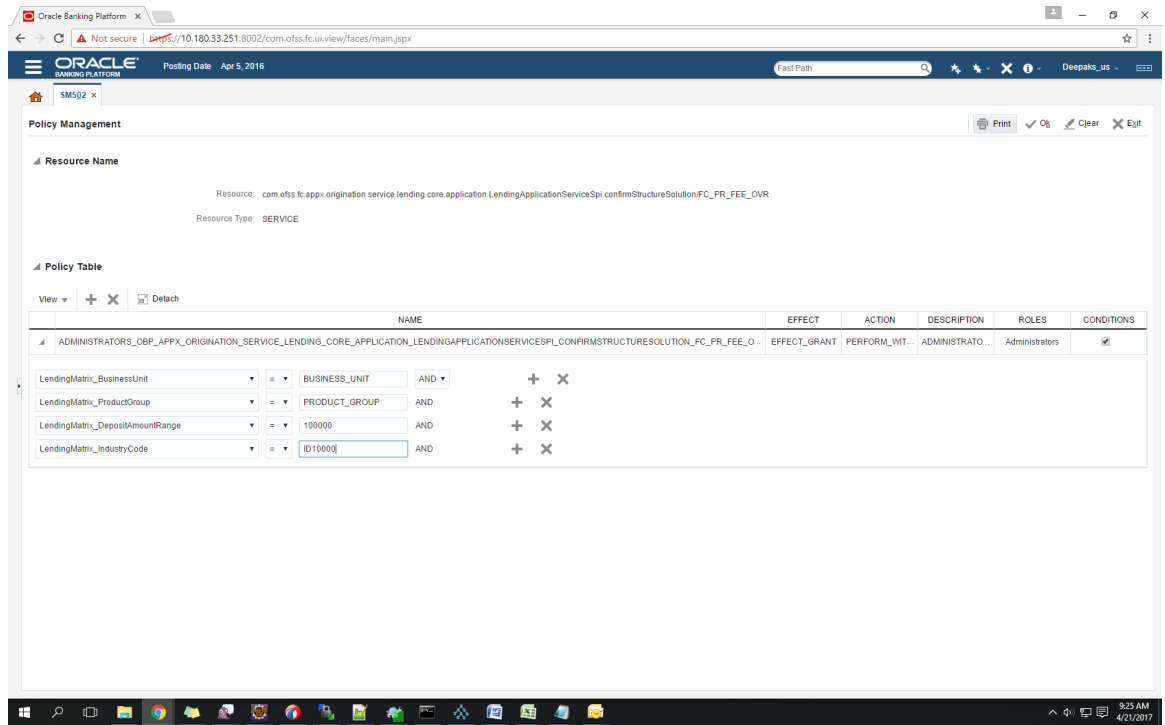
2.1 Discretionary Pricing Assessment (DPA)

Figure 2–6 Action of the Policy



5. To add conditions, select the check box in the conditions column. This displays a collapsible section arrow in the first column. Click the arrow to display the conditions panel as shown below. Enter the conditions needed for the policy.

Figure 2–7 Conditions of the Policy



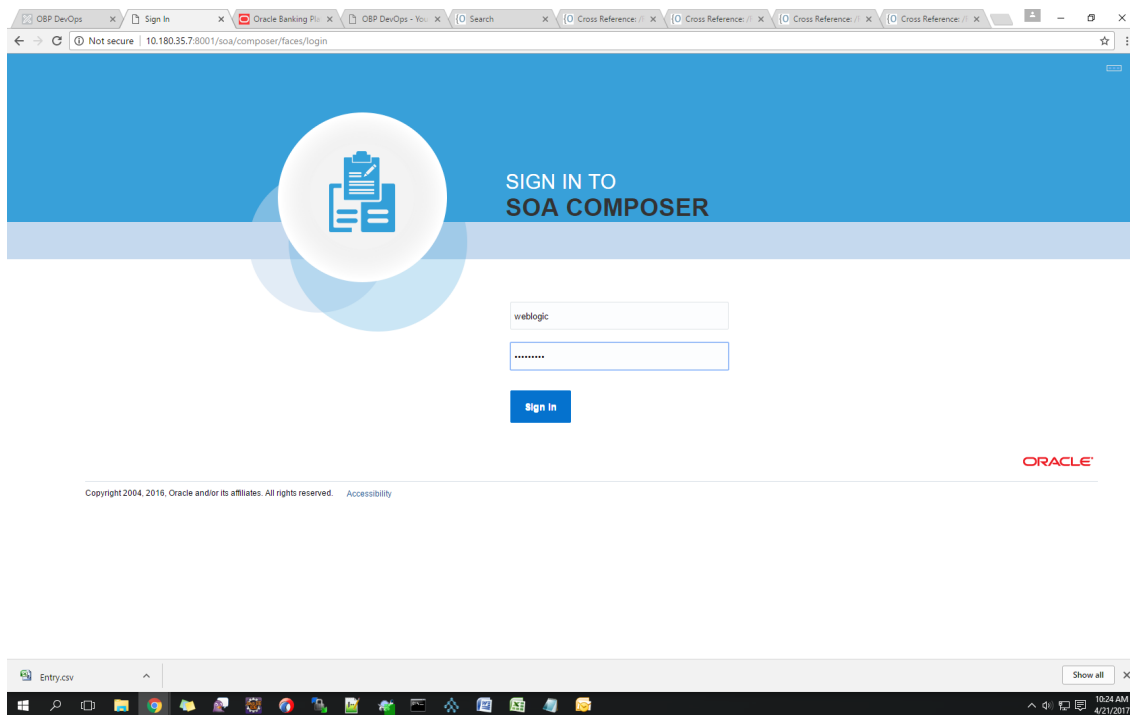
2.1.1.2 SOA Composer Rules Setup

After the rules are set up in UI, you must set up approval rules in SOA composer. These rules should cover all scenarios in which the transaction can come out without being auto approved at the policy level. Any transaction which does not trigger the rules at SOA Composer level is auto rejected.

The following procedure is performed during SOA Composer rules setup:

1. Log in to the SOA Composer application as a user with administrative privileges.

Figure 2–8 Log in to SOA Composer



2. In the **Filter** field in the left panel, enter the name of the rule for the service.

For example:

HT_LendingSpi_ConfirmStructureSolutionRules.rules

Figure 2-9 Find the Rules for Service

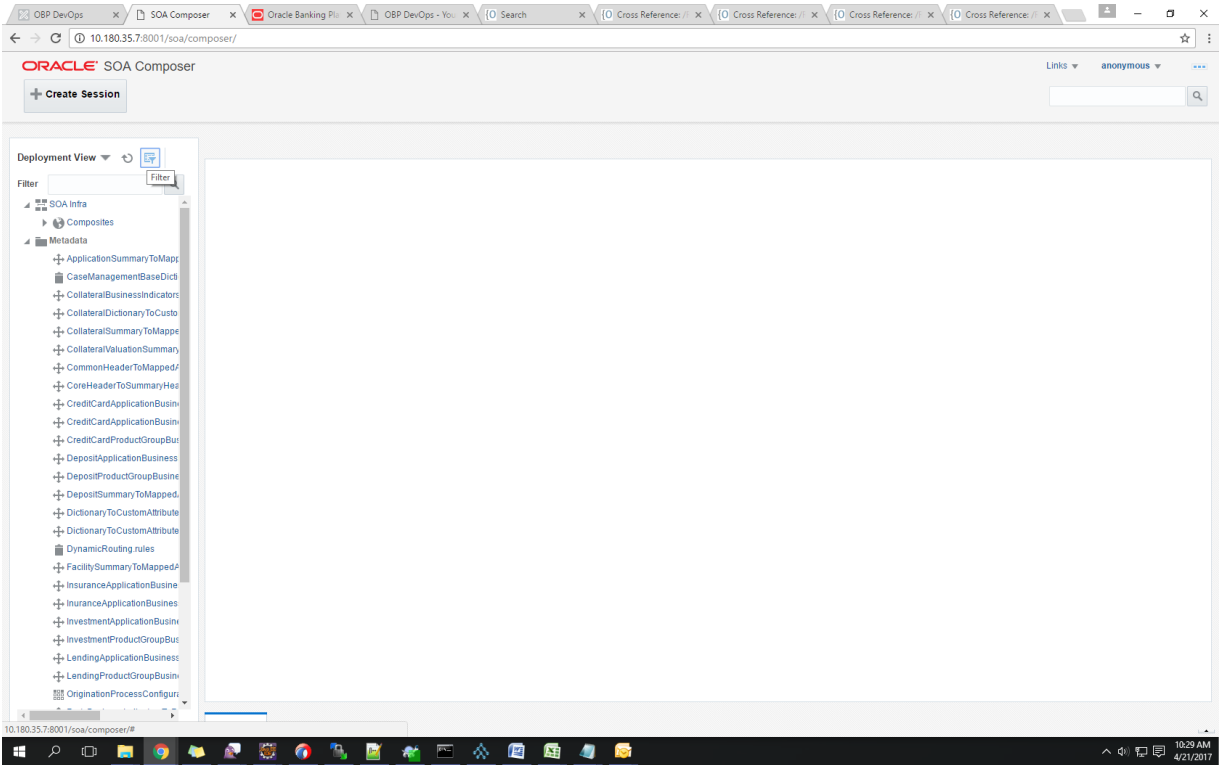
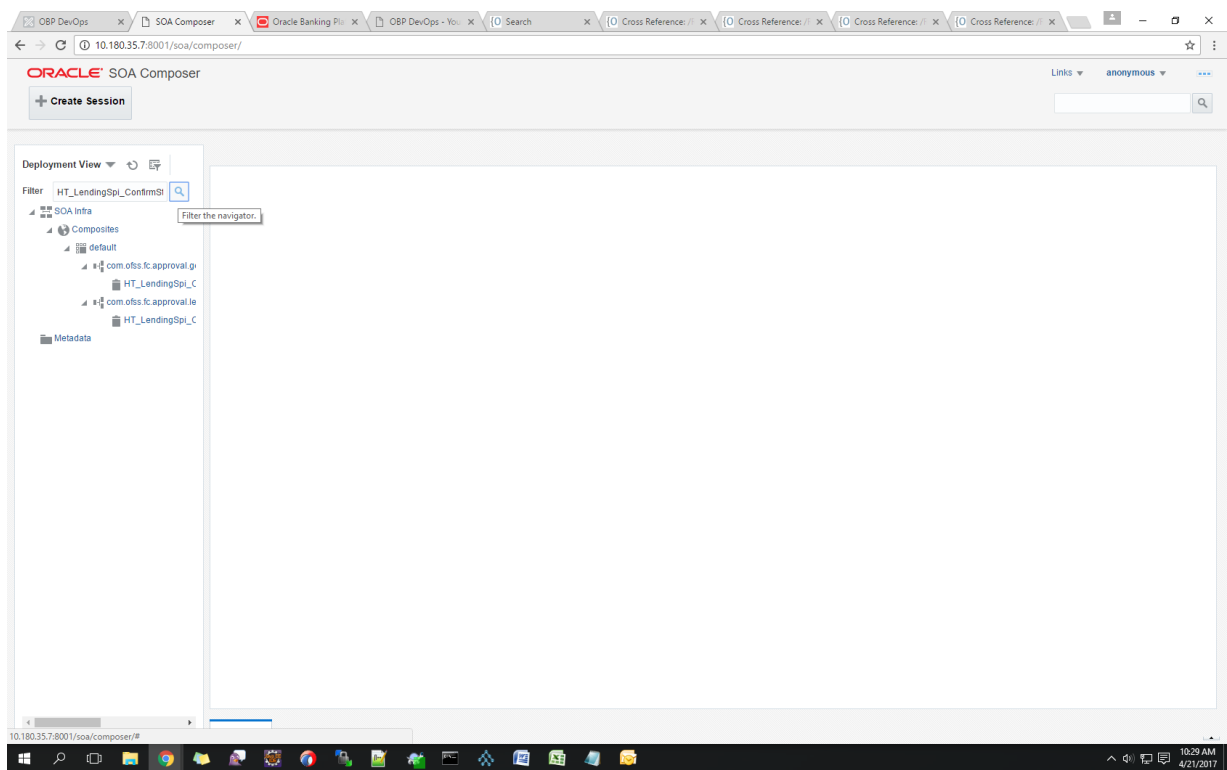
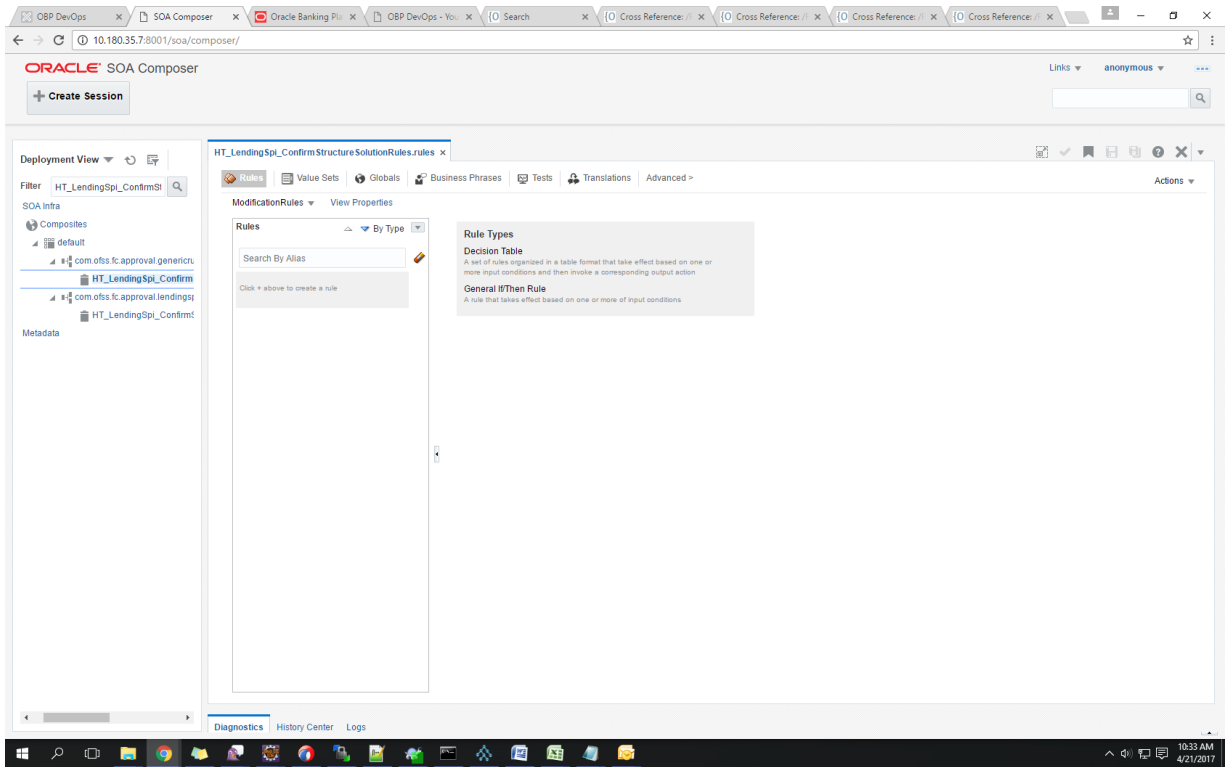


Figure 2–10 Filter Rules



3. Click the rules file present in the process beginning with name `com.ofss.fc.approval.genericrulesapprovalspi.executeapprovalrules`.

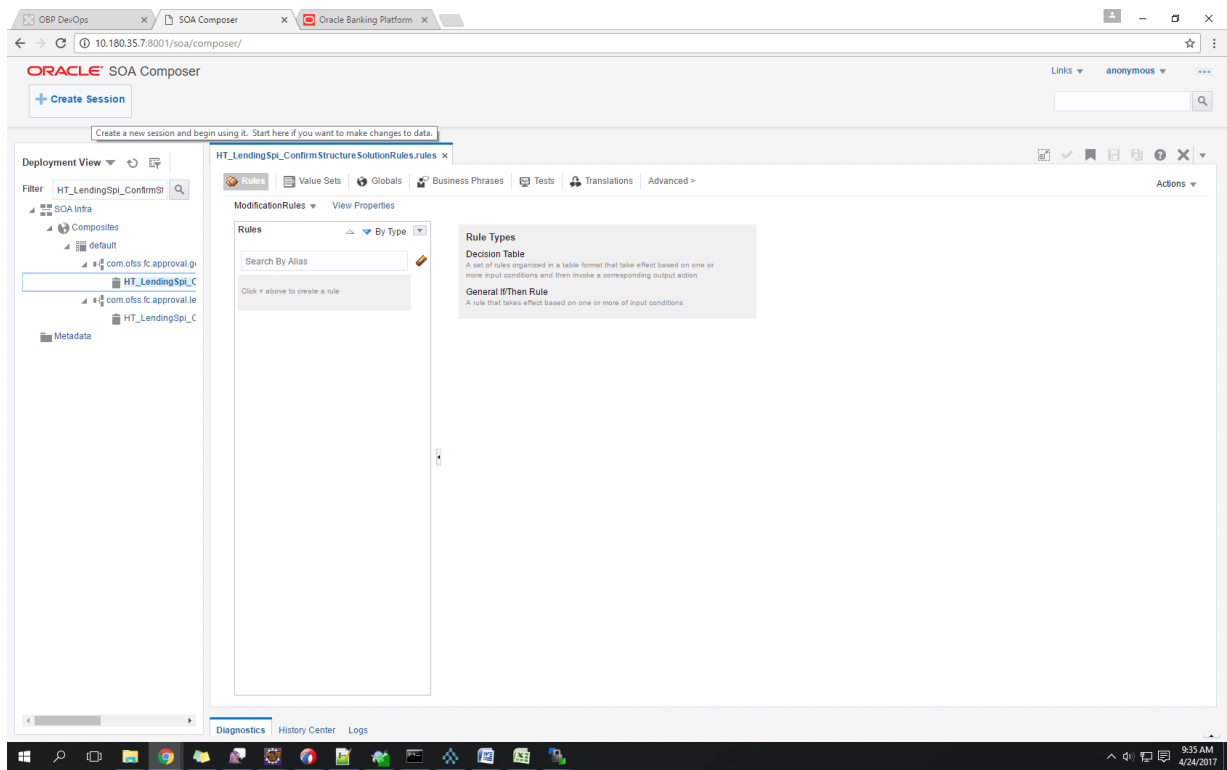
Figure 2–11 Searching Specific Process



4. Click the **Create Session** tab to modify the rules.

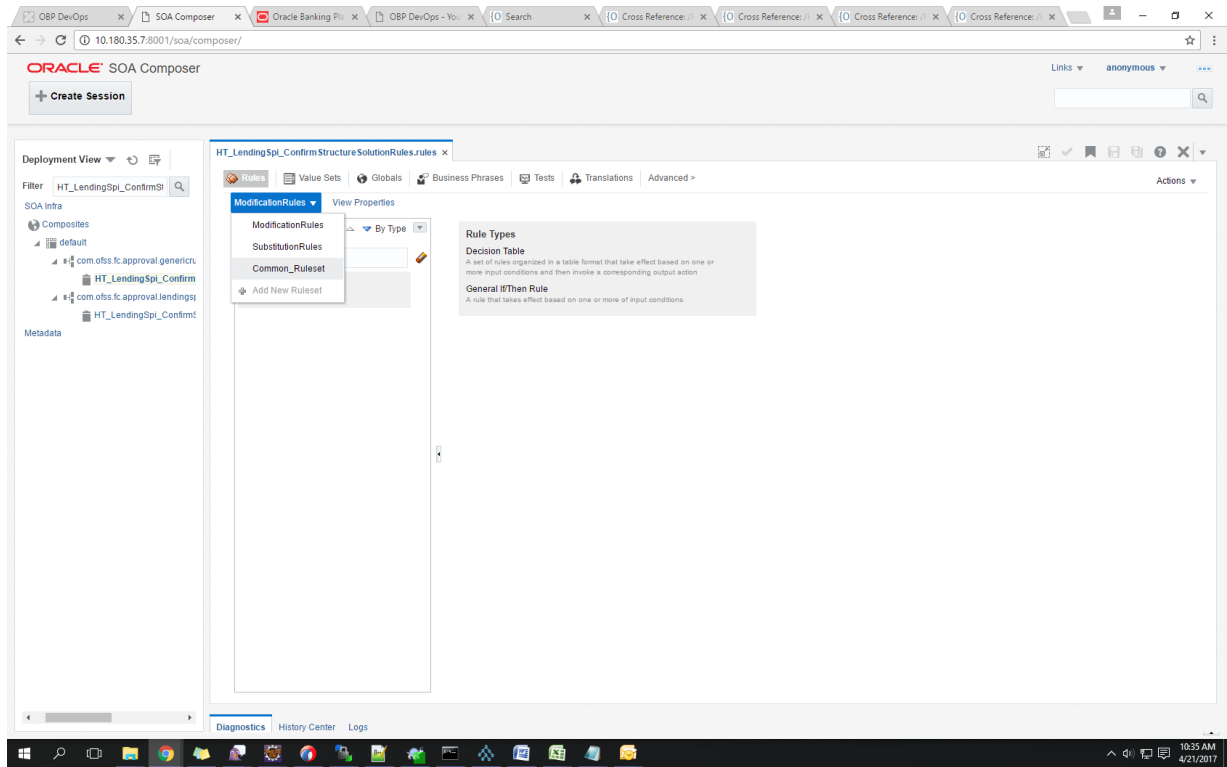
2.1 Discretionary Pricing Assessment (DPA)

Figure 2–12 Creating the Rule



5. From the **ModificationRules** list, select the **Common_Ruleset** option as shown below.

Figure 2–13 Selecting Rules File



6. Select the rule and add attributes to the rule.

Note

The rule being created must be Active rule.

Figure 2–14 Adding Attributes to the Rule File

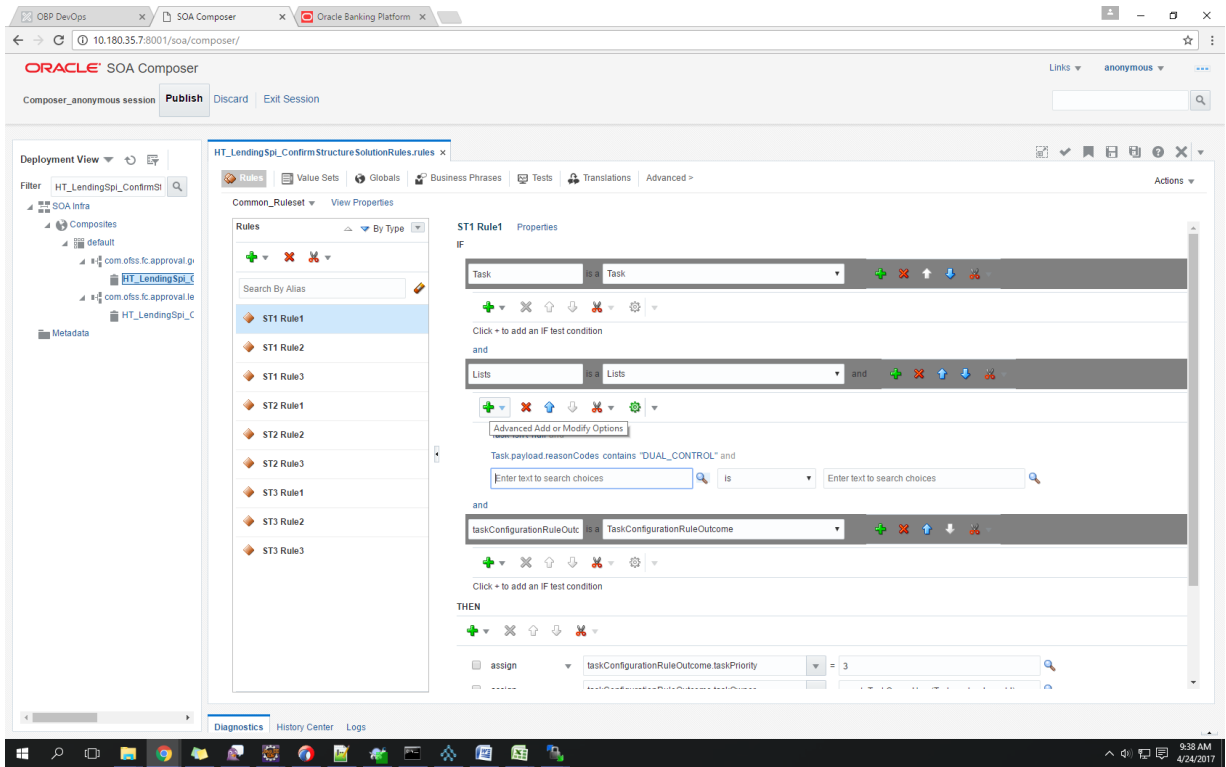
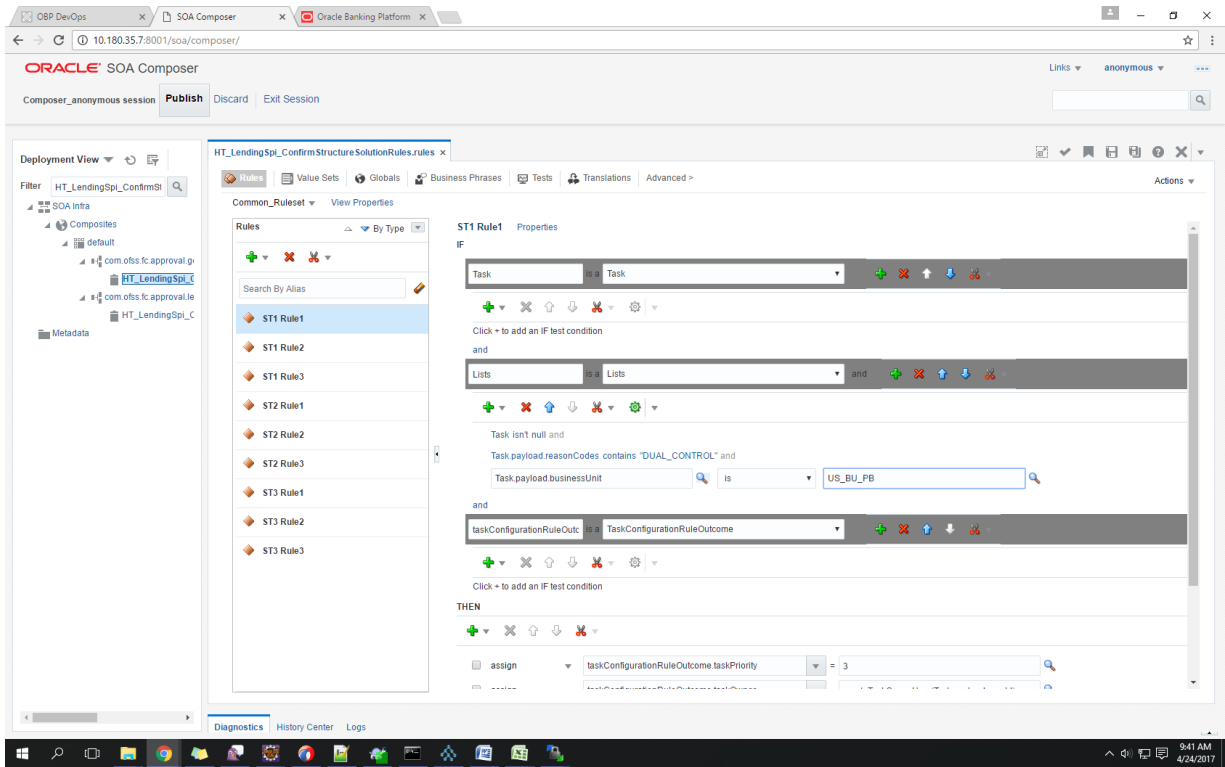
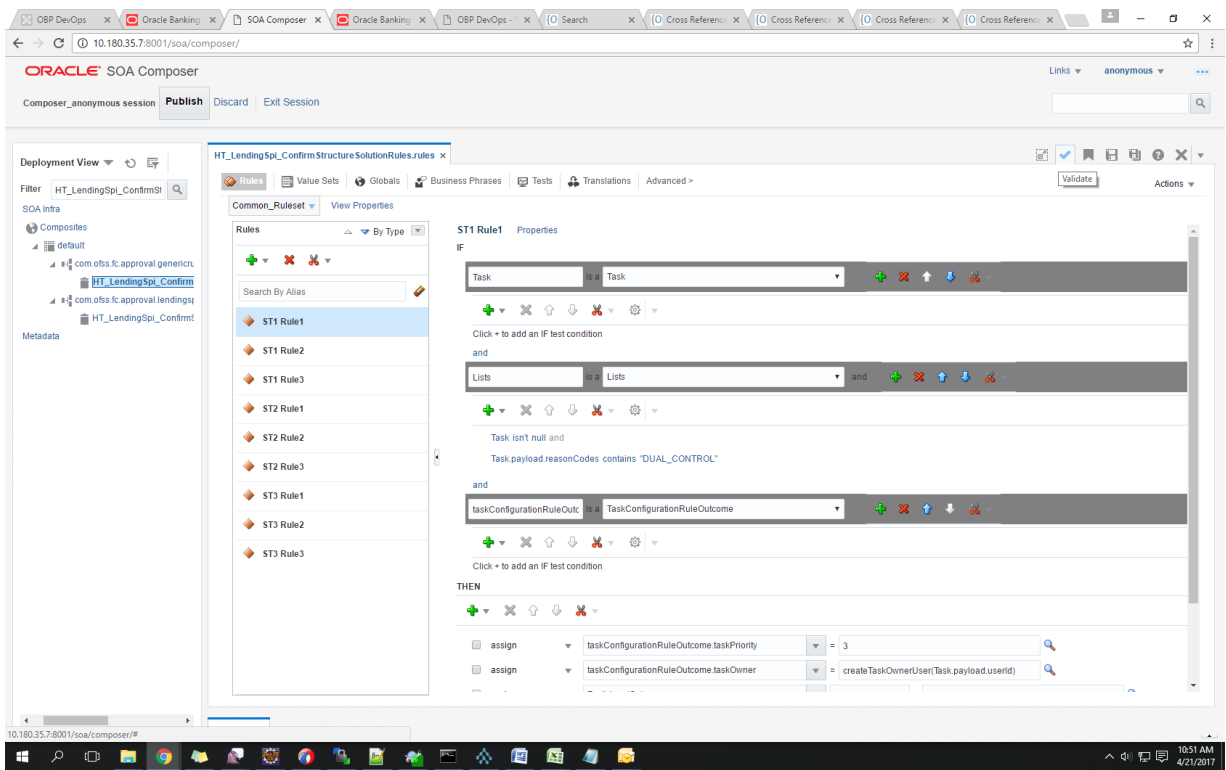


Figure 2–15 Adding Attributes to the Rule File



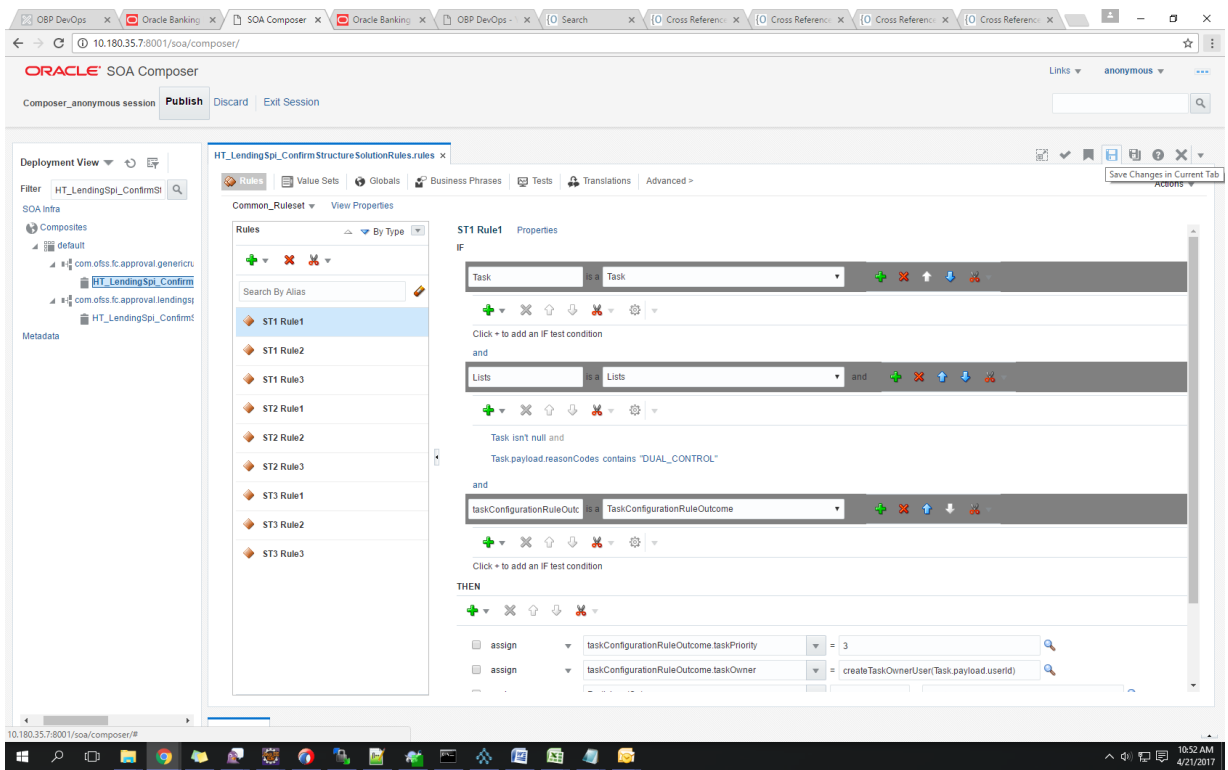
7. Click **Validate** to validate the rules file.

Figure 2–16 Validating Rules File



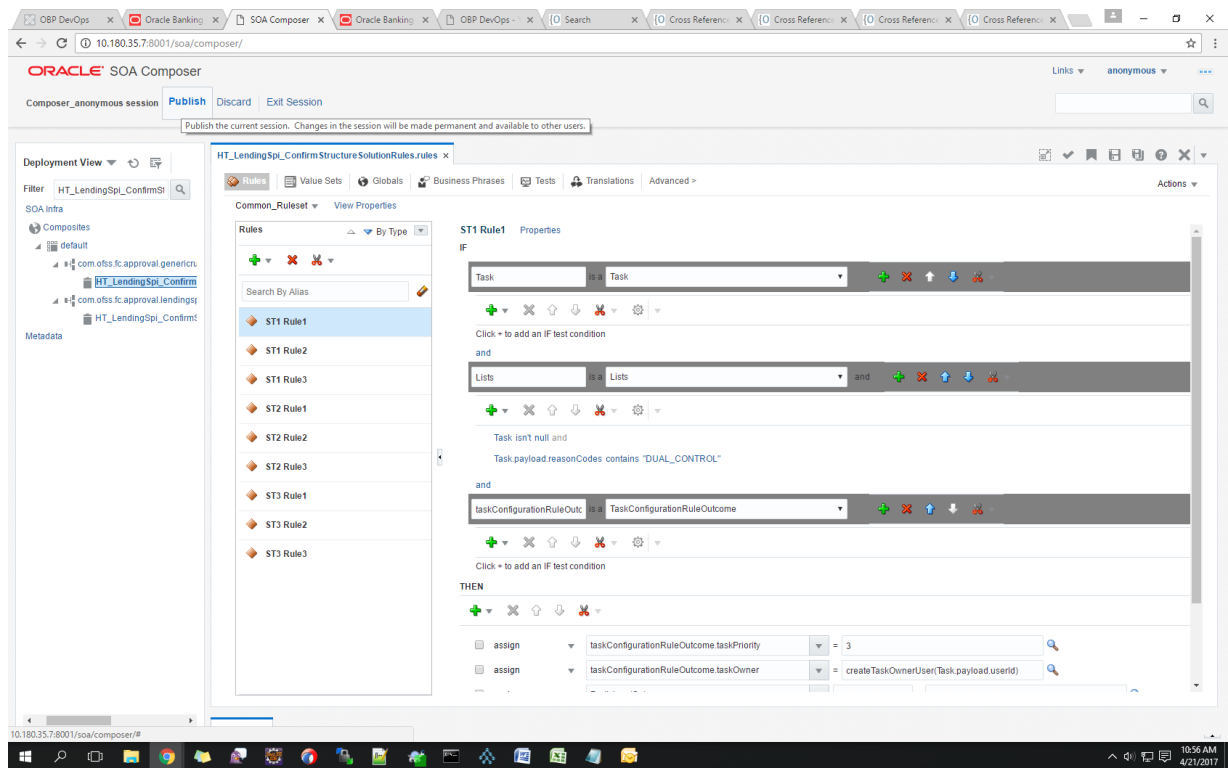
8. Click **Save** to save the rules.

Figure 2–17 Saving Rules File



9. Click **Publish** to publish the rules once editing of rules is done.

Figure 2–18 Publishing Rules File



2.1.1.3 SMS Setup

The user also needs to set up overridable exception for the application to send the transaction to worklist application. This can be achieved through the **Severity** tab in **Artifact Dependency Map (Fast Path: SM500)** page.

Note

The given procedure provides details on SMS setup for Fees. The same procedure can be followed for SMS Setup for UDM with UDM related details.

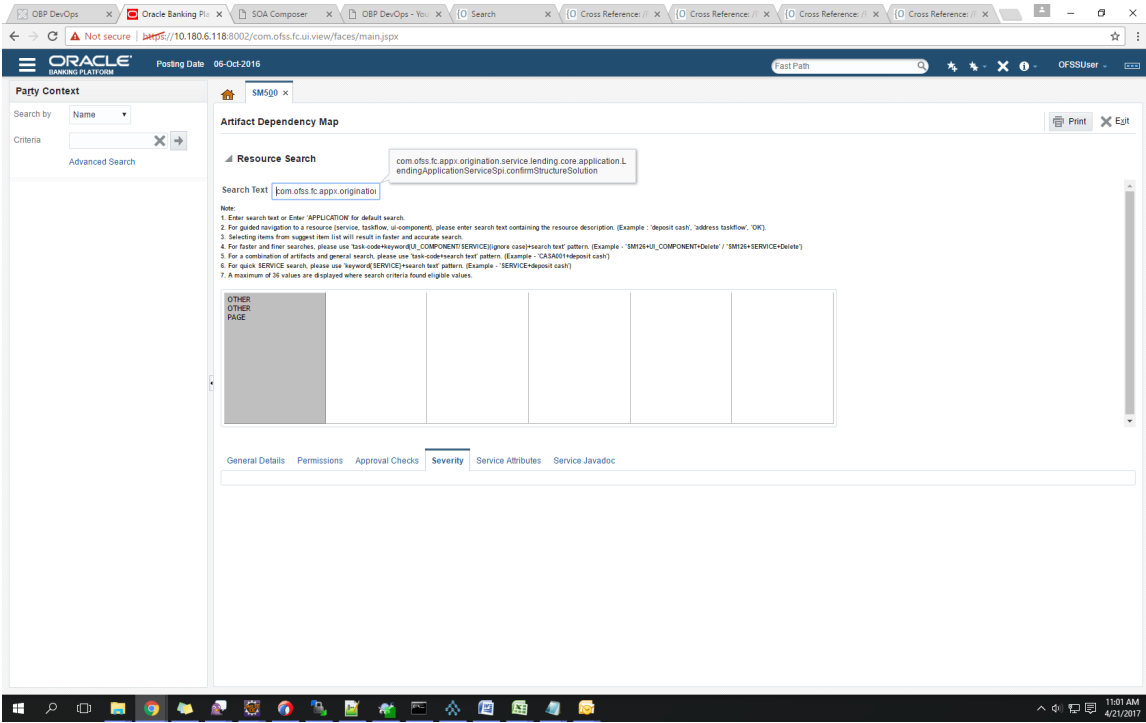
The following procedure is performed during SMS setup:

1. In the **Search Text** field, enter the service name.

For example, to search for a service, search text can be as follows:

- com.ofss.fc.appx.Origination.service.lending.core.application.LendingApplicationServiceSpi.confirmStructureSolution

Figure 2–19 Search for Service Using Entire Service Name



- 2. Navigate to service node by following highlighted path (in grey color) and select the service node.

2.1 Discretionary Pricing Assessment (DPA)

Figure 2–20 Select the Service to be Configured

The screenshot displays the Oracle Banking Platform interface. At the top, there are browser tabs for 'OBP DevOps', 'Oracle Banking Platform', 'Getting Started with OBP', 'OBP DevOps - Your OBP', and 'OBP24SUPPORT-3107'. The main content area is titled 'Artifact Dependency Map' and shows a grid of service dependencies. Below this, there are tabs for 'General Details', 'Permissions', 'Approval Checks', 'Severity', 'Service Attributes', and 'Service Javadoc'. The 'Severity' tab is active, showing a table with columns for Branch Code, Role ID, Channel Id, Reason Code, and SEVERITY. The table contains several rows with values like '1000', '3000', '089999', and 'ANY' for Branch Code, and 'Administrators' for Role ID. The SEVERITY column has values like 'OVERRIDE', 'IGNORE', and 'OVERRIDE'. At the bottom of the interface, there is a Windows taskbar showing the time as 10:20 AM on 4/25/2017.

Branch Code	Role ID	Channel Id	Reason Code	SEVERITY
1000	Administrators	BRN	FC_PR_LIDM_OVR	OVERRIDE
3000	Administrators	BRN	FC_OR_AIGNT_001	IGNORE
089999	Administrators	BRN	FC_PR_LIDM_OVR	OVERRIDE
3000	Administrators	BRN	FC_PR_FEE_OVR	OVERRIDE
ANY	Administrators	BRN	1000	IGNORE

3. Click the **Severity** tab to maintain severity for the resource. Severity can be maintained using add row, delete, and save buttons in the toolbar.

Figure 2–21 Severity Tab - Add Severity

The screenshot shows the Oracle Banking Platform interface. At the top, there's a navigation bar with the Oracle logo and 'Posting Date Jan 31, 2016'. Below that is the 'Artifact Dependency Map' section, which displays a grid of service dependencies. The 'Severity' tab is selected, showing a table with columns for Branch Code, Role ID, Channel Id, Reason Code, and SEVERITY. The table contains several rows, with the last row selected and its dropdown menu open, showing options like IGNORE, NOTIFY, REJECT, and OVERRIDE.

Branch Code	Role ID	Channel Id	Reason Code	SEVERITY
1000	Administrators	BRN	FC_PR_UDM_OVR	OVERRIDE
3000	Administrators	BRN	FC_OR_AGNT_001	IGNORE
089999	Administrators	BRN	FC_PR_UDM_OVR	OVERRIDE
3000	Administrators	BRN	FC_PR_FEE_OVR	OVERRIDE
ANY	Administrators	BRN	1000	OVERRIDE
3000	Administrators	BRN	FC_PR_UDM_OVR	OVERRIDE

2.1.2 Performing the Transaction

Following procedure explains how to perform a transaction:

2.1 Discretionary Pricing Assessment (DPA)

1. Log in to the application as teller user and initiate the transaction.

Figure 2–22 Initiating Transaction

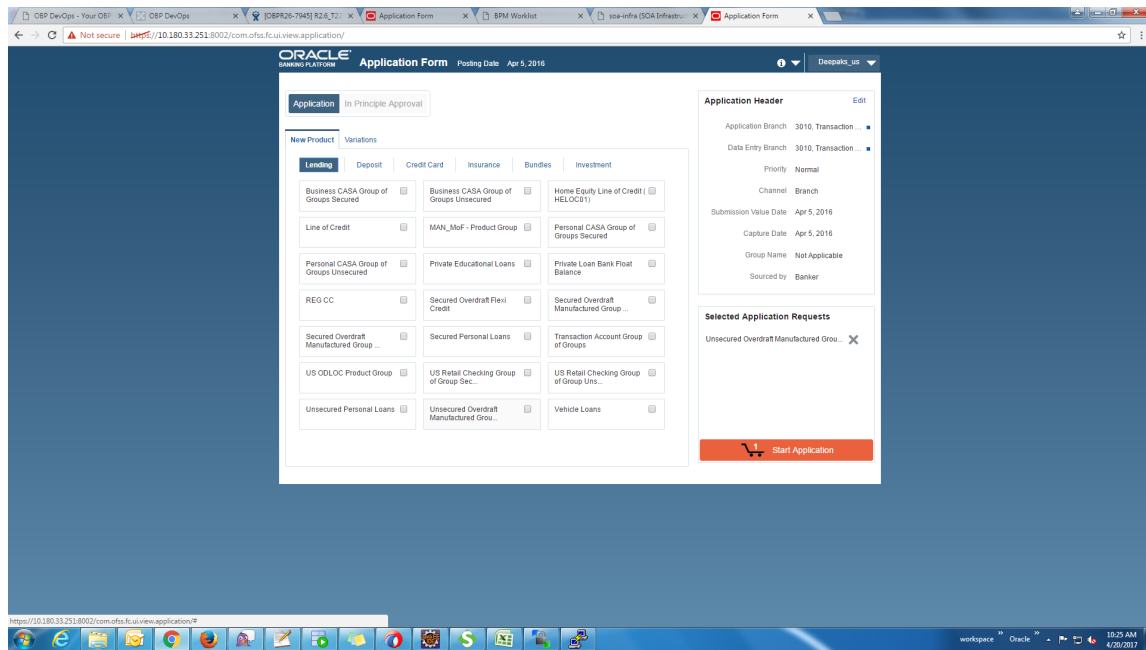
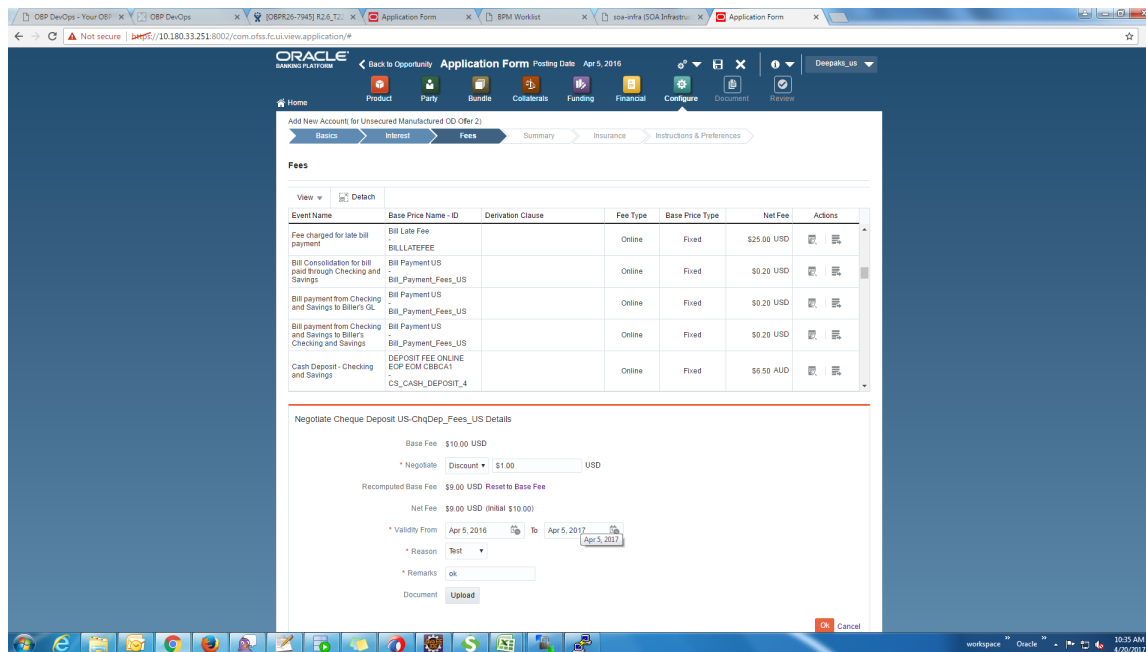
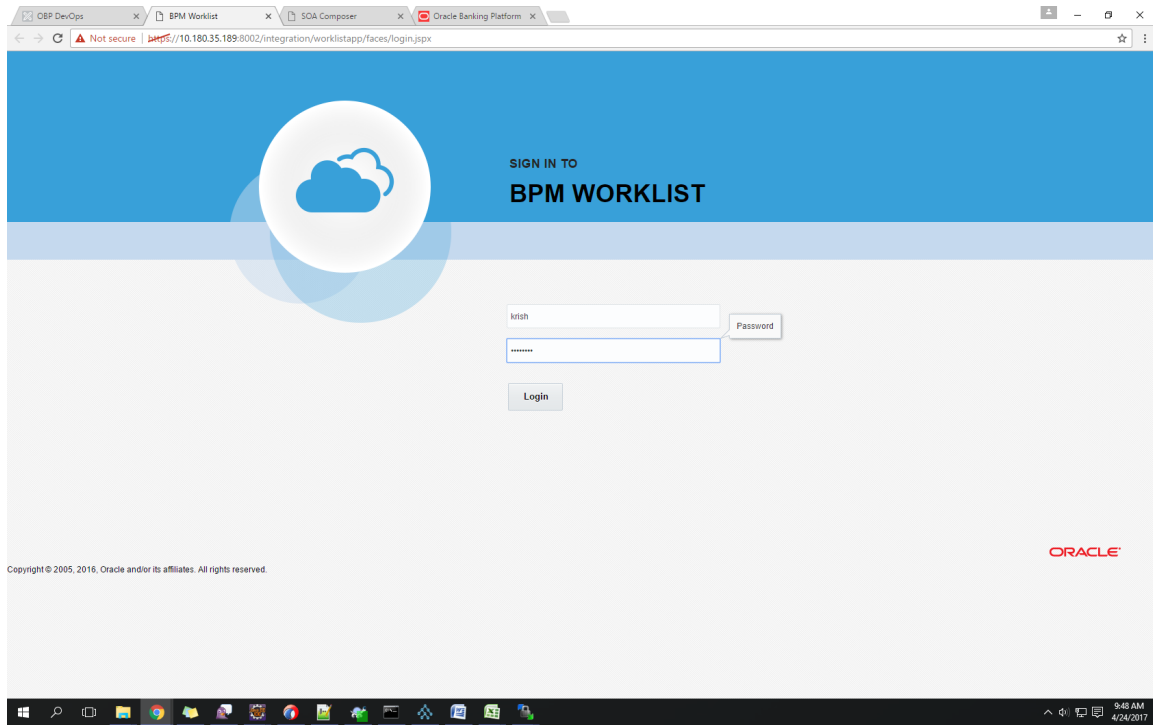


Figure 2–23 Fee Negotiation



2. Log in to the approval worklist as approver user and open the work item.

Figure 2–24 Log in to Approval Worklist

3. You can either approve or reject the work item (approved here) after adding comments.

2.1 Discretionary Pricing Assessment (DPA)

Figure 2–25 Approve or Reject Work item

The screenshot displays the Oracle BPM Worklist interface. At the top, there are browser tabs for 'OBP DevOps', 'Oracle Banking Platform', 'Application Form', and 'BPM Worklist'. The main header shows 'ORACLE BPM Worklist' and a user profile for 'krish'. Below the header is a navigation bar with 'Views' and 'Actions' menus. The main content area features a table of work items with columns for 'Status', 'Title', 'Number', 'Creator', 'Assigned', and 'Priority'. The first item is 'Approval Required for Structure Solution (FC_PR_Disbursement_Fee+LN_DISBURSEMENT_FEE_OVR_DUAL_CONTROL_FC_PR_FEE_OVR) of Lending Application' with number 203374, created by JS, assigned on 21/04/2017 at 6:21 PM, and priority 3. A detailed view of this work item is shown below the table, including a title, a description, and a 'Funds Table' with columns for 'Outlay' and 'Funds'. The 'Funds Table' lists items like 'Purchase or Cost' (\$10,000.00), 'Bank Fees' (\$585.60), and 'Misc Fees' (\$165.00). An 'Actions' menu is open over the work item, showing options like 'Approve', 'Reject', 'Create Work Activity', 'Request Information...', 'Reassign...', 'Create Subtask...', 'Escalate', 'Renew', and 'Suspend'.

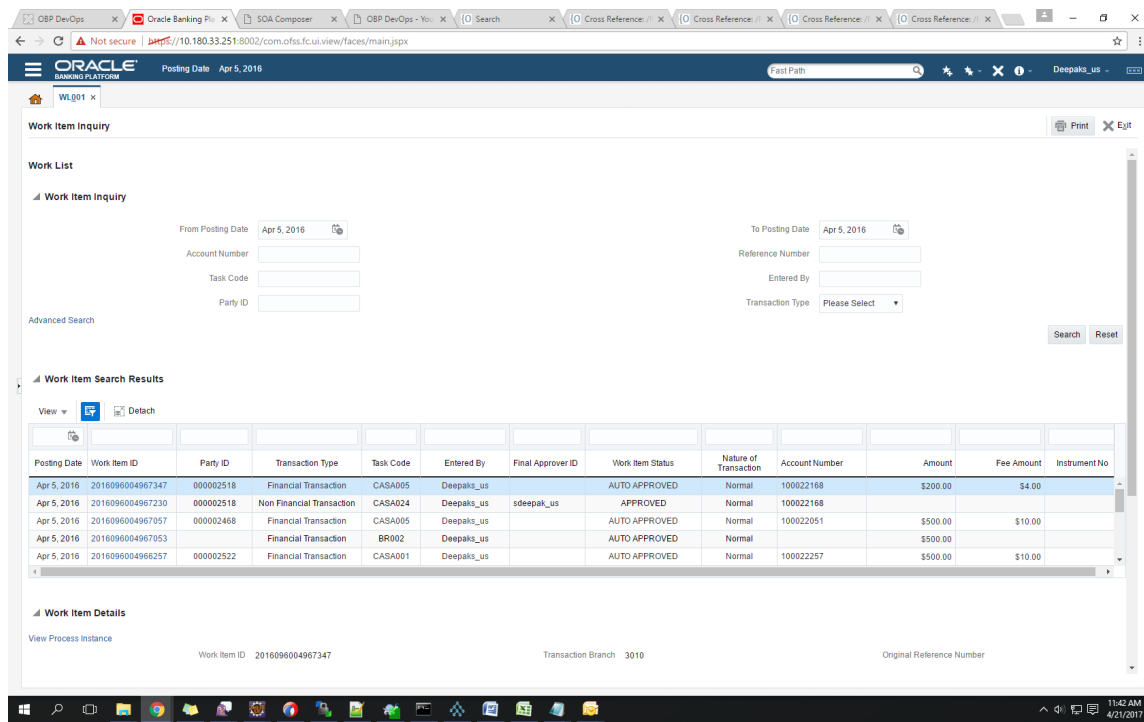
Status	Title	Number	Creator	Assigned	Priority
	Approval Required for Structure Solution (FC_PR_Disbursement_Fee+LN_DISBURSEMENT_FEE_OVR_DUAL_CONTROL_FC_PR_FEE_OVR) of Lending Application	203374	JS	21/04/2017 6:21 PM	3
	Verify Application APP201020160002797 and Submission SUB201020160003564	203363	JS	21/04/2017 5:40 PM	3
	Structure Solution of Lending Application APP201020160002797 and Submission SUB201020160003564	203362	JS	21/04/2017 5:40 PM	3
	Structure Solution of Lending Application APP201020160002792 and Submission SUB201020160003563	203348	JS	21/04/2017 1:51 PM	3
	Verify Application APP201020160002792 and Submission SUB201020160003563	203347	JS	21/04/2017 1:51 PM	3
	Verify Valuation Manual Report - Nextstar Valuer (Request Ref # 0100116000001505/SUB201020160003560)	203346	JS	21/04/2017 12:23 P...	3
	Structure Solution of Lending Application APP201020160002791 and Submission SUB201020160003560	203342	JS	21/04/2017 12:18 P...	3

Outlay	Funds
▶ Purchase or Cost	\$10,000.00
▶ Bank Fees	\$585.60
▶ Misc Fees	\$165.00

4. View the status of the work item.

The initiator user can see the status of the work item from the **Work Item Inquiry (Fast path: WL001)** page (only for non origination task).

Figure 2–26 Viewing Status of Work item



2.2 Discretionary Credit Assessment (DCA)

This section explains steps in Discretionary Credit Decision approvals.

Overview

In Origination workflow at Credit Assessment stage, user submits the submission to credit decision engine. If the credit decision status of the submission is Declined or Referred, then submission is moved to manual decision step. The user attached to Enterprise role having rights on Manual Decision Task can assess the credit decision engine recommendation, make the necessary changes and recommend for approval. The system checks whether the role to which user is attached has required authority to approve the task based on values of parameters in the task. If yes, the task is auto authorized. If the values are not within the limits attached to the role, the system checks the approval matrix to find the roles having the required authority to approve the transaction and route task to such roles for approval.

Facts Required for MCD Approvals

Following are the facts required for MCD approvals.

Table 2–3 Facts Required for the MCD Approvals

State
Business Unit
Currency
Personal Aggregate Application Amount

Overall Aggregate Application Amount
Applicant Credit Card Limit
Aggregate Credit Card Limit
LTV Category Group 1
LTV Category Group 2
LTV Category Group 3
LTV Category Group 4
LTV Category Group 5
Overview Amount
Overview Percentage

These are the facts required to maintain the rules for MCD in OES and SOA. The preconditions are:

- OES configurations
- Group creation in SOA
- Rules configuration in SOA

Scenario: Submission with Referred status and breaching OES configurations, hence transaction sent for approvals in SOA.

2.2.1 Setup Details

This section discusses the setup details required to configure the DCA services.

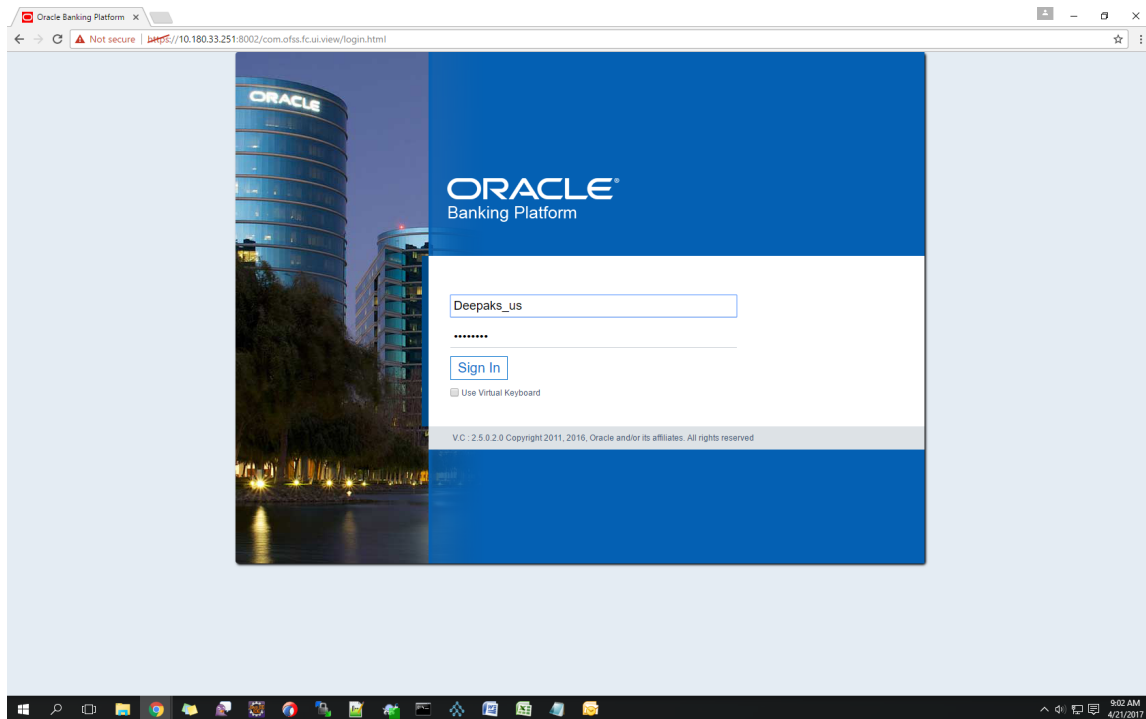
2.2.1.1 Policy Setup in UI

To initiate, the user needs to set up policies in UI for auto approval. This policy specifies which transactions with what data will be auto approved. When the data that is sent from the application matches the policy setup, the transaction is auto approved and if the policy is not matched, then the transaction goes for approval.

Following is the procedure to be followed during OBLs UI policy setup:

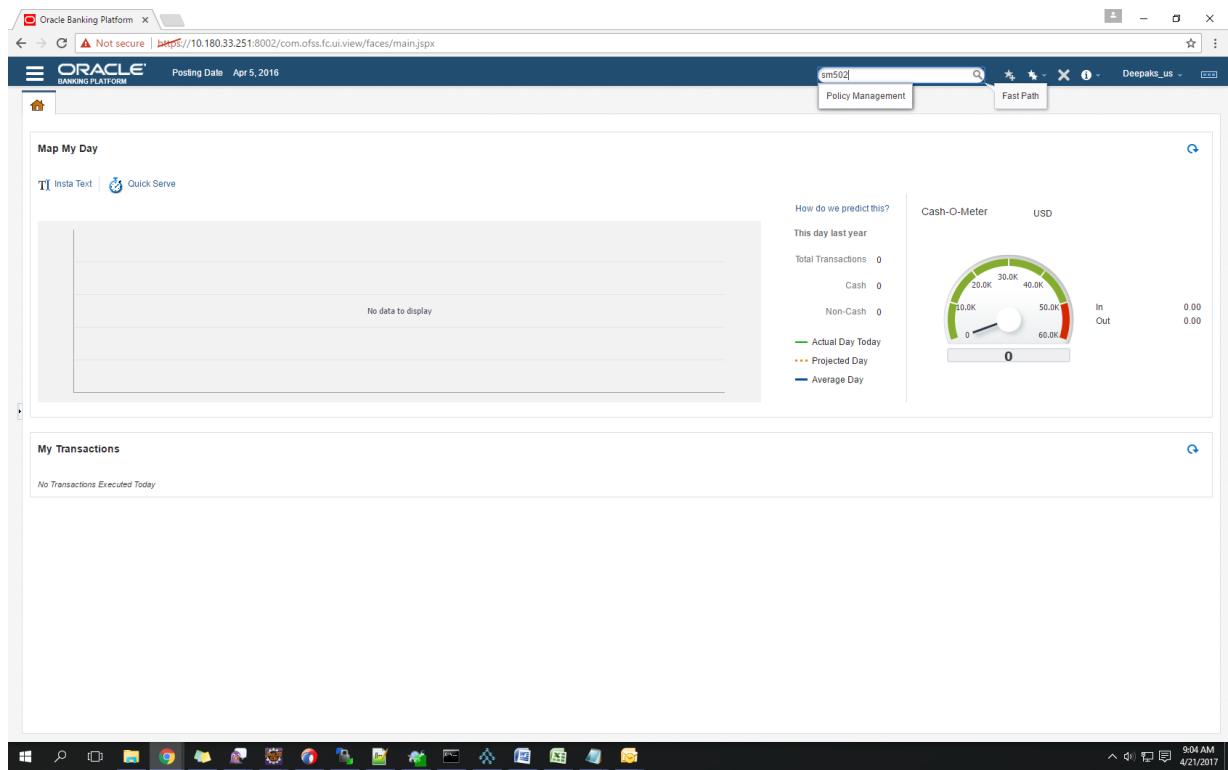
1. Log in to the OBLS UI as a valid user.

Figure 2–27 Log in to OBLS UI to Configure Policies



2. Enter SM502 in the fast path.

Figure 2–28 Search for SM502 in Fast Path

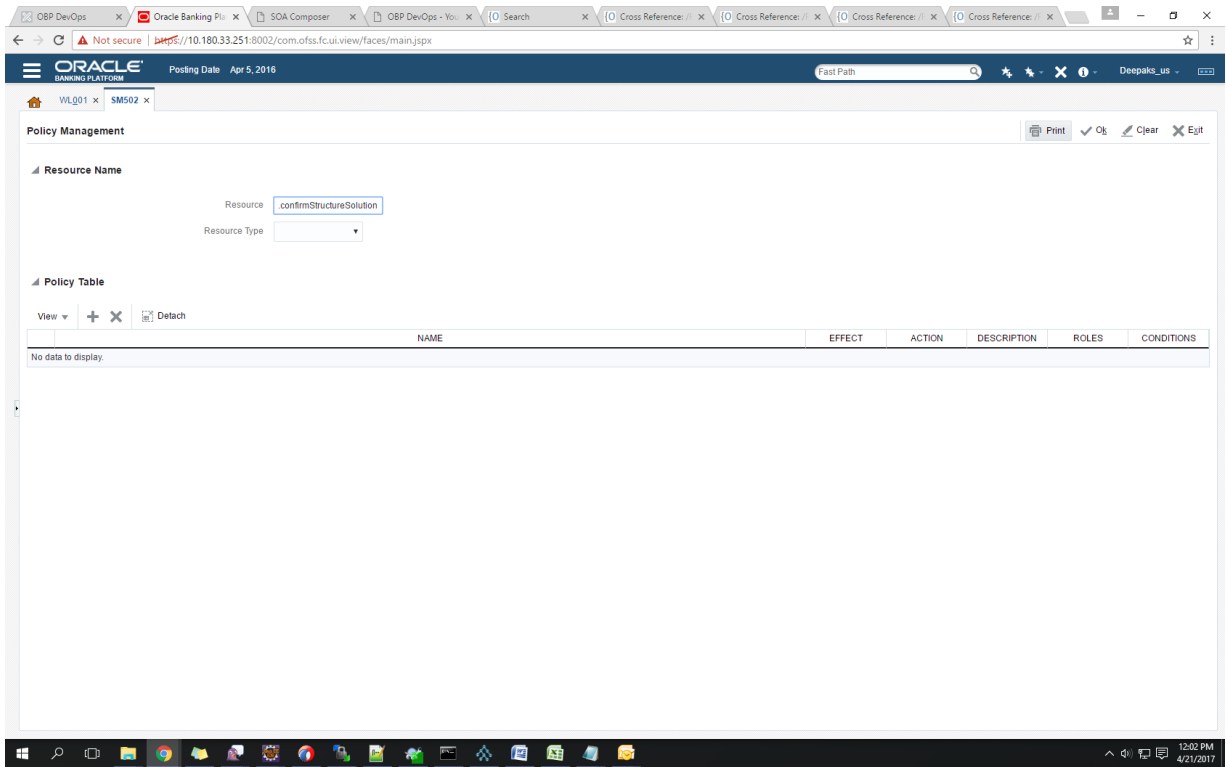


3. Click **Search**. The following screen appears.

Enter the service for which policy needs to be defined.

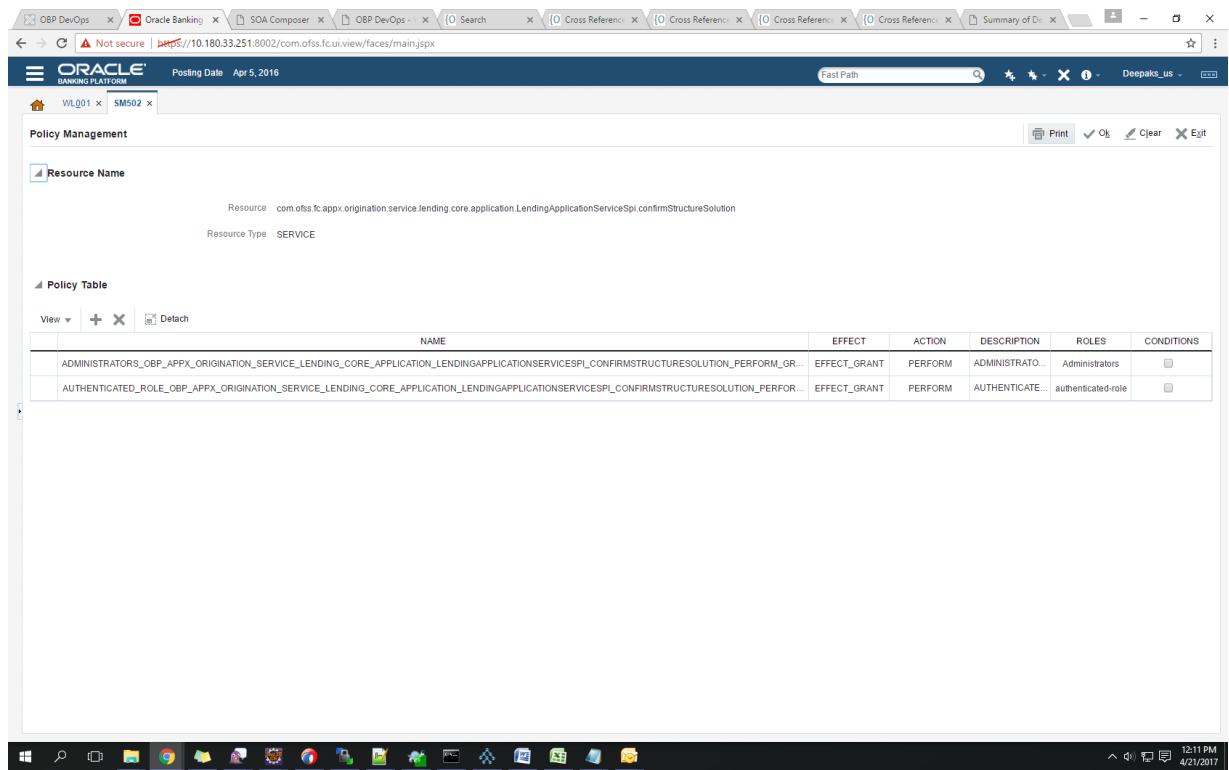
For example,
com.ofss.fc.appx.Origination.service.lending.core.application.LendingApplicationServiceSpi.confirmStructureSolution.

Figure 2–29 Policy Management



The following screen appears:

Figure 2–30 Enter Service for Policy Definition



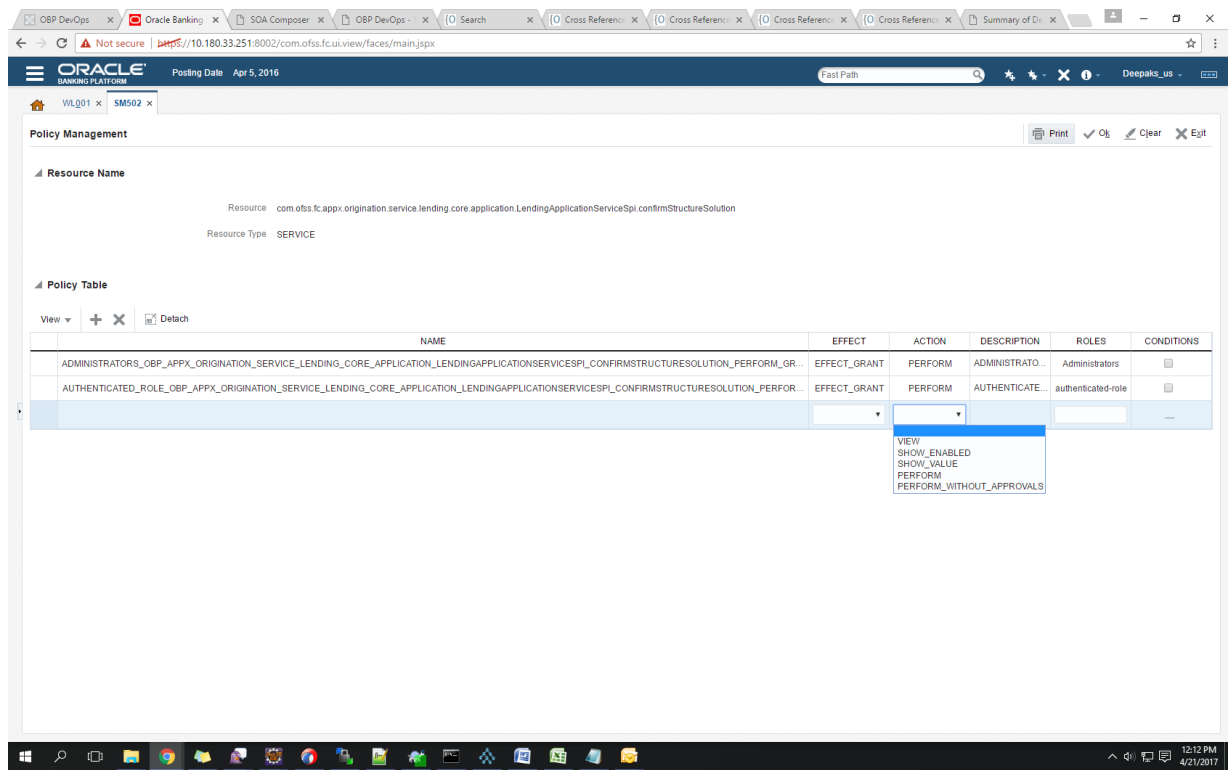
4. Click the + sign if you need to add a new policy along with the Role for which the policy is to be enabled. The rest of the fields are automatically populated.

Figure 2–31 Effect of the Policy

The screenshot shows the Oracle Policy Management interface. The 'Resource Name' section displays the resource path: `com.ots.fc.appx.OriginationService.Lending.Core.Application.LendingApplicationServiceSpi.confirmStructureSolution` with a type of `SERVICE`. The 'Policy Table' section contains a table with columns: NAME, EFFECT, ACTION, DESCRIPTION, ROLES, and CONDITIONS. Two rows are visible, both with an EFFECT of `EFFECT_GRANT` and ACTION of `PERFORM`. The first row's DESCRIPTION is `ADMINISTRATO...` and ROLES is `Administrators`. The second row's DESCRIPTION is `AUTHENTICATE...` and ROLES is `authenticated-role`. A dropdown menu is open over the EFFECT column of the second row, showing options: `EFFECT_DENY` and `EFFECT_GRANT`.

NAME	EFFECT	ACTION	DESCRIPTION	ROLES	CONDITIONS
ADMINISTRATORS_OBP_APPX_ORIGINATION_SERVICE_LENDING_CORE_APPLICATION_LENDINGAPPLICATIONSERVICESPL_CONFIRMSTRUCTURERESOLUTION_PERFORM_GR...	EFFECT_GRANT	PERFORM	ADMINISTRATO...	Administrators	<input type="checkbox"/>
AUTHENTICATED_ROLE_OBP_APPX_ORIGINATION_SERVICE_LENDING_CORE_APPLICATION_LENDINGAPPLICATIONSERVICESPL_CONFIRMSTRUCTURERESOLUTION_PERFOR...	EFFECT_GRANT	PERFORM	AUTHENTICATE...	authenticated-role	<input type="checkbox"/>

Figure 2–32 Action of the Policy



- To add conditions, select the check box in the conditions column. This displays a collapsible section arrow in the first column. Click the arrow to display the conditions panel as shown below. Enter the conditions needed for the policy.

Figure 2–33 Conditions of the Policy

The screenshot shows the Oracle Policy Management console. The 'Resource Name' section displays the resource path: `com.ofss.fc.appx.OriginationService.Lending.Core.Application.LendingApplicationServiceSpi.confirmStructureSolution` and the resource type: `SERVICE`.

The 'Policy Table' section contains the following data:

NAME	EFFECT	ACTION	DESCRIPTION	ROLES	CONDITIONS
ADMINISTRATORS_OBP_APPX_ORIGINATION_SERVICE_LENDING_CORE_APPLICATION_LENDINGAPPLICATIONSERVICESPL_CONFIRMSTRUCTURESOLUTION_PERFORM_GR...	EFFECT_GRANT	PERFORM	ADMINISTRATO...	Administrators	<input type="checkbox"/>
AUTHENTICATED_ROLE_OBP_APPX_ORIGINATION_SERVICE_LENDING_CORE_APPLICATION_LENDINGAPPLICATIONSERVICESPL_CONFIRMSTRUCTURESOLUTION_PERFOR...	EFFECT_GRANT	PERFORM	AUTHENTICATE...	authenticated-role	<input type="checkbox"/>
ADMINISTRATORS_OBP_APPX_ORIGINATION_SERVICE_LENDING_CORE_APPLICATION_LENDINGAPPLICATIONSERVICESPL_CONFIRMSTRUCTURESOLUTION_PERFORMWIT...	EFFECT_GRANT	PERFORM_WIT...	ADMINISTRATO...	Administrators	<input checked="" type="checkbox"/>

Below the table, a matrix-based condition is defined: `LendingMatrix_ProductGroup` is equal to `PRODUCT_GROUP` with an AND operator.

2.2.1.2 SOA Composer Rules Setup

For more information on setting up rules in SOA Composer, see [Section 2.1.1.2 SOA Composer Rules Setup](#).

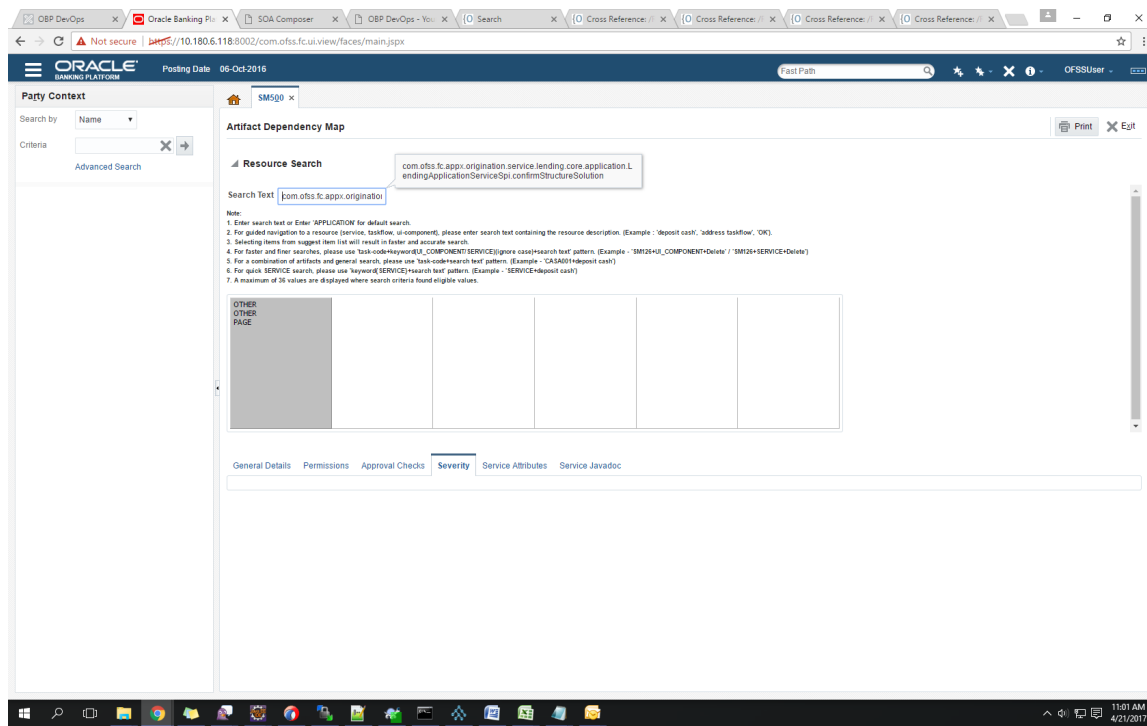
2.2.1.3 SMS Setup

The user also needs to enable matrix-based authorization for the DCA service. This can be done through the **Approval Checks** tab in **Artifact Dependency Map (Fast path: SM500)** page which is used for enabling approval.

The following procedure is performed during SMS setup:

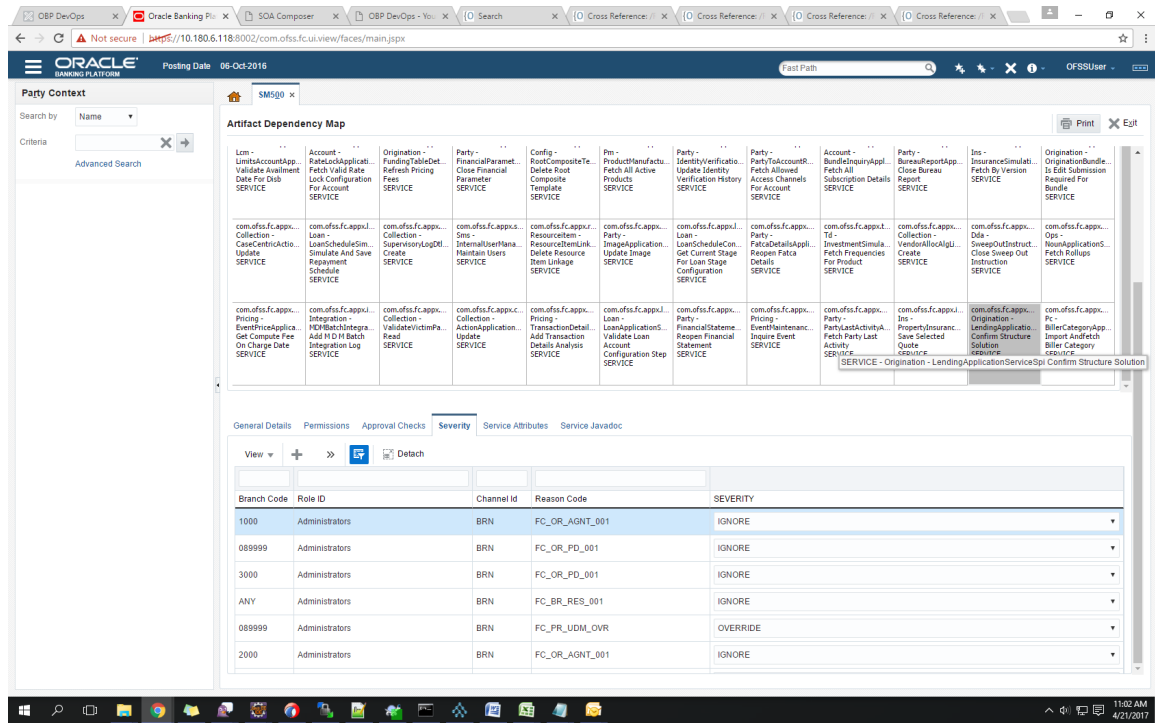
1. In the **Search Text** field, enter the service name.
`com.ofss.fc.appx.OriginationService.Lending.Core.Application.LendingApplicationServiceSpi.confirmStructureSolution`

Figure 2–34 Search for Service Using Entire Service Name



2. Navigate to service node by following highlighted path (in grey color) and select the service node.

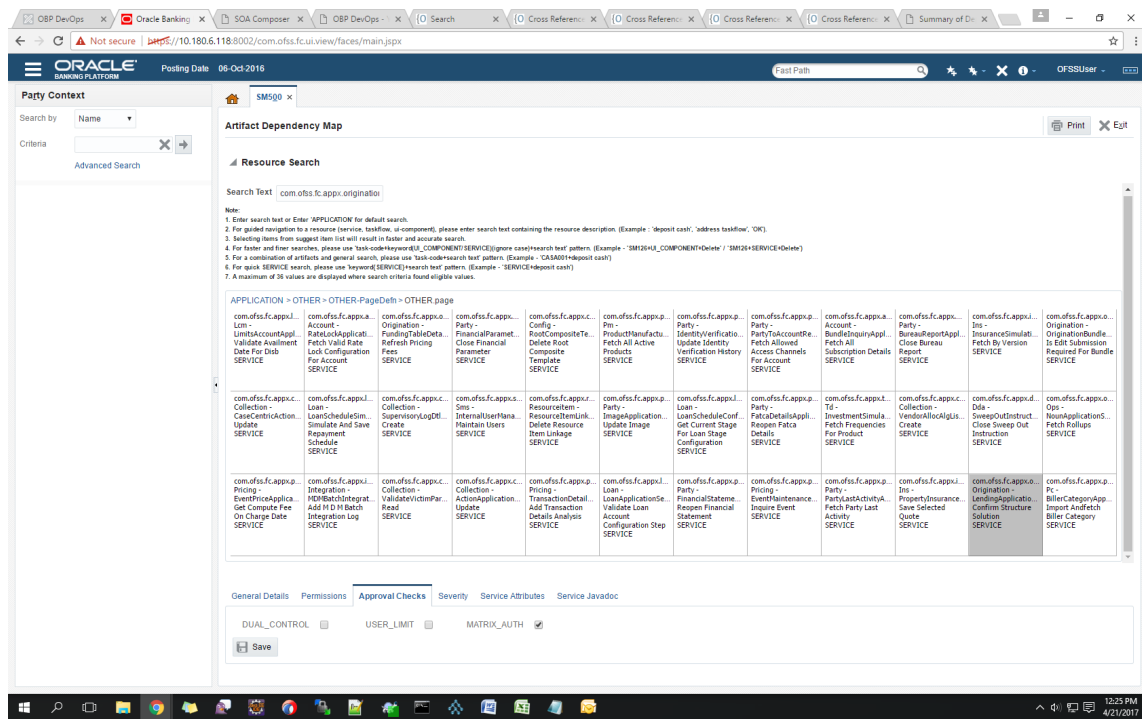
Figure 2–35 Select the Service to be Configured



3. Click the **Approval Checks** tab to maintain approval checks for the resource.

Select the **MATRIX_AUTH** checkbox and save the record.

Figure 2–36 Approval Checks tab - MATRIX_AUTH

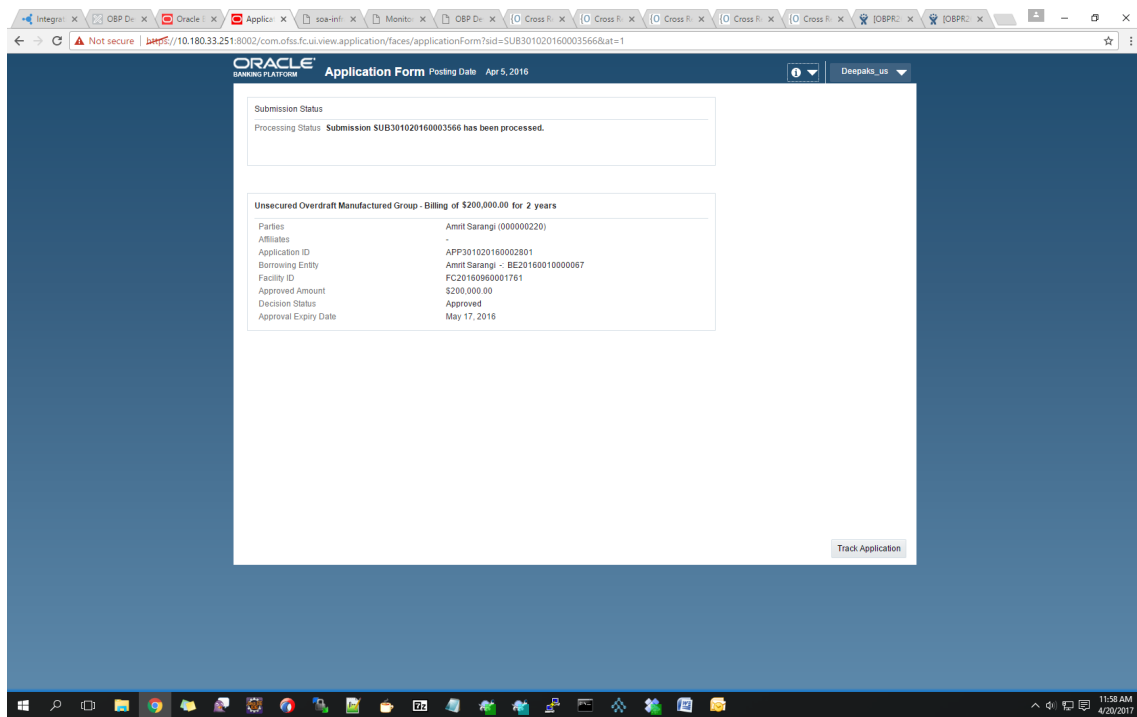


2.2.2 Performing the Transaction

Following procedure explains how to perform a transaction:

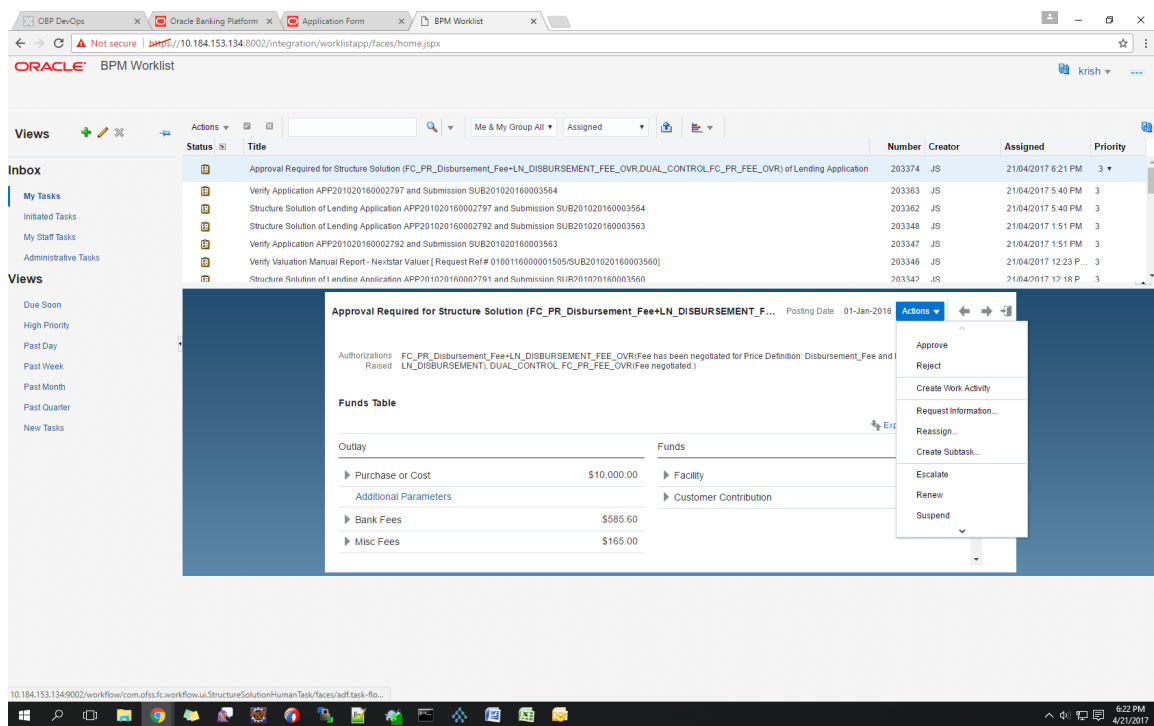
1. Log in to the application as teller user and initiate an origination task flow such that the application goes for approvals.

Figure 2–37 Initiating Origination Task Flow



2. Log in to BPM worklist as the initiator user who initiated the origination process.
3. Select to approve the lending confirmStructureSolution task created for the user.

Figure 2–38 Approving the Task



The task goes to the approver user for approval. Log in as approver user to BPM Worklist.

You can either approve or reject the work item (approved here) after adding comments for non origination flows.

Once approved, the further task flows required for origination will be created for the initiator user.

2.3 Enabling Worklist Authorization

This section explains the steps in enabling Worklist authorization. Following are the steps:

Step 1 Identify the Service Name

For example,

com.ofss.fc.appx.Origination.service.lending.core.application.LendingApplicationServiceSpi.confirmStructureSolution.

Step 2 Enable Dual Authorization or/and adding other severity

Once the services are identified, follow the below steps to enable Dual Authorization and adding other severity.

1. Log in to the application.
2. Navigate to **Artifact Dependency Map (Fast path: SM500)** page.
3. In the **Search Text** field, enter the service-name.
com.ofss.fc.appx.Origination.service.lending.core.application.LendingApplicationServiceSpi.confirmsStructureSolution

Navigate to service node by following highlighted path (in grey color) and select the service node.

Figure 2–39 Select the Service to be Configured

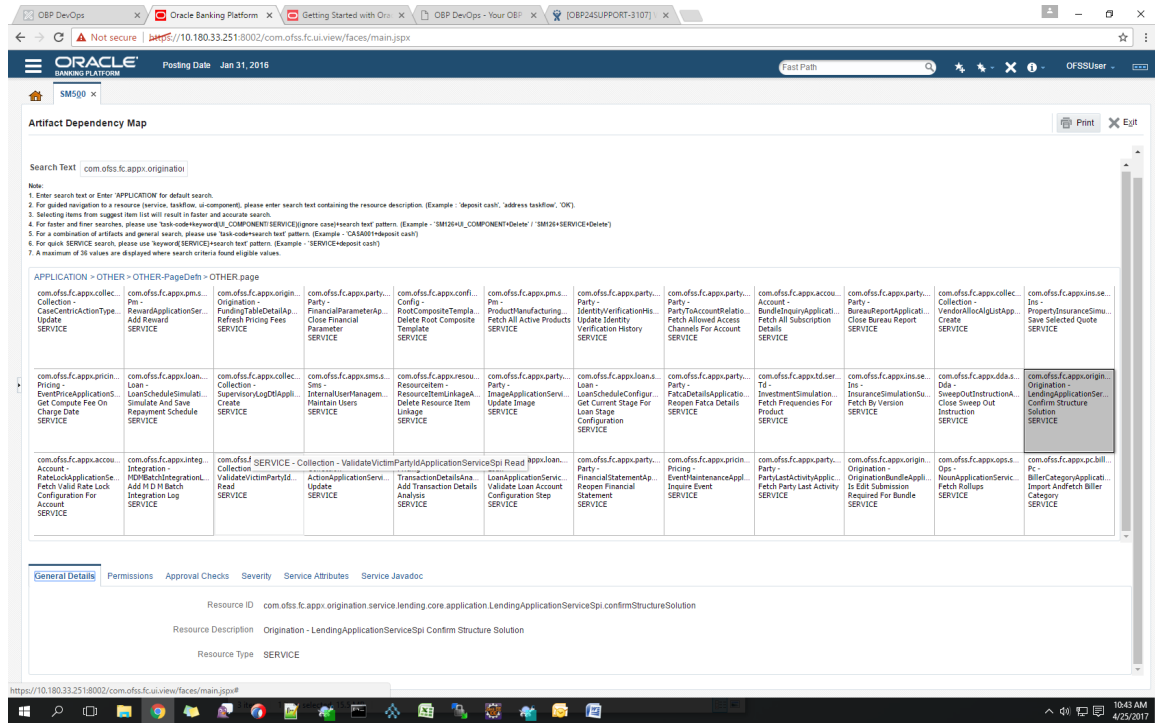
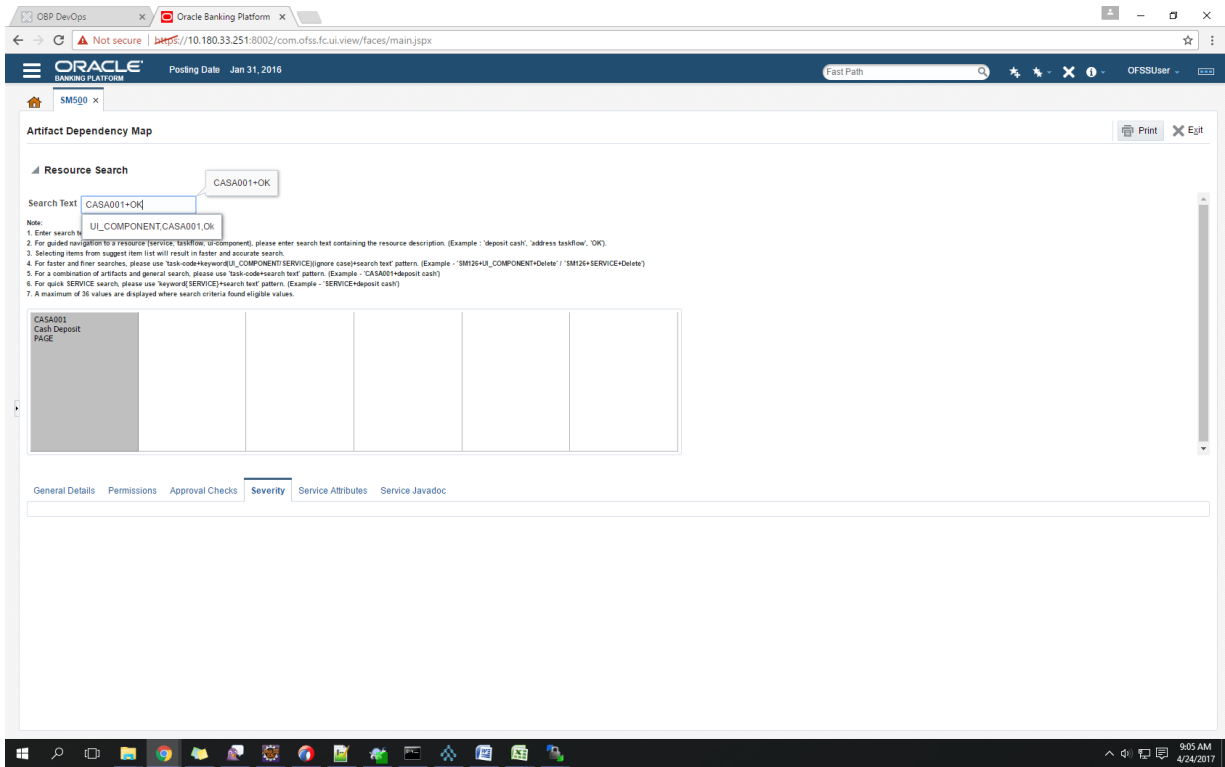


Figure 2–40 Search for Service using TASK CODE + Search text (in case of non Origination)



4. Click the **Approval Checks** tab and add approval checks.

Figure 2–41 Approval Checks tab - Add Approval Checks

The screenshot shows the Oracle Banking Platform interface. The top navigation bar includes 'Oracle Banking Platform' and 'Posting Date: 06-Oct-2016'. The main content area is titled 'Artifact Dependency Map' and 'Fast Path: SM500'. It features a search bar with 'Search Text: com.ofss.fc.appx.Origination'. Below the search bar, there are instructions for using the search function. A table of results is displayed, showing various services and their dependencies. The table has columns for 'APPLICATION' and 'OTHER-PageDefn'. The search results are as follows:

APPLICATION	OTHER-PageDefn	OTHER page
com.ofss.fc.appx.Lcm - LimitsAccountAppr Validate Availment Date For Disb SERVICE	com.ofss.fc.appx.Account - RateLockApplicat Fetch Valid Rate Lock Configuration For Account SERVICE	com.ofss.fc.appx.Origination - FundingTableData Refresh Pricing Fees SERVICE
com.ofss.fc.appx.Collection - CaseCentrication Update Simulate And Save Schedule SERVICE	com.ofss.fc.appx.Loan - LoanScheduleSim Create Repayment SERVICE	com.ofss.fc.appx.Collection - SupervisorLogDel Create SERVICE
com.ofss.fc.appx.Pricing - EventPriceApplica Get Compute Fee On Change Date SERVICE	com.ofss.fc.appx.Integration - HRPBatchIntegrat Add H H Batch Integration Log SERVICE	com.ofss.fc.appx.Collection - ValidatvctmPar Read SERVICE
		com.ofss.fc.appx.Sms - InternalUserMana Maintain Users SERVICE
		com.ofss.fc.appx.ResourceItem - Delete Resource Item Linkage SERVICE
		com.ofss.fc.appx.Party - ImageApplication Update Image SERVICE
		com.ofss.fc.appx.Loan - LoanScheduleConf Get Current Stage For Loan Stage Configuration SERVICE
		com.ofss.fc.appx.Party - Party - FinancialState Reopen Financial Statement SERVICE
		com.ofss.fc.appx.Pricing - EventMaintenance Inquire Event SERVICE
		com.ofss.fc.appx.Party - Party - PropertyInsurance Save Selected Quote SERVICE
		com.ofss.fc.appx.Dis - PropertyInsurance Save Selected Quote SERVICE
		com.ofss.fc.appx.Origination - LendingApplicatio Confirm Structure Solution SERVICE
		com.ofss.fc.appx.Pc - BillerCategoryApp Import Anofetch Biller Category SERVICE

At the bottom of the page, there are tabs for 'General Details', 'Permissions', 'Approval Checks', 'Severity', 'Service Attributes', and 'Service Javadoc'. The 'Approval Checks' tab is active, showing a table with columns for 'DUAL_CONTROL', 'USER_LIMIT', and 'MATRIX_AUTH'. The 'MATRIX_AUTH' checkbox is checked. A 'Save' button is located below the table.

Step 3 Configure Severity

Enabling of dual authorization alone will not send the transaction for approval. Hence, we need to configure Severity for the identified service, to enable the call for approval workflow.

This can be configured from the **Artifact Dependency Map (Fast path: SM500)** page.

Follow the below steps to configure severity:

1. Log in to the application.
2. Navigate to the **Artifact Dependency Map (Fast path: SM500)** page.
3. In the **Search Text** field, enter the service `com.ofss.fc.appx.Origination.service_limit.lending.core.application.LendingApplicationServiceSpi.confirmStructureSolution`.
4. Ensure approval checks are added. If not, then configure the approval checks.

2.3 Enabling Worklist Authorization

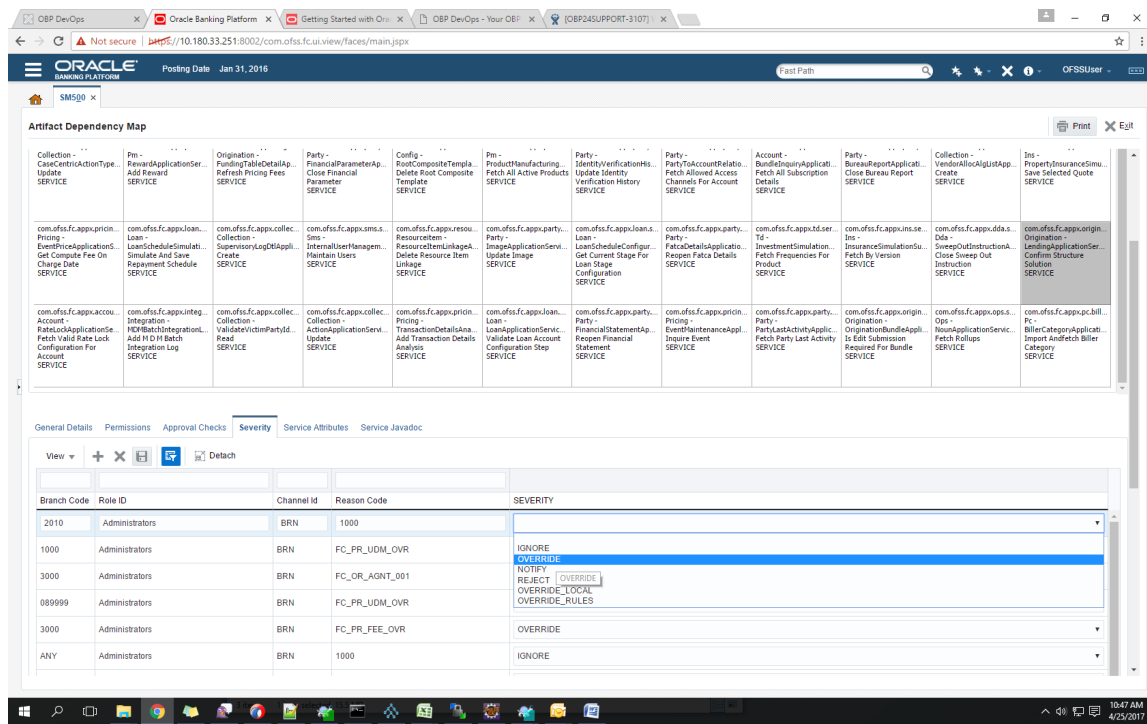
Figure 2–42 Dual Control

The screenshot shows the Oracle Banking Platform interface. The main content area is titled 'Artifact Dependency Map' and contains a 'Resource Search' section. Below the search instructions is a table listing various services. The table has columns for service names and their descriptions. At the bottom of the page, there are tabs for 'General Details', 'Permissions', 'Approval Checks', 'Severity', 'Service Attributes', and 'Service Javadoc'. The 'Severity' tab is currently selected, showing a table with columns for 'DUAL_CONTROL', 'USER_LIMIT', and 'MATRIX_AUTH'. There are checkboxes for each of these columns and a 'Save' button below the table.

Service Name	Description
com.ofss.fc.app.collec...	Collection - CaseContributionType Update SERVICE
com.ofss.fc.app.collec...	Collection - RenewalApplicationServ...
com.ofss.fc.app.collec...	Collection - FundingTableDetailApp...
com.ofss.fc.app.collec...	Collection - Refresh Pricing Fees SERVICE
com.ofss.fc.app.party...	Party - FinancialParameterApp...
com.ofss.fc.app.party...	Party - Close Financial Parameter SERVICE
com.ofss.fc.app.config...	Config - RootCompositeTempla...
com.ofss.fc.app.config...	Config - Delete Root Composite Template SERVICE
com.ofss.fc.app.prm.se...	Prm - ProductManufacturingA...
com.ofss.fc.app.prm.se...	Prm - Fetch All Active Products SERVICE
com.ofss.fc.app.party...	Party - IdentityVerificationHist...
com.ofss.fc.app.party...	Party - Update Identity Verification History SERVICE
com.ofss.fc.app.party...	Party - PartyToAccountRelatio...
com.ofss.fc.app.party...	Party - Fetch Allowed Access Channels For Account Details SERVICE
com.ofss.fc.app.party...	Party - Fetch All Subscription Details SERVICE
com.ofss.fc.app.party...	Party - Close Bureau Report SERVICE
com.ofss.fc.app.collec...	Collection - VendorAllocationApp...
com.ofss.fc.app.collec...	Collection - Create SERVICE
com.ofss.fc.app.collec...	Collection - ProperInsuranceSimu...
com.ofss.fc.app.collec...	Collection - Save Selected Quote SERVICE
com.ofss.fc.app.pricin...	Pricing - EventPriceApplicationS...
com.ofss.fc.app.pricin...	Pricing - Get Complete Fee On Charge Date SERVICE
com.ofss.fc.app.pricin...	Pricing - LoanScheduleSimulatio...
com.ofss.fc.app.pricin...	Pricing - Simulate And Save Requirement Schedule SERVICE
com.ofss.fc.app.collec...	Collection - SupervisorLogDetailApp...
com.ofss.fc.app.collec...	Collection - Create SERVICE
com.ofss.fc.app.sims...	Sims - InternalUserManagemen...
com.ofss.fc.app.sims...	Sims - Maintain Users SERVICE
com.ofss.fc.app.resou...	ResourceItem - ResourceItemLinkageA...
com.ofss.fc.app.resou...	ResourceItem - Delete Resource Item Linkage SERVICE
com.ofss.fc.app.party...	Party - ImageApplicationServ...
com.ofss.fc.app.party...	Party - Update Image SERVICE
com.ofss.fc.app.party...	Party - LoanScheduleConfigur...
com.ofss.fc.app.party...	Party - Get Current Stage For Loan Stage Configuration SERVICE
com.ofss.fc.app.party...	Party - LoanScheduleConfigur...
com.ofss.fc.app.party...	Party - Fetch Details Applicatio...
com.ofss.fc.app.party...	Party - Progen Fatca Details SERVICE
com.ofss.fc.app.party...	Party - InvestmentSimulationA...
com.ofss.fc.app.party...	Party - Fetch Frequencies For Product SERVICE
com.ofss.fc.app.party...	Party - InvestmentSimulationA...
com.ofss.fc.app.party...	Party - Fetch By Version SERVICE
com.ofss.fc.app.party...	Party - InsuranceSimulationA...
com.ofss.fc.app.party...	Party - Fetch By Version SERVICE
com.ofss.fc.app.pricin...	Pricing - SweepOutInstructionA...
com.ofss.fc.app.pricin...	Pricing - Close Sweep Out Instruction SERVICE
com.ofss.fc.app.pricin...	Pricing - SweepOutInstructionA...
com.ofss.fc.app.pricin...	Pricing - Confirm Structure Solution SERVICE
com.ofss.fc.app.pricin...	Pricing - Fetch Valid Rate Lock Configuration For Account SERVICE
com.ofss.fc.app.integr...	Integration - MBOBatchIntegrationL...
com.ofss.fc.app.integr...	Integration - Add M D H Batch Integration Log SERVICE
com.ofss.fc.app.collec...	Collection - ValidServicePartyId...
com.ofss.fc.app.collec...	Collection - Read SERVICE
com.ofss.fc.app.collec...	Collection - AddTransactionDetails...
com.ofss.fc.app.collec...	Collection - Analysis SERVICE
com.ofss.fc.app.pricin...	Pricing - TransactionDetailsAnal...
com.ofss.fc.app.pricin...	Pricing - Add Transaction Details Analysis SERVICE
com.ofss.fc.app.party...	Party - Loan - LoanApplicationServ...
com.ofss.fc.app.party...	Party - Validate Loan Account Configuration Step SERVICE
com.ofss.fc.app.party...	Party - FinancialStatementApp...
com.ofss.fc.app.party...	Party - Progen Financial Statement SERVICE
com.ofss.fc.app.pricin...	Pricing - EventMaintenanceAppl...
com.ofss.fc.app.pricin...	Pricing - Inquire Event SERVICE
com.ofss.fc.app.party...	Party - PartyLastActivityAppl...
com.ofss.fc.app.party...	Party - Fetch Party Last Activity SERVICE
com.ofss.fc.app.party...	Party - Origination - OriginatorBundl...
com.ofss.fc.app.party...	Party - Is Edit Submission Required For Bundle SERVICE
com.ofss.fc.app.party...	Party - Origination - OriginatorBundl...
com.ofss.fc.app.party...	Party - Fetch Rollups SERVICE
com.ofss.fc.app.party...	Party - Origination - OriginatorBundl...
com.ofss.fc.app.party...	Party - Import AndFetch Biller Category SERVICE

5. Click the **Severity** tab and update the severity, if already maintained. Else, click **Add** button in the toolbar to add new row in the table.

Figure 2-43 Add New Severity



6. Enter the following details in the **Severity** tab.

Branch Code	Branch code from which the transaction is to be performed. Specify ANY to configure for all branches. Example: 082991
Role ID	Security Role to which the user belongs and initiates the transaction.
Channel ID	Channels such as BRN, ATM, IB and so on, through which the transaction is performed.
Reason Code	Select REASON CODE 1000 normal approval flow.
Severity	This field contains four values as detailed below: <ul style="list-style-type: none"> ■ Ignore: Allows transaction to complete without any authorization, that is Auto Authorization. ■ Override: Transaction will be sent for Authorization. ■ Notify: In this case, the task is not sent for authorization, but the user is expected to confirm the transaction for proceeding ahead. This option is not applicable in case of Dual Authorization. ■ Reject: System does not allow to proceed with transaction.

2.3 Enabling Worklist Authorization

To enable Dual Authorization, select **Override** option.

Note

If the Severity Configuration is already set up do not change it.

7. Save the newly added severity using the **Save**.

Figure 2–44 Save Severity Details

The screenshot shows the Oracle Banking Platform interface. At the top, there's a navigation bar with 'ORACLE BANKING PLATFORM' and 'Posting Date: Jan 31, 2016'. Below this is the 'Artifact Dependency Map' section, which contains a grid of service dependencies. An 'Information' dialog box is open in the center, displaying a success message: 'Operation completed successfully. Transaction reference number: 2016015004583021'. Below the dialog, there's a 'Severity' configuration table with the following data:

Branch Code	Role ID	Channel Id	Reason Code	SEVERITY
2010	Administrators	BRN	1000	VERRIDE
1000	Administrators	BRN	FC_PR_UDM_OVR	VERRIDE
3000	Administrators	BRN	FC_OR_AGNT_001	IGNORE
089999	Administrators	BRN	FC_PR_UDM_OVR	VERRIDE
3000	Administrators	BRN	FC_PR_FEE_OVR	VERRIDE

Figure 2–45 Update Severity and Save

The screenshot shows the Oracle Banking Platform interface. The top navigation bar includes the Oracle logo, the date 'Jan 31, 2016', and a search bar. Below the navigation bar is the 'Artifact Dependency Map' section, which displays a grid of service dependencies. The 'Severity' tab is selected, showing a table with the following data:

Branch Code	Role ID	Channel Id	Reason Code	SEVERITY
2010	Administrators	BRN	1000	IGNORE
1000	Administrators	BRN	FC_PR_UDM_OVR	OVERRIDE
3000	Administrators	BRN	FC_OR_AGNT_001	IGNORE
089999	Administrators	BRN	FC_PR_UDM_OVR	OVERRIDE
3000	Administrators	BRN	FC_FR_FEE_OVR	OVERRIDE

Step 4 Testing Approvals

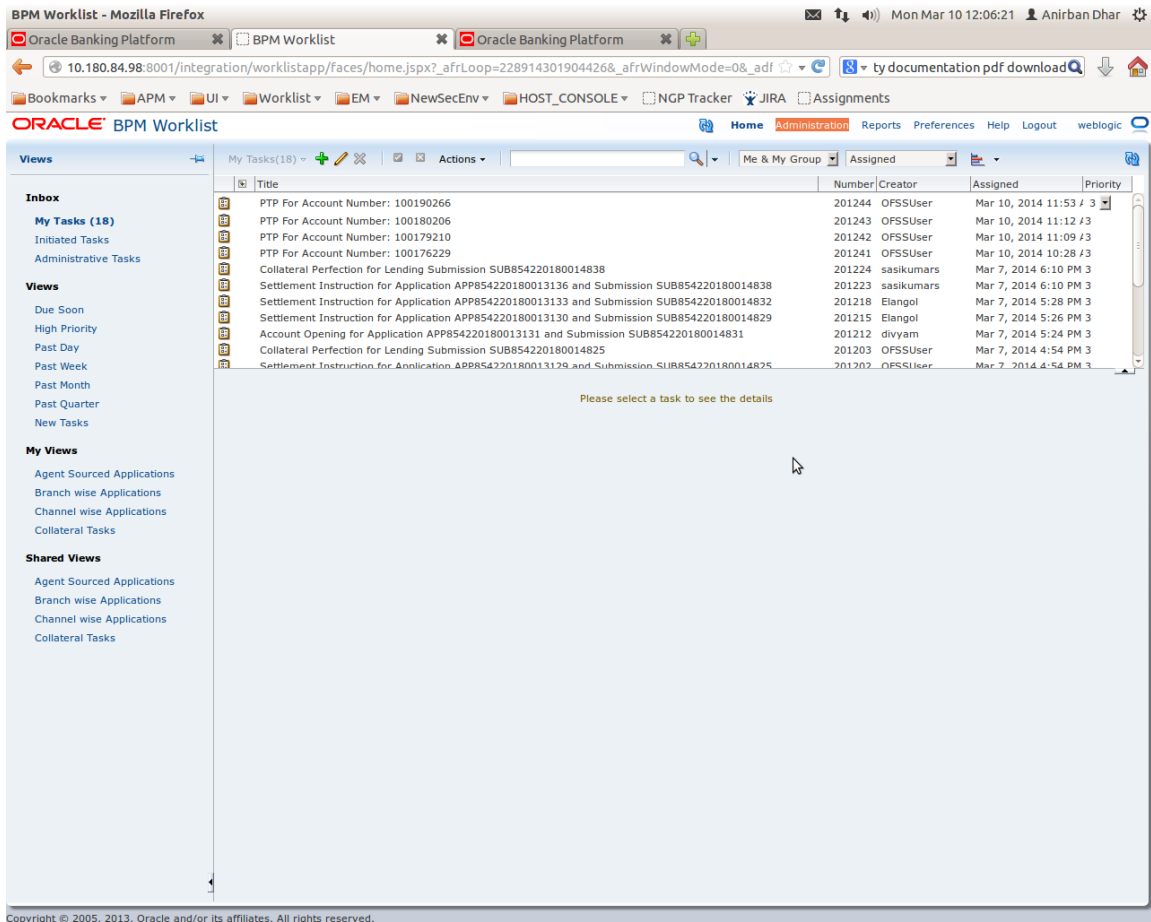
Once the configurations are done, navigate to the screen for which approval is enabled. For more information on testing approvals in case of Lending Confirm Structure Solution, see [Section 2.2.2 Performing the Transaction](#)

2.4 BPM Routing Rules Setup

This section describes the steps and the screens required to configure BPM rules for approval. Same can be referred for configuring any other routing rules based on facts available in human task payload.

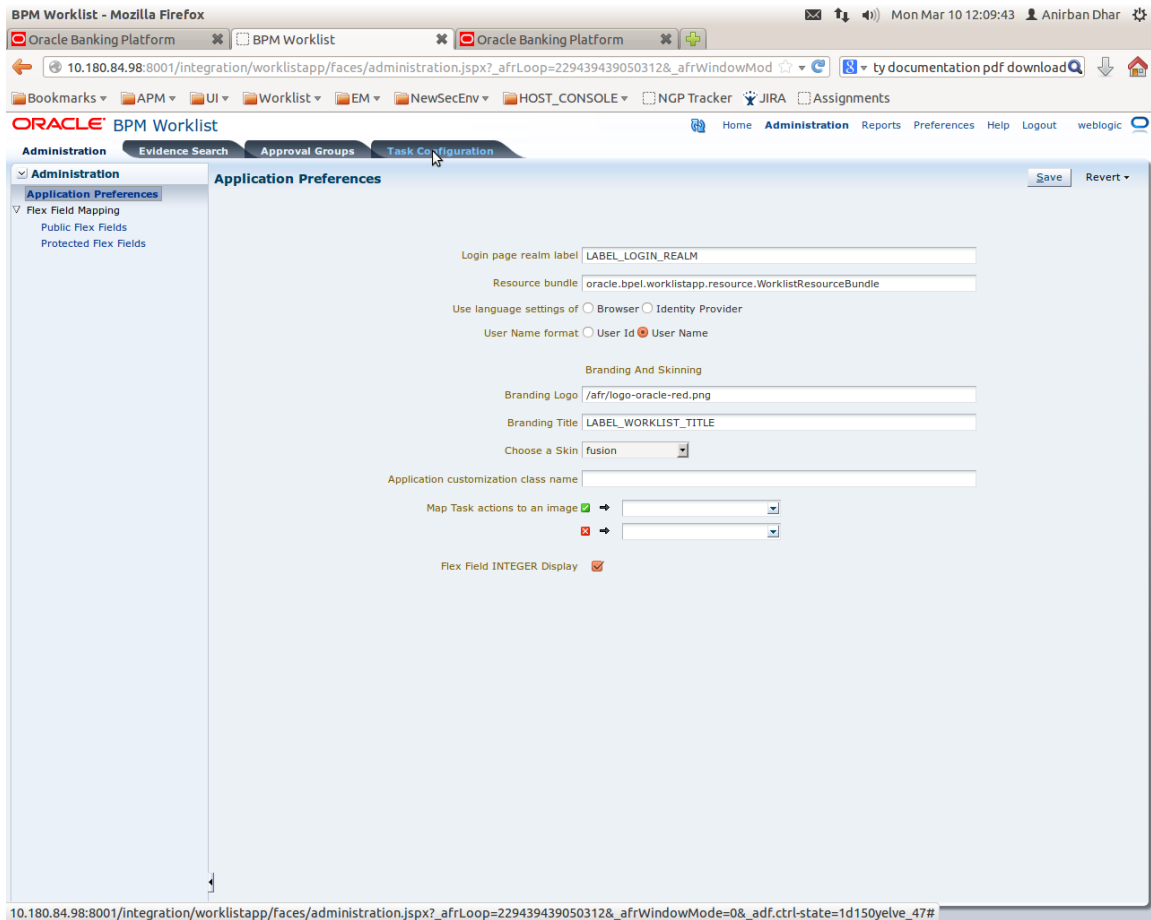
1. Log in to Worklist App using Weblogic / Weblogic1 [or any other user with administrators as role].
2. Click **Administration** link.

Figure 2–46 Worklist App - Administration Link



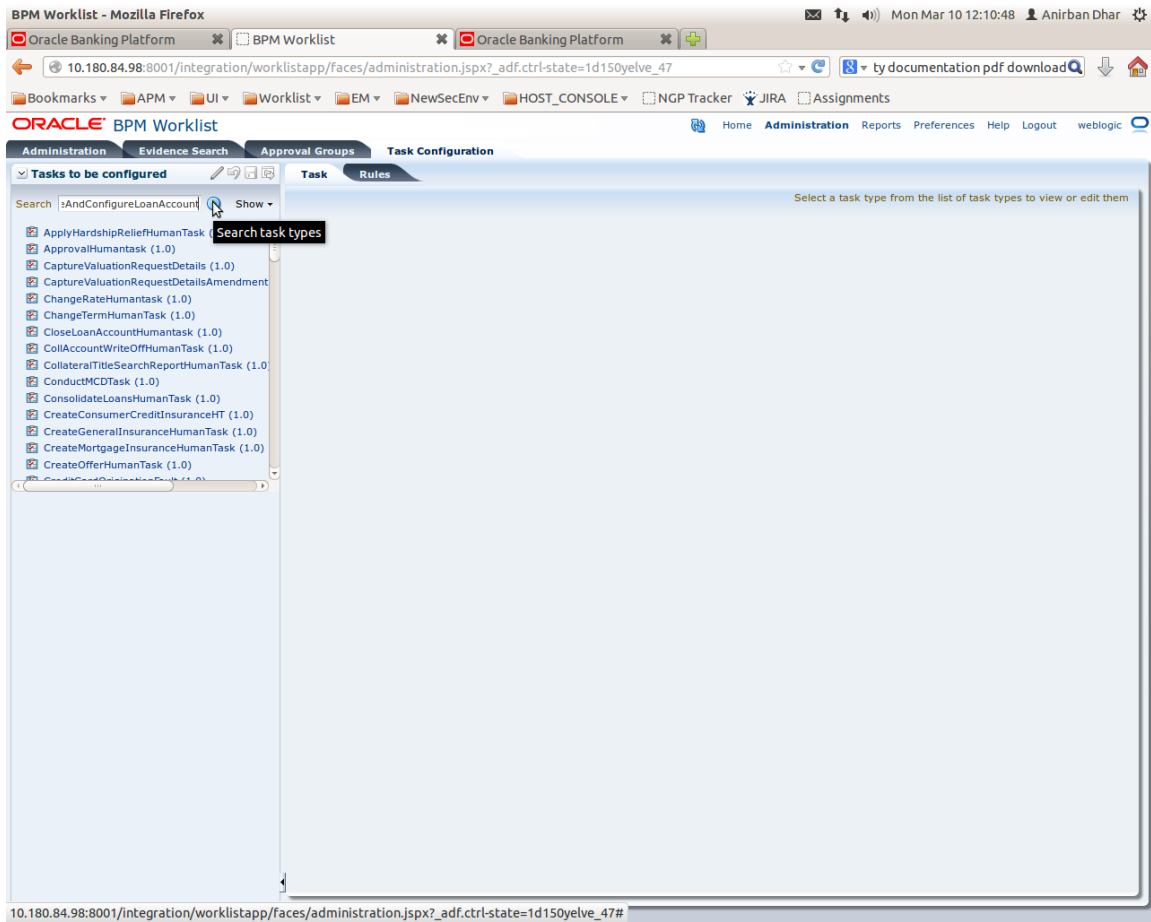
3. Navigate to **Task Configuration** tab.

Figure 2–47 Task Configuration



4. Search the task by inputting the name of the task in the search bar. For example, HT_LoanSpi_CreateAndConfigureLoanAccount or *CreateAndConfigureLoan* or * PromiseToPay*.

Figure 2–48 Search Task Types



5. Click the result to open the task for editing.

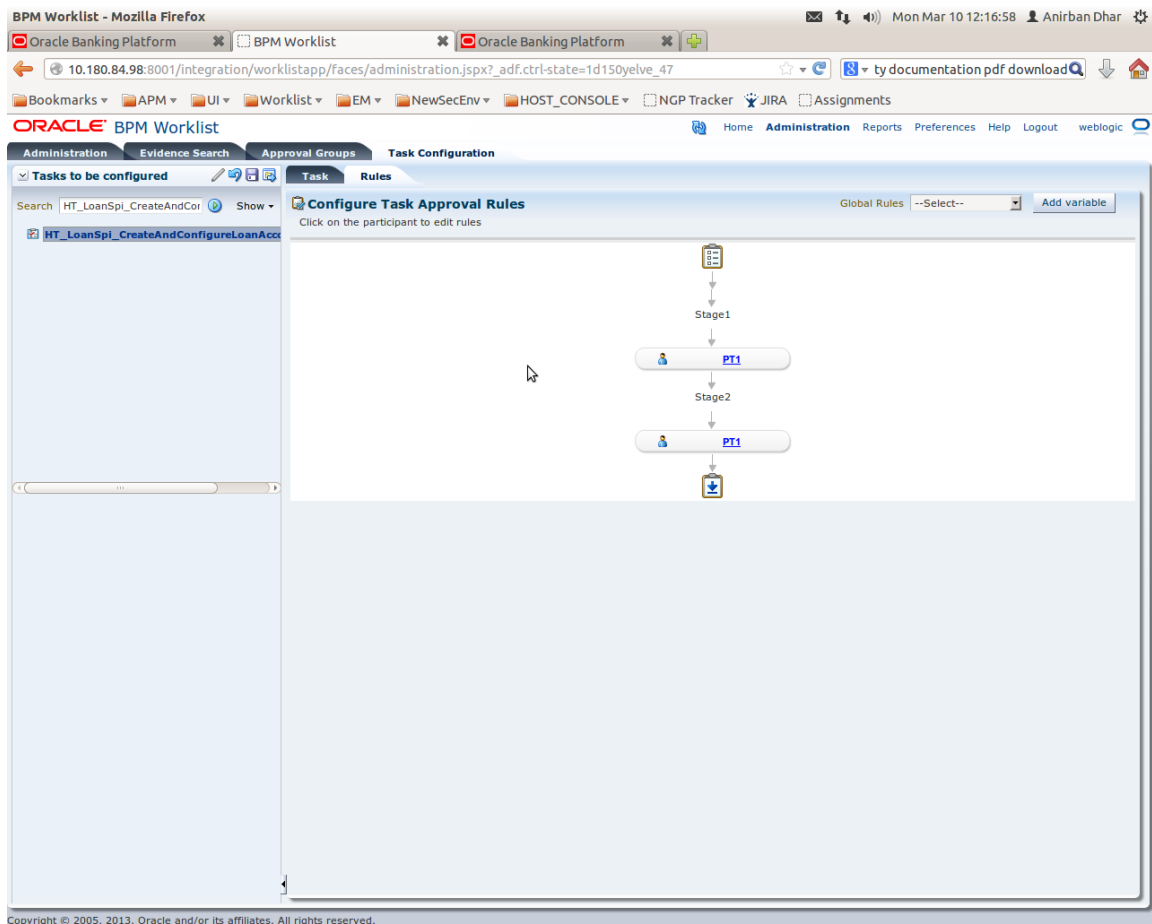
Figure 2–49 Task Editing

The screenshot shows the Oracle BPM Worklist administration interface. The browser window title is 'BPM Worklist - Mozilla Firefox'. The address bar shows the URL: '10.180.84.98:8001/integration/worklistapp/faces/administration.jspx?_adf.ctrl-state=1d150yelve_47'. The page title is 'ORACLE BPM Worklist'. The navigation menu includes 'Administration', 'Evidence Search', 'Approval Groups', and 'Task Configuration'. The 'Task Configuration' page is active, showing the configuration for the task 'HT_LoanSpi_CreateAndConfigureLoanAccount : Event Driven Configuration'. The configuration includes sections for 'Task Aggregation', 'Assignment and Routing Policy', 'Expiration and Escalation Policy', and 'Notification Settings'. The 'Notification Settings' section contains a table with columns for 'Task Status', 'Recipient', and 'Notification Header'. The table has three rows: 'Assign' with 'Assignees' as the recipient, 'Complete' with 'Initiator' as the recipient, and 'Error' with 'Owner' as the recipient. There are also checkboxes for 'Make notifications secure (exclude details)', 'Make notification actionable', 'Send task attachments with email notifications', and 'Don't send multiple notifications for the same human task event'. The page footer contains the copyright notice: 'Copyright © 2005. 2013. Oracle and/or its affiliates. All rights reserved.'

Copyright © 2005. 2013. Oracle and/or its affiliates. All rights reserved.

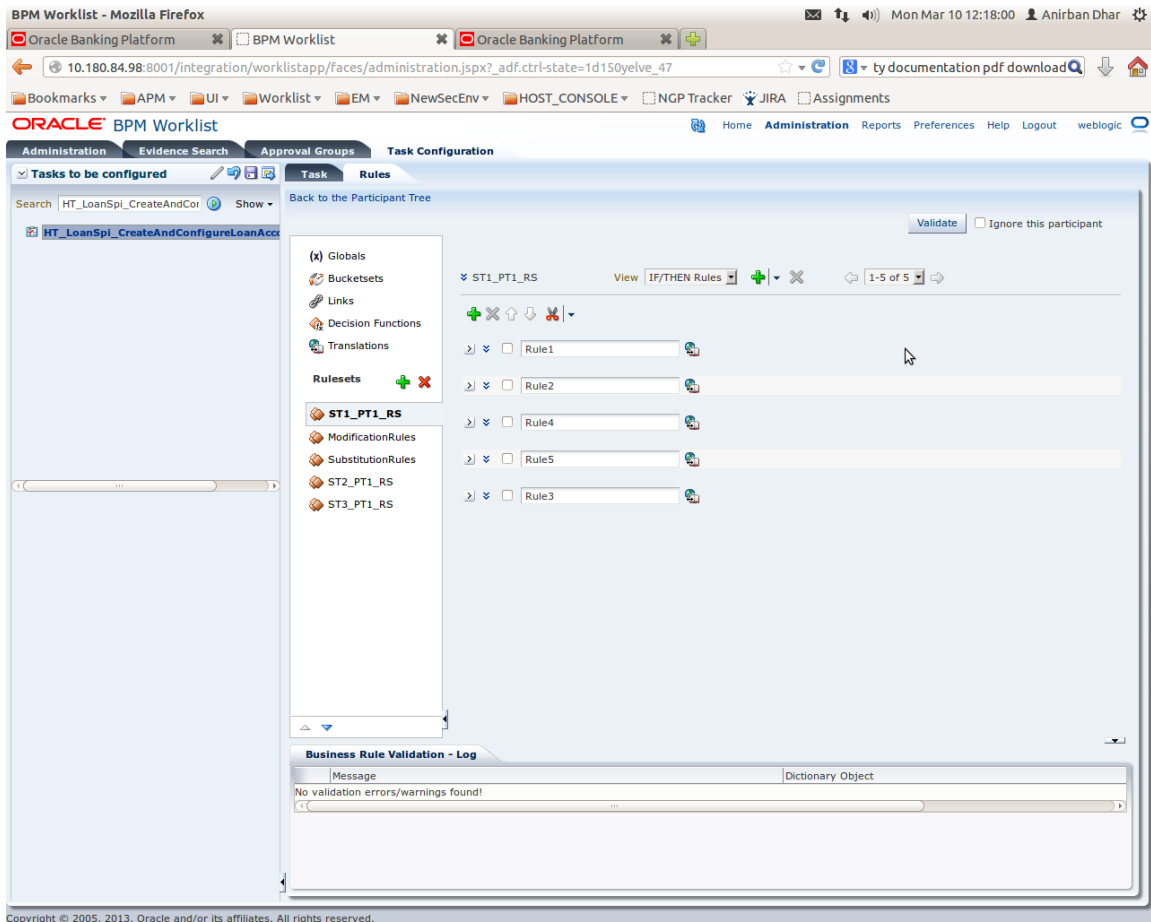
6. Click the **Edit** icon.

Figure 2–50 Configuring Rules - Edit Icon



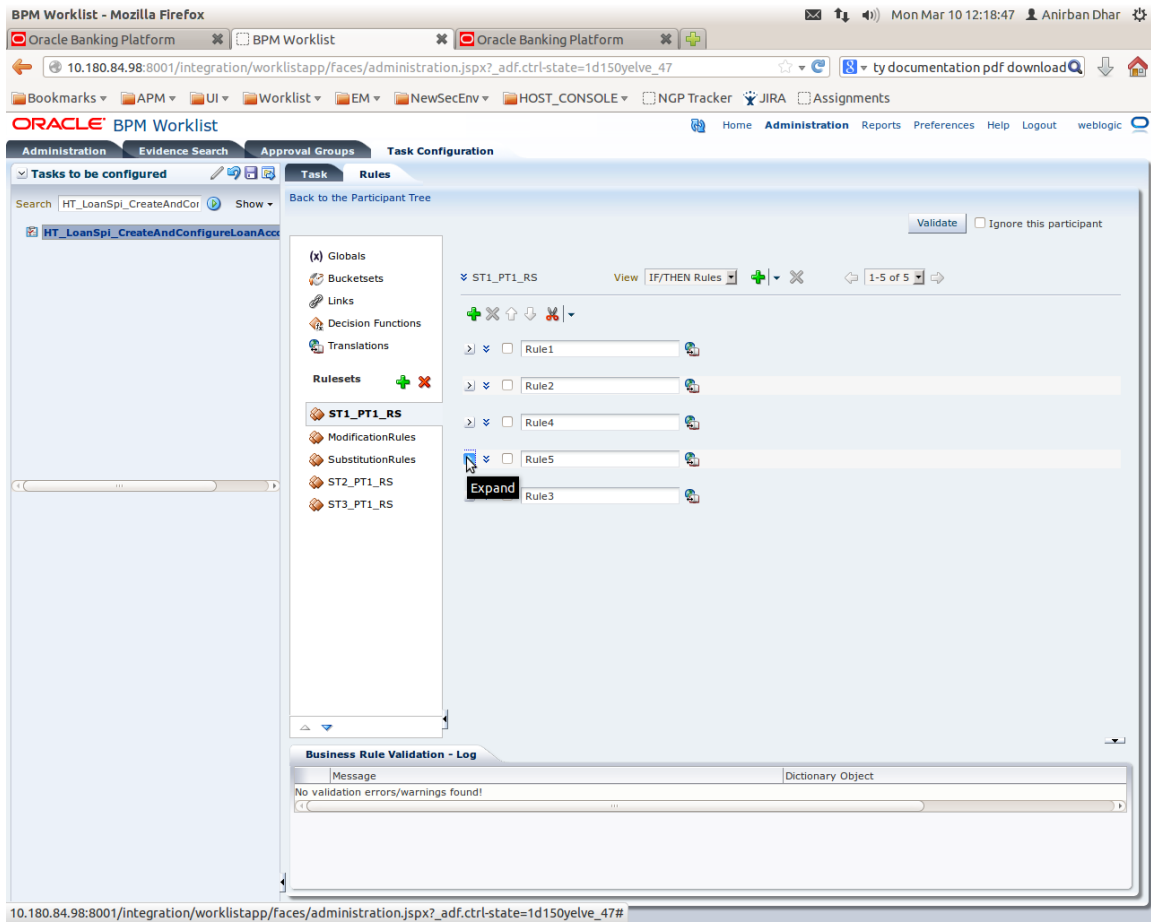
7. Navigate to **Rules** tab for configuring rules.
8. Click participant to edit rule for that stage. For example, stage 1 -> PT1)

Figure 2–51 Configuring Rules - Rules tab



9. Expand the **Rule** to configure. For example, Rule 5.

Figure 2–52 Expand Rule



10. Expand the **Advance Settings** panel.

Figure 2–53 Advanced Settings

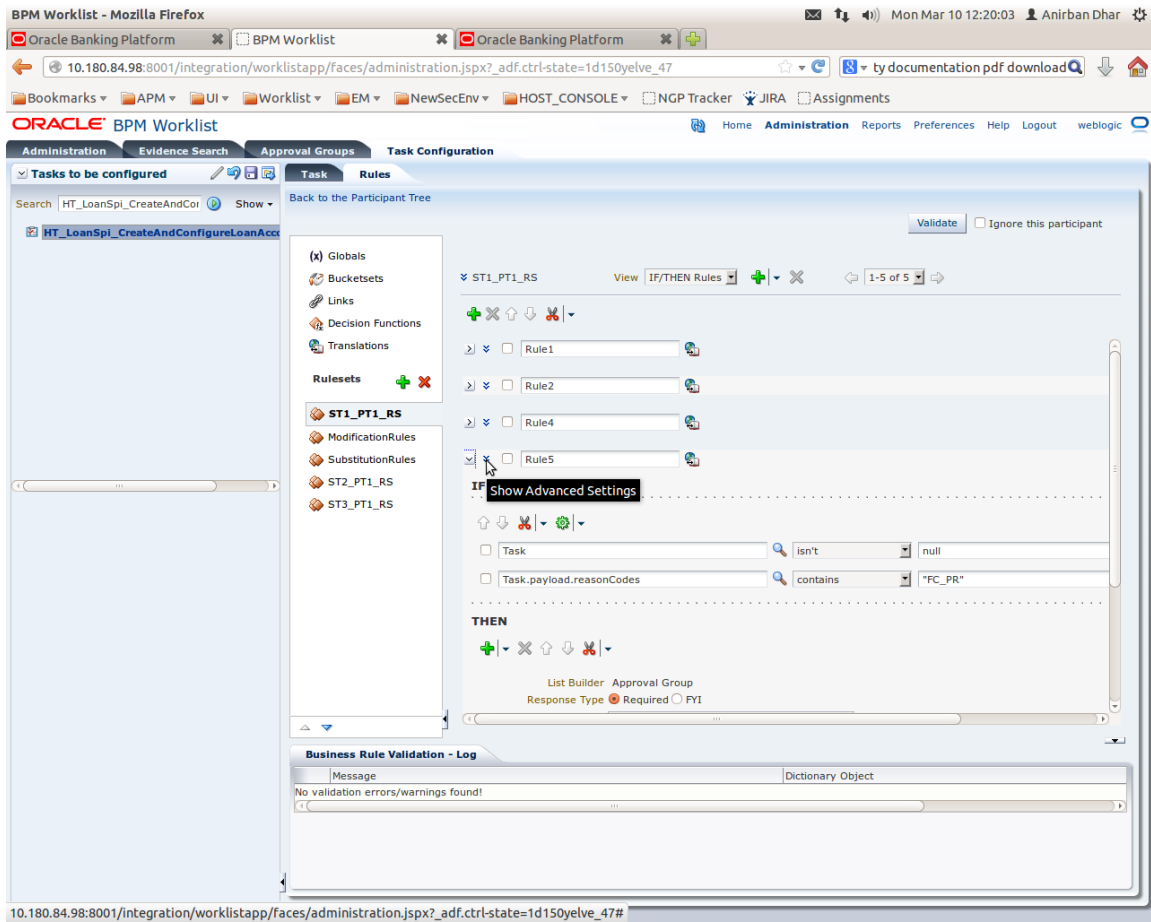
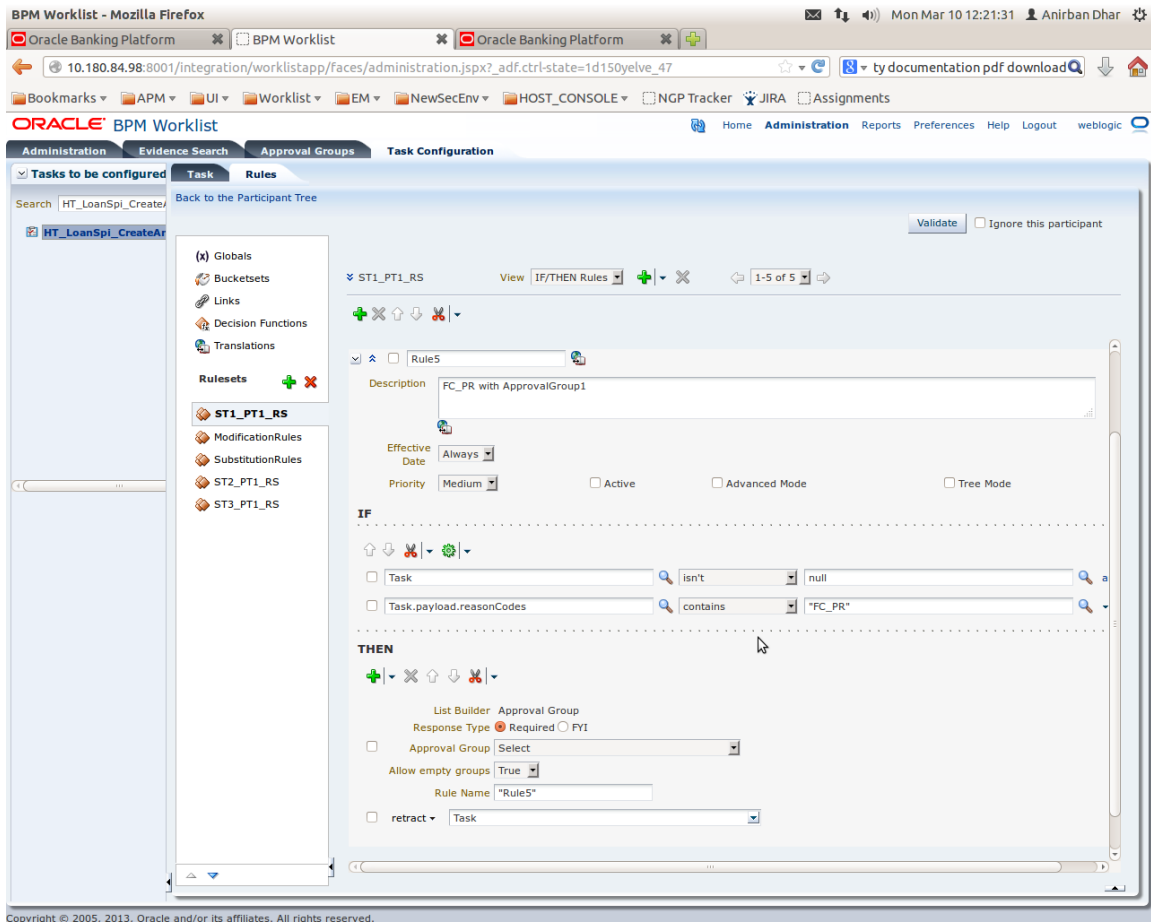
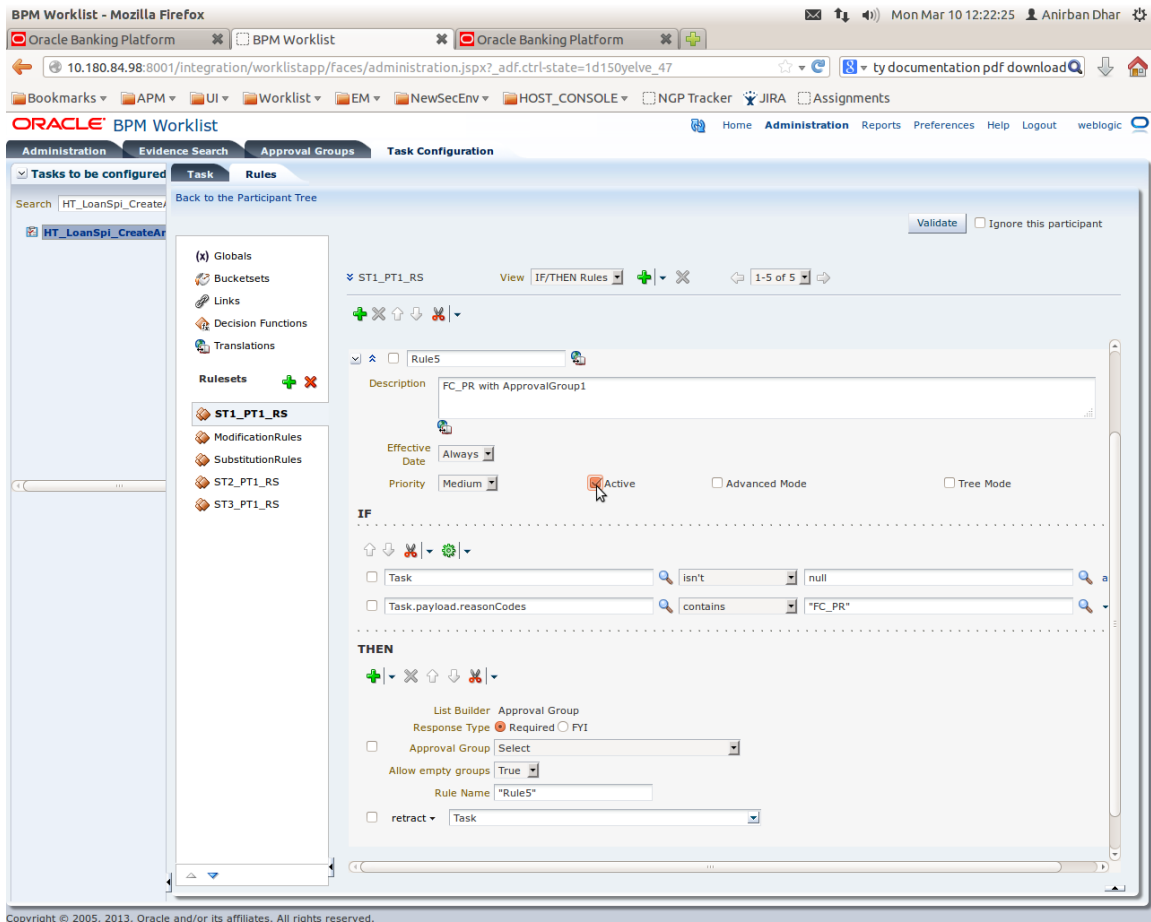


Figure 2–54 Rule Expansion



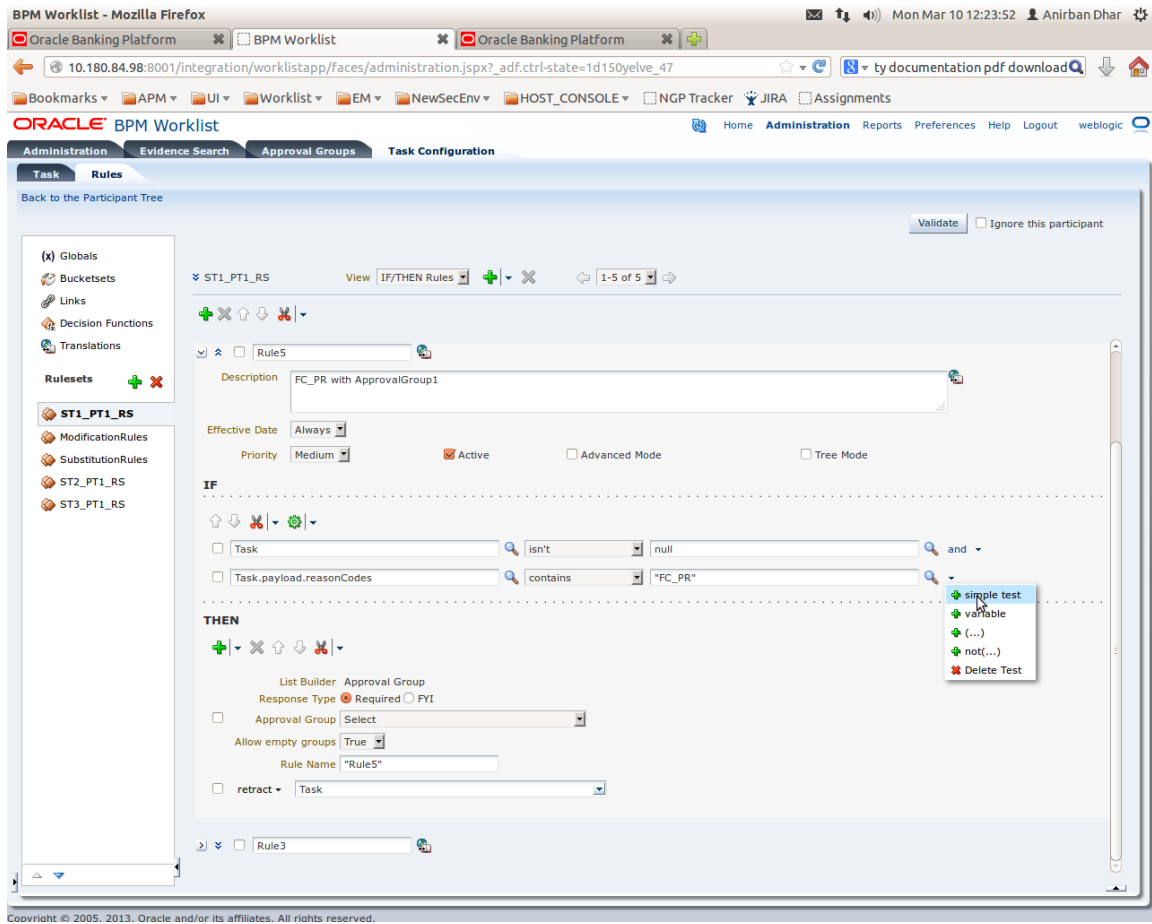
11. Click **Active** check box to enable a particular rule.

Figure 2–55 Enabling Rule



12. Click the drop-down arrow to add a new row of condition and select **Simple Test**.

Figure 2–56 Adding New Row of Condition



- Expand **Task** -> **Payload** and then select the **fact**.

Figure 2–57 Expanding Payload

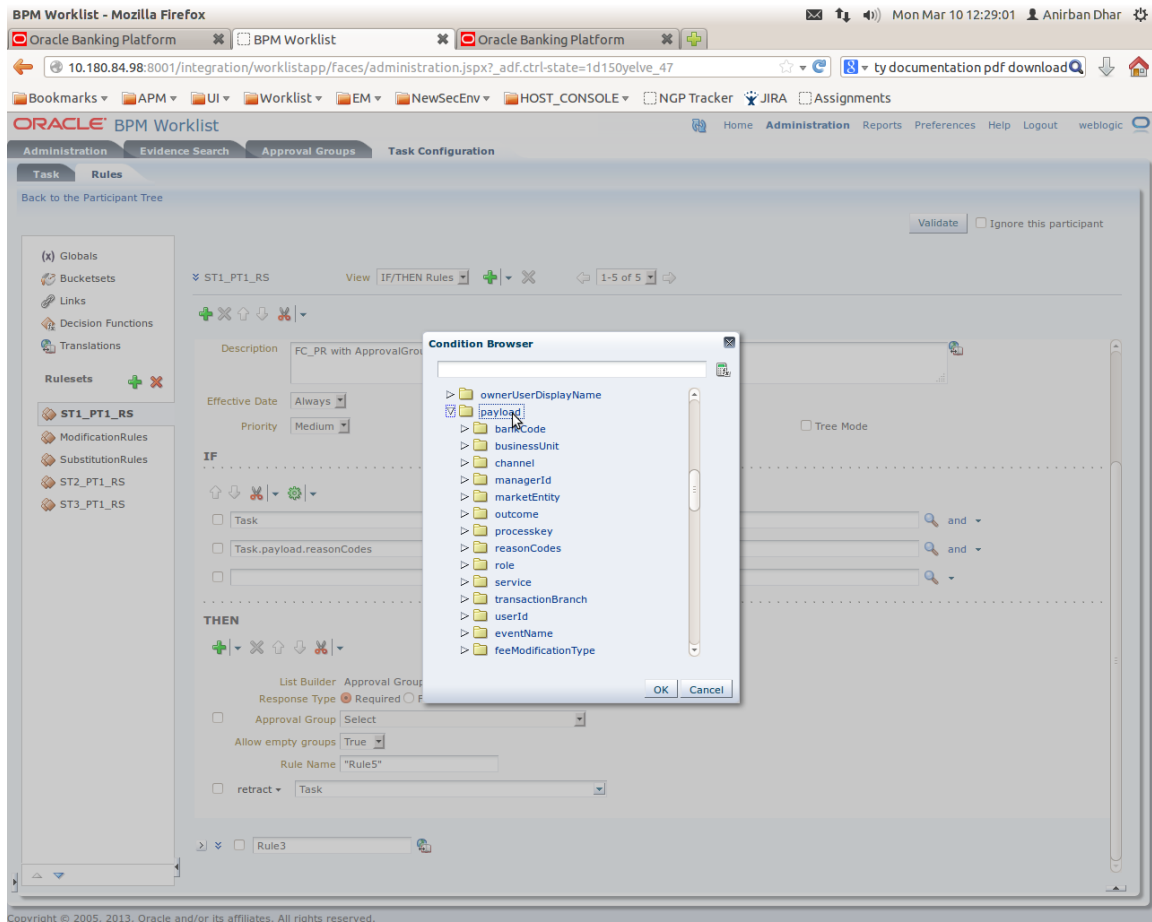
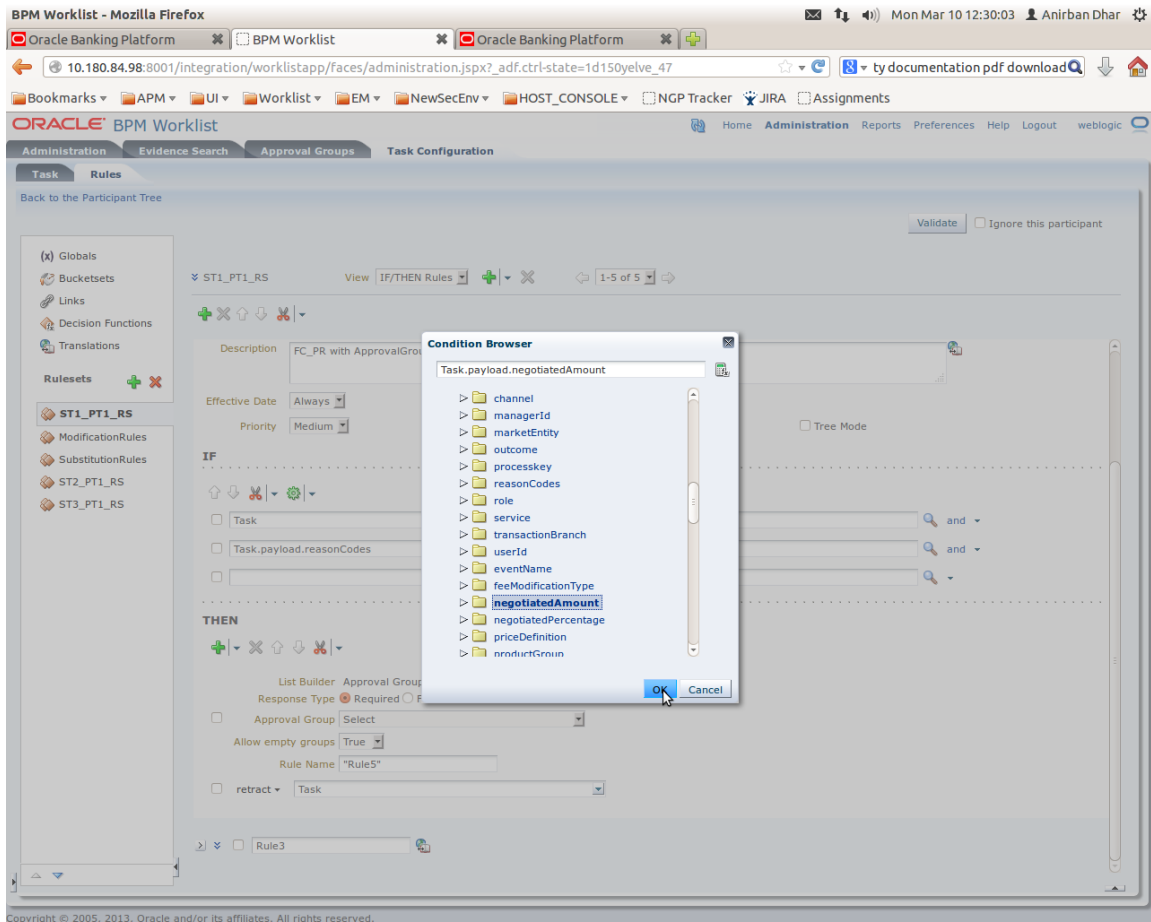
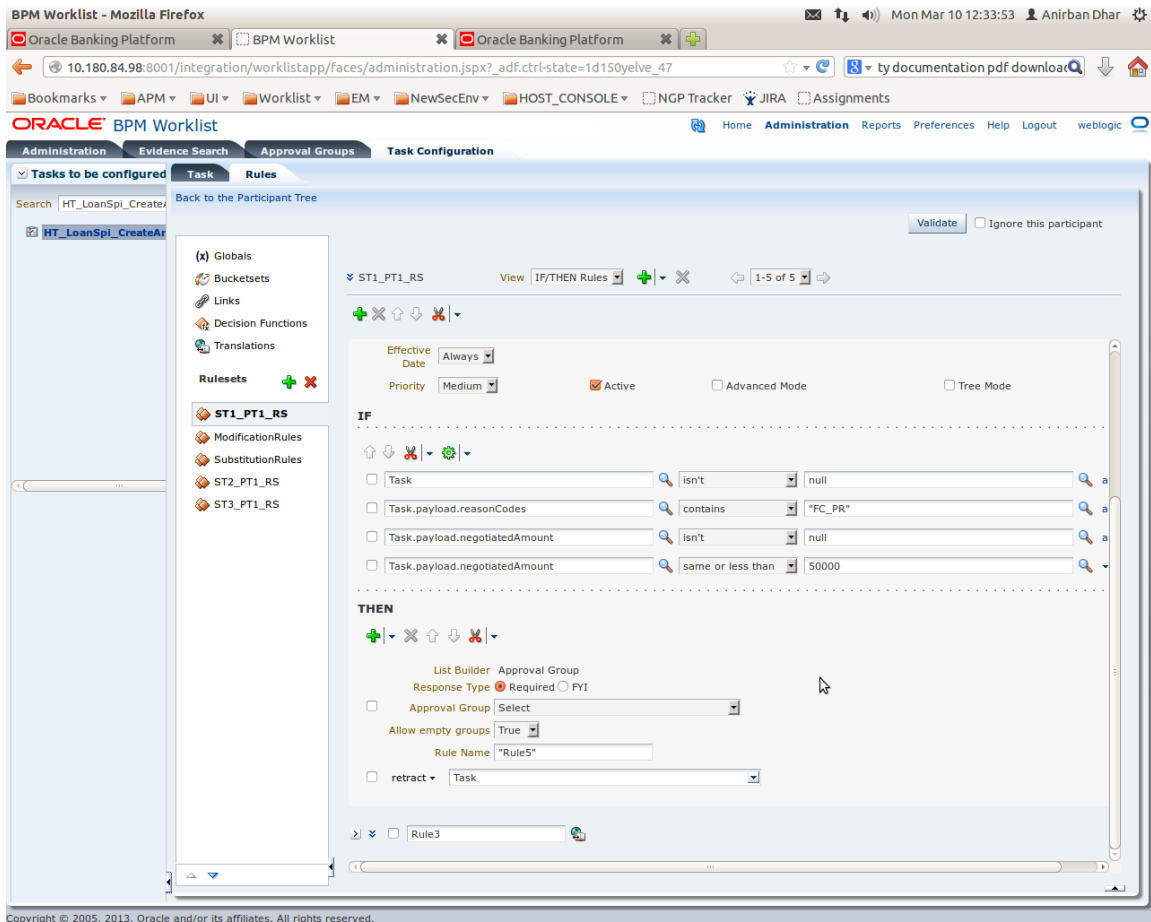


Figure 2–58 Selecting Fact



14. Update the fact value as per condition required for routing.

Figure 2–59 Updating Fact Value

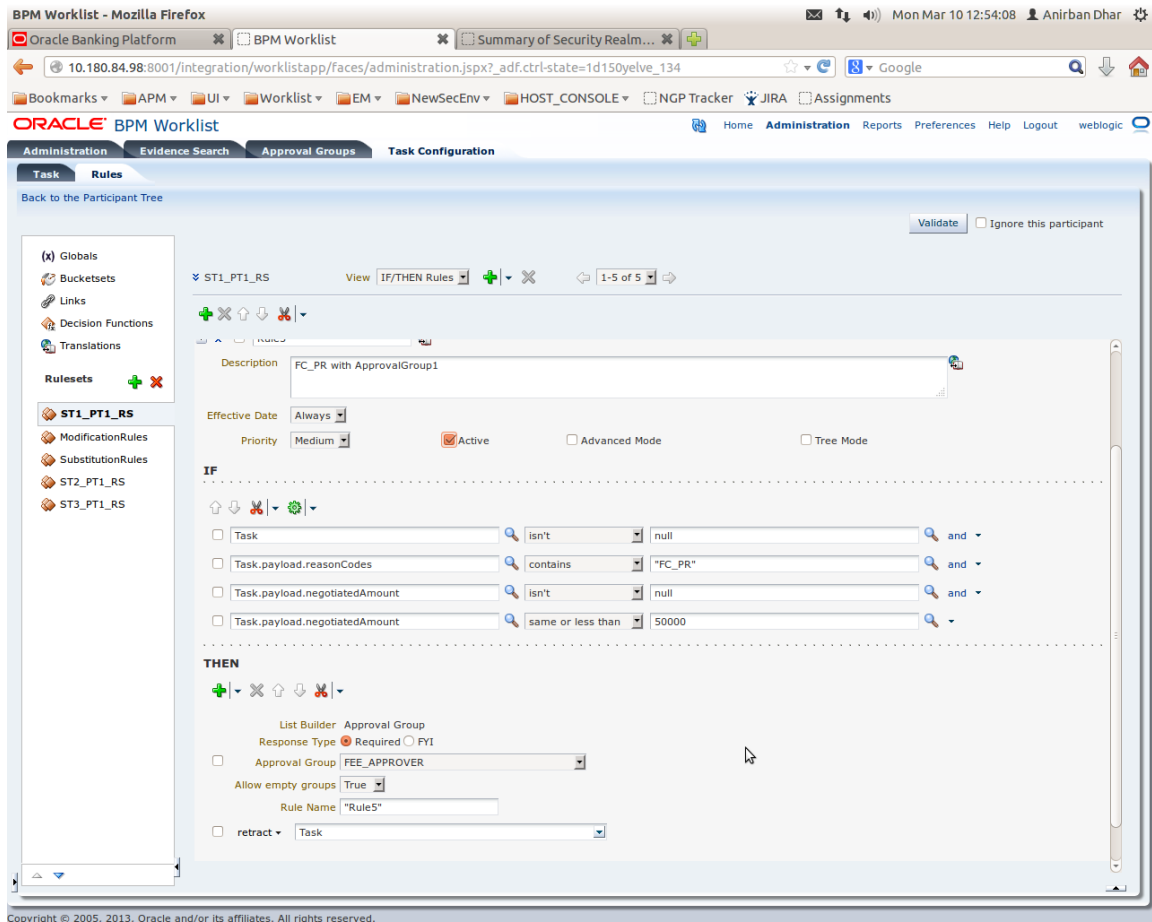


Note

Negotiated Amount should be multiplied by 10000. For example, if you want to set limit for \$5 negotiated amount, then in BPM rule you need to put fact value as 50000.

15. Select **Approver Group** from the option list. For example, select FEE_APPROVER.

Figure 2–60 Select Approver Group



16. Save and commit the rule and the task.

You can follow similar steps to configure rules on different stages. Ensure the desired rule is active. If no rule is evaluated, then the task will be auto rejected by workflow system.

3 Defining Task Configuration Rules

Each human task in Origination business process has business rule associated with it. This business rule can be used to set various parameters for the task like SLA period, Assignees, task priority, task owner, STP configuration, and so on. Below sections illustrate the steps to configure such business rules.

3.1 Important Rule Artifacts

This section provides information about important rule artifacts.

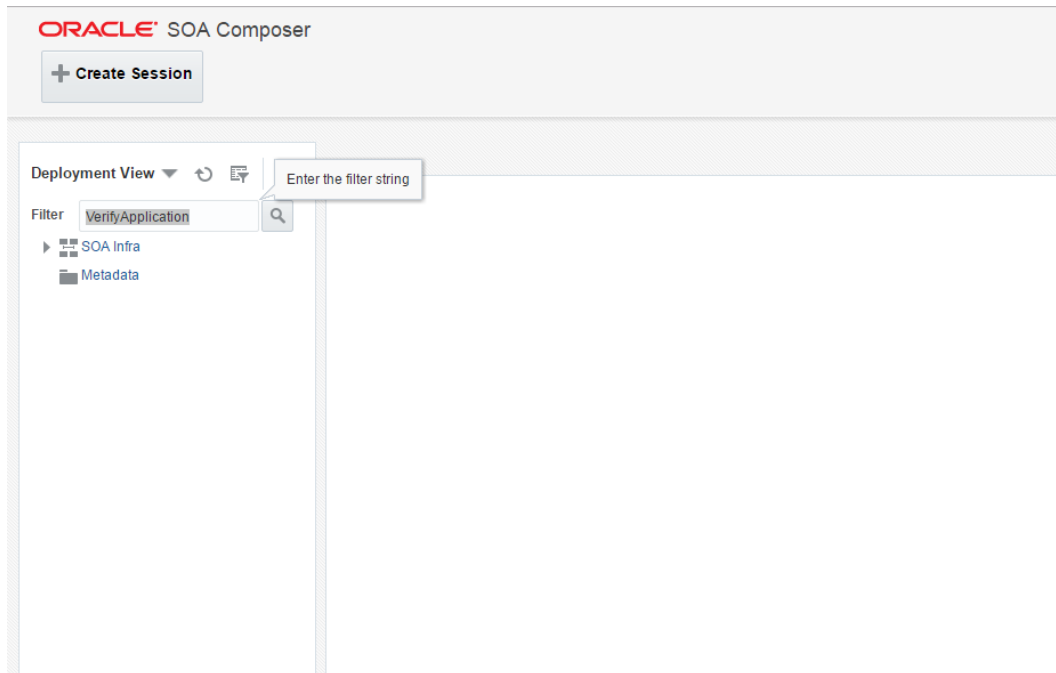
3.1.1 Rules Dictionary

For each human task, a `<name>TaskConfigRules.rules` file is provided. For example, `VerifyApplicationTaskConfigRules.rules`. These rules dictionary files have to be used to configure attributes of the respective human task.

Rules dictionaries can be viewed and edited using Oracle SOA Composer. Oracle SOA composer can be accessed using <http://<IP-of-SOA-server>:8001/soa/composer>.

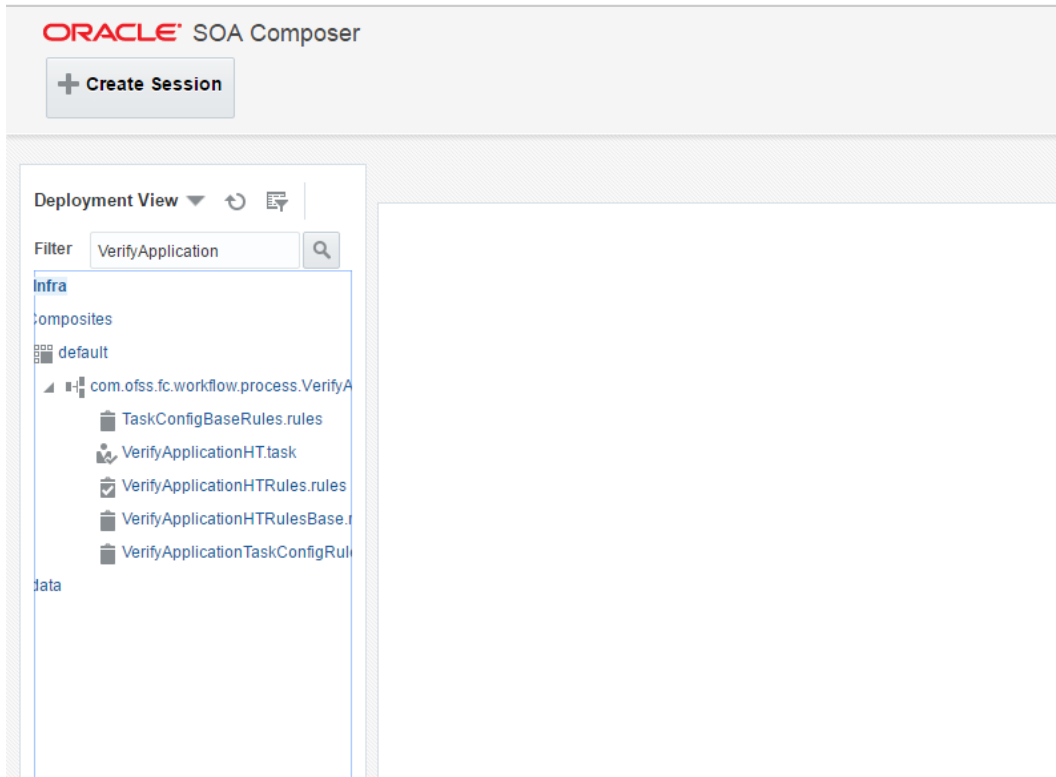
Figure 3–1 and Figure 3–2 illustrate the procedure of opening the rules dictionary for VerfiyApplicationTask.

Figure 3–1 SOA Composer - Open Rules Dictionary Browser



3.1 Important Rule Artifacts

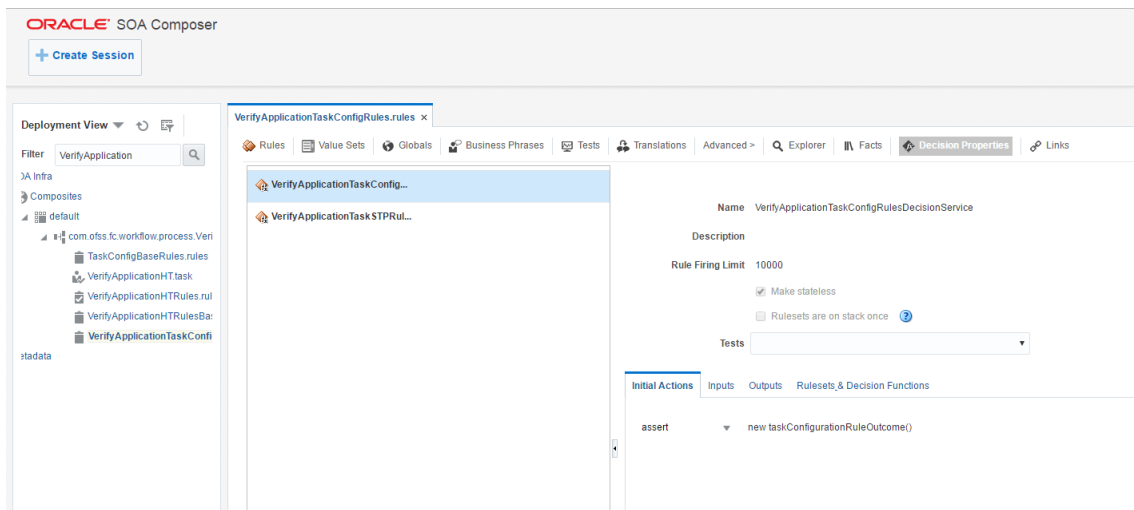
Figure 3–2 SOA Composer – Selecting Rules Dictionary



3.1.2 Decision Function

Configuration rules are written in Rulesets, which are executed through a Decision Function. In each rules dictionary a decision function is provided by the name of <name>TaskConfigurationRulesDecisionService.

Figure 3–3 SOA Composer – Selecting Decision Function



3.1.3 Rulesets

Each decision function executes one or more rulesets. This is where the rules are written. Any rulesets that are defined in the rules dictionary can be added to be used in a decision function.

Figure 3–4 illustrates addition or removal of rulesets from a decision function.

Figure 3–4 SOA Composer - Adding Rulesets to Decision Function

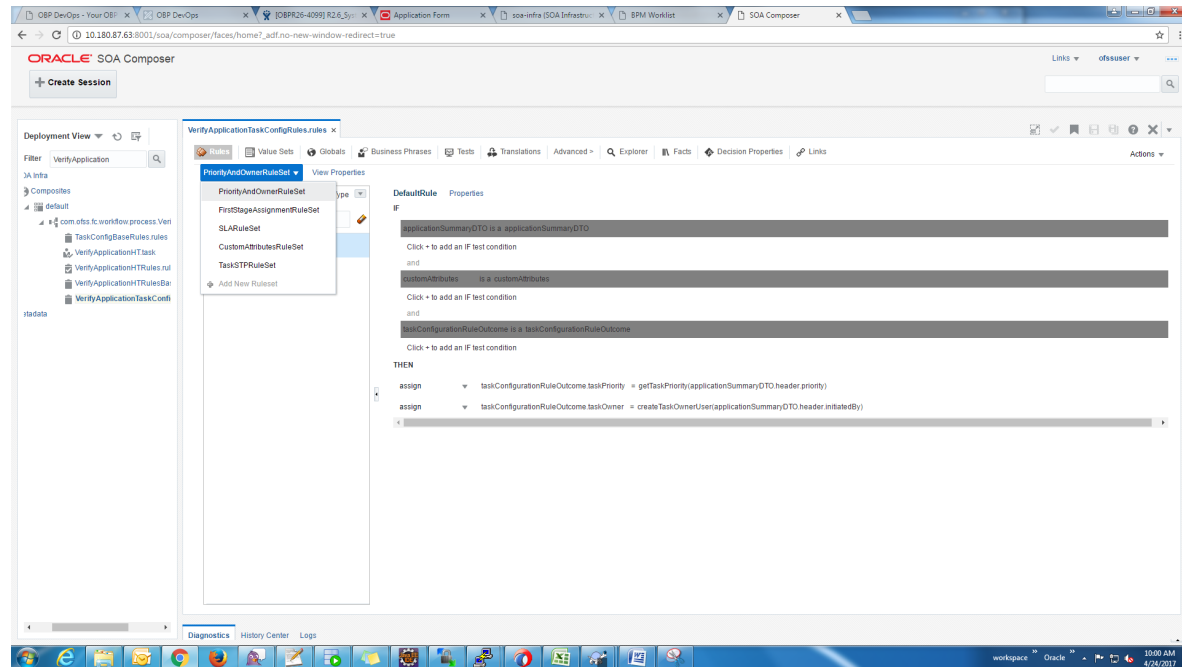
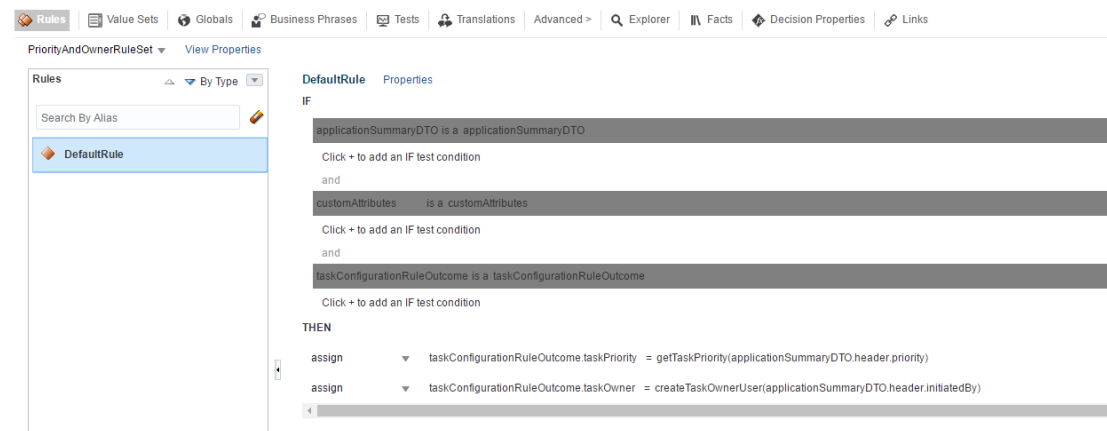


Figure 3–5 shows what a ruleset looks like.

Figure 3–5 SOA Composer - Viewing a ruleset

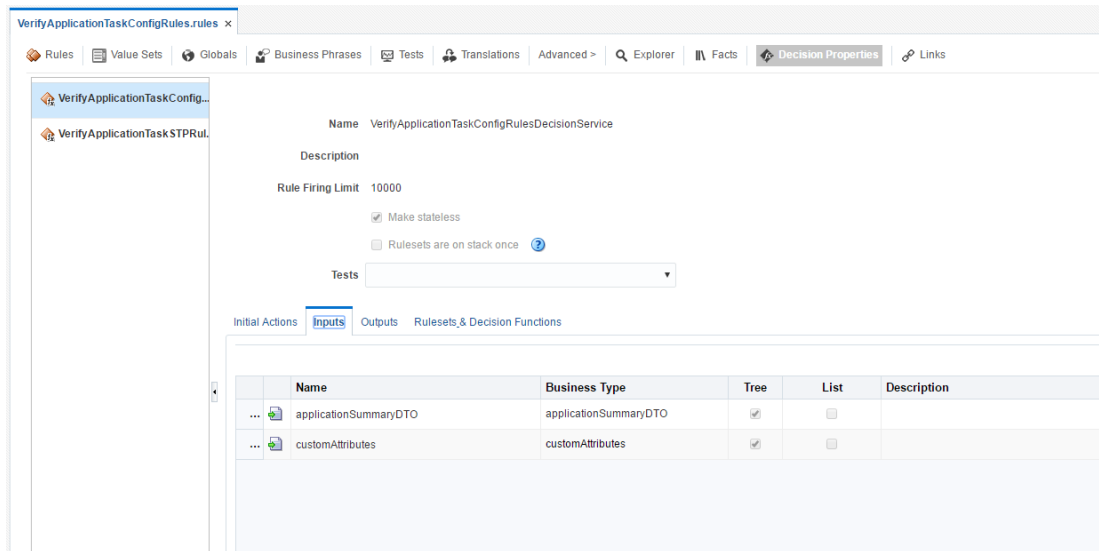


3.2 Inputs to Decision Function

A decision function can take in data objects as input. The rulesets executed by the decision function then work on those inputs to create the output.

Figure 3–6 shows the inputs to a decision function. In this example, there are two input objects - customAttributes of type CustomAttributes and applicationSummaryDTO of type ApplicationSummaryDTO.

Figure 3–6 SOA Composer - Viewing inputs to a Decision Function



In the example, the applicationSummaryDTO is used in the rules to determine the task priority and the task owner. This is illustrated in Figure 3–5.

3.2.1 Custom Input Attributes

CustomAttributes allow three types of attributes - text, number and date, for which, it has following members, respectively:

- CustomTextAttributeList
- CustomNumberAttributeList
- CustomDateAttributeList

Each of these members has a list of respective types,

- CustomTextAttribute
- CustomNumberAttribute
- CustomDateAttribute

All of these three types have a similar steps to configure rules structure and have two members:

- attributeName, of type String
- attributeValue, of type String, int or dateTime, respectively

The UML class diagram of the type CustomAttributes is shown in Figure 2-g. For details on dateTime, please refer <http://www.w3.org/TR/xmlschema-2/#dateTime>

To access the custom attributes passed as input to the decision service, following three functions are provided:

- `getCustomTextAttribute(CustomAttributes customAttributes, String attributeName)`
 - Return type - String
- `getCustomNumberAttribute(CustomAttributes customAttributes, String attributeName)`
 - Return type - int
- `getCustomDateAttribute(CustomAttributes customAttributes, String attributeName)`
 - Return type - XMLGregorianCalendar

Figure 3–7 shows example usage of custom attributes.

Figure 3–7 SOA Composer – Example Usage of Custom Attributes

```

assign new ▾ String dummyCustomInputText = getCustomTextAttribute(customAttributes, "dummyCustomInputText")
assign ▾ dummyCustomInputText = dummyCustomInputText.toUpperCase()
addCustomTextAttribute(taskConfigurationRuleOutcome, "dummyCustomOutputText", dummyCustomInputText)
assign new ▾ int dummyCustomInputNumber = getCustomNumberAttribute(customAttributes, "dummyCustomInputNumber")
assign ▾ dummyCustomInputNumber = dummyCustomInputNumber + 7
addCustomNumberAttribute(taskConfigurationRuleOutcome, "dummyCustomOutputNumber", dummyCustomInputNumber)
assign new ▾ XMLGregorianCalendar dummyCustomInputDate = getCustomDateAttribute(customAttributes, "dummyCustomInputDate")
assign ▾ dummyCustomInputDate = XMLDate.add days to(dummyCustomInputDate, 1)
addCustomDateAttribute(taskConfigurationRuleOutcome, "dummyCustomOutputDate", dummyCustomInputDate)

```

3.3 Output from Decision Function

The output for all task configuration decision functions is of the type `TaskConfigurationRuleOutcome`. This object holds as its attributes, the parameters needed for task configuration. The values for its attributes are set using the rules in the rulesets.

Figure 3–8 shows output definition of decision function.

Figure 3–8 SOA Composer – Viewing Output of a Decision Function

The screenshot shows the SOA Composer interface for a decision function named 'VerifyApplicationTaskConfigRulesDecisionService'. The 'Outputs' tab is active, showing a table with the following data:

Name	Business Type	Tree	List	Description
taskConfigurationRuleOutcome	taskConfigurationRuleOutcome	<input type="checkbox"/>	<input type="checkbox"/>	

3.3.1 List of Configurable Attributes in Rule Outcome

The following human task attributes can be set in TaskConfigurationRuleOutcome object:

1. Task Priority

The task priority can be set by assigning an integer value to the taskPriority attribute of the TaskConfigurationRuleOutcome object. For example, assign `taskConfigurationRuleOutcome.taskPriority = 3`

2. Service Level Agreement (SLA)

SLA consists of taskExpirationDuration and taskDueDuration.

To set SLA for the human task:

- create a new Sla object using `createSLA(String expirationDuration, String dueDuration)`
- assign it to `taskConfigurationRuleOutcome.sla`

For example:

```
assign taskConfigurationRuleOutcome.sla = createSLA("P5D", "P1D")
```

expirationDuration and dueDuration are of the type `xsd:duration` encoded in String. The format of `xsd:duration` is *PnYnMnDnHnMnS*.

P is a literal value that starts the expression

nY represents n years

nM represents n months

nD represents n days

T is a literal value that separates date and time

nH represents n hours

nM represents n minutes

nS represents n seconds

In the example, we have an expiration duration of 5 days and due duration of 1 day. As another example, duration of 1 Month 15 days are represented by "P1M15D"

For more details on the Duration type, please refer <http://www.w3.org/TR/xmlschema-2/#duration>

3. Task Owner

Task owner can be set via following steps:

- create a new ParticipantSet object using `createTaskOwnerUser(String ownerUser)` or `createTaskOwnerGroup(String ownerGroup)`
- assign the new ParticipantSet object to taskOwner attribute of TaskConfigurationRuleOutcome

For example:

```
assign taskConfigurationRuleOutcome.taskOwner = createTaskOwnerUser("user1")
```

4. Stage Participant

Stage participant attribute, stageParticipant is of the type StageParticipant and it consists of following members:

- participant: A ParticipantSet object that holds the participant users and groups.
- filter: A UserFilterCriteria object that holds one or more than one UserAttributeFilterCriteria on which the users will be filtered. A criteria has an attribute name, attributeName, the value of which would determine the filter outcome, the reference value, attributeValue and one operator, out of equals, greater than, less than and in, which decided the type of comparison to be made between the actual value of the attribute and the reference value.

Following steps are supposed to be followed for assigning the stageParticipant:

- Create a ParticipantSet using one of the following functions.
 - createParticipant(String groups, String users): ParticipantSet
 - createParticipantFromUsers(String users): ParticipantSet
 - createParticipantFromGroups(String groups): ParticipantSet
- Create a new UserFilterCriteria.
- Create UserAttributeFilterCriteria objects using CreateUserAttributeFilterCriteria(String attributeName, String attributeValue, UserAttributeFilterOperator operator) and add them to UserFilterCriteria using addUserAttributeFilterCriteria(UserFilterCriteria filter, UserAttributeFilterCriteria attributeFilter)
- Create a new StageParticipant from the ParticipantSet and the UserFilterCriteria using the function createStageParticipant(ParticipantSet participant, UserFilterCriteria filter)
- Add StageParticipant to the TaskConfigurationRuleOutcome using addStageParticipant or addStageParticipantWithStageName

Figure 3–9 shows an example for assigning a StageParticipant.

Figure 3–9 SOA Composer – Example for adding Stage Participant

```
assign new ▾ ParticipantSet participant = createParticipantFromGroups("Administrators")
assign new ▾ UserFilterCriteria filter = new UserFilterCriteria()
assign new ▾ UserAttributeFilterCriteria attributeFilter1 = createUserAttributeFilterCriteria("dummyAttributeName1","dummyAttributeValue1",UserAttrib
addUserAttributeFilterCriteria(filter,attributeFilter1)
assign new ▾ UserAttributeFilterCriteria attributeFilter2 = createUserAttributeFilterCriteria("dummyAttributeName2","dummyAttributeValue2",UserAttrib
addUserAttributeFilterCriteria(filter,attributeFilter2)
assign new ▾ StageParticipant stageParticipant = createStageParticipant(participant, filter)
addStageParticipant(taskConfigurationRuleOutcome, stageParticipant)
```

5. Custom Output Attributes

Following methods may be used in order to add custom text, number or date attributes, respectively to the TaskConfigurationRuleOutcome:

- addCustomTextAttribute
- addCustomNumberAttribute
- addCustomDateAttribute

Figure 3–10 shows example usage of custom attributes.

Figure 3–10 SOA Composer – Example usage of custom attributes

```
assign new ▾ String dummyCustomInputText = getCustomTextAttribute(customAttributes, "dummyCustomInputText")
assign ▾ dummyCustomInputText = dummyCustomInputText.toUpperCase()
addCustomTextAttribute(taskConfigurationRuleOutcome, "dummyCustomOutputText", dummyCustomInputText)
assign new ▾ int dummyCustomInputNumber = getCustomNumberAttribute(customAttributes, "dummyCustomInputNumber")
assign ▾ dummyCustomInputNumber = dummyCustomInputNumber + 7
addCustomNumberAttribute(taskConfigurationRuleOutcome, "dummyCustomOutputNumber", dummyCustomInputNumber)
assign new ▾ XMLGregorianCalendar dummyCustomInputDate = getCustomDateAttribute(customAttributes, "dummyCustomInputDate")
assign ▾ dummyCustomInputDate = XMLDate.add days to(dummyCustomInputDate, 1)
addCustomDateAttribute(taskConfigurationRuleOutcome, "dummyCustomOutputDate", dummyCustomInputDate)
```

3.3.2 List of Functions to Set Rule Outcome

Following functions are available to configure the TaskConfigurationRuleOutcome:

1. **getTaskPriority(String priority): int**

The input to this function is a number as a String and it returns the number as int type. For example, variable1.priority has a value of 2
getTaskPriority(variable1.priority) will return 2.

This method can be used when assigning the TaskConfigurationRuleOutcome.taskPriority

2. **createSLA(String expirationDuration, String dueDuration): Sla** This method takes as inputs the expiration duration and due duration as Strings written in xsd:duration format. Please refer to the description of xsd:duration in section 3.2.1 - 2 Service Level Agreement (SLA) for more details.

3. **createParticipantFromUsers(String users): ParticipantSet**

Use this method to create ParticipantSet from a string containing user names separated with commas, that is, user1,user2,user3. The ParticipantSet can then be used as an input parameter to createStageParticipant function.

4. **createParticipantFromGroups(String groups): ParticipantSet**

Use this method to create ParticipantSet from a string containing group names separated with commas, that is, group1,group2. The ParticipantSet can then be used as an input parameter to createStageParticipant function.

5. **createParticipant(String groups, String users): ParticipantSet**

Use this method to create ParticipantSet containing users as well as groups. The first argument, groups, is a string containing group names separated with commas, that is, group1,group2, and the second argument, users, is a string containing user names separated with commas, that is,

user1,user2,user3. The ParticipantSet can then be used as an input parameter to createStageParticipant function.

6. **getCustomTextAttribute(CustomAttributes customAttributes,String attributeName): String**

This method is used to fetch a text attribute from a CustomAttributes object. Its inputs are:

- customAttributes: the CustomAttributes object from which attribute is to be fetched.
- attributeName: string containing the name of attribute that is to be fetched.

It returns the value for the specified attribute as a String.

7. **getCustomNumberAttribute (CustomAttributes customAttributes, String attributeName): int**

This method is used to fetch a number attribute from a CustomAttributes object. Its inputs are:

- customAttributes: the CustomAttributes object from which attribute is to be fetched
- attributeName: string containing the name of attribute that is to be fetched

It returns the value for the specified attribute as a int.

8. **getCustomDateAttribute (CustomAttributes customAttributes,String attributeName): XMLGregorianCalendar**

This method is used to fetch a date attribute from a CustomAttributes object. Its inputs are:

- customAttributes: the CustomAttributes object from which attribute is to be fetched.
- attributeName: string containing the name of attribute that is to be fetched.

It returns the value for the specified attribute as an XMLGregorianCalendar.

XMLGregorianCalendar is the java representation for xml dateTime. For more information see, <http://docs.oracle.com/javase/1.5.0/docs/api/javax/xml/datatype/XMLGregorianCalendar.html>

9. **createUserAttributeFilterCriteria (String attributeName,String attributeValue,UserAttributeFilterOperator operator): UserAttributeFilterCriteria**

This method constructs a new UserAttributeFilterCriteria object using the given parameters. Its inputs are:

- attributeName: string containing name of the attribute on which the filter criteria is based on.
- attributeValue: string containing the reference value with which the actual value of the attribute is compared to.
- operator: userAttributeFilterOperator object specifying the operator to be used for comparison. The allowed values are GREATER_THAN, LESS_THAN, EQUALS and IN. Refer Figure 3-7 for the UML class diagram of UserAttributeFilterOperator and the related types.

10. **addUserAttributeFilterCriteria (UserFilterCriteriauserFilterCriteria, UserAttributeFilterCriteria UserAttributeFilterCriteria): UserFilterCriteria**

This method adds a UserAttributeFilterCriteria object to the given UserFilterCriteria object. Its input are:

- `userFilterCriteria`: `userFilterCriteria` object to which the attribute filter criteria needs to be added.
- `userAttributeFilterCriteria`: `userAttributeFilterCriteria` object which needs to be added to `userFilterCriteria`. `UserAttributeFilterCriteria` can be created using the function `createUserAttributeFilterCriteria`.

11. **`createStageParticipant (ParticipantSet participant, UserFilterCriteria userFilter): StageParticipant`**

This method is used to create a `StageParticipant` from `ParticipantSet` and a `UserFilterCriteria`, which are passed in as following parameters.

- `participant`: `participantSet` object which can be created using any of the three functions `createParticipant`, `createParticipantFromUsers` or `createParticipantFromGroups`. `userFilter`:
- `userFilterCriteria` object.

12. **`addStageParticipant (TaskConfigurationRuleOutcome taskConfigurationRuleOutcome, StageParticipant stageParticipant): TaskConfigurationRuleOutcome`**

This method is used to add a `StageParticipant` to a `TaskConfigurationRuleOutcome` object.

- `taskConfigurationRuleOutcome`: `taskConfigurationRuleOutcome` to which the stage participant is to be added.
- `stageParticipant`: `stageParticipant` object which is added to `taskConfigurationRuleOutcome`. A `StageParticipant` can be created using `createStageParticipant` function

The function `addStageParticipantWithStageName` can also be used to the same task, and it also has the capability of setting the stage name.

13. **`createTaskOwnerUser (String ownerUser): ParticipantSet`**

This method is used to create a `ParticipantSet`, that is suitable to be set to `TaskConfigurationRuleOutcome.taskOwner`, from a string containing the owner user name, for example, `user1`. The `ParticipantSet` can then be assigned to `TaskConfigurationRuleOutcome.taskOwner`.

14. **`createTaskOwnerGroup (String ownerGroup): ParticipantSet`**

This method is used to create a `ParticipantSet`, that is suitable to be set to `TaskConfigurationRuleOutcome.taskOwner`, from a string containing the owner group name, for example, `group1`. The `ParticipantSet` can then be assigned to `TaskConfigurationRuleOutcome.taskOwner`.

15. **`addCustomTextAttribute (TaskConfigurationRuleOutcome ruleOutcome, String attrName, String attrValue): void`**

This method is used to add a custom text attribute to a `TaskConfigurationRuleOutcome` object. Its inputs are:

- `ruleOutcome`: the `TaskConfigurationRuleOutcome` object to which attribute is to be added.
- `attrName`: string containing the name of attribute that is to be added.

- attrValue: string containing the value of attribute that is to be added.

16. **addCustomNumberAttribute(TaskConfigurationRuleOutcome ruleOutcome,String attrName,int attrValue): void**

This method is used to add a custom number attribute to a TaskConfigurationRuleOutcome object. Its inputs are:

- ruleOutcome: the TaskConfigurationRuleOutcome object to which attribute is to be added.
- attrName: string containing the name of attribute that is to be added.
- attrValue: int containing the value of attribute that is to be added.

17. **addCustomDateAttribute (TaskConfigurationRuleOutcome ruleOutcome, String attrName,XMLGregorianCalendar attrValue): void**

This method is used to add a custom date attribute to a TaskConfigurationRuleOutcome object. Its inputs are:

- ruleOutcome: the TaskConfigurationRuleOutcome object to which attribute is to be added.
- attrName: string containing the name of attribute that is to be added.
- attrValue: XMLGregorianCalendar object containing the value of attribute that is to be added.

XMLGregorianCalendar is the java representation for xml dateTime. For more information see, <http://docs.oracle.com/javase/1.5.0/docs/api/javax/xml/datatype/XMLGregorianCalendar.html>

18. **addStageParticipantWithStageName (TaskConfigurationRuleOutcometaskConfigurationRuleOutcome,StageParticipant stageParticipant,StringstageName): TaskConfigurationRuleOutcome**

This method is has a similar function as that of addStageParticipant and is used to add a StageParticipant to a TaskConfigurationRuleOutcome object and also specify a stage name.

- taskConfigurationRuleOutcome: TaskConfigurationRuleOutcome to which the stage participant is to be added.
- stageParticipant: StageParticipant object which is added to taskConfigurationRuleOutcome. A StageParticipant can be created using createStageParticipant function.
- stageName: String containing the desired stage name.

4 Data Management

This chapter describes data related activities to be performed as an administrator.

4.1 Batch Execution

Batch Execution refers to bulk processing of records to perform business operations in real-time environment. Business operations include complex processing of large volumes of information, that is most efficiently processed with minimal or no user interaction using Batch Execution.

The batch process is run through the **End of Day (Fast path: EOD10)** page with a varied combination of category, job code and job type for a particular business day.

This section explains the steps involved in Batch Execution.

Note

To view the detailed procedure to be followed in the application page **End of Day (Fast Path: EOD10)**, see its context-sensitive help in the application.

4.1.1 Database Backup

Perform Database Backup before starting with the Batch Execution.

4.1.2 Navigate to End of Day Page

To navigate to the End of Day page:

1. Log in to the Admin Application.
2. Navigate to *End of Day* page either by entering the Fast path **EOD10** or through the menu **Administration > End of Day**.

Figure 4–1 End of Day (Fast path:EOD10)

4.1.3 Cutoff Category Execution

This category marks the logical closure of business in the system to ensure that all online transactions during batch run get processed with the next process date.

To execute the Cutoff category:

1. Select the relevant **Category Details** as shown in the table below:

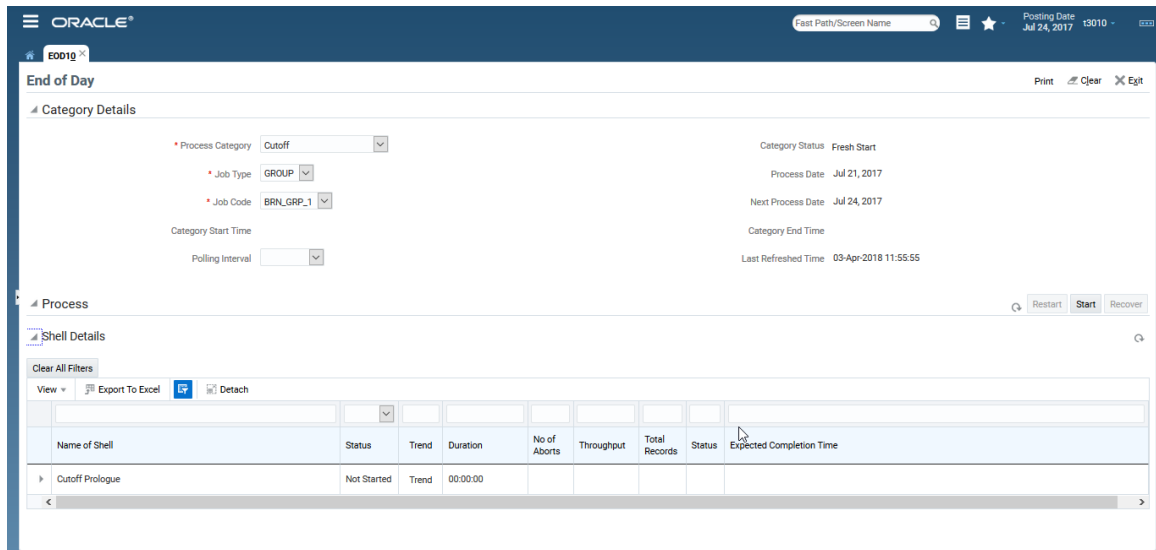
Process Category	Cutoff
Job Type	GROUP
Job Code	BRN_GRP_1

2. Click the **Refresh** button. The rest of the **Category Details** and the **Process Details** appear.

Here, the **Shell State** is *Not Started*.

The **Category Status** is *Fresh Start*.

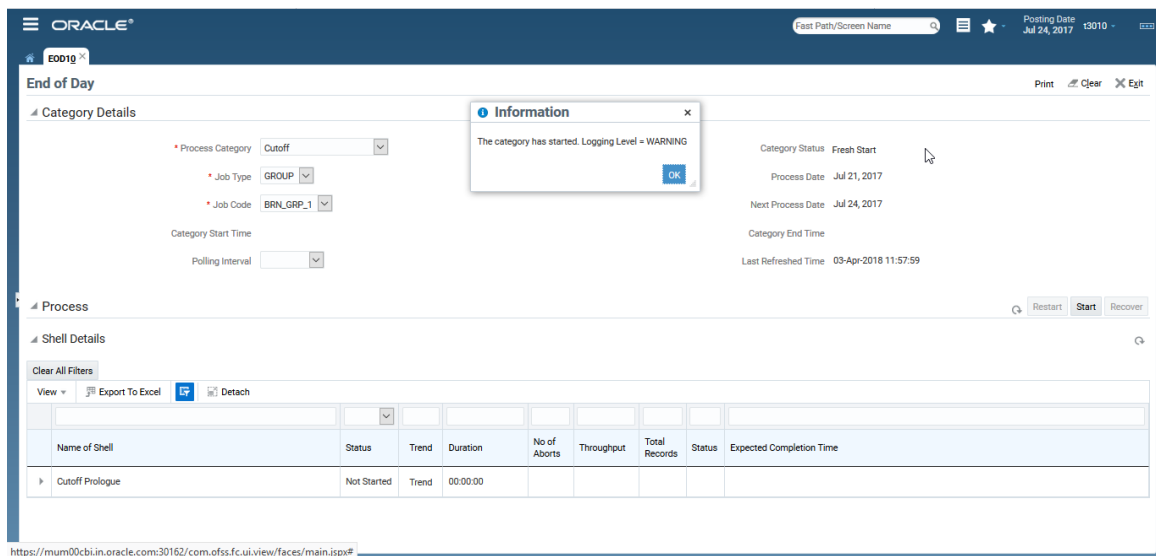
Figure 4–2 Cutoff Category - Not Started



3. Verify the **Process Date** and the **Next Process Date**.
4. Click the **Start** button to begin the execution.

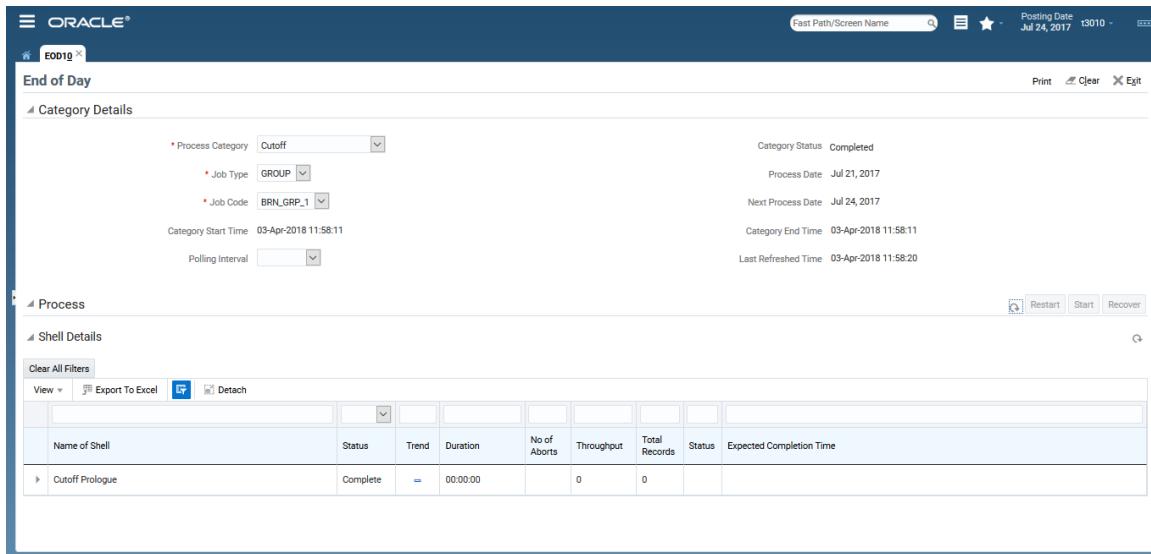
Once the process starts the **Category Status** and the **Shell State** of currently running process display *In Progress*.

Figure 4–3 Cutoff Category - Start



5. On completion of the category, the **Category Status** and the **Shell State** of all the processes display *Completed*.

Figure 4–4 Cutoff Category - Complete



4.1.4 End of Day (EOD) Category Execution

This category performs the tasks required to mark closure of a business day in a bank. For example, value date cleaning, instruction expiry, auto disbursement instruction execution, bundle expiry, report generation and so on. Each task or transaction is performed by a shell in a predefined dependency and sequence.

To execute the End of Day category:

1. Select the relevant **Category Details** as shown in the table below:

Process Category	End of Day
Job Type	GROUP
Job Code	BRN_GRP_1

2. Click the **Refresh** button. The rest of the **Category Details** and the **Process Details** appear.

Here, the **Shell State** is *Not Started*.

The **Category Status** is *Fresh Start*.

Figure 4–5 EOD Category - Not Started

The screenshot shows the Oracle EOD19 'End of Day' configuration page. The 'Category Details' section includes:

- Process Category: End of Day
- Job Type: GROUP
- Job Code: BRN_GRP_1
- Category Status: Fresh Start
- Process Date: Jul 21, 2017
- Next Process Date: Jul 24, 2017
- Last Refreshed Time: 03-Apr-2018 11:59:36

 The 'Process' section has buttons for Restart, Start, and Recover. The 'Shell Details' section shows a table of shells:

Name of Shell	Status	Trend	Duration	No of Aborts	Throughput	Total Records	Status	Expected Completion Time
Reg CC Schedule Generation EOD Shell	Not Started	Trend	00:00:00					
Bundle Reports	Not Started	Trend	00:00:00					

3. Verify the **Process Date** and the **Next Process Date**.
4. Click the **Start** button to begin the execution.

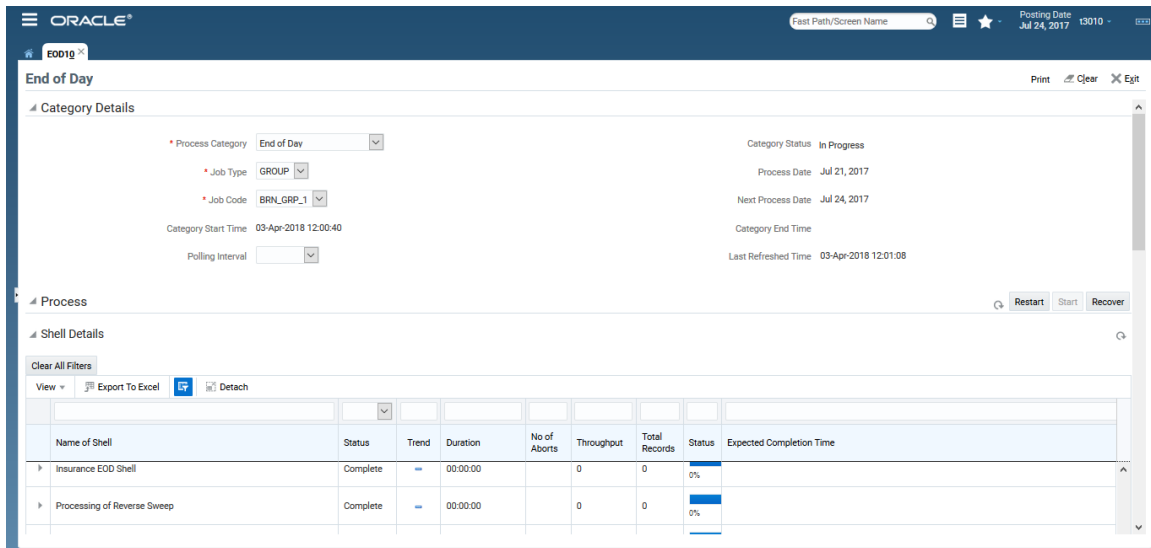
Once the process starts the **Category Status** and the **Shell State** of currently running process display *In Progress*.

Figure 4–6 EOD Category - Start

The screenshot shows the Oracle EOD19 'End of Day' configuration page after the process has started. An 'Information' dialog box is displayed with the message: 'The category has started. Logging Level = WARNING'. The 'Category Status' is now 'Fresh Start' and the 'Last Refreshed Time' is '03-Apr-2018 12:00:42'. The 'Shell Details' table is updated:

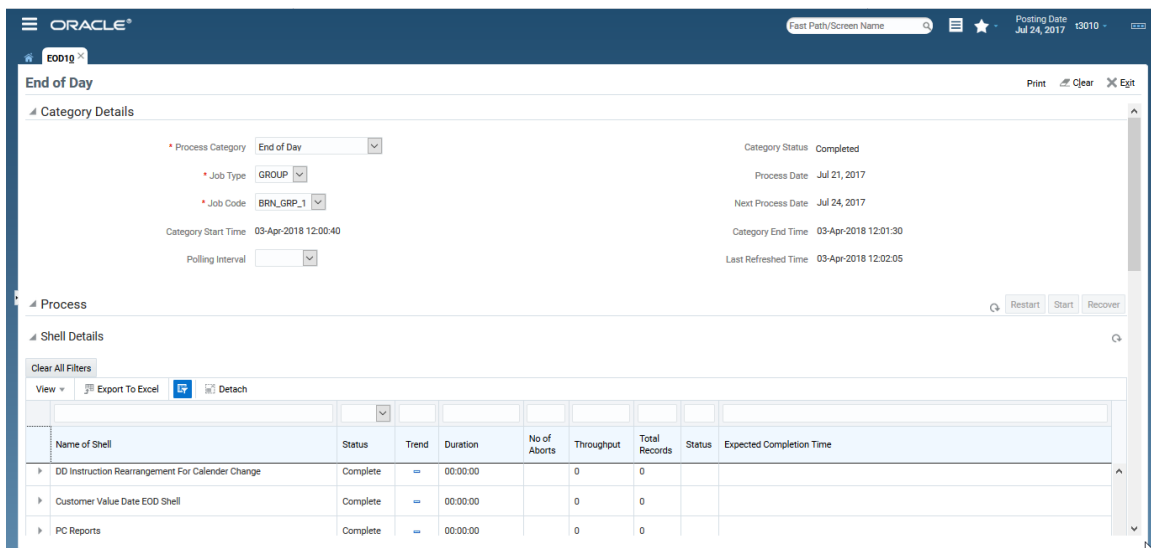
Name of Shell	Status	Trend	Duration	No of Aborts	Throughput	Total Records	Status	Expected Completion Time
Submission EOD Expiry Shell	In Progress		00:00:00	0	0	0	0%	03-Apr-2018 08:00:41
Value Date EOD Shell	Not Started		00:00:00	0	0	0	0%	

Figure 4–7 EOD Category - In Progress



5. On completion of the category, the **Category Status** and the **Shell State** of all the processes display **Completed**.

Figure 4–8 EOD Category - Complete



4.1.5 Internal System EOD Category Execution

This category performs interest accrual, interest capitalisation, interest compounding, accounting balance verification, ledger balance verification and update and related reporting.

To execute the Internal System EOD category:

1. Select the relevant **Category Details** as shown in the table below:

Process Category	Internal System EOD
Job Type	GROUP
Job Code	BRN_GRP_1

2. Click the **Refresh** button. The rest of the **Category Details** and the **Process Details** appear.

Here, the **Shell State** is *Not Started*.

The **Category Status** is *Fresh Start*.

Figure 4–9 Internal System EOD Category - Not Started

The screenshot displays the Oracle EOD19 interface. The main window is titled 'End of Day' and contains several sections:

- Category Details:**
 - Process Category: Internal System EOD
 - Job Type: GROUP
 - Job Code: BRN_GRP_1
 - Category Status: Fresh Start
 - Process Date: Jul 21, 2017
 - Next Process Date: Jul 24, 2017
 - Category End Time: (blank)
 - Last Refreshed Time: 03-Apr-2018 12:03:09
- Process:** Includes buttons for Restart, Start, and Recover.
- Shell Details:** Includes a table with columns: Name of Shell, Status, Trend, Duration, No of Aborts, Throughput, Total Records, Status, and Expected Completion Time.

The table under Shell Details shows the following data:

Name of Shell	Status	Trend	Duration	No of Aborts	Throughput	Total Records	Status	Expected Completion Time
Lending Account Statistics Shell	Not Started	Trend	00:00:00					
Account Action Internal EOD Shell	Not Started	Trend	00:00:00					

3. Verify the **Process Date** and the **Next Process Date**.
4. Click the **Start** button to begin the execution. Once the process starts the **Category Status** and the **Shell State** of currently running process display *In Progress*.

Figure 4–10 Internal System EOD Category - Start

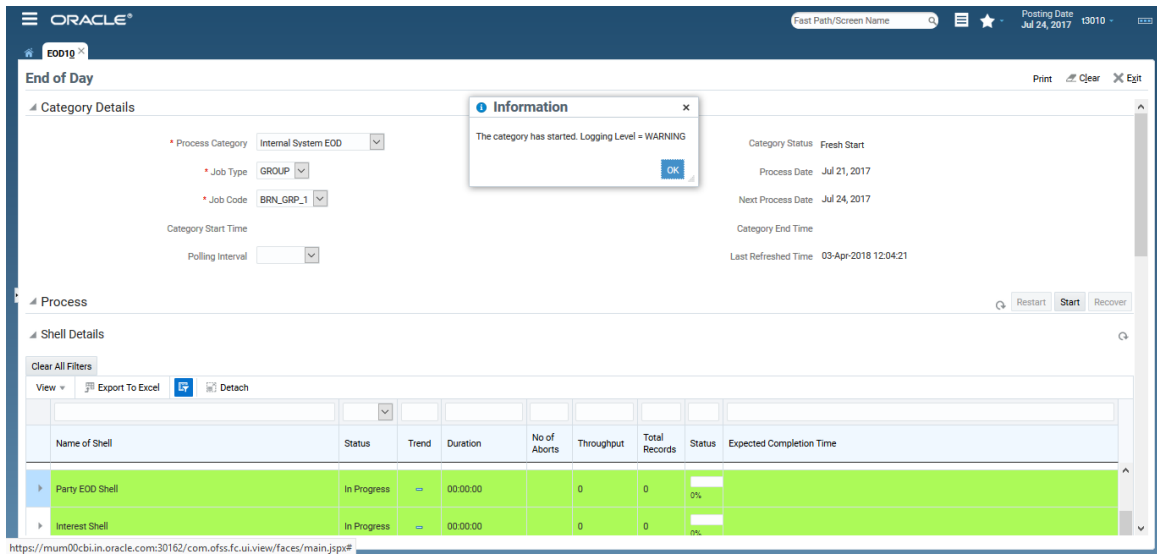
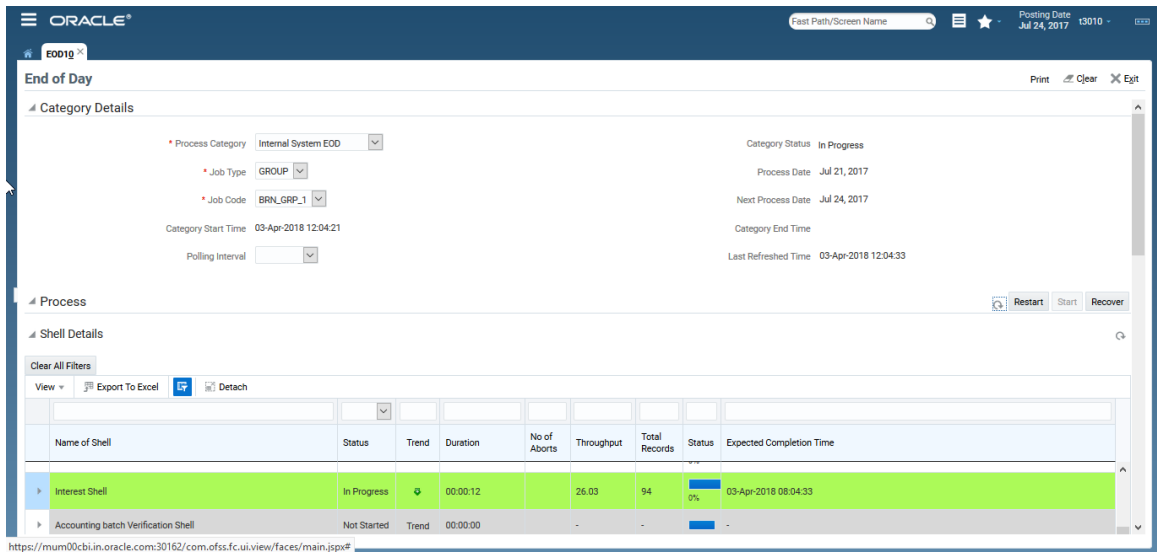


Figure 4–11 Internal System EOD Category - In Progress



- On completion of the category, the **Category Status** and the **Shell State** of all the processes display **Completed**.

Figure 4–12 Internal System EOD Category - Complete

4.1.6 Beginning of Day (BOD) Category Execution

This category performs the tasks required for opening a business day in a bank. For example, standing instruction, sweepout instruction, loan account charging, periodic repayment instruction execution, period fee charging, and report generation. Each task or transaction is performed by a shell in a predefined dependency and sequence.

To execute the Beginning of Day category:

1. Select the relevant **Category Details** as shown in the table below:

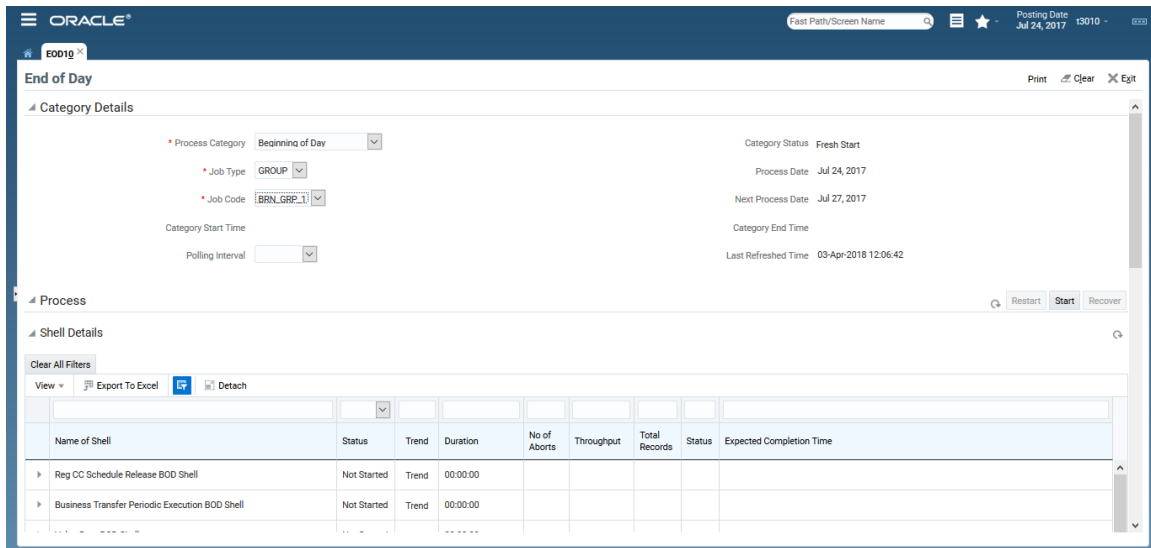
Process Category	Beginning of Day
Job Type	GROUP
Job Code	BRN_GRP_1

2. Click the **Refresh** button. The rest of the **Category Details** and the **Process Details** appear.

Here, the **Shell State** is *Not Started*.

The **Category Status** is *Fresh Start*.

Figure 4–13 BOD Category - Not Started



3. Verify the **Process Date** and the **Next Process Date**.
4. Click the **Start** button to begin the execution.

Once the process starts the **Category Status** and the **Shell State** of currently running process display *In Progress*.

Figure 4–14 BOD Category - Started

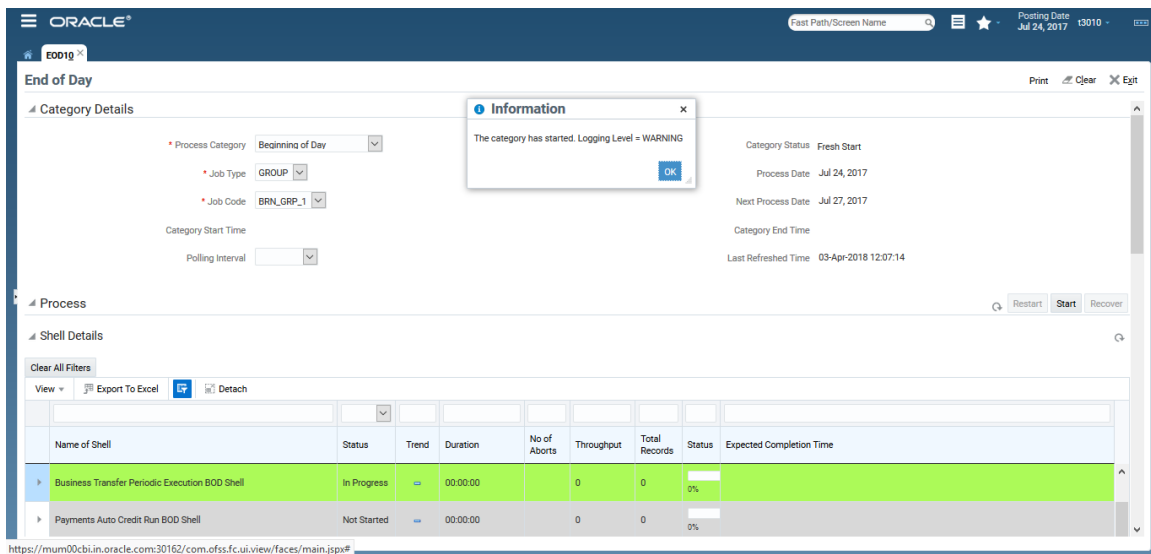


Figure 4–15 BOD Category - In Progress

The screenshot shows the Oracle EOD19 interface for the 'End of Day' process. The 'Category Details' section indicates the process is 'In Progress'. The 'Process' section shows a table of shells with the following data:

Name of Shell	Status	Trend	Duration	No of Aborts	Throughput	Total Records	Status	Expected Completion Time
Untanking Adjustment Posting	In Progress	↔	00:00:12	0	14.5	4	2%	03-Apr-2018 08:07:26
Customer Value Date BOD Shell	Complete	↔	00:00:00	0	0	0	0%	

- On completion of the category, the **Category Status** and the **Shell State** of all the processes display **Completed**.

Figure 4–16 BOD Category - Completed

The screenshot shows the Oracle EOD19 interface for the 'End of Day' process. The 'Category Details' section indicates the process is 'Completed'. The 'Process' section shows a table of shells with the following data:

Name of Shell	Status	Trend	Duration	No of Aborts	Throughput	Total Records	Status	Expected Completion Time
Reg CC Schedule Release BOD Shell	Complete	↔	00:00:00	0	0	0		
Customer Value Date BOD Shell	Complete	↔	00:00:00	0	0	0		
Human Task EOD Resume Shell	Complete	↔	00:00:00	0	0	0		

4.1.7 Housekeeping Category Execution

This category performs the tasks such as statement generation, alert generation, exposure tracking, offset benefit calculation, and facility closure.

To execute the Housekeeping category:

1. Select the relevant **Category Details** as shown in the table below:

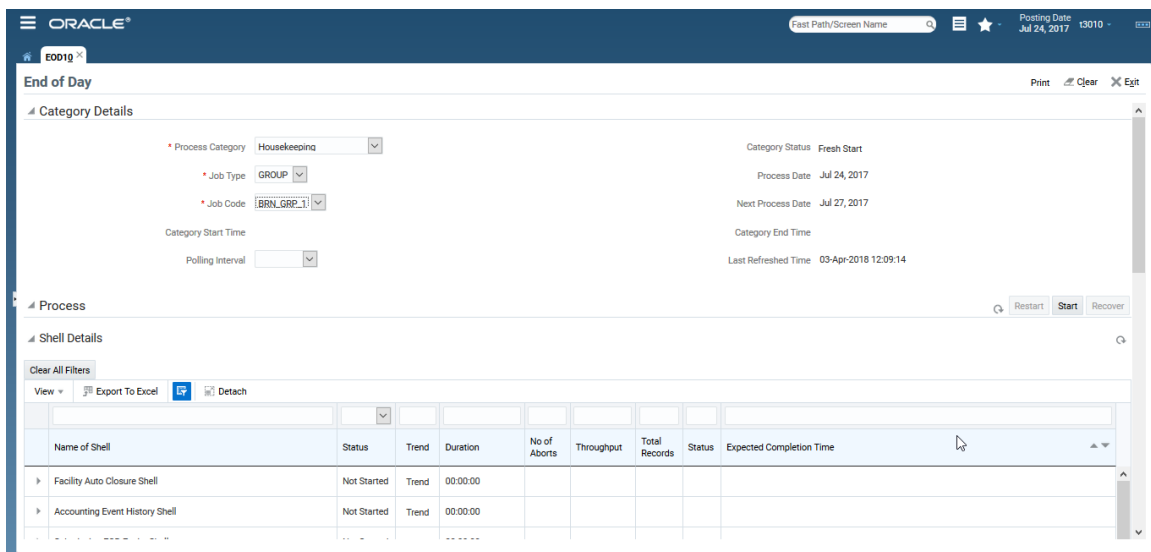
Process Category	Housekeeping
Job Type	GROUP
Job Code	BRN_GRP_1

2. Click the **Refresh** button. The rest of the **Category Details** and the **Process Details** appear.

Here, the **Shell State** is *Not Started*.

The **Category Status** is *Fresh Start*.

Figure 4–17 Housekeeping Category - Not Started



3. Verify the **Process Date** and the **Next Process Date**.
4. Click the **Start** button to begin the execution.

Once the process starts the **Category Status** and the **Shell State** of currently running process display *In Progress*.

Figure 4–18 Housekeeping Category - In Progress

The screenshot displays the Oracle EOD19 interface for the 'End of Day' process. The 'Category Details' section shows the following information:

- Process Category: Housekeeping
- Job Type: GROUP
- Job Code: BRN_GRP_1
- Category Start Time: 03-Apr-2018 12:10:03
- Category Status: In Progress
- Process Date: Jul 24, 2017
- Next Process Date: Jul 27, 2017
- Category End Time: (blank)
- Last Refreshed Time: 03-Apr-2018 12:10:16

The 'Process' section includes buttons for Restart, Start, and Recover. The 'Shell Details' section shows a table with the following data:

Name of Shell	Status	Trend	Duration	No of Aborts	Throughput	Total Records	Status	Expected Completion Time
Move driver table data to History table	Complete	Trend	00:00:00	-	-	-	0%	-
Accounting Event History Shell	Complete	Trend	00:00:00	-	-	-	0%	-

- On completion of the category, the **Category Status** and the **Shell State** of all the processes display **Completed**.

Figure 4–19 Housekeeping Category - Completed

The screenshot displays the Oracle EOD19 interface for the 'End of Day' process, now completed. The 'Category Details' section shows the following information:

- Process Category: Housekeeping
- Job Type: GROUP
- Job Code: BRN_GRP_1
- Category Start Time: 03-Apr-2018 12:10:03
- Category Status: Completed
- Process Date: Jul 24, 2017
- Next Process Date: Jul 27, 2017
- Category End Time: 03-Apr-2018 12:22:49
- Last Refreshed Time: 03-Apr-2018 12:22:49

The 'Process' section includes buttons for Restart, Start, and Recover. The 'Shell Details' section shows a table with the following data:

Name of Shell	Status	Trend	Duration	No of Aborts	Throughput	Total Records	Status	Expected Completion Time
Move driver table data to History table	Complete	==	00:00:00	0	0	0		
Accounting Event History Shell	Complete	==	00:00:00	0	0	0		

4.1.8 Alert Generation Category Execution

This category is used to generate previously logged alerts.

To execute the Alert Generation category:

1. Select the relevant **Category Details** as shown in the table below:

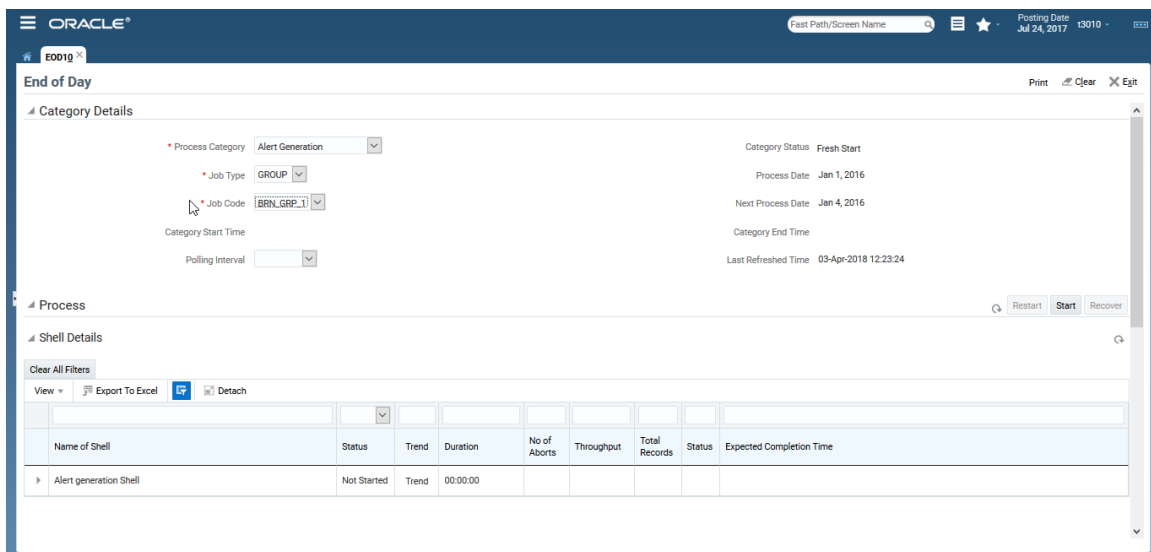
Process Category	Alerts Generation
Job Type	GROUP
Job Code	BRN_GRP_1

2. Click the **Refresh** button. The rest of the **Category Details** and the **Process Details** appear.

Here, the **Shell State** is *Not Started*.

The **Category Status** is *Fresh Start*.

Figure 4–20 Alert Generation Category - Not Started



3. Verify the **Process Date** and the **Next Process Date**.
4. Click the **Start** button to begin the execution.

Once the process starts the **Category Status** and the **Shell State** of currently running process display *In Progress*.

Figure 4–21 Alert Generation Category - In Progress

The screenshot shows the Oracle EOD19 interface for 'Alert Generation Category - In Progress'. The Category Status is 'In Progress'. The Shell Details table shows the following data:

Name of Shell	Status	Trend	Duration	No of Aborts	Throughput	Total Records	Status	Expected Completion Time
Alert generation Shell	In Progress	↔	00:00:09		276.32	84	5%	03-Apr-2018 08:24:00

- On completion of the category, the **Category Status** and the **Shell State** of all the processes display **Completed**.

The screenshot shows the Oracle EOD12 interface for 'Alert Generation Category - Completed'. The Category Status is 'Completed'. The Shell Details table shows the following data:

Name of Shell	Status	Trend	Duration	No of Aborts	Throughput	Total Records	Status	Expected Completion Time
Alert generation Shell	Complete	↔	00:00:20		276	84		

4.2 Batch Exception Recovery

Batch Exception Recovery refers to mechanism to allow support and business users perform actions on the records that were skipped during batch execution. During batch execution, if the number of failures due to business exception is less than pre-configured threshold, such records are skipped for future processing.

The batch exception recovery can be done using the Batch Exception Recovery (Fast Path: OPA007) page. It is recommended that user in support or operations role, checks this page after every batch processing is completed for any PENDING records.

This section explains the steps involved in Batch Exception Recovery.

Batch exception recovery actions can be broadly classified in two categories:

- Actions for Support/Operations user (Performed on Batch Exception Recovery page)
- Actions for Business user (Viewed in worklist application and actioned using OBP screens, data patches.)

In its entire life cycle, the batch exception record will go through the above mentioned actions starting with PENDING and ending with either IGNORED or REPROCESSED. Support or Operations user acts on exception record using the Batch Exception Recovery page.

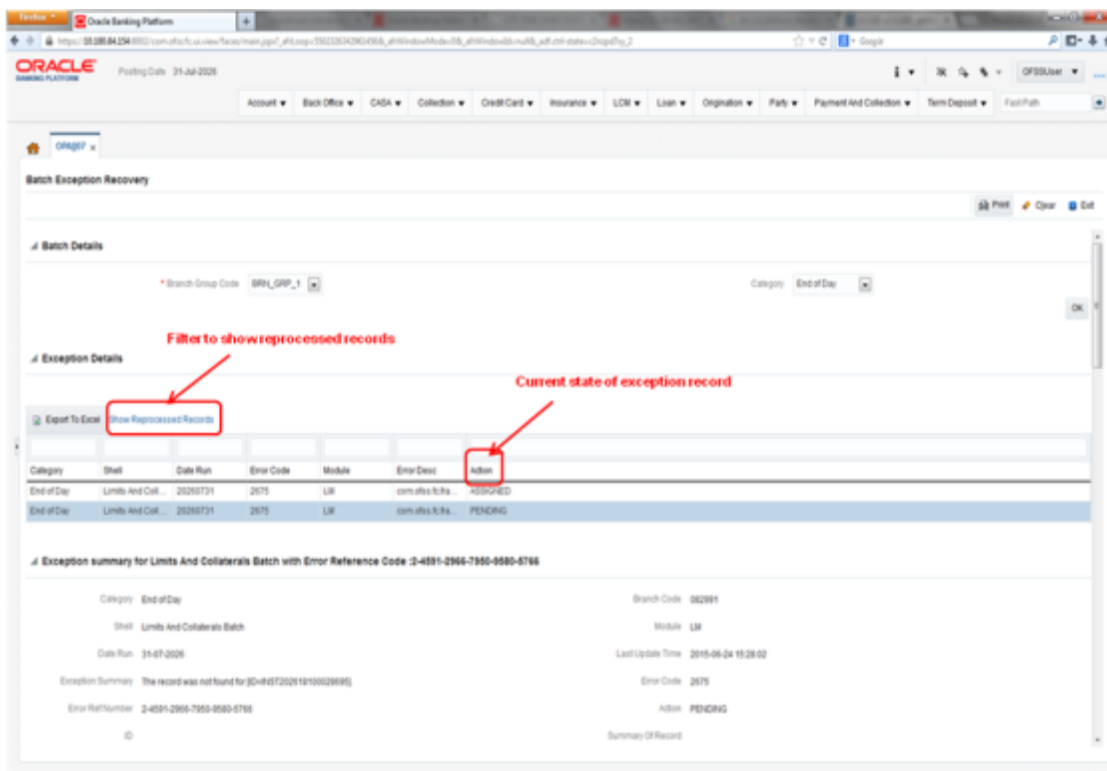
To navigate to the Batch Exception Recovery page:

1. Log in to the Admin application.
2. Navigate to Batch Exception Recovery page either by entering the Fast Path **OPA007** or through the menu **Administration > Batch Exception Recovery**.
3. Select the relevant Category Details as shown in the following table:

Branch Group Code	BRN_GRP_1
Category	End of Day

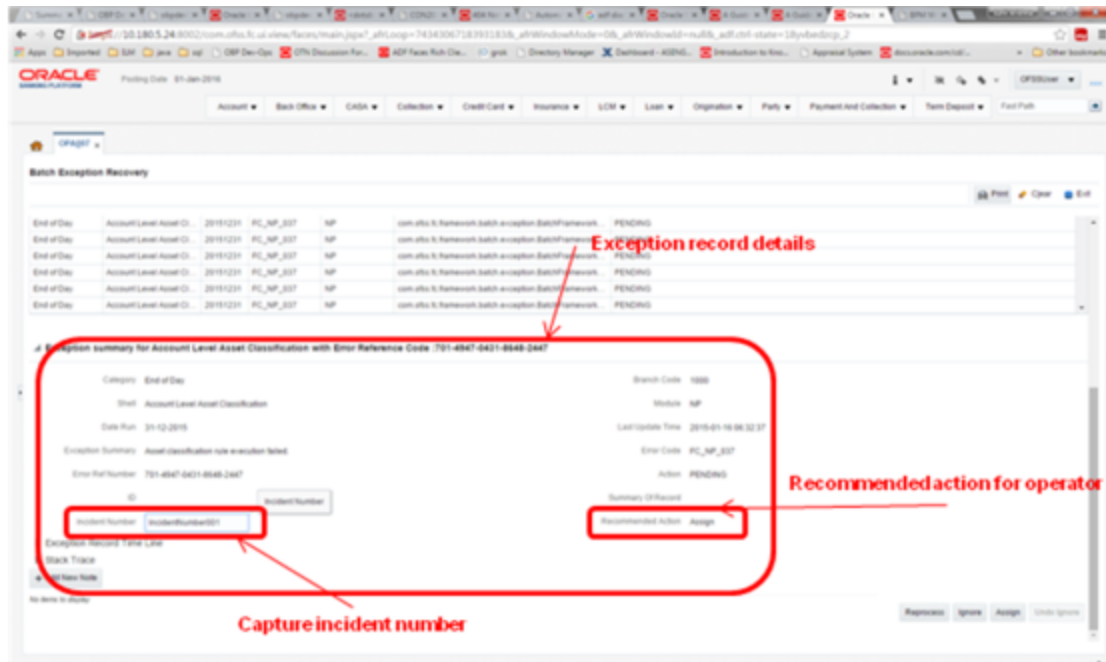
4. Click OK. The Exception Details appear.

Figure 4–22 Exception Details



5. Select an exception record. The additional details such as Stack Trace and Comments appear. One of the important attributes is Recommended Action for the operator.

Figure 4–23 Exception Record Details



6. Check the Stack Trace and Comments. It is recommended that if the current action on an exception record is PENDING and there are no Comments, click Assign to create a task for business user to take appropriate corrective actions on the exception record. Also, look for the Recommended Action. By looking at the Stack Trace, if the support or operator users find a similar previous incident, they can capture the same in the Incident Number field as shown in the above figure.

Note

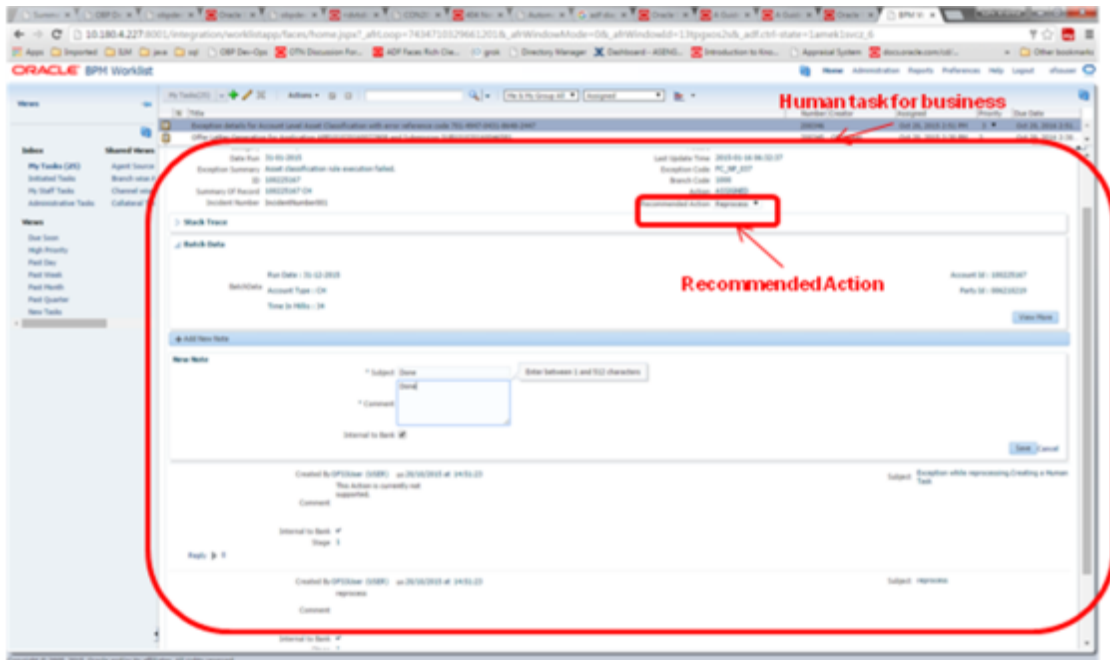
It is mandatory to capture valid meaningful Comments while performing any action on the exception record.

Business user acts on exception record using the Worklist Application

To navigate to the Worklist page:

1. Log in to Worklist application.
2. All the exception records with action as ASSIGNED will appear as a task in the worklist. Select the task to act on.

Figure 4–24 Exception record in Worklist application



3. Click Claim to claim the task.
4. Check the Stack Trace, Batch Data, Incident Number and Comments.
5. Perform appropriate actions using application screens, data patches.
6. Capture comments in Comments section. These comments will be used by the support user to further act on the exception record.
7. Select the mandatory Recommended Action for the support or operator user.
8. Click Done to complete the task. The exception record moves into PENDING state and will be visible to the support user to take further action.

Note

It is mandatory to capture valid meaningful Comments while performing any action on the exception record.

5 Setting Up The Bank And Branch

This chapter provides the process of setting up the bank and the branch commonly referred to as the Day 0 setups.

5.1 Common Services Day 0 Setup

The Common Services setup includes the following sections.

5.1.1 Core Maintenances

Core Entity Services seek to define the broad parameters within which the rest of the application functions. The service defines the bank, the various modules of the application that the bank may want to introduce, the languages and the time zones it operates in, the core parameters and structures of its various branches. The core entity services are also used by each of the different modules, and provide a variety of support functions to them.

The following Core Maintenances must be completed as a part of bank and branch setup:

- Bank Codes (Fast path: CS01)
- Business Group (Fast path: CS02)
- Bank Parameters (Fast path: CS03)
- Branch Parameters (Fast path: CS06)
- Other Financial Institution Details (Fast path: CS07)
- Country Codes (Fast path: CS09)
- Financial Cycle (Fast path: CS10)
- Define Payment Calender Codes (Fast path: CS15)
- Reason Codes (Fast path: CS16)
- State Codes (Fast path: CS17)
- Purpose Codes (Fast path: CS24)
- Bank Policy (Fast path: CS26)
- Bank Policy Deviation Definition (Fast path: CS39)
- Risk Category Maintenance (Fast path: CS41)
- Risk Code Maintenance (Fast path: CS42)
- Mitigant Code Maintenance (Fast path: CS43)
- Transaction Code Maintenance (Fast path: CS44)
- Define Non-Financial Event Transaction Code Mapping (Fast path: CS45)
- Data Security Configuration (Fast path: CS50)

Note

To view the detailed procedure for each application page, see its context sensitive help in the application.

5.1.1.1 Head Office Setup

The Head Office branch creation is currently being done via seed data where the Branch Type is HO. Branch Type is a seed table with fixed values for all applicable branch types, that is uploaded to the application from the backend. After the creation of Head Office branch through seed data, you can proceed to create other branches from the application where the Branch Type is shown as a LOV (excluding HO).

The process to set up a head office branch is as follows:

1. Create a new bank code in the application through the page **Bank Codes (Fast path: CS01)**.
2. Set up the new bank parameters through the page **Bank Parameters (Fast path: CS03)**.
3. Modify the seed data for Branch Type to include the new bank code as HO and run the seed. Currently the seed will be for Bank Code 08. The head office branch is created via this seed data.
4. Proceed to create the other branches through the application using the page **Branch Parameters (Fast Path: CS06)**, that includes all branch types other than HO.

Note

To view the detailed procedure for each application page, see its context-sensitive help in the application.

5.1.2 Currency Maintenances

The Currency Services are a part of the common services of Oracle Banking Platform and serve to record and retrieve the various currency related information.

The following Currency Maintenances must be completed as a part of bank and branch setup:

- Currency Codes (Fast path: CY01)
- Amount Text (Fast path: CY02)
- Currency Pairs (Fast path: CY03)
- Currency Branch Parameters (Fast path: CY04)
- Currency Denomination (Fast path: CY05)
- Currency Rate Types (Fast path: CY06)
- Exchange Rates (Fast path: CY07)

Note

To view the detailed procedure for each application page, see its context-sensitive help in the application.

5.1.3 Calendar Maintenances

The calendar services are embedded in the common services and serve to record and retrieve the various holidays of the bank in a calendar year.

The following Calendar Maintenances must be completed as a part of bank and branch setup:

- Holiday Rule Maintenance (Fast Path: CAL01)
- Calendar Type Maintenance (Fast Path: CAL02)
- Adhoc Calendar Maintenance (Fast path: CAL03)

Note

To view the detailed procedure for each application page, see its context-sensitive help in the application.

5.2 Accounting Day 0 Setup

The Accounting module is supported by Module Accounting, Domain Accounting, and Accounting Services.

- Module Accounting handles transaction initiation, raises accounting event, and updates the customer account balances and Overdraft limits, and invokes account services.
- Domain Accounting provides the services such as input, authorize, delete, and reverses to the modules to enable the module to initiate appropriate action on the transactions. Domain accounting also validates data and lookup accounting template, builds domain entries, and performs currency conversions.
- Accounting Services pick up the entries formed by the domain accounting and perform GAAP accounting, netting, currency position, Inter Branch entries, tanking of unauthorized transactions, suspense posting, generation of P&L entries for year end, and hand off data to product ledger.

The following Accounting maintenances must be completed as a part of bank and branch setup:

- Define System Defined Elements (Fast path: AS013)
- Define Accounting Configuration (Fast path: AS001)
- GAAP Summary (Fast path: AS005)
- Define Bank Parameter (Fast path: AS002)
- Define Branch Parameter (Fast path: AS003)
- Define SDE Range (Fast path: AS012)
- System Defined Elements Class Summary (Fast path: AS011)
- Define Accounting Ledger (Fast path: AS009)
- Define Accounting Ledger (Additional) Details (Fast path: AS010)
- Define Accounting Ledger Group (Fast path: AS008)
- Define Inter Branch Parameters (Fast path: AS006)
- Define Product Group Accounting Entry Template (Fast path: AS014)
- Define Product Accounting Template (Fast path: AS015)
- Define Domain Category Accounting Template (Fast path: AS016)
- Define Product Group Role Mapping (Fast path: AS017)
- Define Product Account Role Mapping (Fast path: AS018)

- Define Domain Role Mapping (Fast path: AS019)
- Define Event Accounting Class (Fast path: AS020)

Note

To view the detailed procedure for each application page, see its context-sensitive help in the application.

5.3 Product Manufacturing Day 0 Setup

Product Manufacturing is a flexible and competent framework for defining products. It has list of tasks to be performed for defining a new product. Each task should be completed parallel or sequentially by respective departments in a bank. It can be mandatory, conditional or non mandatory. Product Manufacturing is complete if the respective mandatory tasks are complete.

Prerequisites

Following are the prerequisites for Product Manufacturing Day 0 Maintenances:

- Asset Classification (AC) Plans Maintenance (Fast path: NP002)
- Common Services: Purpose Code, Currency Code, Calendar Maintenance, Bank Policy
- Accounting Template Maintenance
- Facility Category (Fast path: LCMS53)
- Collateral Category
- DMS maintenance: Document Type Definition (Fast path: CNM01), Document Category Definition (Fast path: CNM02), Document Policy Definition (Fast path: CNM03)
- Risk Indicators Impacts Cross-Reference (Fast path: ACCT010)
- Global Parameter (Fast path: LCM48)
- LTV Matrix (Fast path: LCM52)
- Rate Chart Maintenance (Fast path: PR004)
- Index/Margin Index Code Definition (Fast path: PR005)
- Price Policy Chart Maintenance (Fast path: PR007)
- Price Definition (Fast path: PR006)
- Charge Attribute Definition (Fast path: PR008)
- Tier Criteria Definition (Fast path: PR009)
- Price Benefit Chart (Fast path: PR015)

Day 0 Maintenances

The following Product Manufacturing Maintenances must be completed as part of bank and branch set up:

- Define Party Bank Policy (Fast path: PI314)
- Define CASA Bank Policy (Fast path: PM002)
- Define TD Bank Policy (Fast path: PM003)
- Define Loan Bank Policy (Fast path: PM004)

- Define Bundle Bank Policy (Fast path: PM005)
- Define Hardship Relief Policy (Fast path: PM006)
- Define Statement Policy (Fast Path: PM007)
- Define Dormancy Policy (Fast path: PM008)
- Define Credit Policy (Fast path: PM009)
- Define Product Group
- Define Interest Rule (Fast path: PM011)
- Define TD Interest Payout Plan (Fast path: PM012)
- Define CASA Product
- Define Loan Product
- Define TD Product
- Define Credit Card Product
- Define Investment Product
- Define Insurance Product
- Define Product Interest Linkage (Fast path: PM017)
- Link Dependent Offers (Fast path: PM018)
- Define Bonus Interest Parameters (Fast path: PM019)
- Define CASA Offer
- Define TD Offer
- Define Loan Offer
- Define Credit Card Offer
- Define Investment Offer
- Define Insurance Offer
- Installment Rule Details (Fast path: PM058)
- Loan Schedule Type (Fast path: PM059)
- Define Campaigns (Fast path: PM024)
- Link Offers for Principal Offset Facility (Fast path: PM025)
- Define Offer Bundle (Fast path: PM026)
- Define Transaction Restriction (Fast path: PM027)
- Define Domain Category Settlement Mode (Fast path: PM030)
- Define Product Settlement Mode (Fast path: PM031)
- Define Affinity (Fast path: PM042)
- Define Question Sets (Fast path: PM046)

Note

To view the detailed procedure for each application page, see its context-sensitive help in the application.

6 Application Monitoring Using Administration Application

This chapter provides an overview on the various monitoring operations performed as an administrator using Administration application.

6.1 Dynamic Monitoring Service (DMS)

The aim is to monitor different channels involved in performing transactions with OBLs. The monitoring parameters consists of channels, services, trends (current behavior of execution), and time metrics. The monitoring is performed by DMS (Dynamic Monitoring Service).

What is DMS?

The Oracle Dynamic Monitoring Service (DMS) provides a set of Java APIs that measure and report performance metrics, trace performance and provide a context correlation service for Fusion Middleware and other Oracle products. Along with the APIs, DMS provides interfaces to enable application developers, support analysts, system administrators, and others to measure application-specific performance information.

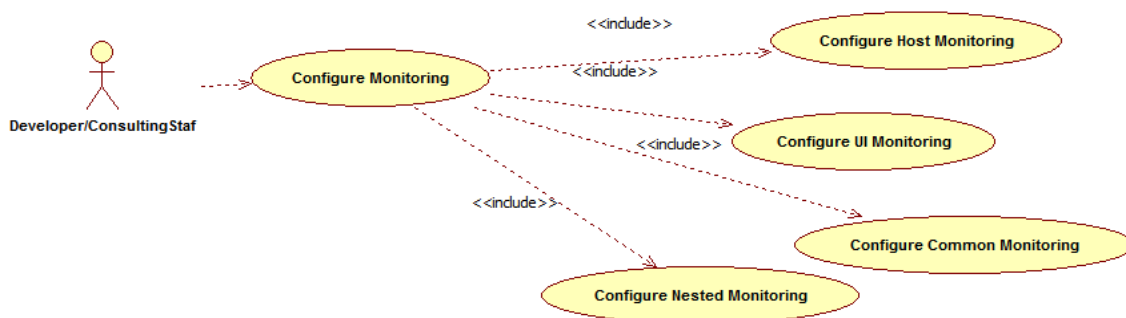
6.1.1 Usage

The usage of DMS is defined by the role of the user. Based on their roles, users can either take part in configuration of services for DMS or monitor the statistics collected via DMS.

Developers

These are the set of people who configure the monitoring services that are the part of OBLs system. The configuration can be made either for available services or for new services.

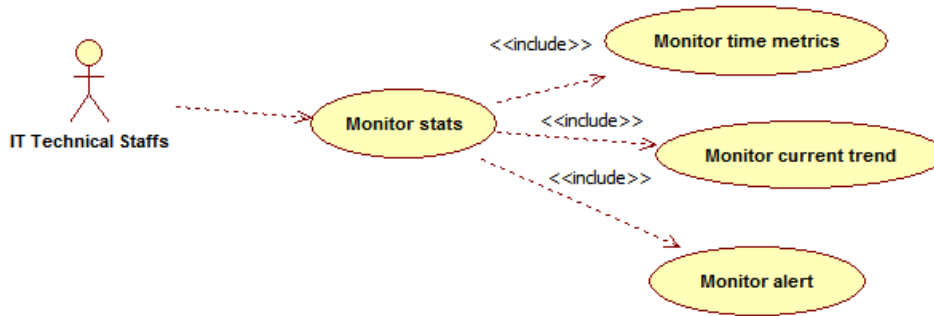
Figure 6–1 Developers



IT Technical Staff

This consists of set of people who monitor the DMS statistics generated for the service. With the help of various metrics generated they can analyze the behaviour of the target service. For example, 'time taken to execute' service could indicate need of optimization of the service.

Figure 6–2 IT Technical Staff



6.1.2 Monitoring Application using the OPA001 page

Once DMS statistics are captured for a particular channel and transactions involving it, it requires a UI representation to understand the statistics in a readable form so that one can analyse the behaviour. The monitoring activities are mainly carried out by IT Technical staff.

6.1.2.1 Monitoring Application Performance (Fast path: OPA001)

This page gives the monitoring statistics of different channels and the transactions occurring through it. It gives the time metric of the transactions, trend of the current transactions, and alert for the channel.

Figure 6–3 Monitoring Application Performance

The screenshot shows the 'Monitor Application Performance' page. It includes a summary section with filters for Branch, ATM, Internet, and Mobile. Below the summary is a table with columns for Alert, Channel, Module, Layer, Transaction, Task Code, Trend, Alert Event Time, Trend Reference Queue, Last Alert User, Time in milliseconds (Average, Max, Min, Total), Transaction Count (Success, Failure), and Amount (Debit, Credit).

Alert	Channel	Module	Layer	Transaction	Task Code	Trend	Alert Event Time	Trend Reference Queue	Last Alert User	Time in milliseconds				Transaction Count		Amount	
										Average	Max	Min	Total	Success	Failure	Debit	Credit
	Branch	ORIGINATION	Spi	Perform Auto Decision	-		27-May-2015 11:39:37	4147, 5047, 3252, 3994, ...	arun	4,563	6,463	2,890	36,501	8	0	-	-
	Branch	TD	Baking Bean	Mixed Paym_ UI	TD002		27-May-2015 10:46:53	881, 936, 2143, 2616, 6816	-	4,155	19,078	861	58,167	14	0	-	-
	Branch	PARTY	Spi	Add Or Update Party Financial Profile	-		27-May-2015 11:39:21	6739, 2380, 1740, 758, 1, ...	arun	3,993	11,972	758	35,936	9	0	-	-
	Branch	CASA	Baking Bean	Alternate Accounts Save_ UI	CASA037		27-May-2015 10:39:16	465, 2720	-	1,593	2,720	465	3,185	2	0	-	-
	Branch	ACCOUNT	Spi	Recommend Bundles	VL000		27-May-2015 11:36:01	424, 901, 399, 1103, 1927	arun	1,528	10,281	306	56,535	37	0	-	-
	Branch	CONTENT	Spi	Deliver And Save Documents	OR247		27-May-2015 10:38:39	1308, 1359, 1420, 1303, ...	asavant	1,515	2,339	1,303	10,602	7	2	-	-
	Branch	ORIGINATION	Spi	Submit Create Offer	OR223		27-May-2015 10:40:22	1025, 1271, 1170, 1288, ...	asavant	1,362	2,006	972	9,537	7	0	-	-

The overall page can be subdivided into 3 sub parts on the basis of information they provide:

6.1.2.1.1 Application Performance Summary

This section gives the information about the different channels of OBLs through which transactions are taking place. The information is about the health and active channels. The Refresh Button on top of this section gets the latest (refreshed) metrics.

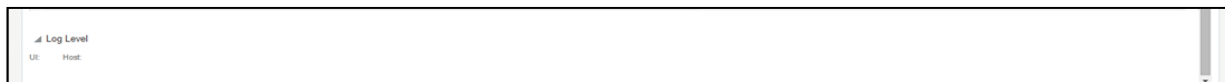
Figure 6–4 Application Performance Summary

Following are the few notification about the channels:

- Denotes transactions not present for the channel
- Denotes normal status that is, the number of alerts are less than the specified limit
- Denotes warning status that is, the number of alerts are in the warning range
- Denotes critical status that is, number of alerts exceeds the limit

6.1.2.1.2 Log Level

This section gives logger level information for the host and UI server.

Figure 6–5 Log Level

6.1.2.1.3 Application Performance

This section gives the metrics for the transaction. Metrics include timing, alert, trending information. Certain filters can be applied over the metric table. Initially only 100 (Initial page size which is configurable) transactions are displayed. To display all the transactions, click the ALL button.

Trend

Indicates trending of execution timings of transaction. It is calculated by algorithm namely, Exponential Moving Average where if the execution time goes above the specified limit which is calculated by adding average execution time of the transaction and allowed limit (varies logarithmically to execution time); the transaction is considered as trending upwards and vice-versa for downwards trend.

However, if the execution time is with the range, trend is considered as neutral.

Alert

Indicates alerting state of the transaction. A transaction is given weight based on its properties namely, transaction type, timing category and module. The weight gives the offset allowed for transaction execution time. If the current transaction time is greater than average transaction time + offset, it is marked as alert. Initially it is marked as 'Critical' and after sometime the state is marked as 'Warning'.

Figure 6–6 Alert State

The screenshot shows the 'Monitor Application Performance' window. At the top, there's a summary section with filters for Branch, ATM, Internet, and Mobile. Below that, the 'Application Performance' section displays a table of transactions. The table has columns for Alert, Channel, Module, Layer, Transaction, Task Code, Trend, Alert Event Time, Trend Reference Queue, Last Alert User, Time in milliseconds (Average, Max, Min, Total), Transaction Count (Success, Failure), Amount (Debit, Credit), Trend Reference, Nested Status, Alert EOD, and Service. The table lists several transactions with their respective alert states and performance metrics.

The table below explains each column of the table present in the given snapshot.

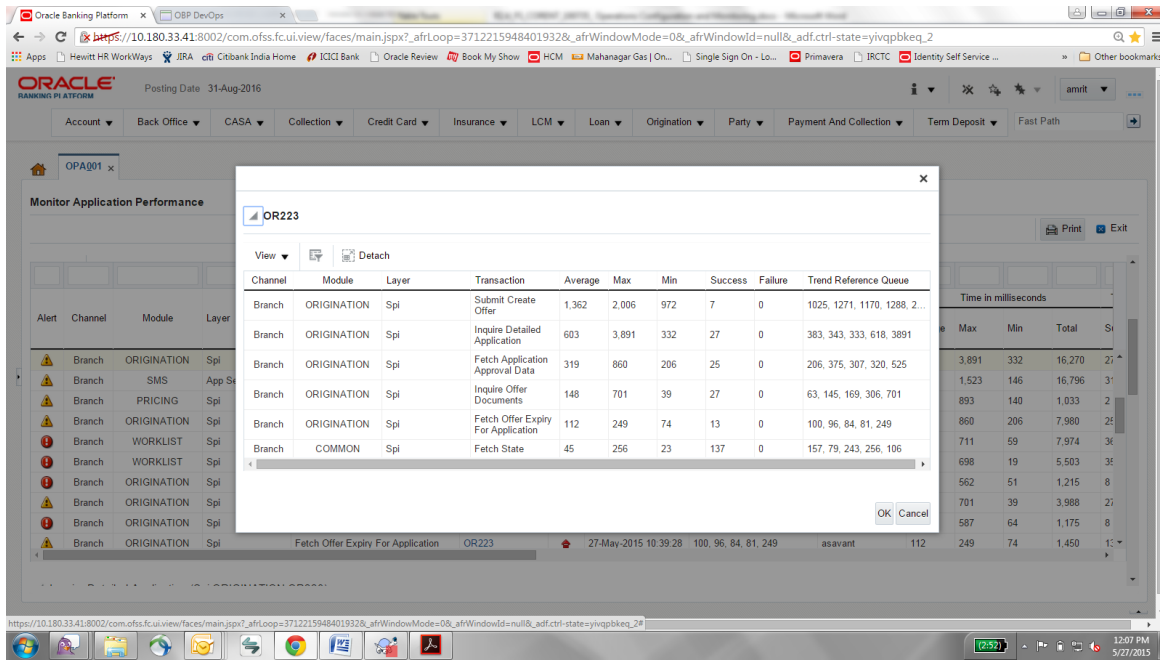
Table 6–1 Alert State

Sr. no.	Column Name	Description
1	Alert	Alert state of the transaction Valid Values: BLANK: No alert, Warning: Alert in past (default 5 minutes), Critical: Alerted Transaction
2	Channel	Channel through which the transaction occurred Valid Values: Branch, ATM, and POS.
3	Module	Application module of which transaction is a part
4	Layer	Configured Noun generation layer. Backing Bean for UI and Spi and App Service for Host.
5	Transaction	Name of the transaction
6	Task Code	Task code of the application page by which the transaction was triggered
7	Trend	Trending of transaction Valid Values: Upwards, Downwards, Neutral
8	Alert Event Time	Time at which last alert occurred for the transaction
9	Trend Reference Queue	Execution time of last n transactions (n=5)
10	Last Alert User	Teller who performed the last alerted transaction
11	Average Time	Average execution time
12	Max Time	Maximum time of execution of the transaction

Sr. no.	Column Name	Description
13	Min Time	Minimum time of execution of the transaction
14	Total Time	Total time of execution
15	Success Count	Number of times transaction executed successfully
16	Failure Count	Number of times transaction failed.
17	Debit Amount	Amount debited after transaction
18	Credit Amount	Amount credited after transaction
19	Trend Reference	Execution time of last transaction
20	Nested Status	Nested Status
21	Alert ECID	ECID of the last alerted transaction
22	Service	Service name of the transaction
23	Completed Operations	Number of completed transactions
24	Active Threads	Active Threads
25	Max Active Threads	Maximum active threads
26	Host	Host name
27	Process	Process Name
28	Server Name	Server name
29	App Root Type	Root type of noun
30	Failure Security Event	Failure due to security error
31	2FA Event	Authentication error
32	Failure Database Event	Failure due to database error
33	Failure Technical Event	Failure due to technical error
34	Failure Outbound Event	Failure due to outbound call (call outside OBLS)

One can select any of the task code which opens a popup with information about that task code only.

Figure 6–7 Select Task Code



Detailed Transaction View

This section gives the detailed view of a selected transaction. The desired transaction can be selected from the table (metric table). Click on any row to display a detailed view of the transaction.

Figure 6–8 Selection of Desired Transaction

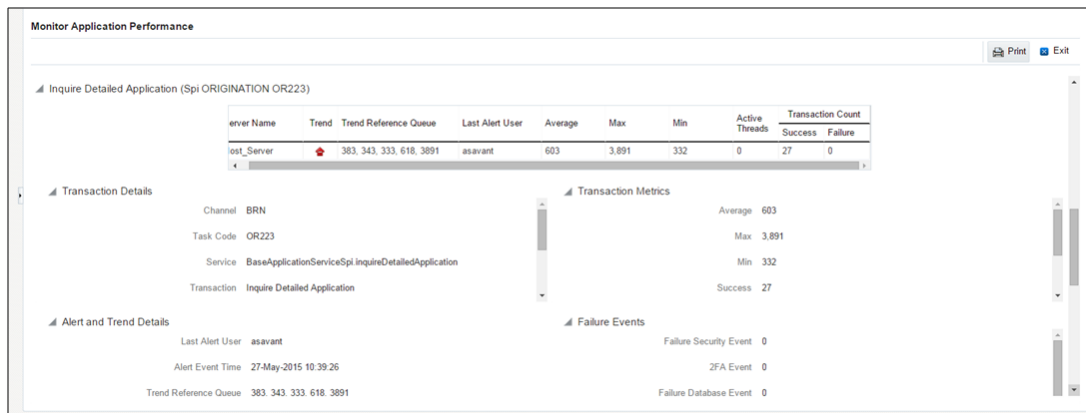


Figure 6–9 Transaction Details

Transaction Details	
Channel	BRN
Task Code	OR223
Service	BaseApplicationServiceSpi.inquireDetailedApplication
Transaction	Inquire Detailed Application
App Root Type	Transaction
Host	ofss3121059.in.oracle.com
Server Name	Host_Server
Process	obphost_server1:8001

Figure 6–10 Transaction Metrics

Transaction Metrics	
Average	603
Max	3,891
Min	332
Success	27
Success	27
Failure	0
Active Threads	0
Max Active Threads	1

Figure 6–11 Alert and Trend Details

Alert and Trend Details	
Last Alert User	asavant
Alert Event Time	27-May-2015 10:39:26
Trend Reference Queue	383, 343, 333, 618, 3891
Alert ECID	9d35654d4414a931:-6e0ab1f:14d8b6681e1:-8000-000000000000d612

Figure 6–12 Failure Events



Configurations

The below mentioned configurations can be made in `DMSConfig.properties`:

- **Channel Status:** Number of alerts for which the channel shows 'Critical and 'Warning' status can be configured
- **Alert Status:** The time after which a 'Critical' alert changes to 'Warning' is configurable
- **Initial Page Size:** Every time host data is fetched only rows equal to page size are displayed. The page size is configurable

These configurations can be made in `DMSConfig.properties`.

6.2 Batch Performance Monitoring

Most of the enterprise applications would require bulk processing of records to perform business operations in real time environments. These business operations include complex processing of large volumes of information that is most efficiently processed with minimal or no user interaction. Such operations would typically include time based events (for example, month-end calculations, notices or correspondence), periodic application of complex business rules processed repetitively across very large data sets (for example, rate adjustments). Batch monitoring includes monitoring of all such batch processes. These batch processes generate huge statistics, which needs to be monitored in order to understand and improve its performance. OPA003 page is used to monitor these processes in detail along various metrics like duration, throughput, aborts, and so on.

6.2.1 Use Cases

The overall use cases for the whole Batch monitoring operation are divided into two units on the basis of actor that works over batch monitoring operations. The different actors along with their use cases are as below:

Developers

These are the set of people who configure the monitoring services that are the part of OBLs system. The configuration can be made in the properties file `BatchStatistics.properties`. Configuration include the number of previous batch runs to be considered for calculation for monitored metrics.

Figure 6–13 Developers



IT Technical Staff

This consists of set of people who monitor the Batch statistics generated during the batch run.

Figure 6–14 IT Technical Staff

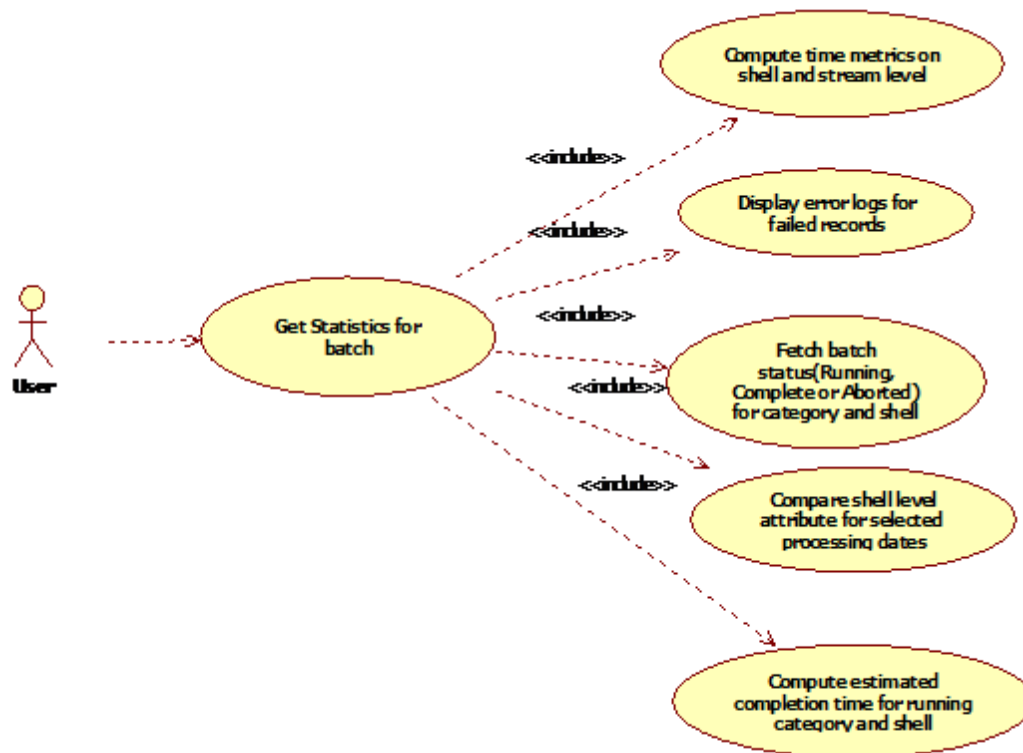
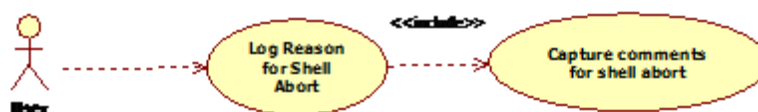


Figure 6–15 IT Technical Staff - Monitor Batch Stats



6.2.2 Monitoring Batch Performance Using OPA003 page

Once batch starts it needs UI representation to easily understand and interpret the batch stats. By monitoring these stats, one can understand the bottle necks of the batch process and hence can work in a way to improve batch performance.

6.2.2.1 Monitor Batch Performance (Fast path: OPA003)

This page takes category, job code, job type, and processing date as input and provides monitoring stats for shells running for selected category.

Figure 6–16 Batch Performance Monitoring

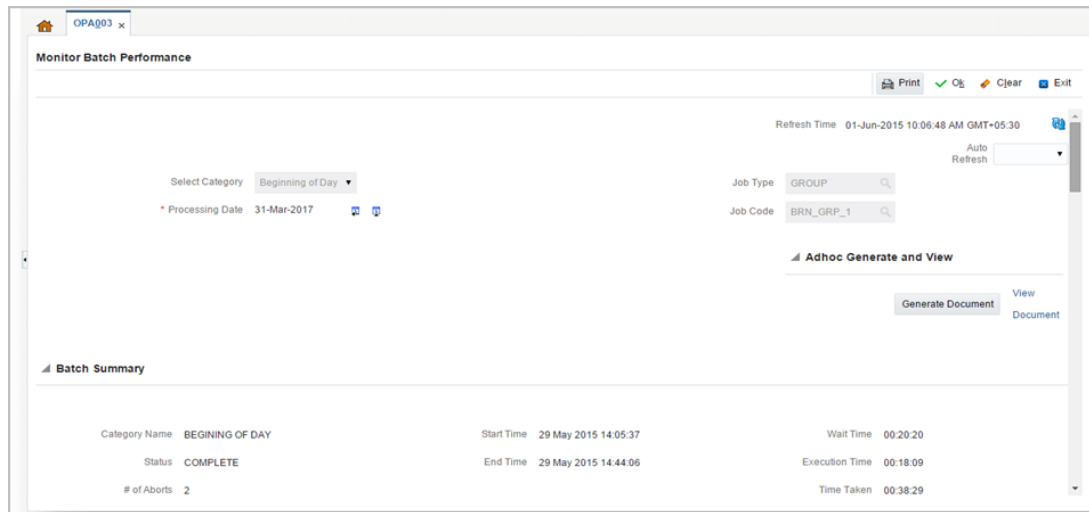
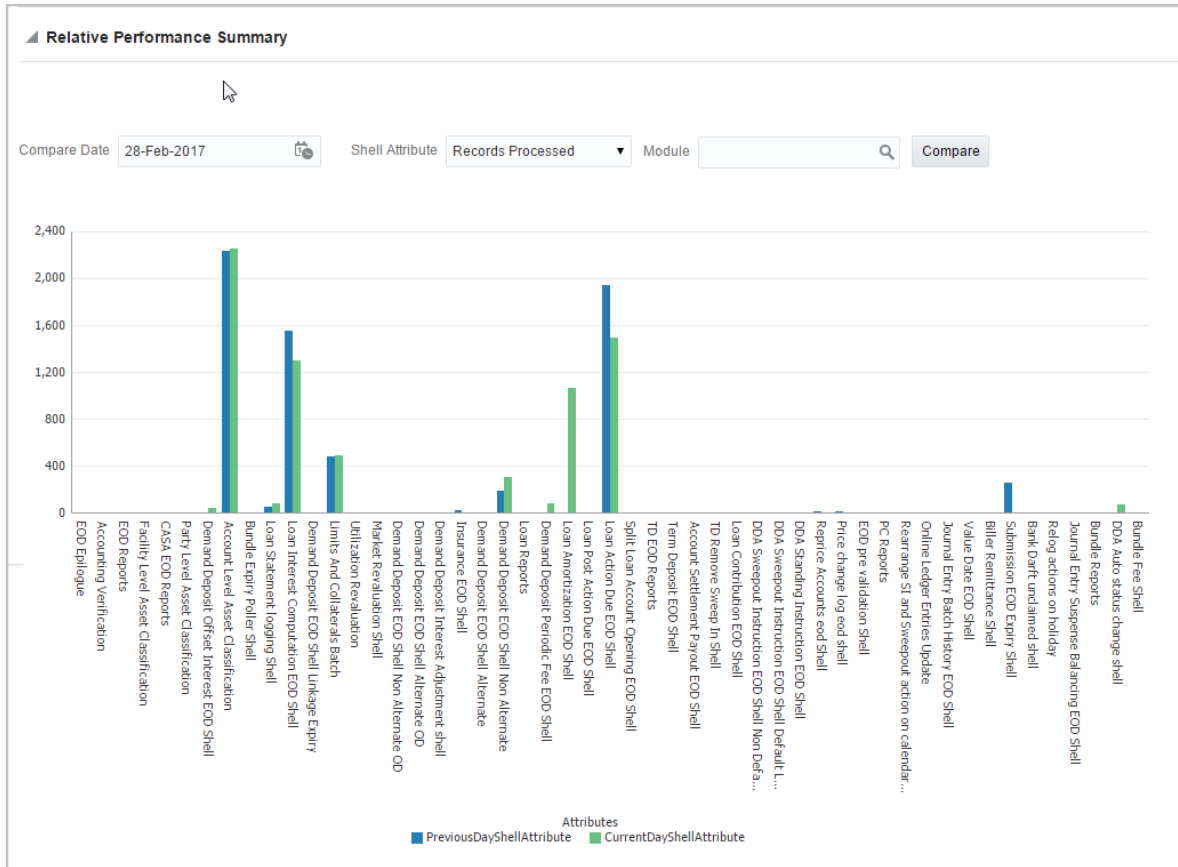


Figure 6–17 Batch Performance Monitoring - Shell Details

Name of Shell	State	Trend	Duration	No of Aborts	Throughput	Total Records	Status	Expected Completion Time
DDA Standing Instruction BOD Shell	Complete	↔	00:00:04		0	0		
DDA Sweepout Instruction BOD Shell Default L...	Complete	↔	00:00:00		0	0		
DDA Sweepout Instruction BOD Shell Non Defa...	Complete	↔	00:00:00		0	0		
Account Settlement Payout BOD Shell	Complete	↓	00:00:00		0	0		
Split Loan Account Opening BOD Shell	Complete	↓	00:00:20		7776	1		
Loan Action due BOD shell	Complete	↓	00:28:35	1	1180	508		
Loan Post Action due BOD shell	Complete	↔	00:00:02		0	0		
CASA BOD Reports	Complete	↔	00:00:00		0	0		

Figure 6–18 Batch Performance Monitoring - Relative Performance Summary



The batch statistics are monitored at different levels as follows:

- Category Level
- Shell Level
- Record level

Category Details

The parameter monitored at category level as given as below:

Table 6–2 Category Details

Attribute Name	Description
Category Name	Name of category for example, EOD (End Of Day)
Status	Indicates status of selected category. Valid Values: COMPLETE, RUNNING, ABORTED.
Start Time	Indicates start time of category. The time is represented in DD-MM-YYYY hh:mm:ss format.
End Time	Indicates end time of category. The time is represented in DD-MM-YYYY hh:mm:ss format.

Attribute Name	Description
Wait Time	It is the time for which category is in Aborted state. Wait time for category denotes the time for which batch was halted.
Execution Time	It the time for which category is in Running state.
Number Of Aborts	Indicates number of times category was aborted.
Total Time	It is the total time taken by category to complete. Time taken for category is summation of wait and execution time.
Estimated Completion Time	It is the predicted time for category completion. This time is calculated based on number of incomplete and pending shells for the current running category. The averaged value of previous run duration is considered for calculating estimated time. Similar calculation is done for estimating completion time for shell. This attribute is displayed only during batch run. It is not displayed once batch is complete
Time Status	The status of category (that is, delayed or early) denotes whether category is running slow or fast. This value is calculated based on average of historical data. This attribute is displayed only during batch run. It is not displayed once batch is complete

Shell Details

This level displays statistics of all shells corresponding to selected category. The parameters monitored at shell level are given below:

Table 6–3 Shell Details

Attribute Name	Description
Name of shell	Represents name of shell
Trend	Valid Values: UPWARD, DOWNWARD, NEUTRAL. It denotes the trend based on historical data for time required by shells to complete.
Status	Valid Values: Complete, Running, Aborted, Not Started. Indicates status of shell
Duration	It is the time required by shell to complete.
Start Time	Indicates start time of shell. The time is represented in DD-MM-YYYY hh:mm:ss format.
End Time	Indicates the time at which shell is completed. The time is represented in DD-MM-YYYY hh:mm:ss format.
Wait Time	It is the time for which shell is in aborted state.
Expected Completion Time	Indicates the estimated time for a shell to complete.
Failed Records	Number of failed records for a shell
Records Processed	Number of records processed in a shell
Number of Streams	Number of streams denote number of processes running in parallel for a shell. On proper analysis of historical data of stream count, number of records and duration for particular shell one can optimize throughput for it.

Attribute Name	Description
Throughput	It is the average processing time for one record. Throughput is denoted in millisecs.

Figure 6–19 Shell Details

The screenshot displays the 'Monitor Batch Performance' interface. Under the 'Shell Details' section, a table lists several shells. The 'Untanking Adjustment Posting' shell is selected, and its details are shown in a pop-up window.

Name of Shell	Stat	Trx	Duration	No of Job	Throughput	Total Records	Status	Expected Completion Time
Insurance BOD Shell	00:00:00	0	0	0		
Value Date BOD Shell	00:00:00	0	0	0		
Untanking Adjustment Posting	00:00:20	29	4			
Limits BOD Batch	00:00:00	0	0			

Details for 'Untanking Adjustment Posting':

Module Code	AS	Wait Time	Pending Time	00:00:00
Number of Streams	1	No of Aborts	CommentCount	0
Start Time	2015-05-06 18:28:01	Records Processed	Failed Records	0
End Time	2015-05-06 18:28:21			

Figure 6–20 Shell Details - DDA Standing Instructions

The screenshot shows the 'DDA Standing Instruction BOD Shell Details' interface. It displays details for a shell with Module Code 'DD'.

Module Code	DD	Wait Time	Pending Time	00:00:00
Number of Streams	1	No of Aborts	commentCount	0
Start Time	2015-05-06 18:28:45	Records Processed	Failed Records	0
End Time	2015-05-06 18:28:45			

Below the details, there is a section for 'DDA Standing Instruction BOD Shell Notes' with an 'Add New Note' button and a message 'No items to display'. At the bottom, there is a 'DDA Standing Instruction BOD Shell Stream Details' section with a 'Clear All Filters' button and a table with columns for 'View', 'Export To Excel', and 'Detach'.

Note

Note the following:

- Trend for a particular shell is decided based on comparison of time statistics (that is, current run time and historical data for previous batch runs). Number of previous batch run to be considered is configurable. It is configured in the property file that is, (BatchStatistics.properties). The trend and other estimated time seems more realistic if number of previous run days configured in property file are more.

- Trend gives an idea whether a particular shell is running fast or slow compared to previous runs though it is important to consider number of records being processed in that shell.

The following figure shows the view displayed during batch run. Few extra parameters like estimated completion time for shell and category are monitored during batch run.

Figure 6–21 View of Batch Run

Name of Shell	State	Trend	Duration	No of Aborts	Throughput	Total Records	Status	Expected Completion Time
DDA Standing Instruction BOD Shell	Complete	↔	00:00:03		0	0	0% 100%	
DDA Sweepout Instruction BOD Shell Default L...	Complete	↔	00:00:00		0	0	0% 100%	
DDA Sweepout Instruction BOD Shell Non Defa...	Complete	↔	00:00:00		0	0	0% 100%	
Account Settlement Payout BOD Shell	Complete	↓	00:00:21		238	1	0% 100%	
Split Loan Account Opening BOD Shell	Complete	↑	00:00:20		11,399	1	0% 100%	
Loan Action due BOD shell	In Progress	↓	00:17:02		1,280.85	859	0% 100%	02-Jun-2015 14:38:00
Loan Post Action due BOD shell	Not Started	↔	00:00:00		0	0	0% 100%	

Comments Table

Comments Table is rendered based on row click of shell details table.

- In case of batch abort, it is important to know the reason behind abort and how that is fixed. Comments table serves this purpose as one can log the details regarding fix and reason behind shell abort. Multiple comments can be captured for particular shell.
- Also one can query historical data for comments. The historical data of comments can be used to analyse the reason behind failure of particular shell.

Stream Details Table

Stream Details table is rendered based on row click of shell details table.

Table 6–4 Stream Details

Attribute Name	Description
Stream Number	Indicates the number of a stream in which the record is being processed
First Row	Indicates the start sequence number of a record, processing in a particular stream.
Last Row	Indicates the end sequence number of a record, processing in a particular stream.
Duration	It is the time required for stream to complete.
Status	Valid Values: COMPLETED, RUNNING. It indicates the status of selected stream
Processed Count	Number of records processed in a stream
Server Name	Name of a server running the stream

Figure 6–22 Stream Based Shells

Loan Action due BOD shell Notes

Created By bhaktim (USER) on 27/05/2015 at 14:38:45
 Subject patch applied
 Comment
 Internal to Bank Stage 2

Loan Action due BOD shell Stream Details

Stream Number	First Row	Last Row	Current Row	Duration	Status	Processed Count	Failed Count	Server Name
1	1	1,269	1,270	1,681	COMPLETED	1,266	0	obphost_server1

Loan Action due BOD shell Error Desc

ErrorCode	ProcessResult	BranchCode	BranchGroupCode	RunCount	ErrorDesc	SummaryText
2	2	1010	BRN_GRP_1	6	com.ofss.fc.fram...	300340757 201...
2	2	1010	BRN_GRP_1	6	com.ofss.fc.fram...	300332595 201...
2	2	1010	BRN_GRP_1	6	com.ofss.fc.fram...	300230097 201...

Note

Shells are categorized into two types that is, Stream based shells and Report based shells. Figure 6–22 displays the view for stream based shells.

Exception Log

On row click of the driver level details, it pops up a window showing the stack trace of failed records if present. One can analyze and know the reason behind the failure of that particular record.

Figure 6–23 Exception Log

Monitor Batch Performance

```

com.ofss.fc.framework.batch.exception.BatchFrameworkException: An error occurred in batch process. at com.ofss.fc.framework.batch.process.BatchProcess.execute(BatchProcess.java:950)
com.ofss.fc.framework.batch.process.RecoverableBatchProcess.executeBatch(RecoverableBatchProcess.java:458) at com.ofss.fc.framework.batch.process.RecoverableBatchProcess.processBatch(RecoverableBatchProcess.java:217) at
com.ofss.fc.framework.batch.process.BatchProcess.startBatchProcess(java:507) at com.ofss.fc.batch.StreamProcessHelper.requestBatchProcess(StreamProcessHelper.java:75) at com.ofss.fc.batch.StreamProcessHelper.processRequest(StreamProcessHelper.java:49) at
com.ofss.fc.batch.mdb.StreamListenerMDB.onMessage(StreamListenerMDB.java:91) Caused by: java.lang.reflect.InvocationTargetException at com.ofss.fc.framework.batch.process.BatchProcess.execute(BatchProcess.java:918) ... 6 more Caused by:
com.ofss.fc.framework.exception.BusinessException: The ledger was not found for the account role LN_INSTRANCE_PAYABLE and LPLUN. at
com.ofss.fc.domain.accounting.da.entity.transactionentry.AccountingTransactionContainerFactory.fetchDerivedGLForAliasOrFactBased(AccountingTransactionContainerFactory.java:618) at
com.ofss.fc.framework.batch.exception.BatchActionProcessingException.Exception occurred while executing Action(s). at com.ofss.fc.domain.accounting.service.action.executor.ActionSetProcessor.processActionSet(ActionSetProcessor.java:191) ... 7 more Caused by:
com.ofss.fc.domain.accounting.da.entity.transactionentry.AccountingTransactionContainerFactory.createInstance(AccountingTransactionContainerFactory.java:222) at
com.ofss.fc.domain.accounting.da.service.AccountingTemplateFetcher.generateAccountingContainerFromTemplate(AccountingTemplateFetcher.java:34) at com.ofss.fc.domain.accounting.da.service.AccountingEventService.processAccountingEvent(AccountingEventService.java:560) at
com.ofss.fc.app.accounting.service.da.AccountingEventApplicationService.raiseAndProcessAccountingEventBatchMode(AccountingEventApplicationService.java:1709) at com.ofss.fc.app.adapter.sml.LoanAccountingAdapter.raiseAccountingEvent(LoanAccountingAdapter.java:53) at
com.ofss.fc.domain.accounting.service.LoanAccountingService.raiseAccountingEvent(LoanAccountingService.java:105) at com.ofss.fc.app.loan.insurance.LoanInsuranceApplication.raiseAccounting(LoanInsuranceApplication.java:919) at
com.ofss.fc.app.loan.insurance.LoanInsuranceApplication.updateAndRaiseAccountingForNewPremium(LoanInsuranceApplication.java:4043) at com.ofss.fc.app.loan.insurance.LoanInsuranceApplication.updateInsuranceBalancesAndRaiseAccounting(LoanInsuranceApplication.java:3844)
at com.ofss.fc.app.loan.insurance.LoanInsuranceApplication.processChangeInInsuranceAmountOnReviewDate(LoanInsuranceApplication.java:4341) at com.ofss.fc.app.loan.account.CCRReviewApplication.processCCRReviewApplication(java:70) at
com.ofss.fc.domain.action.executor.LoanActionExecutor.executeAction(LoanActionExecutor.java:228) at com.ofss.fc.domain.action.executor.LoanActionExecutor.executeAction(LoanActionExecutor.java:71) at
com.ofss.fc.domain.account.service.action.executor.ActionSetProcessor.processActionSet(ActionSetProcessor.java:184) ... 7 more
    
```

Relative Performance Summary

T14_BUILD_DATE=2015-05-26 TNS Details: PDBT14 = (DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)HOST = 0BPDB-RAC-CLUSTER-SCAN.in.oracle.com)PORT = 1521) (CONNECT_DATA = (SERVER = DEDICATED) (SERVICE_NAME = PDBT14)) . DB Details : 114/d114@d
 PDBT14 Host IP : 10.180.4.125
 Copyright © Oracle Financial Services Software Limited. All rights reserved.

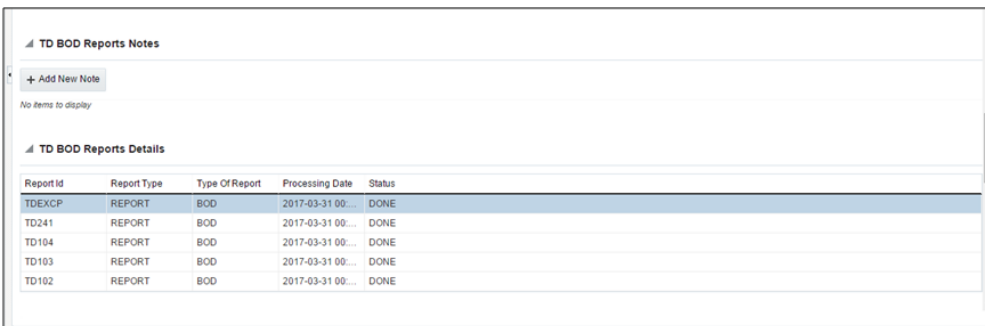
Reports Table

For Report based shells different parameters related to report processing are monitored. The monitored parameters are given below:

Table 6–5 Reports Table

Attribute Name	Description
Report Id	ID to uniquely identify report
Report Type	Report
Type Of Report	Indicates type of reports. Reports are classified based on category.
Processing Date	Indicates processing date of report.
Status	Indicates the status of the report. Valid Values: DONE, PENDING, RUNNING, ABORTED.
Error Message	Error message represents the reason for report failure. No message is displayed in case of successful run.

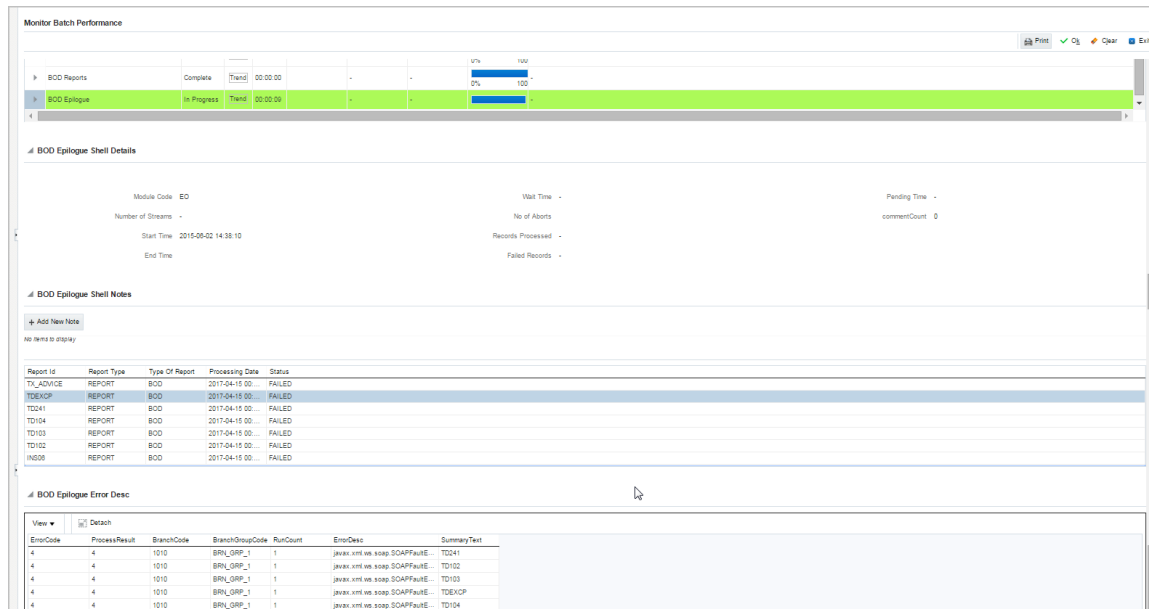
Figure 6–24 Report Based Shells



Report Id	Report Type	Type Of Report	Processing Date	Status
TDEXCP	REPORT	BOD	2017-03-31 00:...	DONE
TD241	REPORT	BOD	2017-03-31 00:...	DONE
TD104	REPORT	BOD	2017-03-31 00:...	DONE
TD103	REPORT	BOD	2017-03-31 00:...	DONE
TD102	REPORT	BOD	2017-03-31 00:...	DONE

The status of report based shell during batch run is shown in [Figure 6–25](#):

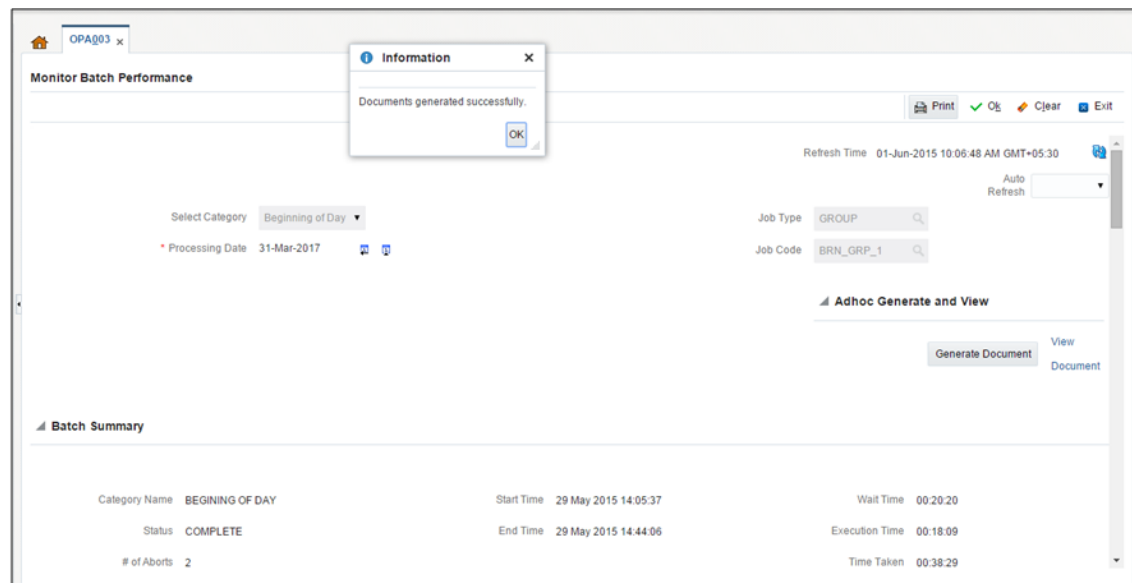
Figure 6–25 Status of Report Based Shell



Exception Report

On click of Generate Document, it generates a report for aborted shells with information like Abort count and exception log.

Figure 6–26 Exception Report



The different parameter monitored at shell level and exception logs for all aborted shells are part of exception report. Figure 6–27 displays sample report for a particular shell.

Figure 6–27 Sample Report

BATCH EXCEPTION REPORT				
Bank : 10 EMERALD_BU			Job Type : GROUP	
Branch : 1010			Job Code: BRN_GRP_1	
Op. ID :			Report Date : 15-04-2017	
BOD Epilogue				
Start Time :	2-Jun-2015 9:08 AM	End Time :	2-Jun-2015 9:13 AM	
Records Skipped :		Duration :	00:05:18	
Number of Aborts :	1	Wait Time :	00:05:08	
Abort Statistics				
Abort Time	Restart Time	Abort Duration		
2-Jun-2015 9:08 AM	2-Jun-2015 9:13 AM	00:05:08		
Exception Summary				
Report Name	Report ID	Module Code	Error Code	Error Description
Maturities Due Report	TD102	TD	Time Of Last Update : 2015-06-02 14:38:11.411 javax.xml.ws.soap.SOAPFaultException: oracle.xdo.webservice.exception.AccessDeniedException; java.lang.SecurityException: java.lang.SecurityException: Failed to log into BI Publisher: invalid username or password.	javax.xml.ws.soap.SOAPFaultException: oracle.xdo.webservice.exception.AccessDeniedException; java.lang.SecurityException: Failed to log into BI Publisher: invalid username or password.
Account/ Deposit Exceptions	TDEXCP	TD	Time Of Last Update : 2015-06-02 14:38:11.374 javax.xml.ws.soap.SOAPFaultException: oracle.xdo.webservice.exception.AccessDeniedException; java.lang.SecurityException: Failed to log into BI Publisher: invalid username or password.	javax.xml.ws.soap.SOAPFaultException: oracle.xdo.webservice.exception.AccessDeniedException; java.lang.SecurityException: Failed to log into BI Publisher: invalid username or password.
Matured Deposits with No Instructions	TD103	TD	Time Of Last Update : 2015-06-02 14:38:11.347 javax.xml.ws.soap.SOAPFaultException: oracle.xdo.webservice.exception.AccessDeniedException; java.lang.SecurityException: Failed to log into BI Publisher: invalid username or password.	javax.xml.ws.soap.SOAPFaultException: oracle.xdo.webservice.exception.AccessDeniedException; java.lang.SecurityException: Failed to log into BI Publisher: invalid username or password.

Exception Log Table

The figure below provides the details of the exception log.

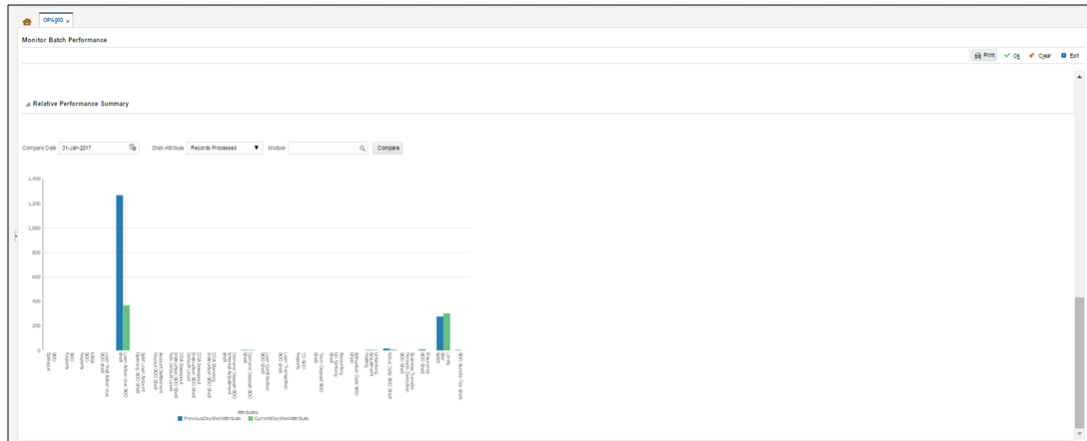
Figure 6–28 Exception Log Table

ERROR CODE	ERROR DESCRIPTION	SUMMARY
kException: An error occurred in batch process.862-8203-0444-6360		
Time Of Last Update : 2013-09-11 11:28:51.438 Error reference Number :862-8182-2552-7227 Error msg :An error occurred in batch process. Error cause :com.ofss.fc.framework.batch.exception.BatchFrameworkkException: An error occurred in batch process.862-8182-2552-7227	com.ofss.fc.framework.batch.exception.BatchFrameworkException: An error occurred in batch process. at com.ofss.fc.framework.batch.process.BatchProcess.execute(BatchProcess.java:910) at com.ofss.fc.framework.batch.process.RecoverableBatchProcess.executeBatch(RecoverableBatchProcess.java:432) at com.ofss.fc.framework.batch.process.RecoverableBatchProcess.processBatch(RecoverableBatchProcess.java:)	
Time Of Last Update : 2013-09-11 11:28:53.868 Error reference Number :862-8206-5767-2044 Error msg :An error occurred in batch process. Error cause :com.ofss.fc.framework.batch.exception.BatchFrameworkkException: An error occurred in batch process.862-8206-5767-2044	com.ofss.fc.framework.batch.exception.BatchFrameworkException: An error occurred in batch process. at com.ofss.fc.framework.batch.process.BatchProcess.execute(BatchProcess.java:910) at com.ofss.fc.framework.batch.process.RecoverableBatchProcess.executeBatch(RecoverableBatchProcess.java:432) at com.ofss.fc.framework.batch.process.RecoverableBatchProcess.processBatch(RecoverableBatchProcess.java:)	

6.2.3 Histogram of Shell Attribute Comparison

This section provides graphical view for comparing shell attributes for any two selected dates. The processing date, shell attribute and module name are taken as input to this table. The output is displayed as bar graph in which X axis represents the name of the shell and Y axis denotes value of shell attribute. For each shell two records are displayed, these records corresponds to the dates for which the data is being compared.

Figure 6–29 Graphs



6.3 ODI Batch Handoff Monitoring

This section provides, top package level execution details for monitoring of ODI handoff. The input for these details are category ID, branch group code, branch group type, and processing date.

[Figure 6–30](#) describes the input parameters for the batch handoff monitoring and the shell details like name of shell, start time, end time, number of aborts.

Figure 6–30 Input Parameters for Batch Handoff

Batch Summary

Category Name	Analytics Batch Data Hand-off	Start Time	28 May 2015 16:11:19	Wait Time	02:29:36
Status	ABORTED	Estimated Completion Time	03 Jun 2015 11:27:34 *	Elapsed Time	139:01:15
# of Aborts	12	Status	DELAYED BY 8356 mins		

Shell Details

Name of Shell	State	Trend	Duration	No of Aborts	Throughput	Total Records	Status	Expected Completion Time
Analytics Hand-off	Complete	Trend	00:00:00		-	-	0% 100'	
Analytics Data Hand-off	Complete	Trend	00:01:07		-	-	0% 100'	
Analytics epilog	Aborted	Trend	139:00:08	12	-	-		

Execution Unit

On click of the analytics data Handoff shell, the below table is shown with the execution unit (top level package) level details:

This table contains the following attributes:

- Execution unit name
- Start time of execution of the execution unit
- End time of execution of the execution unit
- Number of aborts of the execution unit
- Duration of execution of the execution unit
- Service provider for ETL process (ODI)
- Execution status of the execution unit, that is, complete, running, and aborted
- Records processed at the stage level in ETL process

Figure 6–31 Execution Unit

Analytics Data Hand-Off Details

Module Code DI Wait Time - Pending Time -
 Number of Streams - No of Aborts commentCount 0
 Start Time 2015-05-28 16:11:19 Records Processed -
 End Time 2015-05-28 16:12:26 Failed Records -

Analytics Data Hand-Off Notes

+ Add New Note

Execution Unit	Start Time	End Time	No Of Aborts	Duration	Service Provider	Execution Status	Records Processed
PKG_LN_CONTRACT_INTERFACES	28-May-2015 16:12:27	28-May-2015 16:13:34	0	00:01:07	ODI_SERVICE_PROVIDER	C	
PKG_ACCOUNT_RATE_TIERS	28-May-2015 16:12:26	28-May-2015 16:12:41	0	00:00:15	ODI_SERVICE_PROVIDER	C	
PKG_AS_ACCOUNT_ENTRY	28-May-2015 16:12:26	28-May-2015 18:05:03	1	01:52:37	ODI_SERVICE_PROVIDER	C	
PKG_TD_INTERFACES	28-May-2015 16:12:23	28-May-2015 18:34:17	1	02:21:54	ODI_SERVICE_PROVIDER	C	
PKG_PM_INTERFACES	28-May-2015 16:12:13	28-May-2015 16:12:32	0	00:00:19	ODI_SERVICE_PROVIDER	C	
PKG_PARTY_FIN_INTERFACES	28-May-2015 16:11:58	28-May-2015 16:12:27	0	00:00:29	ODI_SERVICE_PROVIDER	C	
PKG_PL_INTERFACES	28-May-2015 16:11:55	28-May-2015 16:12:38	0	00:00:43	ODI_SERVICE_PROVIDER	C	
PKG_OR_INTERFACES	28-May-2015 16:11:53	28-May-2015 16:12:49	0	00:00:56	ODI_SERVICE_PROVIDER	C	
PKG_MITIGANT_INTERFACES	28-May-2015 16:11:51	28-May-2015 16:12:40	0	00:00:49	ODI_SERVICE_PROVIDER	C	
PKG_LN_INTERFACES	28-May-2015 16:11:50	28-May-2015 16:12:39	0	00:00:49	ODI_SERVICE_PROVIDER	C	

Abort Statistics

On click of aborted execution unit, the below table is shown with the abort details like run count, the actual error description, and summary of the exception containing the interface name for which the exception occurred.

Figure 6–32 Abort Statistics

Monitor Batch Performance

Print Refresh Clear Exit

Execution Unit	Start Time	End Time	No Of Aborts	Duration	Service Provider	Execution Status	Records Processed
PKG_TD_INTE...	28-May-2015 1...	28-May-2015 1...	1	02:21:54	ODI_SERVICE...	C	
PKG_PM_INTE...	28-May-2015 1...	28-May-2015 1...	0	00:00:19	ODI_SERVICE...	C	
PKG_PARTY_F...	28-May-2015 1...	28-May-2015 1...	0	00:00:29	ODI_SERVICE...	C	
PKG_PL_INTER...	28-May-2015 1...	28-May-2015 1...	0	00:00:43	ODI_SERVICE...	C	
PKG_OR_INTE...	28-May-2015 1...	28-May-2015 1...	0	00:00:56	ODI_SERVICE...	C	
PKG_MITIGAN...	28-May-2015 1...	28-May-2015 1...	0	00:00:49	ODI_SERVICE...	C	
PKG_LN_INTE...	28-May-2015 1...	28-May-2015 1...	0	00:00:49	ODI_SERVICE...	C	
PKG_GL_INTE...	28-May-2015 1...	28-May-2015 1...	0	00:00:11	ODI_SERVICE...	C	
PKG_FACILITY...	28-May-2015 1...	28-May-2015 1...	0	00:00:41	ODI_SERVICE...	C	
PKG_DDA_INT...	28-May-2015 1...	28-May-2015 1...	1	01:54:50	ODI_SERVICE...	C	

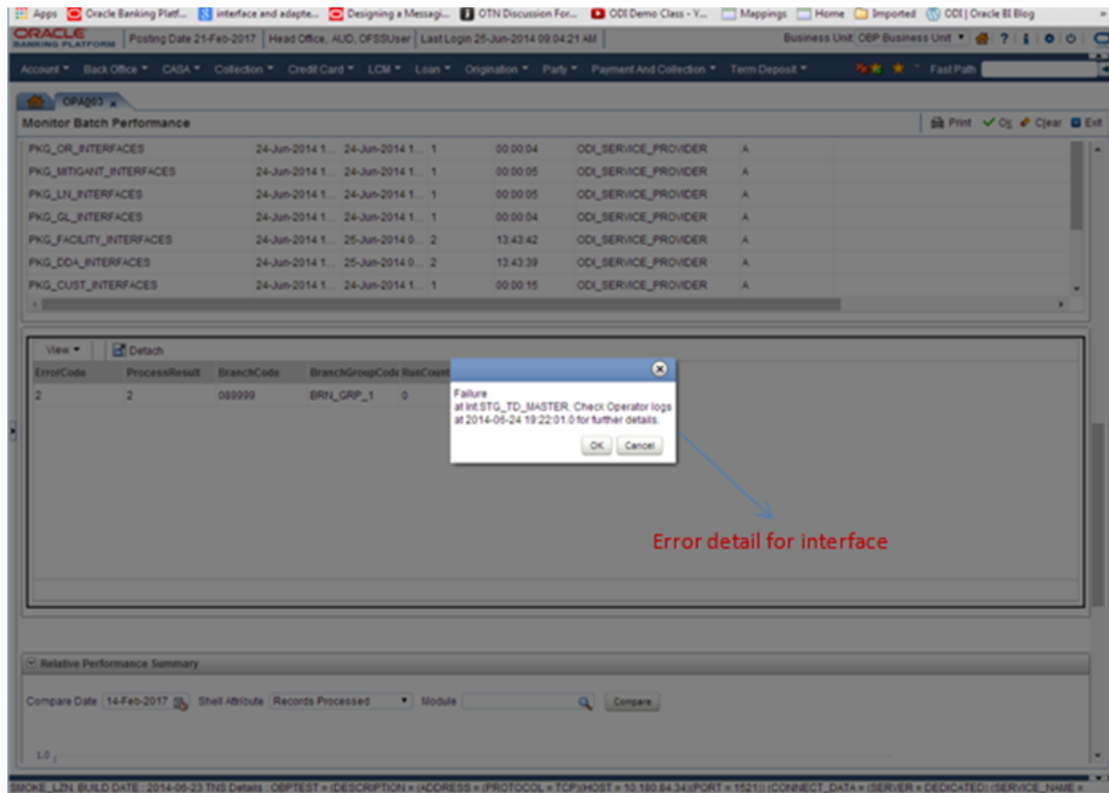
View Detach

ErrorCode	ProcessResult	BranchCode	BranchGroupCode	RunCount	ErrorDesc	SummaryText
2	2	1010	BRN_GRP_1	0	Failure at IntSTG_TD_MAS...	PKG_TD_INTERFACES

6.3 ODI Batch Handoff Monitoring

On click of the error description table, the error description message appears as shown in Figure 6–33:

Figure 6–33 Failure Error Description



7 Application Monitoring Using EM Plugin

This chapter provides an overview on the various monitoring operations performed as an administrator, using Enterprise Manger (EM) Plugin.

7.1 Monitoring Application Using EM Plugin

Once DMS statistics are captured for a particular channel and transactions involving in it, it requires a UI representation to understand the stats in a readable form so that one can analyze the behavior. The monitoring activities are mainly carried out by IT Technical staff.

7.1.1 Oracle Enterprise Manager (EM)







Oracle Enterprise Manager is the application where all the monitoring data exists. It includes server and machines status and performance and also OBP monitoring statistics.

All the servers are monitored by EM including Host, UI, SOA, and so on.

We have a view corresponding to every environment containing all the components which include outbound components.

Some notations in EM are provided below:

Table 7–1 Notations in EM

	Indicates component is down
	Indicates component is up and running
	Indicates alerts
	Indicates warnings
	Indicates metric collection error
	Indicates healthy status

The following figure shows the environment view in Oracle Enterprise Manager:

Figure 7–1 Oracle Enterprise Manager

Name	Type	Status	Availability	Service Level Agreement Status	Incidents				System	Key Components				Key Tests			
					Perfoman	Usage						Status	Incidents	Status	Monitoring Beacons		
OBP_SMOKEPROD261_SOA_Service	Generic Service	↑	Tests	-	-	-	-	-	-	/SMOKEPROD261_SOA_mum00aba_in_oracle_c... /base_domain/soa_server1/soa-infra	n/a	0	0	0	0	↑1	1
OBP_SMOKEPROD261_HOST_Service	Generic Service	↑	Tests	-	-	-	-	-	-	/SMOKEPROD261_HOST_ofss3121179_in_oracle... /host_domain	n/a	0	0	0	0	↑1	1
OBP_SMOKEPROD261_Monitoring_Se...	Generic Service	↑	System	-	-	-	-	-	-	OBP_SMOKEPROD261_Monitoring_System	↑1	0	0	0	0	n/a	0
OBP_SMOKEPROD261_UI_Service	Generic Service	↑	Tests	-	-	-	-	-	-	/SMOKEPROD261_UI_ofss310490_in_oracle_co... /ui_domain	n/a	0	0	0	0	↑1	1
OBP_SMOKEPROD261_OD_Service	Generic Service	↑	Tests	-	-	-	-	-	-	/SMOKEPROD261_OD_ofss3121155_in_oracle_... /ODDomain	n/a	0	0	0	0	↑1	1
OBP_SMOKEPROD261_View	Aggregate Service	↑	Sub Services	-	-	-	-	-	-	n/a	↑5	0	0	0	0	n/a	0

The views in the above figure include UI, Host, and SOA servers.

Security Stacks components such as OAAM, OID, OES, outbound components such as BIP, IPM, Documaker, ATM and POS channels are also part of the environment view.

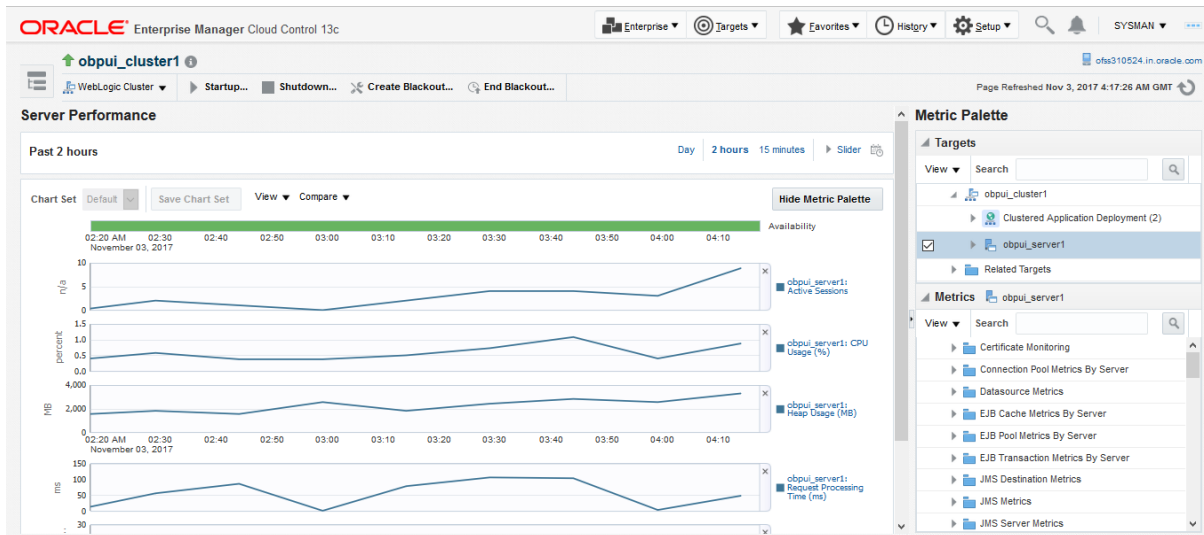
Each component can be further explored for details by clicking on the links provided for them.

7.1.2 UI

For UI, all the managed servers created under Weblogic cluster can be monitored. EM provides the following information for UI Cluster:

- Active Session about all Managed Servers
- CPU Usage
- Heap Usage
- Request Processing Time

Figure 7–2 UI Cluster in EM

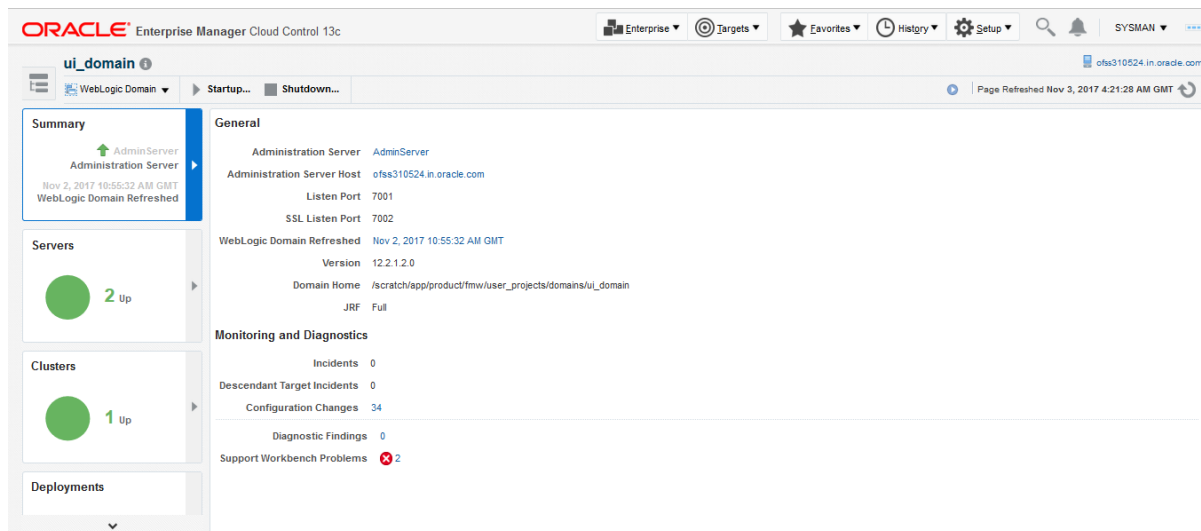


UI is hosted on WebLogic domain, so the EM target of UI machine is WebLogic domain. EM gives the following information for UI:

- Server Performance Statistics
- Up/Down Status
- List of deployed applications
- Incidents or Alerts; if any

The following figure displays the WebLogic domain for UI.

Figure 7–3 WebLogic Domain for UI

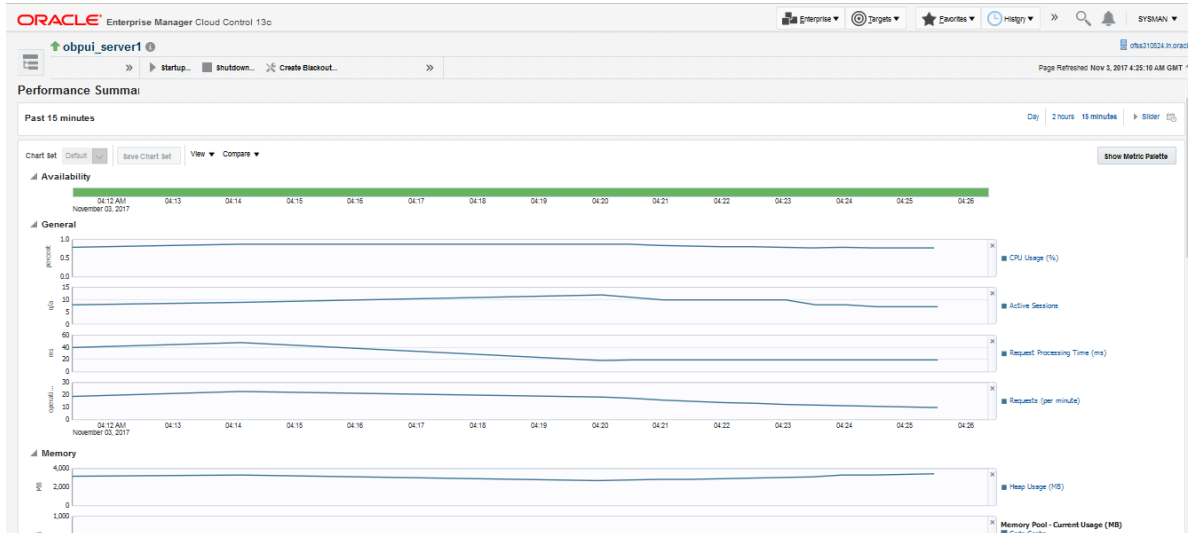


7.1 Monitoring Application Using EM Plugin

The performance metric includes metrics like CPU Utilization, Memory Utilization, Active Sessions and are default metrics provided by EM.

The following figure displays the metrics chart.

Figure 7–4 Metrics Chart

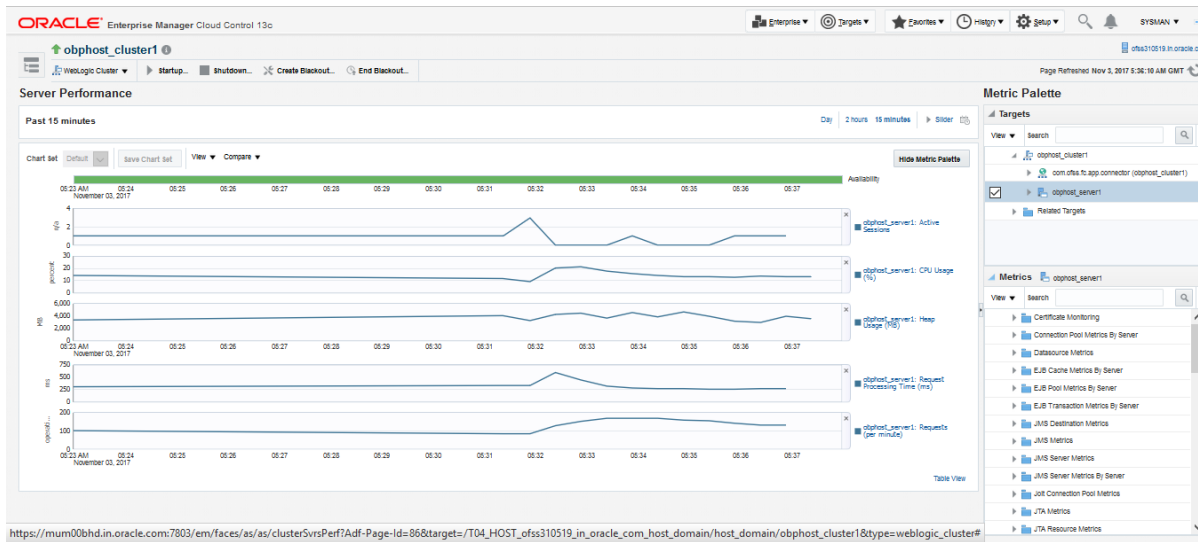


7.1.3 Host

For Host, all the managed servers created under Weblogic cluster can be monitored. EM provides the following information for Host Cluster:

- Active Session about all Managed Servers
- CPU Usage
- Heap Usage
- Request Processing Time

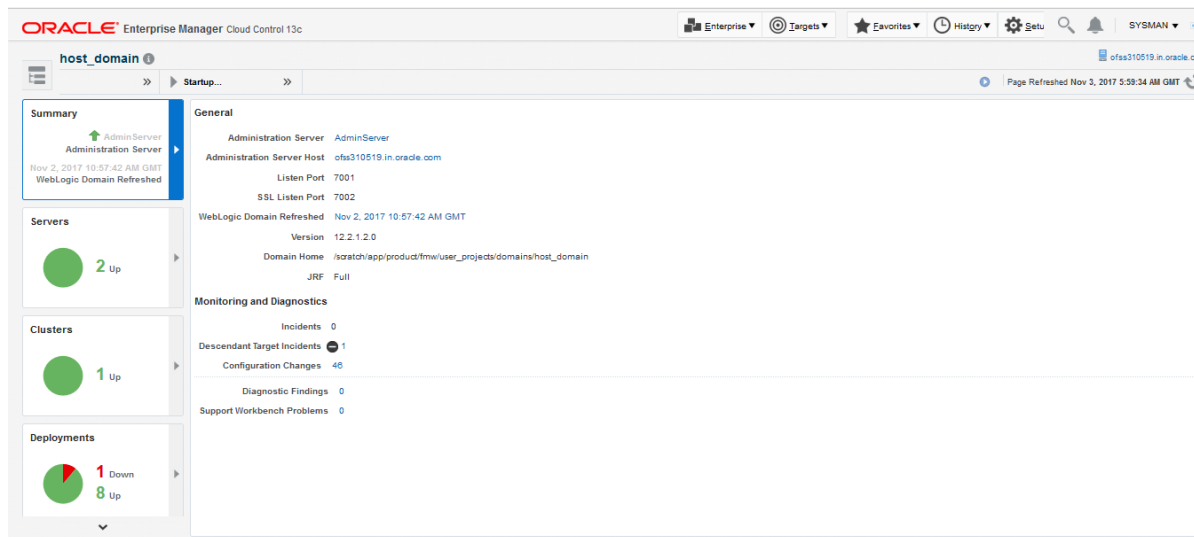
Figure 7–5 Host Cluster in EM



Similar to UI, Host is also deployed on WebLogic domain and has similar metrics like UI.

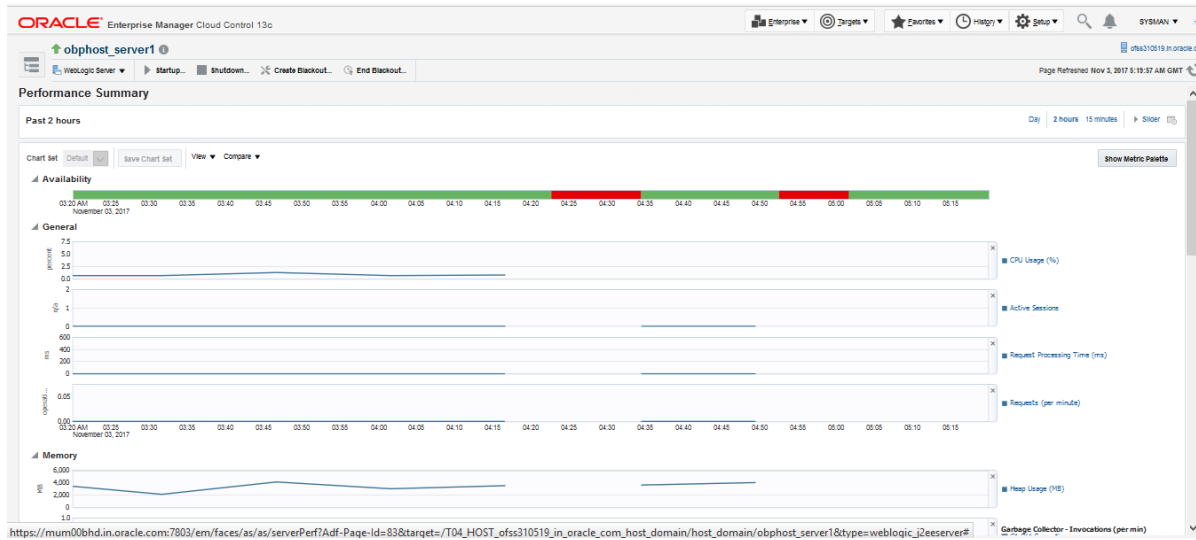
The following figure displays the host target in EM.

Figure 7–6 Host Target in EM



The following figure displays the metric charts.

Figure 7–7 Metrics Chart



7.1.4 SOA

SOA server is deployed on WebLogic domain where the SOA processes are deployed.

The process list can be seen in the list of deployed applications. The other metrics remain same as for WebLogic domain in EM. The following figure displays the process list.

Figure 7–8 Viewing Process List

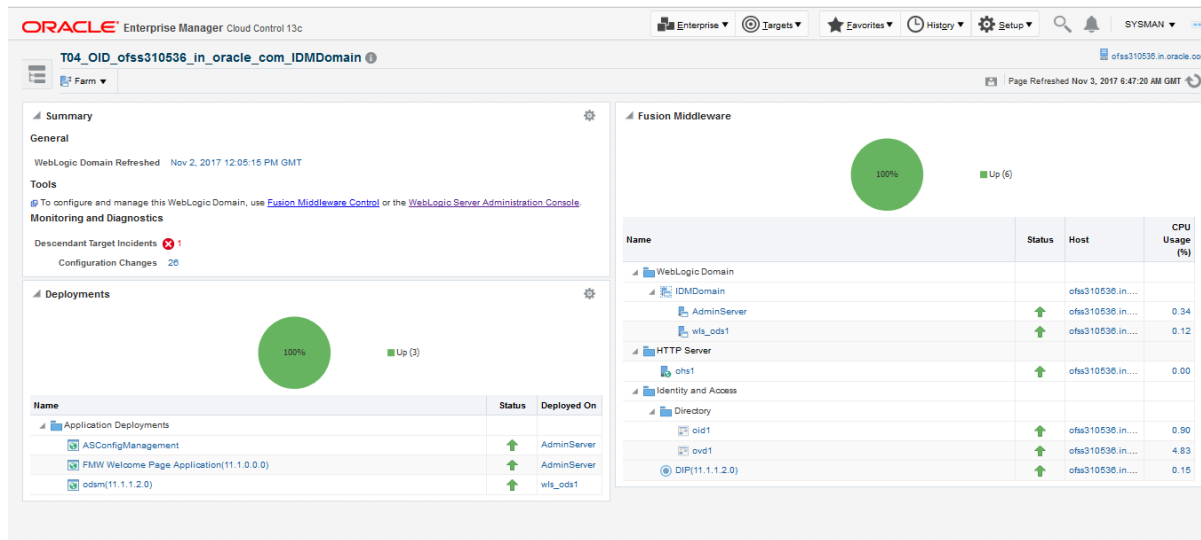
The screenshot shows the 'Composite Table' for 'soa-infra (soa_server1)'. It lists various SOA Composites with their status and performance metrics. A red box highlights a subset of composites.

Composite	Status	Messages (per minute)	Errors (per minute)	Error Rate (%)	SOA Component Rollup			WLS Policy Violations	Composite Instances
					System Faults	Business Faults	Recoverable Faults		
default/oom.ofs.fc.approval.submissionfinancialspi_submitfinancialcapture [1.0]	↑	0.00	0.00	0.00	0	0	0	0	0
default/oom.ofs.fc.approval.creditdecisionspi_waivecollateralvaluation [1.0]	↑	0.00	0.00	0.00	0	0	0	0	0
default/oom.ofs.fc.workflow.process.CapturePartyFinancials [1.0]	↑	0.00	0.00	0.00	0	0	0	0	0
default/oom.ofs.fc.workflow.process.ProcessLoanRollover [1.0]	↑	0.00	0.00	0.00	0	0	0	0	0
default/oom.ofs.fc.workflow.process.StructureDepositSolution [1.0]	↑	0.00	0.00	0.00	0	0	0	0	0
default/oom.ofs.fc.workflow.process.ProcessCreditCardApplication [1.0]	↑	0.00	0.00	0.00	0	0	0	0	0
default/oom.ofs.fc.approval.hardshiprefrequestspi_applyhardshipref [1.0]	↑	0.00	0.00	0.00	0	0	0	0	0
default/oom.ofs.fc.workflow.process.ProvisionIdentity [1.0]	↑	0.27	0.00	0.00	0	0	0	0	4
default/oom.ofs.fc.workflow.process.OriginalInvestment [1.0]	↑	0.00	0.00	0.00	0	0	0	0	0

7.1.5 Security Stack (OID and OAM)

OID and OAM are also deployed as WebLogic domain.

Figure 7–9 OID WebLogic Domain



7.1.6 Document Generation Outbound Components (Documaker, BIP, IPM)

These are not part of the application, but we monitor these so as to detect the cause of failure in case the document generation fails at any point of time.

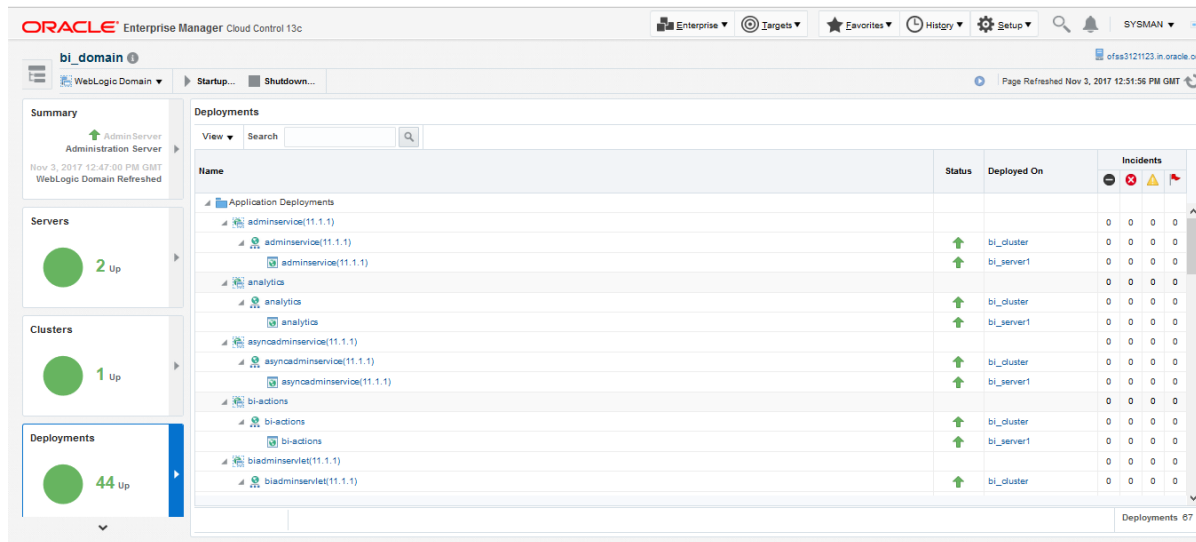
A webservice is invoked for generating the documents from the application with BIP as well as documaker. From EM, we check whether that webservice is up and running or not, which gives the status of these components. The following figure displays the status from EM.

Figure 7–10 Document Generation Status

OBP_T12_BIP_Service	Generic Service	↑	
OBP_T12_Documaker_Service	Generic Service	↑	
OBP_T12_HOST_Service	Generic Service	↑	
OBP_T12_IPM_Service	Generic Service	↑	

BIP is also deployed on WebLogic domain.

Figure 7–11 BIP Deployment



7.1.7 ATM and POS (Point Of Sales) Channels

ATM and POS work on socket listener mechanism.

So, for them to be up and running the port on which they listen should be up. In EM, to monitor these channels, check if the port is listening.

The following figure displays the status from EM.

Figure 7–12 EM Monitoring



7.1.8 Outbound OFSAA call

The application calls OFSAA for calculation of economic cost. This is done through a webservice.

To monitor this, check if the webservice is up and running.

Figure 7–13 Web Monitoring



7.1.9 Monitoring Views

Monitoring views show the batch and application performance statistics along with server performance history. It consists of Batch Monitoring and Application Monitoring tabs, which show detailed view of batch performance and application performance statistics along with the server performance statistics on which they are running.

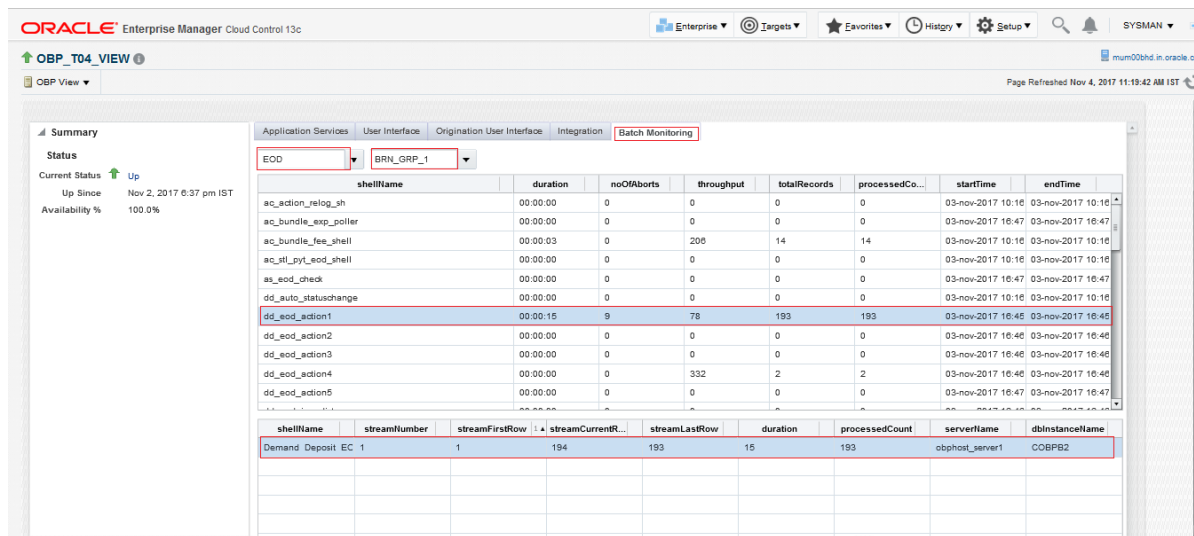
7.1.9.1 Batch Monitoring

Batch Monitoring shows detailed view for host and database server performance charts along with batch performance statistics.

The batch performance statistics are the details of the categories run in the application. The date for which category details are shown is the last run date. The categories include EOD, CutOff, Internal System EOD and BOD.

To get the details of a particular category, select it from the combo box. This will display the list of shells in the category in the table below. From the table, select the desired shell, the shell details provides the stream details of the selected shell.

Figure 7–14 Database Server Info



shellName	duration	noOfAborts	throughput	totalRecords	processedCo...	startTime	endTime
ac_action_relog_sh	00:00:00	0	0	0	0	03-nov-2017 10:16	03-nov-2017 10:16
ac_bundle_exp_poller	00:00:00	0	0	0	0	03-nov-2017 16:47	03-nov-2017 16:47
ac_bundle_fee_shell	00:00:03	0	206	14	14	03-nov-2017 10:16	03-nov-2017 10:16
ac_sh_pyt_eod_shell	00:00:00	0	0	0	0	03-nov-2017 10:16	03-nov-2017 10:16
as_eod_check	00:00:00	0	0	0	0	03-nov-2017 16:47	03-nov-2017 16:47
dd_auto_statuschange	00:00:00	0	0	0	0	03-nov-2017 10:16	03-nov-2017 10:16
dd_eod_action1	00:00:15	9	78	193	193	03-nov-2017 16:46	03-nov-2017 16:46
dd_eod_action2	00:00:00	0	0	0	0	03-nov-2017 16:46	03-nov-2017 16:46
dd_eod_action3	00:00:00	0	0	0	0	03-nov-2017 16:46	03-nov-2017 16:46
dd_eod_action4	00:00:00	0	332	2	2	03-nov-2017 16:46	03-nov-2017 16:46
dd_eod_action5	00:00:00	0	0	0	0	03-nov-2017 16:47	03-nov-2017 16:47

shellName	streamNumber	streamFirstRow	streamCurrentR...	streamLasRow	duration	processedCount	serverName	dbInstanceName
Demand Deposit EC 1	1	194	193	15	193	obphost_server1	COBPB2	

The streams can run in different servers. To get the details of the performance of the server in which the stream is executed, select the stream. The charts below gives the performance summary of the server in which the stream is executed and the database performance.

The following figure displays the status from EM.

Figure 7–15 Batch Monitoring Status

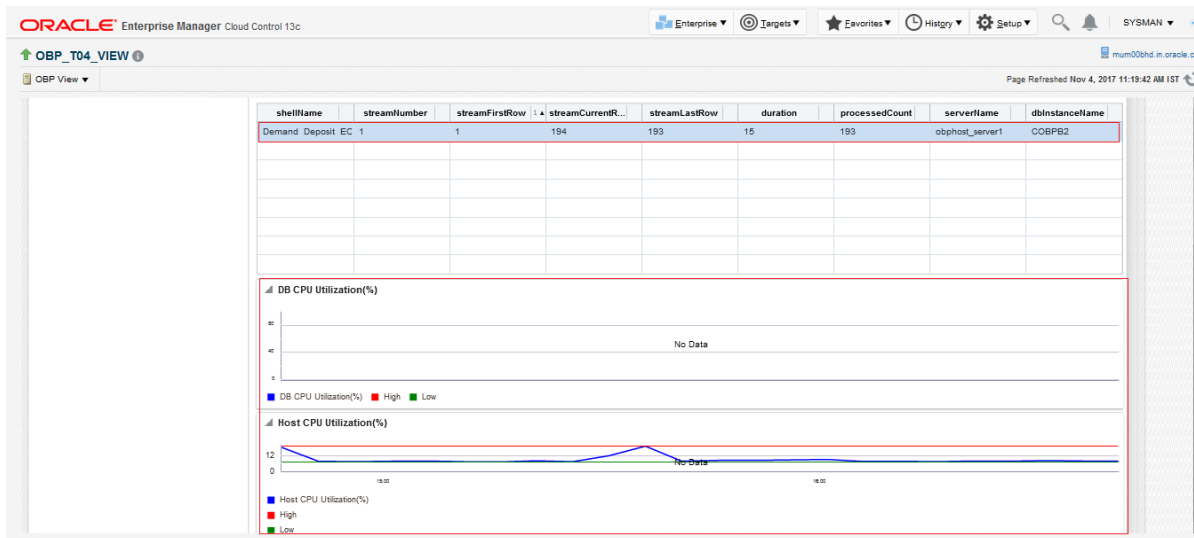


Figure 7–16 Batch Configuration

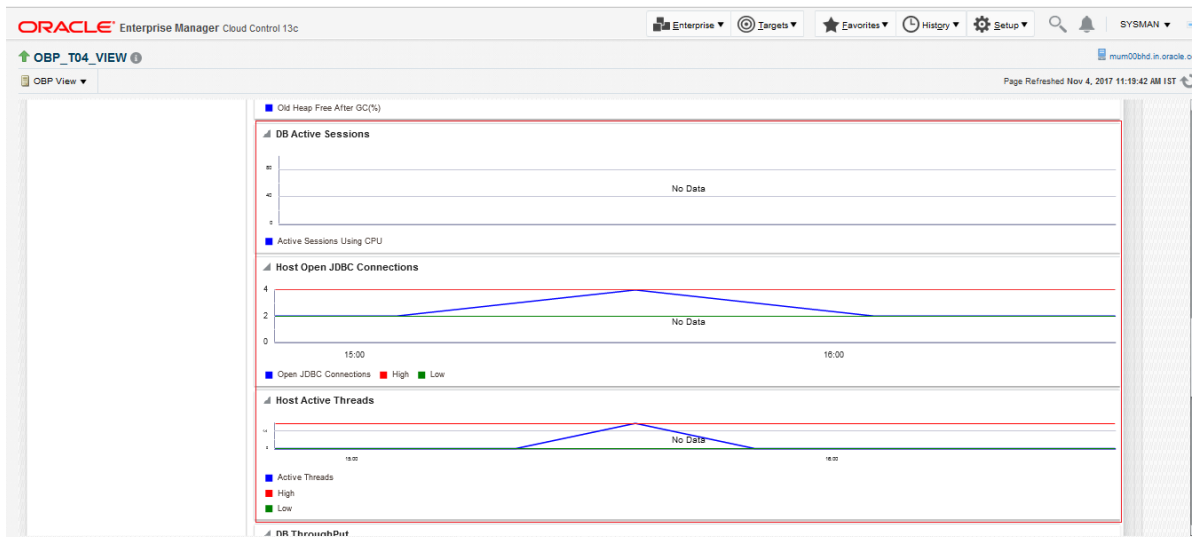
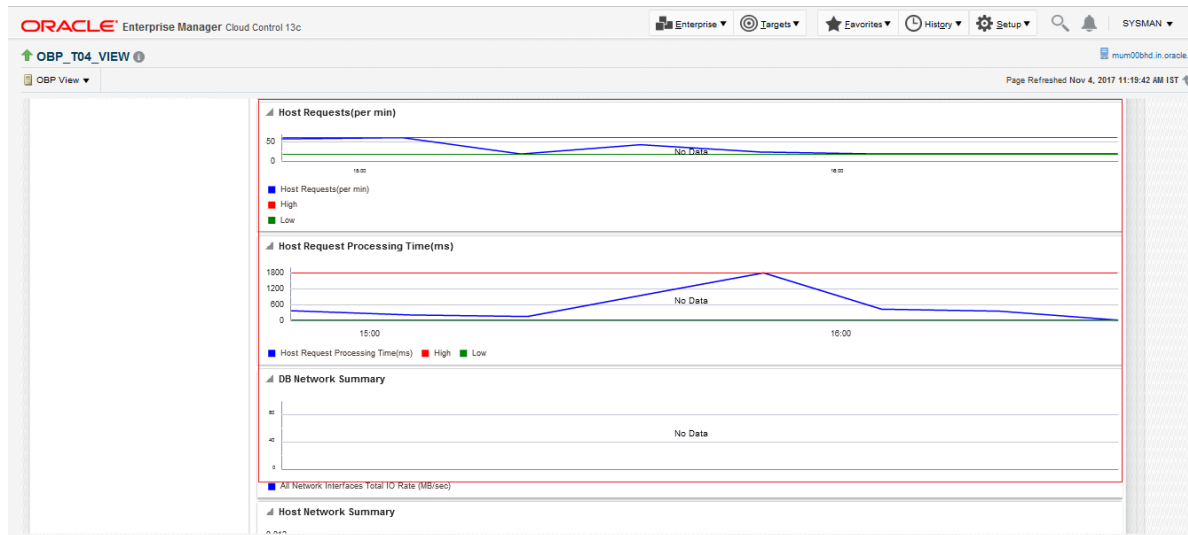


Figure 7–17 WebLogic Service Info



7.1.9.2 Application Monitoring

Application Monitoring shows detailed view of UI and host clusters and servers.

There are four separate tabs, namely Application Services, User Interface, Origination User Interface, and Integration.

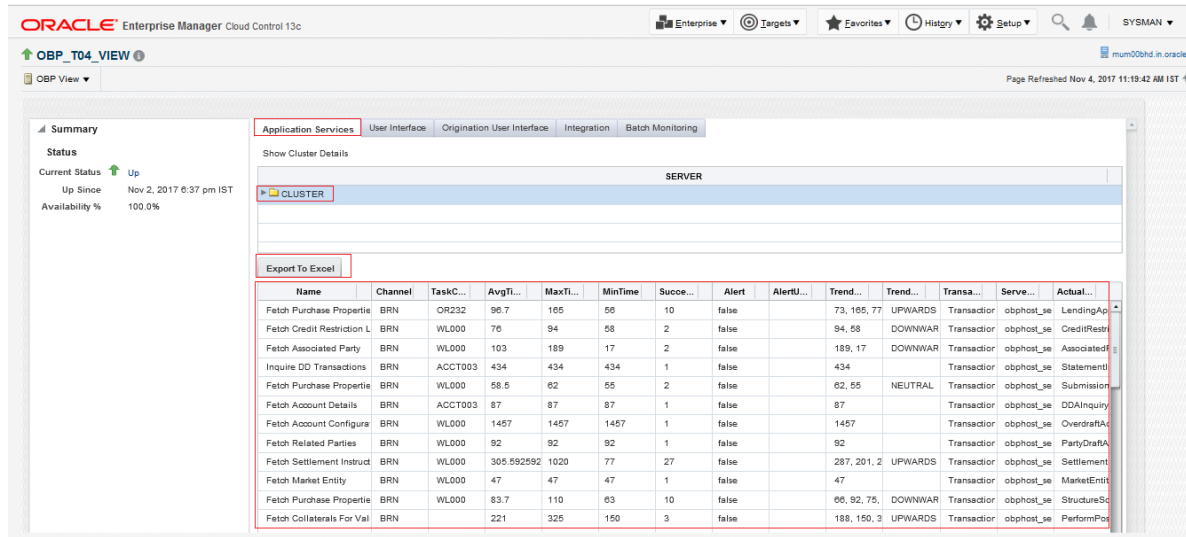
7.1.9.2.1 Application Services

This section provides performance metrics for all application services executed on Host Server. Metrics include timing, alert, trending information, and so on.

For cluster details, click the Show Cluster Details link.

Click CLUSTER to view application metrics for the servers present in the HOST cluster. User can export the application metric data by clicking the Export To Excel button.

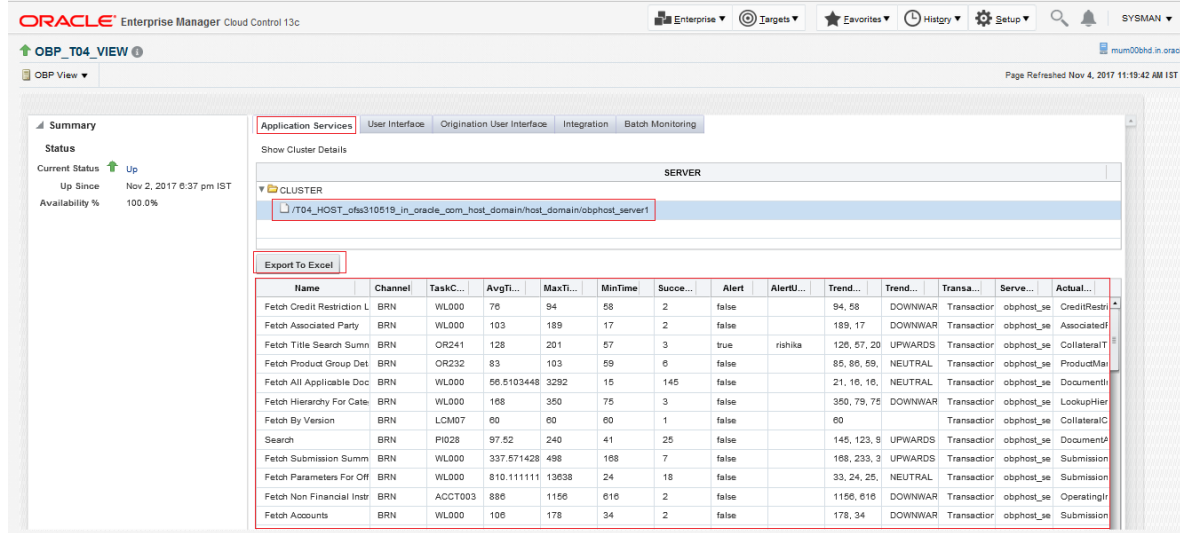
Figure 7–18 Application Metrics of Application Services for all servers in cluster



Expand CLUSTER to get a list of all the servers.

Each server can be further selected to get the details at the server level. On clicking the server, the application metrics are displayed in the table as shown in the following figure.

Figure 7–19 Application Metrics of Application Services for selected server



The following table explains each column of the table present in the given snapshot:

Table 7–2 Details of the Application Metrics table of Application Services

Sr. No.	Column Name	Description
1	Name	Logical name of the application services

Sr. No.	Column Name	Description
2	Channel	Channel through which the transaction occurred Valid Values: Branch, ATM, and POS.
3	Task Code	Task code of the application page by which the transaction was triggered. Application module of which transaction is a part
4	Average Time	Average execution time of the application service
5	Max Time	Maximum time of execution of the application service
6	Min Time	Minimum time of execution of the application service
7	Success Count	Number of times application service executed successfully
8	Alert	Alert state of the application service
9	Alert User	Teller who performed the last alerted transaction
10	Trend Reference Queue	Execution time of last n transactions (n=5)
11	Trend	Trending of transaction Valid Values: Upwards, Downwards, Neutral
12	Transaction Type	Maximum time of execution of the transaction
13	Server Name	Server name
14	Actual Service Name	Service name of the transaction

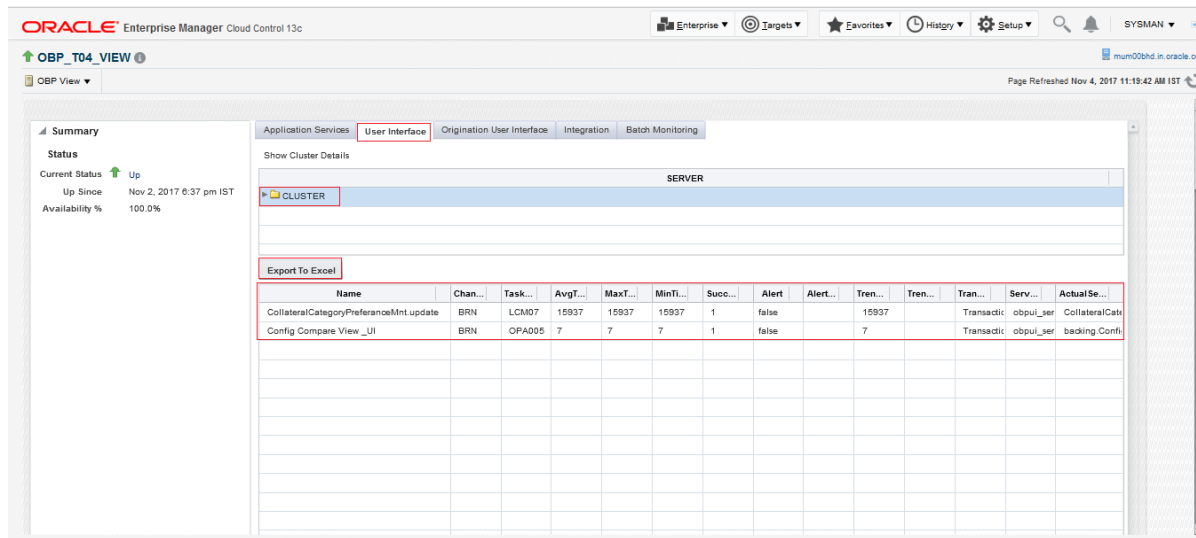
7.1.9.2.2 User Interface

This section provides performance metrics for all major UI components executed on UI Server. Metrics include timing, alert, trending information, and so on.

For cluster details, click the [Show Cluster Details](#) link.

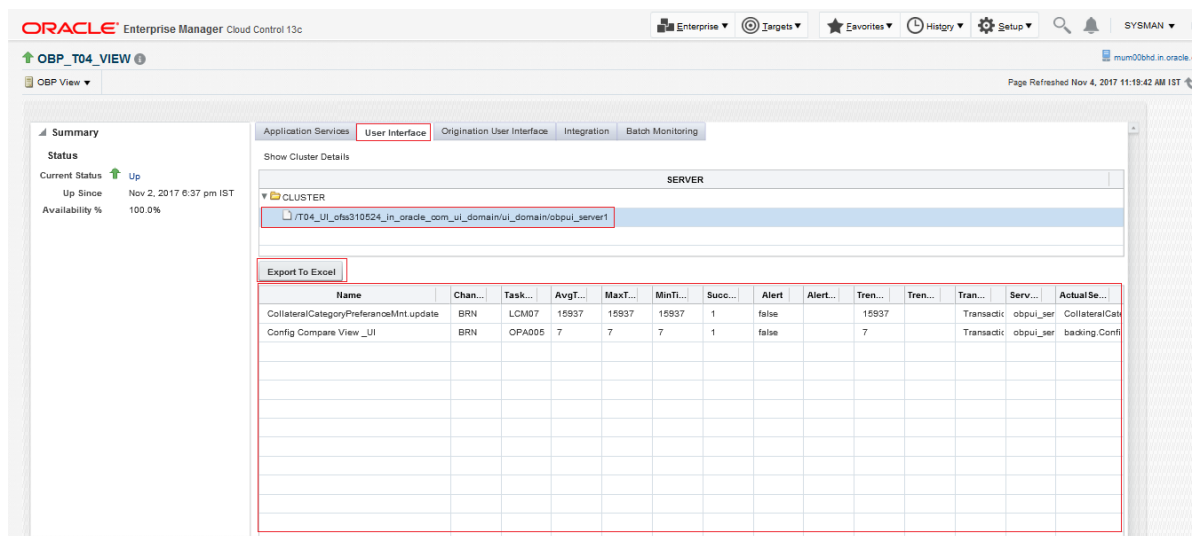
Click **CLUSTER** to view application metrics for the servers present in the UI cluster. User can export the application metric data by clicking the [Export To Excel](#) button.

Figure 7–20 Application Metric for all UI servers in cluster



Expand CLUSTER to get a list of all the servers. Each server can be further selected to get the details at the server level. On clicking the server, the application metrics are displayed in the table as shown in the following figure.

Figure 7–21 Application Metrics of UI components for selected server



The following table explains each column of the table present in the given snapshot:

Table 7–3 Details of the Application Metrics table of UI Components

Sr. No.	Column Name	Description
1	Name	Logical name of the UI component
2	Channel	Channel through which the transaction occurred

Sr. No.	Column Name	Description
		Valid Values: Branch, ATM, and POS
3	Task Code	Task code of the application page by which the transaction was triggered. Application module of which transaction is a part
4	Average Time	Average execution time of UI component
5	Max Time	Maximum time of execution of the UI component
6	Min Time	Minimum time of execution of the UI component
7	Success Count	Number of times UI component executed successfully
8	Alert	Alert state of the UI component
9	Alert User	Teller who performed the last alerted transaction
10	Trend Reference Queue	Execution time of last n transactions (n=5)
11	Trend	Trending of transaction Valid Values: Upwards, Downwards, Neutral
12	Transaction Type	Type of transaction
13	Server Name	UI Server name
14	Actual Service Name	Actual name of UI component

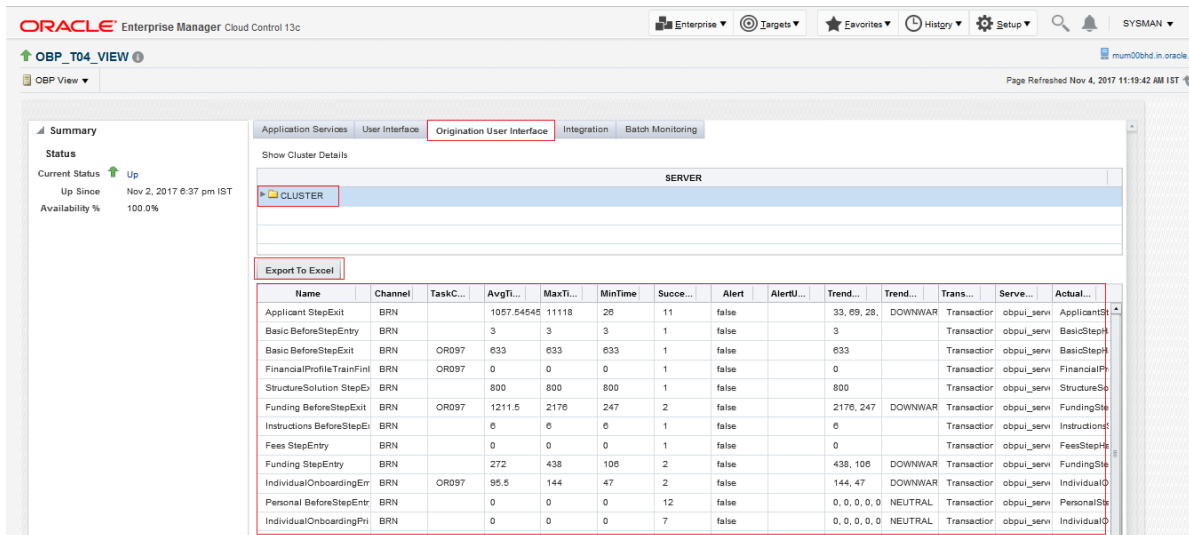
7.1.9.2.3 Origination User Interface

This section provides performance metrics for rendering all multistep train taskflows. The metrics capture the time taken for entering and exiting a particular step of the application form. If there are any host calls made to persist data before leaving a step or to fetch data from host server before entering a step, these metrics encapsulate those timings. Metrics include timing, alert, trending information, and so on.

For cluster details, click the Show Cluster Details link.

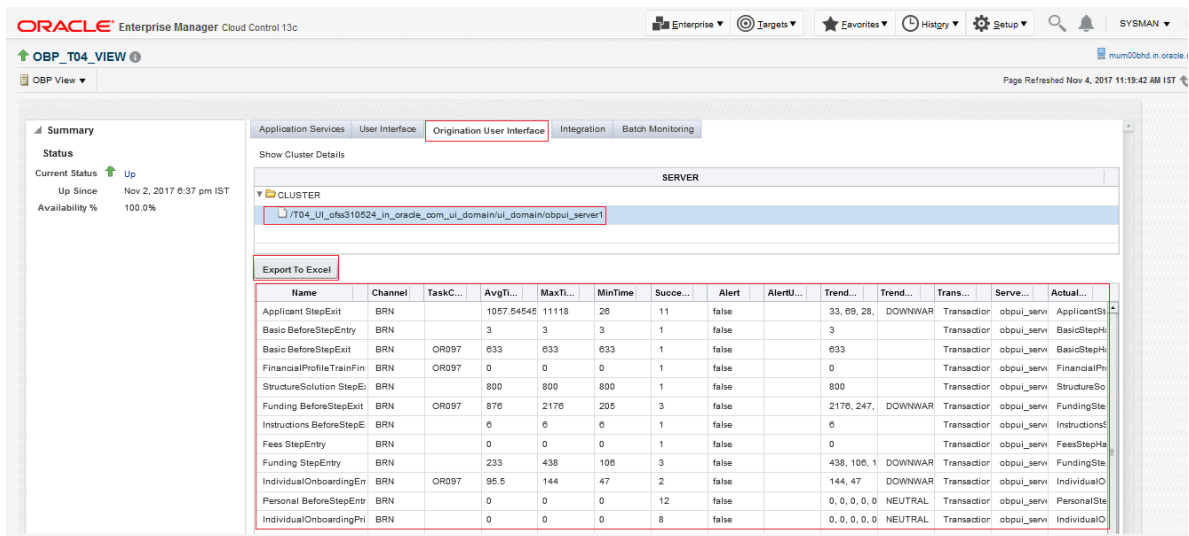
Click CLUSTER to view application metrics for the servers present in the UI cluster. User can export the application metric data by clicking the Export To Excel button.

Figure 7–22 Application Metrics of Origination UI Components for all UI servers in cluster



Expand 'CLUSTER' to get a list of all the servers. Each server can be further selected to get the details at the server level. On clicking the server, the application metrics are displayed in the table as shown in the following figure.

Figure 7–23 Application Metrics of Origination UI components for selected server



The following table explains each column of the table present in the given snapshot:

Table 7–4 Details of the Application Metrics table of Origination UI Components

Sr. No.	Column Name	Description
1	Name	Logical name of the multistep train taskflow component

Sr. No.	Column Name	Description
2	Channel	Channel through which the transaction occurred Valid Values: Branch, ATM, and POS.
3	Task Code	Task code of the application page by which the transaction was triggered. Application module of which transaction is a part
4	Average Time	Average execution time
5	Max Time	Maximum time of execution of the multistep train taskflow component
6	Min Time	Minimum time of execution of the multistep train taskflow component
7	Success Count	Number of times multistep train taskflow component executed successfully
8	Alert	Alert state of the multistep train taskflow component
9	Alert User	Teller who performed the last alerted transaction
10	Trend Reference Queue	Execution time of last n transactions (n=5)
11	Trend	Trending of transaction Valid Values: Upwards, Downwards, Neutral
12	Transaction Type	Type of transaction
13	Server Name	UI Server name
14	Actual Service Name	Actual name of multistep train taskflow component

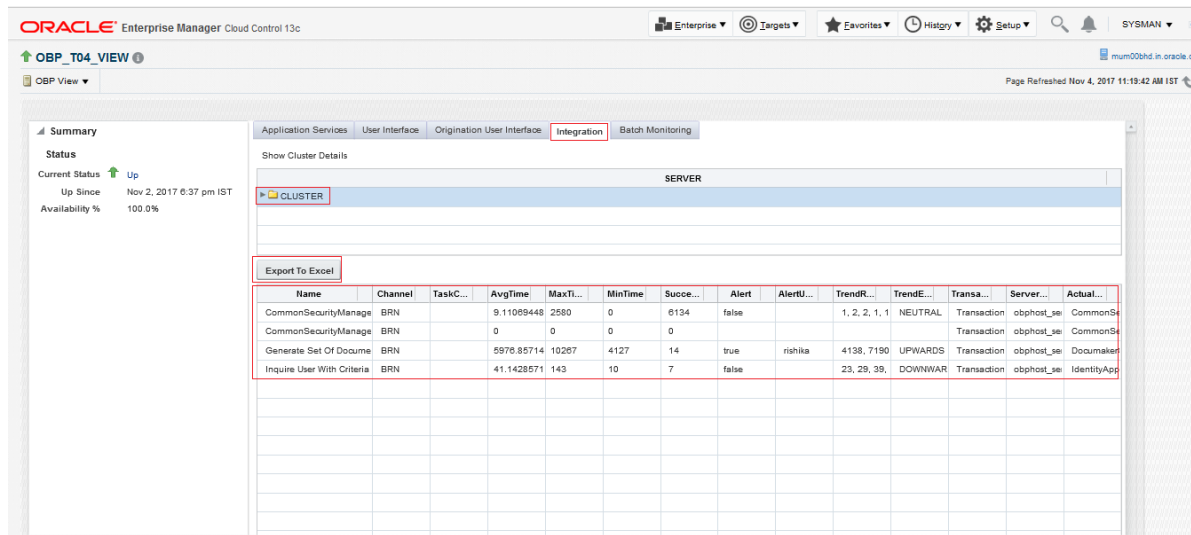
7.1.9.2.4 Integration

This section provides performance metric for all outbound services called from Host Server. Metrics include timing, alert, trending information, and so on.

For cluster details, click the Show Cluster Details link.

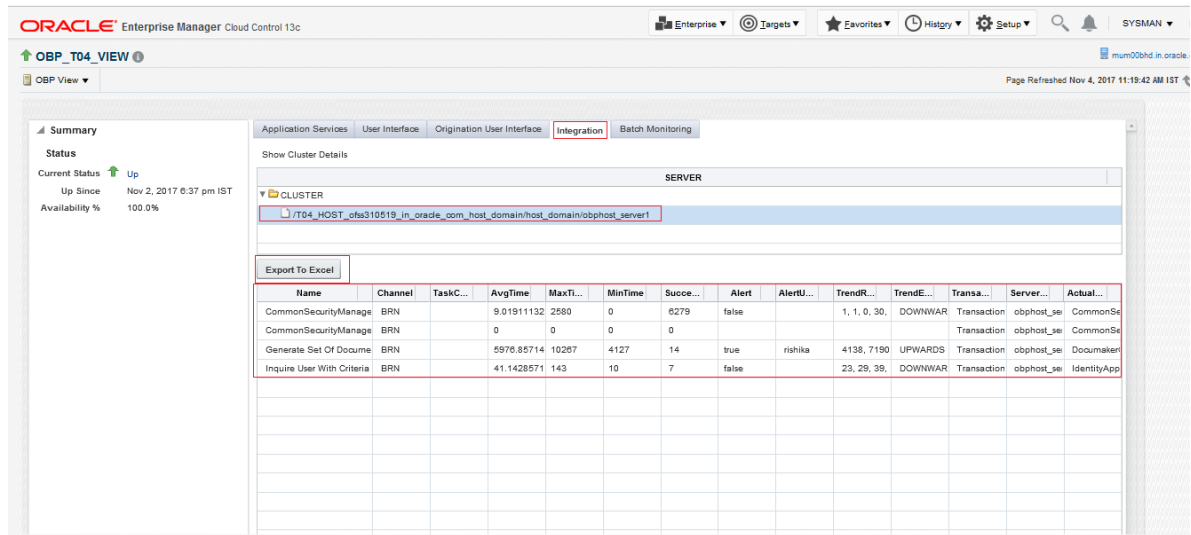
Click CLUSTER to view application metrics for the servers present in the HOST cluster. User can export the application metric data by clicking the Export To Excel button.

Figure 7–24 Application Metrics of all outbound services called from all host servers in cluster



Expand it to get a list of all the servers. Each server can be further selected to get the details at the server level. On clicking the server, the application metrics are displayed in the table as shown in the following figure.

Figure 7–25 Application Metrics of all outbound services called from selected server



The following table explains each column of the table present in the given snapshot:

Table 7–5 Details of the Application Metrics table of all Outbound Services

Sr. No.	Column Name	Description
1	Name	Logical name of the Outbound services
2	Channel	Channel through which the transaction occurred Valid Values: Branch, ATM, and POS.

Sr. No.	Column Name	Description
3	Task Code	Task code of the application page by which the transaction was triggered. Application module of which transaction is a part
4	Average Time	Average execution time
5	Max Time	Maximum time of execution of the outbound service
6	Min Time	Minimum time of execution of the outbound service
7	Success Count	Number of times outbound service executed successfully
8	Alert	Alert state of the outbound service
9	Alert User	Teller who performed the last alerted transaction
10	Trend Reference Queue	Execution time of last n transactions (n=5)
11	Trend	Trending of transaction Valid Values: Upwards, Downwards, Neutral
12	Transaction Type	Maximum time of execution of the transaction
13	Server Name	Server name
14	Actual Service Name	Service name of the transaction

8 Configuration Export-Import Operations

This chapter gives an insight to the Configuration Export-Import operations.

8.1 Objective

Config operations include exporting business configurations, from one environment, to DB or file and importing these configurations in another environment, thus replicating the entire data with the golden copy.

Compare Business Configurations (OPA005) page provides the UI to compare the entities present in two environments on the basis of the data attributes.

Suppose R1 is an environment where the teller has maintained an entity, say currency AUD and in R2 environment the teller wants the exact copy of R1. The Import Export operations allows the user to export a single entity or all entities of a taskcode and can replicate the working environment with the exported version of data very effectively.

The overall Config operations are divided into five parts, each part representing an operation with its specific functionality. The user has the option to invoke any of the operation to get the required work done.

8.2 Export

This operation aims at exporting a business configuration of a taskcode to the configured location. It stores the serializable response of the entity. When export operation is invoked, data gets exported to the database or file as per configuration.

This operation can be carried out as a webservice call for the Export operation of the specific taskcode whose page level configuration has not been done.

8.3 Import

This operation aims at replicating the entity of target environment with exported data from a source environment. It retrieves the serializable response of the entity from database or file as per configuration and de-serializes the response to replicate the entity in target environment. When import operation is performed, it fetches the response from the source environment database and inserts/updates in the target environment.

8.4 Export All

This operation aims at exporting all the entities of a given taskcode. So that the same can be replicated in other environment. It is carried out through a web service call, by invoking the `fetchAllAndExport` method of `ExportImportApplicationService`. The request parameters are `sessionContext`, `taskCode`.

Export Request

Export request xml is provided below:

```
- <soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:exp="http://eximp.service.ops.app.fc.ofss.com/ExportImportApplicationService"
  xmlns:con="http://context.app.fc.ofss.com"
  xmlns:exc="http://exception.infra.fc.ofss.com">
```

```

<soapenv:Header />
- <soapenv:Body>
- <exp:fetchAllAndExportExportImport>
- <exp:sessionContext>
<con:bankCode>48</con:bankCode>
<con:businessUnit>MODELBANK</con:businessUnit>
<con:channel>BRN</con:channel>
<con:marketEntity>MODEL01</con:marketEntity>
<con:postingDateText>20130228000000</con:postingDateText>
<con:targetUnit>MODELBANK</con:targetUnit>
<con:transactionBranch>8542</con:transactionBranch>
<con:userId>OFSSUser</con:userId>
</exp:sessionContext>
<exp:taskCode>PM031</exp:taskCode>
</exp:fetchAllAndExportExportImport>
</soapenv:Body>
</soapenv:Envelope>

```

Export Response

Once this service is invoked with the above request, it fetches the configVersionNo of the exported data in response which is the version number with which Export All was performed.

```

- <S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/">
- <S:Body>
- <ns11:fetchAllAndExportExportImportResponse
xmlns:ns11="http://eximp.service.ops.app.fc.ofss.com/ExportImportA
pplicationService" xmlns:ns10="http://fact.enumeration.fc.ofss.com"
xmlns:ns9="http://enumeration.fc.ofss.com"
xmlns:exceptioninfra="http://exception.infra.fc.ofss.com"
xmlns:datatype="http://datatype.fc.ofss.com"
xmlns:contextapp="http://context.app.fc.ofss.com"
xmlns:dtocoreseedopsapp="http://dto.core.seed.ops.app.fc.ofss.com"
xmlns:dtocommondomainframework="http://dto.common.domain.framework
.fc.ofss.com"
xmlns:errorvalidationinfra="http://error.validation.infra.fc.ofss.
com" xmlns:opsapp="http://ops.app.fc.ofss.com"
xmlns:responseservice="http://response.service.fc.ofss.com">
- <ns11:return>

<responseservice:configVersionId>104</responseservice:configVersio
nId>
- <responseservice:status>
<responseservice:errorCode>0</responseservice:errorCode>
<responseservice:extendedReply />

<responseservice:internalReferenceNumber>2016075018875027</respons
eservice:internalReferenceNumber>
<responseservice:isOverriden>>false</responseservice:isOverriden>

```

```

<responseservice:isServiceChargeApplied>>false</responseservice:isS
erviceChargeApplied>
- <responseservice:postingDate>
<datatype:dateString>20130228000000</datatype:dateString>
<datatype:month>2</datatype:month>
<datatype:monthDate>228</datatype:monthDate>
<datatype:monthDateTime>228000000</datatype:monthDateTime>
<datatype:timestamp>2013-02-28T00:00:00+05:30</datatype:timestamp>
<datatype:year>2013</datatype:year>
</responseservice:postingDate>
<responseservice:replyCode>0</responseservice:replyCode>
<responseservice:replyText>Operation completed
successfully.</responseservice:replyText>
<responseservice:spReturnValue>0</responseservice:spReturnValue>
</responseservice:status>
</ns11:return>
</ns11:fetchAllAndExportExportImportResponse>
</S:Body>
</S:Envelope>

```

The user can import the required data based on this version number.

8.5 Import All

This operation aims at importing the record for the given taskCode and configVersionNo in the target environment. This method fetches the exported record based on versionNo and taskCode and tries to update if the records exist, else create the new records.

This is carried out by making a web service call to importAll method of ExportImportApplicationService with taskCode, versionNo as input. The request and response xml are as attached.

Import Request

```

- <soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:exp="http://eximp.service.ops.app.fc.ofss.com/ExportImportAp
plicationService" xmlns:con="http://context.app.fc.ofss.com"
xmlns:exc="http://exception.infra.fc.ofss.com">
<soapenv:Header />
- <soapenv:Body>
- <exp:importAllExportImport>
- <exp:sessionContext>
<con:bankCode>48</con:bankCode>
<con:businessUnit>MODELBANK</con:businessUnit>
<con:channel>BRN</con:channel>
<con:marketEntity>MODEL01</con:marketEntity>
<con:postingDateText>20130228000000</con:postingDateText>
<con:targetUnit>MODELBANK</con:targetUnit>
<con:transactionBranch>8542</con:transactionBranch>
<con:userId>OFSSUser</con:userId>
</exp:sessionContext>

```

```

<exp:taskCode>PM031</exp:taskCode>
<exp:versionNo>104</exp:versionNo>
</exp:importAllExportImport>
</soapenv:Body>
</soapenv:Envelope>

```

Import Response

```

- <S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/">
- <S:Body>
- <ns5:importAllExportImportResponse
xmlns="http://enumeration.fc.ofss.com"
xmlns:ns2="http://fact.enumeration.fc.ofss.com"
xmlns:ns3="http://context.app.fc.ofss.com"
xmlns:ns4="http://exception.infra.fc.ofss.com"
xmlns:ns5="http://eximp.service.ops.app.fc.ofss.com/ExportImportAp
plicationService"
xmlns:ns6="http://dto.common.domain.framework.fc.ofss.com"
xmlns:ns7="http://datatype.fc.ofss.com"
xmlns:ns8="http://ops.app.fc.ofss.com"
xmlns:ns9="http://response.service.fc.ofss.com"
xmlns:ns10="http://error.validation.infra.fc.ofss.com"
xmlns:ns11="http://dto.core.config.app.fc.ofss.com">
- <ns5:return>
<ns9:errorCode>0</ns9:errorCode>
<ns9:extendedReply />

<ns9:internalReferenceNumber>2012132010145535</ns9:internalReferen
ceNumber>
<ns9:isOverriden>>false</ns9:isOverriden>
<ns9:isServiceChargeApplied>>false</ns9:isServiceChargeApplied>
- <ns9:postingDate>
<ns7:month>4</ns7:month>
<ns7:monthDate>425</ns7:monthDate>
<ns7:monthDateTime>425000000</ns7:monthDateTime>
<ns7:timestamp>2012-04-25T00:00:00+05:30</ns7:timestamp>
<ns7:year>2012</ns7:year>
</ns9:postingDate>
<ns9:replyCode>0</ns9:replyCode>
<ns9:replyText>Operation completed successfully.</ns9:replyText>
<ns9:spReturnValue>0</ns9:spReturnValue>
</ns5:return>
</ns5:importAllExportImportResponse>
</S:Body>
</S:Envelope>

```

8.6 Config Compare

This operation is used to compare Domain Objects, with same key, for a given taskCode. It aims at comparing the entities from two databases which are termed as TO and FROM database. The comparison is

such as it contains following information:

Present only in TO database (presently working environment)

Present only in FROM database (configurable DB environment)

Present in both, but data is different

In the whole set of operations, Export and Import can be performed either by screen or by webservice. For performing import using DB datastore, the reference DataSource needs to be configured in the target environment (the reference datasource is initially configured at the time of installation), which points to the data base where export has been performed. For ExportAll and ImportAll there is a common service ExportImportApplicationService which have the operation to perform the duties.

8.7 Data Store Configuration

The Data Store for Config operations can be configured to either Database or File. The user has the option to choose any one of the two data store configurations. The exported response will be stored in database or file as per this configuration.

8.7.1 DB Data Store

This configuration stores the exported data to database. For using this configuration, following changes have to be made:

1. In **FLX_FW_CONFIG_ALL_B** table, maintain **DataSourceType=File**

```
select *from flx_fw_config_all_b where category_id='DataSourceDestination' and prop_id='DataSourceType'
```

Note

No separate configuration is required for export and import in case of DB Data Store.

8.7.2 File Data Store

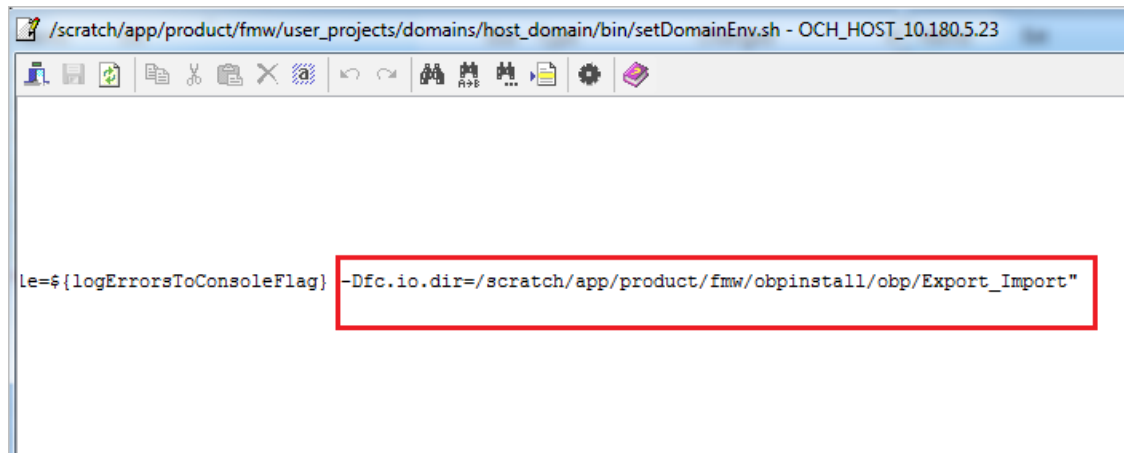
This configuration stores the exported data to file. For using this configuration, following changes have to be made:

1. In **FLX_FW_CONFIG_ALL_B** table, maintain **DataSourceType=FILE**.

```
select * from flx_fw_config_all_b where category_id='DataSourceDestination' and prop_id='DataSourceType'
```

2. Set the location of system property **fc.io.dir** in **setDomainEnv.sh** to a valid directory.

Figure 8–1 File Data Store



8.7.2.1 Configuration for Export

The configuration for export requires the following changes:

1. Set **ExportLoggingPath** variable in **FLX_FW_CONFIG_ALL_B** to the directory where the exported files are needed to be stored. This is relative path with respect to **fc.io.dir/runarea/BusinessUnit**.

```
select * from flx_fw_config_all_b where category_id='DataSourceDestination' and prop_id='ExportLoggingPath'.
```

If **fc.io.dir** is set to **/scratch/app/product/fmw/obpinstall/obp/Export_Import**, **ExportLoggingPath** is set to **export** and **business unit** is **DEMO_BANK**, then the files will be stored at **/scratch/app/product/fmw/obpinstall/obp/Export_Import/runarea/DEMO_BANK/export**.

8.7.2.2 Configuration for Import

The configuration for import requires the following changes:

1. Set **ImportLoggingPath** variable in **FLX_FW_CONFIG_ALL_B** to the directory from where the exported response has to imported.

```
select * from flx_fw_config_all_b where category_id='DataSourceDestination' and prop_id='ImportLoggingPath'
```

/scratch/app/product/fmw/obpinstall/obp/Export_Import/runarea/DEMO_BANK/export will be set as **ImportLoggingPath** in our case.

8.8 How to Export Records

Export Operations can be performed using screen or webservice. This operation can be used to export either a single record or multiple records based on the requirement.

In case of DB Data Store, exported data is stored in **flx_ops_config_data_item** and for File Data Store, exported files are generated at the path specified for export configuration. For more information, see [Chapter 8.7 Data Store Configuration](#).

8.8.1 Exporting Single Record

This operation is used to export single record of an entity.

Let us assume the configuration is done for **DATABASE**, so the data gets stored in **flx_ops_config_data_item** table of the source database. The entity inquiry response gets stored as a serialized byte into the database.

Export operation can be carried out as a webservice call for the export operation of the specific taskcode. A single record of business configuration can be exported using the service **<BusinessConfiguration>ApplicationService**, which provides a **'fetch<BusinessConfiguration>AndExport'** method.

The request parameters to this service are:

- SessionContext
- <BusinessConfiguration>DTO - Representing the key of the record to be exported.

In response of the service call, it returns **'configVersionNo'**. This 'configVersionNo' will be used to import this record into the target environment.

Sample request and response are as follows:

Export Single Request

```

- <soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:act="http://action.service.ep.app.fc.ofss.com/ActivityEventActionApplicationService" xmlns:con="http://context.app.fc.ofss.com"
xmlns:exc="http://exception.infra.fc.ofss.com"
xmlns:dto="http://dto.common.domain.framework.fc.ofss.com"
xmlns:dat="http://datatype.fc.ofss.com"
xmlns:act1="http://action.dto.ep.app.fc.ofss.com"
xmlns:rule="http://rule.action.dto.ep.app.fc.ofss.com"
xmlns:sub="http://subscriber.action.dto.ep.app.fc.ofss.com">
<soapenv:Header />
- <soapenv:Body>
- <act:fetchActivityEventActionAndExportActivityEventAction>
- <!-- Optional:
-->
- <act:sessionContext>
<con:bankCode>08</con:bankCode>
<con:businessUnit>OBP_BU</con:businessUnit>
<con:channel>BRN</con:channel>
<con:marketEntity>SUN01</con:marketEntity>
<con:postingDateText>20130228000000</con:postingDateText>
<con:targetUnit>OBP_BU</con:targetUnit>
<con:transactionBranch>089999</con:transactionBranch>
<con:userId>OFSSUser</con:userId>
</act:sessionContext>
- <!-- Optional:
-->
- <act:activityEventActionDTO>

```

```

- <act1:keyDTO>
- <!-- Optional:
-->
<act1:actionId>A</act1:actionId>
- <!-- Optional:
-->

<act1:activityId>com.ofss.fc.domain.lcm.batch.service.BatchCovenantService.processNotificationForCompliance</act1:activityId>
- <!-- Optional:
-->
<act1:eventId>LM_STATUS_COV</act1:eventId>
</act1:keyDTO>
</act:activityEventActionDTO>
</act:fetchActivityEventActionAndExportActivityEventAction>
</soapenv:Body>
</soapenv:Envelope>

```

Export Single Response

```

- <S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/">
- <S:Header>
<work:WorkContext
xmlns:work="http://oracle.com/weblogic/soap/workarea/">r00ABXdWABx
3ZWJsb2dpYy5hcHAub2JwLXd1YnN1cnZpY2VzAAAA1gAAACN3ZWJsb2dpYy53b3JrY
XJlYS5TdHJpbmdXb3JrQ29udGV4dAAJMi4yLjAuMC4wAAA=</work:WorkContext>
</S:Header>
- <S:Body>
-
<ns14:fetchActivityEventActionAndExportActivityEventActionResponse
xmlns:ns14="http://action.service.ep.app.fc.ofss.com/ActivityEvent
ActionApplicationService"
xmlns:ns13="http://ep.enumeration.fc.ofss.com"
xmlns:ns12="http://enumeration.fc.ofss.com"
xmlns:exceptioninfra="http://exception.infra.fc.ofss.com"
xmlns:validationdtoapp="http://validation.dto.app.fc.ofss.com"
xmlns:ruleactiondtoepapp="http://rule.action.dto.ep.app.fc.ofss.com"
xmlns:datatype="http://datatype.fc.ofss.com"
xmlns:contextapp="http://context.app.fc.ofss.com"
xmlns:dtocommondomainframework="http://dto.common.domain.framework
.fc.ofss.com"
xmlns:errorvalidationinfra="http://error.validation.infra.fc.ofss.
com" xmlns:actiondtoepapp="http://action.dto.ep.app.fc.ofss.com"
xmlns:responseservice="http://response.service.fc.ofss.com"
xmlns:userdtosmsapp="http://user.dto.sms.app.fc.ofss.com"
xmlns:subscriberactiondtoepapp="http://subscriber.action.dto.ep.ap
p.fc.ofss.com">
- <ns14:return>

<responseservice:configVersionId>187</responseservice:configVersio
nId>

```

```

- <responseservice:status>
<responseservice:errorCode>0</responseservice:errorCode>
<responseservice:extendedReply />

<responseservice:internalReferenceNumber>2016305031622005</respons
eservice:internalReferenceNumber>
<responseservice:isOverriden>>false</responseservice:isOverriden>

<responseservice:isServiceChargeApplied>>false</responseservice:isS
erviceChargeApplied>
- <responseservice:postingDate>
<datatype:dateString>20130228000000</datatype:dateString>
</responseservice:postingDate>
<responseservice:replyCode>0</responseservice:replyCode>
<responseservice:replyText>Operation completed
successfully.</responseservice:replyText>
<responseservice:spReturnValue>0</responseservice:spReturnValue>
</responseservice:status>
- <actiondtoepapp:activityEventActionDTO>

<dtocommondomainframework:auditSequence>1</dtocommondomainframewor
k:auditSequence>

<dtocommondomainframework:createdBy>ArvindKu</dtocommondomainframe
work:createdBy>
- <dtocommondomainframework:creationDate>
<datatype:dateString>20130809000000</datatype:dateString>
</dtocommondomainframework:creationDate>

<dtocommondomainframework:generatedPackageId>>false</dtocommondomai
nframework:generatedPackageId>

<dtocommondomainframework:lastUpdatedBy>OFSSUser</dtocommondomainf
ramework:lastUpdatedBy>
- <dtocommondomainframework:lastUpdatedDate>
<datatype:dateString>20140721162124</datatype:dateString>
</dtocommondomainframework:lastUpdatedDate>

<dtocommondomainframework:version>2</dtocommondomainframework:vers
ion>
<actiondtoepapp:alertName>Covenant Status
Complied</actiondtoepapp:alertName>
- <actiondtoepapp:alertTemplate>

<dtocommondomainframework:auditSequence>1</dtocommondomainframewor
k:auditSequence>

<dtocommondomainframework:generatedPackageId>>false</dtocommondomai
nframework:generatedPackageId>

```

```
<dtocommondomainframework:version>1</dtocommondomainframework:version>
- <actiondtoepapp:keyDTO>
<actiondtoepapp:id>1</actiondtoepapp:id>
</actiondtoepapp:keyDTO>
<actiondtoepapp:importance>CRITICAL</actiondtoepapp:importance>
<actiondtoepapp:language>ENG</actiondtoepapp:language>
<actiondtoepapp:name>Email Template</actiondtoepapp:name>
<actiondtoepapp:urgency>HIGH</actiondtoepapp:urgency>
</actiondtoepapp:alertTemplate>
<actiondtoepapp>alertType>MANDATORY</actiondtoepapp>alertType>
- <actiondtoepapp:decisionAgent>

<dtocommondomainframework:auditSequence>1</dtocommondomainframework:auditSequence>

<dtocommondomainframework:generatedPackageId>>false</dtocommondomainframework:generatedPackageId>

<dtocommondomainframework:version>1</dtocommondomainframework:version>
- <ruleactiondtoepapp:keyDTO>
<ruleactiondtoepapp:id>0</ruleactiondtoepapp:id>
</ruleactiondtoepapp:keyDTO>
- <ruleactiondtoepapp:rule>

<dtocommondomainframework:auditSequence>1</dtocommondomainframework:auditSequence>

<dtocommondomainframework:generatedPackageId>>false</dtocommondomainframework:generatedPackageId>

<dtocommondomainframework:version>1</dtocommondomainframework:version>
<ruleactiondtoepapp:description>Invokes the default rule</ruleactiondtoepapp:description>
<ruleactiondtoepapp:keyDTO />
<ruleactiondtoepapp:name>defaultRule</ruleactiondtoepapp:name>

<ruleactiondtoepapp:ruleClass>com.ofss.fc.domain.ep.service.action.rule.DefaultRuleHandler</ruleactiondtoepapp:ruleClass>

<ruleactiondtoepapp:ruleEngine>INTERNAL</ruleactiondtoepapp:ruleEngine>
</ruleactiondtoepapp:rule>
</actiondtoepapp:decisionAgent>
- <actiondtoepapp:expiryDate>
<datatype:dateString>20991231000000</datatype:dateString>
```

```
</actiondtoepapp:expiryDate>
<actiondtoepapp:isConditional>>false</actiondtoepapp:isConditional>
<actiondtoepapp:isRetryAllowed>>true</actiondtoepapp:isRetryAllowed>

<actiondtoepapp:isTransactional>>false</actiondtoepapp:isTransactio
nal>
- <actiondtoepapp:keyDTO>
<actiondtoepapp:actionId>A</actiondtoepapp:actionId>

<actiondtoepapp:activityId>com.ofss.fc.domain.lcm.batch.service.Ba
tchCovenantService.processNotificationForCompliance</actiondtoepap
p:activityId>
<actiondtoepapp:eventId>LM_STATUS_COV</actiondtoepapp:eventId>
</actiondtoepapp:keyDTO>
<actiondtoepapp:maxRetryCount>2</actiondtoepapp:maxRetryCount>
- <actiondtoepapp:recipientMessageTemplates>

<dtocommondomainframework:auditSequence>1</dtocommondomainframewor
k:auditSequence>

<dtocommondomainframework:generatedPackageId>>false</dtocommondomai
nframework:generatedPackageId>

<dtocommondomainframework:version>1</dtocommondomainframework:vers
ion>

<subscriberactiondtoepapp:amount>0</subscriberactiondtoepapp:amoun
t>

<subscriberactiondtoepapp:bankerType>NA</subscriberactiondtoepapp:
bankerType>

<subscriberactiondtoepapp:conditional>>false</subscriberactiondtoep
app:conditional>
- <subscriberactiondtoepapp:decisionAgent>

<dtocommondomainframework:auditSequence>1</dtocommondomainframewor
k:auditSequence>

<dtocommondomainframework:generatedPackageId>>false</dtocommondomai
nframework:generatedPackageId>

<dtocommondomainframework:version>1</dtocommondomainframework:vers
ion>
- <ruleactiondtoepapp:keyDTO>
<ruleactiondtoepapp:id>0</ruleactiondtoepapp:id>
</ruleactiondtoepapp:keyDTO>
- <ruleactiondtoepapp:rule>
```

```
<dtocommondomainframework:auditSequence>1</dtocommondomainframework:auditSequence>

<dtocommondomainframework:generatedPackageId>>false</dtocommondomainframework:generatedPackageId>

<dtocommondomainframework:version>1</dtocommondomainframework:version>
<ruleactiondtoepapp:description>Invokes the default rule</ruleactiondtoepapp:description>
<ruleactiondtoepapp:keyDTO />
<ruleactiondtoepapp:name>defaultRule</ruleactiondtoepapp:name>

<ruleactiondtoepapp:ruleClass>com.ofss.fc.domain.ep.service.action.rule.DefaultRuleHandler</ruleactiondtoepapp:ruleClass>

<ruleactiondtoepapp:ruleEngine>INTERNAL</ruleactiondtoepapp:ruleEngine>
</ruleactiondtoepapp:rule>
</subscriberactiondtoepapp:decisionAgent>
- <subscriberactiondtoepapp:keyDTO>

<subscriberactiondtoepapp:actionId>A</subscriberactiondtoepapp:actionId>

<subscriberactiondtoepapp:activityId>com.ofss.fc.domain.lcm.batch.service.BatchCovenantService.processNotificationForCompliance</subscriberactiondtoepapp:activityId>

<subscriberactiondtoepapp:destinationType>EMAIL</subscriberactiondtoepapp:destinationType>
<subscriberactiondtoepapp:eventId>LM_STATUS_COV</subscriberactiondtoepapp:eventId>
<subscriberactiondtoepapp:messageTemplateId>LCM_Covenant status is Complied</subscriberactiondtoepapp:messageTemplateId>

<subscriberactiondtoepapp:subscriberType>PARTY</subscriberactiondtoepapp:subscriberType>

<subscriberactiondtoepapp:subscriberValue>CUSTOMER</subscriberactiondtoepapp:subscriberValue>
</subscriberactiondtoepapp:keyDTO>

<subscriberactiondtoepapp:recipientType>INTERNAL</subscriberactiondtoepapp:recipientType>
</actiondtoepapp:recipientMessageTemplates>
</actiondtoepapp:activityEventActionDTO>
</ns14:return>
```



```

</ns14:fetchActivityEventActionAndExportActivityEventActionResponse>
</S:Body>
</S:Envelope>

```

8.8.2 Exporting All Records

This operation is used to export all the entities of a given task code. The exported package can then be replicated into the target environment. All records of a Business configuration entity can be exported using the **FetchAllAndExport** method of **ExportImportApplicationService**.

The request parameters to this service are:

- **SessionContext**
- **TaskCode**

A '**configVersionNo**' is returned in the response. This '**configVersionNo**' will be used as an identifier to trigger an import into the target environment.

Sample request and response are as follows:

Export All Request

```

- <soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:exp="http://eximp.service.ops.app.fc.ofss.com/ExportImportApplicationService"
xmlns:con="http://context.app.fc.ofss.com"
xmlns:exc="http://exception.infra.fc.ofss.com">
<soapenv:Header />
- <soapenv:Body>
- <exp:fetchAllAndExportExportImport>
- <!-- Optional:
-->
- <exp:sessionContext>
<con:bankCode>08</con:bankCode>
<con:businessUnit>OBP_BU</con:businessUnit>
<con:channel>BRN</con:channel>
<con:marketEntity>SUN01</con:marketEntity>
<con:postingDateText>20130228000000</con:postingDateText>
<con:targetUnit>OBP_BU</con:targetUnit>
<con:transactionBranch>089999</con:transactionBranch>
<con:userId>OFSSUser</con:userId>
</exp:sessionContext>
<exp:taskCode>AL04</exp:taskCode>
</exp:fetchAllAndExportExportImport>
</soapenv:Body>
</soapenv:Envelope>

```

Export All Response

```

- <S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/">
- <S:Header>

```

```

<work:WorkContext
xmlns:work="http://oracle.com/weblogic/soap/workarea/">r00ABXdWABx
3ZWJsb2dpYy5hcHAub2JwLXd1YnNlcnZpY2VzAAAA1gAAACN3ZWJsb2dpYy53b3JrY
XJlYS5TdHJpbmdXb3JrQ29udGV4dAAJMi4yLjAuMC4wAAA=</work:WorkContext>
</S:Header>
- <S:Body>
- <ns13:fetchAllAndExportExportImportResponse
xmlns:ns13="http://eximp.service.ops.app.fc.ofss.com/ExportImportA
pplicationService" xmlns:ns12="http://ops.enumeration.fc.ofss.com"
xmlns:ns11="http://fact.enumeration.fc.ofss.com"
xmlns:ns10="http://enumeration.fc.ofss.com"
xmlns:exceptioninfra="http://exception.infra.fc.ofss.com"
xmlns:validationdtoapp="http://validation.dto.app.fc.ofss.com"
xmlns:datatype="http://datatype.fc.ofss.com"
xmlns:contextapp="http://context.app.fc.ofss.com"
xmlns:dtocoreseedopsapp="http://dto.core.seed.ops.app.fc.ofss.com"
xmlns:dtocommondomainframework="http://dto.common.domain.framework
.fc.ofss.com"
xmlns:errorvalidationinfra="http://error.validation.infra.fc.ofss.
com" xmlns:opsapp="http://ops.app.fc.ofss.com"
xmlns:responseservice="http://response.service.fc.ofss.com">
- <ns13:return>

<responseservice:configVersionId>186</responseservice:configVersio
nId>
- <responseservice:status>
<responseservice:errorCode>0</responseservice:errorCode>
<responseservice:extendedReply />

<responseservice:internalReferenceNumber>2016305031622003</respons
eservice:internalReferenceNumber>
<responseservice:isOverriden>>false</responseservice:isOverriden>

<responseservice:isServiceChargeApplied>>false</responseservice:isS
erviceChargeApplied>
- <responseservice:postingDate>
<datatype:dateString>20130228000000</datatype:dateString>
</responseservice:postingDate>
<responseservice:replyCode>0</responseservice:replyCode>
<responseservice:replyText>Operation completed
successfully.</responseservice:replyText>
<responseservice:spReturnValue>0</responseservice:spReturnValue>
</responseservice:status>
</ns13:return>
</ns13:fetchAllAndExportExportImportResponse>
</S:Body>
</S:Envelope>

```

In case of DB Data Store, exported data is stored in **flx_ops_config_data_item** and for File Data Store, exported files are generated at the path specified for export configuration. For more information, see [Chapter 8.7 Data Store Configuration](#).

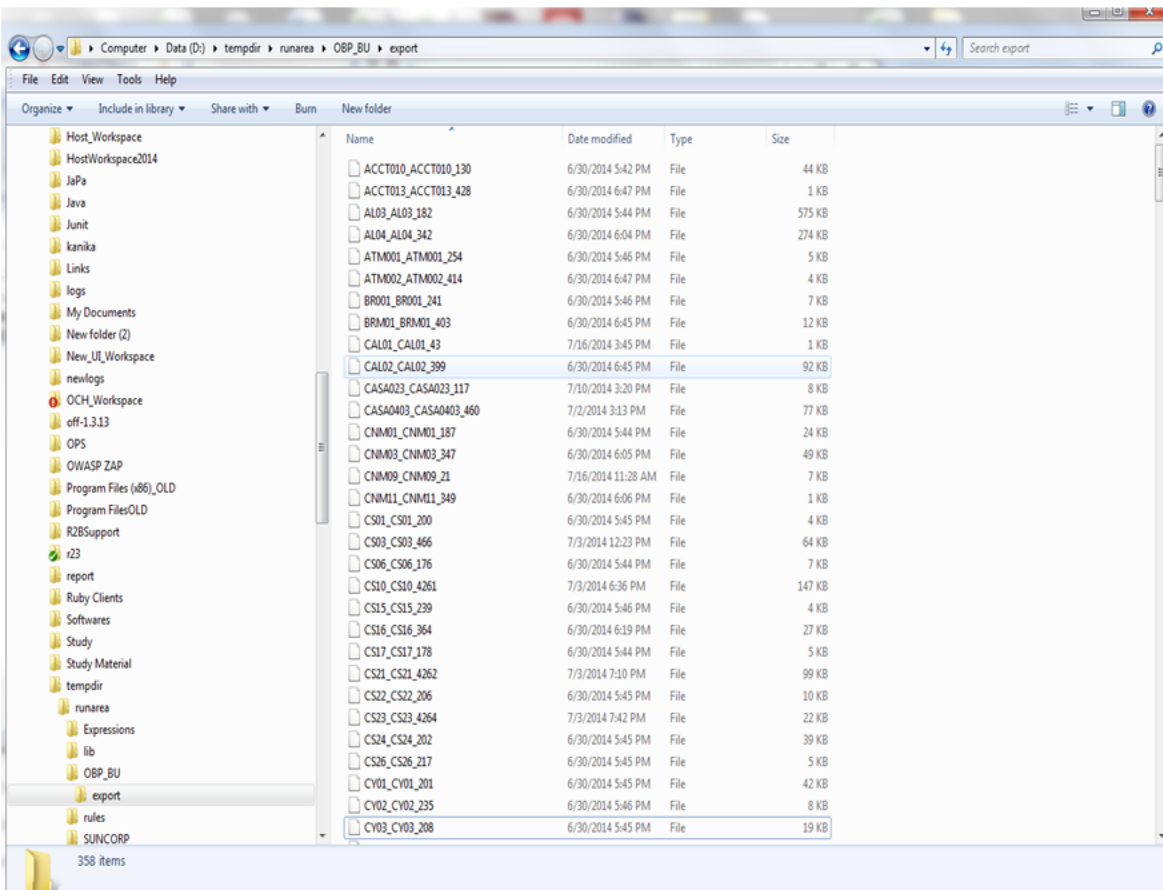
Figure 8–2 Exported Data

The screenshot shows a PL/SQL Developer window with a query window containing two SQL statements. The first statement is highlighted in blue and is: `select * from flx_ops_config_data_item where task_code='PM011' and config_ver_no='104' and operation_type='Export'`. The second statement is: `select * from flx_ops_config_data_item where task_code='PM011' and config_ver_no='104' and operation_type='Import'`. The output window displays a table with 15 rows. The columns are: CHANNEL, SERIALIZED_ENTITY, CREATION_DATE, OPERATION_TYPE, STATUS, CONFIG_VER_NO, TASK_CODE, and EXCEPTION_DE. The data in the table is as follows:

CHANNEL	SERIALIZED_ENTITY	CREATION_DATE	OPERATION_TYPE	STATUS	CONFIG_VER_NO	TASK_CODE	EXCEPTION_DE
1	BRN	<BLOB>	Export	success	104	PM011	
2	BRN	<BLOB>	Export	success	104	PM011	
3	BRN	<BLOB>	Export	success	104	PM011	
4	BRN	<BLOB>	Export	success	104	PM011	
5	BRN	<BLOB>	Export	success	104	PM011	
6	BRN	<BLOB>	Export	success	104	PM011	
7	BRN	<BLOB>	Export	success	104	PM011	
8	BRN	<BLOB>	Export	success	104	PM011	
9	BRN	<BLOB>	Export	success	104	PM011	
10	BRN	<BLOB>	Export	success	104	PM011	
11	BRN	<BLOB>	Export	success	104	PM011	
12	BRN	<BLOB>	Export	success	104	PM011	
13	BRN	<BLOB>	Export	success	104	PM011	
14	BRN	<BLOB>	Export	success	104	PM011	
15	BRN	<BLOB>	Export	success	104	PM011	

The status bar at the bottom indicates: 21 15 rows selected in 0.078 seconds.

Figure 8–3 Exported Files



8.9 How to Import Records

Import Operations can be performed using webservice clients. This operation can be used to import either a single record or multiple records based on the requirement.

8.9.1 Importing Single Record

This operation is used to import single record of an configuration.

8.9.1.1 Using API Client

A single record of a business configuration entity can be imported using the **ExportImportApplicationService**, which provides an **'importAll'** method.

The request parameters to this service are:

- SessionContext
- TaskCode
- configVersionNo (from Export Single Record response)

The steps to import single record using API client are same as importing all records. These are mentioned in the further section.

Sample request and response are as below:

Import All Request

```

- <soapenv:Envelope
  xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:exp="http://eximp.service.ops.app.fc.ofss.com/ExportImportAp
  plicationService" xmlns:con="http://context.app.fc.ofss.com"
  xmlns:exc="http://exception.infra.fc.ofss.com">
  <soapenv:Header />
  - <soapenv:Body>
  - <exp:importAllExportImport>
  - <!-- Optional:
  -->
  - <exp:sessionContext>
  <con:bankCode>08</con:bankCode>
  <con:businessUnit>OBP_BU</con:businessUnit>
  <con:channel>BRN</con:channel>
  <con:marketEntity>SUN01</con:marketEntity>
  <con:postingDateText>20130228000000</con:postingDateText>
  <con:targetUnit>OBP_BU</con:targetUnit>
  <con:transactionBranch>089999</con:transactionBranch>
  <con:userId>OFSSUser</con:userId>
  </exp:sessionContext>
  <exp:taskCode>AL04</exp:taskCode>
  <exp:versionNo>186</exp:versionNo>
  </exp:importAllExportImport>
  </soapenv:Body>
  </soapenv:Envelope>

```

Import All Response

```

- <S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/">
- <S:Header>
  <work:WorkContext
  xmlns:work="http://oracle.com/weblogic/soap/workarea/">r00ABXdWABx
  3ZWJsb2dpYy5hcHAub2JwLXd1YnN1cnZpY2VzAAAA1gAAACN3ZWJsb2dpYy53b3JrY
  XJlYS5TdHJpbmdXb3JrQ29udGV4dAAAJMi4yLjAuMC4wAAA=</work:WorkContext>
  </S:Header>
- <S:Body>
- <ns13:importAllExportImportResponse
  xmlns:ns13="http://eximp.service.ops.app.fc.ofss.com/ExportImportA
  pplicationService" xmlns:ns12="http://ops.enumeration.fc.ofss.com"
  xmlns:ns11="http://fact.enumeration.fc.ofss.com"
  xmlns:ns10="http://enumeration.fc.ofss.com"
  xmlns:exceptioninfra="http://exception.infra.fc.ofss.com"
  xmlns:validationdtoapp="http://validation.dto.app.fc.ofss.com"
  xmlns:datatype="http://datatype.fc.ofss.com"
  xmlns:contextapp="http://context.app.fc.ofss.com"
  xmlns:dtocoreseedopsapp="http://dto.core.seed.ops.app.fc.ofss.com"
  xmlns:dtocommondomainframework="http://dto.common.domain.framework
  .fc.ofss.com"

```

```

xmlns:errorvalidationinfra="http://error.validation.infra.fc.ofss.com"
xmlns:opsapp="http://ops.app.fc.ofss.com"
xmlns:responseservice="http://response.service.fc.ofss.com">
- <ns13:return>
<responseservice:errorCode>0</responseservice:errorCode>
<responseservice:extendedReply />

<responseservice:internalReferenceNumber>2016305031622004</responseservice:internalReferenceNumber>
<responseservice:isOverriden>>false</responseservice:isOverriden>

<responseservice:isServiceChargeApplied>>false</responseservice:isServiceChargeApplied>
<responseservice:replyCode>0</responseservice:replyCode>
<responseservice:spReturnValue>0</responseservice:spReturnValue>
</ns13:return>
</ns13:importAllExportImportResponse>
</S:Body>
</S:Envelope>

```

8.9.2 Importing All Records

This operation is used to import the records belonging to the given '**TaskCode**' and '**configVersionNo**' into the target environment. This method fetches the exported records based on the '**configVersionNo**' and '**TaskCode**', and upserts the same into the target environment. All records of a Business configuration entity can be imported using the **ImportAll** method of **ExportImportApplicationService**.

The request parameters to this service are:

- TaskCode
- ConfigVersionNo

For performing the import operation, the '**Config Data Source**' needs to be configured in the target environment, this datasource points to the database of the reference environments.

Sample request and response are as below:

Import All Request

```

- <soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:exp="http://eximp.service.ops.app.fc.ofss.com/ExportImportApplicationService"
xmlns:con="http://context.app.fc.ofss.com"
xmlns:exc="http://exception.infra.fc.ofss.com">
<soapenv:Header />
- <soapenv:Body>
- <exp:importAllExportImport>
- <!-- Optional:
-->
- <exp:sessionContext>
<con:bankCode>08</con:bankCode>
<con:businessUnit>OBP_BU</con:businessUnit>

```

```

<con:channel>BRN</con:channel>
<con:marketEntity>SUN01</con:marketEntity>
<con:postingDateText>20130228000000</con:postingDateText>
<con:targetUnit>OBP_BU</con:targetUnit>
<con:transactionBranch>089999</con:transactionBranch>
<con:userId>OFSSUser</con:userId>
</exp:sessionContext>
<exp:taskCode>AL04</exp:taskCode>
<exp:versionNo>186</exp:versionNo>
</exp:importAllExportImport>
</soapenv:Body>
</soapenv:Envelope>

```

Import All Response

```

- <S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/">
- <S:Header>
<work:WorkContext
xmlns:work="http://oracle.com/weblogic/soap/workarea/">r00ABXdWABx
3ZWJsb2dpYy5hcHAub2JwLXdlYnNlcnZpY2VzAAAA1gAAACN3ZWJsb2dpYy53b3JrY
XJlYS5TdHJpbmdXb3JrQ29udGV4dAAAJMi4yLjAuMC4wAAA=</work:WorkContext>
</S:Header>
- <S:Body>
- <ns13:importAllExportImportResponse
xmlns:ns13="http://eximp.service.ops.app.fc.ofss.com/ExportImportA
pplicationService" xmlns:ns12="http://ops.enumeration.fc.ofss.com"
xmlns:ns11="http://fact.enumeration.fc.ofss.com"
xmlns:ns10="http://enumeration.fc.ofss.com"
xmlns:exceptioninfra="http://exception.infra.fc.ofss.com"
xmlns:validationdtoapp="http://validation.dto.app.fc.ofss.com"
xmlns:datatype="http://datatype.fc.ofss.com"
xmlns:contextapp="http://context.app.fc.ofss.com"
xmlns:dtocoreseedopsapp="http://dto.core.seed.ops.app.fc.ofss.com"
xmlns:dtocommondomainframework="http://dto.common.domain.framework
.fc.ofss.com"
xmlns:errorvalidationinfra="http://error.validation.infra.fc.ofss.
com" xmlns:opsapp="http://ops.app.fc.ofss.com"
xmlns:responseservice="http://response.service.fc.ofss.com">
- <ns13:return>
<responseservice:errorCode>0</responseservice:errorCode>
<responseservice:extendedReply />

<responseservice:internalReferenceNumber>2016305031622004</respons
eservice:internalReferenceNumber>
<responseservice:isOverriden>>false</responseservice:isOverriden>

<responseservice:isServiceChargeApplied>>false</responseservice:iss
erviceChargeApplied>
<responseservice:replyCode>0</responseservice:replyCode>
<responseservice:spReturnValue>0</responseservice:spReturnValue>

```

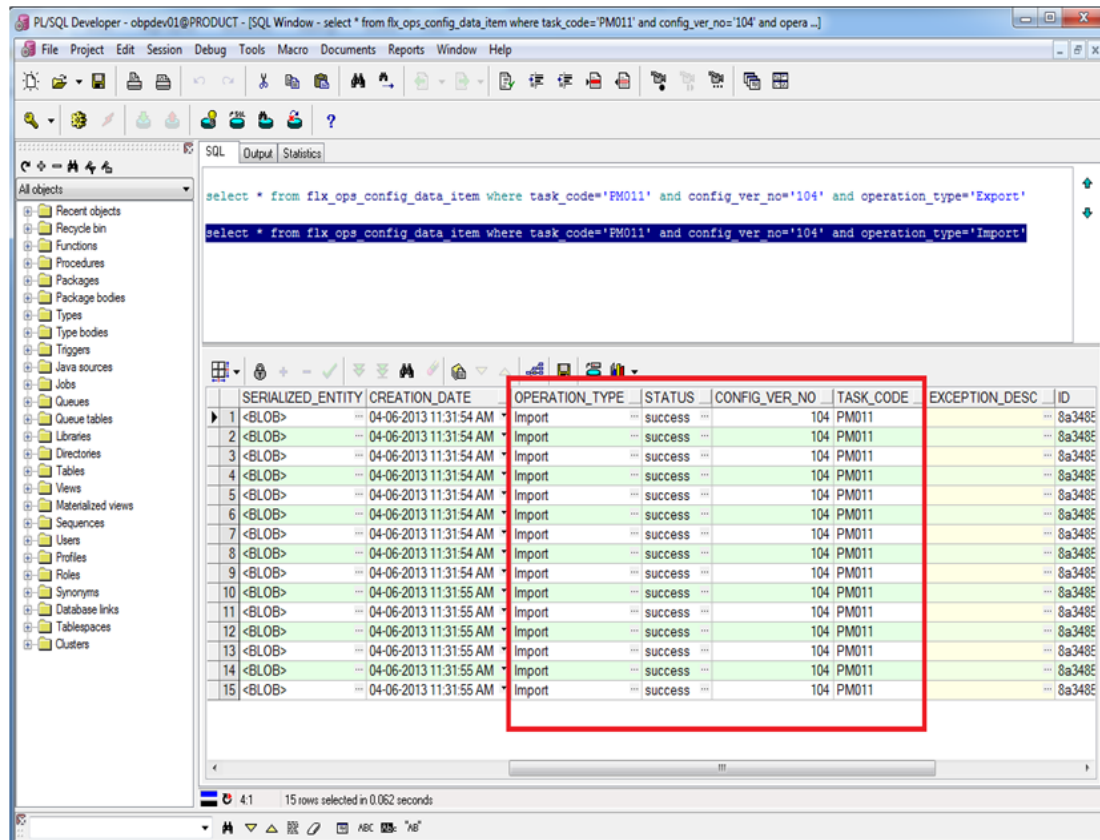
```

</ns13:return>
</ns13:importAllExportImportResponse>
</S:Body>
</S:Envelope>

```

Database entry for imported response will be stored in **fix_ops_config_data_item**.

Figure 8–4 Importing Data Using SOAP UI - Storing Response



8.10 Configuration Comparison

This section describes the details of configuration comparison.

8.10.1 Compare Business Configuration (Fast Path: OPA005)

This page is used to compare two entities on basis of its content.

It provides facility to compare Domain Objects, with same key, for a given task code. It aims at comparing the entities from two database which are termed as **TO** and **FROM** database. The comparison is such as it contains following information:

- Present only in TO database (presently working environment).
- Present only in FROM database (configurable DB environment).

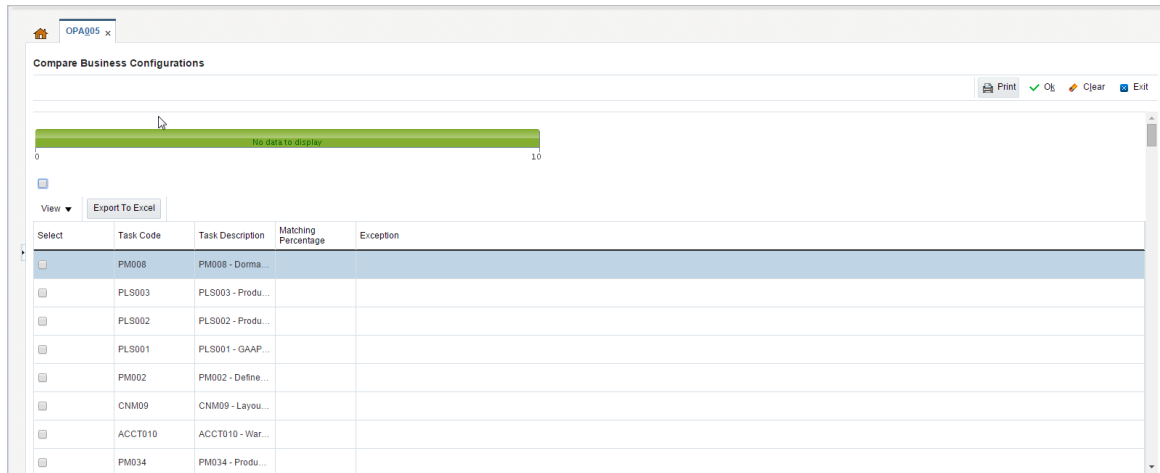
- Present in both, but data is different.

8.10.2 Usage

The comparison results among entities can be generated by performing the following steps:

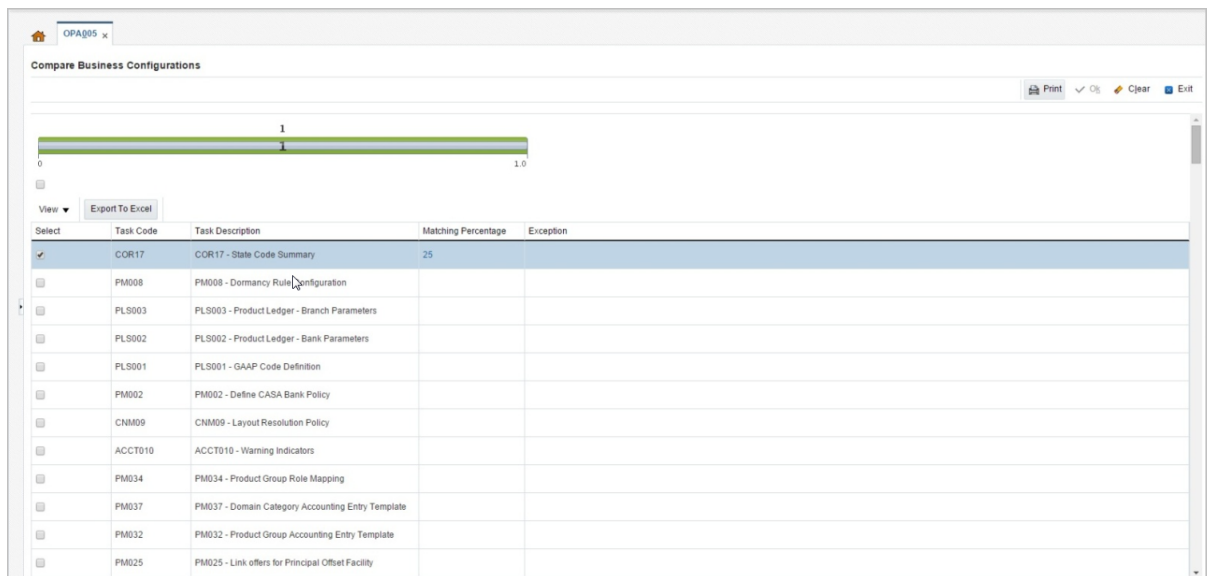
1. Open the OPA005 page, which loads all the entities configured in the table `flx_ops_task_defn`.

Figure 8–5 Entity Comparison



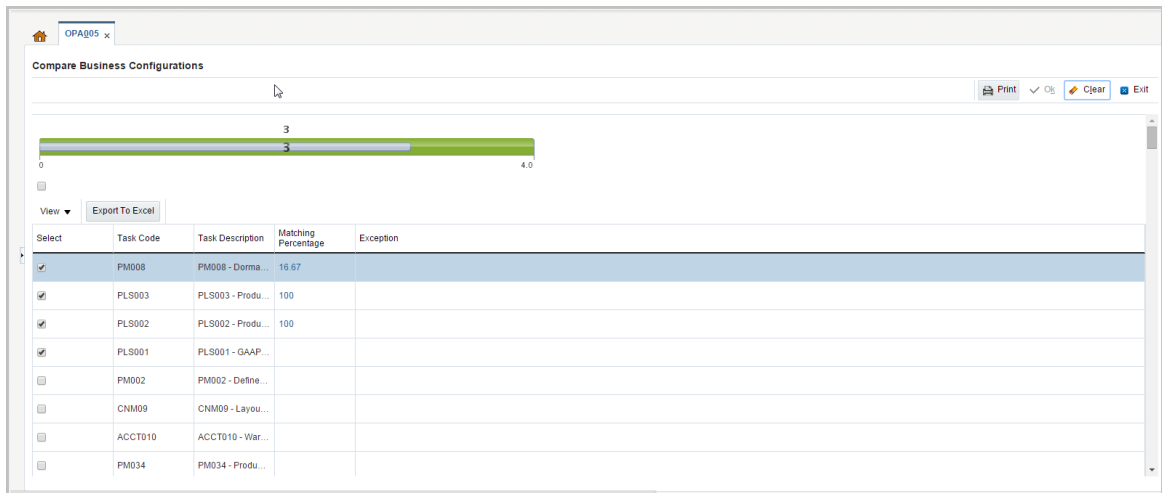
2. Select the option under **Select** column to do the comparison of configuration/configurations which shows the matching % of data in the two environment.

Figure 8–6 Entity Comparison Results



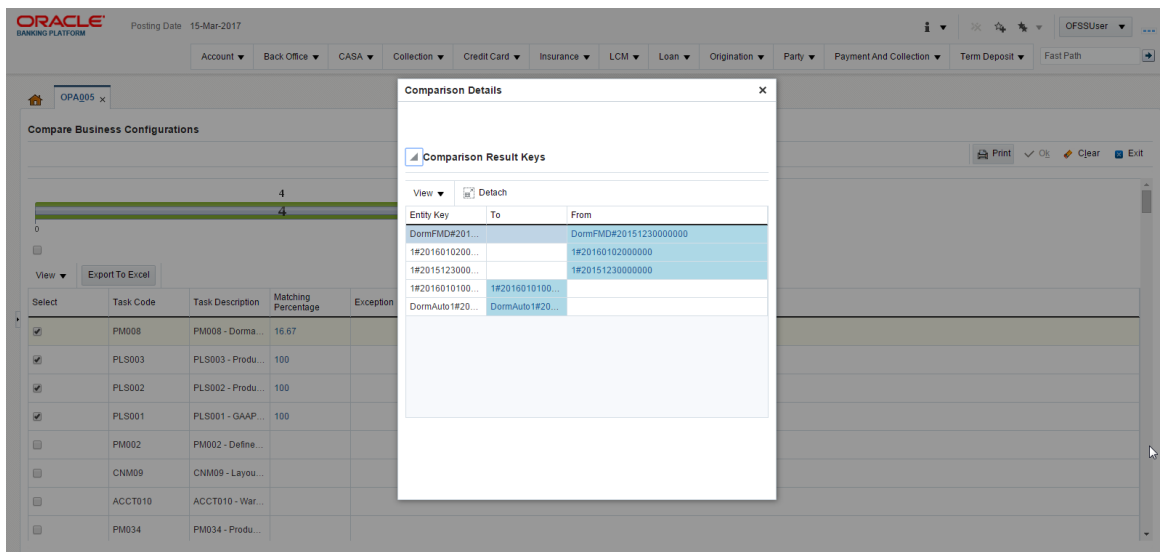
Progress bar denoting that the compare operation has finished.

Figure 8–7 Progress Bar



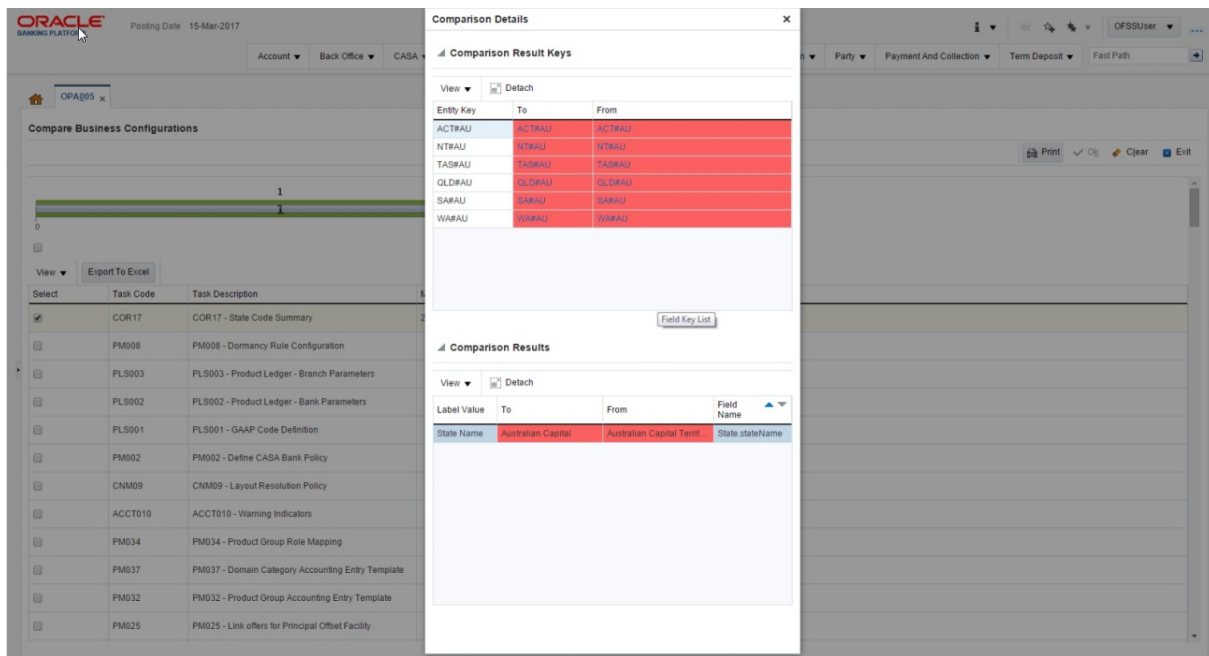
3. Select the % match to launch a pop up which shows the comparison result with different keys associated to it.

Figure 8–8 Comparison Details



4. Select any of the key to see the difference of its associated attributes in the two environment.

Figure 8–9 Attributes Difference



8.11 Application Configuration

This section describes the application configuration details.

8.11.1 Cache Configuration

Configuration cache is where we cache configuration information (stored in the configuration tables in database or some files) for every application on each server in the farm.

The entire application configuration to be cached is pre-defined in **Preferences.xml**.

Sample entries in Preferences.xml are as below:

Preferences.xml

```
<Preferences>
  <Nodes>
    <Preference name="jdbcpreference"
      PreferencesProvider="com.ofss.fc.infra.config.impl.PropertiesFileC
      onfigProvider" parent="" propertyFileName="jdbc.properties"
      syncTimeInterval="600000" />
    <Preference name="ConfigurationVariable"
      PreferencesProvider="com.ofss.fc.infra.config.impl.DBBasedProperty
      Provider" parent="jdbcpreference" propertyFileName="select prop_id,
      prop_value from flx_fw_config_var_b" syncTimeInterval="600000" />
    <Preference name="ChannelConstants"
      PreferencesProvider="com.ofss.fc.infra.config.impl.JavaConstantsCo
      nfigProvider" parent="jdbcpreference"
      propertyFileName="com.ofss.fc.common.ChannelConstantsConfiguration"
      syncTimeInterval="600000" />
  
```

```
<Preference name="JSONServiceMap"
  overriddenBy="JSONServiceMapOverride"
  PreferencesProvider="com.ofss.fc.infra.config.impl.JavaConstantsCo
nfigProvider" parent="jdbcpreference"
  propertyFileName="com.ofss.fc.common.JSONServiceConfig"
  syncTimeInterval="600000" />

.....
</Nodes>
</Preferences>
```

Important parameters in preferences.xml are as follows:

- **PreferencesProvider:** DB based provider, File base provider or Java constant base provider.
- **propertyFileName:** Describes the configuration source. Either sql query, file name or fully qualified Java constant class name.
- **syncTimeInterval:** Refresh time
- **name:** Acts as configuration key in the cache
- **parent:** Enables building the dependency hierarchy
- **overriddenBy:** This parameter specifies the name of preference which will override the current one.

9 Batch Shells in OBLS

This chapter describes the batch shells used in OBLS and their execution sequence.

9.1 Batch Shells Description

The following table lists the batch shells along with their detailed description.

Table 9–1 Shell Description

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
1	0	Reports Health Check	reports_chk_shell	Reports Health Check	FW	This is dummy shell. It is used to check whether report framework is ready to process reports and to check if there is any issue on framework or not.
2	1	End of Day	ac_action_relog_sh	Relog actions on holiday	AC	The actions are logged into the base tables (Module Specific). When there change in calendars, this shell rearranges the pickup dates for all the affected future actions, as per the new calendar dates.
3	1	End of Day	ac_bundle_fee_shell	Bundle Fee Shell	BN	This shell charges the bundle period fees defined while originating CASA.
4	1	End of Day	bundle_report_shell	Bundle Reports	BN	This shell generates the various bundle offer related reports.
5	1	End of Day	ins_quote_exp_eod	Expire Quote EOD Shell	LM	This shell processes all the Insurance quote's quote status to Expired on quote expiry date.
6	1	End of Day	je_susp_bal_shell	Journal Entry Suspense Balancing EOD Shell	JE	This shell checks if each of the single entry batches are balanced, and if not it passes a suspense entry into the branch suspense GL under the same branch. It checks for the balancing Branch wise (Contingent/Real) or Period Code wise.
7	1	End of Day	pc_blr_remit_shell	Biller Remittance Shell	PC	This shell does the consolidation biller amount settlement in EOD, for example, selected settlement mode of biller like CASA or GL during biller setup.
8	1	End of Day	pc_value_	Value Date	PC	This shell moves the funds from unclear to clear balance, where float of instrument

9.1 Batch Shells Description

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
			date_eod_sh	EOD Shell		is getting over at EOD. This is the 1st shell that runs post cut off. Value Date Clearing shell is run for 0 Day float items. Hence, it becomes mandatory to run it with the current process date even though cut off has been run. This is taken care of by the Value Date Clearing Shell. As the float realization is derived based on branch dates, the date is always set to the working day of the branch.
9	1	End of Day	pi_srv_ord_sta_eod	Service Order Deactivation EOD Shell	PI	This shell handles de-activation of Service Orders based on Service Order end date. (US localization specific shell)
10	1	End of Day	py_bank_val_date_eod	Bank Value Date EOD Shell	PY	This shell will intimate the respective account modules (CASA\Loans\TD) on a given Bank Value Date for any valid transaction posted successfully in Payments module. The respective account module will update the Bank Float Balance bucket for the respective accounts on this date which is taken further for interest calculations. The funds are still not available for the customer.
11	1	End of Day	py_regcc_sch_gen	Reg CC Schedule Generation EOD Shell	PY	This shell will pick the valid transactions posted in Payments module and generate the schedule of fund availability for the respective account (Reg CC capable CASA accounts only) as per the rules defined in the system for Reg CC. (US localization specific shell)
12	1	End of Day	py_regcc_sch_rel_eod	Reg CC Schedule Release EOD Shell	PY	This shell will process only the accounts which follow the RegCC contract in the US localization. This shell will make funds available to the customer as per the generated schedule from "Reg CC Schedule Generation EOD Shell". (US localization specific shell)
13	1	End of Day	je_batch_hist_shell	Journal Entry Batch History EOD Shell	JE	This shell performs the following activities: <ol style="list-style-type: none"> 1. Moves the Journal Entries (Single and Multi) details into history. 2. Flushes the Batch codes table (Single and Multi). 3. Drops the Sequences related to the above batch codes which are used to generate the Journal Entry Reference numbers.
14	1	End of Day	pl_onl_ledg_bal_upd	Online Ledger Entries Update	AS	This shell updates the GL balance of all the online transactions in the day. If the GL balance is updated using MDB, then there is contention for huge number of entries and hence batch shell to update the GL balance ap_as_gl_bal_update_on
15	1	End of Day	pc_report_	PC Reports	PC	This shell generates Payments and Clearing Reports.

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
			shell			
16	1	End of Day	py_cust_val_date_eod	Customer Value Date EOD Shell	PY	This shell will intimate the respective account modules (CASA\Loans\TD) on a given Customer Value Date for any valid transaction posted successfully in Payments module. The respective account module will make the funds available for the customer on this date. This will process the transactions in EOD.
17	1	End of Day	eod_preval	EOD pre validation Shell	DD	Reprice Failed Accounts Verify. The shell is to cross check if there are still pending accounts, for which repricing was failed. EOD will not start if there are such pending accounts.
18	1	End of Day	pr_price_changes_eod	Price change action log shell for account opened today	PR	This shell identifies the accounts (which are opened today) eligible for rate and fee changes and logs action for further processing in pr_reprice_acn_eod shell.
19	1	End of Day	pr_reprice_acn_eod	Reprice Action shell for account opened today	PR	This shell processes accounts (which are opened today) for interest or fee changes happened in the system.
20	1	End of Day	ln_contri_eod_shell	Loan Contribution EOD Shell	LN	This shell processes customer's Contribution Instruction set at time of Origination.
21	1	End of Day	ac_stl_pyt_eod_shell	Account Settlement Payout EOD Shell	AC	This shell execute settlement pay out instructions that are maintained on CASA & Loan Accounts
22	1	End of Day	ln_split_eod_shell	Split Loan Account Opening EOD Shell	LN	Split Loan Account Opening and Disbursement request execution
23	1	End of Day	ln_actn_eod_shell	Loans Action Due EOD Shell	LN	This shell performs the following actions: <ul style="list-style-type: none"> ■ Interest Charging ■ Interest Compounding

9.1 Batch Shells Description

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
						<ul style="list-style-type: none"> ■ Interest Cap ■ Fee Cap ■ Customer Initiated Rollover ■ Auto Disbursement ■ Repayment Review (Apply and Generate) also called as periodic reschedule
24	1	End of Day	td_eod_report_shell	TD EOD Reports	TD	This shell generates TD related reports in EOD.
25	1	End of Day	ln_actn_post_eod_sh	Loan Post Action Due EOD Shell	LN	When a backdated index change is done and as part of the processing in EOD, it fails due to a proper business reason (funds not there or beyond redraw) as part of the replay process, the backdated rate change is skipped. Subsequently, when a payment happens on the account action for retrying the backdated rate change is logged on the account which gets picked up in Loan Post Action Due EOD Shell. It will get picked up if the action date happens to be a holiday.
26	1	End of Day	ln_report_shell	Loan Reports	LN	Loan Related Reports
27	1	End of Day	ins_eod_action	Insurance EOD Shell	LM	This shell is used for insurance expiry alerts. Customer gets the notification about expired insurances.
	1	End of Day	lm_market_reval	Market Revaluation Shell	LM	This shell revaluates the Collaterals as per current market values.
	1	End of Day	lm_util_reval	Utilization Revaluation	LM	If the utilization of the credit facility is done in a currency which is not the same as its currency, then revaluation process will be triggered as part of the End of the Day process.
	1	End of Day	lm_batch_p_eod_shell	LCM EOD Pre Processor	LM	This shell is used to form a group of lcm eod actions for processing in multi streams.
	1	End of Day	lm_batch_eod_shell	Limits And Collaterals Batch	LM	Credit Facility Review: Credit Facility can be subjected to review based on the parameters set during the creation of the facility. On the review date, the facility is submitted to the rule engine for processing. The rule ID is maintained as part of the

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
						<p>facility category. On successful completion the next review date, facility conduct is updated on the credit facility.</p> <p>Credit Facility Earmarking Expiry: LCM system provides an option to block/earmark the credit facility for a certain amount. This amount will not contribute towards the available amount of the facility. On the start date, the amount has to be moved into the earmarked amount column which will ensure that the amount will not be utilized. A reinstatement of the earmarked amount is to be done on the earmark expiry date.</p> <p>Credit Facility Transfer Expiry: LCM system provides option of transfer of the available amount of the facility to the another facility. The facility transfer is bound by a start and end date. On the facility transfer expiry date, the transfer amount needs to be reinstated to the facility. This is handled in the batch.</p> <p>Facility Amount Schedule Processing: System provides an option define the facility amount in schedules. The amount can be an increase/decrease to the existing sanctioned amount. The amount stored is the effective amount. On the start date, the effective amount maintained will become the effective Limit of the facility. On the end date, the amount will be removed and the new limit amount will be calculated.</p> <p>Credit Facility Availment Expiry Date: The credit facility created is expected to be utilized within a particular date. For example, first drawdown of the loan has to be done before the Availment expiry date. In case it is not done, the facility will be made unavailable.</p> <p>Facility Expiry Date Processing: The facility being created can have an expiry date. On the expiry date of the facility, system is expected to make the facility unavailable for further utilization.</p>
1	End of Day	In_intrst_comp_shell	Loan Interest Computation EOD Shell	LN	This shell does Interest Computation (balance change).	
1	End of Day	In_stmt_log_shell	Loan Statement logging Shell	LN	Statement Item generation based on frequency maintained at the product level Records from the last statement generation date to current date is copied to Statement Item. Statement Generation is not done in this shell. Data is copied from Loan Financial Statement to Statement Item.	
1	End of Day	ac_bundle_exp_poller	Bundle Expiry Poller Shell	BN	This shell maintains Track Bundle expiry.	
1	End of Day	np_eod_acion	Asset Classification	NP	This shell processes all EOD actions of Asset Classification module using action framework.	

9.1 Batch Shells Description

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
				EOD action		
1	End of Day	np_account_classify	Account Level Asset Classification	NP	This is the first and mandatory shell for asset classification which processes all the Loan, CASA, and OD accounts which are due for classification as per the current processing date. The process derives the expected classification code using the rule setup on the product class. The rule is based on arrears information received from the module along with other information like limit expiry, TOD or overline. Based on the classification code details, it will be arrived at whether the classification has to be Manual or Automatic. In case of Manual classification, the expected classification code is stamped and the process continues with the next account. In case of Automatic classification, the expected classification code and actual classification code will be stamped the same. Necessary accounting entries will be passed for Normal to Suspended or Suspended to Normal movements. The new classification code, classification status (Normal or Suspended) and clawback details (only in case of forward movement) will be sent to Loan/CASA/OD module. Customer alerts will be generated as required.	
1	End of Day	np_party_classify	Party Level Asset Classification	NP	This shell runs immediately after account shell, if the asset classification applicability level is Party. This process first determines the worst classification of the party by comparing the expected code of all accounts under the party that have been classified today and actual code of the remaining accounts under the party. Based on the classification code details, it will be arrived at whether the classification has to be Manual or Automatic. In case of Manual classification, the worst classification code will be stamped as the expected classification code of the party and the same will be propagated as the expected code of all accounts under the party, and the process continues with the next party. In case of Automatic classification, the worst classification code will be stamped as the expected classification code and actual classification code of the party. The same will be propagated as the expected classification code and actual classification code of all accounts under the party. For each account under the party, necessary accounting entries will be passed for Normal to Suspended or Suspended to Normal movements. The new classification code, classification status (Normal or Suspended) and clawback details (only in case of forward movement) will be sent to Loan/CASA/OD module. Customer alerts will be generated as required.	
1	End of Day	np_facility_classify	Facility Level Asset Classification	NP	This shell runs immediately after account shell, if the asset classification applicability level is Facility. This process first determines the worst classification of the facility by comparing the expected code returned from the facility rule, the	

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
						expected code of all accounts under the facility that have been classified today and actual code of the remaining accounts under the facility. Based on the classification code details, it will be arrived at whether the classification has to be Manual or Automatic. In case of Manual classification, the worst classification code will be stamped as the expected classification code of the facility and the same is propagated as the expected code of all accounts under the facility, and the process continues with the next facility. In case of Automatic classification, the worst classification code will be stamped as the expected classification code and actual classification code of the facility. The same is propagated as the expected classification code and actual classification code of all accounts under the facility. For each account under the facility, necessary accounting entries will be passed for Normal to Suspended or Suspended to Normal movements. The new classification code, classification status (Normal or Suspended) and clawback details (only in case of forward movement) will be sent to Loan/CASA/OD module. Customer alerts will be generated as required.
1	End of Day	End of Day	eod_report_shell	EOD Reports	AL	This shell generates reports in EOD.
1	End of Day	End of Day	as_eod_check	Accounting Verification	AS	This shell ensures that the Accounting events raised for the day are processed and all the balances updated. It also verifies whether the system is balanced (Credits and Debits match) for certain criteria for all the accounting entries raised and also for the period balance update.
1	End of Day	End of Day	eod_epilogue	EOD Epilogue	EO	This shell waits for all the reports to be generated and changes the Process date.
2	Beginning of Day	Beginning of Day	ac_bod_bn_fee_shell	BOD Bundle Fee Shell	BN	This shell processes the subscription and maintenance fees.
2	Beginning of Day	Beginning of Day	as_untank_adjustment	Untanking Adjustment Posting	AS	The shell is used to process Untanking Adjustment entries during the batch.
2	Beginning of Day	Beginning of Day	ins_bod_action	Insurance BOD Shell	LM	This shell is responsible for renewing the premium of CCI policy for next review period. If CCI is loan funded, then next review premium is charged on the nominated loan or OD account.
2	Beginning of Day	Beginning of Day	lz_pi_child_exmpt_sh	Exemption code BOD shell	PI	The shell is used to automatically update the Identification Type to TFN and Identification value to NO TFN of a party (onboarded as child) when the party turns 17 years.

9.1 Batch Shells Description

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
						(Australia localization specific shell)
2	Beginning of Day	pc_business_transfr	Business Transfer Periodic Execution BOD Shell	PC	Business Transfer SI Execution Shell	
2	Beginning of Day	pc_value_date_shell	Value Date BOD Shell	PC	This shell moves the funds from unclear to clear balance, where float of instrument is getting over at BOD. Value Date Clearing shell in BOD is run for more than 0 day float items. Hence it becomes mandatory to run this with the current process date, even though cut off has been run. This is taken care of by the Value Date Clearing Shell. As the float realization will be derived based on branch dates, the date will be always set to the working day of the branch.	
2	Beginning of Day	pi_srv_ord_sta_bod	Service Order Activation BOD Shell	PI	This shell handles activation of Service Orders based on Service Order start date. (US localization specific shell)	
2	Beginning of Day	py_auto_credit_bod	Payments Auto Credit Run BOD Shell	PY	This shell processes records for outward collection transactions and intimate the respective modules (CASA/LOANS) on customer value date configured in the Bank Float Definition. This shell is effective only if the Bank Float Definition is configured to not wait for network settlement in case of non-unclear balance method treatment.	
2	Beginning of Day	py_cust_val_date_bod	Customer Value Date BOD Shell	PY	This shell will intimate the respective account modules (CASA\Loans\TD) on a given Customer Value Date for any valid transaction successfully posted in Payments module. The respective account module will make the funds available for the customer on this date. This will process the transactions in BOD.	
2	Beginning of Day	py_regcc_sch_rel_bod	Reg CC Schedule Release BOD Shell	PY	This shell will intimate the account module (Reg CC capable CASA accounts only) with fund value that has to be made available for the customer on this date as per the schedule generated in Reg CC Schedule Generation EOD Shell for the respective accounts. (US localization specific shell)	
2	Beginning of Day	as_untank_bod_shell	Accounting Un-tanking Shell	AS	This shell is used to un-tank the accounting entries during batch process. Online Transactions during EOD do not process accounting entries but are tanked. This shell processes accounting of the tanked records.	
2	Beginning of	lm_batch_p_	LCM BOD Pre	LM	This shell is used to form a group of lcm bod actions for processing in multi	

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
		Day	bod_shell	Processor		streams.
2		Beginning of Day	pc_activ_date_shell	Activation Date BOD Shell	PC	This shell takes the data of those transaction which are getting activated for processing for that day. For e.g- transaction like Outward collection, flat extended inward and outward clearing, future dated outgoing payments etc
2		Beginning of Day	lm_batch_bod_shell	Limits Bod Batch	LM	Same as Limits And Collaterals Batch shell in EOD Category
2		Beginning of Day	ln_post_trans_bod	Loan Transaction BOD shell	LN	This shell processes all the transactions done after cutoff is run.
2		Beginning of Day	ln_contri_bod_shell	Loan Contribution BOD Shell	LN	This shell processes customer's Contribution Instruction set at time of Origination.
2		Beginning of Day	ac_stl_pytd_bod_shell	Account Settlement Payout BOD Shell	AC	This shell executes settlement pay out instructions that are maintained on CASA and Loan Accounts.
2		Beginning of Day	ln_split_bod_shell	Split Loan Account Opening BOD Shell	LN	Split Loan Account Opening and Disbursement request execution - Guided by holiday processing logic
2		Beginning of Day	ln_actn_bod_shell	Loan Action due BOD shell	LN	<p>This shell does the following actions:</p> <ul style="list-style-type: none"> ■ Interest Charging ■ Interest Compounding ■ Interest Cap ■ Fee Cap ■ Customer Initiated Rollover ■ Auto Disbursement - Guided by holiday processing logic ■ Repayment Review (Apply and Generate) also called as periodic reschedule

9.1 Batch Shells Description

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
						<ul style="list-style-type: none"> - Guided by holiday processing logic ■ Backdated PPF - These transactions will get processed as a part of host EOD. ■ Back dated installment - These transactions will get processed as a part of host EOD.
2	Beginning of Day	Beginning of Day	In_actn_post_bod_sh	Loan Post Action due BOD shell	LN	When a backdated index change is done and as part of the processing in EOD, it fails due to a proper business reason (funds not there or beyond redraw) as part of the replay process, the backdated rate change is skipped. Subsequently, when a payment happens on the account, action for retrying the backdated rate change is logged on the account which gets picked up in Loan Post Action Due BOD Shell.
2	Beginning of Day	Beginning of Day	bod_report_shell	BOD Reports	AL	This shell generates reports.
2	Beginning of Day	Beginning of Day	bod_epilogue	BOD Epilogue	EO	This shell waits for all the reports to be generated.
3	Cut Off	Cut Off	co_cutoff_prologue	Cutoff Prologue	CO	This shell is used to indicate that the cut off has been started by setting the flg_cutoff_run_today in flx_cs_branch_dates_b to 'Y'. (This flag is set back to 'N' at the end of the EOD category.)
12	FSDf master data hand-off	FSDf master data hand-off	handoff_initialise	Analytics Hand-Off Initialisation Shell	DI	This shell initializes the start time of CSA (Common staging area) data handoff time frame.
12	FSDf master data hand-off	FSDf master data hand-off	handoff_shell	Analytics Hand-Off Shell	DI	This shell initiates all ODI scenario execution defined in FLX_DI_ETL_JOB_DEFINITION table.
12	FSDf master data hand-off	FSDf master data hand-off	epilogue_shell	Analytics epilogue Shell	DI	This shell checks all running ODI scenario execution status. If any error occurs, the scenario execution is restarted after resolve.
13	FSDf EOD data hand-off	FSDf EOD data hand-off	handoff_shell	Analytics Hand-Off Shell	DI	This shell initiates all ODI scenario execution defined in FLX_DI_ETL_JOB_DEFINITION table.
13	FSDf EOD data hand-off	FSDf EOD data hand-off	epilogue_shell	Analytics epilogue Shell	DI	This shell checks all running ODI scenario execution status. If any error occurs, the scenario execution is restarted after resolve.

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
14	FSDf Txn data Hand-off	FSDf Txn data Hand-off	handoff_shell	Analytics Hand-Off Shell	DI	This shell initiates all ODI scenario execution defined in FLX_DI_ETL_JOB_DEFINITION table.
14	FSDf Txn data Hand-off	FSDf Txn data Hand-off	epilogue_shell	Analytics epilogue Shell	DI	This shell checks all running ODI scenario execution status. If any error occurs, the scenario execution is restarted after resolve.
15	Analytics Batch Data Hand-off	Analytics Batch Data Hand-off	handoff_initialise	Analytics Hand-Off Initialisation Shell	DI	This shell initializes the start time of CSA (Common staging area) data handoff time frame.
15	Analytics Batch Data Hand-off	Analytics Batch Data Hand-off	handoff_shell	Analytics Hand-Off Shell	DI	This shell initiates all ODI scenario execution defined in FLX_DI_ETL_JOB_DEFINITION table.
15	Analytics Batch Data Hand-off	Analytics Batch Data Hand-off	epilogue_shell	Analytics epilogue Shell	DI	This shell checks all running ODI scenario execution status. If any error occurs, the scenario execution is restarted after resolve.
16	Internal System EOD	Internal System EOD	ac_actn_ieod_shell	Account Action Internal EOD Shell	LN	This shell processes all Internal EOD actions of Account module using action framework.
16	Internal System EOD	Internal System EOD	interest_eod_action	Interest Shell	IN	<p>This shell does following activities:</p> <ul style="list-style-type: none"> ■ Interest Accrual Process: When interest accrual is done, system raises events for the current working day, even though the cut off has been executed. This is required to enable posting of transaction on the current date and not for the next working day. It looks up at the host date. ■ Interest Capitalization: Based on holiday processing logic. ■ Interest Compounding: Based on holiday processing parameter. ■ Related tax events for any of the above functions, as configured, based on holiday processing parameter.
16	Internal System EOD	Internal System EOD	lending_acct_stat	Lending Account Statistics Shell	AC	This shell is responsible for recording data required for reporting purposes of a Loan and LOC account. Delinquency, account status, arrears of an account are populated which is further extracted for reporting purposes.

9.1 Batch Shells Description

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
	16	Internal System EOD	pi_eod_shell	Party EOD Shell	PI	This shell is used to process the Party Due Diligence Expiry if the Expiry date is a holiday.
	16	Internal System EOD	as_batch_verify	Accounting batch Verification Shell	AS	<p>There are certain checks and validations that are done as part of the Accounting in the EOD framework. These checks ensure that the system has balanced accounting entries, correct ledger balances and system account balances. Some of the checks are listed below:</p> <ul style="list-style-type: none"> ■ Ensure that all the accounting events raised for the day are processed. ■ Ensure that all the accounting entries generated for the day are updated for the ledger and system account balances. ■ Ensure that the accounting entries raised for the day are balanced. The balancing has to be branch wise and not group wise. ■ Ensure that period balances for ledger and system account are balanced.
	16	Internal System EOD	pl_ledg_bal_upd	Deferred Ledger Balance Update	AS	For all the events raised during the batch process, the ledger balances will not be updated near online (no messages will be put into the Balance queue for processing). The ledger balances for such events will be Deferred and the balance will be updated through a procedure in the Internal EOD and as part of BOD (last batch in BOD). This is done to ensure that there is no lock on the ledgers when the balance update happens. (Scenario: when most of the accounts are mapped to the same product and hence update the same GL.)
	16	Internal System EOD	pl_sdeadjmt_eod_shel	SDE Adjustment Shell	AS	This shell is used to adjust the system account balances if there are any change in the account, party and product attributes.
	16	Internal System EOD	as_verify_prereval	Accounting batch Pre Revaluation Verify Shell	AS	<p>Some of the checks that are done are listed below:</p> <ul style="list-style-type: none"> ■ Ensure that all the accounting events raised for the day are processed. ■ Ensure that all the accounting entries generated for the day are updated for the ledger and system account balances. ■ Ensure that the accounting entries raised for the day are balanced. The balancing has to be branch wise and not group wise.

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
						<ul style="list-style-type: none"> Ensure that period balances for ledger and system account are balanced.
16	Internal System EOD	Internal System EOD	pl_reval_eod_shell	Revaluation Shell	AS	Ledgers whose balances are maintained in the Foreign Currency will be revalued (if required) based on a specific Reval Rate. This is done when all the batch transactions are completed in the OBP system, since the current/closing balance of the ledgers are used for this purpose.
16	Internal System EOD	Internal System EOD	as_verify_prefinclsr	Accounting batch Pre Fin Closure Verify Shell	AS	Same as per accounting verification.
16	Internal System EOD	Internal System EOD	pl_fin_period_shell	Balance FIN Period Creation Shell	AS	It creates the system period FIN whenever applicable.
16	Internal System EOD	Internal System EOD	pl_finclose_eod_shel	Financial Closure Shell	AS	When the financial cycle changes, the system has to calculate the Profit/Loss for the current financial year and has to post to the Profit/Loss ledgers maintained. This will include the zeroization of the Income/Expense Ledgers and posting the profit or loss to the Profit/Loss Accounts maintained. This operation is done on the system period code FIN. All the accounting entries created for this purpose are posted in the FIN period.
16	Internal System EOD	Internal System EOD	as_verify_prerptglns	Accounting batch Pre Reporting Lines Verify Shell	AS	Same as per accounting verification
16	Internal System EOD	Internal System EOD	pl_rptglns_eod_shell	ReportingLines Shell	AS	If the bank requires Central Bank and Head Office Reporting system obtains the rule code maintained for the ledger, derives the Reporting GL and creates balances for the Reporting ledger.
16	Internal System EOD	Internal System EOD	as_verify_prearchiv	Accounting batch Pre Archive Verify Shell	AS	<p>There are certain checks and validations that are done as part of the Accounting in the EOD framework. These validations are to ensure that the system has balanced accounting entries, correct ledger balances and system account balances. Some of the checks are listed below:</p> <ul style="list-style-type: none"> Ensure that all the accounting events raised for the day are processed.

9.1 Batch Shells Description

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
						<ul style="list-style-type: none"> ■ Ensure that all the accounting entries generated for the day are updated for the ledger and system account balances. ■ Ensure that the accounting entries raised for the day are balanced. The balancing has to be branch wise and not group wise. ■ Ensure that period balances for ledger and system account are balanced. <p>All the checks are with respect to each account branch and not branch group.</p>
16	Internal System EOD	Internal System EOD	pl_intr_eod_rep_shell	PL Internal EOD Report Shell	PL	This shell generates Ledger related reports in EOD.
16	Internal System EOD	Internal System EOD	pl_balance_history	Periodic PL balance history	PL	This shell archives GL Period balances.
16	Internal System EOD	Internal System EOD	pl_period_bod_shell	Balance Period Creation Shell	AS	If there is a period change, then the system moves the period balances of the last month to the current month. The opening balances are updated and the movements for the current period is set to 0. The period balance update and the working of this shell are tightly coupled.
16	Internal System EOD	Internal System EOD	int_eod_report_shell	Internal EOD Reports	AL	This shell generates Reports during Internal system EOD.
16	Internal System EOD	Internal System EOD	int_eod_epilogue	Int EOD Epilogue	EO	This shell waits for all the reports to be generated.
18	Clearing	Clearing	pc_rej_reproc_shell	Scan Reject Reprocess Shell	PC	This shell reprocesses Reject Items.
18	Clearing	Clearing	pc_scn_pas_plr_shell	Scan Pass Poller Shell	PC	Honored Items Poller
18	Clearing	Clearing	pc_oc_return_shell	Outgoing Clearing Return Shell	PC	OC Return Shell
17	Sales Offer Handoff	Sales Offer Handoff	pm_sales_offer_hoff	Sales Offer Handoff Shell	PM	

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
17	Sales Offer Handoff	Sales Offer Handoff	handoff_shell	Analytics Hand-Off Shell	DI	This shell initiates all ODI scenario execution defined in FLX_DI_ETL_JOB_DEFINITION table.
17	Sales Offer Handoff	Sales Offer Handoff	epilogue_shell	Analytics epilogue Shell	DI	This shell checks all running ODI scenario execution status. If any error occurs, the scenario execution is restarted after resolve.
19	CMD Hand-off	CMD Hand-off	cmd_handoff_shell	CMD Hand-Off Shell	DI	This shell initiates ODI task for Datamart population for Credit Monitor Dashboard.
19	CMD Hand-off	CMD Hand-off	cmd_epilogue_shell	CMD epilogue Shell	DI	This shell monitors and allows for restart of ODI task for Datamart population for Credit Monitor Dashboard.
23	Global Float	Global Float	pc_glb_ft_ext_shell	Global Float Extension Shell	PC	Global Float Extension
30	Scan Payment Queue Process	Scan Payment Queue Process	pc_scn_rej_plr_shell	Scan Reject Poller Shell	PC	Rejected Items Poller
63	Business Transfer	Business Transfer	pc_b_colln_cdt_shell	Business Collection Credit Shell	PC	Business Collection Credit
63	Business Transfer	Business Transfer	pc_b_pymt_dbt_shell	Business Payment Debit Shell	PC	Business Payment Debit
63	Business Transfer	Business Transfer	pc_b_colln_dbt_shell	Business Collection Debit Shell	PC	Business Collection Debit
63	Business Transfer	Business Transfer	pc_b_pymt_cdt_shell	Business Payment Credit Shell	PC	Business Payment Credit
69	mdm_Publish	mdm_Publish	mdm_publish_shell	mdm Publish	IN	This shell publishes to OCH following status updates taken place during EOD: <ul style="list-style-type: none"> ■ Account closures during batch execution

9.1 Batch Shells Description

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
						<ul style="list-style-type: none"> ■ Account opening during batch execution ■ KYC updates during batch execution
	100	Health Check	health_chk_shell	Health Checkup Shell	FW	This is dummy shell. It is used to check whether framework is ready to process batch and to check if there is any issue on framework or not.
	100	Health Check	excep_pending_shell	Batch Exceptions Pending Check Shell	FW	This shell will check in exception log for all unprocessed records which marked as deferred. If any record is found, then this shell will be marked as aborted as there are still pending exception record available.
	102	Analytics Result Upload	rslt_handoff_shell	Analytics Result Upload Shell	DI	This shell initiates OFSAA LLFP result area data upload scenario execution.
	102	Analytics Result Upload	rslt_epilogue_shell	Analytics Result Upload Epilogue Shell	DI	This shell checks OFSAA LLFP result area data upload scenario execution status. If any error occurs, the scenario execution is restarted after resolve.
	117	Housekeeping	ac_arrear_history	Arrear history shell.	AC	This shell moves the details from FLX_AC_ARREAR_DETAILS_B to FLX_AC_ARREAR_DETAILS_H.
	117	Housekeeping	ac_casa_housekeeping	CASA housekeeping shell.	AC	This shell updates the account statistics by moving the details to history in last day of the month.
	117	Housekeeping	ac_stl_alrt_scdl	Procssing of Frequency based Alerts	DD	This shell executes the recurring alerts.
	117	Housekeeping	acct_benefit_shell	Account Benefit Shell	AC	This shell calculates amount benefited due to offset account.
	117	Housekeeping	as_hist_log_eod_shel	Accounting Transaction History Log Shell	AS	This shell archives accounting events and accounting entries into history table.
	117	Housekeeping	ba_purge_shell_proc	Procedure based Purge	DD	This procedure based shell purges data with desired retention policy at configured purge frequency. This shell works on purge configuration (seed data) that stores

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
				shell to be run during Housekeeping		purge related configuration like when to purge, how much data to retain, at what frequency, any additional where clause if any, whether or not to move data to history table, etc.
117	Housekeeping		bd_unclaimed_shell	Bank Darft unclaimed shell	PC	The bank draft which has breached unclaimed period, is picked up and marked the instrument status as Unclaimed.
117	Housekeeping		da_event_h_eod_shell	Accounting Event History Shell	AS	This shell archives accounting events and accounting entries into history table.
117	Housekeeping		dd_hsk_actions	Processing of House Keeping shell	DD	This shell logs periodic alerts and maintain counters for CASA account.
117	Housekeeping		lm_auto_closur_shell	Facility Auto Closure Shell	LM	For non revolving facilities, auto closure will be done and all the records are picked up for processing in this shell.
117	Housekeeping		lm_exp_track_shell	Exposure Tracking Shell	LM	The exposures for the bank is tracked across the dimensions party and account. LCM tracks all the exposure of the transaction based on the facts that are created for the account and party. The exposure values are calculated and shown across each fact values. For example, the bank might require to track the exposure under different currency. The account fact is defined as the currency code and each transaction in the system will be tracked against the account currency and the exposures are calculated under each different currency.
117	Housekeeping		lm_insider_exp	Insider Exposure Tracking Shell	LM	This shell calculates the exposure of an insider. This data will be used while creating/amending the facility to check the total exposure of an insider for breach calculation.
117	Housekeeping		ln_adv_alert_shell	Loan Advance Alert Action BOD Shell	LN	This shell sends alerts based on Lead and Lag Days defined at product levels.
117	Housekeeping		move_drv_table_data	Move driver table data to History table	DD	This shell moves Driver table data into History Table.
117	Housekeeping		np_prvsn_updt_shell	Account Level	NP	This shell is used for Account Level Provision Update.

9.1 Batch Shells Description

Sr. No.	Process Category	Category Description	Shell	Shell Description	Module Code	Detailed Description
				Provision Update		
117	Housekeeping		or_sub_exp_shell	Submission EOD Expiry Shell	OR	This shell expires the submission IDs which have breached the defined submission period.
117	Housekeeping		pi_bod_shell	Party BOD Shell	PI	This shell is used to process the Party Due Diligence Expiry if it falls on a working day. This shell also updates the future party address getting active on this day. It updates such addresses to be current and marks the previous current address as past.
117	Housekeeping		ln_stmt_gen_shell	Loan Statement Generation EOD Shell	LN	This shell generates all the loan account statements.
117	Housekeeping		ac_pop_domain_ind	Domain index tables populate shell	AC	This shell populates the domain index table, which is used for Oracle text search.
120	Alert Generation		ep_generation_shell	Alert generation Shell	DI	All pending alert requests is picked and processed. If the status of the alert is generated state, it means processing is pending for the alerts. This shell picks the alerts which are less than current date.
125	Adhoc Scheduler Online		as_online_ledg_upd	Online Ledger Balance Update Shell	AS	This shell handles the Ledger balance posting of online accounting entries.
127	Human Task Action		wf_task_resume_shell	Human Task Resume Shell	WF	
247	Reprice		pr_acrl_batch_shell	Price Accrual Batch Shell	PR	This shell identifies accounts and performs fee accrual.
247	Reprice		pr_price_changes	Price change log online shell	PR	This shell identifies the accounts (which are not opened today) eligible for rate and fee changes and logs action for further processing in pr_reprice_action shell.
247	Reprice		pr_reprice_action	Reprice action online Shell	PR	This shell processes accounts (which are not opened today) for interest or fee changes happened in the system.

9.2 Batch Shells Execution Sequence

The following table presents the execution sequence of the batch shells.

Table 9–2 Shell Execution Sequence

Sr. No.	Process Category	Category Description	Category Significance	Shell Execution Sequence	Shell	Shell Description	Module Code	Required Shells	Required Shell Description
1	100	Health Check	Optional	1	health_chk_shell	Health Checkup Shell	FW		
2	100	Health Check	Optional	1	excep_pending_shell	Batch Exceptions Pending Check Shell	FW		
3	0	Reports Health Check	Optional	1	reports_chk_shell	Reports Health Check	FW		
4	3	Cut Off	Mandatory	1	co_cutoff_prologue	Cutoff Prologue	CO		
5	1	End of Day	Mandatory	1	ac_bundle_fee_shell	Bundle Fee Shell	BN		
6	1	End of Day	Mandatory	1	bundle_report_shell	Bundle Reports	BN		
8	1	End of Day	Mandatory	1	pr_price_changes_eod	Price change action log shell for account opened today	PR		
9	1	End of Day	Mandatory	5	pr_reprice_acn_eod	Reprice Action shell for account opened today	PR	pr_price_changes_eod	Price change action log shell for account opened today
10	1	End of Day	Mandatory	5	ac_bundle_exp_poller	Bundle Expiry Poller Shell	BN	ac_bundle_fee_shell pr_reprice_acn_eod	Bundle Fee Shell Reprice Action shell for account opened today
11	1	End of Day	Mandatory	7	eod_	EOD Reports	AL	bundle_	Bundle Reports

9.2 Batch Shells Execution Sequence

Sr. No.	Process Category	Category Description	Category Significance	Shell Execution Sequence	Shell	Shell Description	Module Code	Required Shells	Required Shell Description
					report_shell			report_shell ac_bundle_fee_shell or_sub_exp_shell pr_reprice_acn_eod	Bundle Fee Shell Submission Expiry shell Reprice Action shell for account opened today
12	1	End of Day	Mandatory	8	eod_epilogue	EOD Epilogue	EO	eod_report_shell	EOD Reports
13	16	Internal System EOD	Mandatory	1	pi_eod_shell	Party EOD Shell	PI		
14	2	Beginning of Day	Mandatory	1	ac_bod_bn_fee_shell	BOD Bundle Fee Shell	BN		
15	117	Housekeeping	Mandatory	1	lm_auto_closur_shell	Facility Auto Closure Shell	LM		
16	117	Housekeeping	Mandatory	1	pi_bod_shell	Party BOD Shell	PI		
17	117	Housekeeping	Mandatory	1	ac_pop_domain_ind	Domain index tables populate shell	AC		
18	120	Alert Generation	Optional	1	ep_generation_shell	Alert generation Shell	DI		
19	247	Reprice	Default	1	pr_price_changes	Price change log online shell	PR		

Sr. No.	Process Category	Category Description	Category Significance	Shell Execution Sequence	Shell	Shell Description	Module Code	Required Shells	Required Shell Description
20	247	Reprice	Default	2	pr_reprice_action	Reprice action online Shell	PR	pr_price_changes	Price change log online shell
21	69	mdm_Publish	Optional	1	mdm_publish_shell	mdm Publish	IN		

10 Information Lifecycle Management (ILM)

This chapter describes the configuration, installation, and policy setup of Information Lifecycle Management (ILM).

Information Lifecycle Management is a set of techniques and technologies available from Oracle that assist in managing the lifecycle of data to support business needs and minimize storage costs. OBLs drive ILM at the Oracle database level using database options and features to manage and move data as it evolves during its lifetime.

10.1 Configuration

The following values for the duration of data retention need to be determined. These values are used to drive ILM configuration.

Table 10–1 Values for ILM Configuration

Pattern Name	Partition Range Type	Data Retention in Active Tier	Data Retention in Less Active Tier	Data Retention in Historical Tier	Purge After
Lifecycle_Pattern_1	MONTH	2 month	N/A	2 year	2 year
Lifecycle_Pattern_2	MONTH	6 month	Will be provided by business	N/A	Will be provided by business
Lifecycle_Pattern_3	YEAR	N/A	N/A	N/A	Will be provided by business
Lifecycle_Pattern_4	YEAR	1 year	Will be provided by business		N/A
Lifecycle_Pattern_5	YEAR	1 year	N/A	Will be provided by business	
Lifecycle_Pattern_6	MONTH	1 month			1 month

10.2 Installation

This section explains the process of ILM installation.

10.2.1 Prepare Scripts

Operator needs to create partition creation script and ADO policy creation script manually based on data provided in ILM_Config.xlsx for each ILM qualified table and attached lifecycle pattern.

Parameters required for populating partition creation script are as follows:

- Table Name (OBLs Tables Worksheet)
- ILM Column (OBLs Tables Worksheet)
- Partition Range Type (Lifecycle Pattern Worksheet)

Parameters required for populating ADO policy creation script are as follows:

- Table Name (OBLS Tables Worksheet)
- Lifecycle Definition (OBLS Tables Worksheet)
- Data retention in different tier (Lifecycle Pattern Worksheet)
- Purging time (Lifecycle Pattern Worksheet)

The following sections describe the steps to be performed during the OBLS database creation.

10.2.2 Create Tablespace

Separate tablespaces need to be created for the following tiers:

- Active tier
- Less Active tier
- Historical tier

The following command is to be used for creation of the above tiers:

```
CREATE TABLESPACE <tablespace_name> datafile <datafile_name> SIZE <allocated_size> SEGMENT SPACE management auto extent management local autoallocate;
```

For example:

```
CREATE TABLESPACE less_active_data datafile '/oracleE2POC/data01/s2poc/less_active_data01.dbf' SIZE 10m SEGMENT SPACE management auto extent management local autoallocate;
```

10.2.3 Create Partition Script

Partitioning script can be generated through partition script creation utility. For ILM qualified tables, the tables should always be partitioned based on range. Partition script can be generated based on Day, Month and Year. The following parameters need to be provided to the utility:

- Table Name
- ILM Column Name
- Schema Name (decided by DBA)
- Partition Interval (Default 1)
- Partition Type (DAY, MONTH and YEAR)
- Directory where partition script will be created (decided by DBA)

This utility can be run as follows:

1. Connect to OBLS Database.
2. Run the following SQL statement:

```
DECLARE  
PI_TABLE_NAME VARCHAR2(200);
```

```
PARTITION_COLUMN_NAME VARCHAR2(200);
SRC_SCHEMA_NAME VARCHAR2(200);
PARTITION_INTERVAL NUMBER;
PARTITION_TYPE VARCHAR2(200);
DIRECTORY_NAME VARCHAR2(200);
DURATION NUMBER;
DURATION_TYPE VARCHAR2(200);
BEGIN
PI_TABLE_NAME := <ILM qualified table name>;
PARTITION_COLUMN_NAME := <ILM column name>;
SRC_SCHEMA_NAME := <Source schema name>;
PARTITION_INTERVAL := <Duration>;
PARTITION_TYPE :=< Partition type as DAY,MONTH or YEAR>;
DIRECTORY_NAME := <Location where partition script will be
created>;
DURATION := 0;
DURATION_TYPE := NULL;

AP_OPA_ILM_CREATE_PARTITION(
PI_TABLE_NAME => PI_TABLE_NAME,
PARTITION_COLUMN_NAME => PARTITION_COLUMN_NAME,
SRC_SCHEMA_NAME => SRC_SCHEMA_NAME,
PARTITION_INTERVAL => PARTITION_INTERVAL,
PARTITION_TYPE => PARTITION_TYPE,
DIRECTORY_NAME => DIRECTORY_NAME,
DURATION => DURATION,
DURATION_TYPE => DURATION_TYPE
);
--rollback;
END
```

Figure 10–1 Partition Script - SQL Statement

```
PL/SQL Block
DECLARE
PI_TABLE_NAME VARCHAR2(200);
PARTITION_COLUMN_NAME VARCHAR2(200);
SRC_SCHEMA_NAME VARCHAR2(200);
PARTITION_INTERVAL NUMBER;
PARTITION_TYPE VARCHAR2(200);
DIRECTORY_NAME VARCHAR2(200);
DURATION NUMBER;
DURATION_TYPE VARCHAR2(200);
BEGIN
PI_TABLE_NAME := 'FLX_DA_ACCT_EVENT_H_DEMO';
PARTITION_COLUMN_NAME := 'POSTING_DATE';
SRC_SCHEMA_NAME := 'OBPIUTT10_ILM';
PARTITION_INTERVAL := 1;
PARTITION_TYPE := 'MONTH';
DIRECTORY_NAME := '/scratch/app/ILM_PARTITION_DIR/';
DURATION := 0;
DURATION_TYPE := NULL;

AP_OPA_ILM_CREATE_PARTITION(
PI_TABLE_NAME => PI_TABLE_NAME,
PARTITION_COLUMN_NAME => PARTITION_COLUMN_NAME,
SRC_SCHEMA_NAME => SRC_SCHEMA_NAME,
PARTITION_INTERVAL => PARTITION_INTERVAL,
PARTITION_TYPE => PARTITION_TYPE,
DIRECTORY_NAME => DIRECTORY_NAME,
DURATION => DURATION,
DURATION_TYPE => DURATION_TYPE
);
--rollback;
END;
```

3. After execution, the utility table creation script appears as shown in the below figure.

Figure 10–2 Utility Table Creation Script

```

CREATE TABLE "OBPIUTT10_ILM"."FLX_DA_ACCT_EVENT_H_DEMO"
(
  "TRN_REFERENCE_CODE" VARCHAR2(16),
  "TRN_EVENT_SEQ_NUM" NUMBER,
  "TRN_EVENT_CODE" VARCHAR2(30),
  "TRN_BANK_CODE" VARCHAR2(10),
  "TRN_BRANCH_CODE" VARCHAR2(10),
  "TRN_DESC" VARCHAR2(750),
  "CHANNEL_CODE" VARCHAR2(20),
  "EVENT_OCCURED_DATE" TIMESTAMP (6),
  "POSTING_DATE" DATE,
  "PROCESS_DATE" DATE,
  "PRODUCT_CODE" VARCHAR2(30),
  "PARTY_CODE" VARCHAR2(40),
  "RELATED_ACCOUNT_CODE" VARCHAR2(40),
  "RELATED_ACCT_BRANCH_CODE" VARCHAR2(10),
  "RELATED_MODULE_TYP" VARCHAR2(2),
  "RELATED_ACCT_STATUS" VARCHAR2(20),
  "DOMAIN_CATEGORY" VARCHAR2(2),
  "ORIGINAL_TRN_REF_CODE" VARCHAR2(16),
  "ORIGINAL_EVENT_SEQ_NUM" NUMBER,
  "REVERSED_FLAG" VARCHAR2(1),
  "REVERSAL_PROC_FLAG" VARCHAR2(1),
  "DELETED_FLAG" VARCHAR2(1),
  "AUTHORIZED_FLAG" VARCHAR2(1),
  "ACCOUNTING_STAGE" VARCHAR2(10),
  "EVENT_TYP" VARCHAR2(10),
  "EVENT_STATUS_TYP" VARCHAR2(3),
  "BATCH_EVENT_FLAG" VARCHAR2(1),
  "EVENT_PROCESSED_DATE" DATE,
  "ERROR_CODE" VARCHAR2(20),
  "ERR_CODE_DESC" VARCHAR2(3000),
  "CREATED_BY" VARCHAR2(254),
  "AUTHORIZED_BY" VARCHAR2(254)
) SEGMENT CREATION IMMEDIATE
PCTFREE 10 PCTUSED 40 INITRANS 1 MAXTRANS 255
NOCOMPRESS LOGGING
STORAGE(INITIAL 65536 NEXT 1048576 MINEXTENTS 1 MAXEXTENTS 2147483645
PCTINCREASE 0 FREELISTS 1 FREELIST GROUPS 1
BUFFER_POOL DEFAULT FLASH_CACHE DEFAULT CELL_FLASH_CACHE DEFAULT)
TABLESPACE "OBPIUTT10_ILM" PARTITION BY RANGE (POSTING_DATE)
(INTERVAL(NUMTOYMINTERVAL(1, 'MONTH'))
(PARTITION p0 VALUES less than (TO_DATE('21-DEC-2014', 'DD-MON-YYYY')) tablespace OBPIUTT10_ILM
, PARTITION p1 VALUES less than (TO_DATE('21-JAN-2015', 'DD-MON-YYYY')) tablespace OBPIUTT10_ILM
, PARTITION p2 VALUES less than (TO_DATE('21-FEB-2015', 'DD-MON-YYYY')) tablespace OBPIUTT10_ILM
, PARTITION p3 VALUES less than (TO_DATE('21-MAR-2015', 'DD-MON-YYYY')) tablespace OBPIUTT10_ILM
, PARTITION p4 VALUES less than (TO_DATE('21-APR-2015', 'DD-MON-YYYY')) tablespace OBPIUTT10_ILM
, PARTITION p5 VALUES less than (TO_DATE('21-MAY-2015', 'DD-MON-YYYY')) tablespace OBPIUTT10_ILM
, PARTITION p6 VALUES less than (TO_DATE('21-JUN-2015', 'DD-MON-YYYY')) tablespace OBPIUTT10_ILM
, PARTITION p7 VALUES less than (TO_DATE('21-JUL-2015', 'DD-MON-YYYY')) tablespace OBPIUTT10_ILM
, PARTITION p8 VALUES less than (TO_DATE('21-AUG-2015', 'DD-MON-YYYY')) tablespace OBPIUTT10_ILM
, PARTITION p9 VALUES less than (TO_DATE('21-SEP-2015', 'DD-MON-YYYY')) tablespace OBPIUTT10_ILM
, PARTITION p10 VALUES less than (TO_DATE('21-OCT-2015', 'DD-MON-YYYY')) tablespace OBPIUTT10_ILM
, PARTITION p11 VALUES less than (TO_DATE('21-NOV-2015', 'DD-MON-YYYY')) tablespace OBPIUTT10_ILM
, PARTITION p12 VALUES less than (TO_DATE('21-DEC-2015', 'DD-MON-YYYY')) tablespace OBPIUTT10_ILM
);
INSERT INTO OBPIUTT10_ILM.FLX_DA_ACCT_EVENT_H_DEMO select * from OBPIUTT10_ILM.FLX_DA_ACCT_EVENT_H_DEMOT ;
DROP TABLE OBPIUTT10_ILM.FLX_DA_ACCT_EVENT_H_DEMOT ;
comment on table FLX_DA_ACCT_EVENT_H_DEMO is

```

10.2.4 Run Partition Script

The steps to run the partition script are as follows:

1. Download the newly created partition script from specified directory.
2. Verify created partition script before running.
3. Execute the script on OBLS database as follows:
 - a. Connect to OBLS Database.
 - b. Run partition creation script:

```
@ <Tablename>par.sql
```

For example:

```
@ /scratch/app/ILM_PARTITION_DIR/FLX_DA_ACCT_EVENT_H_DEMOparsql
```

10.2.5 Create and Register ADO Policies based on Lifecycle Pattern

Automatic Data Optimization (ADO) is used to create policies and automate actions based on those policies, for implementing the ILM strategy. The data is moved across storage tiers. The following script needs to be executed to create the ADO policies:

1. Connect to OBLS Database.
2. Run ADO policy creation script:

```
@ <Tablename>ado.sql
```

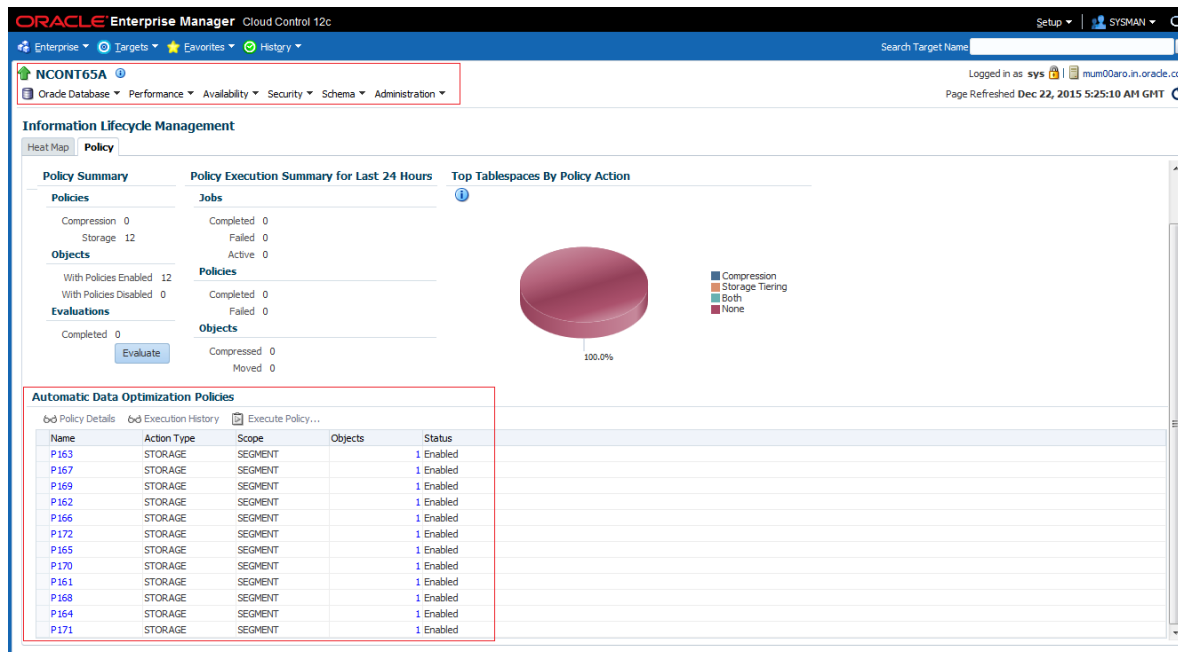
For example:

```
@ /scratch/app/ILM_ADO_DIR/FLX_DA_ACCT_EVENT_H_DEMOado.sql
```

10.2.6 Verify Registered ADO Policies

The created ADO policies can be verified through Oracle Enterprise Manager.

Figure 10–3 Verify ADO Policies



10.3 Policy Execution

ADO policies are required to be scheduled to execute automatically by configuring the database maintenance period. This can be determined during the implementation phase.

These ADO policies can be additionally executed manually with the following command:

```
declare
  v_executionid number;
begin
  dbms_ilm.execute_ilm (ilm_scope=>dbms_ilm.scope_schema,
    execution_mode=>dbms_ilm.ilm_execution_offline,
    task_id=>v_executionid);
end;
/
```

11 Transparent Data Encryption (TDE)

This chapter describes the configuration, installation, and policy setup of Transparent Data Encryption (TDE).

Transparent Data Encryption is a technology used to encrypt database files. This feature enables you to protect sensitive data in database columns stored in operating system files by encrypting it. Then, to prevent unauthorized decryption, it stores encryption keys in a security module external to the database.

11.1 Configuration

The following is the classification of information related to OBLs. This information is used to drive TDE configuration.

Table 11–1 TDE Configuration

Classification	Details	Access and Distribution	Action
Public	This information is not sensitive, and there is no value with it remaining confidential to Bank.	No restrictions	No Encryption
Confidential Internal	It is important that this information remains confidential to Bank.	May be accessed by and distributed to all support person. Distribution to third parties must be authorized by the information owner and requires that an appropriate confidential disclosure agreement be in place.	No Encryption
Confidential Restricted	It is very important that this information remains confidential to Bank and that access within bank is restricted on a need-to-know basis.	Internal access/distribution must be on a business need-to-know basis. Not authorized for information unless the information is encrypted using Oracle-approved encryption.	Need to set encryption rule during TDE
Confidential Highly Restricted	It is essential that this information remains confidential to Bank and that access within bank is restricted on a need-to-know basis.	Internal access/distribution must be very limited and is on a stringent business need-to-know basis. Not authorized for information unless the information is encrypted using Oracle-approved encryption.	Need to set encryption rule during TDE

All tables in OBLs are classified based on above classification and columns of those tables are marked based on sensitivity.

11.2 Installation

This section explains the installation process.

11.2.1 Prepare Scripts to Encrypt Sensitive Data

Database administrator needs to create alter script to encrypt sensitive data. The utility tool (obpencryption.sh) is used to create this alter script for TDE. To run the tool, the following prerequisites are required.

Prerequisites

- Create a folder "obpencryption" where user wants to run the tool.
- Upload Sensitive_Data_List.xlsx, obp-encryption-script-gen.jar, obpencryption.sh, DB_RESOURCEBUNDLE.properties. These files are available in maskingencryption.zip. The maskingencryption.zip is part of host.zip available in installer.
- Update database details in DB_RESOURCEBUNDLE.properties file before running the script.
- Update value "encryptLocation" variable with obp encryption path in obpencryption.sh at line 6.

For example: `encryptLocation="/scratch/app/product/obpencryption"`

Run Encryption Tool

- Create update scripts for all the tables containing sensitive data. Run obpencryption.sh with TDE and ENCRYPT.

For example: `/obpencryption.sh TDE ENCRYPT`

11.2.2 Create TDE Keystore

Perform these steps to create keystore which is required for encryption and decryption. Perform the following steps.

- Create keystore location with `mkdir -p <location>`.

For example: `mkdir -p /scratch/app/admin/TDE/encryption_keystore/`

- Log in to database with `sysdba`.

For example: `sqlplus / as sysdba`

- Run the following sql instruction:

- ADMINISTER KEY MANAGEMENT CREATE KEYSTORE '{Keystore loaction}' IDENTIFIED BY {Password}

For example: `SQL>ADMINISTER KEY MANAGEMENT CREATE KEYSTORE '/scratch/app/admin/TDE/encryption_keystore/' IDENTIFIED BY myPassword`

- ADMINISTER KEY MANAGEMENT SET KEYSTORE OPEN IDENTIFIED BY welcome1 CONTAINER=ALL;

For example: `SQL>ADMINISTER KEY MANAGEMENT SET KEYSTORE OPEN IDENTIFIED BY welcome1 CONTAINER=ALL;`

- ADMINISTER KEY MANAGEMENT CREATE KEY using tag 'KEY5' IDENTIFIED BY welcome1 WITH BACKUP CONTAINER =all;

For example: SQL>ADMINISTER KEY MANAGEMENT CREATE KEY using tag 'KEY5'
IDENTIFIED BY welcome1 WITH BACKUP CONTAINER =all;

- ADMINISTER KEY MANAGEMENT SET KEY using tag 'KEY5' IDENTIFIED BY welcome1 WITH BACKUP CONTAINER=ALL

For example: SQL>ADMINISTER KEY MANAGEMENT SET KEY using tag 'KEY5'
IDENTIFIED BY welcome1 WITH BACKUP CONTAINER=ALL;

- Check the encryption keys generated.

For example: SQL> SELECT con_id, key_id FROM v\$encryption_keys;

- Check the wallet status.

For example: SQL> SELECT * FROM v\$encryption_wallet;

11.2.3 Edit sqlnet.ora file

Perform this step to enter the TDE wallet location.

- Take a backup of sqlnet.ora file before update for TDE.
- Add entries of sqlnet.ora file as follows:

```
ENCRYPTION_WALLET_LOCATION =
(SOURCE =(METHOD = FILE)(METHOD_DATA =
(DIRECTORY = {Keystore location})
```

For example:ENCRYPTION_WALLET_LOCATION =
(SOURCE = (METHOD = FILE) (METHOD_DATA =
(DIRECTORY = /scratch/app/admin/TDE/encryption_keystore/))

11.2.4 Run Created Alter Script

- Get TDE_Encryption.sql script from obpencryption/generatedScript/tde.
- Log in to database.
- Run TDE_Encryption.sql.

12 Masking Customer Private Data

This chapter describes the configuration, installation, and policy setup to mask customer private data categories as sensitive or Personally Identifiable Information (PII).

12.1 Configuration

The following is the classification of information related to OBLs. This information is used to drive TDE configuration.

Table 12–1 TDE Configuration

Classification	Details	Access and Distribution	Action
Public	This information is not sensitive, and there is no value with it remaining confidential to Bank.	No restrictions	No Encryption
Confidential Internal	It is important that this information remains confidential to Bank.	May be accessed by and distributed to all support persons. Distribution to third parties must be authorized by the information owner and requires that an appropriate confidential disclosure agreement is in place.	No Encryption
Confidential Restricted	It is very important that this information remains confidential to Bank and that access within bank is restricted on a need-to-know basis.	Internal access/distribution must be on a business need-to-know basis. Not authorized for information unless the information is encrypted using Oracle-approved encryption.	Need to set encryption rule during masking Tables containing this type of data will be accessed through view for RO user. Synonym needs to be created for the tables and views containing this type of data for RO and ERO user.
Confidential Highly Restricted	It is essential that this information remain confidential to Bank and that access within bank is restricted on a need-to-know basis.	Internal access/distribution must be very limited and is on a stringent business need-to-know basis. Not authorized for information unless the information is encrypted using Oracle-approved encryption.	Need to set encryption rule during masking. Tables containing this type of data will be accessed through view for RO user. Synonym needs to be created for the tables and views containing this type of data for RO and ERO user.

All tables in OBLs are classified based on above classification and columns of these tables are marked based on sensitivity.

12.2 Installation

This section explains the installation process.

12.2.1 Prepare Scripts to Encrypt Sensitive Data

Database administrator needs to create the following script for masking sensitive data.

- View creation script of the tables containing sensitive data and mask them for RO (Read only) user.
- Synonym creation script of created view of the containing sensitive data for RO (Read only) user.
- Synonym creation script of tables containing sensitive data for ERO (E Read only) user.

The utility tool (obpencryption.sh) is used to create above script. To run the tool, the following prerequisites are required.

Prerequisites

- Create a folder "obpencryption" where user wants to run the tool.
- Upload Sensitive_Data_List.xlsx, obp-encryption-script-gen.jar, obpencryption.sh, DB_RESOURCEBUNDLE.properties. These files are available in maskingencryption.zip. The maskingencryption.zip is part of host.zip available in installer.
- Update database details in DB_RESOURCEBUNDLE.properties file before running the script.
- Update value "encryptLocation" variable with obp encryption path in obpencryption.sh at line 6.

For example: `encryptLocation="/scratch/app/product/obpencryption"`

Run Encryption Tool for View Creation script and mask data

- Create view creation scripts for all the tables containing sensitive data after mask. Run obpencryption.sh with MASK and VIEWCREATE as parameter.

For example: `/obpencryption.sh MASK VIEWCREATE`

Run Encryption Tool for Synonym Creation script for RO user

- Create synonym creation scripts for all the created containing sensitive data. Run obpencryption.sh with MASK and SYNONYMRO as parameter.

For example: `/obpencryption.sh MASK SYNONYMRO`

Run Encryption Tool for Synonym Creation script for ERO user

- Create synonym creation scripts for all the tables containing sensitive data. Run obpencryption.sh with MASK and SYNONYMEERO as parameter.

For example: `/obpencryption.sh MASK SYNONYMEERO`

12.2.2 Create Schema for RO and ERO User

To create schema for RO and ERO user, execute the following steps.

- Create Read-Only (RO) and E Read-Only (ERO) user for accessing masked data from view and table.
- Grant for proper access.

12.2.3 Execute Created Scripts through Encryption Tool

Run all created scripts through the encryption tool for the following task.

- Mask sensitive data for RO user.
- Create view for tables contain sensitive data.
- Create synonym to access the view.
- Create synonym to access the table for ERO user.

To do the above tasks, perform the following steps.

- Get all view creation scripts from obpencryption /generatedScript/masking/viewforRO location and run after logging in to database.
- Get synonym creation script (MaskingSynonymForRO.sql) for RO user from obpencryption/generatedScript/masking/synonymForRO and run after logging in to database.
- Get synonym creation script (MaskingSynonymForERO.sql) for ERO user from obpencryption/generatedScript/masking/ synonymForERO and run after logging in to database.

13 Configure ODI for Inbound Document Upload

This chapter provides the steps to configure ODI for Inbound Document Upload.

For document upload ODI execution, complete the following configurations:

1. Configuring the Input directory:

a. For example, if input directory is `/scratch/odi/InboundDocument/Upload/lendingZone/`

b. Update the configuration in the table using the following SQL:

```
update FLX_FW_ODI_SUB_INTERFACE_TYPE set IN_FILE_PATH=
/scratch/odi/InboundDocument/Upload/lendingZone/ ' where SUB_INTERFACE_ID='9551';
```

c. Note that the `SUB_INTERFACE_ID='9551'` should not be changed.

2. Configure the Schema directory:

a. Provide the directory where all the schemas are present.

Framework configuration:

```
update FLX_FW_ODI_SUB_INTERFACE_TYPE set SCHEMA_FILE_PATH =
'/scratch/odi/InboundDocument/Upload/schema/' where SUB_INTERFACE_ID ='7002';
```

b. Copy all the schema for ODI mediapack zip from directory schema to the new directory which is configured for framework.

c. Provide schema file for Document Upload.

```
update FLX_FW_ODI_SUB_INTERFACE_TYPE set schema_file_path='D:\work\odi\inDocUpload\InboundDocument\Upload\schemas\scan_images_request.0.1.XSD' where SUB_INTERFACE_ID='9551';
```

3. Configure Temporary directory:

```
update FLX_FW_ODI_SUB_INTERFACE_TYPE set temp_file_path=
'/scratch/odi/InboundDocument/Upload /lendingZonetmp/' where SUB_INTERFACE_ID='9551';
```

4. Configure Archive directory:

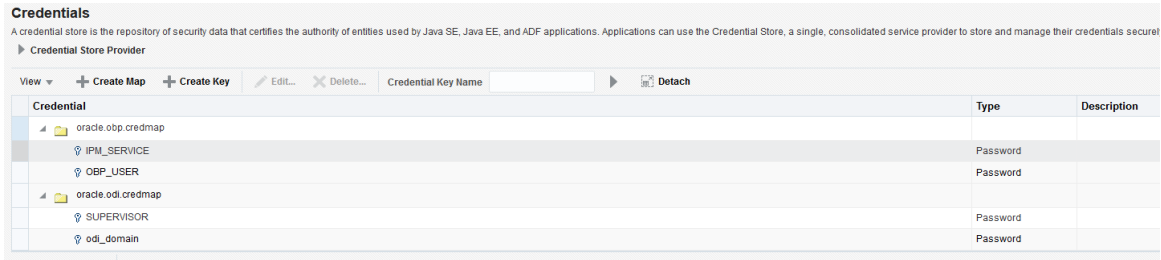
```
update FLX_FW_ODI_SUB_INTERFACE_TYPE set archive_file_path=
/scratch/odi/InboundDocument/Upload/archieve/' where SUB_INTERFACE_ID='9551';
```

5. Create users in connector: Create two credential maps:

- oracle.obp.credmap: This has two keys.
 - IPM_SERVICE: It has the username and password of IPM. It is used to upload the documents to IPM.
 - OBP_USER: It is required to make web service call to OBP.

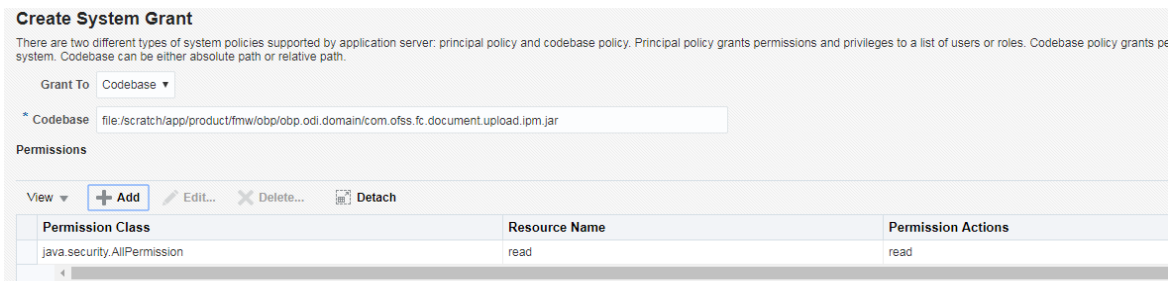
- oracle.odi.credmap
 - SUPERVISOR: It has supervisor username and password.
 - odi_domain: It has domain username and password.

Figure 13–1 Credentials



6. Provide permission to the java project for fetching the user credentials. Provide read permission to Java binary com.ofss.fc.document.upload.ipm.jar from EM.

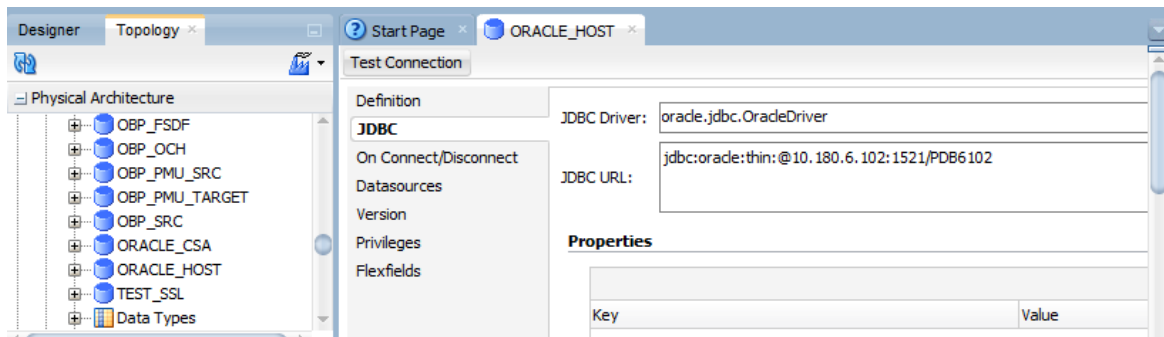
Figure 13–2 Example of premissions



7. Configuring IPM URL:
 - a. update FLX_FW_ODI_SUB_INTERFACE_TYPE set GEFU_IN_FILE_PATH='http://\${IPM-HOSTNAME}:\${IPM-PORT}/imaging/ws' where SUB_INTERFACE_ID='9551';
 - b. Replace \${IPM-HOSTNAME} with IPM Hostname or IP address.
 - c. Replace \${IPM-PORT} with IPM Server port number.
8. Configure config/properties/OutboundWebserviceConfig.properties to provide OBP Host web service configuration.
 - a. Replace \${OBP-HOST-IP} with OBP Host IP address or hostname.
 - b. Replace \${OBP-HOST-PORT} with OBP Host managed server port.

-
9. Provide FJ Connection Details in ODI Topology data server ORACLE_HOST.

Figure 13–3 Connection details



14 Additional Recommendations

This chapter provides specific recommendations to be considered for implementation:

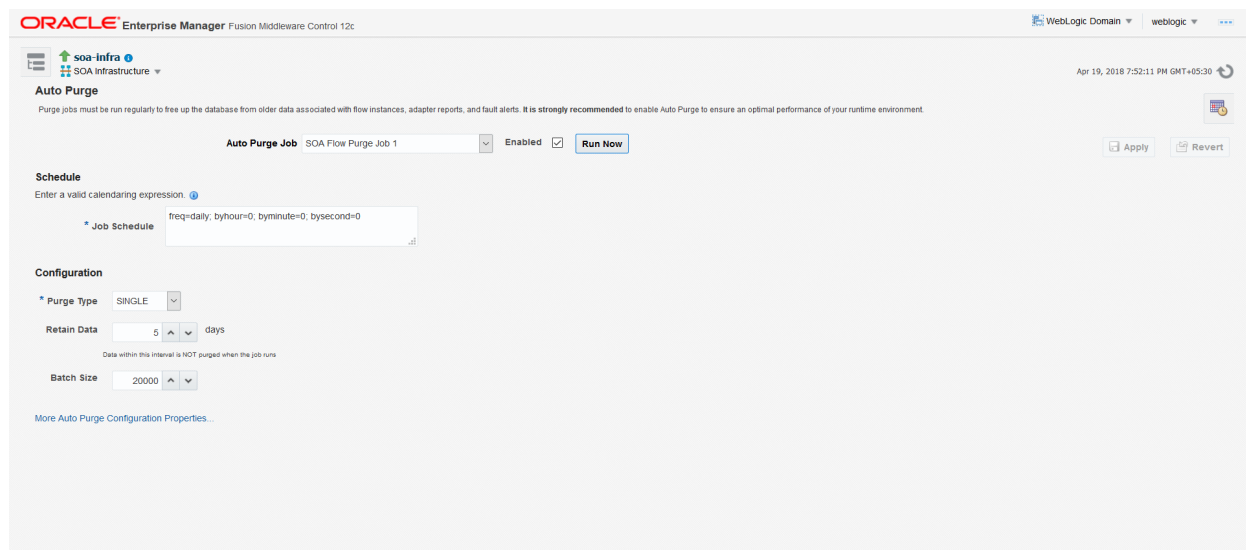
14.1 SOA Related

This section mentions certain recommendations for setting up the properties on SOA server.

14.1.1 Enable Auto Purge Job

- Oracle SOA Suite team strongly recommends periodic purging of composite instances. Purge instances as soon as they are available for purge.
- SOA suite 12c comes up with default purge job enabled with retention period of 7 days.
- It is recommended to keep this default job enabled in the production.

Figure 14–1 Auto Purge

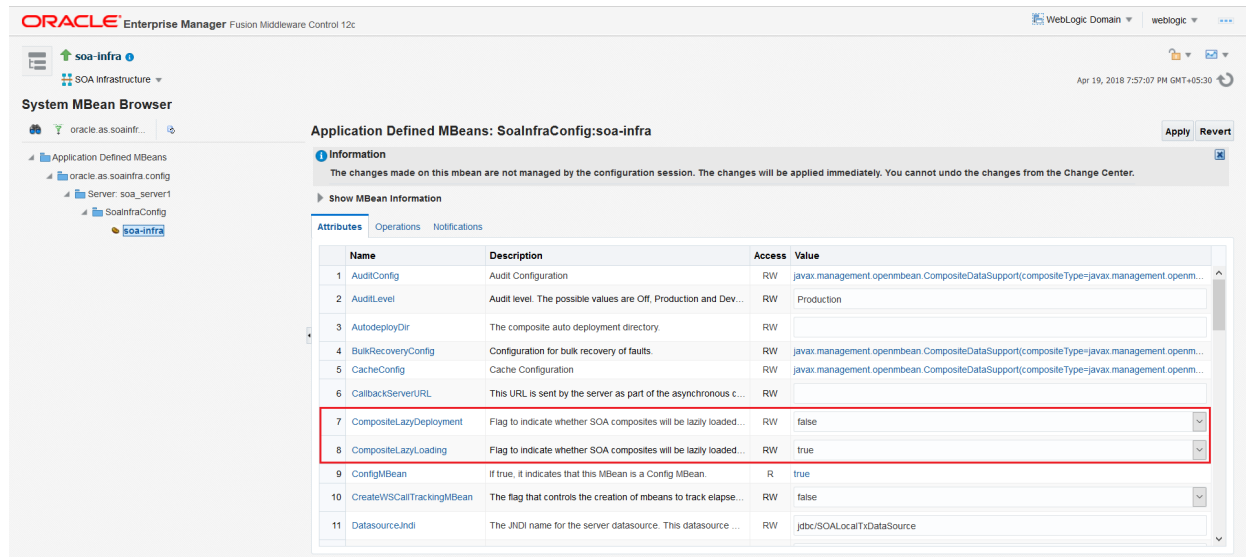


14.1.2 Enable Lazy Loading

- 12c supports lazy loading of composites on deployment as well as server startup.
- **CompositeLazyDeployment:** Loads the composites lazily on deployment.
 - More useful for non-production environments where there is frequent deployment of all the composites.
- **CompositeLazyLoading:** Loads the composites lazily on server start up.
- It is recommended to keep the default settings unchanged, that is CompositeLazyDeployment as false and CompositeLazyLoading as true in production environment.

- This will reduce the SOA server startup time.
- To confirm the settings, in SOA EM console, go to soa-infra > SOA Administration > Common Properties. Click More SOA Infra Advanced Configuration Properties link.

Figure 14–2 Lazy Loading Settings



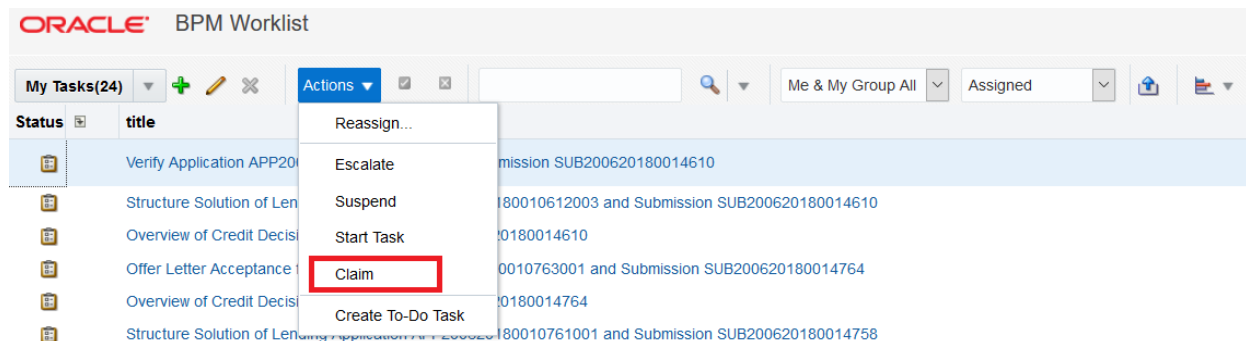
14.2 BPM Worklist Related

This section mentions certain recommendations on usage of BPM worklist.

14.2.1 Disable Claim Action from Task Details Page

- Always claim the task using worklist action menu.
- Claim option is disabled by default inside task details page.
- It can be enabled (configurable), if needed (but not recommended).
- Disabling this option helps to avoid loading of task details page twice, that is before claiming the task and after claiming the task.

Figure 14–3 Claim Action



14.2.2 Always Open Human Task Details in External Window

- BPM worklist supports two options to display the task details.
 - **Same Window:** Human task details are opened in the same browser window just below the worklist grid.
 - **External Window:** Human task details are opened in the new browser window (as a child popup).
- It is strongly recommended to make use of **External Window** option.
 - Human task details can be seen in full-screen mode.
 - Avoids unnecessary loading the task details page if user is browsing through the list of human tasks in worklist grid.
- This option can be enabled from worklist administration page.

Figure 14–4 Enable External Window option

