Oracle® Banking Enterprise Default Management

Administrator Guide

Release 2.11.0.0.0

F36758-01

December 2020

ORACLE®

Oracle Banking Enterprise Default Management Administrator Guide, Release 2.11.0.0.0

F36758-01

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Preface

This guide describes how to administer the Oracle Banking Enterprise Default Management application environment.

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 Enterprise Default Management.

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 User Administration with OIM

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

Chapter 2 User Management With Local Security

This chapter describes the configurations to be done if local security option is configured instead of OIM based security.

Chapter 3 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 4 Application Monitoring Using Administration Application

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

Chapter 5 Transparent Data Encryption (TDE)

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

Chapter 6 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).

Related Documents

For more information, see the following documentation:

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

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.
italic	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 User Administration with OIM

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

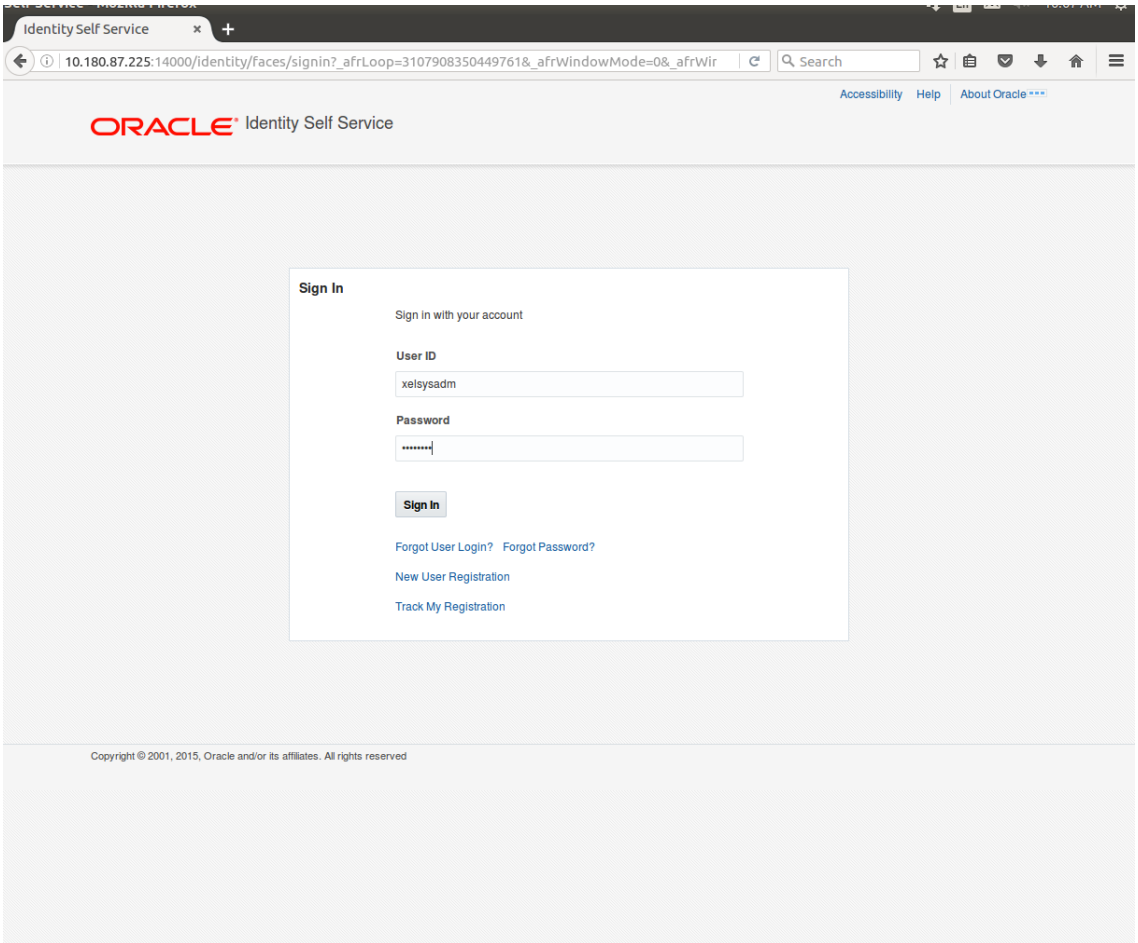
1.1 Creating Users in Oracle Identity Manager (OIM)

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

To create users in OIM:

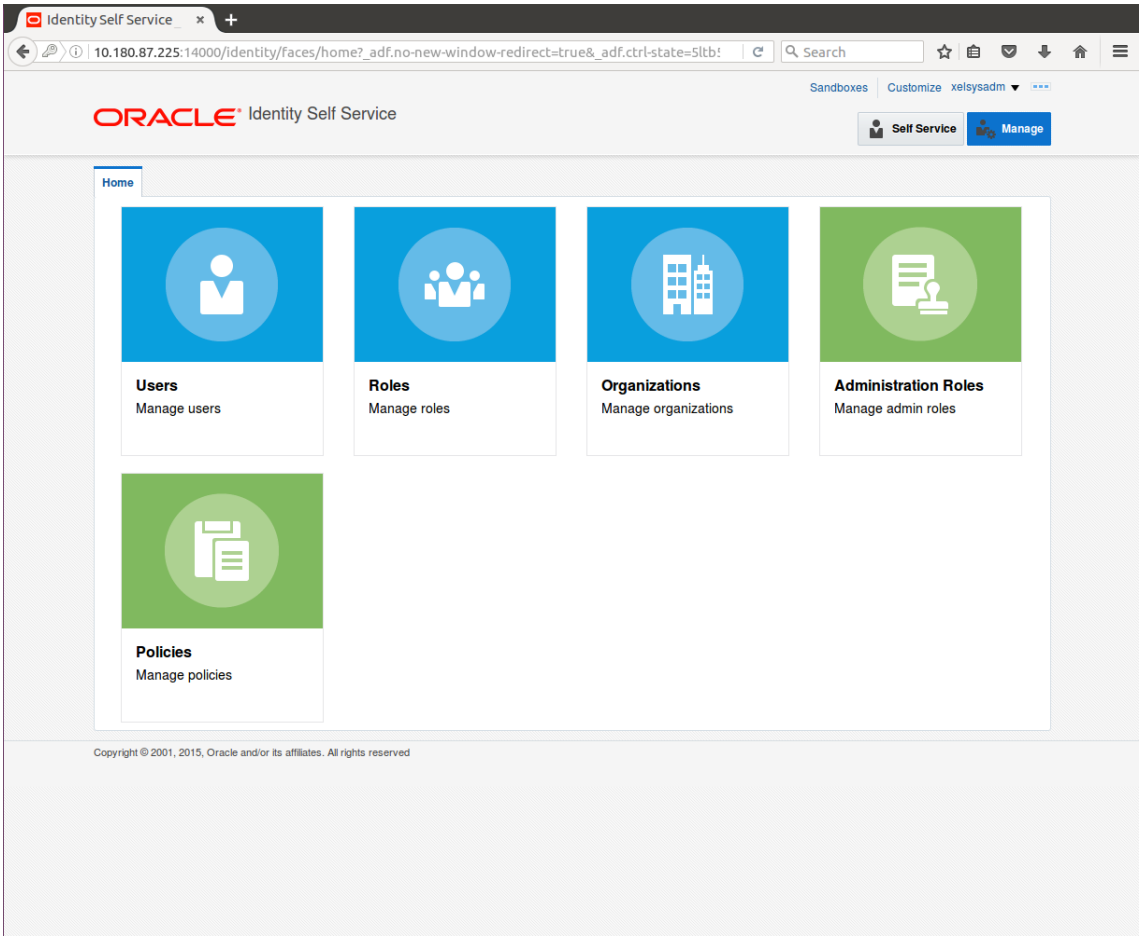
1. Log in to OIM with the User ID as **xelsysadm** and the relevant <Password>.

   Figure 1–1 Creating Users in OIM - Log in

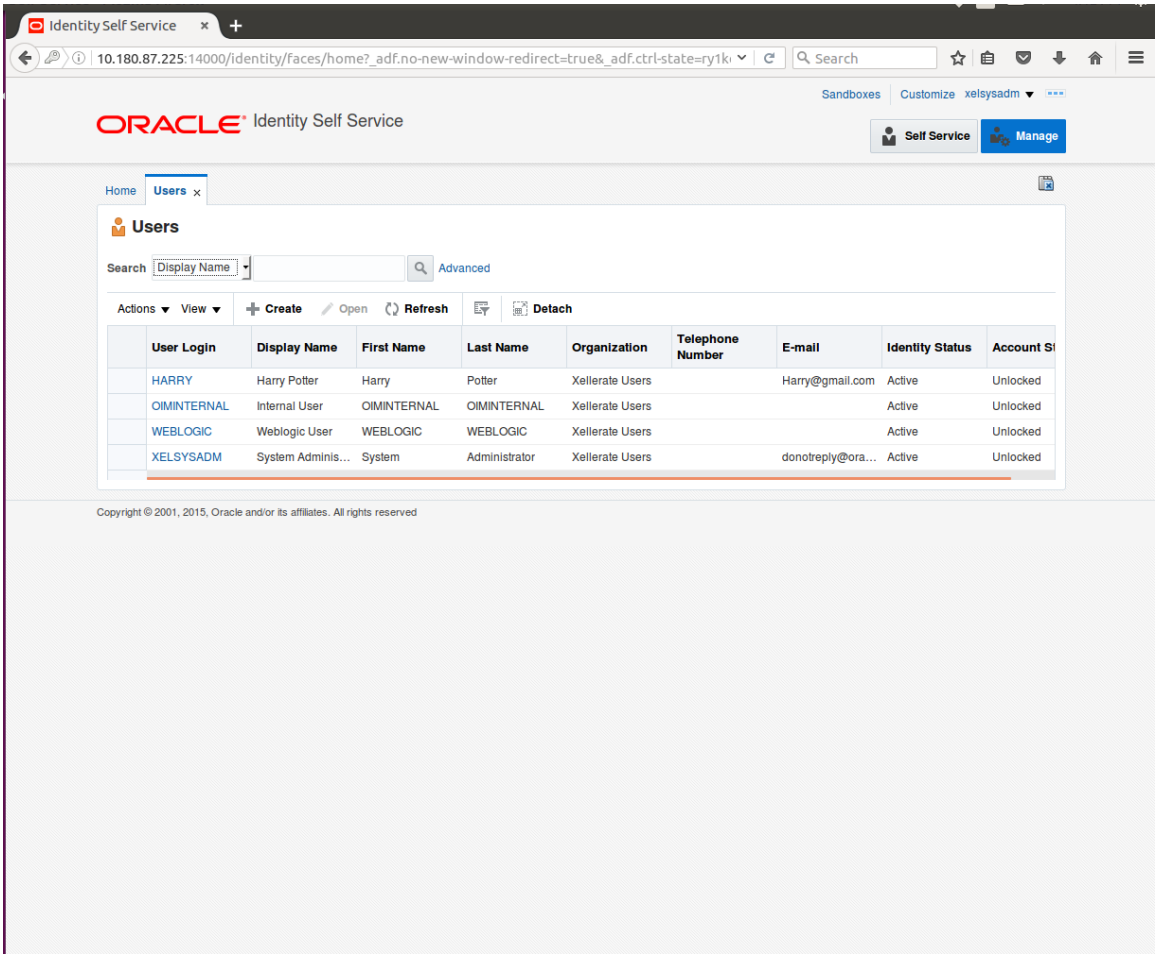
2. Click **Users** under the Manage section.

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



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

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

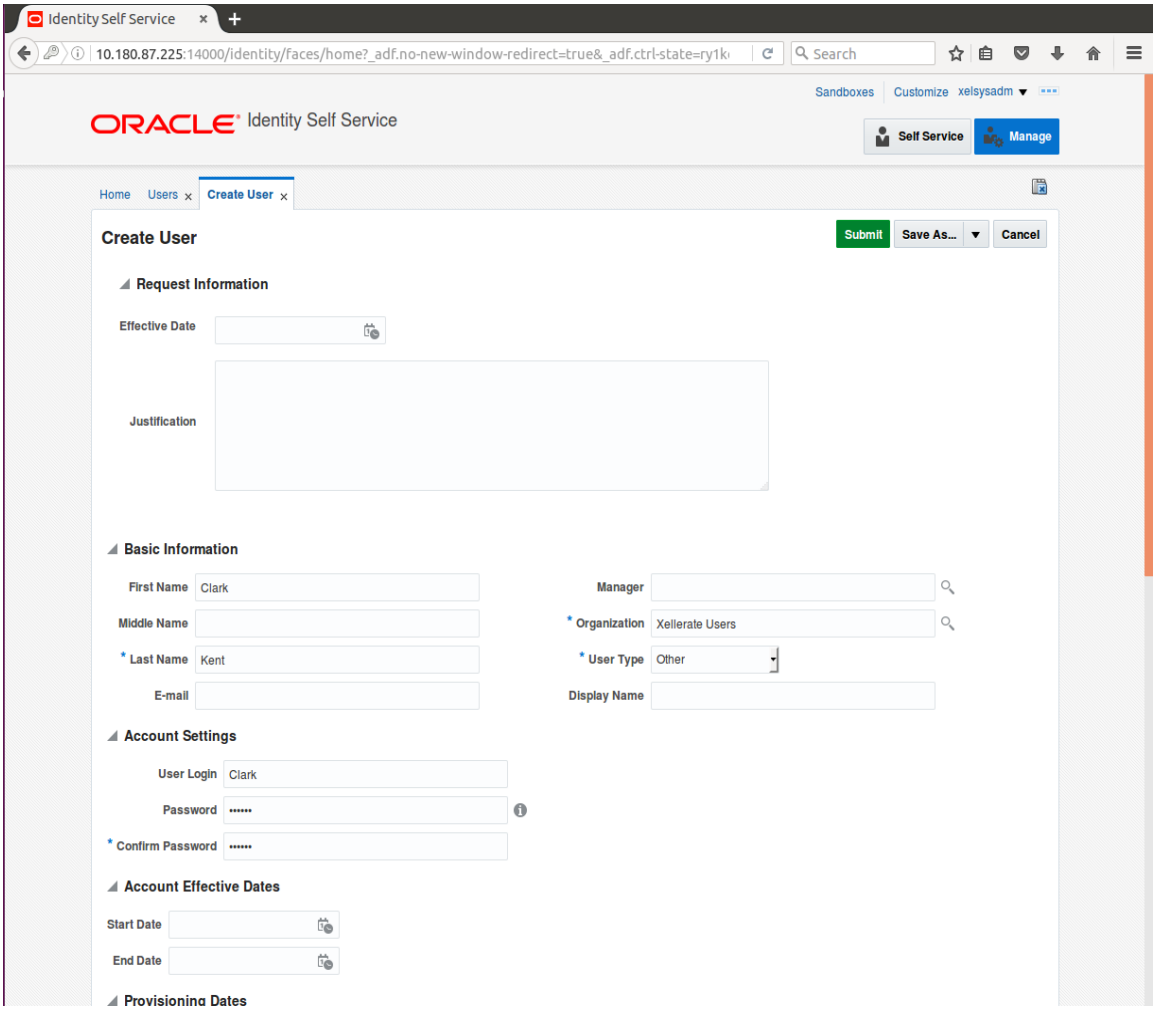
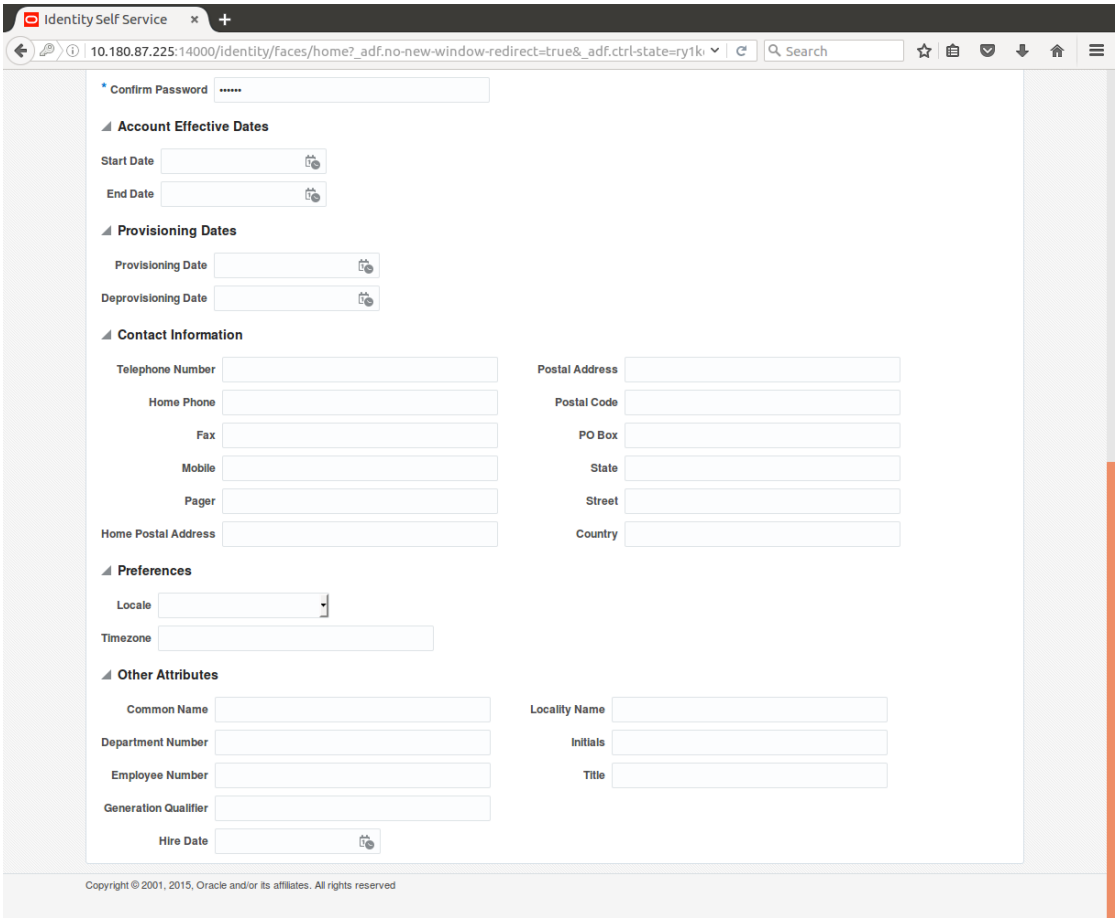


Figure 1–5 Enter User Details (Continued)



6. Click **Submit.**

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

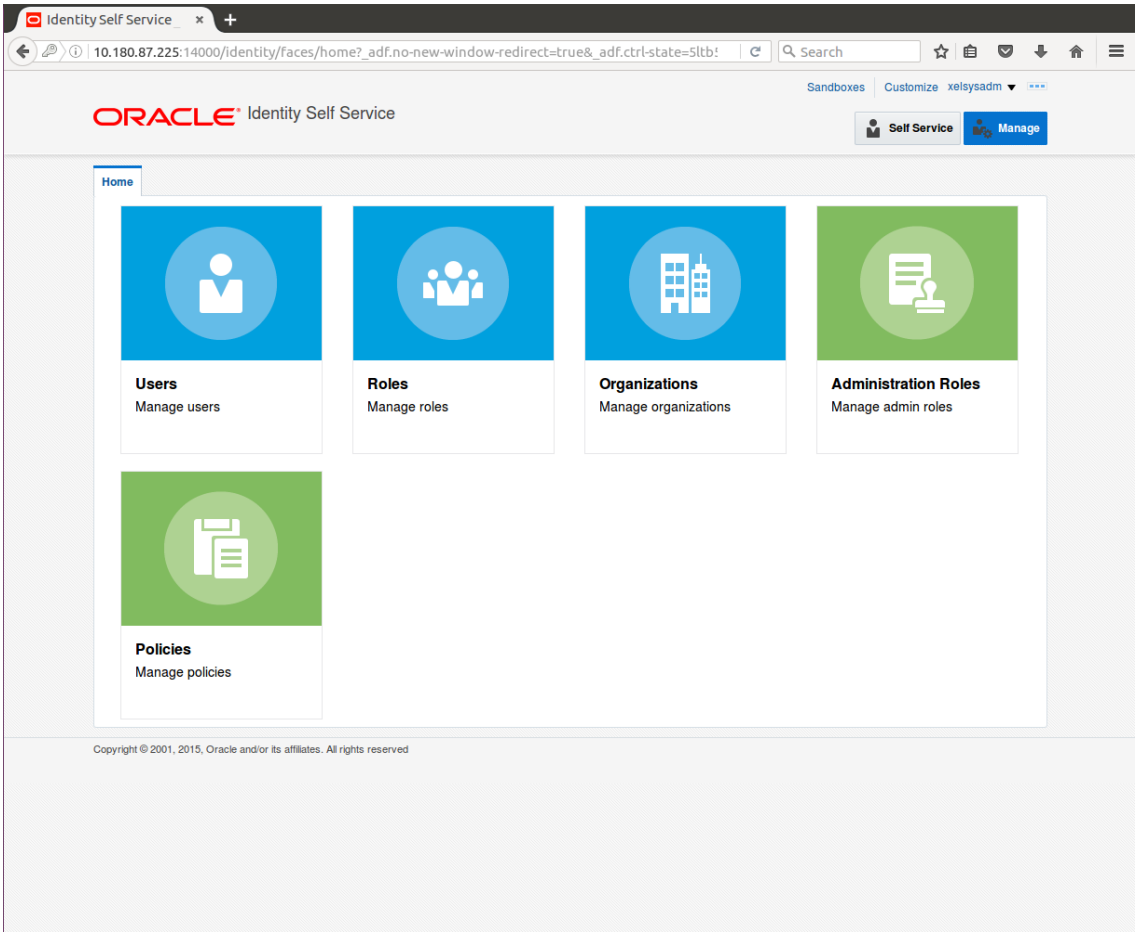
1.2 Creating Roles in Oracle Identity Manager (OIM)

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

To create roles in OIM:

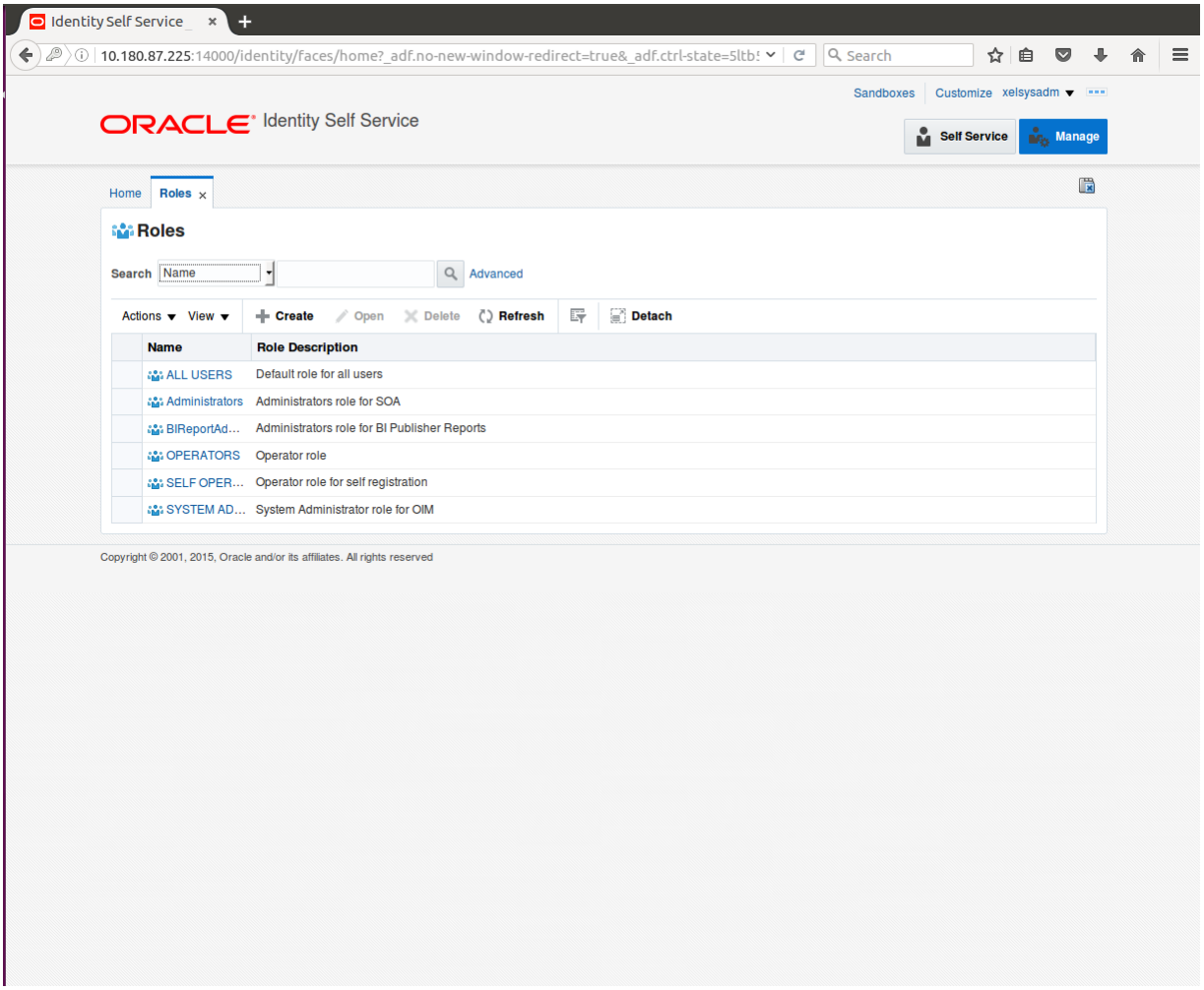
1. Click **Roles** under the Manage section.

Figure 1–6 Creating Roles in OIM - Manage Section



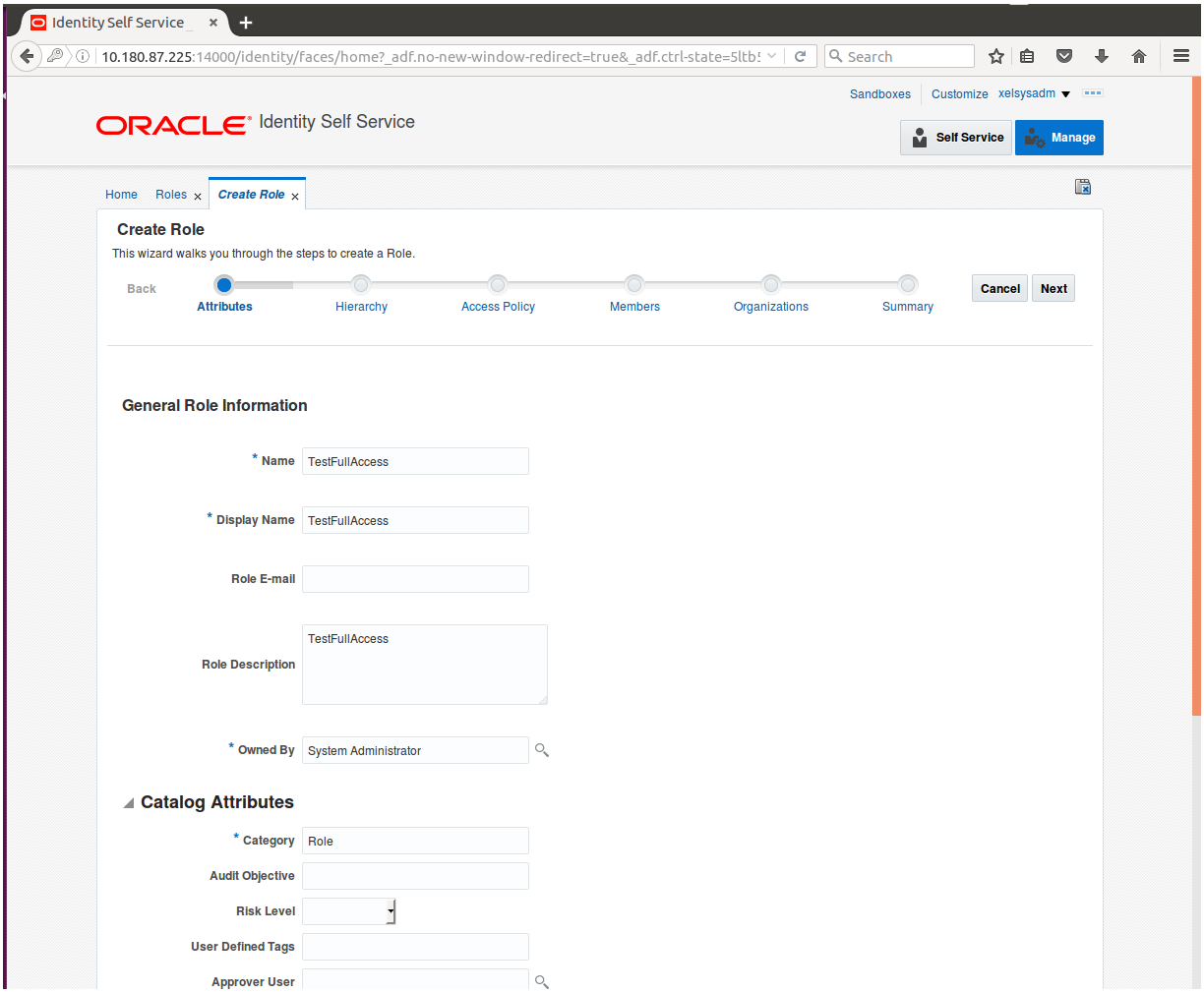
2. In the **Search Roles** page, search for existing roles. The Search Results appear.
3. Click **Create** in the Search Results section to create a new Role.

Figure 1–7 Creating Roles in OIM - Click Create



4. Fill the role details.

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

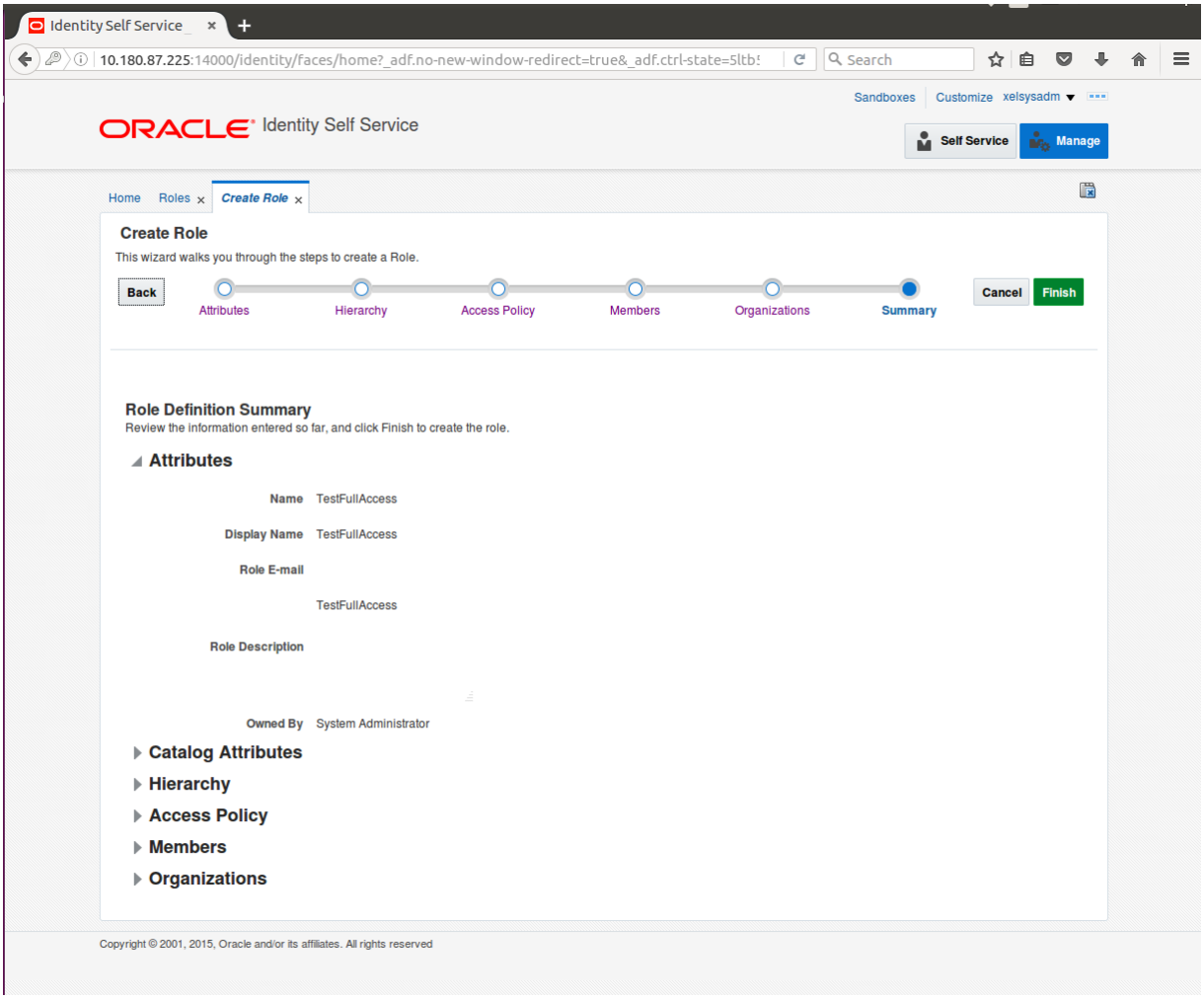


5. Click **Finish.** The role is created successfully.

   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



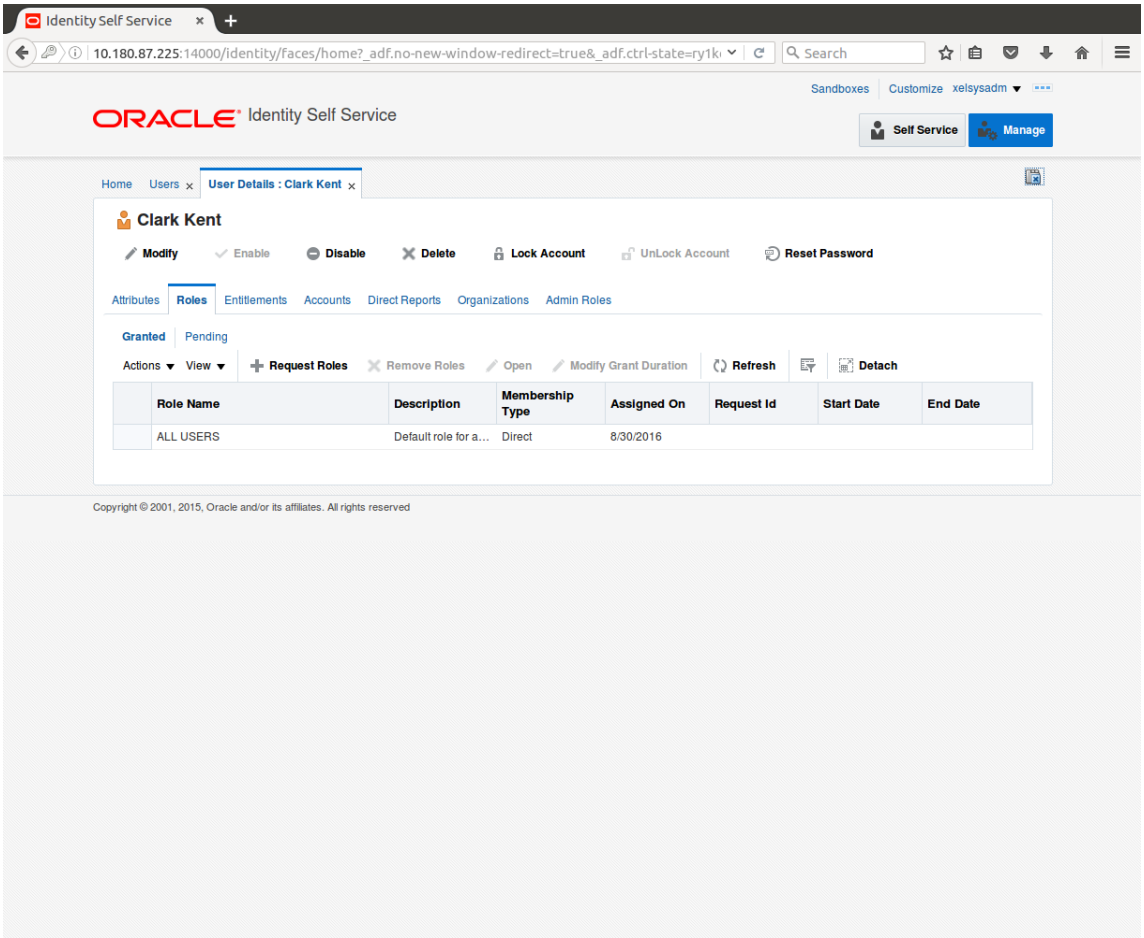
1.3 Assigning Roles to Users in OIM

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

To assign a role to a user:

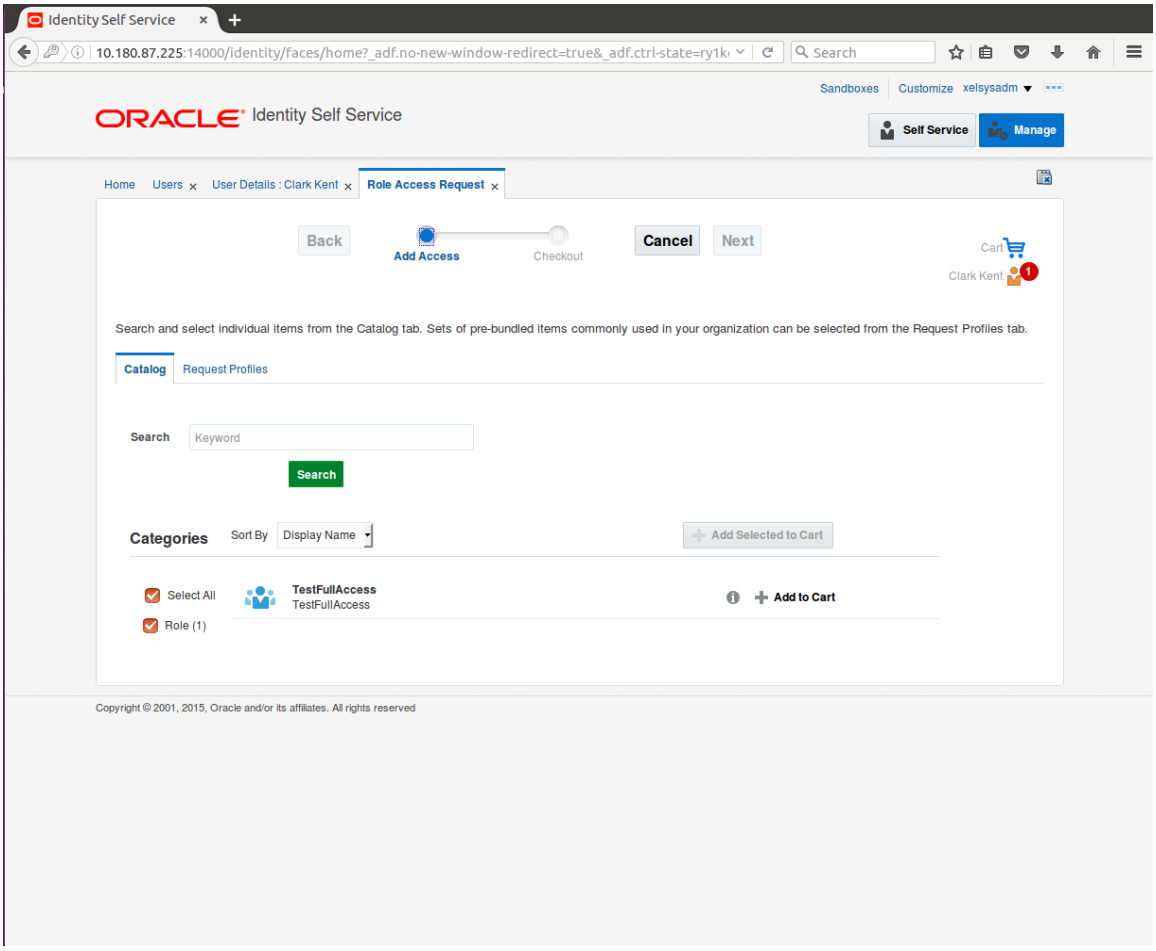
1. Log in to OIM.
2. Navigate to the **Roles Tab** under the User.
3. Click **Request Roles.**

Figure 1–10 Assigning Roles in OIM - Requesting Roles



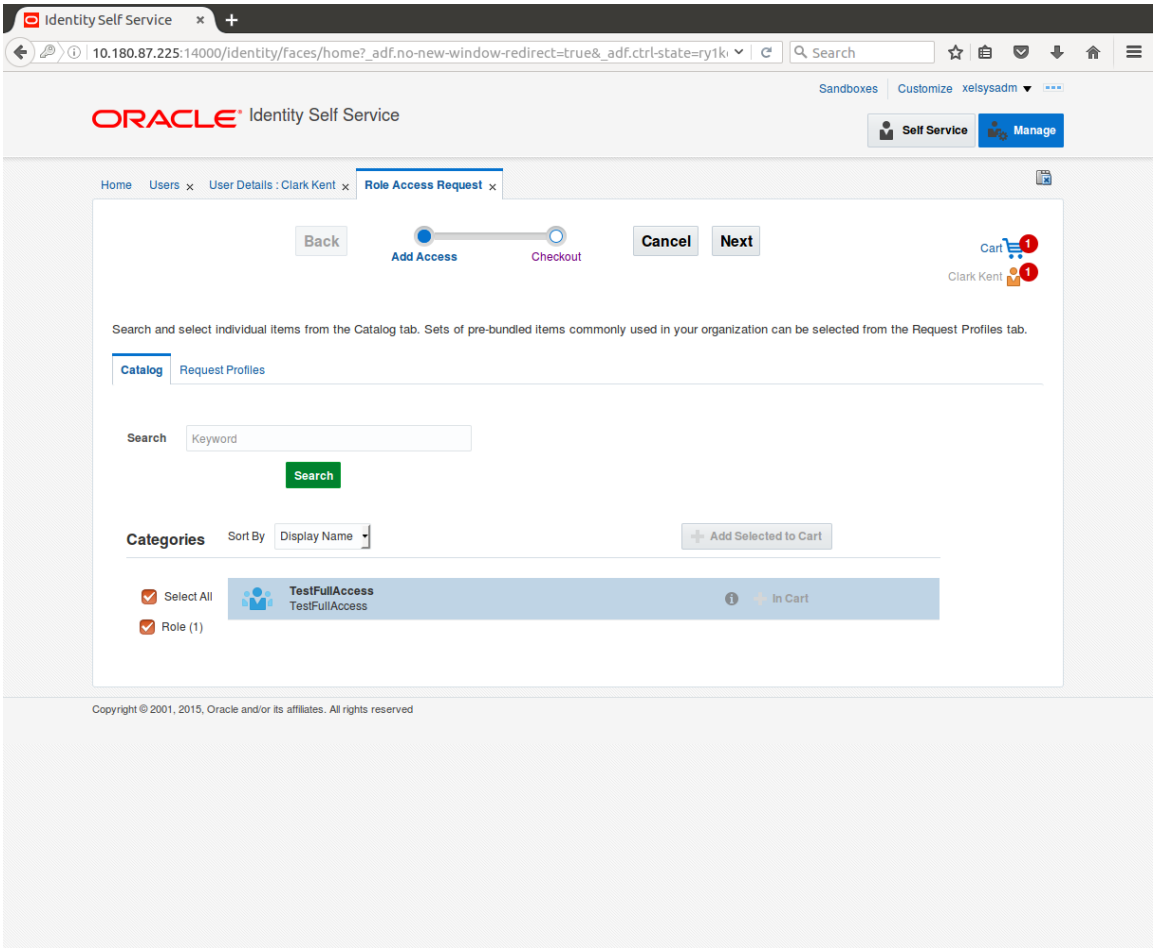
4. In the **Catalog** page, select the required role and click **Add to Cart.** The item gets added to the cart.

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



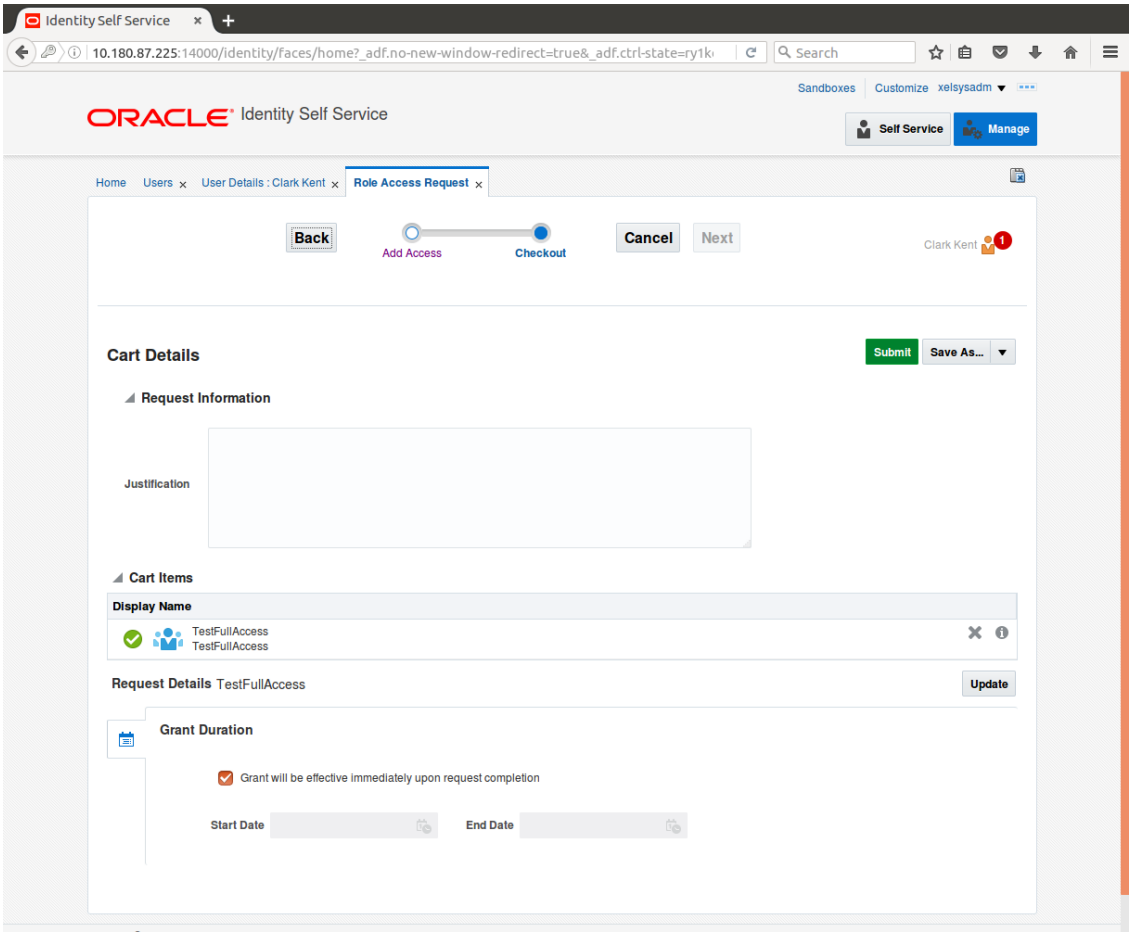
5. Click **Checkout.**

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

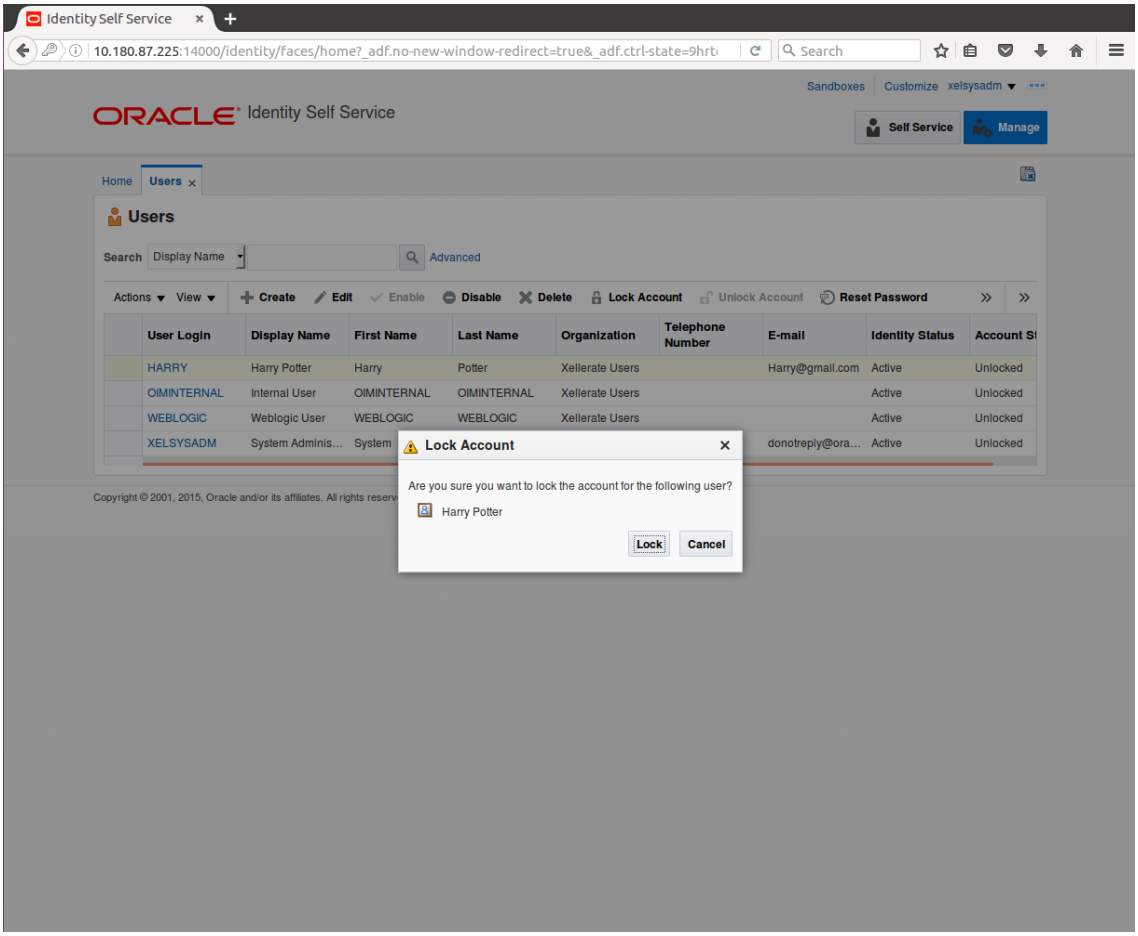
This section explains how to lock the user in OIM.

To lock a user:

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

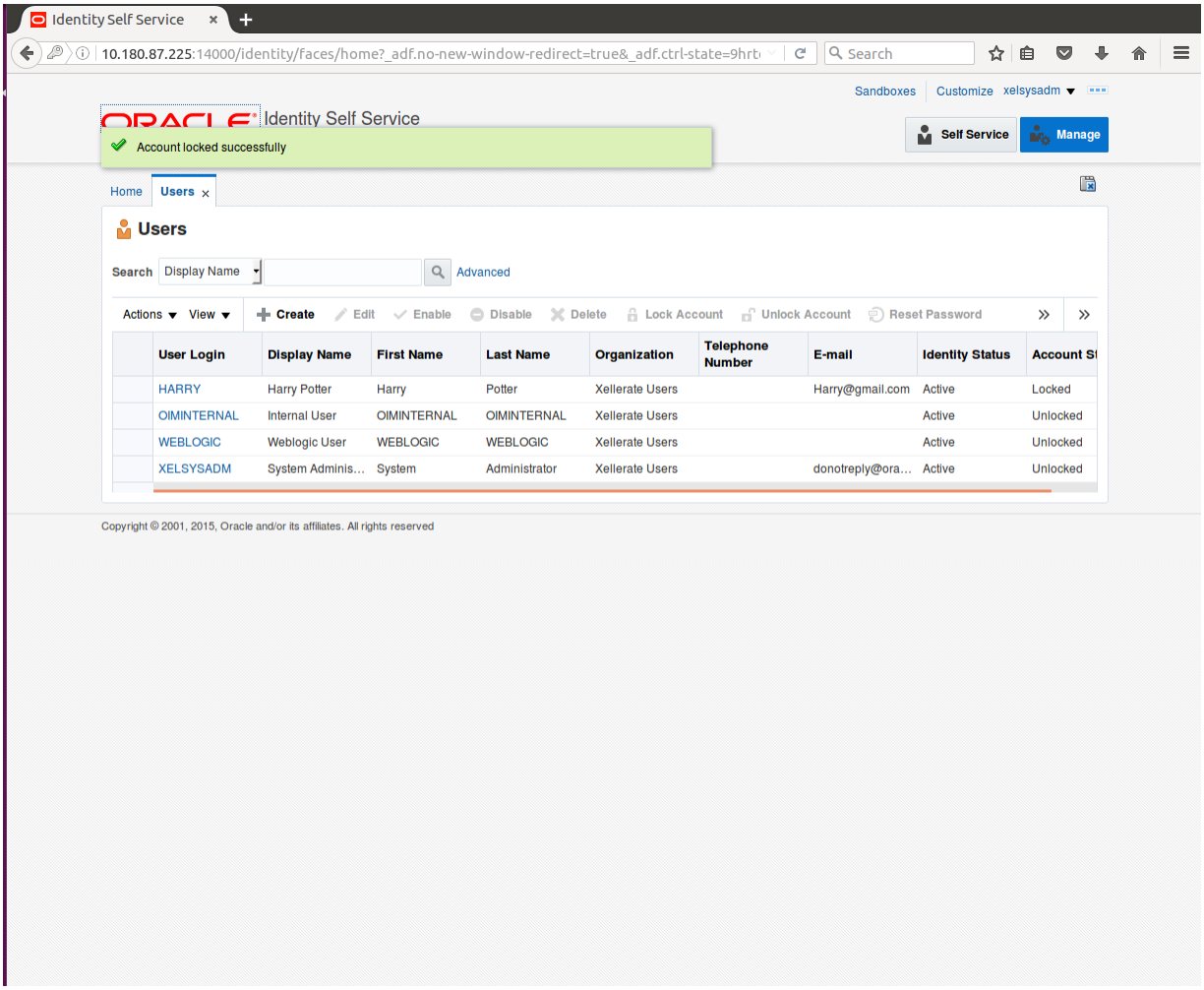
   A message appears, Are you sure you want to lock the account for the following user?
3. Click **Lock.**

Figure 1–14 Locking Users in OIM



The user is locked successfully.

Figure 1–15 User Locked Successfully



1.5 Unlocking Users in OIM

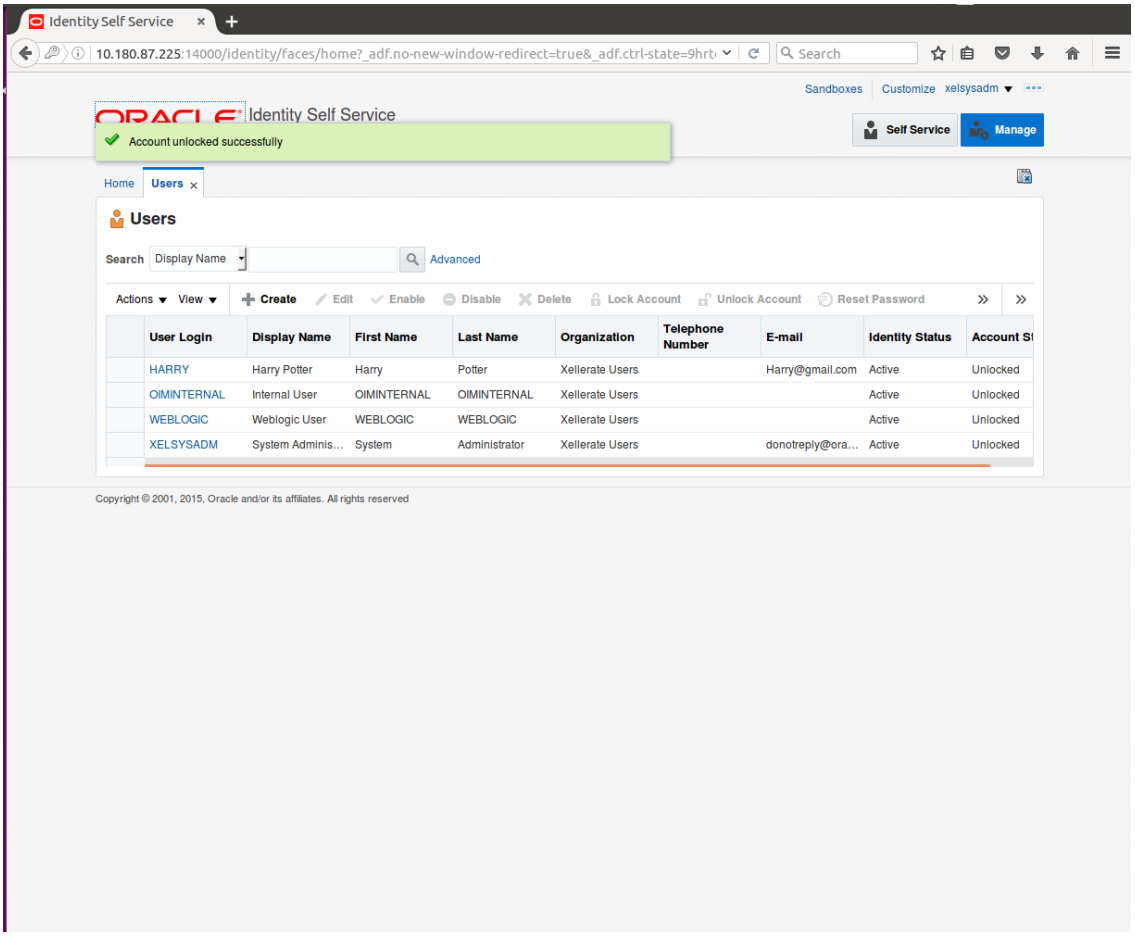
This section explains how to unlock the user in OIM.

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



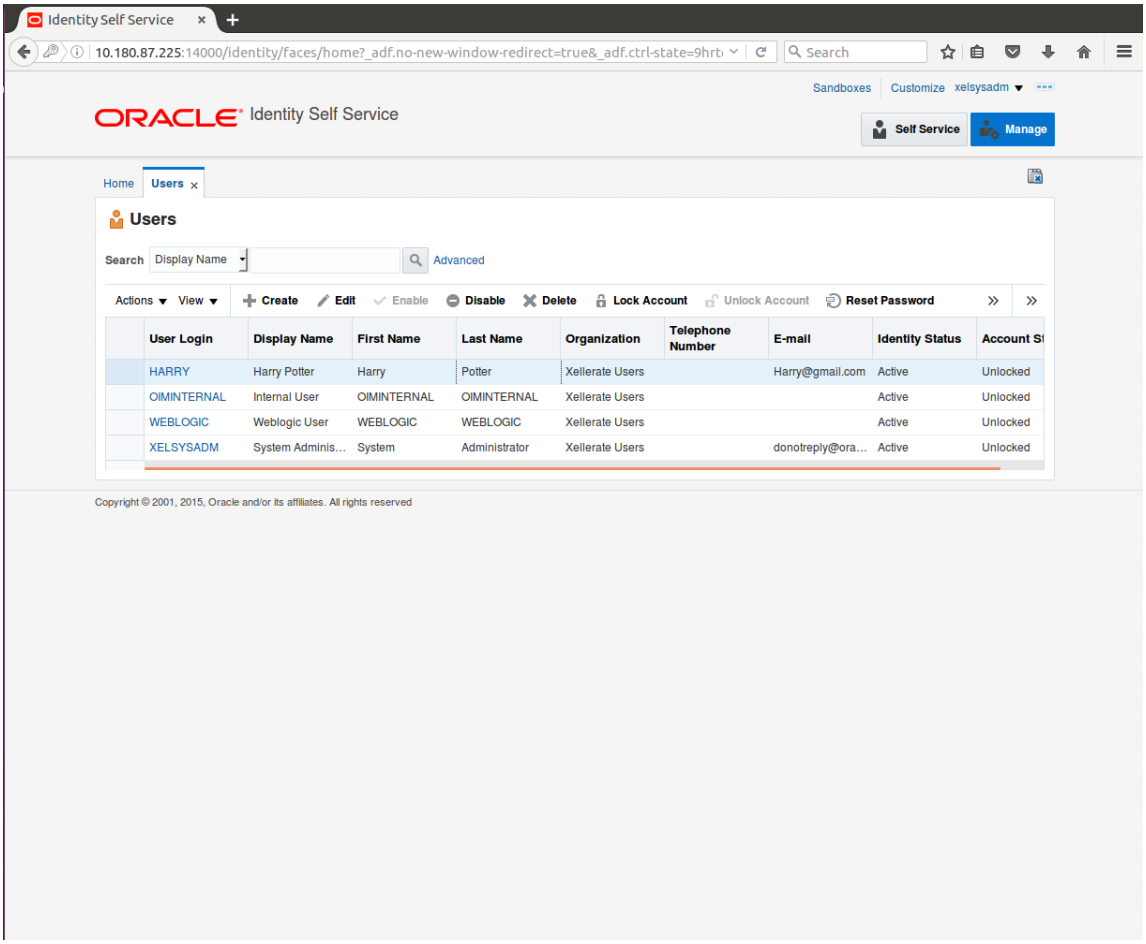
The user is unlocked successfully.

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.

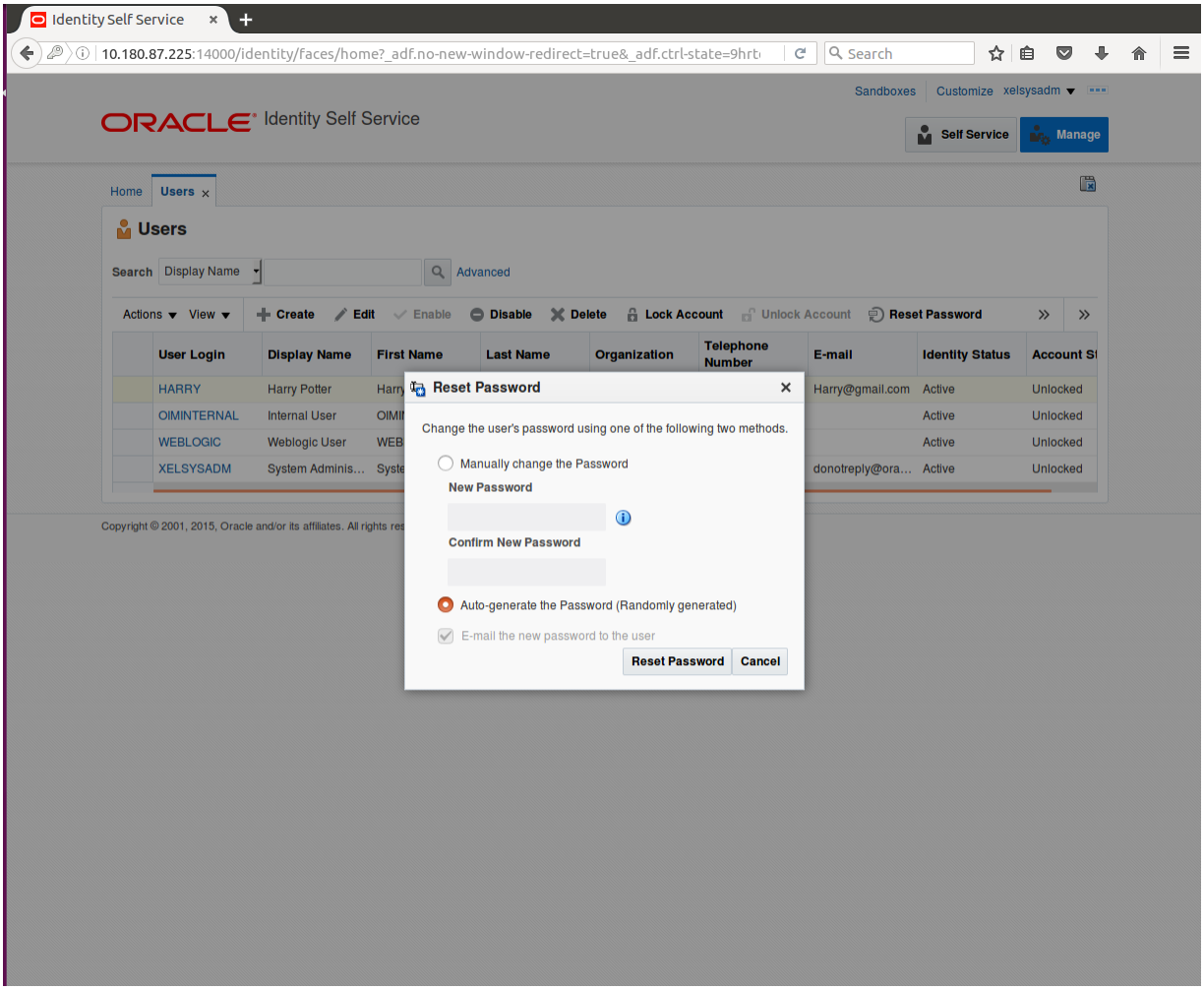
Figure 1–17 Resetting User Password in OIM



The **Reset Password** dialog box appears.

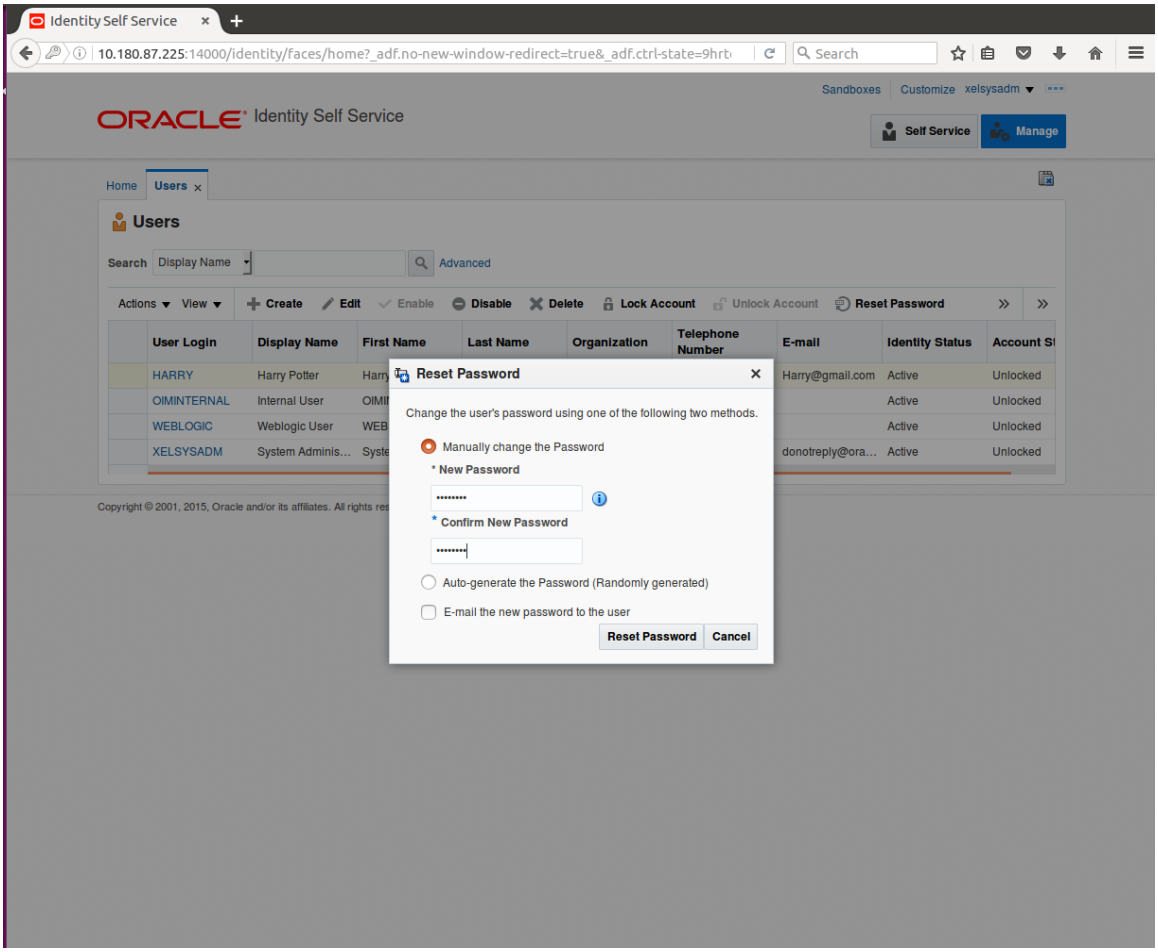
You can select either **Manually change the Password** option to change the password manually or select the **Auto-generate the password (Randomly generated)** option to enable auto generation of the password.

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



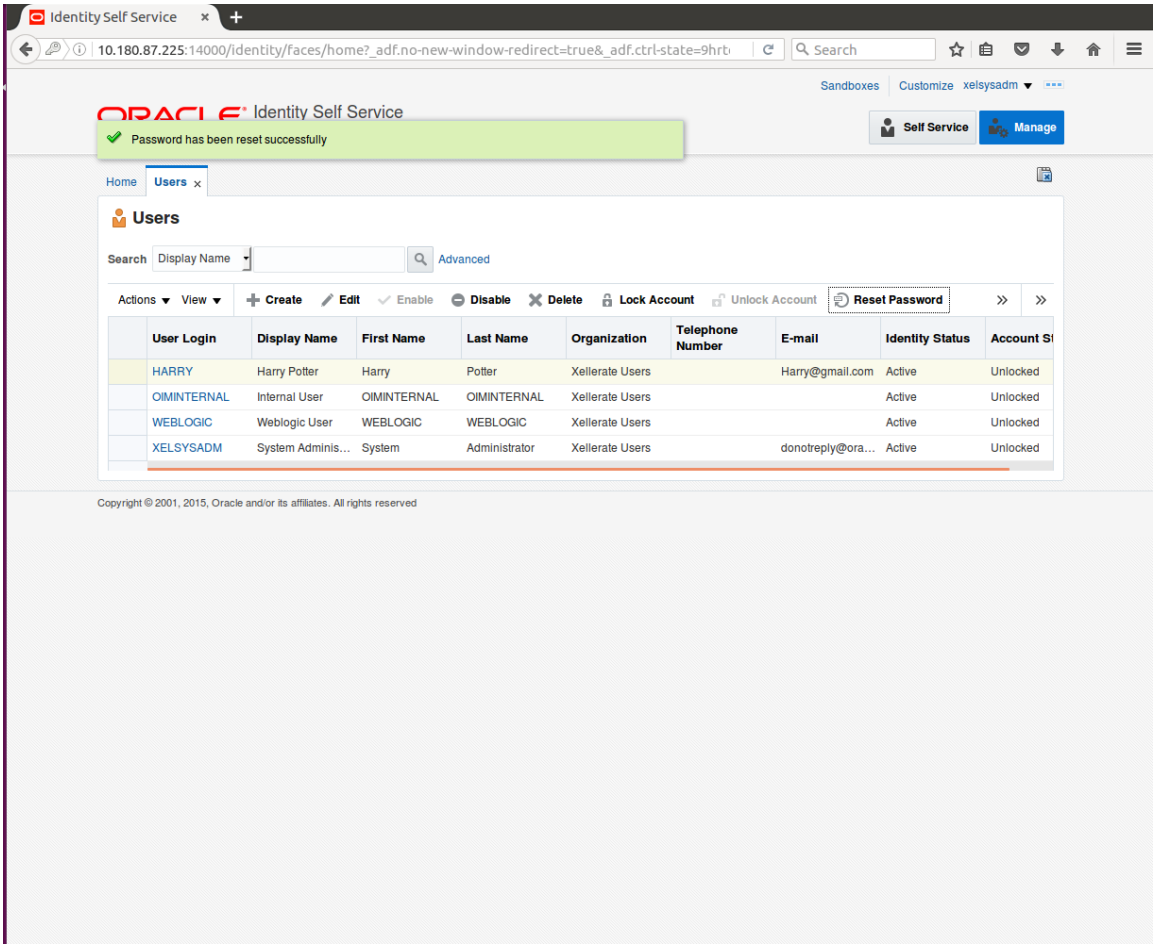
3. If you select the **Manually change the Password** option, enter the new password in the **New Password** and the **Confirm New Password** fields.

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

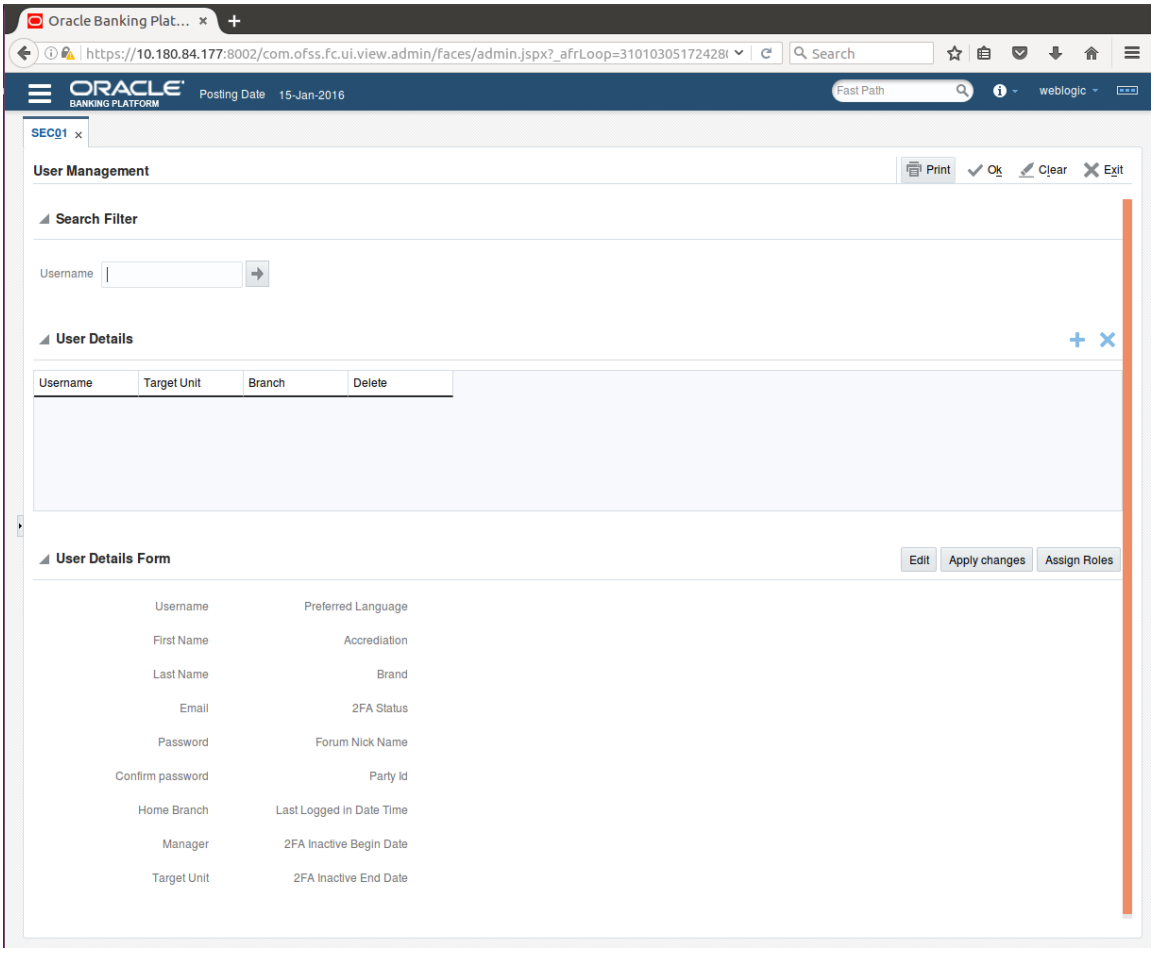
The User Management screen is a quick start UI, provided to create initial users and verify the OBEDM installation.

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:

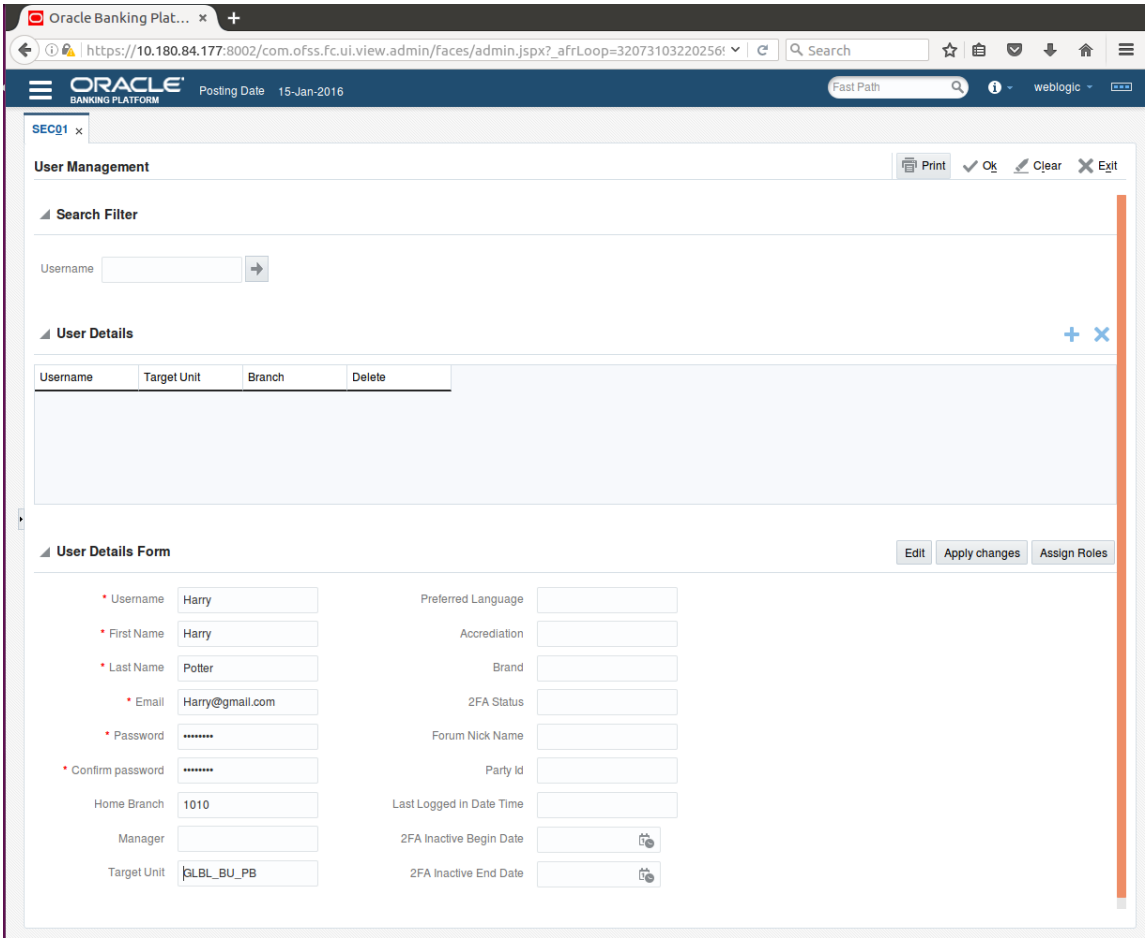
1. Click **Security** tab in **View Admin**.
2. Select **User Management**.
3. Click **+** icon to add a user.

Figure 1–21 Adding a User



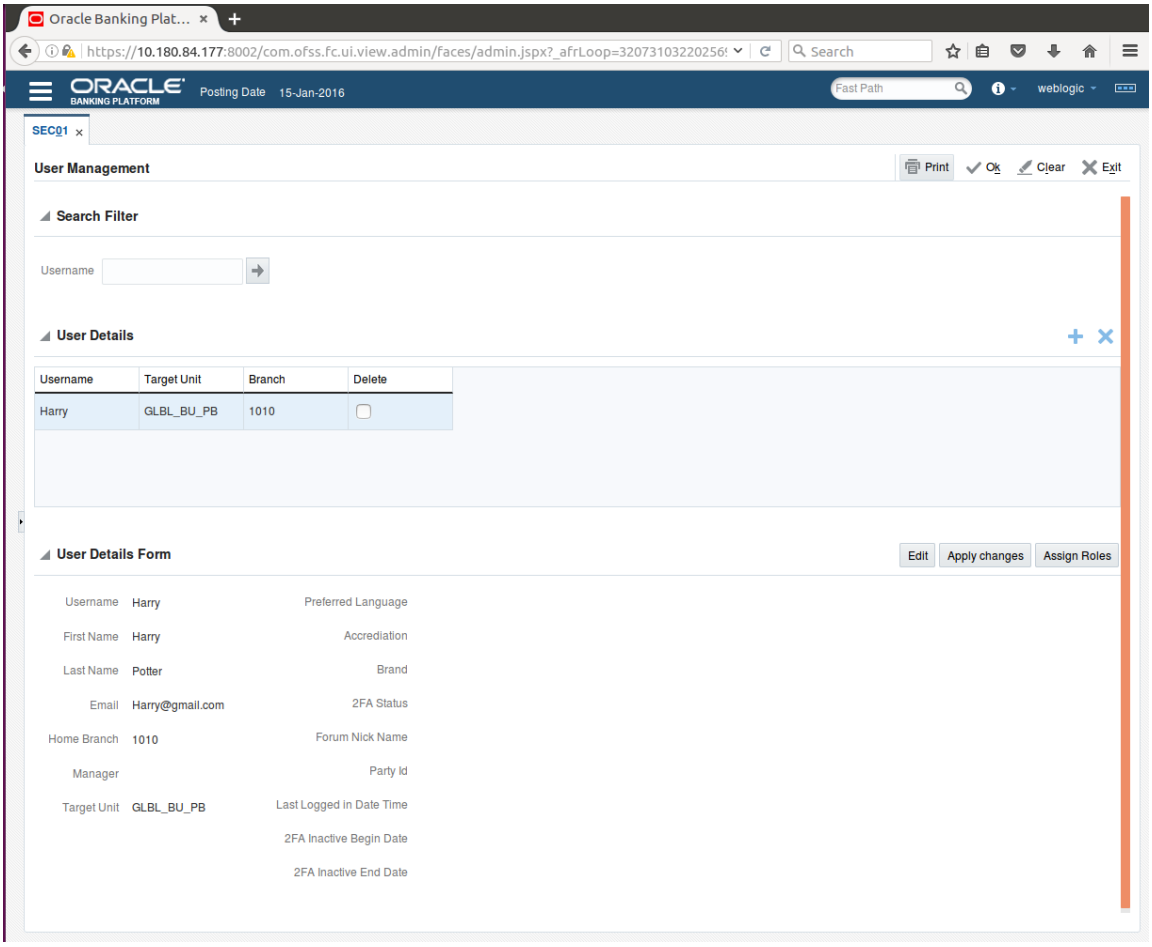
4. Enter the mandatory fields required for creating a user.

Figure 1–22 Enter Mandatory Details



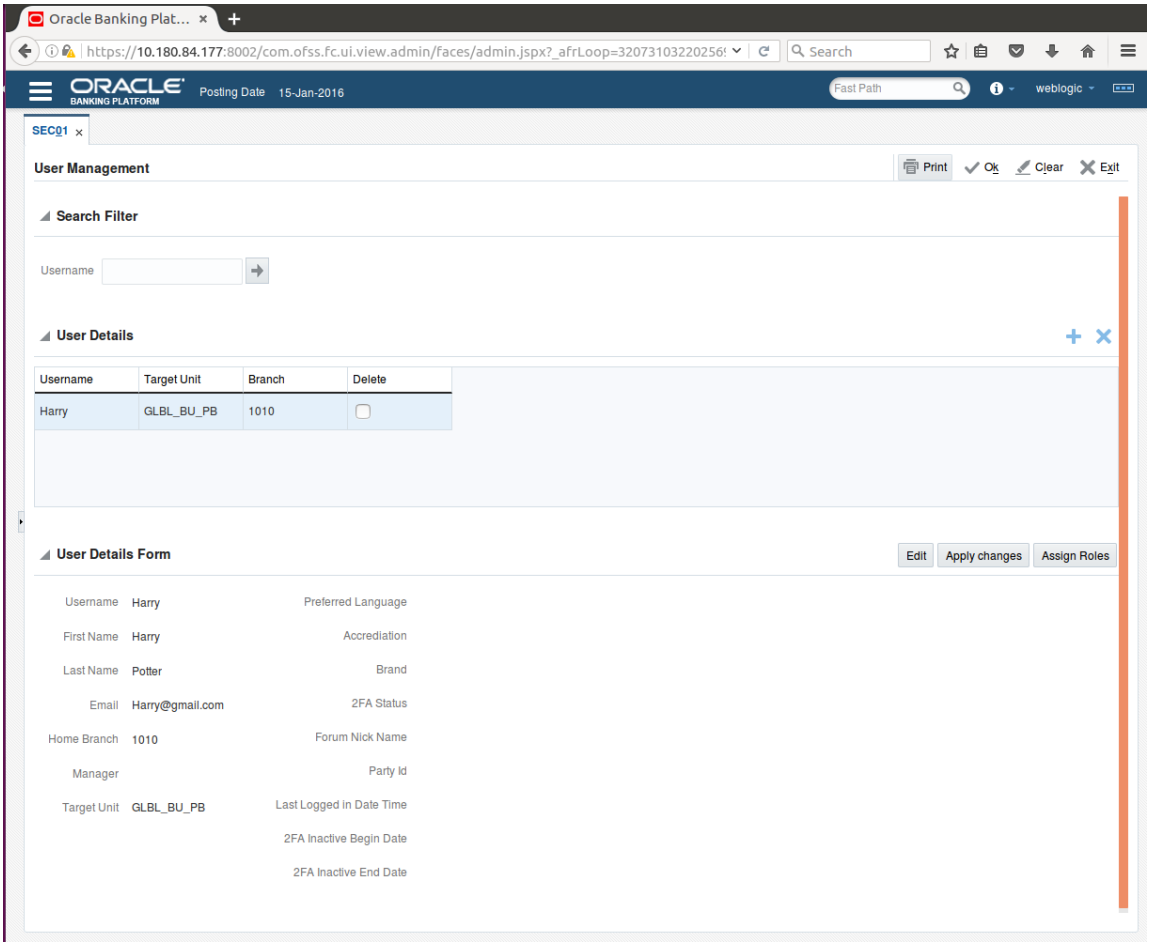
5. Click **Apply Changes** to save the user details locally.

Figure 1–23 Applying Changes



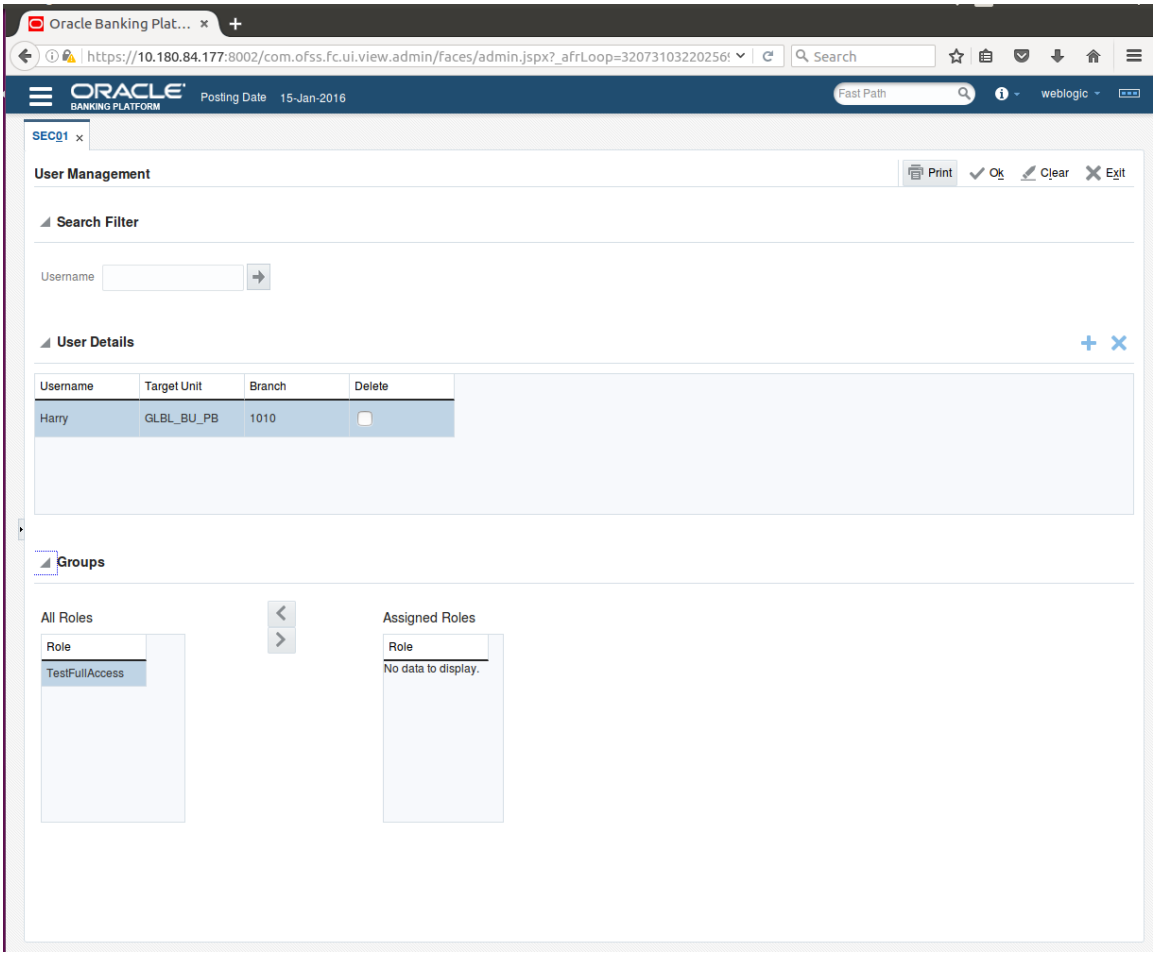
6. To add a user to a group, select the row containing the user and click **Assign Roles**.

Figure 1–24 Adding User to a Group



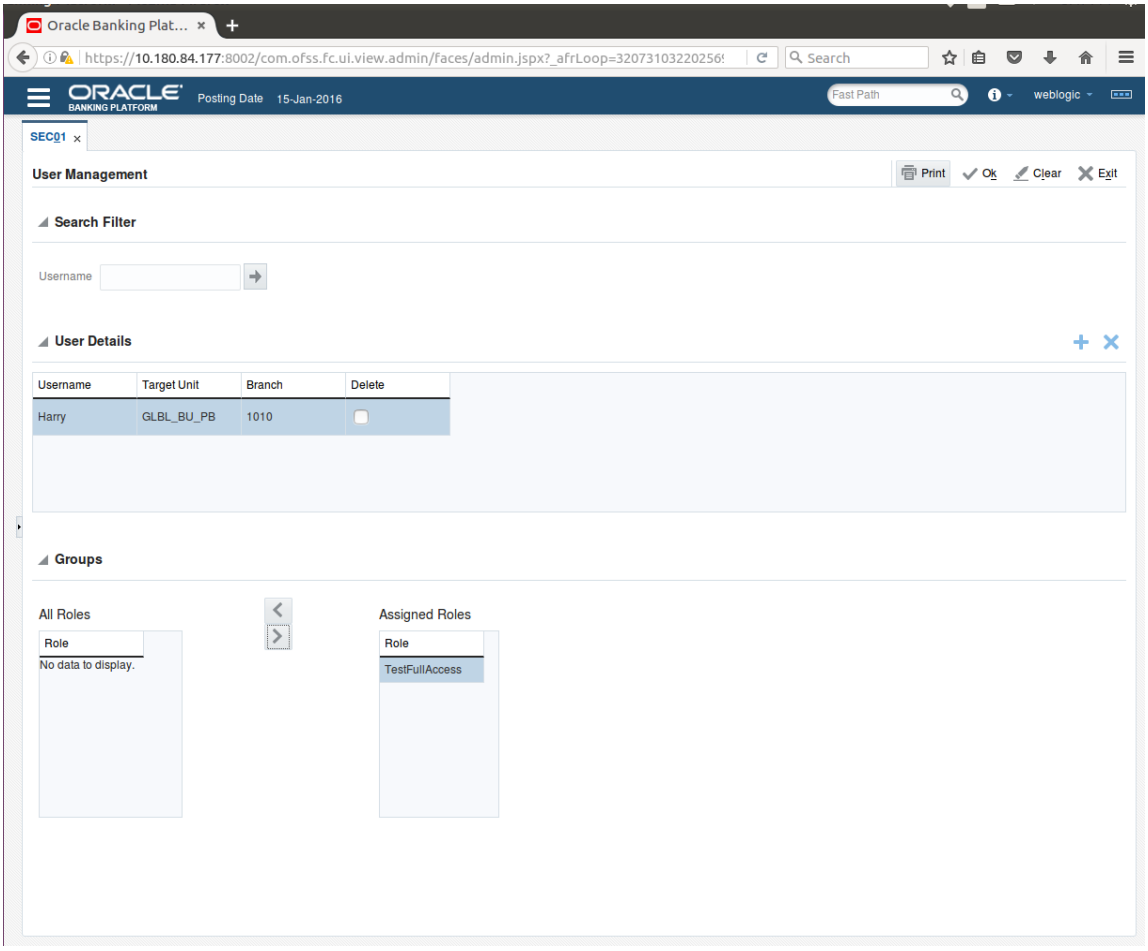
The available and assigned roles appear.

Figure 1–25 Available and Assigned Roles



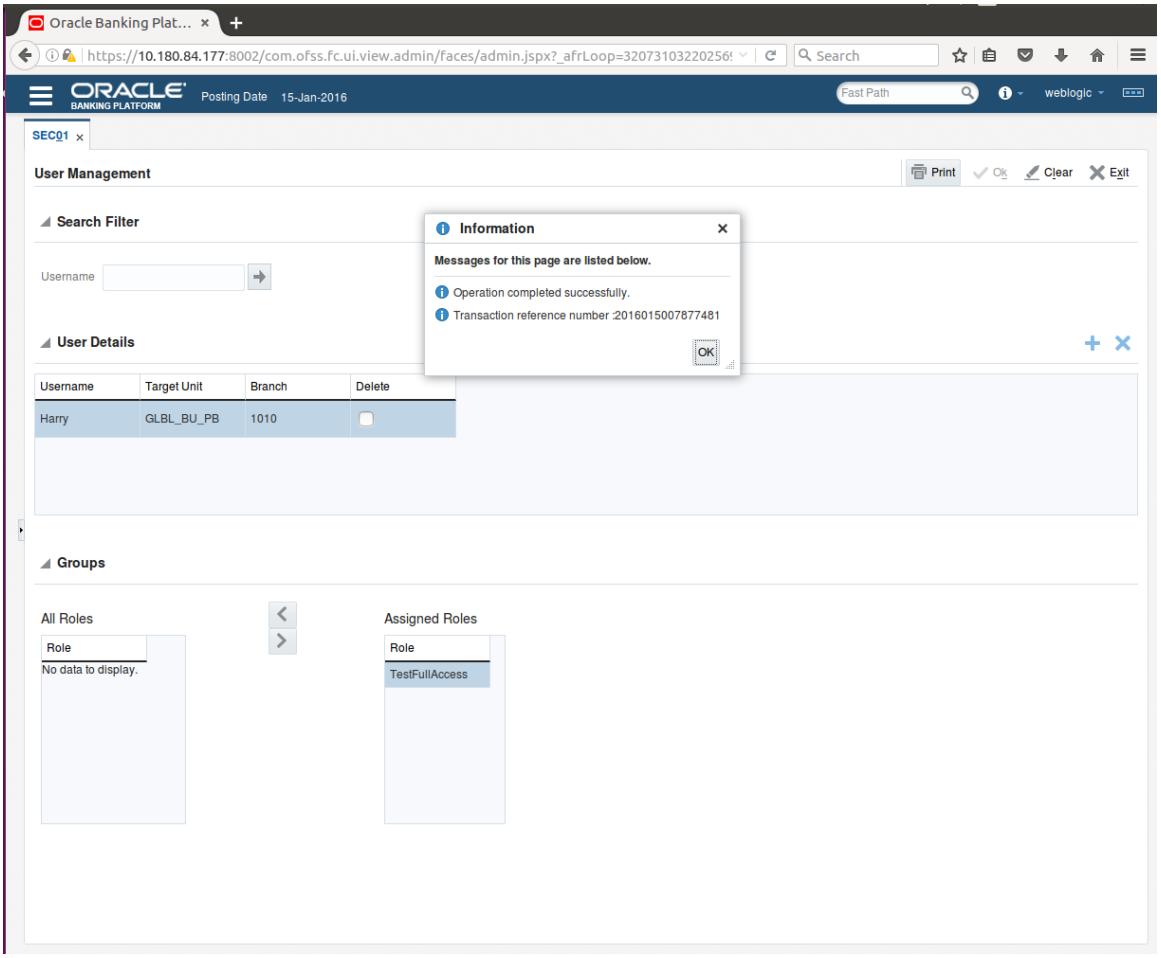
7. Select the group to add user and move it to the **Assigned Roles** table.

Figure 1–26 Adding User to Assigned Roles Table



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

Figure 1–27 Save Changes



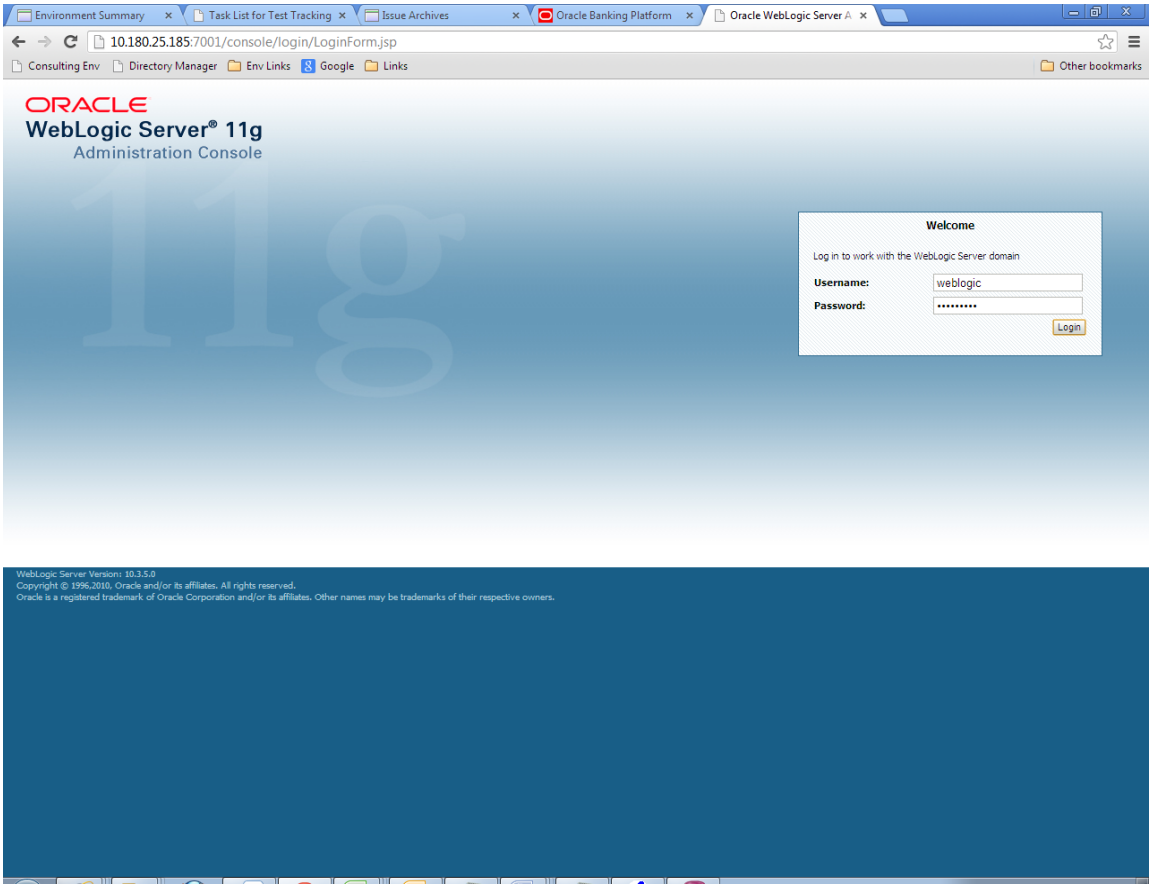
1.8 Unlocking Users in Oracle WebLogic Server (OWS) Administration Console

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:

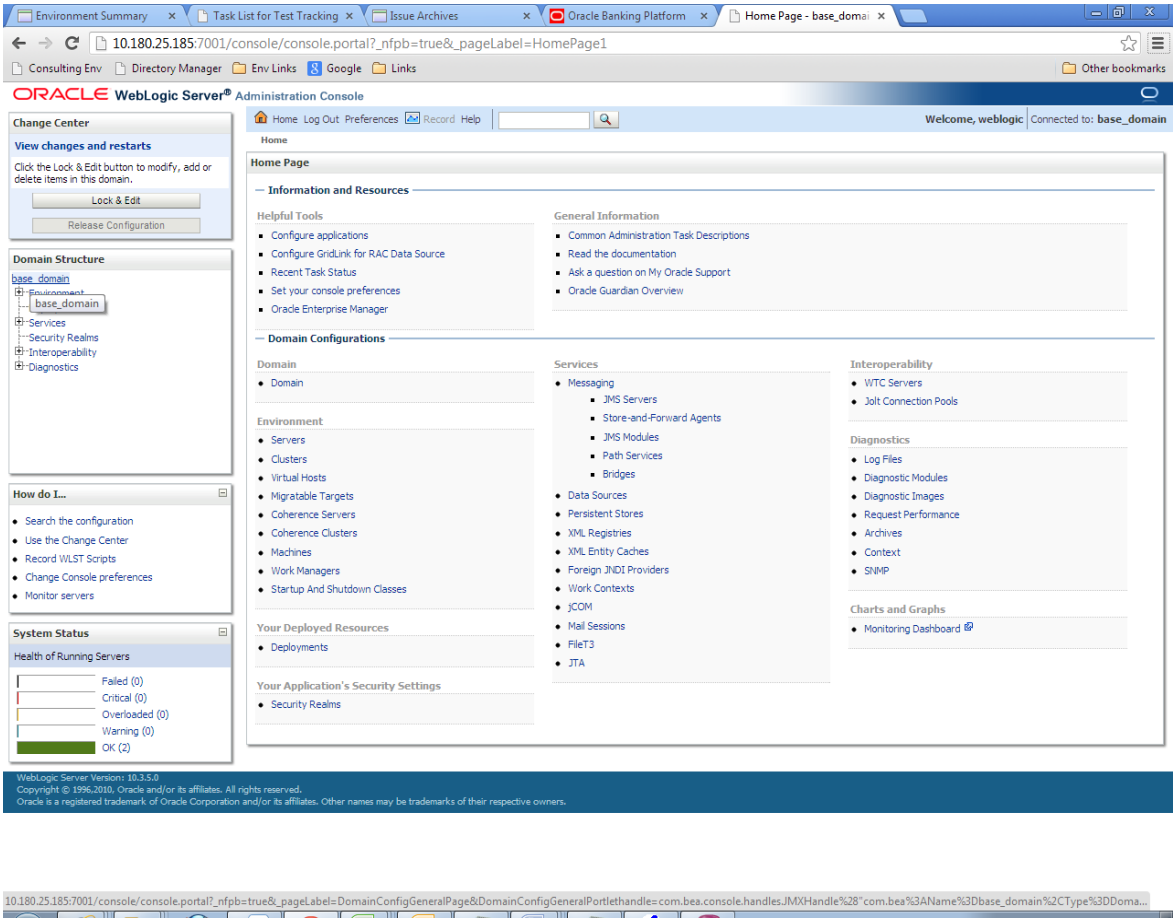
1. Log in to OWS. The **Home Page** of OWS Administration Console appears.

Figure 1–28 OWS Log in



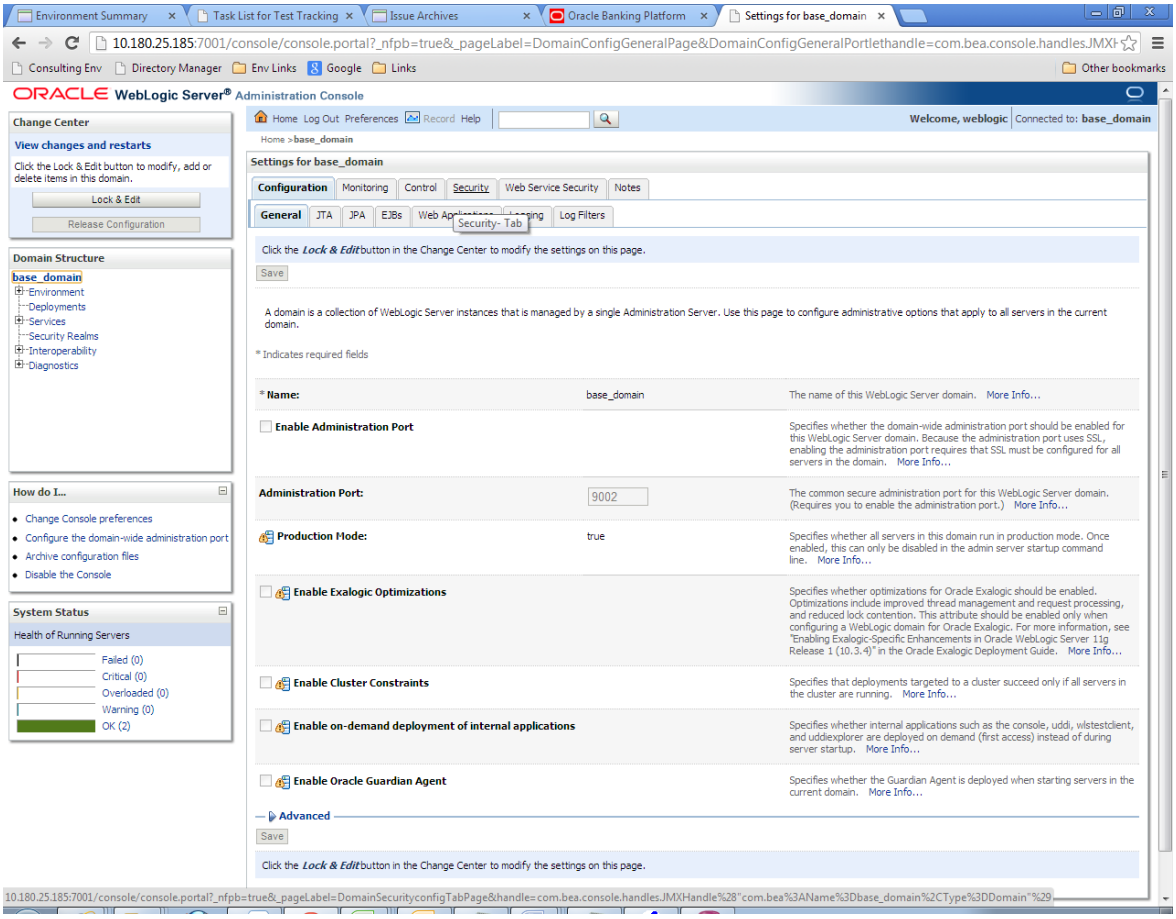
2. In the **Domain Structure** section, click the **base_domain** link.

Figure 1–29 base_domain



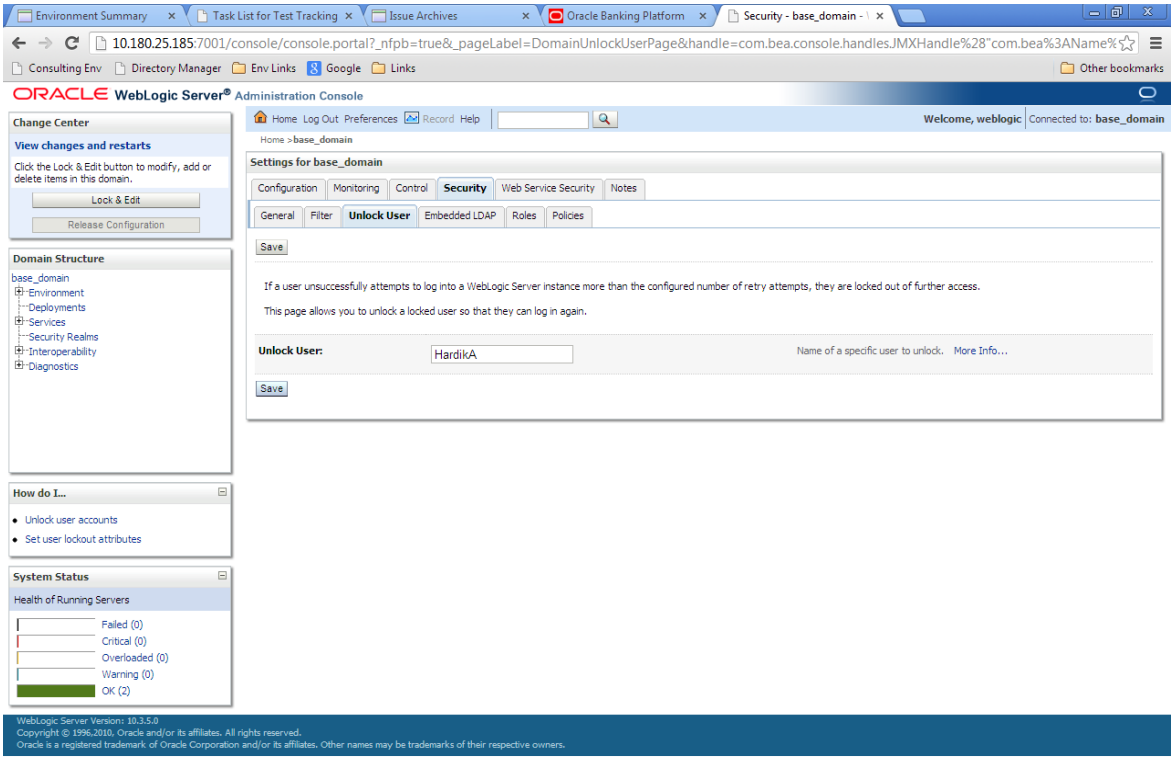
3. In the **Settings for base_domain** page that appears, click the **Security** tab.

Figure 1–30 Security tab



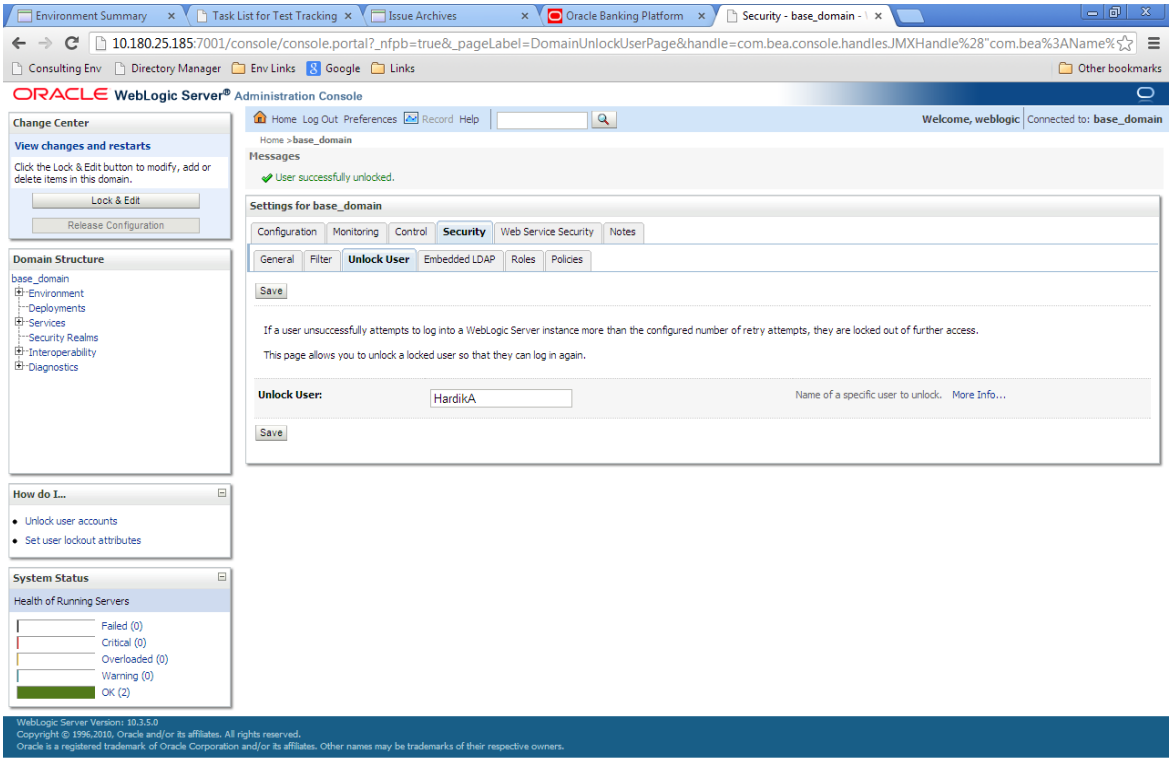
4. Click the **Unlock User** tab.
5. In the **Unlock User** field, enter the User ID to unlock the user.

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 OBEDM

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

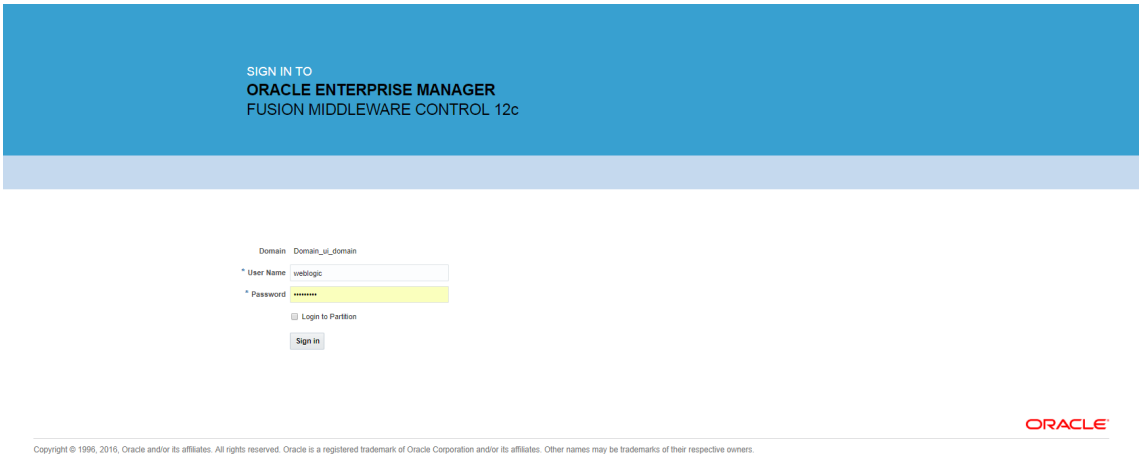


Figure 1–34 Click Application Roles

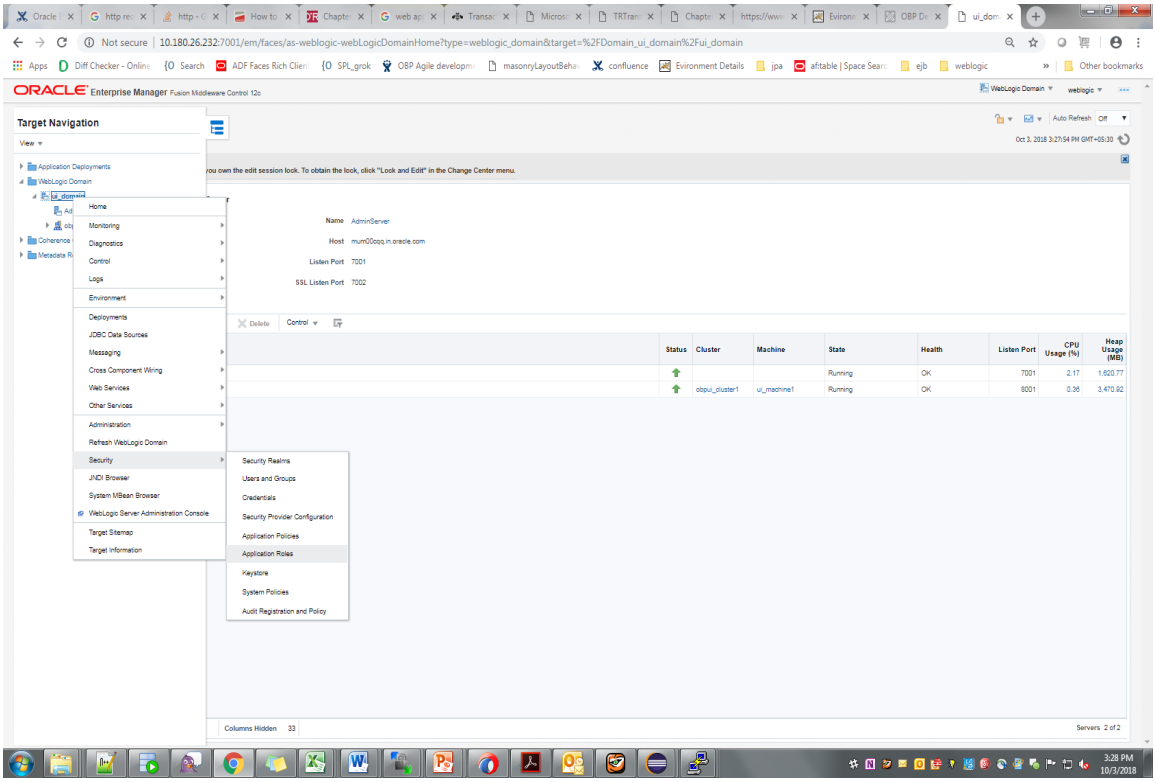


Figure 1–35 Select Administrators Role

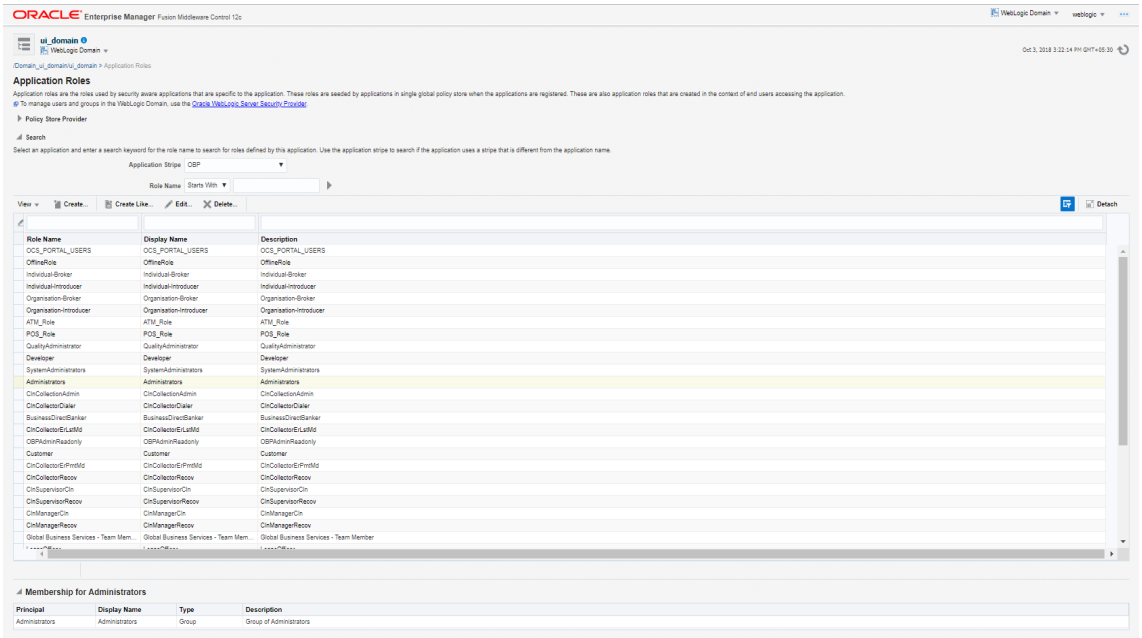
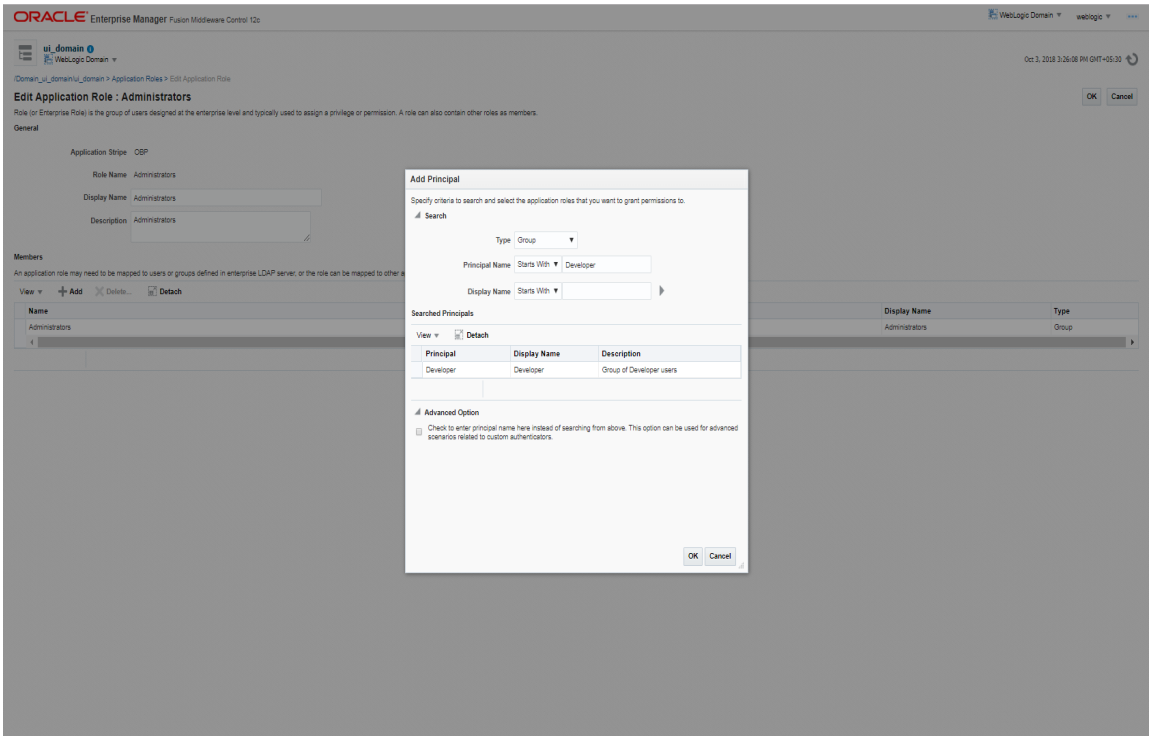


Figure 1–36 Add Principal



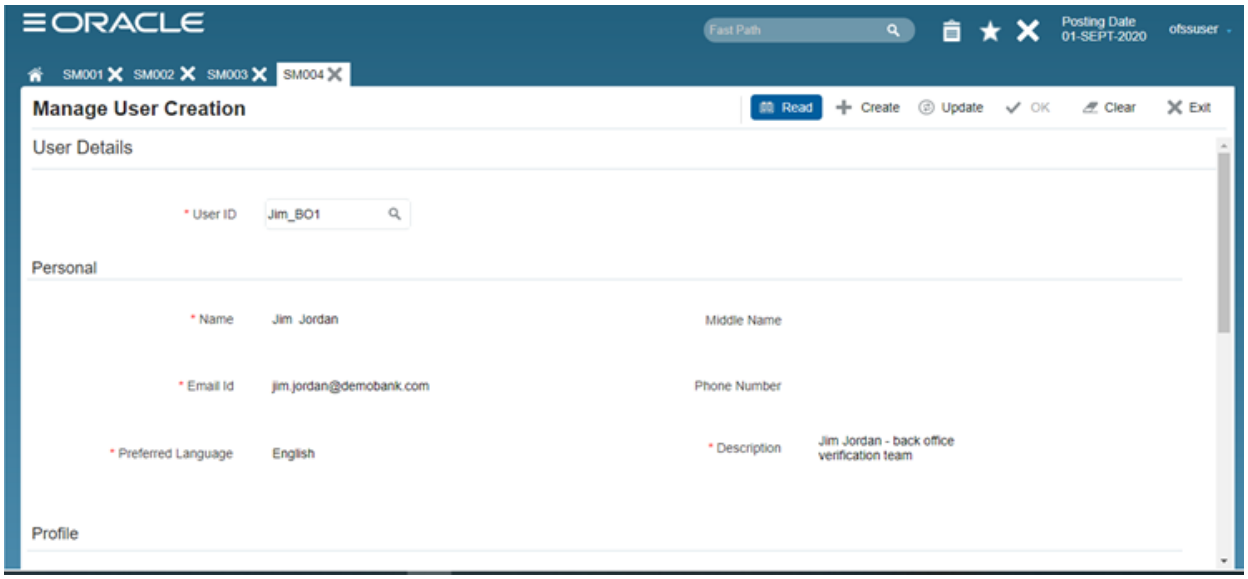
2 User Management With Local Security

This chapter describes the configurations to be done if local security option is configured, instead of OIM based security.

2.1 Create User or User Details

Using the Manage User Creation (SM004) screen, a new user can be created by filling in all the details. The users are mapped to the enterprise role in this screen.

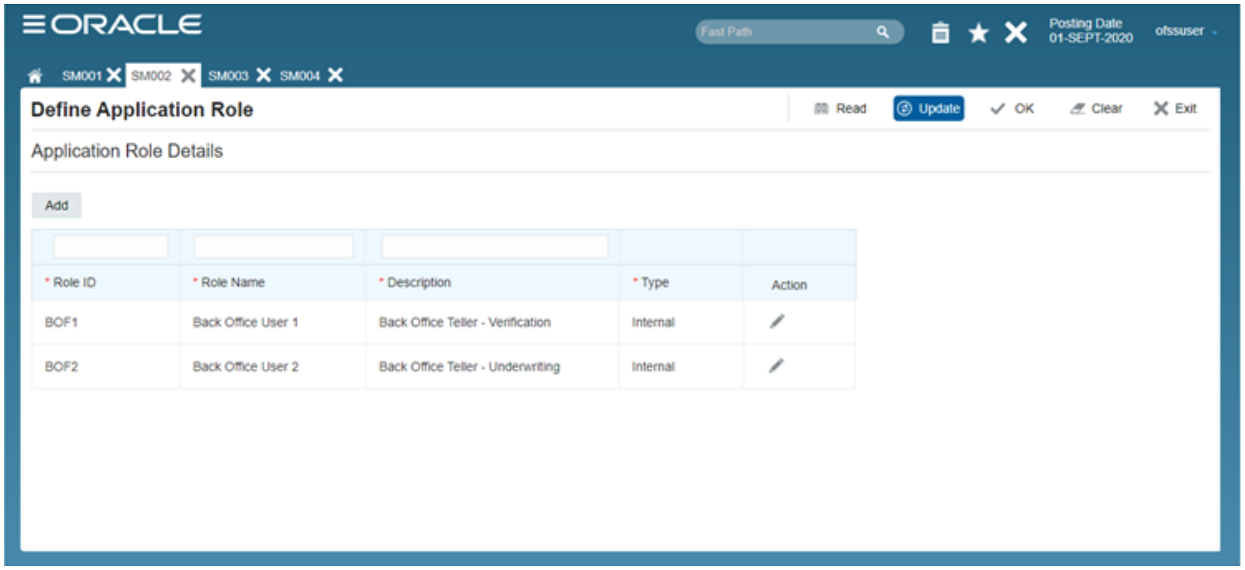
Figure 1–37 Create User



2.2 Define Application Roles

The application roles are created using the Define Application Role (Fast Path: SM002) screen. The application roles are used within the application. For more information, Oracle Banking Enterprise Default Management Security Guide.

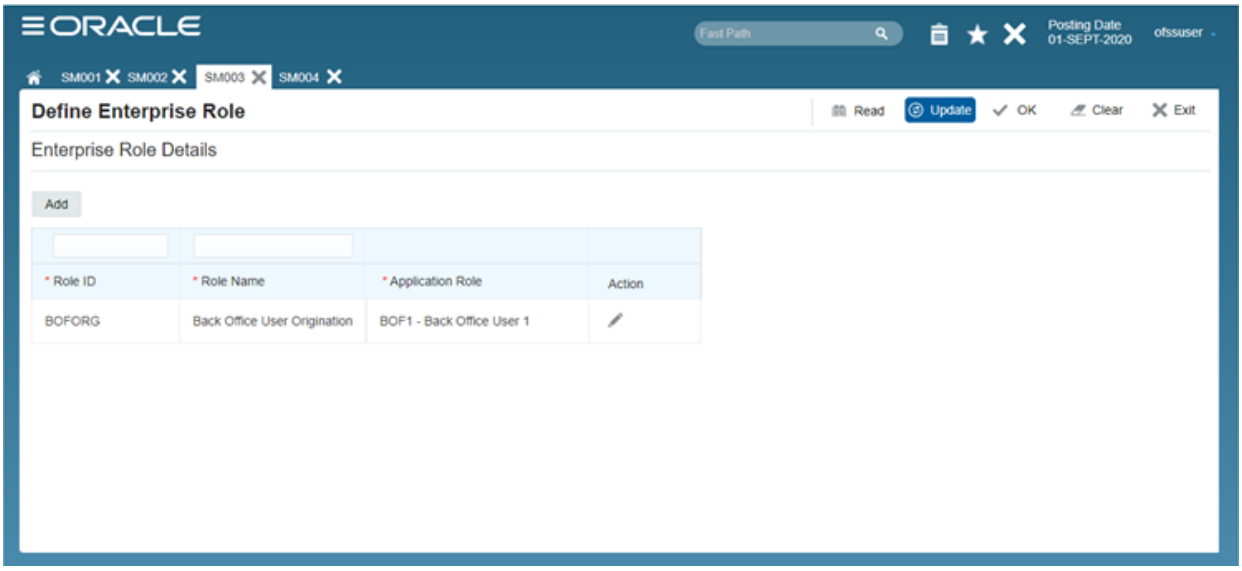
Figure 1–38 Define Application Role



2.3 Define Enterprise Role

The enterprise roles are used across organization. These roles are created and are mapped to application roles using the Define Enterprise Role (Fast Path: SM003) screen.

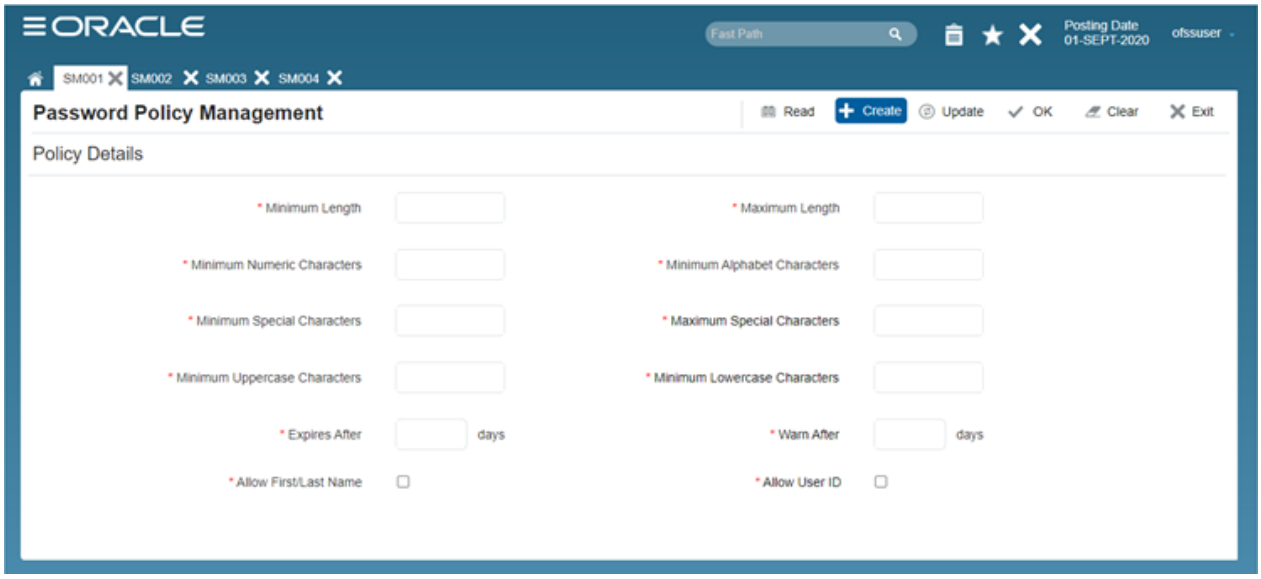
Figure 1–39 Define Enterprise Role



2.4 Password Policy Management

The Password Policy Management (Fast Path: SM001) screen covers the details of password policy to be managed by bank. All the prerequisites for password creation during user creation and password lifecycle are defined using this screen.

Figure 1–40 Password Policy Management



3 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.

3.1 Common Services Day 0 Setup

The Common Services setup includes the following sections.

3.1.1 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)
- Bank Parameters (Fast path: CS03)
- Branch Parameters (Fast path: CS06)
- 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)
- 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.

3.1.1.1 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.

3.1.2 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.

3.1.3 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.

3.2 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 Domain Category Accounting Template (Fast path: AS016)
- Define Domain Role Mapping (Fast path: AS019)

Note

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

3.3 Product Manufacturing Day 0 Setup

Following are the required setups:

Prerequisites

Following are the prerequisites for Product Manufacturing Day 0 Maintenances:

- Common Services: Purpose Code, Currency Code, Calendar Maintenance, Bank Policy
- Accounting Template Maintenance

- 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)
- 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)

Day 0 Maintenances

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

- Define Hardship Relief Policy (Fast path: PM006)
- Define Interest Rule (Fast path: PM011)
- Define Domain Category Settlement Mode (Fast path: PM030)

Note

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

4 Application Monitoring Using Administration Application

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

4.1 Dynamic Monitoring Service (DMS)

The aim is to monitor different channels involved in performing transactions with OBEDM. The monitoring parameters consists of channels, services, trends (current behavior of execution), and time metrices. 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.

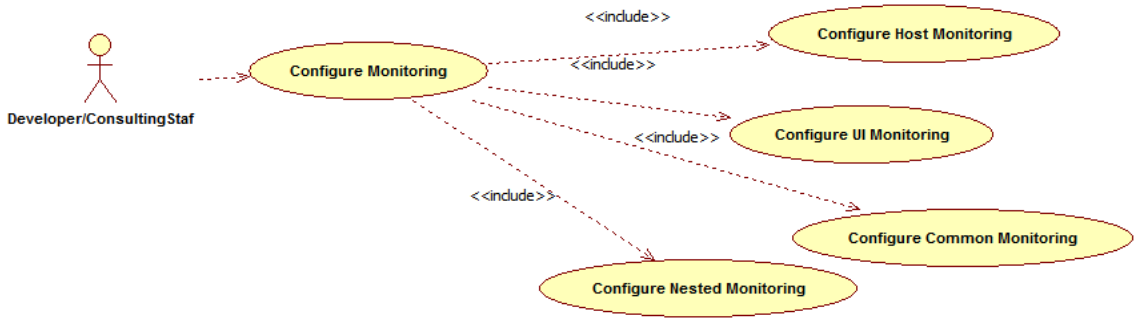
4.1.1 Usage

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 OBEDM system. The configuration can be made either for available services or for new services.

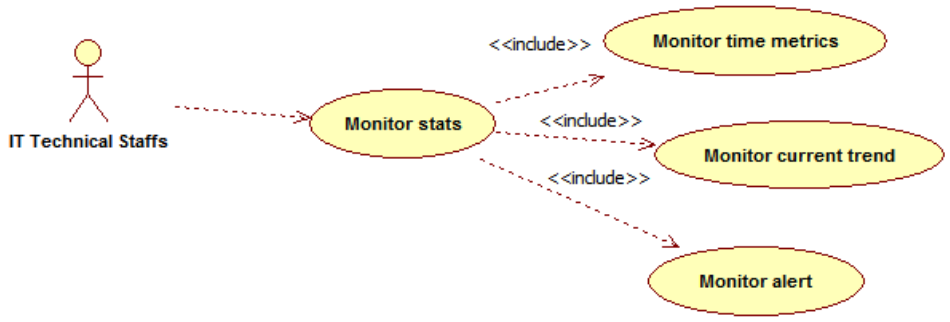
Figure 3–1 Developers



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 3–2 IT Technical Staff



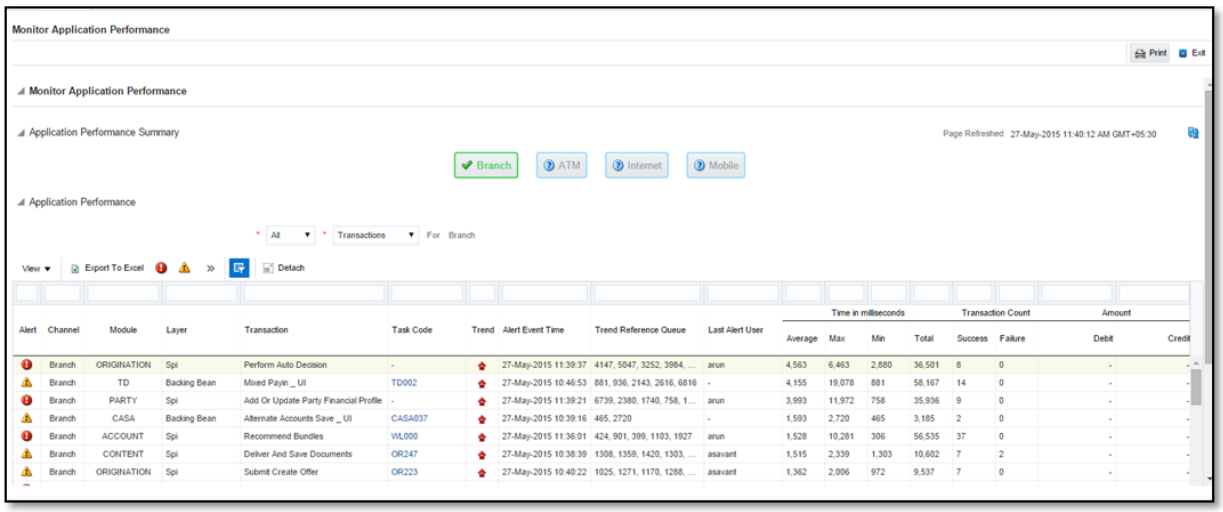
4.1.2 Monitoring Application using the OPA001 page

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.

4.1.2.1 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 3–3 Monitoring Application Performance



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

4.1.2.1.1 Application Performance Summary

This section gives the information about the different channels of OBEDM 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 3–4 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

4.1.2.1.2 Log Level

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

Figure 3–5 Log Level

4.1.2.1.3 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, 'ALL' button is to be clicked.

Trend

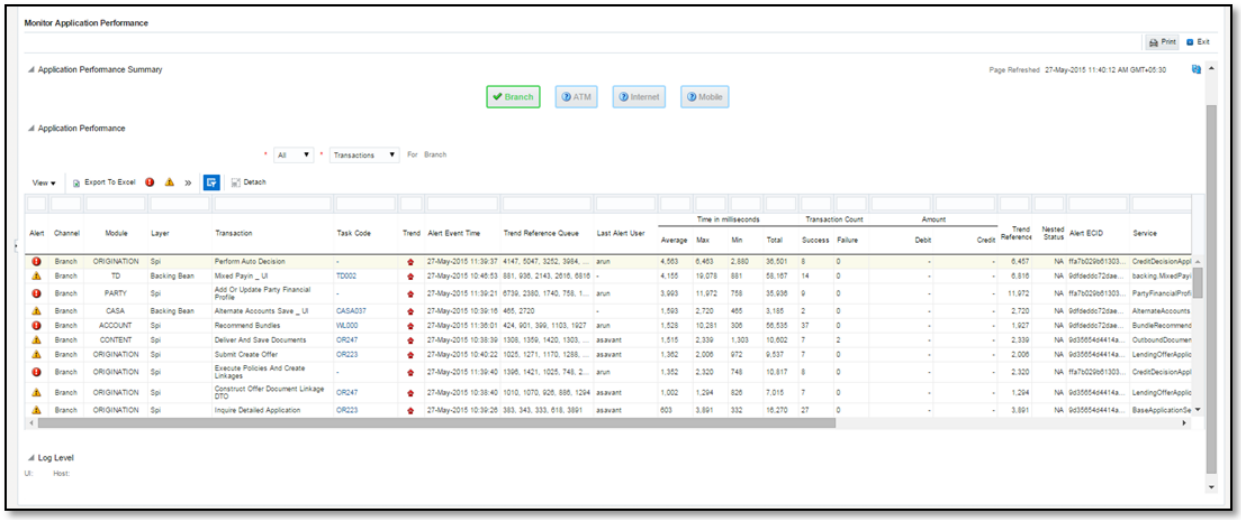
Indicates trending of execution timings of transaction. It is calculated by algorithm namely, Exponential Moving Average where if the execution time goes above the specified limit which is calculated by adding average execution time of the transaction and allowed limit (varies logarithmically to execution 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 OBEDM 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 3–6 Alert State



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

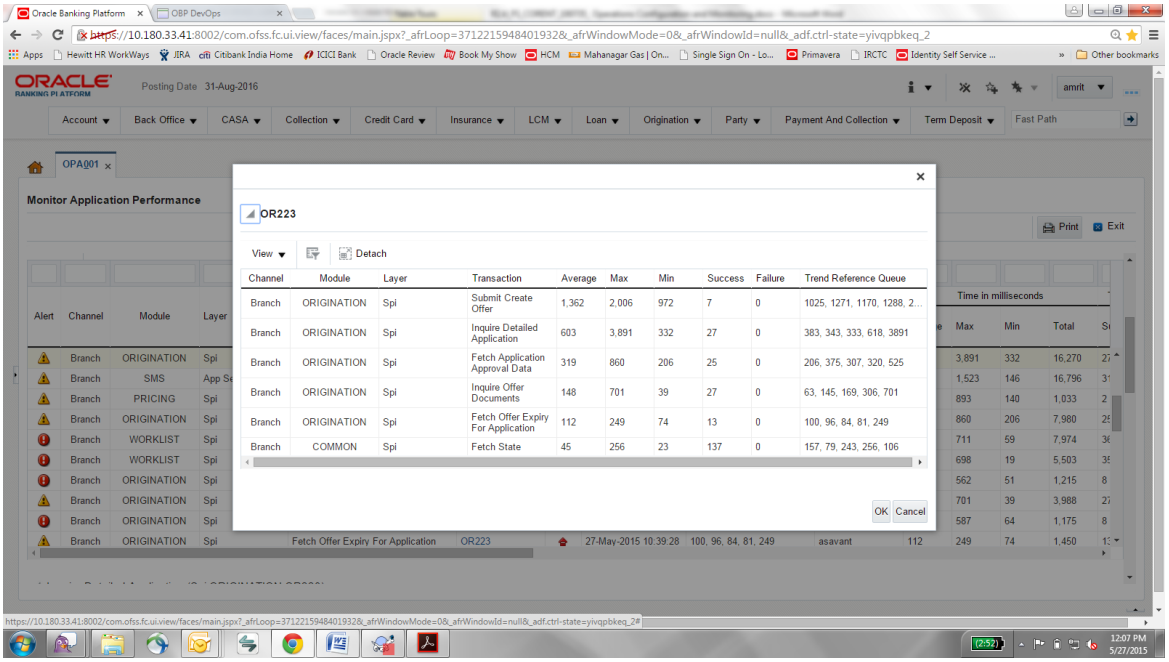
Table 3–1 Alert State

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	OBEDM 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 OBEDM 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 OBEDM)

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

Figure 3–7 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 3–8 Selection of Desired Transaction

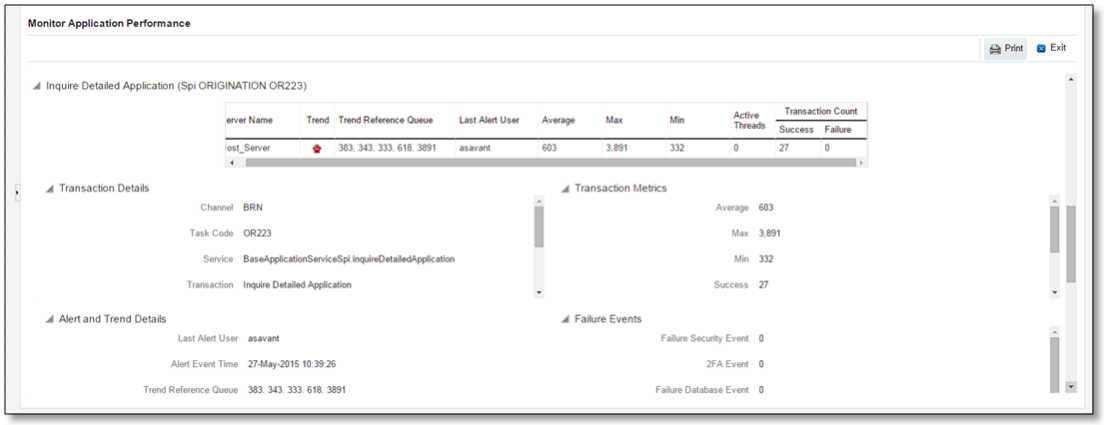


Figure 3–9 Transaction Details

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 3–10 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 3–11 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 3–12 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.

5 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.

5.1 Configuration

The following is the classification of information related to OBEDM. This information is used to drives TDE configuration.

Table 4–1 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 OBEDM are classified based on above classification and columns of those tables are marked based on sensitivity.

5.2 Installation

This section explains the installation process.

5.2.1 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`

5.2.2 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;`

5.2.3 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/)`

5.2.4 Run Created Alter Script

- Get TDE_Encryption.sql script from obpencryption/generatedScript/tde.
- Log in to database.
- Run TDE_Encryption.sql.

6 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).

6.1 Configuration

The following is the classification of information related to OBEDM. This information is used to drive TDE configuration.

Table 5–1 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 OBEDM are classified based on above classification and columns of these tables are marked based on sensitivity.

6.2 Installation

This section explains the installation process.

6.2.1 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 SYNONYMERO`

6.2.2 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.

6.2.3 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.