Oracle Banking Multi Entity Deployment Guide

Oracle Banking

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1. Preface

1.1 Introduction

This guide describes the approach that could be considered as a reference, while moving into multi-entity model.

1.2 Audience

This guide is intended for WebLogic admin or ops-web team who are responsible for installing the OFSS banking products.

1.3 Documentation Accessibility

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

1.4 Acronyms and Abbreviations

Following are some of the acronyms and abbreviations you are likely to find in this user manual:

Table 1: Acronyms and Abbreviations

Abbreviation	Description
JNDI	Java Naming and Directory Interface

1.5 List of Topics

This guide is organized as follow

Table 2: List of Topics

Topics	Description
Overview	This topic describes about Multi Entity Maintenance module.

1.6 Related Documents

For more information on any related features, you can refer to the following documents;

- Common Core User Guide.
- Oracle Banking Security Management System User Guide

2. Overview

Banks may have multiple implementations across geographies that necessitates the need to support multiple entities.

Multi Entity feature, introduced in Oracle Banking Microservices Architecture products, will enable a single instance of the product (and the underlying Oracle Banking Microservices Architecture platform) to onboard multiple entities of the bank onto the platform.

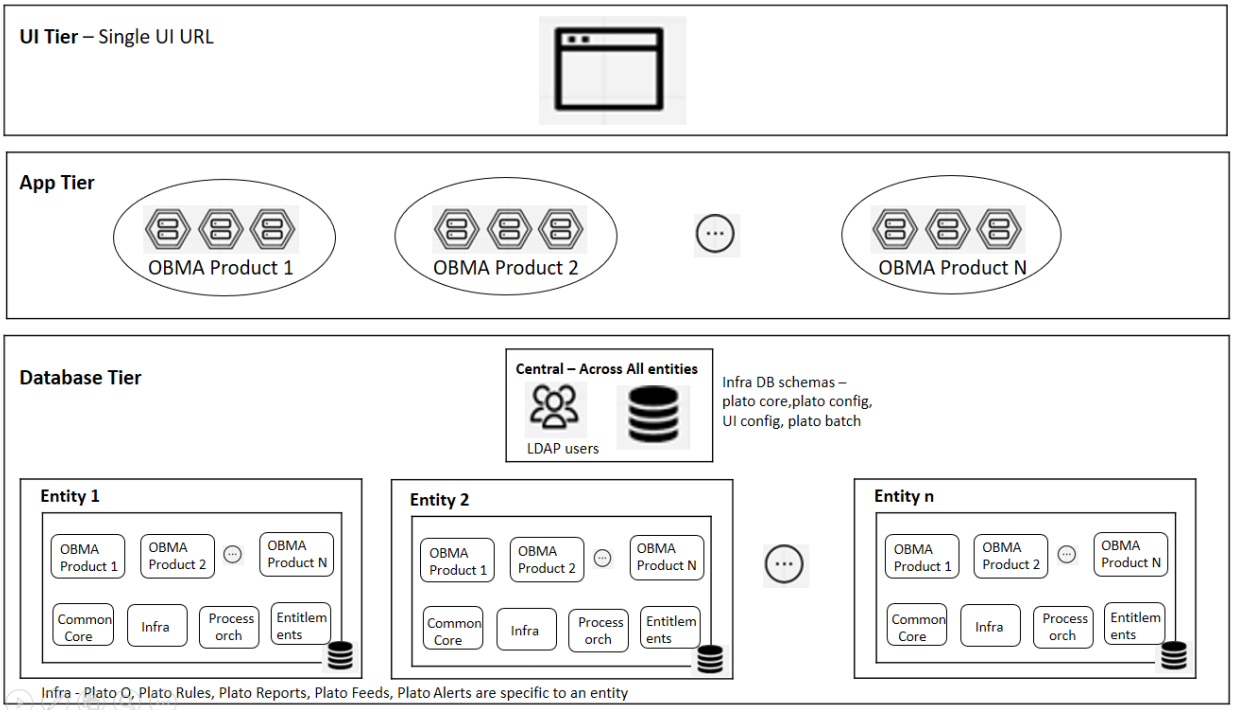
As part of **Multi Entity** feature, the below are the functionalities that will be supported in all Oracle Banking Microservices Architecture products.

- Creation of "Multi-Entity Admin" user(s)
- Entity Definition and Maintenance
- Creation of "Entity Admin" User(s) & regular Users
- Mapping of users (entity admins or regular users) to one or more entities - The users of the application will be central in nature and users can have access to one or more entities.
- User Entitlement will be local to the entity

2.1 Deployment Diagram

Deployment diagram depicts multi-entity based deployment model. Entities based on geographies are considered as an example in the deployment diagram.

Figure 1: Deployment Diagram.



UI Tier – UI Domain will be shared across multiple entities for a bank and so same UI URL will be used.

A user can be mapped to one or more entities and a single home entity. During login, user will be logged into to the home entity and an option would be provided to switch to any of the other associated entities.

Multi Entity admin user has the special access to create/modify new entities in the system.

App Tier – One or more managed servers that host all the microservices that are to be deployed for a product

This includes

- Infrastructure services – Plato Infra services (Plato Discovery, Plato API Gateway, Plato Batch, etc…) that are used across all products
- SMS service – for Role Based Authorization
- Common Core and Mid-office Common core services - Common domain related services that are used across by one or more products
- Domain services – micro-services related to Oracle Banking Microservices Architecture products (Oracle Banking Trade Finance Process Management, Oracle Banking Credit Facilities Process Management, Oracle Banking Liquidity Management, Oracle Banking Virtual Account Management, etc...)

Same as UI tier, App tier will also be shared across multiple entities. Based on the entity id provided in the request header, DB schema to the entity will be accessed for all CRUD operations.

Database Tier – The segregation of entities should be done in the DB layer. Separate DB schemas should be defined and used for the entities.

Below are shared across multiple entities

- LDAP users
- few infrastructure related DB schemas - Plato Config, Plato UI config, Plato core, and Plato Batch

Below schemas will NOT be shared and should be specific to an entity

- Infra related schemas - Plato O, Plato Rules, Plato Reports, Plato Feeds, and Plato Alerts
- User entitlements – SMS schema
- Common core schema
- Product specific DB schemas (each product will have multiple schemas; ideally 1 schema per microservice/sub-domain)

Banks that have a single entity should also follow the same architecture but with "DEFAULT_ENTITY" configured in the system.

2.1.1 Default Entity Creation

During environment setup, when microservices are deployed, DMLs/DDLs related to “DEFAULTENTITY” will be executed through flyway scripts.

Multi Entity Admin user should be created as mentioned in **Section 7.3** of **Oracle Banking Microservices Platform Foundation Installation Guide**.

Note: Two Multi entity admin users must be created to manage and authorize entity and users in the system

The bank must pre-determine if the application will be set-up as single or multiple entity system based on the actual implementation requirement. User can directly refer to section 2.1.2 Single Entity setup or 2.1.3 Multi Entity Setup

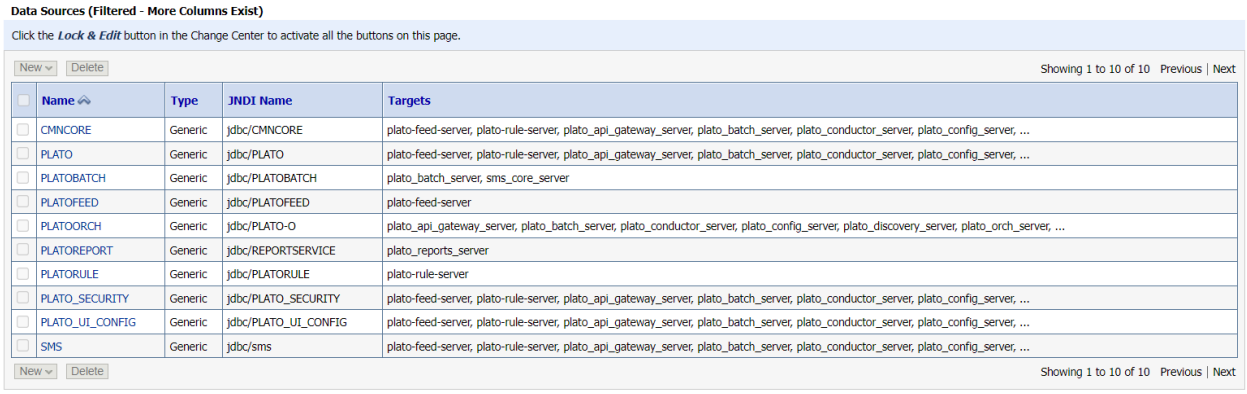
By default, the system will create an entity with name **DEFAULTENTITY** and the name is allowed to be modified only once and must be manually controlled..

2.1.2 Single Entity setup

Bank can modify the existing **DEFAULTENTITY** created by system during application set-up.

Before modifying the default entity, DB schemas corresponding to various domains should be identified and corresponding “Data Sources” should be created in weblogic server.

Figure 2: Data Sources



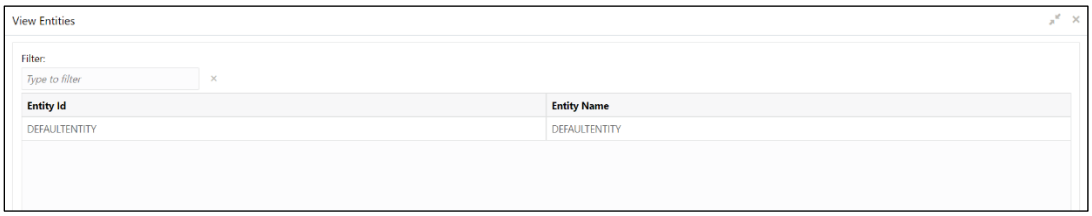
Once the Data Sources are mapped with the corresponding DB schemas and servers, restart the PLATO, CMC, SMS, and other required managed servers.

Check and verify in Eureka to see if all the services are up and running.

2.1.2.1 View Entities

1. Login to application with one of the multi entity admin user
2. From **Home** screen, click **Entities**. Under **Entities**, click **View Entities**.

Figure 3: View Entities



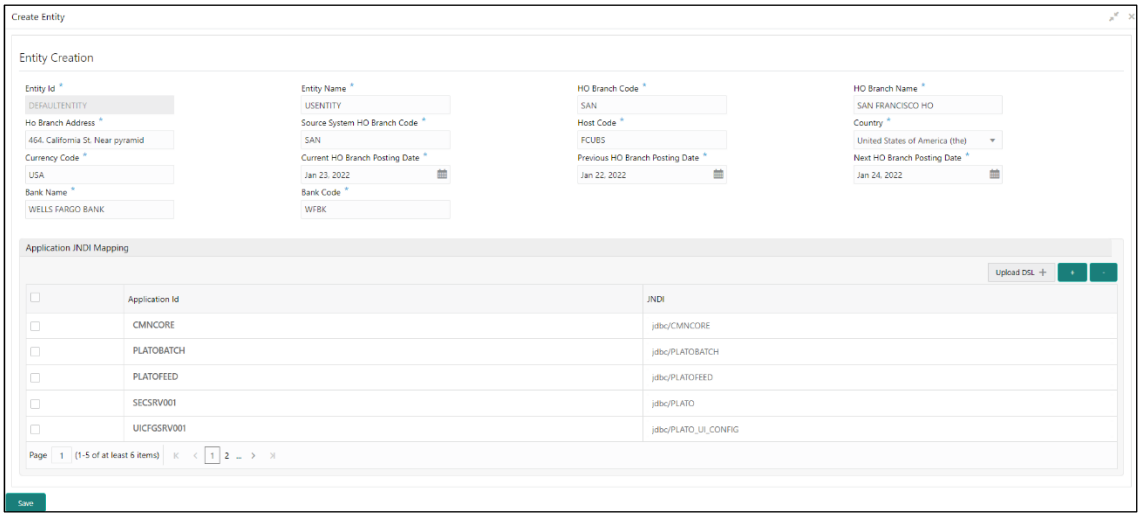
On **View Entities** screen, view the details. For more information on fields, refer to the field description table below.

Table 3: View Entities – Field Description

Field	Description
Entity Id	Displays the entity Id of the entity.
Entity Name	Displays the name of the entity.

3. Right-click on **DEFAULTENTITY** and select view details.
4. User can modify the **DEFAULTENTITY** from the screen**.**

Figure 4: Create Entity



5. On **Create Entity** screen, specify the fields. The fields which are marked with asterisk are mandatory. For more information on fields, refer to the field description table below.

Note: The default entity name value **DEFAULTENTITY** name can be modified only once and must be manually controlled.

Table 4: Create Entity – Field Description

Field	Description
Entity Id	Entity Id for the entity. **Note** : This cannot be modified
Entity Name	Specify the name of the entity. The default name will be **DEFAULTENTITY**
HO Branch Code	Specify the head office branch code of the entity.
HO Branch Name	Specify the head office branch name of the entity.
HO Branch Address	Specify the head office branch address of the entity.
Host Code	Specify the host code.
Country	Select the head office branch country code.
Current HO Branch Posting Date	Select the head office branch current posting date.
Previous HO Branch Posting Date	Select the head office branch previous posting date.
Next HO Branch Posting Date	Select the head office branch next posting date.
Bank Name	Specify the bank name.
Bank Code	Specify the bank code.
Application JNDI Mapping By default, application Ids that require a JNDI appear. You can click + to add multiple application **JNDI** mappings and click - to remove an application **JNDI** mapping.	
Application Id	Click **Search** and select the required application Ids from the list.
JNDI	Specify the JNDI for the application Id.

6. Select the required application id and map it with the new JNDI configured in weblogic
7. As shown in the above snapshot, as part of entity creation through app-shell, **JNDI** names for each of the applications should be provided.
8. Click **Save**. You can view the confirmation entity details in the 2.1.2.1 View Entities

9. On **Save**, the following common core maintenance data will get created automatically which can be enhanced further after the creation of entity admin users.
    - Country code
    - Currency definition
    - Language code
    - Bank
    - Branch
    - Branch System date
    - Host code

10. The following processes will execute in the background

    - The entity details will be saved in the PLATO_TM_ENTITY table.
    - The JNDIs will be saved in the APPLICATION_LEDGER table.
    - The flyway scripts for all the micro services will get executed in their respective schemas.
    - Once the flyway execution is completed a new role “ENTITY_ADMIN” will be created in the entity. This step will insert scripts into the following tables:
        - SMS_TM_ROLE
        - SMS_TW_ROLE
        - SMS_TM_ROLE_ACTIVITY
        - SMS_TW_ROLE_ACTIVITY

    This role will be assigned to the entity admin user in the user creation step. For more details refer 2.2.2 Create User

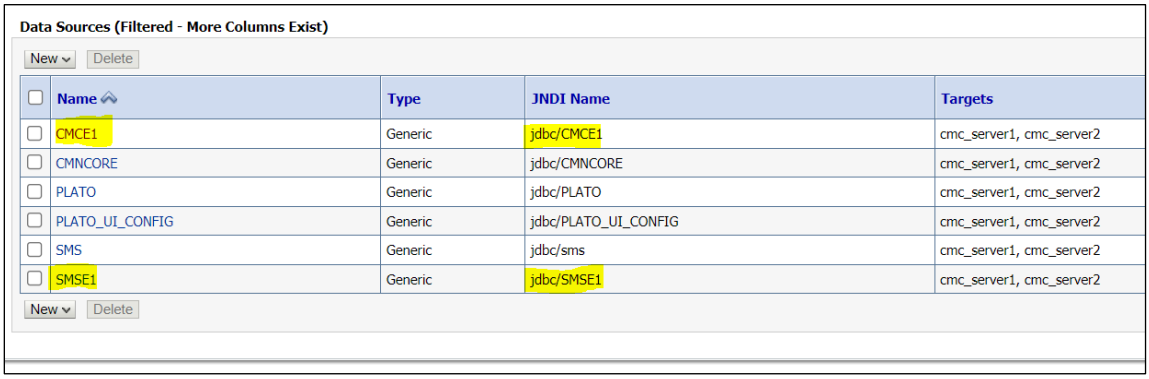
    - The Head Office branch details will be inserted into the CMC_TM_CORE_BRANCH and CMC_TW_CORE_BRANCH tables.
    - The Bank details will be inserted into the CMC_TM_CORE_BANK and CMC_TW_CORE_BANK tables.
    - The System dates will be inserted into the CMC_TM_SYSTEM_DATES and CMC_TW_SYSTEM_DATES tables.

2.1.3 Multi Entity Setup

The system by default will have an entity as **DEFAULTENTITY.** In multi-entity scenario the bank can rename the **DEFAULTENTITY** to one of its entities in multi-entity setup. Refer the above section 2.2.2 for steps to modify the default entity.

Before creating a new entity, DB schemas corresponding to various domains should be identified and corresponding “Data Sources” should be created in weblogic server.

Figure 5: Weblogic Server



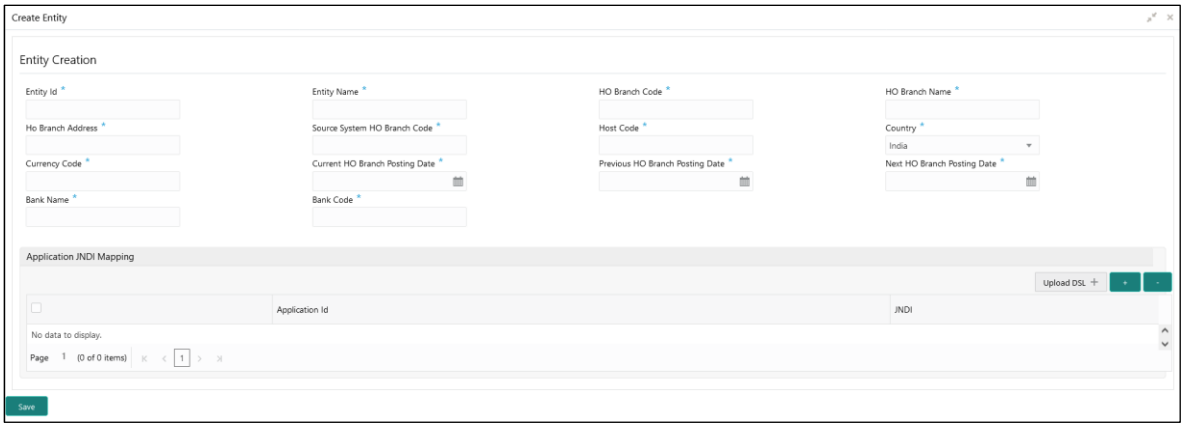
Once the Data Sources are mapped with the corresponding DB schemas and servers, restart the PLATO, CMC, SMS, and other required managed servers.

Check and verify in Eureka to see if all the services are up and running.

2.1.3.1 Create Entity

1. Login into application with the newly created entity admin user.
2. From **Home** screen, click **Entities**. Under **Entities**, click **Create Entities**.

Figure 6: Create Entity



3. On **Create Entity** screen, specify the fields. The fields which are marked with asterisk are mandatory. For more information on fields, refer to the field description table below.

Table 5: Create Entity – Field Description

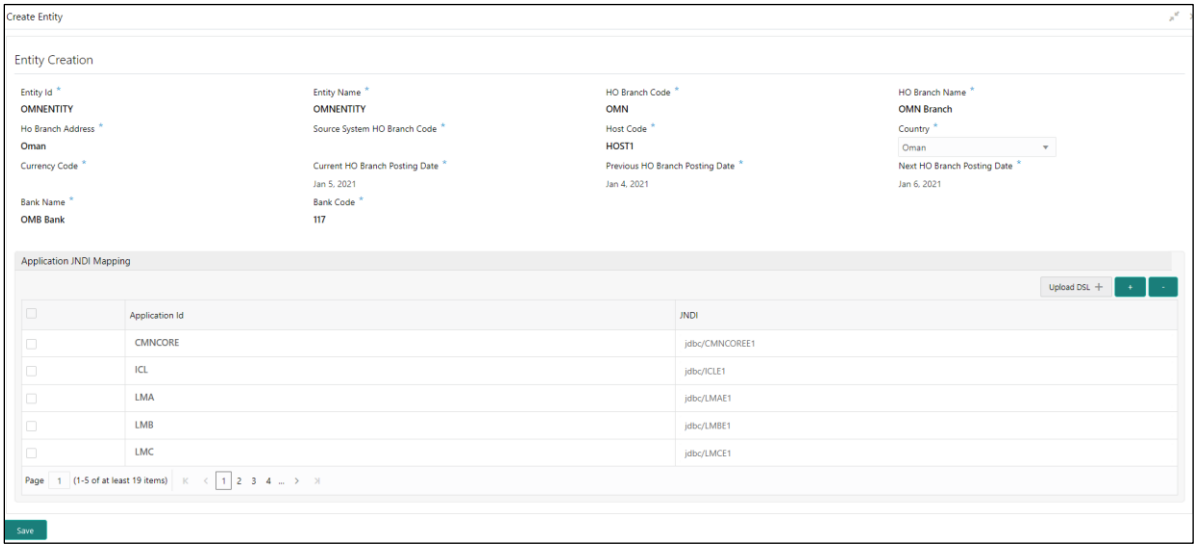
Field	Description
Entity Id	Specify entity Id. **Note** : This cannot be modified
Entity Name	Specify the name of the entity. The default name will be **DEFAULTENTITY**
HO Branch Code	Specify the head office branch code of the entity.
HO Branch Name	Specify the head office branch name of the entity.
HO Branch Address	Specify the head office branch address of the entity.
Host Code	Specify the host code.
Country	Select the head office branch country code.
Current HO Branch Posting Date	Select the head office branch current posting date.
Previous HO Branch Posting Date	Select the head office branch previous posting date.
Next HO Branch Posting Date	Select the head office branch next posting date.
Bank Name	Specify the bank name.
Bank Code	Specify the bank code.
Application JNDI Mapping By default, application Id's that require a **JNDI** appear. You can click + to add multiple application **JNDI** mappings and click - to remove an application **JNDI** mapping.	
Application Id	Click **Search** and select the required application Ids from the list.
JNDI	Specify the **JNDI** for the application Id.

4. Click **Save**. You can view the confirmation entity details in the 2.1.3.2 View Entity
5. Select the required application id and map it with the new **JNDI** configured in weblogic.
6. User can also use "**Upload DSL**" button to upload all application ids with JNDI.

Example provided for DSL format below:

```
[
  {
    "appId":"CMNCORE",
    "jndi":"jdbc/CMNCOREKW"
  },
  {
    "appId":"sms",
    "jndi":"jdbc/SMSCOREKW"
  },
  {
    "appId":"SECSRV001",
    "jndi":"jdbc/PLATO_SECURITY"
  },
  {
    "appId":"UICFGSRV001",
    "jndi":"jdbc/PLATO_UI_CONFIG"
  },
  {
    "appId":"LMA",
    "jndi":"jdbc/LMAKW"
  }
]
```

Figure 7: JNDI Mapping



7. On **Save**, the following common core maintenance data will get created automatically for the new entity which can be enhanced further after the creation of entity admin users:

   - Country code
   - Currency definition
   - Language code
   - Bank
   - Branch

- Branch System date
- Host code

8. The following processes will execute in the background

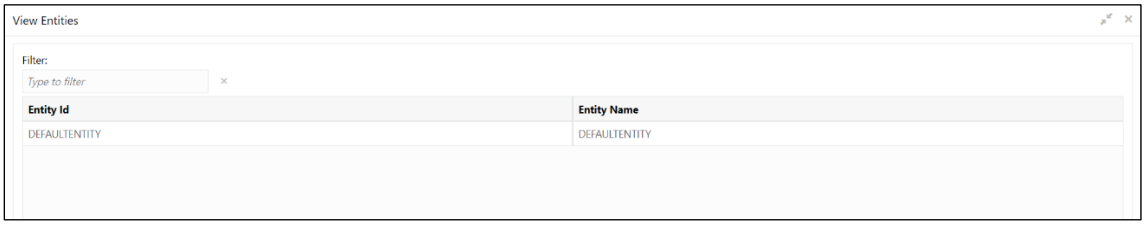
   - The entity details will be saved in the PLATO_TM_ENTITY table.
   - The JNDIs will be saved in the APPLICATION_LEDGER table.
   - The flyway scripts for all the micro services will get executed in their respective schemas.
   - Once the flyway execution is completed a new role “ENTITY_ADMIN” will be created in the entity. This step will insert scripts into the following tables:
     - SMS_TM_ROLE
     - SMS_TW_ROLE
     - SMS_TM_ROLE_ACTIVITY
     - SMS_TW_ROLE_ACTIVITY

   This role will be assigned to the entity admin user in the user creation step. For more details refer to 2.2.2 Create User
   - The Head Office branch details will be inserted into the CMC_TM_CORE_BRANCH and CMC_TW_CORE_BRANCH tables.
   - The Bank details will be inserted into the CMC_TM_CORE_BANK and CMC_TW_CORE_BANK tables.
   - The System dates will be inserted into the CMC_TM_SYSTEM_DATES and CMC_TW_SYSTEM_DATES tables.

2.1.3.2 View Entity

1. From **Home** screen, click **Entities**. Under **Entities**, click **View Entities**.

Figure 8: View Entity



2. On **View Entities** screen, view the details. For more information on fields, refer to the field description table below.

Table 6: View Entity – Field Description

Field	Description
Entity Id	Displays the entity Id.
Entity Name	Displays the name of the entity.

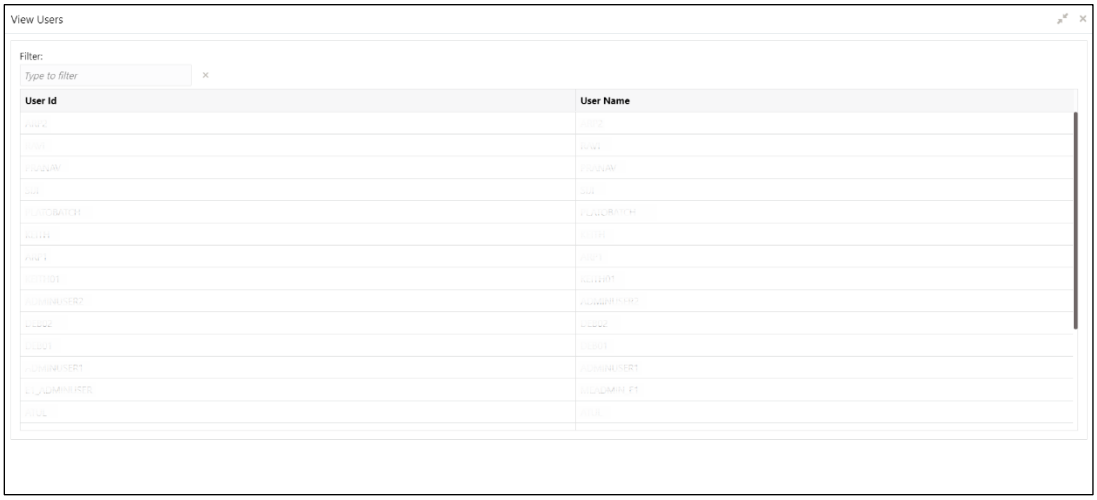
2.2 Users

2.2.1 View Users

The summary screen provides a list of configured users.

1. From **Home** screen, click **Users**. Under **Users**, click **View Users**.

Figure 9: View Users



2. On **View Users** screen, view the details. For more information on fields, refer to the field description table below.

Table 7: View Users – Field Description

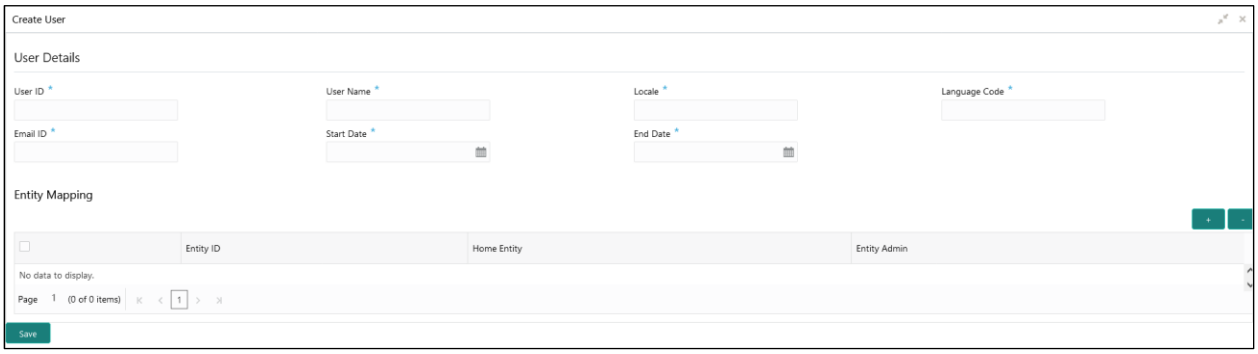
Field	Description
User Id	Displays the User Id.
User Name	Displays the User Name.

2.2.2 Create User

The maintenance screen allows multi entity admins to configure a new user.

1. From **Home** screen, click **Users**. Under **Users**, click **Create User**.

Figure 10: Create User



Note: In case of a single entity setup, there will be only one mapping to DEFAULTENTITY where as in case of multi-entity setup, a single user can be mapped to multiple entities. At least, one entity must be marked as default home entity. User will login with default home entity in case of multiple entities.

2. On **Create User** screen, specify the fields. The fields which are marked with asterisk are mandatory. For more information on fields, refer to the field description table below

Table 8: Create User – Field Description

Field	Description
User Id	Specify the user Id.
User Name	Specify the user name.
Locale	Specify the user locale.
Email ID	Specify the user email ID.
Start Date	Select the user start date. The start date of the user should greater than the Current HO Branch Posting Date.
End Date	Select the user end date.
Entity Mapping Click + to add a row and provide the required details.	
Entity Id	Click **Search** and select the entity to which the user belongs.
Home Entity	Select whether the entity is user's home entity. Only one entity can be selected as Home Entity for a user
Entity Admin	Select whether the user is an entity admin of the entity. Marking a user as Entity Admin will give rights to the user to perform the following actions when logged in to that entity. Modify the details of the users in the entity. Create branches in the entity Create roles in the entity. Assign the roles and branches to the users.

3. Click **Save**. You can view the confirmation entity details in the 2.2.1 View Users

   Note: Entity Admin option must be enabled to create an administrator user for an entity.

Create LDAP user account for the new user

1. Entity admin user will have default access to these core maintenance and security management screen.

   Core Maintenance

   - Currency definition
   - Country code
   - Language code
   - Local Holiday
   - System Dates
   - External Branch Parameters
   - External Bank Parameters
   - Host code

   Security Management

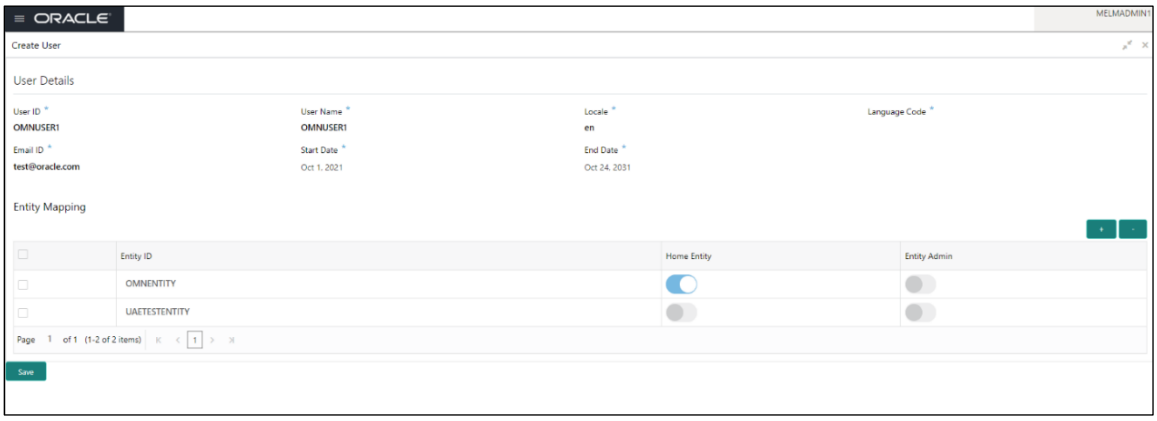
   - Role
   - User

2. The core maintenances which are automatically created during the creation of an entity can be enhanced further by entity admin user. User can also perform new core maintenance for the new entity.
   For more information on **Core Maintenance**, refer to the **Common Core User Guide**.

Creation of normal user

1. Normal users can be created as shown below, here "**Entity Admin**" toggle should be disabled

   Figure 11: Entity Admin



2. Unlock and enrich the normal users created, by mapping the required user role branches and user applications. Authorize the same.
   For detail explanation refer to the **Oracle Banking Security Management System User Guide**.

2.3 Switching Between Entities

1. User can be mapped to one or more entities during user creation but only one among the entities should be made as “**Home Entity”**
2. If a user is mapped to 2 or more entities, then the user is allowed to switch between the entities.
3. Users can switch between the entities only if :
    a. Same user should be available across the entities.
    b. Same branch should be available across the entities.
    c. User should have proper user role branch mapping done.

Oracle Banking Multi Entity Deployment Guide

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