Oracle® Banking APIs

Installation Guide

Patchset Release 22.2.4.0.0

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Oracle Banking APIs Installation Guide, Patchset Release 22.2.4.0.0

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Preface

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- Audience
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Purpose

This guide is designed to help acquaint you with the Oracle Banking APIs application. This guide provides answers to specific features and procedures that the user need to be aware of the module to function successfully.

Audience

This document is intended for the following audience:

- Customers
- Partners

Documentation Accessibility

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the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

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.

Related Resources

For more information on any related features, refer to the following documents:

- Oracle Banking APIs Installation Manuals

Screenshot Disclaimer

Personal information used in the interface or documents is dummy and does not exist in the real world. It is only for reference purposes.

Acronyms and Abbreviations

The list of the acronyms and abbreviations used in this guide are as follows:

Table 1 Acronyms and Abbreviations

Abbreviation	Description
OBAPI	Oracle Banking APIs

1
Introduction

- Purpose of the Document

1.1 Purpose of the Document

The purpose of the OBAPI Installation Manual is to provide a step by step overview on the installation process of the solution.

It includes:

- Reference to prerequisites software installation required for OBAPI & OBAPI installer
- Setup of OBAPI with Oracle's own Core Banking and Origination Products along with Third-party HOST system.
- Running the installation in silent mode
- Advanced Configurations (Post installation)
- Installation Verification
- Multi-Entity Installation and configuration
- Best Practice
- Troubleshoot Overview

2 Prerequisites

OBAPI pre-requisite software should be installed and available before proceeding.

For OBAPI pre-requisite software setup refers document “**Oracle Banking API Installer Pre-Requisite Setup Manual”** .

Installer Pre-requisite verification

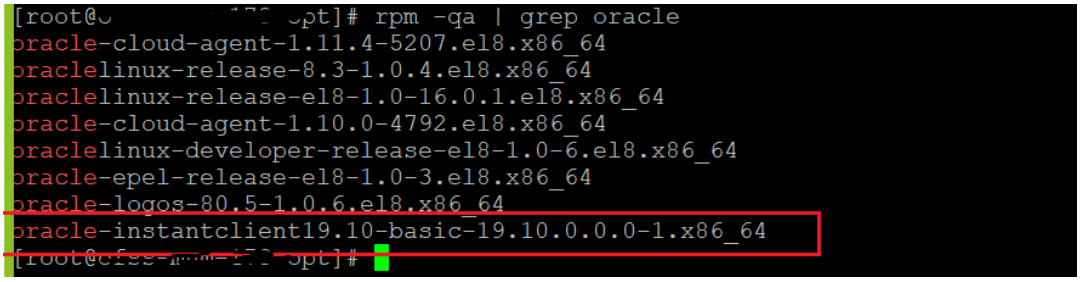
Post installation of OBAPI Installer prerequisite software’s, verification can be done using below steps.

> **Note:**
>
> Verification should be performed on Server where Oracle Weblogic is locally installed and by OS user (which is owner for Oracle Weblogic home directory) for non-root steps. The same user will be used to execute installer.

Oracle Instant client

1. Login using root user.
2. Run below command to verify if Oracle Instant client is installed.

```
rpm -qa | grep oracle
```

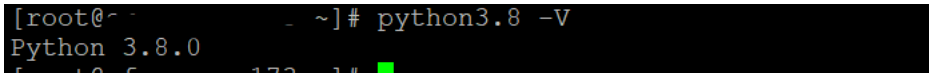


> **Note:**
>
> Above package verification command is specific to Oracle Linux and RHEL distributions only. For other Linux distributions or OS please refer to OS specific package manager documentation.

Python:

1. Execute python –V command

```
python3.8 -V
```



> **Note:**
>
> Ensure Python 3.8.0 supported version is installed. Above command should reflect the same.

cx_Oracle & Urwid:

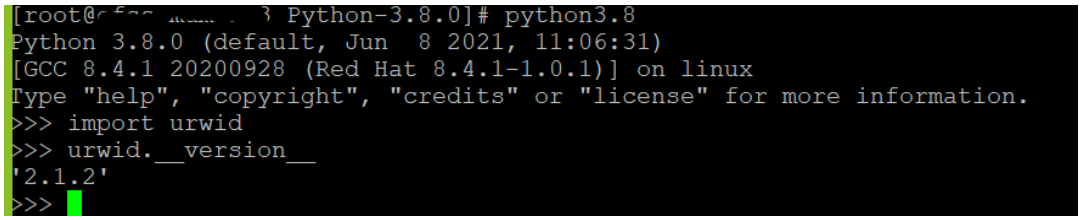
1. Execute python command

```
python
```

> **Note:**
>
> Ensure Python 3.8.0 version should be available in PATH variable. Above execution should be done using Python 3.8.0.

2. Import Urwid and check version

```
import urwid (Press Enter) urwid.__version__
```



If version is displayed, then Urwid is installed and available for use.

> **Note:**
>
> Ensure Urwid 2.1.2 supported version is installed. Above command should reflect the same.

3. Similarly import cx_Oracle and check version

```
import cx_Oracle (Press Enter)
cx_Oracle.version
```

```
[root@c... ... 172 Python-3.8.0]# python3.8
Python 3.8.0 (default, Jun  8 2021, 11:06:31)
[GCC 8.4.1 20200928 (Red Hat 8.4.1-1.0.1)] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> import cx_Oracle
>>> cx_Oracle.version
'8.1.0'
>>>
```

If version is displayed, then cx_Oracle is installed and available for use.

> **Note:**
>
> Ensure cx_Oracle 8.1.0 supported version is installed. Above command should reflect the same.

Python 3.8 for Linux Operating System :

1. Execute below commands to install the python 3.8.0

```
dnf groupinstall 'development tools'
dnf install bzip2-devel expat-devel gdbm-devel ncurses-devel openssl-devel
readline-devel
wget sqlite-devel tk-devel xz-devel zlib-devel libffi-devel
wget https://www.python.org/ftp/python/3.8.0/Python-3.8.0.tgz
tar -xzvf Python-3.8.0.tgz
cd Python-3.8.0
./configure --enable-optimizations
make altinstall
python3.8 -version
```

```
[root@...  ~]# python3.8 -V
Python 3.8.0
```

2. Once above steps are executed successfully install the following required modules.

```
pip3.8 install --upgrade pip
pip3.8 install cx-Oracle==8.3
```

```
root@o... ... Python-3.8.0]# pip3.8 install cx-Oracle==8.1.0
Collecting cx-Oracle==8.1.0
  Downloading https://files.pythonhosted.org/packages/5f/3a/f63cf2cee42b32874af13f0a2deb5d4a1448b2fc39bff36ab11e3369f00c/cx_Oracle-8.1.0-cp38-cp38-manylinux1
x86_64.whl (825kB)
    |...| 829kB 138kB/s
Installing collected packages: cx-Oracle
Successfully installed cx-Oracle-8.1.0
```

```
pip3.8 install urwid==2.1.2
```

```
[root@c      Python-3.8.0]# pip3.8 install urwid==2.1.2
Collecting urwid==2.1.2
  Using cached urwid-2.1.2.tar.gz (634 kB)
Using legacy 'setup.py install' for urwid, since package 'wheel' is not installed.
Installing collected packages: urwid
    Running setup.py install for urwid ... done
Successfully installed urwid-2.1.2
```

3 Installation

Pre-Installation

- Install all the prerequisite software and packages mentioned above

Steps of Installation

- Download and extract the installer zip file (Base).
- Navigate to “<OBDX INSTALLER DIR>/core/config”
- Open the “installer.properties” file to maintain key configurations for BASE ENTITY (OBDX_BU)

```
##########################################################################################
# Installer Properties                                                                   #
#                                                                                        #
# All entries to be made immediately after the '=' and WITHOUT quotation marks. i.e. '' or "".  #
#                                                                                        #
##########################################################################################

####################
#                  #
# Weblogic Details #
#                  #
####################

#Middleware home path. Example /home/obdxuser/Oracle/Middleware/Oracle_Home - where you have sub-directories like wlserver,oracle_common etc.
MIDDLEWARE_HOME=/scratch/app/product/Oracle/Middleware/Oracle_Home

#JAVA home path. Example /home/obdxuser/jdk18 - where you have sub-directories like bin,jre,lib etc.
JAVA_HOME=/scratch/app/java

#DB_WITH_FLYWAY_EXECUTION YES OR NO. Example if we want to execution of db with cx_Oracle then value will be NO.
DB_WITH_FLYWAY_EXECUTION=NO

#FLYWAY_HOME home path. Example /home/obdxuser/flyway - where you have sub-directories like bin,jre,lib etc.
FLYWAY_HOME=/home/devops/flyway-7.9.2

#GRADLE HOME path. Example /home/obdxuser/gradle
GRADLE_HOME=/scratch/obdx/gradle/gradle-7.4

#Path where OBDX config files needs to be installed. ****DO NOT KEEP INSTALLATION_HOME AS MIDDLEWARE_HOME or any existing directory.****
INSTALLATION_HOME=/scratch/obdx/install_home

#Domain name. The domain will be created by the name specified.
WLS_DOMAIN_NAME=obdx_mod_domain

#Domain path. Example /home/obdxuser/domain.
WLS_DOMAIN_PATH=/scratch/app/domains

#application root directory
APP_ROOT_DIR=/scratch/app/application
```

IMPORTANT:

- Enter the values right after the **“=”**sign
- DO NOT change anything to the left of the **“=”**
- DO NOT change any of the flag values or pre-filled values (such as **`WLS_JDBC_DIGX_NAME`**, **`WLS_JDBC_DIGX_JNDI`**, Flag values etc) available in **“Factory Shipped”** section.
- Ensure there is no blank space after **“=”** sign, except specific flavor specific configuration.
- Throughout this document consider UBS as UBS core banking with OBPM as payments engine.

Only below parameters should be set in **installer.properties** file

Component	Parameter	Description	Example
DB details (for OBDX schema)	**OBDX_DATABASE_HOSTNAME**	Enter the hostname of the database server which would host the database schema for OBDX	abc.xyc.com
	OBDX_DATABASE_PORT	Enter the port number of the database listener	1521
	OBDX_DATABASE_SID	Enter the Oracle Service Name for database instance	obdxdb.in.oracle.com
	OBDX_DATABASE_SYS_USER	Enter the username with 'sys' privileges	Sys
	POST_FIX	For OBDX schema name like "OBDX_DEV" POST FIX is 'DEV'. **SHOULD BE IN UPPERCASE ONLY.**	DEV
	OBDX_DBA_DIRECTORY_NAME	Enter the directory name in which you want the OBDX schema tablespace datafile to be created. Enter Logical name (i.e. **DIRECTORY_NAME** column) from **DBA_DIRECTORIES** table NOT the physical path.	OBDX_DIR
	OBDX_AUDIT_DBA_DIRECTORY_NAME	Enter the directory name in which you want the OBDX AUDIT tablespace datafile to be created. Enter Logical name (i.e. **DIRECTORY_NAME** column) from **DBA_DIRECTORIES** table NOT the physical path.	OBDX_AUDIT_DIR
EHMS DB details (to be configured only in-case of FLAVOR as UBS,FCORE&OBPM)	**EHMS_DATABASE_HOSTNAME**	Enter the hostname for EHMS database server	abc.xyz.com
	EHMS_DATABASE_PORT	Enter the port number of EHMS database listener	1521
	EHMS_SCHEMA_NAME	Enter the Complete OBDX-EXT (B1A1) HostInterfaceschema name you want installer to create as new schema. **SHOULD BE IN UPPERCASE ONLY.**	EHMS182SCHEMA

Component	Parameter	Description	Example
	EHMS_DBA_DIRECTORY_NAME	Enter the directory name in which you want the OBDX-EXT (B1A1) schema tablespace datafile to be created. Enter Logical name (i.e.**DIRECTORY_NAME** column) from **DBA_DIRECTORIES** table NOT the physical path.	OPATCH_LOG_DIR
	EHMS_DATABASE_SYS_USER	Enter the username with 'sys' privileges	Sys
	EHMS_DATABASE_SID	Enter the EHMS database Service Name	obdxehms.in.oracle.com
	EHMS_HOST_SCHEMA_NAME	Enter the EXISTING EHMS HOST schema name	OBDXUBS
	EHMS_CCY(to be configured for UBS and OBPM HOST only)	Enter the Country code for EHMS HOME Branch	GB
	EHMS_HB (to be configured for UBS and OBPM HOST only)	Enter the Branch code for code for EHMS HOME Branch	AT3
	EHMS_FCORE_FCUBS_SCHEMA_NAME (to be configured for FCORE HOST only)	FCORE-FCUBS schema name	FCRUBSHOST
Weblogic server details	**MIDDLEWARE_HOME**	Oracle Weblogic Server home path. Example / home/obdxuser/Oracle/ Middleware/ Oracle_Home - where you have sub-directories like wlserver,oracle_common etc.	/home/obdxuser/Oracle/ Middleware/ Oracle_Home
	JAVA_HOME	Path where JAVA (JDK) is installed	/home/obdxuser/ jdk11_0_14
	FLYWAY_HOME	Path where FLYWAY is installed	/home/obdxuser/ flyway-8.3
	DB_WITH_FLYWAY_EXECUTION	Database execution type	YES or NO
	GRADLE_HOME	Path where GRADLE is installed	/home/obdxuser/ gradle-7.9
	MavenRepositoryUrl	Path where maven-repo under installer folder	$installerDir/installables/ maven-repo
	GradleRepositoryUrl	Path where gradle-repo under installer folder	$installerDir/installables/ gradle-repo

Component	Parameter	Description	Example
	INSTALLATION_HOME	Path where OBDX is to be installed. All configuration files will be copied as a sub-directory “config” under this directory. **DO NOT KEEP INSTALLATION_HOME AS MiddlewareHome.**	/home/obdxuser/obapi
	WLS_DOMAIN_PATH	Path where OBDX Weblogic domain should be created. Users can now enter custom path as per their requirements.	/home/obdxuser/domains
	WLS_CLUSTER_NAME	Name of cluster; this cluster would have one single managed server.	obdx_cluster
	WLS_CLUSTER_NODE_HOSTNAME	Host name or IP address of managed server participating in the cluster. Currently only single node is supported.	abc.xyz.com
	WLS_ADMIN_SERVER_PORT	Weblogic AdminServer port. It is the port to access the administration console of the Weblogic server. Generally port 7001 is used as the AdminServer port. Custom port are supported.	7001
	WLS_ADMIN_SERVER_SSL_PORT	AdminServer SSL port. It is the port used to securely access (https) the administration console of the Weblogic server.	7002
	WLS_NODE_PORT	Node Manager Port. It is the port used by Node Manager to be configured for OBDX domain. Generally, 5556 is utilized as Node Manager Port. Custom ports are supported.	5556

Component	Parameter	Description	Example
	WLS_MS_SERVER_NAME	Managed server name. This will be the name of the managed server created in the cluster followed by indexes. eg- If this is set as 'clip' managed servers would be clip1.	Clip
	WLS_MS_SERVER_PORT	Managed Server Port. Managed server will utilize this port for hosting OBDX components and associated resources. Custom ports are supported.	9001
	WLS_DOMAIN_NAME	Enter Weblogic Domain name.	obdx_domain1
	WLS_DOMAIN_ADMIN_USER	Domain user ID. The user id will be used to access the Weblogic Administration console.	weblogic
	WLS_NODE_TYPE	Weblogic Node Manager type	Plain/SSL
	WLS_MACHINE_NAME	Weblogic Node Manager machine name	obdx_machine
	APP_ROOT_DIR	Any empty directory path	/scratch/app/dir
	WLS_JMS_FILEUPLOAD_PS (to be configured for all OBDX supported HOST)	Set the paths for the persistent store of the FileUpload JMS modules. **DO NOT KEEP path as INSTALLATION_HOME or as sub directory inside INSTALLATION_HOME.**	/scratch/obapi/FileUpload
	WLS_JMS_AUDIT_PS (to be configured for all OBDX supported HOST)	Set the paths for the persistent store of the Audit JMS modules. **DO NOT KEEP path as INSTALLATION_HOME or as sub directory inside INSTALLATION_HOME.**	/scratch/obapi/Audit

Component	Parameter	Description	Example
	WLS_JMS_REPORT_PS (to be configured for all OBDX supported HOST)	Set the paths for the persistent store of the Reports JMS modules. **DO NOT KEEP path as INSTALLATION_HOME or as sub directory inside INSTALLATION_HOME.**	/scratch/obapi/Reports
	WLS_JMS_JPA_PS (to be configured for all OBDX supported HOST)	Set the paths for the persistent store of the JPA JMS modules. **DO NOT KEEP path as INSTALLATION_HOME or as sub directory inside INSTALLATION_HOME.**	/scratch/obapi/JPA
	WLS_JMS_EXTSYSRECEIVER_PS (to be configured for all OBDX supported HOST)	Set the paths for the persistent store of the ExtSystemReceiver JMS modules. **DO NOT KEEP path as INSTALLATION_HOME or as sub directory inside INSTALLATION_HOME.**	/scratch/obapi/Receiver
	WLS_JMS_EXTSYSSENDER_PS(to be configured for all OBDX supported HOST)	Set the paths for the persistent store of the ExtSystemSender JMS modules. **DO NOT KEEP path as INSTALLATION_HOME or as sub directory inside INSTALLATION_HOME.**	/scratch/obapi/Sender

Component	Parameter	Description	Example
OBDX Application Administrator user details	**OBDX_ADMIN_USERNAME**	Set username for OBDX application Admin user. USERNAME IS CASE SENSITIVE. In-case of OUD as provider username should be the User ID mentioned during user creation steps mentioned in pre-requisite document (refer To create User and mapping it to the Group section)	superadmin
	OBDX_ADMIN_EMAIL	Enter the Email ID for OBDX application admin user.	superadmin@oracle.com
	OBDX_ADMIN_CONTACT_NO	Enter the mobile number for OBDX application admin user. **COUNTRY CODE IS MUST.**	+911234567890

> **Note:**
>
> Apart from above any other property values should not be modified.

Ensure `ORACLE_HOME, JAVA_HOME` variable are set and their binaries are available in PATH variable before proceeding.

Login with OS user which was used to perform OBDX pre-requisite software installation (or has ownership on Oracle Weblogic home directory)

Ensure OBDX Installation home and filestore path's maintained in installer.properties exists and user running the installer has read-write permissions.

Installation Steps:

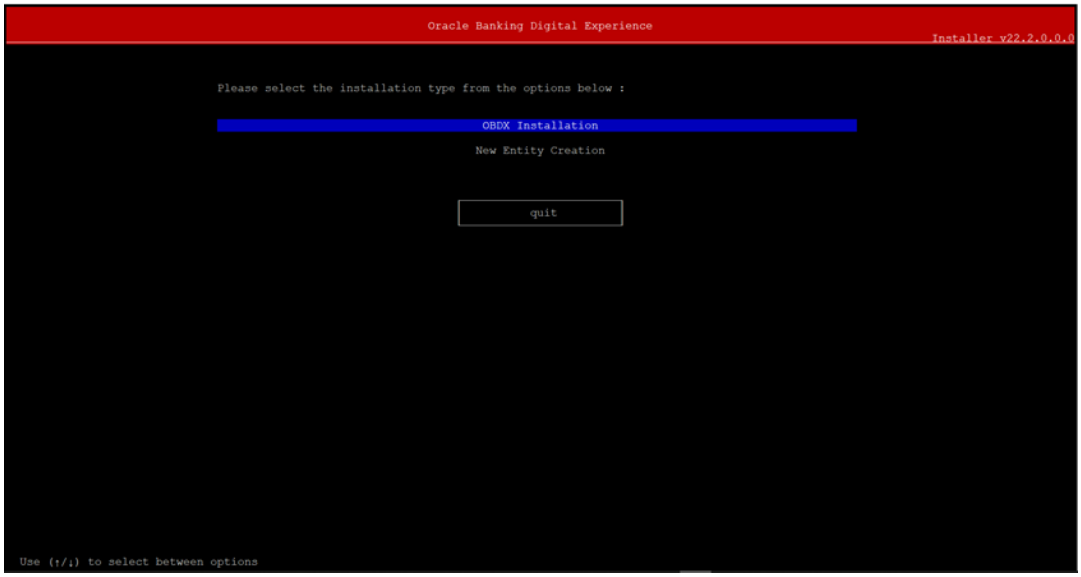
- From your terminal navigate to <OBDX INSTALLER DIR>/

```
[devops@obdxwls OBDX_Installer]$ ls -la
total 8
drwxrwxrwx  6 1002 1012  118 May  4 15:40 .
drwxr-xr-x  5 1002 1012   77 May  4 15:39 ..
drwxrwxrwx  2 1002 1012    6 May  4 09:03 ExecInstances
-rwxrwxrwx  1 1002 1012    0 May  4 09:05 __init__.py
drwxrwxrwx  5 1002 1012   60 May  4 09:05 core
drwxrwxrwx  5 1002 1012   69 May  4 09:03 framework
drwxrwxrwx 17 1002 1012  223 May  4 11:11 installables
-rwxrwxrwx  1 1002 1012 4372 May  4 09:05 runInstaller.py
[devops@obdxwls OBDX_Installer]$ python3.8 runInstaller.py
```

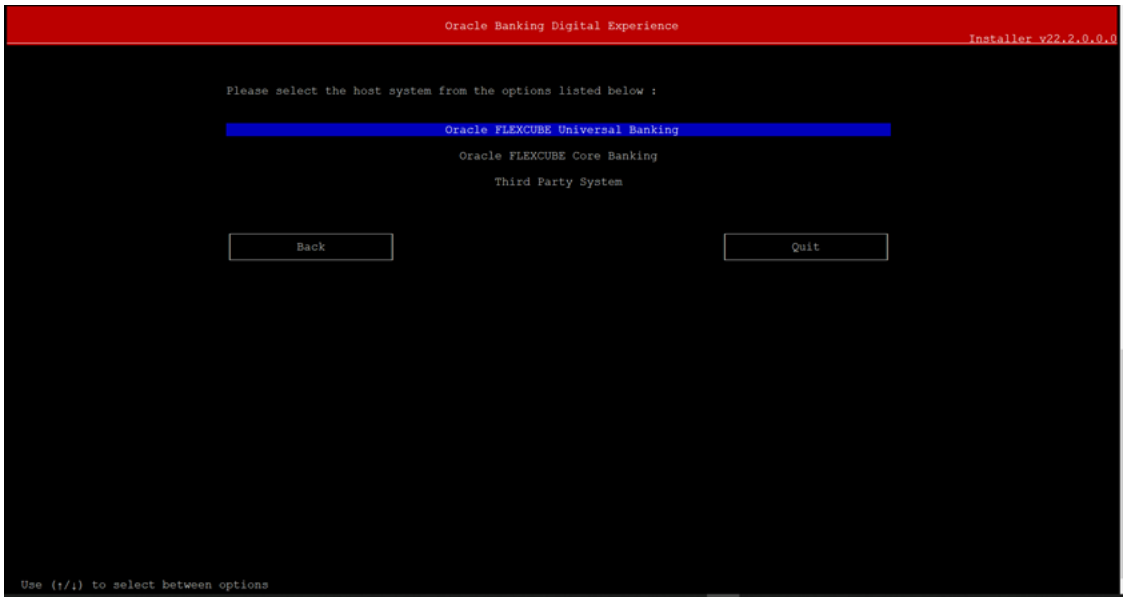
- Enter the following command

  python3.8 runInstaller.py

  Select the appropriate host system for Installation

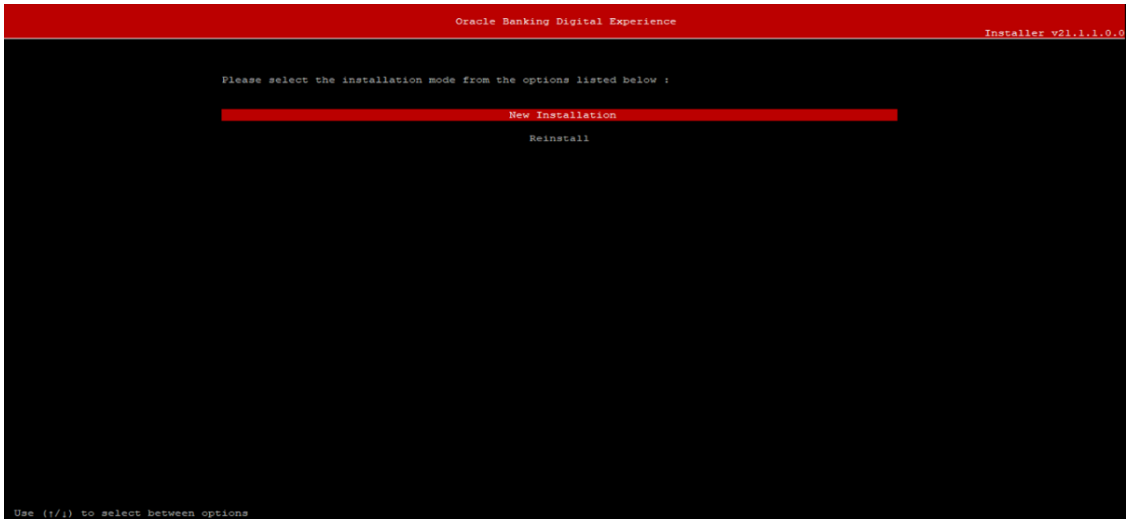


Select the appropriate host system for Installation



Oracle FLEXCUBE Universal Banking (OBDX with UBS)

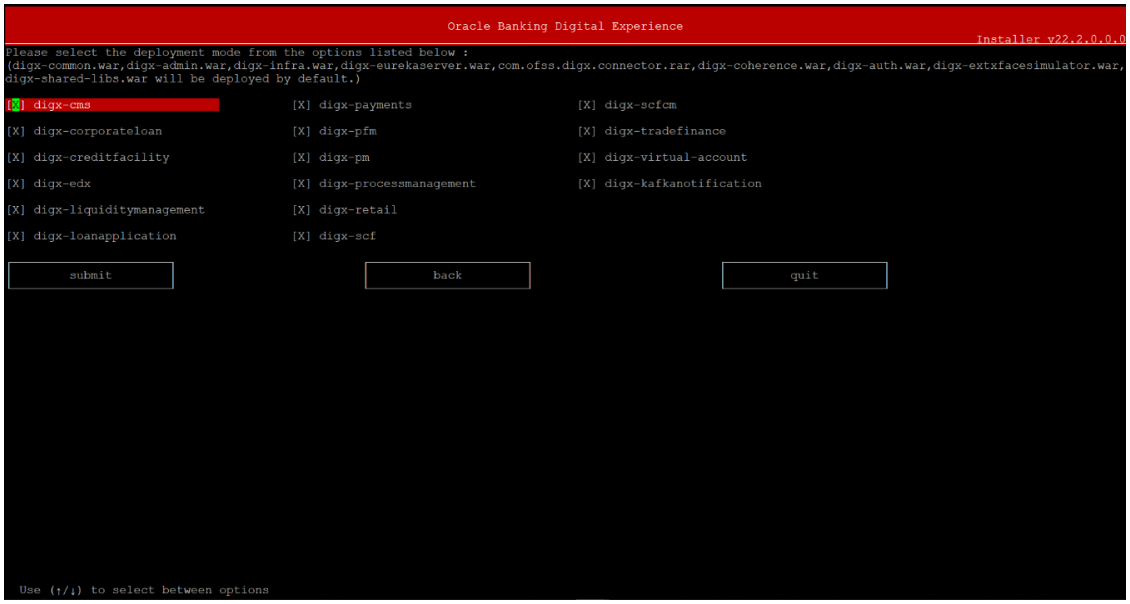
Select Installation mode



Mode of Installation - New Installation

- New installation

In-case of a fresh installation of OBDX with appropriate host system for the first run on server.



Type of Deployment

Select the wars which you want to deploy. Some wars will be deployed by default. There are in total 25 wars.

Below screens would appear to taken end-user input

Enter below passwords:

- SYS privilege user password where OBDX schema would be created
- OBDX schema password
- Weblogic console administrator user password
- SYS privilege user password where UBS host schema exists
- Existing UBS HOST schema password
- New OBDX EHMS schema password

- Password for OBDX application administrative user (In-case of OUD as provider, password should be similar to one used while user creation in OUD (or User Password field))

Third Party System (OBDX with THP)

Post Third Party System selection, enter the required credentials details

Enter below passwords:

- SYS privilege user password where OBDX schema would be created
- OBDX schema password
- Weblogic console administrator user password
- OBDX application admin user password

Oracle FLEXCUBE Core Banking (OBDX with FCORE)

Post Oracle FLEXCUBE Core Banking, enter the required credentials details

Enter below passwords:

- SYS privilege user password where OBDX schema would be created
- OBDX schema password
- Weblogic console administrator user password
- SYS privilege user password where FCORE host schema exists

- New OBDX EHMS schema password
- Password for OBDX application administrative user

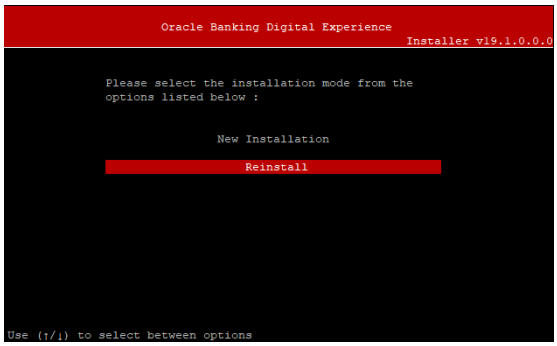
Oracle FLEXCUBE Universal Banking with Oracle Banking Payments (OBDX with OBPM)

Enter the required credentials details

Enter below passwords:

- SYS privilege user password where OBDX schema would be created
- OBDX schema password
- Weblogic console administrator user password
- SYS privilege user password where OBPM host schema exists
- Existing OBPM HOST schema password
- New OBDX EHMS schema password
- Password for OBDX application administrative user

Mode of Installation – Reinstall



In-case of an existing OBDX installation that you want to overwrite OR in case of a previously failed installation user can opt for this option.

Pre-requisites

- Weblogic domain processes should be down (i.e. AdminServer, NodeManager, Managed Servers, Derby etc)
- No open session (user should not be logged-in) with OBDX database schema (and OBDX EHMS schema in-case of OBDX UBS;OBPM and FCORE flavor).

Over-write the policies files (Day0Policy.csv; Entitlement.csv; Resources.csv and Task.csv) from OBDX Product zip into <OBDX INSTALLER DIR>/installables/policies directory

Key pointers

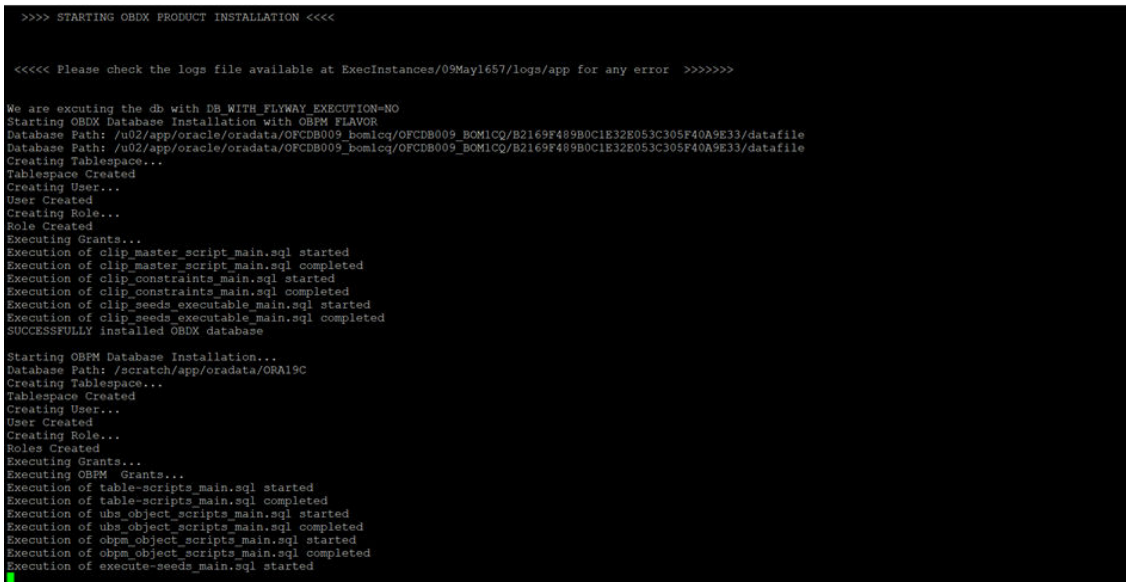
- OBDX schema (and OBDX EHMS schema in-case of OBDX UBS flavor) would be dropped and recreated (as per installer.properties). Tablespace would be re-used.
- Weblogic domain (as per installer.properties) would be deleted and created again.
- Installation Home would be cleaned up (all files/ sub-directories would be deleted) and re-created again.

> **Note:**
>
> All input screens are similar to new installation option and as per the host system opted.

Installation Status

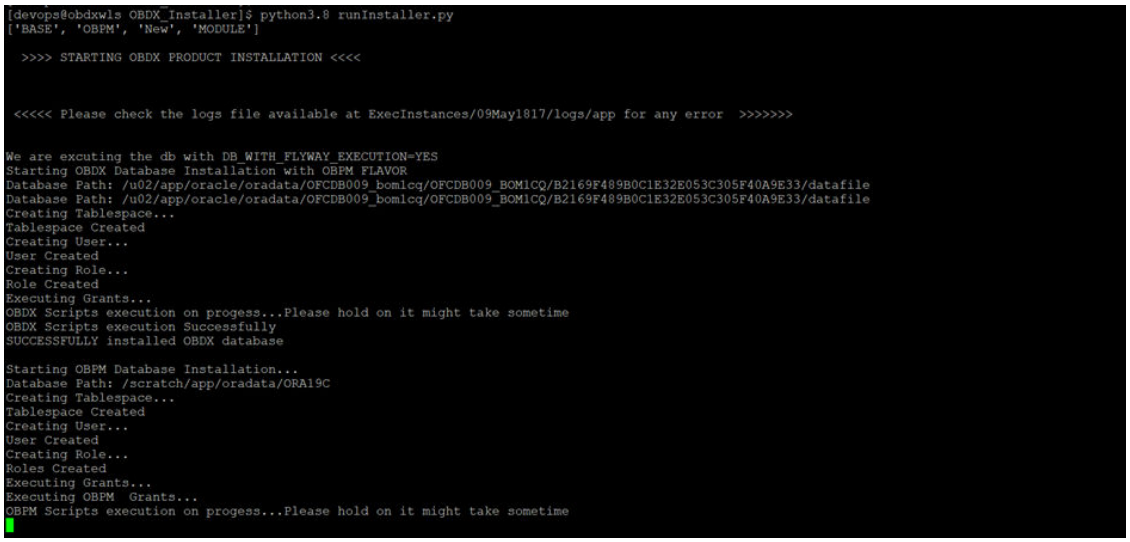
After selecting the mode and entering all required details, the status is displayed (as shown below) on the terminal to indicate the progress of the installation.

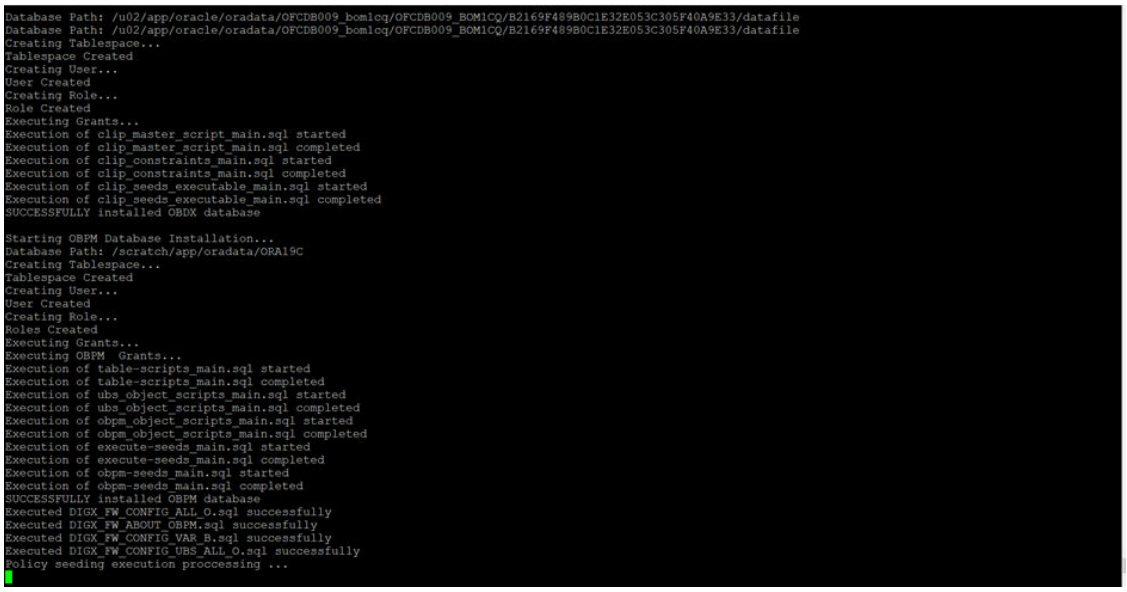
If `DB_WITH_FLYWAY_EXECUTION` set to **NO**



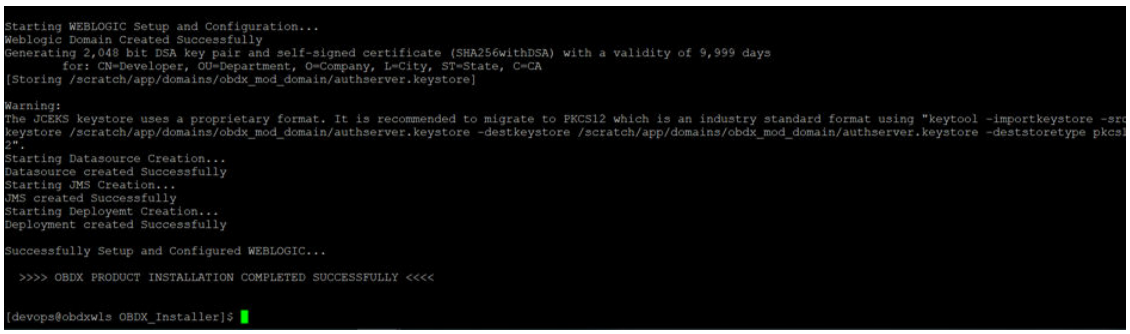
If `DB_WITH_FLYWAY_EXECUTION` set to **YES**

When the installation completes, the below message is displayed





When the installation completes, the below message is displayed



4

Installation using Silent Mode

This chapter describes how to run the OBAPI installer in silent mode.

What is silent-mode installation?

During installation in silent mode, the installation program reads the details for your configuration parameters (flavor; mode; passwords etc) from the environment variables (same session in which installer is executed) and installer.properties that you set before beginning the installation. The installation program does not display any configuration options during the installation process.

Steps for Silent-Mode Installation

- Download and extract the installer zip file (Base – non localization version).
- Navigate to “<OBAPI INSTALLER DIR>/core/config”
- Open the “installer.properties” file to maintain key configurations for BASE ENTITY (OBDX_BU)

**Refer to page 9 to 14 (step 4) for filling up installer.properties.

- Set the environment variables , as shown below

```
[devops@obdxwls OBDX_Installer]$ export FLAVOUR=OBPM
[devops@obdxwls OBDX_Installer]$ export MODE=New
[devops@obdxwls OBDX_Installer]$ export DB_SYS_PASSWORD=welcome1
[devops@obdxwls OBDX_Installer]$ export SCHEMA_PASS=welcome1
[devops@obdxwls OBDX_Installer]$ export DomainPassword=welcome1
[devops@obdxwls OBDX_Installer]$ export EHMS_DATABASE_SYS_PASS=welcome1
[devops@obdxwls OBDX_Installer]$ export EHMS_HOST_SCHEMA_NAME_PASS=welcome1
[devops@obdxwls OBDX_Installer]$ export EHMS_SCHEMA_PASS=welcome1
[devops@obdxwls OBDX_Installer]$ export DBAuthPassword=welcome1
[devops@obdxwls OBDX_Installer]$ export LD_LIBRARY_PATH=/usr/lib/oracle/19.10/client64/lib/:$LD_LIBRARY_PATH
```

Below parameters should be set as environment variables, depending on the Host system the installer should be executed.

Host	Parameter	Description	Example
Environment variables to set for flavor:UBSFCORE	**FLAVOUR**	Flavour for installation **UBS** for Oracle FLEXCUBE Universal Banking 14.6.0.0.0 (OBAPI with UBS) **FCORE** for Oracle FLEXCUBE Core Banking 11.8.0.0.0 (OBAPI with FCORE)	**export FLAVOUR=OBPM** **or** **export FLAVOUR=FCORE**

Host	Parameter	Description	Example
	MODE	Mode of installation. '**New**' in-case of a fresh installation of OBAPI for the first run on server '**Clean**' in-case of an existing OBAPI installation that you want to overwrite OR in case of a previously failed installation or re-installation	**export MODE=New** **or** **export MODE=Clean**
	DB_SYS_PASSWORD	Sys user password of OBAPI database (Existing)	**export DB_SYS_PASSWORD=obdx182sys**
	SCHEMA_PASS	Password for new schema on OBAPI database	**export SCHEMA_PASS=obapi#182**
	DomainPassword	Password for Weblogic Administrator console	**export DomainPassword=wlsadmn**
	EHMS_DATABASE_SYS_PASS	Sys user password of EHMS HOST database (Existing)	**export EHMS_DATABASE_SYS_PASS=obdxehmssys**
	EHMS_HOST_SCHEMA_NAME_PASS ** Only required for UBS & OBPM Host. Ignore this parameter in-case of FCORE Host	Password of existing EHMS HOST schema (Existing)	**export EHMS_HOST_SCHEMA_NAME_PASS=obdxehmshost**
	EHMS_SCHEMA_PASS	Password for new OBAPI EHMS schema on EHMS HOST database	**export EHMS_SCHEMA_PASS=obdx182ehms**
	wars_to_deploy	Mention the optional wars to deployed	**export wars_to_deploy=digx-cms.war,digx-corporateloan.war,digx-payments.war**
	DBAuthPassword	Password for new OBAPI Administrator user of OBAPI application (In-case of OUD as provider, password should similar to one used while user creation in OUD(or User Password field))	**export DBAuthPassword=obdxadmn**
Environment variables to set for flavor: **OBAPI (Third-party HOST)**	**FLAVOUR**	Flavour for installation 'OBAPI' for Third Party System 1.0 (OBAPI with THP)	**export FLAVOUR=OBAPI**

Host	Parameter	Description	Example
	Mode	Mode of installation. '**New**' in-case of a fresh installation of OBAPI for the first run on server '**Clean**' in-case of an existing OBAPI installation that you want to overwrite OR in case of a previously failed installation or re-installation	**export MODE=New** **or** **export MODE=Clean**
	DB_SYS_PASSWORD	Sys user password of OBDX database (Existing)	**export DB_SYS_PASSWORD=obdx182sys**
	SCHEMA_PASS	Password for new schema on OBDX database	**export SCHEMA_PASS=obapi#182**
	DomainPassword	Password for Weblogic Administrator console	**export DomainPassword=wlsadmn**
	wars_to_deploy	Mention the optional wars to deployed	**export wars_to_deploy=digx-cms.war,digx-corporateloan.war,digx-payments.war**
	DBAuthPassword	Password for new OBAPI Administrator user of OBAPI application (In-case of OUD as provider, password should similar to one used while user creation in OUD(or User Password field))	**export DBAuthPassword=obdxadmn**

Run the runInstaller.py file with '--silent ' argument along with '--base' option.

```
[devops@obdxwls OBDX_Installer]$ python3.8 runInstaller.py --silent
```

Installation Status

The status is displayed on the terminal to indicate the progress of the installation.

If `DB_WITH_FLYWAY_EXECUTION` set to **NO**

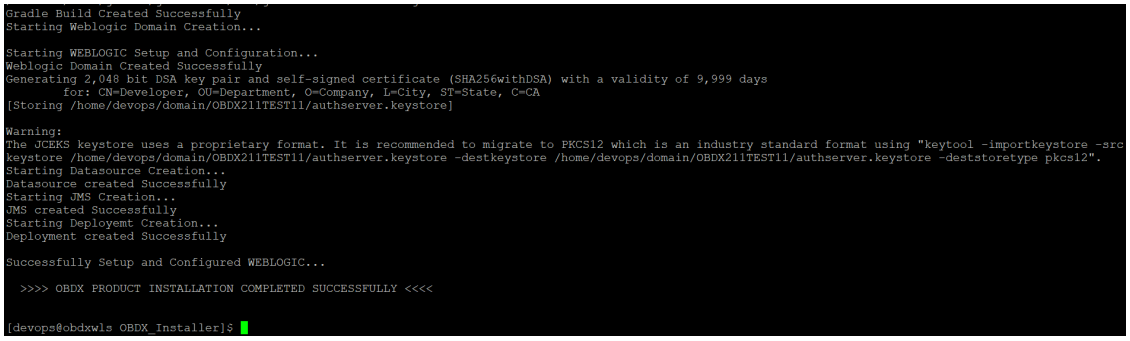
```
  >>>> STARTING OBDX PRODUCT INSTALLATION <<<<


 <<<<< Please check the logs file available at ExecInstances/12May0626/logs/app for any error  >>>>>>>


We are excuting the db with DB_WITH_FLYWAY_EXECUTION=NO
Starting OBDX Database Installation with OBPM FLAVOR
Database Path: /u02/app/oracle/oradata/OFCDB009_bom1cq/OFCDB009_BOM1CQ/B2169F489B0C1E32E053C305F40A9E33/datafile
Database Path: /u02/app/oracle/oradata/OFCDB009_bom1cq/OFCDB009_BOM1CQ/B2169F489B0C1E32E053C305F40A9E33/datafile
Creating Tablespace...
Tablespace Created
Creating User...
User Created
Creating Role...
Role Created
Executing Grants...
Execution of clip_master_script_main.sql started
Execution of clip_master_script_main.sql completed
Execution of clip_constraints_main.sql started
Execution of clip_constraints_main.sql completed
Execution of clip_seeds_executable_main.sql started
Execution of clip_seeds_executable_main.sql completed
SUCCESSFULLY installed OBDX database

Starting OBPM Database Installation...
Database Path: /scratch/app/oradata/ORA19C
Creating Tablespace...
Tablespace Created
Creating User...
User Created
Creating Role...
Roles Created
Executing Grants...
Executing OBPM  Grants...
Execution of table-scripts_main.sql started
Execution of table-scripts_main.sql completed
Execution of ubs_object_scripts_main.sql started
Execution of ubs_object_scripts_main.sql completed
Execution of obpm_object_scripts_main.sql started
Execution of obpm_object_scripts_main.sql completed
Execution of execute-seeds_main.sql started
```

If `DB_WITH_FLYWAY_EXECUTION` set to **YES**

When the installation completes, the below message is displayed

```
Password validated for sys
Password validated for sys
Password validated for COD144_ITR

  >>>> STARTING OBDX PRODUCT INSTALLATION <<<<


 <<<<< Please check the logs file available at ExecInstances/12May0721/logs/app for any error  >>>>>>>


We are excuting the db with DB_WITH_FLYWAY_EXECUTION=YES
Starting OBDX Database Installation with OBPM FLAVOR
Database Path: /u02/app/oracle/oradata/OFCDB009_bom1cq/OFCDB009_BOM1CQ/B2169F489B0C1E32E053C305F40A9E33/datafile
Database Path: /u02/app/oracle/oradata/OFCDB009_bom1cq/OFCDB009_BOM1CQ/B2169F489B0C1E32E053C305F40A9E33/datafile
Creating Tablespace...
Tablespace Created
Creating User...
User Created
Creating Role...
Role Created
Executing Grants...
OBDX Scripts execution on progess...Please hold on it might take sometime
OBDX Scripts execution Successfully
SUCCESSFULLY installed OBDX database

Starting OBPM Database Installation...
Database Path: /scratch/app/oradata/ORA19C
Creating Tablespace...
Tablespace Created
Creating User...
User Created
Creating Role...
Roles Created
Executing Grants...
Executing OBPM  Grants...
OBPM Scripts execution on progess...Please hold on it might take sometime
```

When the installation completes, the below message is displayed


Gradle Build Created Successfully
Starting Weblogic Domain Creation...
Starting WEBLOGIC Setup and Configuration...
Weblogic Domain Created Successfully
Generating 2,048 bit DSA key pair and self-signed certificate (SHA256withDSA) with a validity of 9,999 days
for: CN=Developer, OU=Department, O=Company, L=City, ST=State, C=CA
[Storing /home/devops/domain/OBDX211TEST11/authserver.keystore]
Warning:
The JCEKS keystore uses a proprietary format. It is recommended to migrate to PKCS12 which is an industry standard format using "keytool -importkeystore -src
keystore /home/devops/domain/OBDX211TEST11/authserver.keystore -destkeystore /home/devops/domain/OBDX211TEST11/authserver.keystore -deststoretype pkcs12".
Starting Datasource Creation...
Datasource created Successfully
Starting JMS Creation...
JMS created Successfully
Starting Deployemt Creation...
Deployment created Successfully
Successfully Setup and Configured WEBLOGIC...
>>>> OBDX PRODUCT INSTALLATION COMPLETED SUCCESSFULLY <<<<
[devops@obdxwls OBDX_Installer]$

5

Installer Verification

Each execution creates a new directory as <DDMonthHHMM> under <OBAPI INSTALLER DIR>/ExecInstances directory where installer execution logs as described below are stored.

Log Description	PATH
Summarized Installer Activity Log	<OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM> /logs/obdx_installer.log
Summarized Database Logs	<OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM> /logs/db/DB_installation.log
Detailed OBAPI DB Logs per SQL file	<OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM> /logs/db/OBAPI/OBAPI.log
Detailed EHMS schema Logs per SQL file (specific to EHMS host system only)	<OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM> /logs/db/<EHMSHOST>/<EHMSHOST>.log <EHMSHOST> - values such as; FCORE; OBPM;
Weblogic Configuration Logs	<OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM> /logs/app/app_debug.log <OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM> /logs/app/domain.log <OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM> /logs/app/datasource.log <OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM> /logs/app/jms.log <OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM> /logs/app/deployment.log
Detailed OBAPI policy seeding logs	<OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM> /logs/db/Entitlement.log <OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM> /logs/db/Task.log <OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM> /logs/db/Dashboard_seed.log **Note:** Check for SEVERE keyword; If found refer to Troubleshot section to re-run the policy
Policy seeding execution Log	<OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM> /logs/db/seedPolicies.log **Note:** Should be empty if no errors during policy execution. In-case non-empty refer to Troubleshot section to re-run the policy

Check all the logs for any errors.

6
Installer Scope

OBAPI Installer currently covers below activities:

Flavor: Third Party system (OBAPI with THP)

Flavor	Activity	Detailed Activity List	New Installation	Reinstall
OBAPI with THP	OBAPI DB Setup	Create Tablespace	√	NA
		Create Schema and Role	√	√ (drop and re-create objects)
		Grants	√	√
		Load DB object (DDL's and DML's)	√	√
		Compile Schema	√	√
		Policy Seeding	√	√
	Weblogic Setup and Configuration	Create and Configure AdminServer, Machine, Managed Server and Cluster	√	√
		Configure NodeManager	√	√
		Configure JDBC	√	√
		JMS servers, Persistent stores and JMS Modules	√	√
		Application Deployment	√	√
		JTA	√	√
		Enable Production Mode	√	√
		Start AdminServer and NodeManager	√	√
	OBAPI Configuration	Copy config files into OBAPI Installation Home	√	√ (Delete old and copy new from installer zip)

Flavor: Oracle FLEXCUBE Core Banking (OBAPI with FCORE)

Flavor	Activity	Detailed Activity List	New Installation	Reinstall
OBAPI with THP	OBAPI DB Setup	Create Tablespace	√	NA
		Create Schema and Role	√	√ (drop and re-create objects)
		Grants	√	√

Flavor	Activity	Detailed Activity List	New Installation	Reinstall
		Load DB object (DDL's and DML's)	√	√
		Compile Schema	√	√
		Policy Seeding	√	√
	EHMS DB Setup	Create Tablespace	√	NA
		Create Schema and Role	√	√ (drop and re-create objects)
		Grants	√	√
		Load DB object (DDL's and DML's)	√	√
		Compile Schema	√	√
	Weblogic Setup and Configuration	Create and Configure AdminServer, Machine, Managed Server and Cluster	√	√
		Configure NodeManager	√	√
		Configure JDBC	√	√
		JMS servers, Persistent stores and JMS Modules	√	√
		Application Deployment	√	√
		JTA	√	√
		Enable Production Mode	√	√
		Start AdminServer and NodeManager	√	√
	OBAPI Configuration	Copy config files into OBAPI Installation Home	√	√(Delete old and copy new from installer zip)

Flavor: Oracle FLEXCUBE Universal Banking with Oracle Banking Payments (OBAPI with OBPM)

Flavor	Activity	Detailed Activity List	New Installation	Reinstall
OBAPI with OBPM (14.6.0.0.0 version)	OBAPI DB Setup	Create Tablespace	√	NA
		Create Schema and Role	√	√ (drop and re-create objects)
		Grants	√	√
		Load DB object (DDL's and DML's)	√	√
		Execute OBPM HOST specific scripts	√	√
		Compile Schema	√	√
		Policy Seeding	√	√

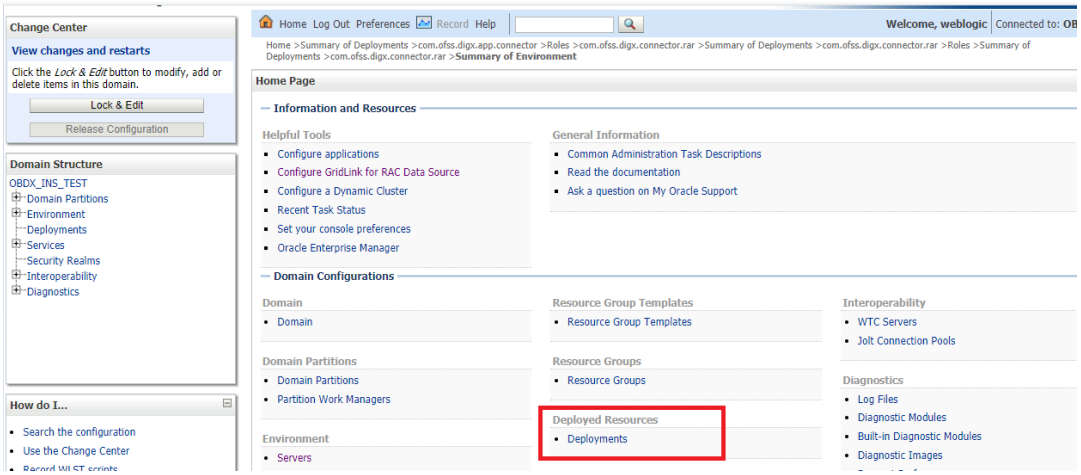
Flavor	Activity	Detailed Activity List	New Installation	Reinstall
	EHMS DB Setup	Create Tablespace	√	NA
		Create Schema and Role	√	√ (drop and re-create objects)
		Grants	√	√
		Load DB object (DDL's and DML's)	√	√
		Compile Schema	√	√
	Weblogic Setup and Configuration	Create and Configure AdminServer, Machine, Managed Server and Cluster	√	√
		Configure NodeManager	√	√
		Configure JDBC	√	√
		JMS servers, Persistent stores and JMS Modules	√	√
		Application Deployment	√	√
		JTA	√	√
		Enable Production Mode	√	√
		Start AdminServer and NodeManager	√	√
	OBAPI Configuration	Copy config files into OBAPI Installation Home	√	√(Delete old and copy new from installer zip)

7

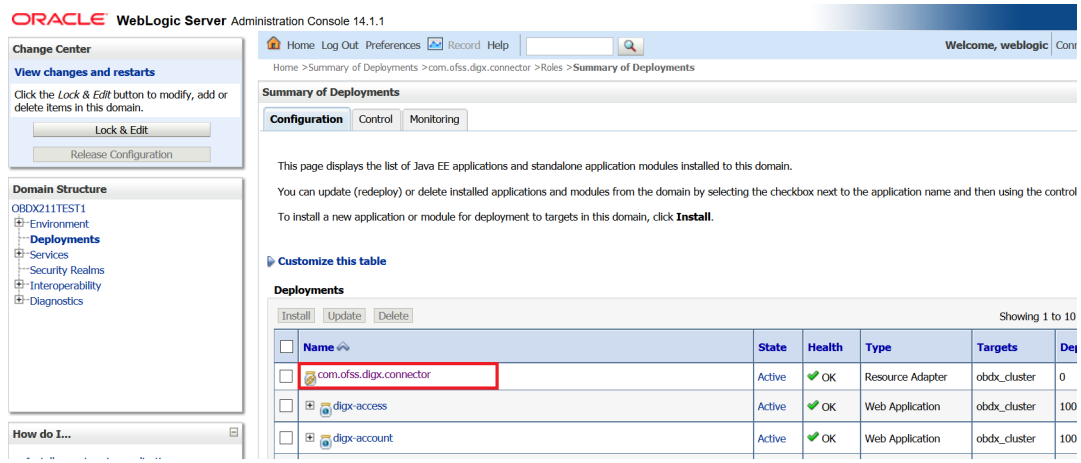
Post Installation Steps

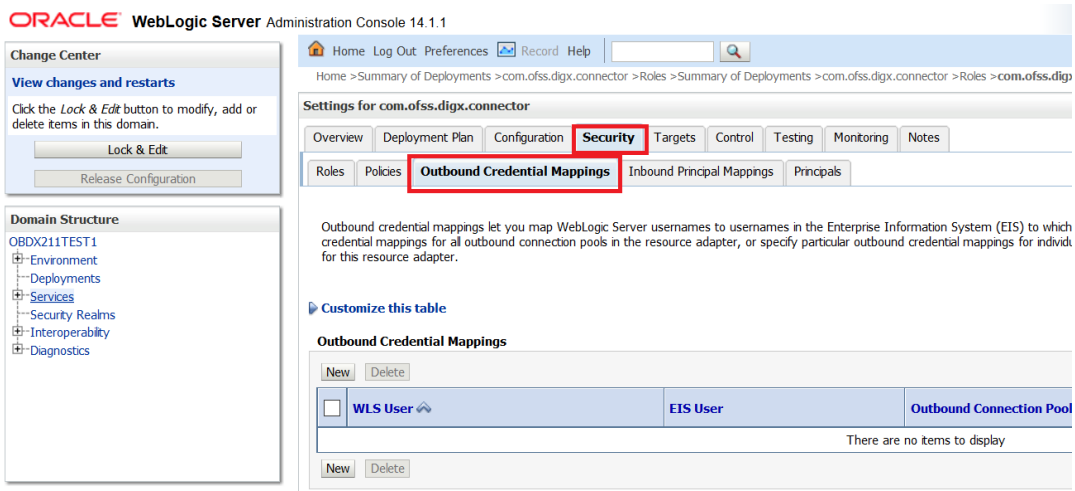
Outbound credential mappings

1. Login Weblogic Admin Console. Click on **Deployments**.

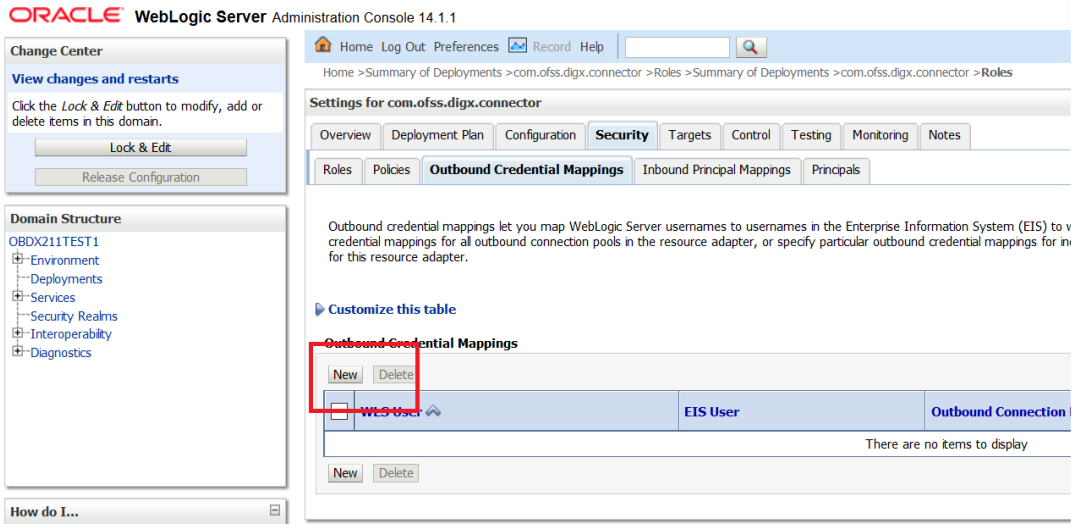


2. Click on com.ofss.digx.connector .
3. Click on **Security** Tab → **Outbound Credential Mappings**.

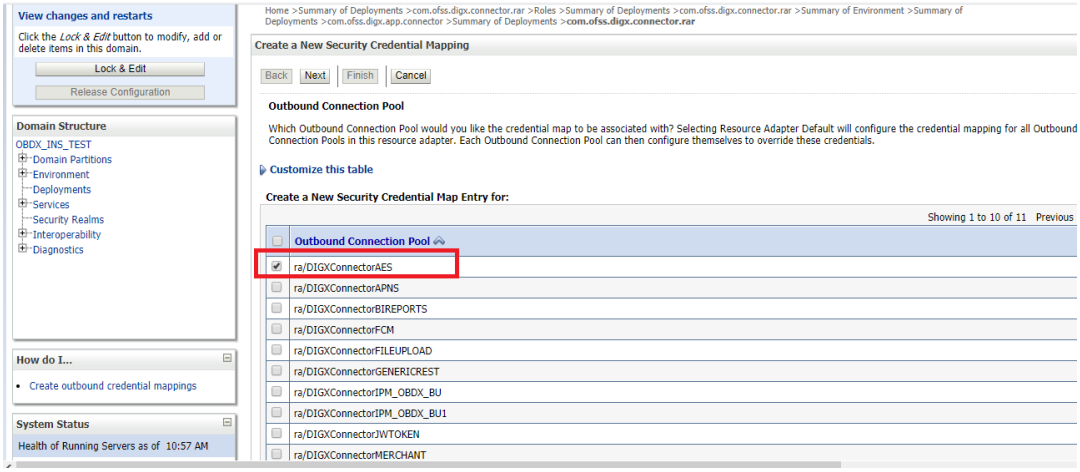




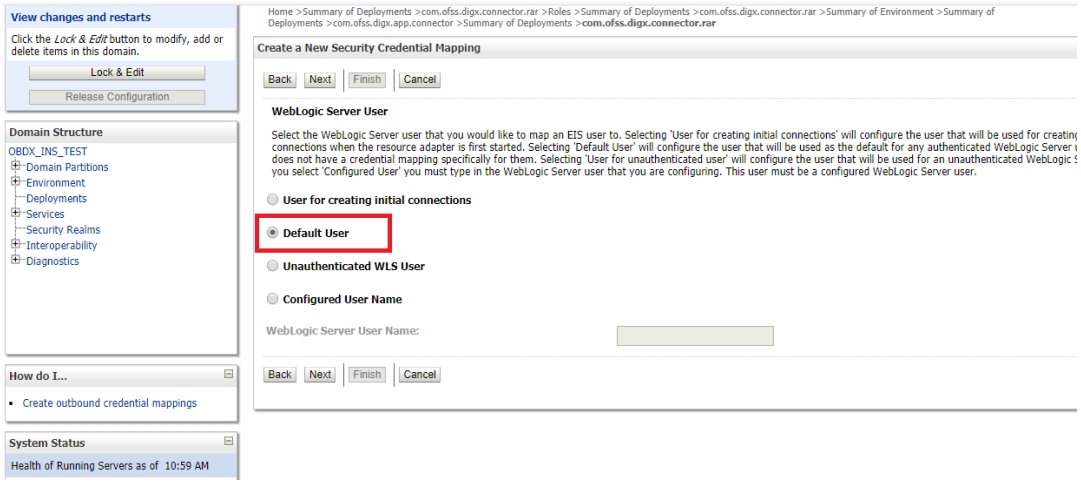
4. Click on **New**.



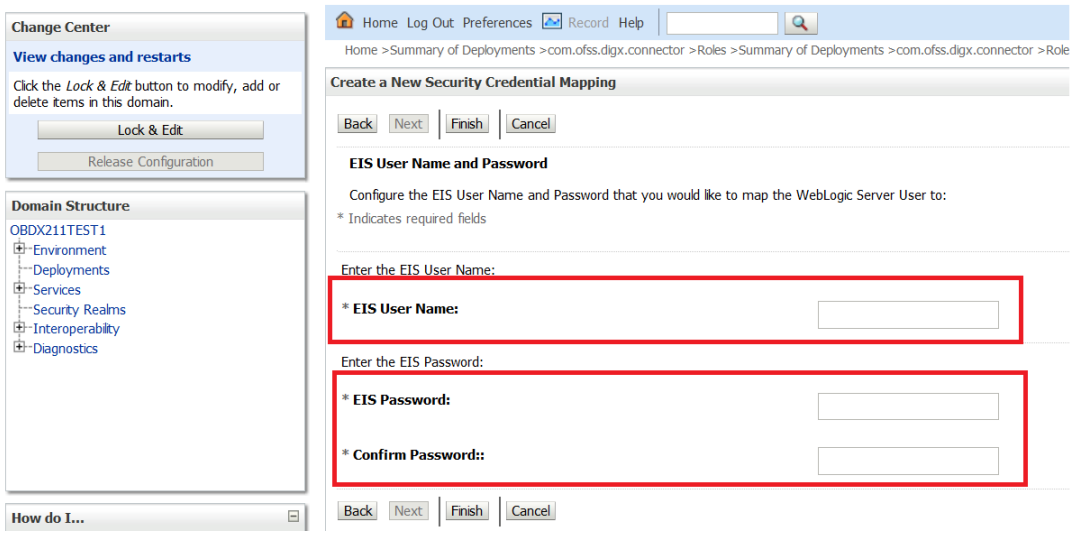
5. Select **ra/DIGXConnectorAES → Next**.



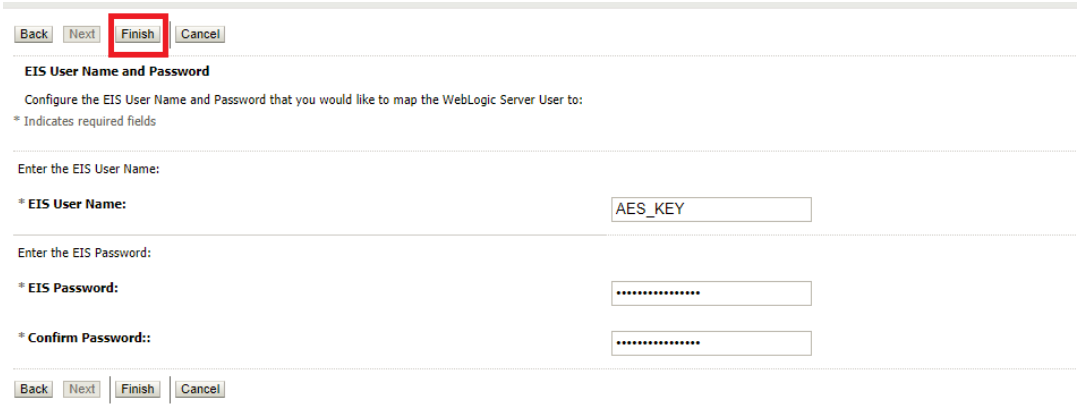
6. Select "**Default User**" → **Next**.



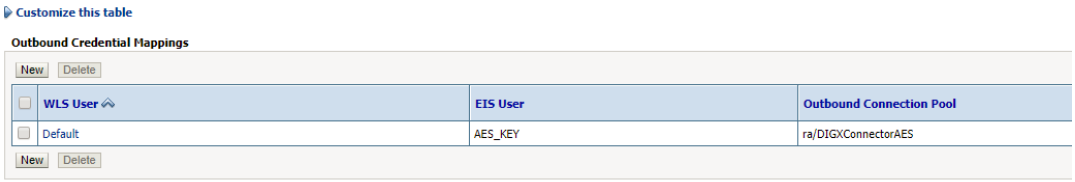
7. Enter "EIS User Name". It should be set to AES_KEY.
8. Enter "EIS Password". Password should be any 16 characters.



9. Click **Finish**.



10. Check AES_KEY mapping is created successfully.



Configuring the Connector Credential Store

This step is required to setup the encryption key required for encryption of certain sensitive data within the OBAPI application.

For more information, refer the **Oracle Banking APIs Connector Credential Store Guide**.

Functionality / Module	OutBound Connection Pool Name
VAM	ra/DIGXConnectorOBVAM

Fileupload with UBS

Refer below document for File upload configuration with UBS

- **Oracle Banking APIs File Upload Report Configuration** user manual.

Origination with OBO

Refer below document (section 5 and 6) for enabling Origination with OBO

- **Oracle Banking APIs OBO and Third Party Setup and Configuration** user manual.

Trade Finance (LC and BG) with OBTFPM

Refer below document for enabling ‘Letter Of Credit’ issuance and ‘Bank Guarantee’ issuance with Oracle Banking Trade Finance Management.

- **Oracle Banking Mid-Office Product Setup and Configuration Guide** user manual.

OHSOHS server needs to be configured for all FLAVOR’s as a mandatory activity.

To configure OHS server follow steps mentioned in below document before proceeding further.

- **Oracle Banking APIs OHS User Interface Configuration** user manual.

Feedback module:

In order to enable Scale (Rating) icons please refer the section **Creating Procedure** of **Oracle Banking APIs Content Upload Guide** user manual.

WAR deployments

Sr. No.	Module	Description
Domainwise deployments		
Sr No	**Module**	**Mandatory (Y/N)**
1	digx-admin	Y
2	digx-common	Y
3	digx-auth	Y

Sr. No.	Module	Description
4	digx-infra	Y
5	digx-coherence	Y
6	digx-eurekaserver	Y
7	digx-shared-libs	Y
8	digx-extxfacesimulator	Y
9	digx-cms	N
10	digx-corporateloan	N
11	digx-creditfacility	N
12	digx-edx	N
13	digx-kafkanotification	N
14	digx-liquiditymanagement	N
15	digx-loanapplication	N
16	digx-payments	N
17	digx-pfm	N
18	digx-pm	N
19	digx-processmanagement	N
20	digx-retail	N
21	digx-scf	N
22	digx-scfcm	N
23	digx-tradefinance	N
24	digx-virtual-account	N

8

OBAPI Logging Configuration

Logging Level Configuration with SLF4J & Logback in Weblogic

Logging at package and class levels can be externalized/customized by maintaining a common logback file outside the application for all the wars. This file will be configured as a server start argument.

1. Use the attached sample reference file and copy it to any physical path. (For example, /scratch/obapi/domains/obapi_domain/logbackOverride.xml)
   logbackOverride.xml

```
<configuration scan="true"
        scanPeriod="10 minutes">

        <appender name="STDOUT"
        class="ch.qos.logback.core.ConsoleAppender">
<!-- encoders are assigned the type
ch.qos.logback.classic.encoder.PatternLayoutEncoder by
        default -->
<encoder>
<pattern>%date{dd MMM yyyy;HH:mm:ss.SSS} [%thread] %X{ecid}
        %-5level %logger{100}[%X{FILE_IDENTIFIER} %X{FILE_REF_ID}] -
        %msg%n</pattern>        </encoder>
        </appender>
    <!--   <logger name="com.ofss.digx.app.sms.service.user.login"
        level="info"/>   <logger
name="com.ofss.digx.app.sms.service.user.User" level="debug"/>
        -->
        <root level="ERROR">
<appender-ref ref="STDOUT" />
        </root>
 </configuration>
```

2. Configure the same above path in server start arguments as follows.
   `-Dlogback.configurationFile=/scratch/obapi/domains/obapi_domain/logbackOverride.xml`

   Enable package and class level logging :

   If you want to change the logging level of a particular class or a package, you can do so by adding the following snippet in the external logback file and taking managed server restart. (Refer to the sample file)

   a. To configure package logging level:
      `<logger name="com.ofss.digx.app.sms.service.user.login" level="info"/>`

   b. To configure class logging level :
      `<logger name="com.ofss.digx.app.sms.service.user.User" level="debug"/>`

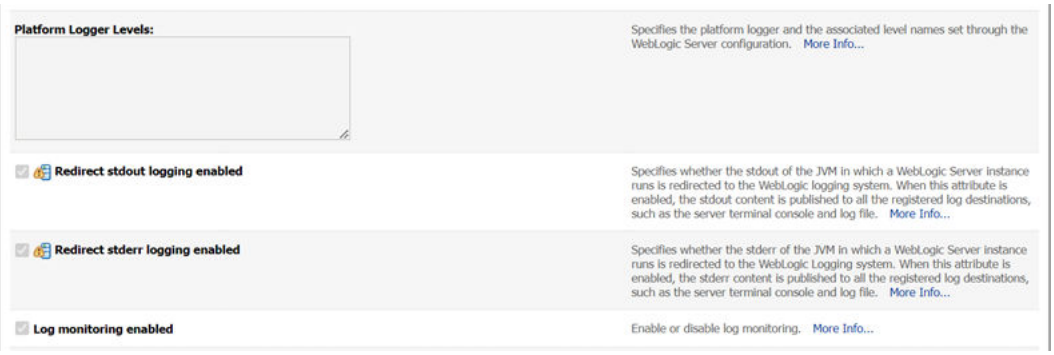
> **Note:**
>
> In order to get the changes reflected without server restart, you can add a "scan" attribute to the <configuration> element in the external logback file. By default, the configuration file will be scanned for changes once every minute. To configure your desired scan period, add the attribute "scanPeriod" with value in milliseconds, seconds, minutes, or hours.
>
> For example,
>
> ```
> <configuration scan="true" scanPeriod="2 minutes">
> ```
>
> This will scan for the configuration file every 2 minutes for any changes.

Redirecting stdout and stderr logs into a log file :

To redirect standard out and error logs to a log file, please follow the below steps.

Login to Weblogic console → Take Lock & Edit session → Go to Servers inside Environment menu à

Click on the managed server → Go to Logging tab → Advanced → Check the boxes “Redirect stdout logging enabled” and “Redirect stderr logging enabled” as shown below.

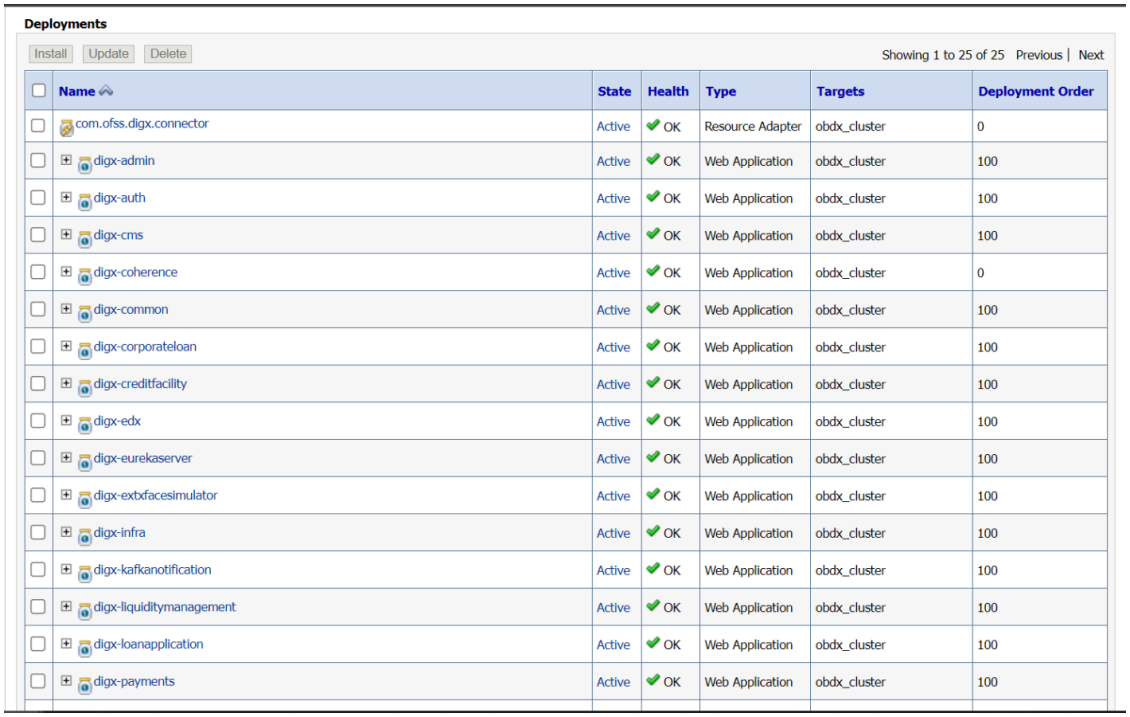


9

OBAPI Product Verification

Start managed server and verify all deployed applications are in Active state (as shown below).

Domainwise deployment wars status



Deployments

Install | Update | Delete — Showing 1 to 25 of 25 Previous | Next

Name	State	Health	Type	Targets	Deployment Order
com.ofss.digx.connector	Active	OK	Resource Adapter	obdx_cluster	0
digx-admin	Active	OK	Web Application	obdx_cluster	100
digx-auth	Active	OK	Web Application	obdx_cluster	100
digx-cms	Active	OK	Web Application	obdx_cluster	100
digx-coherence	Active	OK	Web Application	obdx_cluster	0
digx-common	Active	OK	Web Application	obdx_cluster	100
digx-corporateloan	Active	OK	Web Application	obdx_cluster	100
digx-creditfacility	Active	OK	Web Application	obdx_cluster	100
digx-edx	Active	OK	Web Application	obdx_cluster	100
digx-eurekaserver	Active	OK	Web Application	obdx_cluster	100
digx-extxfacesimulator	Active	OK	Web Application	obdx_cluster	100
digx-infra	Active	OK	Web Application	obdx_cluster	100
digx-kafkanotification	Active	OK	Web Application	obdx_cluster	100
digx-liquiditymanagement	Active	OK	Web Application	obdx_cluster	100
digx-loanapplication	Active	OK	Web Application	obdx_cluster	100
digx-payments	Active	OK	Web Application	obdx_cluster	100

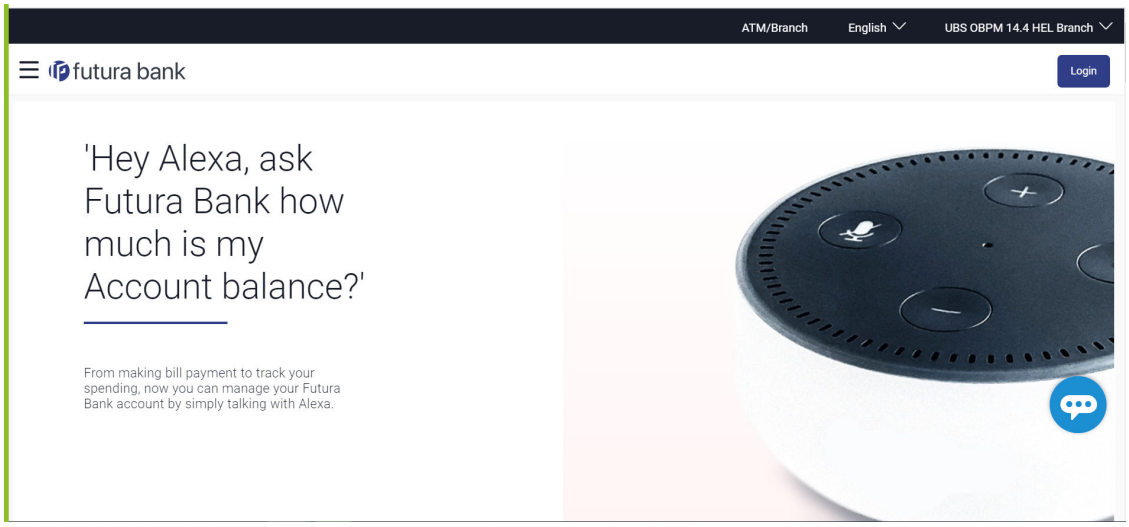
digx-extxfacesimulator	Active	OK	Web Application	obdx_cluster	100
digx-infra	Active	OK	Web Application	obdx_cluster	100
digx-kafkanotification	Active	OK	Web Application	obdx_cluster	100
digx-liquiditymanagement	Active	OK	Web Application	obdx_cluster	100
digx-loanapplication	Active	OK	Web Application	obdx_cluster	100
digx-payments	Active	OK	Web Application	obdx_cluster	100
digx-pfm	Active	OK	Web Application	obdx_cluster	100
digx-pm	Active	OK	Web Application	obdx_cluster	100
digx-processmanagement	Active	OK	Web Application	obdx_cluster	100
digx-retail	Active	OK	Web Application	obdx_cluster	100
digx-scf	Active	OK	Web Application	obdx_cluster	100
digx-scfcm	Active	OK	Web Application	obdx_cluster	100
digx-shared-libs (22.2.0.0.0,4208)	Active		Library	AdminServer, obdx_cluster	0
digx-tradefinance	Active	OK	Web Application	obdx_cluster	100
digx-virtual-account	Active	OK	Web Application	obdx_cluster	100

Install | Update | Delete — Showing 1 to 25 of 25 Previous | Next

To verify the installation, launch below URL

http://<OHS server ip or hostname>:<OHS port>

Check if the page loads successfully.



Day1 Configuration

Universal Banking Solution (OBAPI with UBS)

Refer below document (Section 3. System Configuration) for Day1 configuration required for integration with UBS

Oracle Banking APIs System Configuration

Once day1 is completed, application is available for end-user transactions.

> **Note:**
>
> Post Day1 restart of Managed server is mandatory

Third Party System (OBAPI with THP)

Refer below document (Section 5. System Configuration – Host System as Third Party) for Day1 configuration required for integration with Third-party System

Oracle Banking APIs System Configuration

Once day1 is completed, application is available for end-user transactions.

> **Note:**
>
> Post Day1 restart of Managed server is mandatory

Chat Bot Configuration:

Refer below document for Chat Bot configuration.

Oracle Banking APIs Chatbot Configuration

Mobile Application Builder:

Refer below documents for Mobile Applications build and setup.

Oracle Banking APIs Mobile Application Builder-Android

Oracle Banking APIs Mobile Application Builder-iOS

Mid Office Configuration:

Refer below document for Mid Office Configurations i.e. Trade Finance, Corporate Lending.

Oracle Banking Mid-Office Product Setup and Configuration Guide.

Account Uniqueness Configuration:

Some core banking systems support same account number in multiple branches within the entity. OBAPI has support for such core banking systems. However, the configuration is not enabled by default. In case the Bank has core banking system which supports and provides same account numbers across multiple branches, the following scripts should be executed per entity for enabling the support.

```
Insert into  DIGX_FW_CONFIG_ALL_O (PROP_ID, PREFERENCE_NAME, PROP_VALUE,
DETERMINANT_VALUE,
CREATED_BY,CREATION_DATE, LAST_UPDATED_BY, LAST_UPDATED_DATE)
values
('obapi.host.account.uniqueness','ExtSystemsConfig','BRANCH','<ENTITY_ID>','of
ssuser',sysdate,
'ofssuser',sysdate);
Insert into DIGX_FW_CONFIG_ALL_O (PROP_ID, PREFERENCE_NAME, PROP_VALUE,
DETERMINANT_VALUE,
CREATED_BY, CREATION_DATE, LAST_UPDATED_BY, LAST_UPDATED_DATE)
values
('obapi.host.accountbranch.delimiter','ExtSystemsConfig','@~','<ENTITY_ID>','o
fssuser',sysdate,'ofssuser',sysdate);
```

> **Note:**
>
> Please ensure that <ENTITY_ID> has been replaced with correct Entity ID for the corresponding entity.

10

Multi Entity

To add entity to existing OBAPI with supported host system follow below steps.

- Add entity through OBAPI Web application, using
  - User Manual Oracle Banking Digital Experience System Configuration
- In case of OBTFPM integration, following document should be referred.
  - Oracle Banking Mid-Office Product Setup and Configuration Guide Running OBAPI installer

Ensure that Managed server should be down and Admin server should be running state.

Ensure `ORACLE_HOME, JAVA_HOME` variable are set and their binaries are available in PATH variable before proceeding.

Login with OS user which was used to perform OBAPI software installation (or has ownership on Oracle Weblogic home directory)

Ensure OBAPI installation details (OBAPI DB; WLS etc) are maintained in installer.properties and user running the installer has read-write permissions.

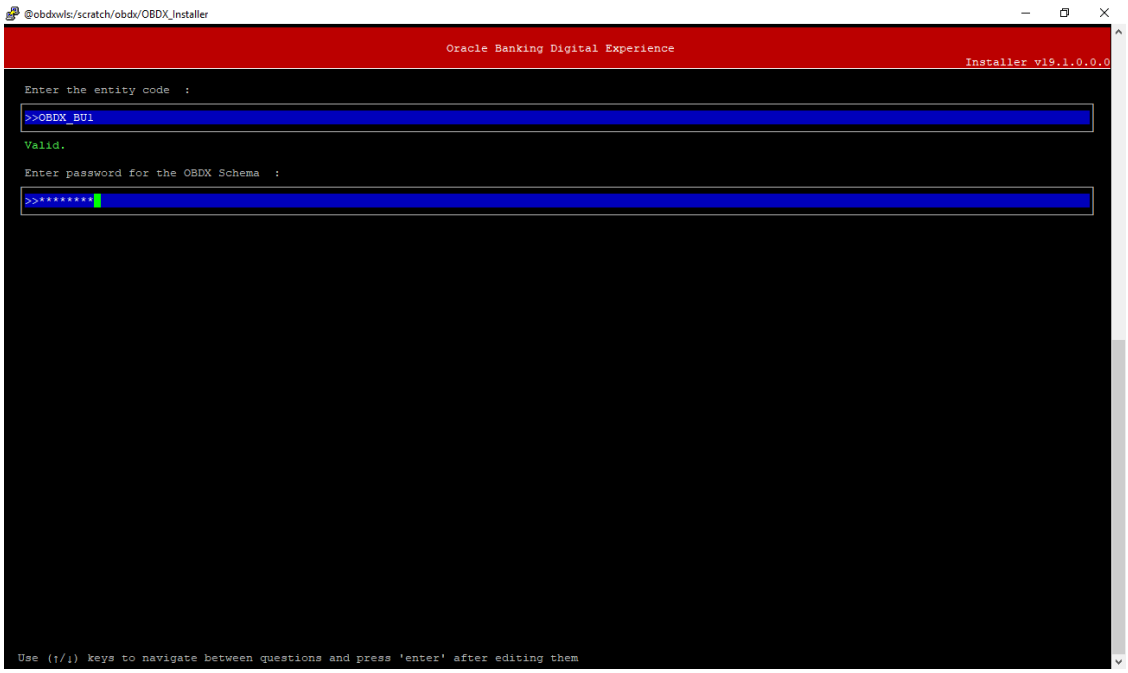
From your terminal navigate to <OBAPI INSTALLER DIR>

Enter the following command

```
python3 runInstaller.py
```

Select installation type as ‘New Entity Creation’.

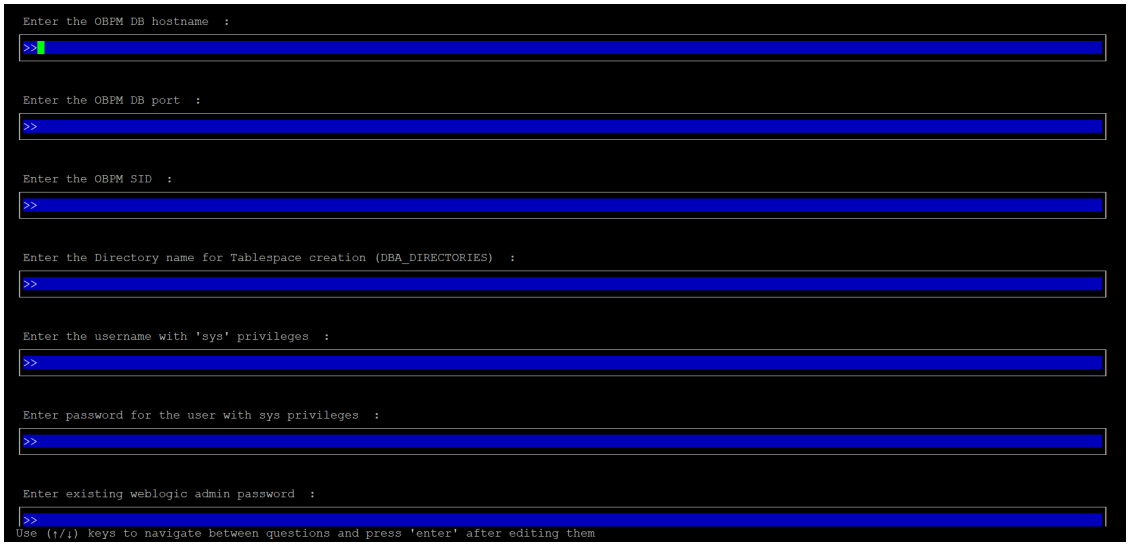
Below screen will appear after selecting add entity.

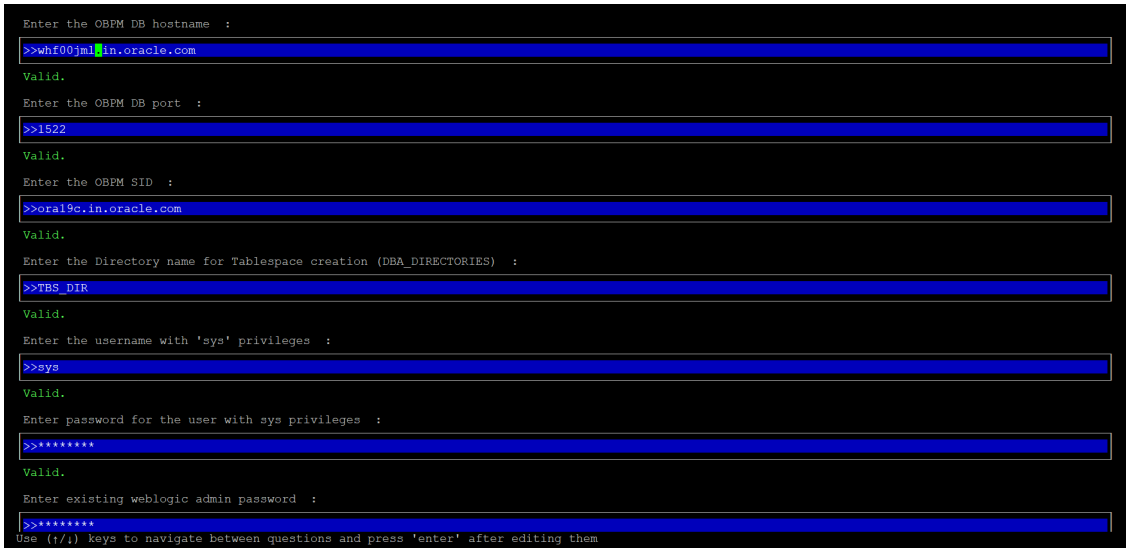


Enter below information:

- Entity code which has been added from screen
- OBAPI schema password

If an entity code belongs to UBS / OBPM host following screen (below screenshot are for OBPM ; for UBS same input are required) will appear:





Enter below details:

- Hostname of the database host server
- Port of the database host server
- Host database Service Name
- Oracle directory name in which you want the database datafile (dbf) to be created. Enter only the name NOT the path.
- Username with 'sys' privileges
- SYS privilege user password where UBS schema would be created
- Weblogic console administrator user password

Enter below details:

- EXISTING Host schema name
- Password for EXISTING schema
- Complete EHMS (HostInterface) schema name you want installer to create as new schema
- Password for New schema
- Country Code of entity branch

Installation Status in case of UBS / OBPM

After entering all required details, the status is displayed (as shown below) on the terminal to indicate the progress of the installation.

```
[c  OBDX_Installer]$ python3 runInstaller.py

Starting OBPM Database Installation...
Creating Tablespace...
Tablespace Created
Creating User...
User Created
Creating Role...
Roles Created
Executing Grants...
Executing OBPM  Grants...
OBPM Scripts execution on progess...Please hold on it might take sometime
Scripts execution Successfully
SUCCESSFULLY installed OBPM database
Executed DIGX_FW_CONFIG_ALL_O.sql successfully
Executed DIGX_FW_CONFIG_UBS_ALL_O.sql successfully
```

When the installation completes, the below message is displayed

```
Starting Entity Configuration

Calling WLST

Initializing WebLogic Scripting Tool (WLST) ...

Welcome to WebLogic Server Administration Scripting Shell

Type help() for help on available commands

Connecting to t3://100.76.133.230:7001 with userid weblogic ...
Successfully connected to Admin Server "AdminServer" that belongs to domain "OBDX211TEST".

Warning: An insecure protocol was used to connect to the server.
To ensure on-the-wire security, the SSL port or Admin port should be used instead.

Location changed to edit tree.
This is a writable tree with DomainMBean as the root.
To make changes you will need to start an edit session via startEdit().
For more help, use help('edit').

Creating Data source OBDXBU2_B1A1
Starting an edit session ...
Started edit session, be sure to save and activate your changes once you are done.
Activating all your changes, this may take a while ...
The edit lock associated with this edit session is released once the activation is completed.
Activation completed
OBDXBU2_B1A1 created sucessfully.


Exiting WebLogic Scripting Tool.


Entity successfully configured.
```

Post successful installation refer to “Section 8: Post Installation steps” for manual steps to be performed for UBS additional entity (sub-section : Oracle FLEXCUBE Universal Banking (OBAPI with UBS)).

If an entity code belongs to Third-party host following screen will appear:

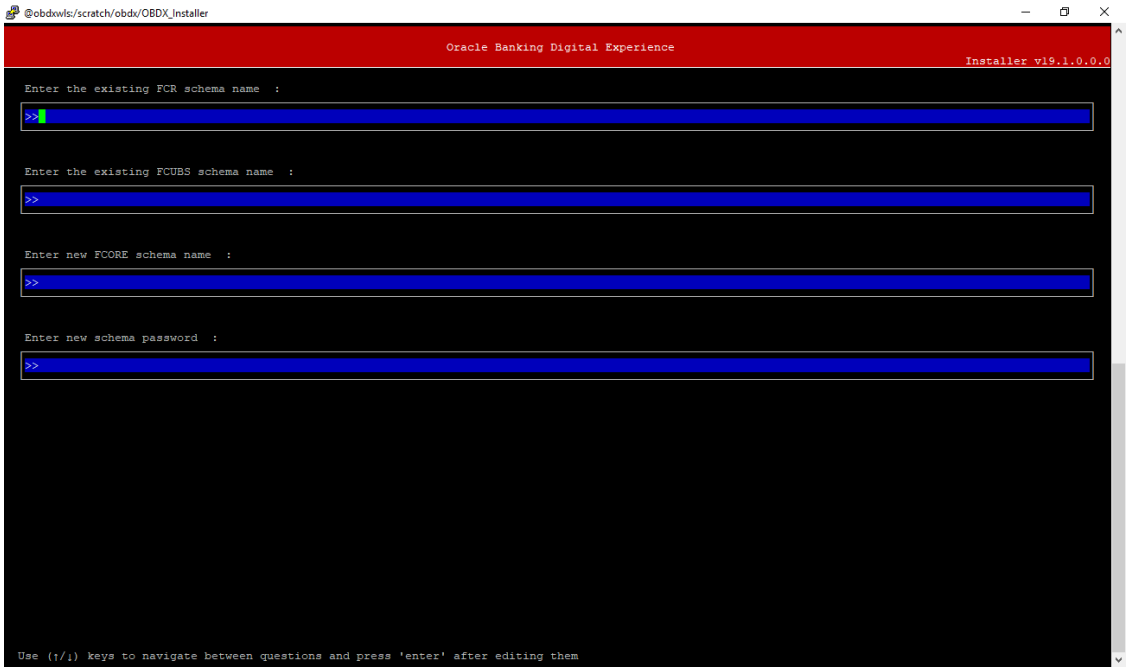
```
[obdxadmin@obdxwls 222 OBDX_Installer]$ python3 runInstaller.py
Execution of DB script for OBDXBU4 started
Executed DIGX_FW_CONFIG_ALL_O.sql successfully
Execution  completed.
```

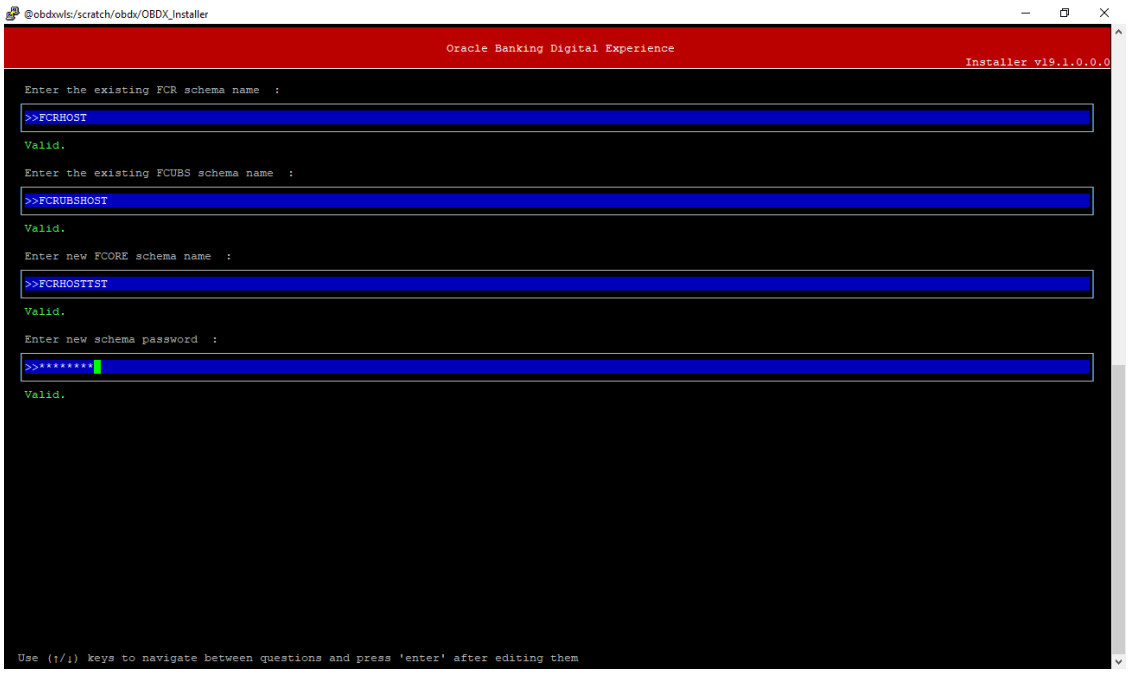
No additional steps/ configuration are required.

If an entity code belongs to Oracle FLEXCUBE Core Banking host following screen will appear:

Enter below details:

- Hostname of the FCORE database host server
- Port of the FCORE database host server
- FCORE Host database Service Name
- Oracle directory name in which you want the database datafile (dbf) to be created. Enter only the name NOT the path.
- Username with 'sys' privileges
- SYS privilege user password where FCORE schema would be created
- Weblogic console administrator user password



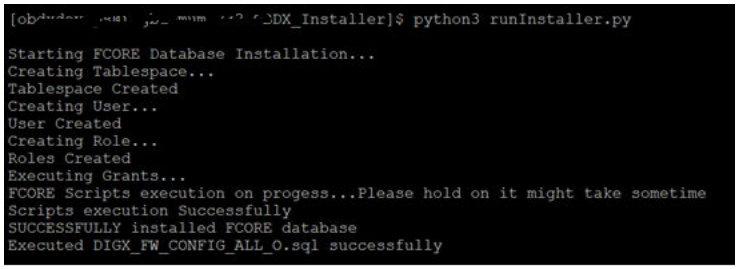


Enter below details:

- EXISTING FCORE HOST schema name
- EXISTING FCORE FCUBS schema name
- Complete EHMS (HostInterface) schema name you want installer to create as new schema
- Password for New EHMS schema

Installation status for FCORE Add entity

After entering all required details, the status is displayed (as shown below) on the terminal to indicate the progress of the installation.



```
Starting Entity Configuration

Calling WLST

Initializing WebLogic Scripting Tool (WLST) ...

Welcome to WebLogic Server Administration Scripting Shell

Type help() for help on available commands

Connecting to t3://100.76.133.230:7001 with userid weblogic ...
Successfully connected to Admin Server "AdminServer" that belongs to domain "OBDX211TEST".

Warning: An insecure protocol was used to connect to the server.
To ensure on-the-wire security, the SSL port or Admin port should be used instead.

Location changed to edit tree.
This is a writable tree with DomainMBean as the root.
To make changes you will need to start an edit session via startEdit().
For more help, use help('edit').

Creating Data source OBDXBU3_B1A1
Starting an edit session ...
Started edit session, be sure to save and activate your changes once you are done.
Activating all your changes, this may take a while ...
The edit lock associated with this edit session is released once the activation is completed.
Activation completed
OBDXBU3_B1A1 created sucessfully.


Exiting WebLogic Scripting Tool.


Entity successfully configured.
```

No additional steps/ configuration are required.

Post successful installation refer to “Section 8: Post Installation steps” for manual steps to be performed for OBPM additional entity (sub-section: Oracle FLEXCUBE Universal Banking with Oracle Banking Payments (OBAPI with OBPM)).

11

Multi-entity installation using Silent Mode

This chapter describes how to run the OBAPI installer for add entity in silent mode.

Ensure that Managed server should be down and Admin server should be running.

Ensure ORACLE_HOME, JAVA_HOME variable are set and their binaries are available in PATH variable before proceeding.

Login with OS user which was used to perform OBAPI software installation (or has ownership on Oracle Weblogic home directory)

Steps for Silent-Mode Installation

1. Set the environment variables, as shown below.

```
OBDX_Installer]$ export Entity_Code=OBDX_BU7
OBDX_Installer]$ export SCHEMA_PASS=welcome1
OBDX_Installer]$ export ENTITY_EHMS_DATABASE_HOSTNAME=hostanme.in.oracle.com
OBDX_Installer]$ export ENTITY_EHMS_DATABASE_PORT=1520
OBDX_Installer]$ export ENTITY_EHMS_DATABASE_SID=obdxdb.in.oracle.com
OBDX_Installer]$ export ENTITY_EHMS_DBA_DIRECTORY_NAME=TBS_DIR
OBDX_Installer]$ export ENTITY_EHMS_DATABASE_SYS_USER=sys
OBDX_Installer]$ export ENTITY_EHMS_DATABASE_SYS_PASS=welcome1
OBDX_Installer]$ export ENTITY_EHMS_SCHEMA_NAME=welcome1
OBDX_Installer]$ export ENTITY_EHMS_SCHEMA_PASS=welcome1
OBDX_Installer]$ export ENTITY_EHMS_HOST_SCHEMA_NAME=FCUBS140
OBDX_Installer]$ export ENTITY_EHMS_HOST_SCHEMA_NAME_PASS=welcome1
OBDX_Installer]$ export WLS_DOMAIN_PASS=welcome1
OBDX_Installer]$ export ENTITY_EHMS_HOST_SCHEMA_NAME_PASS=FCUBS140
OBDX_Installer]$ export ENTITY_EHMS_CCY=GB
OBDX_Installer]$ python runInstaller.py --silent --addEntity
```

Below parameters should be set in environment variables

Environment variables	Parameter	Description	Example
Environment variables to set for flavor: **FCORE UBS (14.6.0.0.0 release)** **OBPM (14.6.0.0.0 release)**	`Entity_Code`	Entity code which has been entered from screen	`export Entity_Code=OBDX_BU7`
	`SCHEMA_PASS`	Password for existing OBAPI schema	`export SCHEMA_PASS=devops#obapi182`
	`ENTITY_EHMS_DATABASE_HOSTNAME`	Hostname of the EHMS HOST database host server	`export ENTITY_EHMS_DATABASE_HOSTNAME=xx.xx.xx.xx`
	`ENTITY_EHMS_DATABASE_PORT`	Port of the EHMS HOST database host server	`export ENTITY_EHMS_DATABASE_PORT=1521`
	`ENTITY_EHMS_DATABASE_SID`	EHMS Host database Service Name	export ENTITY_EHMS_DATABASE_SID=obdxdb.in.oracle.com

Environment variables	Parameter	Description	Example
	ENTITY_EHMS_DBA_DIRECTORY_NAME	Oracle Directory name in which you want the EHMS (HostInterface) schema datafile (dbf). Enter only the name and NOT the path	export ENTITY_EHMS_DBA_DIRECTORY_NAME=TBS_DIR
	ENTITY_EHMS_DATABASE_SYS_USER	Username with 'sys' privileges	export ENTITY_EHMS_DATABASE_SYS_USER=sys
	ENTITY_EHMS_DATABASE_SYS_PASS	Password for EHMS sys user	export ENTITY_EHMS_DATABASE_SYS_PASS=devops@sys
	ENTITY_EHMS_SCHEMA_NAME	Complete EHMS (HostInterface) schema name you want installer to create as new schema.	export ENTITY_EHMS_SCHEMA_NAME=OBAPIEHMS
	ENTITY_EHMS_SCHEMA_PASS	Password for new EHMS schema on EHMS HOST database	export ENTITY_EHMS_SCHEMA_PASS=devops#ehms
	ENTITY_EHMS_HOST_SCHEMA_NAME	EXISTING EHMS Host schema name	export ENTITY_EHMS_HOST_SCHEMA_NAME=EHMSHOST
	ENTITY_EHMS_HOST_SCHEMA_NAME_PASS **This parameter is only required for UBS & OBPM Host	Password of existing HOST EHMS schema (Existing)	export ENTITY_EHMS_HOST_SCHEMA_NAME_PASS=ehmshst
	WLS_DOMAIN_PASS	Password for Weblogic admin console	export WLS_DOMAIN_PASS=weblogic182
	ENTITY_EHMS_CCY **This parameter is only required for UBS & OBPM Host	Country Code for new or additional entity home branch	export ENTITY_EHMS_CCY=GB
	ENTITY_EHMS_FCORE_FCUBS_SCHEMA_NAME **This parameter is only required for FCORE	FCORE-FCUBS HOST schema name	export ENTITY_EHMS_FCORE_FCUBS_SCHEMA_NAME=FCRUBSHOST
Environment variables to set for flavor: **OBAPI (Third-party HOST)**	Entity_Code	Entity code which has been entered from screen	export Entity_Code=OBDX_BU1
	SCHEMA_PASS	Password for existing OBAPI schema	export SCHEMA_PASS=welcome1

2. Run the **runInstaller.py** file with '--silent ' argument along with '--addEntity'.

```
[devops@        /]$
[devops@        /]$ export Entity_Code=OBDX_BU7
[devops@        /]$ export SCHEMA_PASS=devops#obdx182
[devops@        /]$ export ENTITY_EHMS_DATABASE_HOSTNAME=mumaa012.in.oracle.com
[devops@        /]$ export ENTITY_EHMS_DATABASE_PORT=1521
[devops@        /]$ export ENTITY_EHMS_DATABASE_SID=obdxdb.in.oracle.com
[devops@        /]$ export ENTITY_EHMS_DBA_DIRECTORY_NAME=TBS_DIR
[devops@        /]$ export ENTITY_EHMS_DATABASE_SYS_USER=sys
[devops@        /]$ export ENTITY_EHMS_DATABASE_SYS_PASS=devops@sys
[devops@        /]$ export ENTITY_EHMS_SCHEMA_NAME=OBDXEHMS
[devops@        /]$ export ENTITY_EHMS_SCHEMA_PASS=devops#ehms
[devops@        /]$ export ENTITY_EHMS_HOST_SCHEMA_NAME=FCUBS140
[devops@        /]$ export ENTITY_EHMS_HOST_SCHEMA_NAME_PASS=FCUBS140HST
[devops@        /]$ export WLS_DOMAIN_PASS=weblogic182
[devops@        /]$ export ENTITY_EHMS_CCY=GB
[devops@        /]$ python runInstaller.py --silent --addEntity
```

Installation Status in case of Oracle FLEXCUBE Core Banking, Oracle FLEXCUBE Universal Banking, Oracle FLEXCUBE Universal Banking with Oracle Banking Payments

After entering all required details, the status is displayed (as shown below) on the terminal to indicate the progress of the installation.

When the installation completes, the below message is displayed

```
Starting Entity Configuration

Calling WLST

Initializing WebLogic Scripting Tool (WLST) ...

Welcome to WebLogic Server Administration Scripting Shell

Type help() for help on available commands

Connecting to t3://100.76.133.230:7001 with userid weblogic ...
Successfully connected to Admin Server "AdminServer" that belongs to domain "OBDX211TEST".

Warning: An insecure protocol was used to connect to the server.
To ensure on-the-wire security, the SSL port or Admin port should be used instead.

Location changed to edit tree.
This is a writable tree with DomainMBean as the root.
To make changes you will need to start an edit session via startEdit().
For more help, use help('edit').

Creating Data source OBDXBU2_B1A1
Starting an edit session ...
Started edit session, be sure to save and activate your changes once you are done.
Activating all your changes, this may take a while ...
The edit lock associated with this edit session is released once the activation is completed.
Activation completed
OBDXBU2_B1A1 created sucessfully.


Exiting WebLogic Scripting Tool.


Entity successfully configured.
```

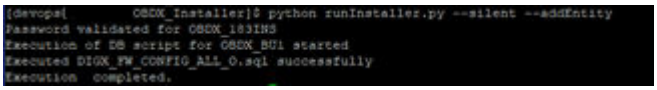
Post successful installation refer to section **Post Installation steps** for manual steps to be performed for

- UBS additional entity (sub-section : Oracle FLEXCUBE Universal Banking Solution (OBAPI with UBS))
- OBPM additional entity (sub-section: Oracle FLEXCUBE Universal Banking with Oracle Banking Payments (OBAPI with OBPM))

3. **Installation Status in case of other hosts as Add Entity**

After entering all required details, the status is displayed (as shown below) on the terminal to indicate the progress of the installation.

- THP(third party as entity)



12

OBAPI Product Security

Refer below document for OBAPI product security configuration

Oracle Banking APIs Security Guide

13

OBAPI Product – Best Practice

- Tablespace for AUDIT INDEX

13.1 Tablespace for AUDIT INDEX

The index's used by AUDIT table should be moved into new tablespace from current AUDIT tablespace.

Follow below steps

- Create a new tablespace
- Give quota to OBAPI schema

```
alter user <OBAPI_SCHEMA> quota unlimited on
<OBAPI_AUDIT_INDEX_TABLESPACE>;
```

- Drop and create below index by mapping the newly created tablespace
  - `OBAPI_Installer\installables\db\OBAPI\ddl\oracle\audit\IDX_DIGX_AL_API_AUDIT_LOGGING.sql`
  - `OBAPI_Installer\installables\db\OBAPI\ddl\oracle\audit\IDX_DIGX_AL_API_AUDIT_LOG_HIST.sql`
  - `OBAPI_Installer\installables\db\OBAPI\ddl\oracle\audit\IDX_DIGX_AL_AUDIT_LOGGING.sql`
  - `OBAPI_Installer\installables\db\OBAPI\ddl\oracle\audit\IDX_DIGX_AL_AUDIT_LOGGING_1.sql`
  - `OBAPI_Installer\installables\db\OBAPI\ddl\oracle\audit\IDX_DIGX_AL_AUDIT_LOGGING_2.sql`
  - `OBAPI_Installer\installables\db\OBAPI\ddl\oracle\audit\IDX_DIGX_AL_AUDIT_LOGGING_3.sql`
  - `OBAPI_Installer\installables\db\OBAPI\ddl\oracle\audit\IDX_DIGX_AL_AUDIT_LOGGING_4.sql`
  - `OBAPI_Installer\installables\db\OBAPI\ddl\oracle\audit\IDX_DIGX_AL_AUDIT_LOGGING_DETAILS.sql`

14

JPA and OBAPI multi-cluster

In a multi-cluster environment, below JPA related changes should be implemented

- Go to Weblogic server
- Open config\META-INF\persistence.xml
- Append below configuration for all data-source
  <property name="eclipselink.cache.coordination.jms.host" value="t3://<WEBLOGIC-HOST-NAME OR IP>:<MANAGED-SERVER-PORT>/" />

  Replace with respective hostname or IP and Port no (this should be the managed server port number which hosts the JPA queues in the cluster)

Key pointers;

- Multi-cluster here refer's to :
  - Single cluster with multiple nodes (2 or more physical servers hosting the OBAPI product)
  - 2 or more Weblogic cluster's
- Ensure these (persistence.xml) changes are available to all Managed server by maintaining appropriate classpath

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Troubleshoot Overview

This section describes how to troubleshoot OBAPI setup.

Invalid database password

This topic contains troubleshooting information if you receive an error when attempting to connect to the database server.

If you get the following error:

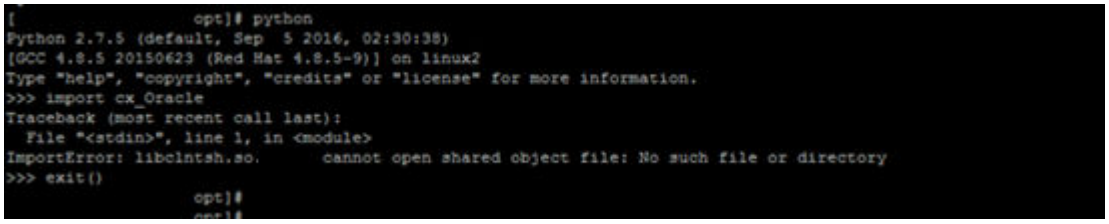
Try one of the following:

- Verify that the database is running.
- Check Network connectivity between Weblogic Server and Database server.
- Check the database configuration in installer.properties file
- Verify that the entered password is correct.

cx_oracle module

This topic contains troubleshooting information about problems with cx_Oracle python module.

If you get the following error:



Execute the below command:

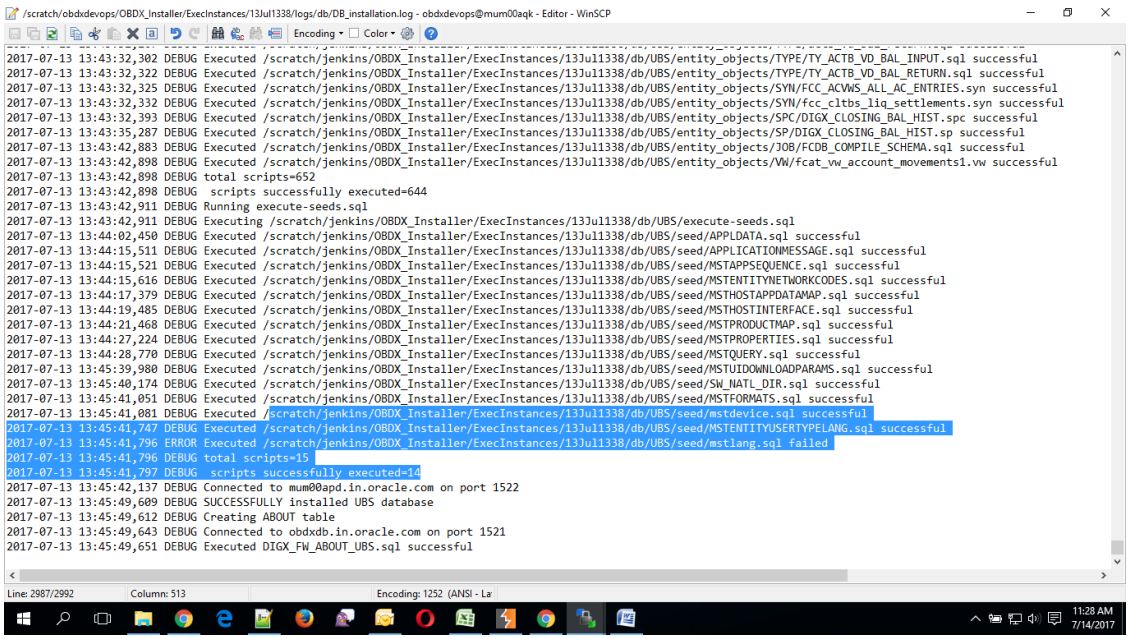
```
export LD_LIBRARY_PATH=/usr/lib/oracle/19.10/client64/lib:$LD_LIBRARY_PATH
python
    import cx_Orace
    cx_Oracle.__version__
```

```
[devops@        /]$ export LD_LIBRARY_PATH=/usr/lib/oracle/18.3/client64/lib/:$LD_LIBRARY_PATH
[devops@        /]$ python
Python 2.7.5 (default, Apr 11 2018, 17:41:36)
[GCC 4.8.5 20150623 (Red Hat 4.8.5-28.0.1)] on linux2
Type "help", "copyright", "credits" or "license" for more information.
>>> import cx_Oracle
>>> cx_Oracle.__version__
'7.3.0'
```

Failed Database Scripts

This topic contains troubleshooting information in case of database script failures.

If you get the following error in DB_installation.log:



Check the detailed log of the failed SQL file at <OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM> /logs/db folder.

Failure of Policy Seeding

This topic contains troubleshooting information if policy seeding fails during installation.

If you get the following error:

```
Policy seeding failed. Please see logs for more details
```

Try one of the following:

- Check if Entitlement.log is created on following path <OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM>/logs/db/ and contains any SEVERE errors for Entitlement policy seeding.

- Check if Task.log is created on following path <OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM>/logs/db/ and contains any SEVERE errors for Task policy seeding.

- Check if Dashboard_seed.log is created on following path <OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM>/logs/db/ and contains any SEVERE errors for Dashboard policy seeding.

- Check the seedPolicies.log in <OBAPI INSTALLER DIR>/ExecInstances/<DDMonthHHMM>/logs/db/ directory
  if it contains any runtime errors generated during execution of the policies Seeding in OBAPI schema

Fix the problem by following below steps:

- Login to OBAPI installer server
- Over-write the policies files (Day0Policy.csv; Entitlement.csv; Resources.csv and Task.csv) from OBAPI Product zip into <OBAPI INSTALLER DIR>/installables/policies directory
- Browse to <OBAPI INSTALLER DIR>\ installables\policies
- Edit Entitlement_log4j.properties , Task_log4j.properties & Dashboard_seed_log4j.properties . Replace <logs_path> with directory where policy seeding logs will be generated
  e.g.

```
############################################################

# default file output is in user's home directory.
#java.util.logging.FileHandler.pattern = %h/java%u.log
java.util.logging.FileHandler.pattern = <logs_path>/Task.log
java.util.logging.FileHandler.limit = 50000
java.util.logging.FileHandler.count = 1
#java.util.logging.FileHandler.formatter = java.util.logging.XMLFormatter
java.util.logging.FileHandler.formatter = java.util.logging.SimpleFormatter
java.util.logging.SimpleFormatter.format= [%1$tc] %4$s: %2$s - %5$s %6$s%n


# Limit the message that are printed on the console to INFO and above.
java.util.logging.ConsoleHandler.level = OFF
java.util.logging.ConsoleHandler.formatter = java.util.logging.SimpleFormatter
```

```
############################################################

# default file output is in user's home directory.
#java.util.logging.FileHandler.pattern = %h/java%u.log
java.util.logging.FileHandler.pattern = /scratch/Task.log
java.util.logging.FileHandler.limit = 50000
java.util.logging.FileHandler.count = 1
#java.util.logging.FileHandler.formatter = java.util.logging.XMLFormatter
java.util.logging.FileHandler.formatter = java.util.logging.SimpleFormatter
java.util.logging.SimpleFormatter.format= [%1$tc] %4$s: %2$s - %5$s %6$s%n
```

- Run below command manually if “SEVERE” error logs are found in Task.log

```
java -jar -Djava.util.logging.config.file='<logs.properties>'
com.ofss.digx.utils.feed.data.task.jar "Task.csv"
"oracle.jdbc.OracleDriver,
<OBAPI Schema name>,<OBAPI Schema password>,jdbc:oracle:thin:@<OBAPI DB
hostname or
IP>:<OBAPI DB listener port>/<OBAPI Service Name>"
```

e.g.

```
java -jar -Djava.util.logging.config.file='Task_log4j.properties'
com.ofss.digx.utils.feed.data.task.jar 'Task.csv'
"oracle.jdbc.OracleDriver,OBAPI_THP181,Welcome#1,
jdbc:oracle:thin:@xx.xx.xx.xx:1521/OBAPI"
```

- Run below command manually if “SEVERE” error logs are found in Entitlement.log

```
java -jar -Djava.util.logging.config.file='<logs.properties>'
com.ofss.digx.utils.entitlement.feed.data.jar
'Resources.csv,Entitlement.csv,Day0Policy.csv'
'KERNEL'  "oracle.jdbc.OracleDriver,<OBAPI Schema name>,
<OBAPI Schema password>,jdbc:oracle:thin:@<OBAPI DB hostname
or IP>:<OBAPI DB listener port>/<OBAPI Service Name>"
```

e.g.

```
java -jar -Djava.util.logging.config.file='Entitlement_log4j.properties'
com.ofss.digx.utils.entitlement.feed.data.jar  'Resources.csv,Entitlement.c
sv,
Day0Policy.csv'  'KERNEL' "oracle.jdbc.OracleDriver,OBAPI_THP201,Welcome#1,
jdbc:oracle:thin:@xx.xx.xx.xx:1521/OBAPI"
```

> **Note:**
>
> Please remove the space between multiple csv's if there is any.

- Run below command manually if “SEVERE” error logs are found in Dashboard_seed.log

```
java -jar -Djava.util.logging.config.file='<logs.properties>'
com.ofss.digx.utils.dashboard.jar  '<path>/
dashboard_json'  "oracle.jdbc.OracleDriver,<OBAPI Schema name>,
<OBAPI Schema password>,jdbc:oracle:thin:@<OBAPI DB hostname or
IP>:<OBAPI DB listener port>/<OBAPI Service Name>"
```

e.g.

```
java -jar -Djava.util.logging.config.file= Dashboard_seed_log4j.properties'
com.ofss.digx.utils.dashboard.jar
'/installables/policies/dashboard_json'
"oracle.jdbc.OracleDriver,OBAPI_THP201,
Welcome#1,jdbc:oracle:thin:@xx.xx.xx.xx:1521/OBAPI"
```

- Post successfully execution, restart Managed server.

16

List of Topics

This user manual is organized as follows:

Table 16-1 List of Topics

Topics	Description
Preface	This topic provides information on the introduction, intended audience, list of topics, and acronyms covered in this guide.
Introduction	This topic provides a step by step overview on the installation process of the solution.
Pre-requisite	This topic provides information about prerequisites software installation required for OBDX & OBDX installer.
Installation using Silent Mode	This topic describes how to run the OBDX installer in silent mode.
Installer Verification	This topic explains the installer verification.
Installer Scope	This topic provides information about activities covered by OBDX Installer such as Third Party system (OBDX with THP) Oracle FLEXCUBE Core Banking (OBDX with FCORE), Oracle FLEXCUBE Universal Banking with Oracle Banking Payments (OBDX with OBPM).
Post Installation Steps	This topic describes post installation steps.
OBAPI Logging Configuration	This topic provides information about the logging configuration in WebLogic standard edition.
OBAPI Product Verification	This topic provides information about the how to verify all deployed applications are in Active state.
Multi Entity	This topic describes steps to add entity to existing OBDX with supported host system.
Multi-entity installation using Silent Mode	This topic describes how to run the OBDX installer for add entity in silent mode.
OBAPI Product Security	This topic provides information about the OBDX product security configuration.
OBAPI Product – Best Practice	This topic provides information on best practises followed in OBDXsuch as space for AUDIT INDEX.
JPA and OBAPI multi-cluster	This topic provides information about the JPA related changes to be implemented in a multi-cluster environment.
Troubleshoot Overview	This topic describes how to troubleshoot OBDX setup.

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