Oracle Financial Services Retail Customer Analytics Application Pack

Installation and Configuration Guide

Version 8.0.5.0.0

DOCUMENT CONTROL

Version Number	Revision Date	Changes Done
1.0	November 2017	Captured 8.0.5.0.0.CA Release enhancement updates.

Executive Summary

This document includes the necessary instructions to apply 8.0.5.0.0 Minor Release for OFS Customer Analytics Application Pack and perform the required post install configurations. You can find the latest copy of this document in OTN Documentation Library.

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Preface

This document provides step-by-step instructions to install the OFS CA Applications Pack 8.0.5.0.0 Interim Release.

This chapter discusses the following topics:

Audience

Oracle Financial Services Customer Analytical Applications Pack Installation and Configuration Guide is intended for administrators, and implementation consultants who are responsible for installing and maintaining the application pack components.

Prerequisites for the Audience

The document assumes that you have experience in installing Enterprise components and basic knowledge about the following is recommended.

The following are the expected preparations from the administrator before starting the actual installation:

- Oracle Financial Services Customer Analytical Applications pack components
- OFSAA Architecture
- UNIX Commands
- Database Concepts
- Web Server/ Web Application Server

Recommended Environment

Infrastructure application has been tested with Microsoft Internet Explorer™ browser. For best viewing of Infrastructure pages, set the screen resolution to a minimum resolution of 1024 x 768 pixels.

Related Documents

For more information, refer the Oracle Financial Services Customer Analytical Applications Pack 8.0.5.0.0 documents available in OHC.

Conventions and Acronyms

Conventions	Description
Actions are indicated in **Bold**. Command or query is indicated in `Courier New` font.	
AIX	Advanced Interactive eXecutive
OFS AAI	Oracle Financial Services Analytical Applications Infrastructure
OFS PFT	Oracle Financial Services Profitability Management
OFS FTP	Oracle Financial Services Funds Transfer Pricing
OFS EFPA	Oracle Financial Services Enterprise Financial Performance Analytics
OFS IPA	Oracle Financial Services Institutional Performance Analytics
OFA RPA	Oracle Financial Services Retail Performance Analytics
RHEL	Red Hat Enterprise Linux
ML	Maintenance Level
R	Third-party open source software. Open source R is governed by GNU General Public License (GPL)
Oracle R Distribution	Oracle R Distribution is Oracle's free distribution of open source R
Oracle R Enterprise	Oracle R Enterprise integrates R, the open source scripting language and environment, with Oracle Database

1 OFS Customer Analytics Application Pack Release 8.0.5.0.0

This Interim Release (IR) of OFS Customer Analytics Application Pack is cumulative and includes all enhancements and bug fixes done since the OFS Customer Analytics Application Pack v8.0 GA release. For more information, refer the Oracle Financial Services Customer Analytical Applications Pack Installation and Configuration Guide – Release 8.0.0.0.0.

1.1 Supported Software Versions

The following table shows the minimum hardware and software requirements for installing OFS Customer Analytics Application Pack:

Requirement	Sub-Category	Value
Operating System	Oracle Linux / Red Hat Enterprise Linux (x86-64)	▪ Red Hat Enterprise Linux or Oracle Linux Server release 6 update 6 to latest update version ▪ Red Hat Enterprise Linux or Oracle Linux Server release 7 update 1 to latest update version
	Shell	KORN Shell (KSH)
Java Runtime Environment	Oracle Linux / Red Hat Enterprise Linux	▪ Sun JRE Standard Edition 1.7.x ▪ Sun JRE Standard Edition 1.8.x
Oracle Database Server and Client		▪ Oracle Database Server Enterprise Edition 12c Release 1 (12.1.0.1.0 +)- 64 bit RAC/ Non-RAC with/ without partitioning option ▪ Oracle Client 12c Release 1 (12.1.0.1.0+) - 64 bit ▪ Oracle 12C Release 1 (12.1.0.1+) JDBC driver (Oracle thin driver) ▪ Oracle Distribution of R version 2.15.1, 2.15.2 or 2.15.3.(Optional) ▪ Oracle R Enterprise (Server) version 1.5 (Optional)
	Note: Ensure that the following patches are applied:	

Requirement	Sub-Category	Value
	▪ Oracle Server 12c, v12.1.0.1 – 17082699 ▪ Oracle Server 12c, v12.1.0.2 - 19392604, 19649591 ▪ Also for latest information, refer http://support.oracle.com/ , 12.1.0.2 Bundle Patches for Engineered Systems and DB In-Memory - List of Fixes in each Bundle (Doc ID 1937782.1)	
OLAP	Oracle Hyperion Essbase	▪ V 11.1.2.3+ (Server and Client) with Oracle 12c Database ▪ V 11.1.2.3+ (Server and Client) with Oracle 12c Database
	Oracle OLAP	▪ V 11.2.0.3+ with Oracle 11g Database ▪ V 12.1.0.1+ with Oracle 12c Database
	Note: Oracle Hyperion Essbase & Oracle OLAP is required only if you are using the OLAP feature of OFSAAI. For Oracle OLAP, ensure that you have configured the Oracle Database server with OLAP option.	
Web Server/ Web Application Server	Oracle Linux / Red Hat Enterprise Linux	▪ Oracle HTTP Server 11.1.1.1/ Apache HTTP Server 2.2.x/ IBM HTTP Server Oracle 12c Database: ▪ IBM WebSphere Application Server 8.5+ with IBM Java Runtime (64 bit)
Big Data Software Hadoop distribution	Cloudera	▪ Cloudera Manager 5.8 + ▪ CDH 5.8 + ▪ hadoop-2.5.0+cdh5.3.3+844 ▪ hive-0.13.1+cdh5.3.3+350 ▪ sqoop1 v1.4.5+cdh5.3.3+67 ▪ sqoop2 v1.99.4+cdh5.3.3+23 ▪ Oracle Loader For Hadoop (OLH) v 3.2 ▪ Cloudera Hive Connectors ▪ Hive JDBC Connectors v 2.5.15+

Requirement	Sub-Category	Value
Desktop Requirements	Operating System	▪ Microsoft Windows 7 ▪ Microsoft Windows 10
	Browser	▪ Microsoft Internet Browser 11.x ▪ Chrome 57.x ▪ FireFox 52.x
	Client Software/ Office Tools	▪ Microsoft Office 2007 ▪ Microsoft Office 2010 ▪ Microsoft Office 2013 ▪ Microsoft Office 2016 ▪ Adobe Acrobat Reader 10 and 11
	Screen Resolution	1024*768 or 1280*1024
Directory Services	-	OFSAAI is qualified on both OPEN LDAP 2.2.29+ and Oracle Internet Directory v 11.1.1.3.0. However, it can be integrated with other directory services software like MS Active Directory.
	Note: Configuration of Directory services software for OFSAAI installation is optional. For more information on configuration, see Infrastructure LDAP Configuration. Open LDAP needs to be installed on MS Windows Server machine only.	

1.2 Pre Installation Requirements

- You should have 8.0.0.0.0 CA as the minimum patch set level.
- Alter session set NLS_TIMESTAMP_FORMAT = 'DD-MON-YY HH24:MI:SS';

  If this is not done, the weblog SCDs may fail to execute.
- You need to apply the following patch to avoid "more than 1000 columns" issue:

  "Patch 19509982: DISABLE FIX FOR RAISING ORA-1792 BY DEFAULT"

- Connect to the database as user with DBA privileges. Execute the following grant statements:

  ```
  GRANT CREATE TYPE TO [<ATOMIC SCHEMA>;

  GRANT CREATE TYPE TO [<Sandbox_schema>];
  ```

1.3 How to Apply This Minor Release?

1.3.1 Installing OFS CA

Refer to the following instructions to download, extract, install, and configure this Interim Release.

1. Install 8.0.0.0.0 CA.
2. Ensure that `SYS.DBMS_DATA_MINING` privilege is available to the atomic schema if not already provided. This is to run statistical models through Modelling Framework.
3. Login to https://support.oracle.com/ and search for **26940579** under the *Patches & Updates* tab.
4. Download the OFS Customer Analytics Application Pack v8.0.5.0.0 IR archive file and copy it to your OFSAA server in **Binary** mode.

   Note: The archive files are different for every operating system like AIX, Solaris, and RHEL/Oracle Linux.

5. Shut down all the OFSAAI Services. For more information, see the *Start/Stop Infrastructure Services* section in Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide – Release 8.0.0.0.0.
6. Assign WRITE permission to the files/ folders such as commonscripts, EXEWebService, ficapp, ficweb, and ficdb in the **$FIC_HOME** folder by executing the command:

   ```
   chmod -R 750 $FIC_HOME
   ```

7. If you have Unzip utility, skip to the next step. Download the Unzip utility (OS specific) **unzip_<os>.Z** from the location https://updates.oracle.com/unzips/unzips.html and copy it in **Binary** mode to the directory that is included in your PATH variable, typically **$HOME** path or directory in which you have copied the 8.0.5.0.0 IR.
   - Uncompress the unzip installer file using the command:

     ```
     uncompress unzip_<os>.Z
     ```

     Note: In case you notice an error message “uncompress: not found [No such file or directory]” when the package is not installed, contact your UNIX administrator.

   - Give EXECUTE permission to the file using the command:

     ```
     chmod 751 OFSAAI_80500_<OperatingSystem>.zip
     ```

8. Extract the contents of the 8.0.5.0.0 IR archive file using the command:

   ```
   unzip_<os> -a <name of the file to be unzipped>
   ```

   Note: The above "-a" option is mandatory to unzip the archive file. For example: `unzip_aix -a OFSAAI_80500_<OperatingSystem>.zip`

9. Update the 'params.conf' file in 'CA_PACK/OFS_CA/conf' folder as per the instructions given in that file.

10. Give EXECUTE permission to the IR archive file. Navigate to the path *OFSAAI_80500_<OperatingSystem>.zip* and execute the command:

    ```
    chmod 750 OFSAAIUpdate.sh
    ```

11. Execute **OFSAAIUpdate.sh** file.

    Verify if the IR is applied successfully by checking the log file generated in the installation folder. You can ignore ORA-00001, ORA-00955, ORA-02260, and ORA-01430 errors in the log file. In case of any other errors, contact Oracle Support.

    For any reasons, if execution fails due to Update Constraints Utility, then follow the instructions given in the section *Troubleshooting* in Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide – Release 8.0.5.0.0.

12. For more information on securing your OFSAA Infrastructure, refer note 1540442.1 in My Oracle Support (MOS).

13. Add umask 0027 in the `.profile` of the UNIX account which manages the WEB server to ensure restricted access permissions.

14. Make the necessary module specific configurations as mentioned in the *Dimension Management Module Configurations* section of the Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Administration Guide – Release 8.0.0.0.0. If you want to make these configurations at a later time, proceed with the next step.

15. Generate the application EAR/WAR file and redeploy the application onto your configured web application server. For more information on generating and deploying EAR / WAR file, see the *Post Installation Configuration* section in Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Administration Guide – Release 8.0.0.0.0.

16. After the successful installation of the IR, restart all the OFSAAI services. For more information, see the *Start/Stop Infrastructure Services* section in Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Administration Guide – Release 8.0.0.0.0.

1.4 Post Installation Steps

On successful installation of the Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack, perform the following post installation steps:

- Execute the following scipts manually from the Release 8.0.5 pack script location. Before executing the scripts, edit the placeholders in the scripts with the respective infodom and sandbox ID values from the tables.

  In the atomic schema:

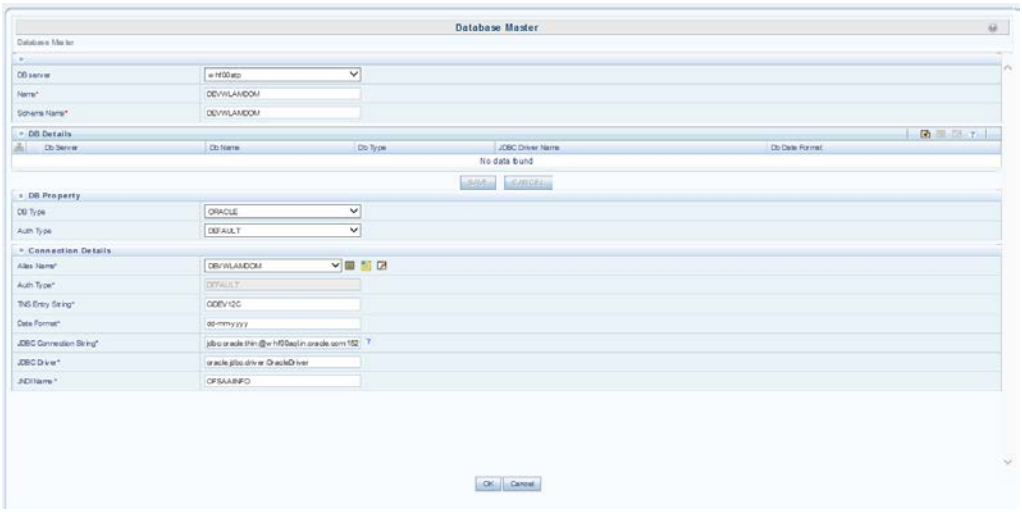
  - FN_MF_MODEL_MERGE_DT.sql
  - vwv_fct_wla_page_summary.sql

  In the config schema:

  - batch_param_master_crm_acc_summ.sql
  - metadata_element_master_ansi_join.sql
  - ca_model_Market_Basket_Analysis.sql (Additional deletion needed only if duplicate variable is still seen in Market Basket model Model Framework screen. Run "`Delete MF_INPUT_VALUES where V_object_id in ('1414112549254') and V_unique_id in ('14371483188527247','14371483188635226','14371483188678386');`" in that case).

NOTE: To open the above scripts, right click and select **Open Link in New Tab**.

1. Create RCAUSER from sysadmin.
2. Authorize the user from sysauth.
3. Assign the user to RCA-related user groups.
4. Authorize the user group mapping to RCA.
5. Enable Big Data application from sysadmn. For details, see Enabling Big Data Option.
6. Create the metadom schema in rdbms for the hive infodom and add TNS entry for the same.
7. Execute GRANT scripts in CONFIG and SYSDBA to provide required privileges to the METADOM. For more details, see Grants to be given to METADOM Schema.
8. Create database definition for the above created RDBMS schema. For more information, see the *System Configuration and Identity Management* section in Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack User Guide – Release 8.0.2.0.0.



9. Stop all the services and make required changes in `$TOMCAT/conf/server.xml` and `$FIC_HOME/ficweb/webroot/WEB-INF/web.xml`. For more information, see the *Configuring Resource Reference in Tomcat Application Server* section in Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide – Release 8.0.2.0.0.

10. Copy Hive related jar files to `$FIC_HOME/ext/lib` and KEYTAB, conf files to `$FIC_HOME/ficweb/webroot/conf`; KEYTAB,conf,xml files `$FIC_HOME/conf/clientconf`; KEYTAB, conf files to `$FIC_HOME/conf`; modify `Clusters.xml` and provide `<CONFPATH>` value as `$FIC_HOME/conf/clientconf`. For the list of jar files to be copied, see Copying Files for CDH . For more details, see Copying KEYTAB and KRB5 files in OFSAAI.

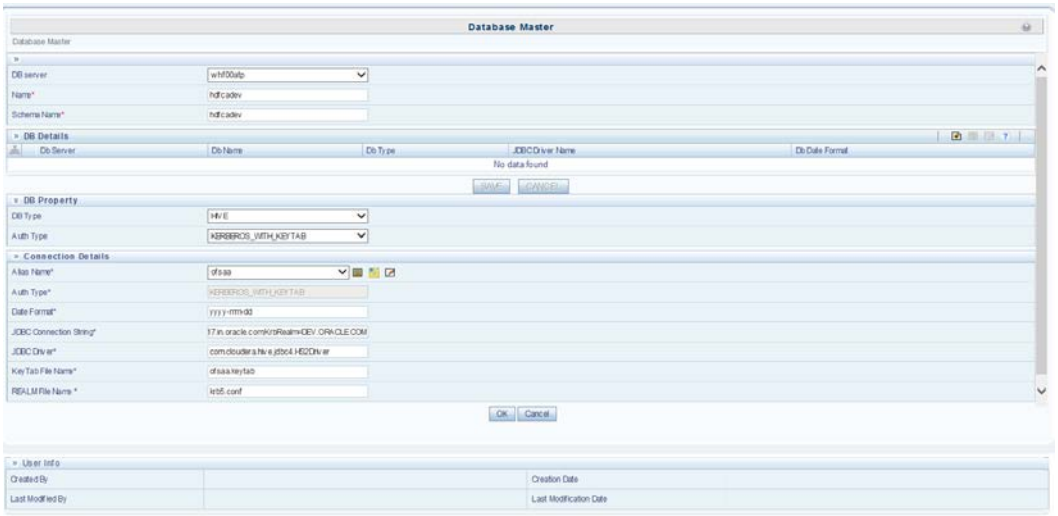
    Note: If your hive cluster is not Kerberized, KEYTAB and conf files are not required.

11. Modify the `ETLLoader.properties` from `$FIC_HOME/ficdb/conf` folder as follows:

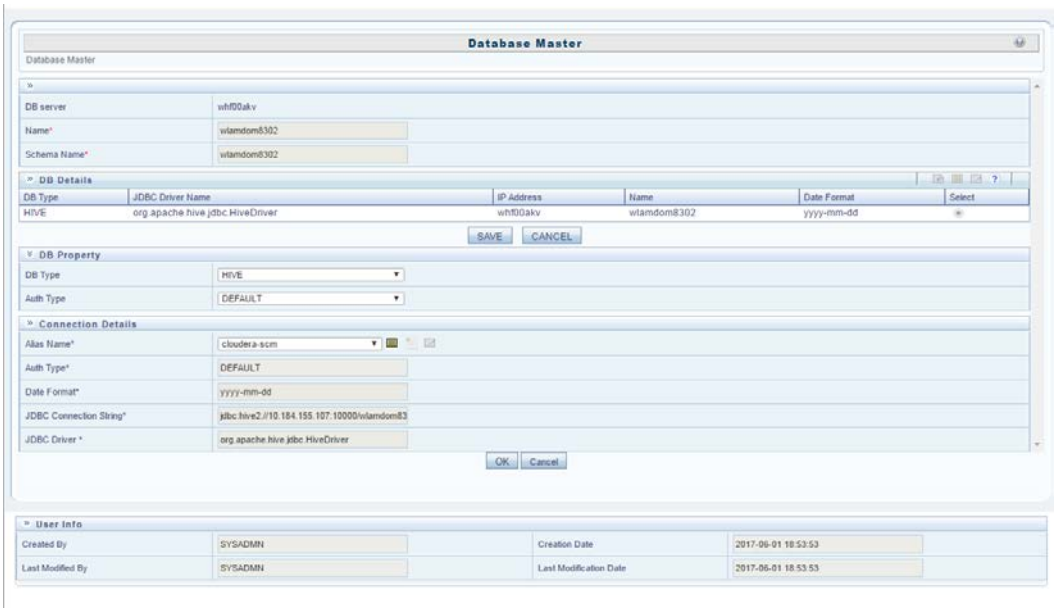
```
<?xml version="1.0"?>
<PROPERTIES NAME="ETLLoader">
      <PROPERTY ID="T2HMode" VALUE="default"/>
      <PROPERTY ID="SQOOPURL" VALUE=""/>
      <PROPERTY ID="SQOOP_VERSION" VALUE=""/>
      <PROPERTY ID="H2TMode" VALUE="default"/>
      <PROPERTY ID="ISHIVELOCAL" VALUE="NO"/>
      <PROPERTY ID="HIVESERVER_NAME" VALUE="10.184.155.107"/>
      <PROPERTY ID="HIVESERVER_PORT" VALUE="22"/>
```

```
<PROPERTY ID="HIVESERVER_FTPDRIVE"
VALUE="/scratch/ftpshare"/>

<PROPERTY ID="HIVESERVER_FTPSHARENAME"
VALUE="/scratch/ftpshare"/>

<PROPERTY ID="HIVESERVER_FTP_USERID" VALUE="cloudera-scm"/>

<PROPERTY ID="HIVESERVER_FTP_PASSWORD" VALUE="Qewr1111"/>

<PROPERTY ID="SQOOP_WORKING_DIR" VALUE="/dumpSqoop"/>

<PROPERTY ID="IMPALA_WORKING_DIR" VALUE="/impala"/>

<PROPERTY ID="WEBLOG_WORKING_DIR"
VALUE="/user/ofsaadb/weblogstg"/>

<PROPERTY ID="KEEP_WEBLOG_PROCESSED_FILES" VALUE="NO"/>

<PROPERTY ID="SQOOPSERVER_NAME" VALUE=""/>

<PROPERTY ID="SQOOPSERVER_SSH_PORT" VALUE=""/>

<PROPERTY ID="SQOOPSERVER_SSH_USERID" VALUE=""/>

<PROPERTY ID="SQOOPSERVER_SSH_PASSWORD" VALUE=""/>

<PROPERTY ID="SQOOP_PARAMS" VALUE=""/>

<PROPERTY ID="SQOOP_USE_STAGING" VALUE="NO"/>

</PROPERTIES>
```

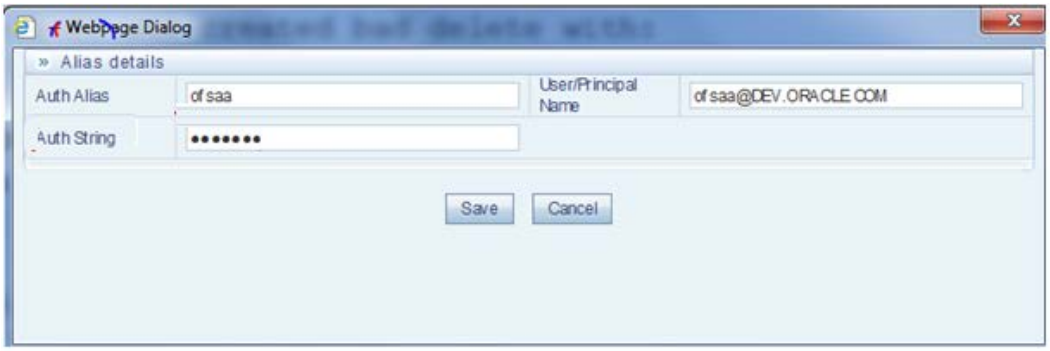
12. Rename the .WAR file that exists in the folder `$FIC_HOME/ficweb` and then execute `ant.sh`.
13. Replace the WAR file in `$TOMCAT/webapps` and remove the context directory.
14. Restart all the services.
15. Copy all jars from `$FIC_HOME/ext/lib` to `$FIC_HOME/ficapp/common/FICServer/lib` if not moved already. For more details, see Copying HDFS related jars to OFSAA.
16. Create hive datadom schema in hive with the metadom schema name that is created already in the database definitions.
17. Create database definition from the sysadmn interface as shown below:



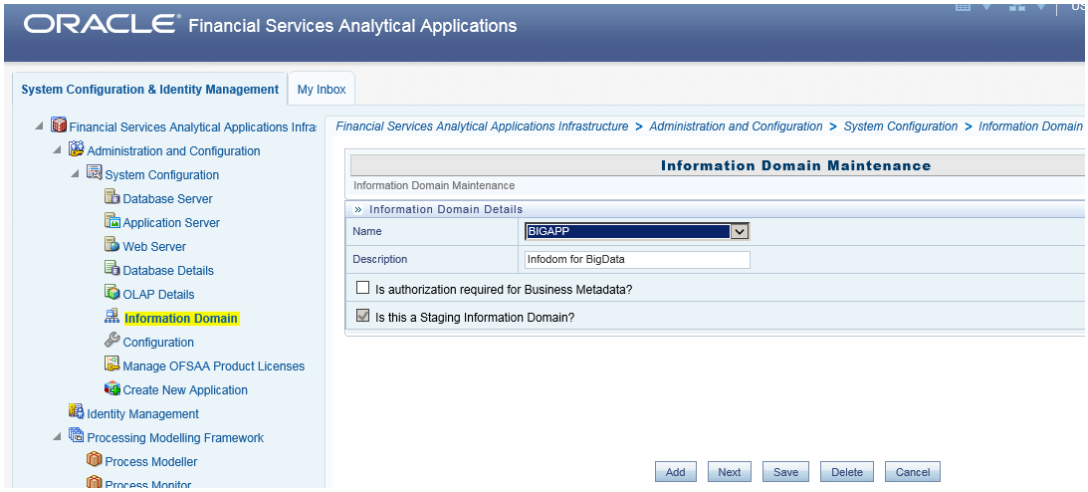
For non-kerberos environment:

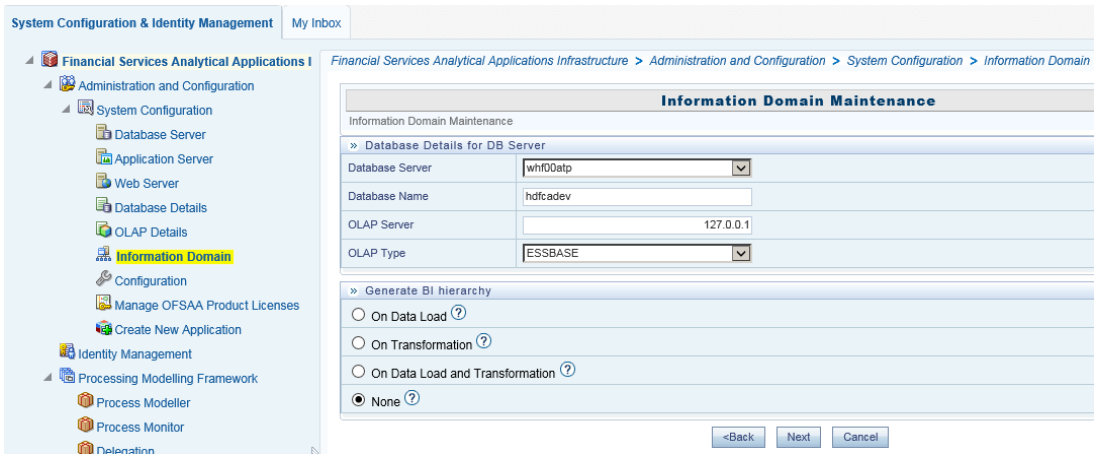


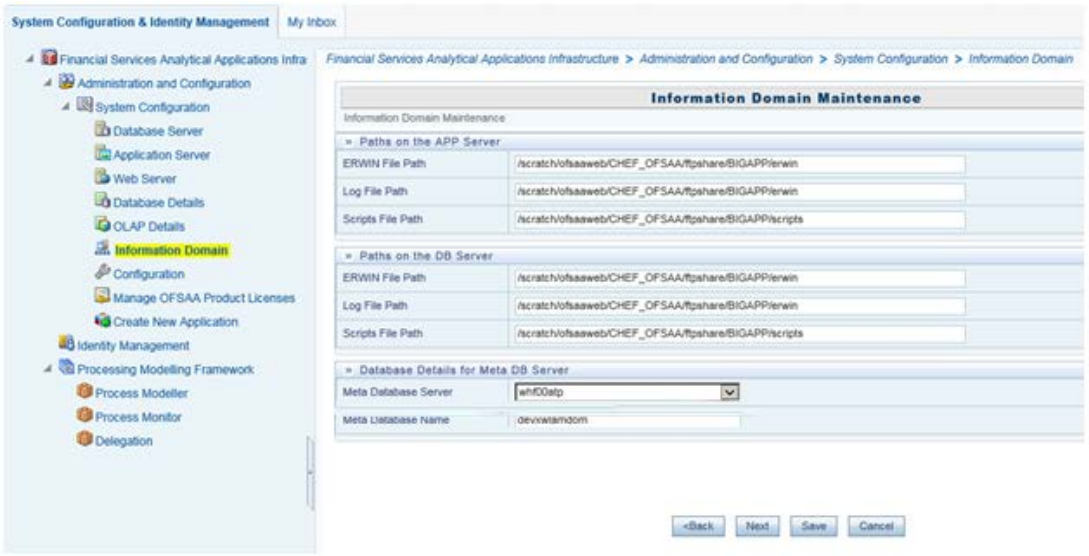
The alias name should be given properly where auth string is principal users' password:



18. Create BigData infodom with the name BIGAPP as shown below:

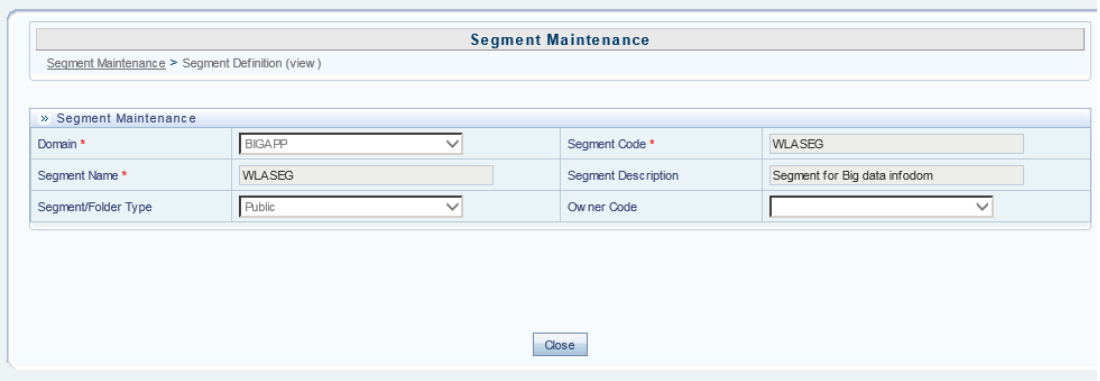






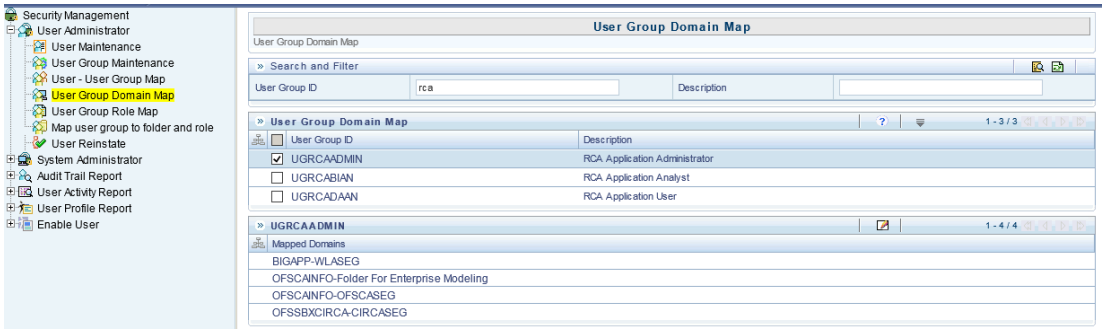
For more information, refer to the Adding Database Detail for DB Server section in Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide – Release 8.0.2.0.0.

19. Create segment as shown below:



For more information, see the *Segment Maintenance* section in Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack User Guide – Release 8.0.5.0.0.

20. Create Domain Map to Infodom as shown below:

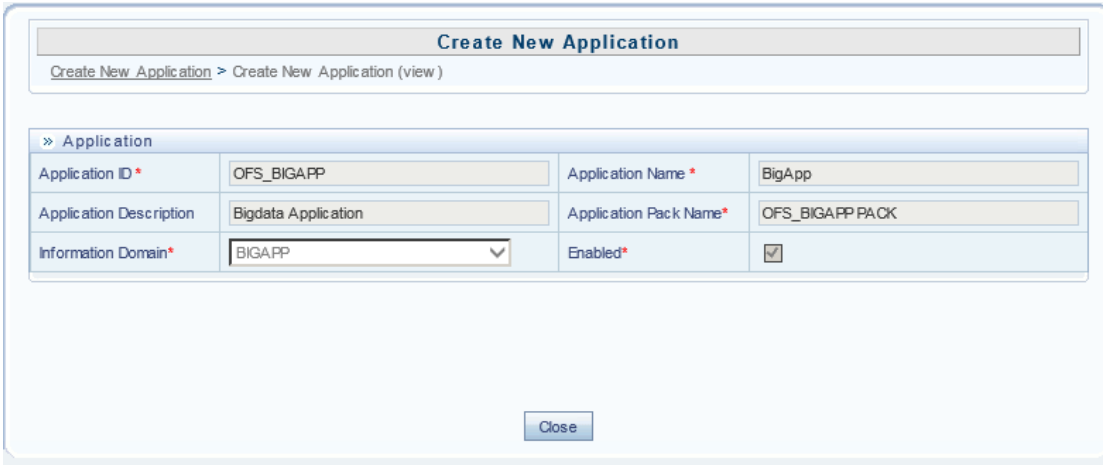


For more information, see the *User Group Domain Map* section in Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack User Guide – Release 8.0.3.0.0.

21. Authorize the created user roles/groups from sysauth.

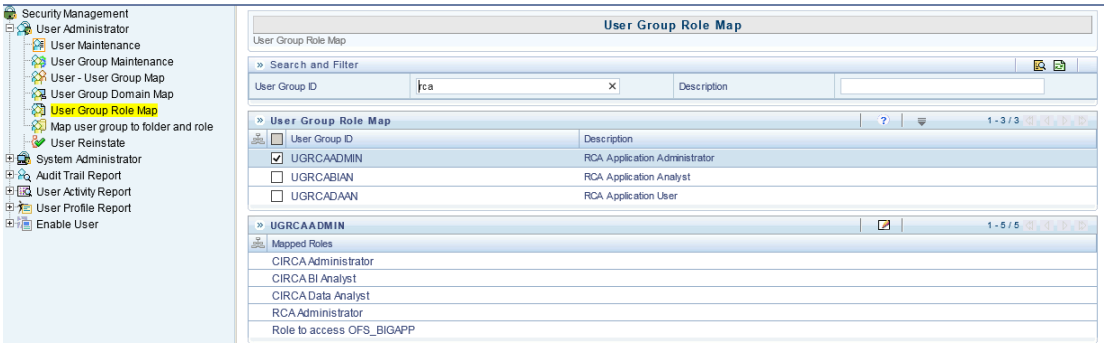
22. Assign the Hive infodom to RCAUSER.

23. Create application for web analytics with hive infodom as shown below:



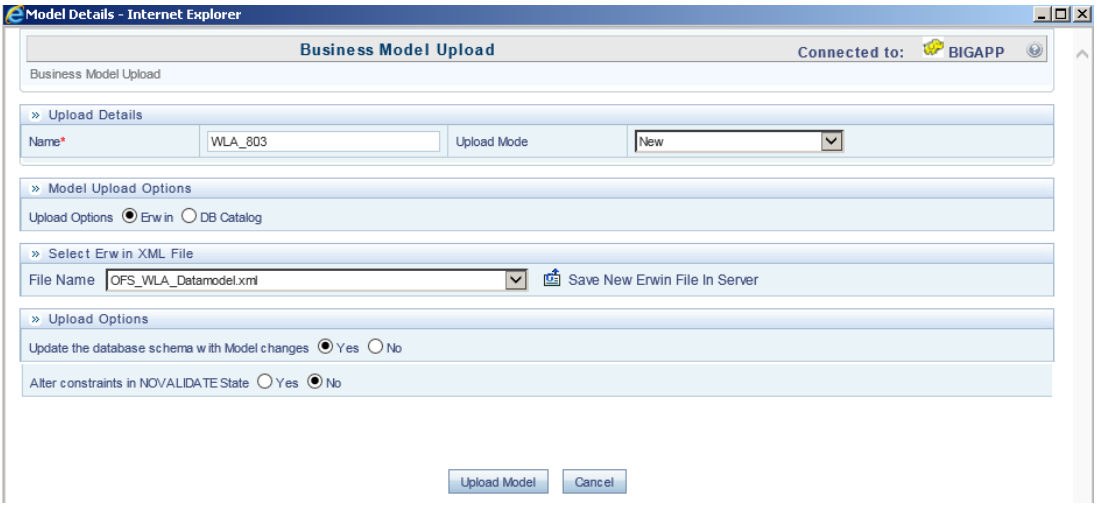
24. Assign application roles to RCAUSER to access Hive infodom.

25. Assign role for web analytics to groups as shown below:



26. Login to OFSAA as RCAUSER and select Hive application.

27. Upload the WLA data model as shown below:



For more information, see the *Upload Business Model* section in Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack User Guide – Release 8.0.5.0.0.

28. Recreate the hive tables as partitioned tables using the following steps:

    a. Log in to hive.

    b. On hive CLI or beeline prompt run use the hive datadome schema.

    c. Run all the scripts from the following folder:

    ```
    <<install
    location>>/patch/OFS_CA_PACK/OFS_CA/bin/OFS_WLA/scripts/hive
    /create/
    ```

29. Execute the hive utility for the WLA folders to get created as follows:

    a. To change the `etl_wla.properties` file, run the following code:

    ```
    $FIC_HOME/OFS_WLA/deploy_wla/conf file path

    INFODOM=<rdbms infodom>

    HIVE_INFODOM=<hive info dom>

    HIVE_SEGMENT=<hive infodom segment>


    CLUSTER_ID=<cluster id from clusters.xml>

    HDFS_FILE_PATH=<hdfs L2H template path>

    METADATA_DBNAME=<metadom schema name for hive infodom>
    ```

    b. Go to the `OFS_WLA/deploy_wla/bin` path.

    c. Execute the `appUtility.sh` file using the `. ./appUtility.sh etl_wla.properties` command.

    The log folder is in the `$FIC_HOME/OFS_WLA/deploy_wla/logs` path.

    NOTE: Verify if `<MODELGENERATED></MODELGENERATED>` tag in the ETLRepository.xml in the folder ftpshare/etlapphome is becoming "NO" from "YES". If this is NO for any of the sources of WLA, Replace "NO" by "YES".

30. Define the CLUSTERS.XML file from $FIC_HOME/conf. For the details, see Template for the CLUSTERS.XML file.

31. After installer utility is executed with success, the AAI_ETL_SOURCE table in config schema needs to be checked to confirm that the v_db_name attribute for WLAH2T definition is populated with hive db name. If not the hive db name needs to be updated.

32. Restart all the services.

33. Alter the source table (`FCT_WLA_LOG`) to set the table property, fire the below query in the hive schema.

```
ALTER TABLE FCT_WLA_LOG SET TBLPROPERTIES
('serialization.null.format' = '');
```

This SQL query will take care of the duplicate entries for records that do not have the values for any of the fields after running the H2H_FSI_WLA_ACTIVITY_LOG process.

1.4.1 Verifying TFM.XML

1. Shut down the servers.
2. It has to be verified if *ftpshare/<infodom>/erwin/fipxml/*INFODOM_TFM.XML has all the seeded tasks present in the Patch installation log.

   The following are the task names which have to be verified if they are present in the INFODOM_TFM_XML under.

   - Fn_upd_crm_cust_chnl
   - MapPushDown_DT
   - Fn_com_DT_Setup
   - Dim_Dates_Population
   - RepLine_Parent_Child_Rel
   - FN_RUN_EXE_PARAM
   - FN_REFRSH_DE
   - FN_FCT_ACCOUNT_PFT
   - DT_FN_PARTY_ROLE_MAP
   - FN_PARTY_DENORMALIZE_DT
   - Update_Bands
   - FN_PROD_LTV_UPD_DT
   - FN_CUST_LTV_UPD_DT
   - FN_ORE_MODEL_INSERT_DT
   - FN_MF_MODEL_MERGE_WRAP
   - fn_model_fsi_avf_load_wr
   - camp_chnl_propensityload
   - FN_XSELL_MODEL_INSERT_DT
   - FN_UPDATE_ATTR_SCORE
   - UPD_WLA_ATTR_SCORE_WRAP

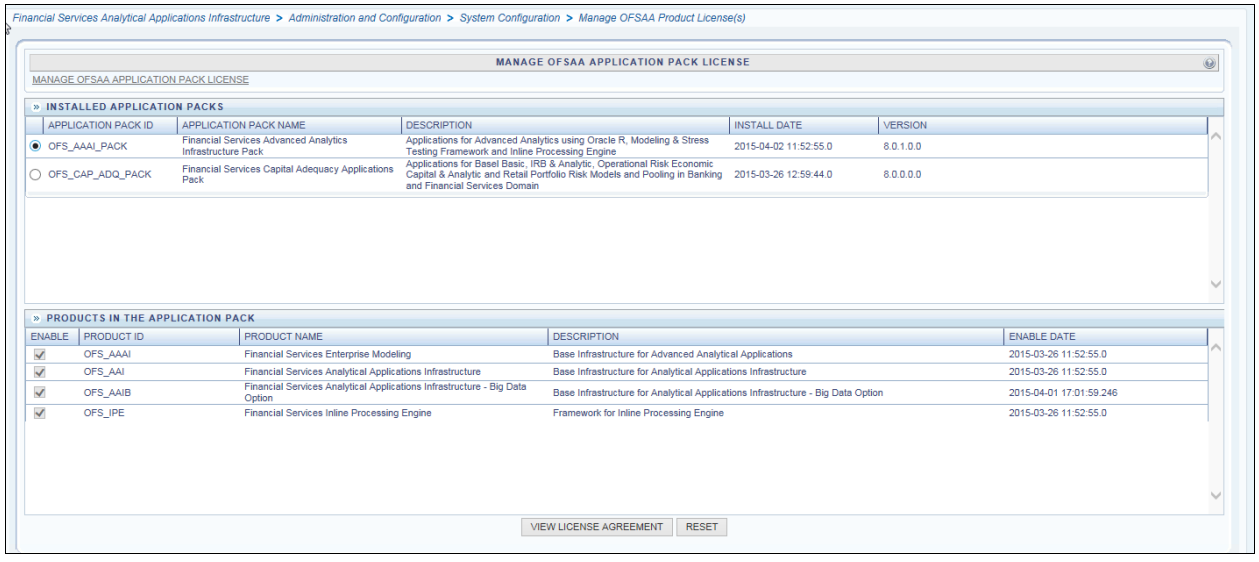
- DT_NBO_OFFER_SCORE
- TD_FN_NBO_LOAD_CLUSTER
- FN_NBO_PROD_PAGE_WT_LOAD
- FN_NBO_OFFER_WT
- Fn_RCA_Trend_Var_Process

3. If they are not present in the *ftpshare/<infodom>/erwin/fipxml/*INFODOM_TFM.XML, then they have to be copied from *ftpshare/<infodom>/erwin/fipxml/*FUSION_TFM_OFS_CA.XML under node TFMSTEP.
4. Start server.
5. Verify post load changes under data management screen that all the dts are available as per point #2 above.

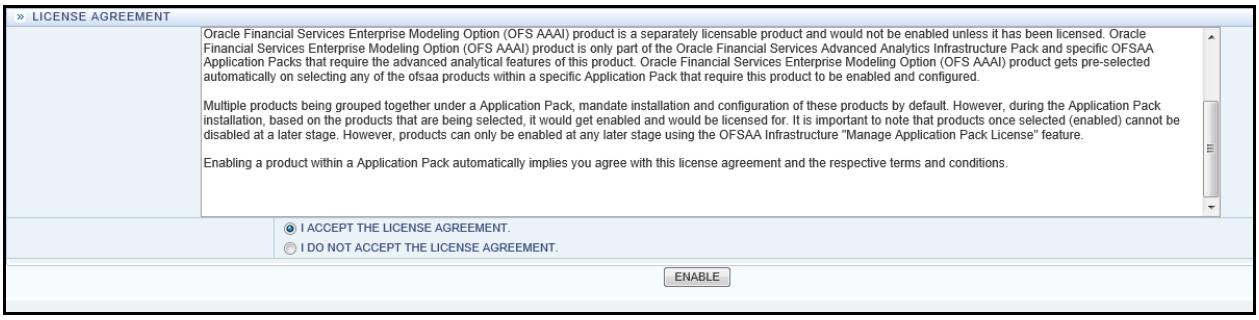
1.4.2 Enabling Big Data Option

To enable Big Data option, follow these steps:

1. Login to the application as SYSADMN user or any user with System Administrator privileges.
2. Click **System Configuration & Identity Management** tab.
3. Expand Financial Services Analytical Applications Infrastructure, select Administration and Configuration and click System Configuration.
4. Click **Manage OFSAA Product License(s)**. The Manage OFSAA Application Pack License page is displayed.



5. Select OFS_AAAI_PACK application pack in Installed Application Packs. The products in the application pack are displayed.
6. Select Financial Services Analytical Applications Infrastructure - Big Data option.
7. Click **VIEW LICENSE AGREEMENT**. The License Agreement section is displayed.



8. Select the option I ACCEPT THE LICENSE AGREEMENT.
9. Click **ENABLE**. A confirmation message is displayed showing that the product is enabled for the pack.

1.4.3 Grants to be given to METADOM Schema

Privilege Granted On (METADOM)	Target Resources of CONFIG Schema
create user <DEVWLAMDOM> IDENTIFIED by password; ALTER USER <DEVWLAMDOM> QUOTA UNLIMITED ON USERS; grant create SESSION to <DEVWLAMDOM>; grant create PROCEDURE to <DEVWLAMDOM>; grant create SEQUENCE to <DEVWLAMDOM>; grant create TABLE to <DEVWLAMDOM>; grant create TRIGGER to <DEVWLAMDOM>; grant create VIEW to <DEVWLAMDOM>; grant create MATERIALIZED VIEW to <DEVWLAMDOM>; grant create SYNONYM to <DEVWLAMDOM>; GRANT CREATE SESSION TO <DEVWLAMDOM> GRANT CREATE VIEW TO <DEVWLAMDOM> GRANT CREATE SEQUENCE TO <DEVWLAMDOM>	grant select on <DEVXCACONF>.CSSMS_USR_PROFILE to <DEVWLAMDOM>; grant select on <DEVXCACONF>.CSSMS_ROLE_MAST to <DEVWLAMDOM>; grant select on <DEVXCACONF>.CSSMS_GROUP_MAST to <DEVWLAMDOM>; grant select on <DEVXCACONF>.CSSMS_FUNCTION_MAST> to <DEVWLAMDOM>; grant select on <DEVXCACONF>.CSSMS_USR_GROUP_MAP to <DEVWLAMDOM>; grant select on <DEVXCACONF.CSSMS_USR_GROUP_DSN_SEG_MAP> to <DEVWLAMDOM>; grant select on <DEVXCACONF>.CSSMS_ROLE_FUNCTION_MAP to <DEVWLAMDOM>; grant select on <DEVXCACONF>.CSSMS_GROUP_ROLE_MAP to <DEVWLAMDOM>; grant select on <DEVXCACONF>.CSSMS_SEGMENT_MAST to

Privilege Granted On (METADOM)	Target Resources of CONFIG Schema
GRANT CREATE TABLE TO <DEVWLAMDOM> GRANT CREATE PROCEDURE TO <DEVWLAMDOM> grant create RULE to <DEVWLAMDOM> GRANT CREATE TRIGGER TO <DEVWLAMDOM> grant create type to <DEVWLAMDOM> grant select on SYS.V_$PARAMETER to <DEVWLAMDOM> grant select on sys.dba_free_space to <DEVWLAMDOM> grant select on sys.dba_tables to <DEVWLAMDOM> grant select on sys.Dba_tab_columns to <DEVWLAMDOM> GRANT CREATE SYNONYM TO <DEVWLAMDOM>M GRANT DEBUG CONNECT SESSION TO <DEVWLAMDOM> GRANT DEBUG ANY PROCEDURE TO <DEVWLAMDOM> GRANT CREATE MATERIALIZED VIEW TO <DEVWLAMDOM> GRANT OLAP_USER TO <DEVWLAMDOM> GRANT CONNECT TO <DEVWLAMDOM> GRANT OLAP_USER TO <DEVWLAMDOM> GRANT CREATE ANY MATERIALIZED VIEW TO <DEVWLAMDOM> GRANT CREATE ANY TABLE TO <DEVWLAMDOM> GRANT CREATE MATERIALIZED VIEW TO <DEVWLAMDOM> GRANT CREATE PROCEDURE TO <DEVWLAMDOM> GRANT CREATE SEQUENCE TO <DEVWLAMDOM> GRANT CREATE SESSION TO <DEVWLAMDOM> GRANT CREATE SYNONYM TO <DEVWLAMDOM> GRANT CREATE TABLE TO <DEVWLAMDOM> GRANT CREATE TRIGGER TO <DEVWLAMDOM> GRANT CREATE TYPE TO <DEVWLAMDOM>	<DEVWLAMDOM>; grant select on <DEVXCACONF>.BATCH_TASK to <DEVWLAMDOM>; grant select on <DEVXCACONF>.CSSMS_USR_DSN_SEG_MAP to <DEVWLAMDOM>; grant select on <DEVXCACONF>.CSSMS_USR_ROLE_MAP to <DEVWLAMDOM>; grant select on <DEVXCACONF>.CSSMS_METADATA_SEGMENT_MAP to <DEVWLAMDOM>; grant select on <DEVXCACONF>.BATCH_RUN to <DEVWLAMDOM>; grant select on <DEVXCACONF>.PR2_FILTERS to <DEVWLAMDOM>; grant select on <DEVXCACONF>.PR2_TASK_FILTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.PR2_TASK_FILTER_DETAIL to <DEVWLAMDOM>; grant select on <DEVXCACONF>.ST_STRESS_MASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.ST_SCENARIO_MASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.ST_SHOCK_MASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.BATCH_MASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.ICC_MESSAGELOG to <DEVWLAMDOM>; grant select on <DEVXCACONF>.PR2_MASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.PR2_RUN_REQUEST to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MF_MODEL_SCRIPT_MASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF.MF_INPUT_VALUES> to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MF_MODEL_OUTPUT_VALUES to <DEVWLAMDOM>;

Privilege Granted On (METADOM)	Target Resources of CONFIG Schema
	grant select on <DEVXCACONF>.DB_MASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.DSNMASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.pr2_rule_map to <DEVWLAMDOM>; grant delete on <DEVXCACONF>.pr2_rule_map_pr to <DEVWLAMDOM>; grant insert on <DEVXCACONF>.pr2_rule_map_pr to <DEVWLAMDOM>; grant update on <DEVXCACONF>.pr2_rule_map_pr to <DEVWLAMDOM>; grant select on <DEVXCACONF>.pr2_rule_map_pr to <DEVWLAMDOM>; grant delete on <DEVXCACONF>.pr2_rule_map_pr_tmp to <DEVWLAMDOM>; grant insert on <DEVXCACONF>.pr2_rule_map_pr_tmp to <DEVWLAMDOM>; grant update on <DEVXCACONF>.pr2_rule_map_pr_tmp to <DEVWLAMDOM>; grant select on <DEVXCACONF>.pr2_rule_map_pr_tmp to <DEVWLAMDOM>; grant select on <DEVXCACONF>.pr2_rule_map_exclude to <DEVWLAMDOM>; grant delete on <DEVXCACONF>.pr2_rule_map_exclude_pr to <DEVWLAMDOM>; grant insert on <DEVXCACONF>.pr2_rule_map_exclude_pr to <DEVWLAMDOM>; grant update on <DEVXCACONF>.pr2_rule_map_exclude_pr to <DEVWLAMDOM>; grant select on <DEVXCACONF>.pr2_rule_map_exclude_pr to <DEVWLAMDOM>; grant delete on

Privilege Granted On (METADOM)	Target Resources of CONFIG Schema
	<DEVXCACONF>.pr2_rule_map_exclude_pr_tmp to <DEVWLAMDOM>; grant insert on <DEVXCACONF.pr2_rule_map_exclude_pr_tmp> to <DEVWLAMDOM>; grant update on <DEVXCACONF>.pr2_rule_map_exclude_pr_tmp to <DEVWLAMDOM>; grant select on <DEVXCACONF>.pr2_rule_map_exclude_pr_tmp to <DEVWLAMDOM>; grant select on <DEVXCACONF>.pr2_run_object to <DEVWLAMDOM>; grant select on <DEVXCACONF>.pr2_run_object_member to <DEVWLAMDOM>; grant select on <DEVXCACONF>.pr2_run_map to <DEVWLAMDOM>; grant select on <DEVXCACONF>.pr2_run_execution_b to <DEVWLAMDOM>; grant select on <DEVXCACONF>.pr2_run_execution_filter to <DEVWLAMDOM>; grant select on <DEVXCACONF>.pr2_firerun_filter to <DEVWLAMDOM>; grant select on <DEVXCACONF>.pr2_filters to <DEVWLAMDOM>; grant select on <DEVXCACONF>.configuration to <DEVWLAMDOM>; grant select on <DEVXCACONF>.batch_parameter to <DEVWLAMDOM>; grant select on <DEVXCACONF>.component_master to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MDB_OBJECT_TYPE_ATT_LAYOUT to <DEVWLAMDOM>; grant select on <DEVXCACONF>.REV_OBJECT_ATTRIBUTE_DTL to

Privilege Granted On (METADOM)	Target Resources of CONFIG Schema
	<DEVWLAMDOM>; grant select on <DEVXCACONF>.FORMS_LOCALE_MASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.mdb_object_dependencies to <DEVWLAMDOM>; grant select on <DEVXCACONF>.mdb_execution_details to <DEVWLAMDOM>; grant select on <DEVXCACONF>.REV_STAT_DATA to <DEVWLAMDOM>; grant select on <DEVXCACONF>.REV_OBJECT_REPOSITORY_B to <DEVWLAMDOM>; grant select on <DEVXCACONF>.REV_OBJECT_REPOSITORY_TL to <DEVWLAMDOM>; grant select on <DEVXCACONF>.REV_OBJECT_ATTRIBUTE_DTL_MLS to <DEVWLAMDOM>; grant select on <DEVXCACONF>.REV_OBJECT_APPLICATION_MAP to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MDB_OBJ_EXPR_DETAILS to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MDB_EXECUTION_DETAILS to <DEVWLAMDOM>; grant select on <DEVXCACONF>.REV_OBJECT_TYPES_CD to <DEVWLAMDOM>; grant select on <DEVXCACONF>.REV_OBJECT_TYPES_MLS to <DEVWLAMDOM>; grant select on <DEVXCACONF>.REV_APPLICATIONS_CD to <DEVWLAMDOM>; grant select on <DEVXCACONF>.REV_APPLICATIONS_MLS to <DEVWLAMDOM>; grant select on <DEVXCACONF>.METADATA_BROWSER_LOCALE to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MDB_STAT_DATA to <DEVWLAMDOM>;

Privilege Granted On (METADOM)	Target Resources of CONFIG Schema
	grant select on <DEVXCACONF>.MDB_OBJECT_TYPE_LAYOUT to <DEVWLAMDOM>; grant select on <DEVXCACONF>.ofsa_md_id_ref to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MDB_ETL_MAPPING to <DEVWLAMDOM>; grant select on <DEVXCACONF>.setupinfo to <DEVWLAMDOM>; grant select on <DEVXCACONF>.LOCALEREPOSITORY to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MF_MODEL_MASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MF_SANDBOX_MASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MF_VARIABLE_MASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MF_TECHNIQUE_MASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.ST_SCENARIO_SHOCK_DATA to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MDB_RULE_SOURCE_HEADER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MDB_RULE_TARGET_HEADER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MDB_RULE_TARGET_MEMBER_HEADER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MDB_RULE_GRID_DATA to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MDB_MODEL_MAPPING to <DEVWLAMDOM>; grant delete on <DEVXCACONF>.AAI_MAP_MAPPER to <DEVWLAMDOM>; grant insert on <DEVXCACONF>.AAI_MAP_MAPPER to <DEVWLAMDOM>; grant update on <DEVXCACONF>.AAI_MAP_MAPPER to

Privilege Granted On (METADOM)	Target Resources of CONFIG Schema
	<DEVWLAMDOM>; grant select on <DEVXCACONF>.AAI_MAP_MAPPER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MDB_OBJECTS_GROUPING to <DEVWLAMDOM>; grant select on <DEVXCACONF>.MDB_OBJECTS_GROUP_MASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.RTI_UI_EXCLUDE_PDM_LIST to <DEVWLAMDOM>; grant select on <DEVXCACONF>.RTI_VIR_PHY_TBL_NAME to <DEVWLAMDOM>; grant select on <DEVXCACONF>.infodom_patches to <DEVWLAMDOM>;

1.4.4 Copying Files for CDH

Hadoop jars, Kerberos files and client config of hadoop into $FIC_HOME/ext/lib and $TOMCAT_HOME/webapps/<context>/WEB-INF/lib. The files for CDH 5.3.1 are as shown below. Note that the version number is different for each CDH.

- avro-1.7.6-cdh5.3.1.jar
- commons-cli-1.2.jar
- commons-collections-3.2.1.jar
- commons-configuration-1.6.jar
- commons-httpclient-3.1.jar
- commons-io-2.4.jar
- commons-logging-1.1.3.jar
- core-site.xml
- guava-11.0.2.jar
- hadoop-auth-2.5.0-cdh5.3.1.jar
- hadoop-common-2.5.0-cdh5.3.1.jar

- hadoop-core-2.5.0-mr1-cdh5.3.1.jar
- hadoop-core.jar
- hadoop-hdfs-2.5.0-cdh5.3.1.jar
- hdfs-site.xml
- hive-exec-0.13.1-cdh5.3.1.jar
- hive-exec.jar
- hive-jdbc-0.13.1-cdh5.3.1.jar
- HiveJDBC4.jar
- hive-jdbc.jar
- hive-metastore-0.13.1-cdh5.3.1.jar
- hive_metastore.jar
- hive-service-0.13.1-cdh5.3.1.jar
- hive_service.jar
- hive-site.xml
- htrace-core-3.0.4
- httpclient-4.2.5.jar
- httpcore-4.2.5.jar
- jackson-core-asl-1.8.8.jar
- jackson-mapper-asl-1.8.8.jar
- krb5.conf
- libfb303-0.9.0.jar
- libthrift-0.9.0-cdh5-2.jar
- libthrift-0.9.0.jar
- log4j-1.2.14.jar
- mapred-site.xml
- ofsaa.keytab
- protobuf-java-2.5.0.jar
- ql.jar
- servlet-api.jar
- slf4j-api-1.7.5.jar

- TCLIServiceClient.jar
- yarn-site.xml
- zookeeper-3.4.6.jar

Copy realm,Kerberos and CDH client config files to $TOMCAT_HOME/webapps/<context>/conf folder.

1.4.5 Copying HDFS related jars to OFSAA

The HDFS jars deployed as part of Pivotal installation needs to be copied to OFSAAAI from Pivotal installation directory.

To copy the HDFS jars, do the following:

1. Copy the following jars to the locations, $FIC_WEB_HOME/webroot/WEB-INF/lib, $FIC_APP_HOME/common/FICServer/lib, and $FIC_DB_HOME/lib:

Jar File	From Folder
guava-11.0.2.jar	/usr/lib/gphd/hadoop/lib
hadoop-common-2.2.0.jar	/usr/lib/gphd/hadoop
hadoop-auth-2.2.0.jar	/usr/lib/gphd/hadoop
hadoop-hdfs-2.2.0.jar	/usr/lib/gphd/hadoop-hdfs
hadoop-mapreduce-client-core-2.2.0.jar	/usr/lib/gphd/hadoop-mapreduce
hive-metastore-0.12.0.jar	/usr/lib/gphd/hive/lib
hive-jdbc-0.12.0.jar	/usr/lib/gphd/hive/lib
hive-exec-0.12.0.jar	/usr/lib/gphd/hive/lib
hive-service-0.12.0.jar	/usr/lib/gphd/hive/lib
httpcore-4.2.4.jar	/usr/lib/gphd/hive/lib
httpclient-4.2.5.jar	/usr/lib/gphd/hive/lib
libfb303-0.9.0.jar file	/usr/lib/gphd/hive/lib
libthrift-0.9.0-.jar	/usr/lib/gphd/hive/lib

2. The following jars available in $FIC_DB_HOME/lib path of OFS AAAI installation directory should be copied $FIC_WEB_HOME/webroot/WEB-INF/lib and $FIC_APP_HOME/common/FICServer/lib folders:
    - commons-collections-3.2.1.jar
    - commons-io-2.1.jar

- commons-configuration-1.6.jar
- slf4j-api-1.7.5.jar

1.4.6 Copying KEYTAB and KRB5 files in OFSAAI

A Keytab is a file containing pairs of Kerberos principals and encrypted keys (these are derived from the Kerberos password). The krb5.conf file contains Kerberos configuration information, including the locations of KDCs and admin servers for the Kerberos realms of interest, defaults for the current realm and for Kerberos applications, and mappings of hostnames onto Kerberos realms.

If the Database Authentication is configured as KERBEROS_WITH_KEYTAB for both Hive databases, then you must use the Keytab file to login to Kerberos. The Keytab and Kerberos files should be copied to $FIC_HOME/conf and $FIC_WEB_HOME/webroot/conf of OFS AAAI Installation Directory.

Generate the application EAR/WAR file and redeploy the application onto your configured web application server. For more information on generating and deploying EAR / WAR file, see the *Post Installation Configuration* section in Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide – Release 8.0.0.0.0.

1.4.7 Template for the CLUSTERS.XML file

The CLUSTERS.XML file defines the cluster for the application. The template is as shown below:

```
<CLUSTERS>
<CLUSTER ID="KERBERIZEDCLUSTER">
<NAME>KERBERIZEDCLUSTER</NAME>
<AUTHTYPE>KRB</AUTHTYPE>
<PRINCIPAL>Kerberos Principal Name</PRINCIPAL>
<CONFPATH>Enter Path To Folder Containing The Below Files</CONFPATH>
<KEYTAB>Kerberos KeyTab File Name</KEYTAB>
<REALM>Kerberos Realm File Name</REALM>
<CORESITE>Name of core-site.xml</CORESITE>
<HDFSSITE>Name of hdfs-site.xml</HDFSSITE>
<MAPREDSITE>Name of mapred-site.xml</MAPREDSITE>
<YARNSITE>Name of yarn-site.xml</YARNSITE>
<DESCRIPTION>Details of the Kerberized Cluster</DESCRIPTION>
```

```
<CREATEDBY>NA</CREATEDBY>
<CREATETIME>NA</CREATETIME>
</CLUSTER>
<CLUSTER ID="NONSECURECLUSTER">
<NAME>NONSECURECLUSTER</NAME>
<AUTHTYPE>DEFAULT</AUTHTYPE>
<CONFPATH>Enter Path To Folder Containing The Below Files</CONFPATH>
<CORESITE>Name of core-site.xml</CORESITE>
<HDFSSITE>Name of hdfs-site.xml</HDFSSITE>
<MAPREDSITE>Name of mapred-site.xml</MAPREDSITE>
<YARNSITE>Name of yarn-site.xml</YARNSITE>
<DESCRIPTION>Details of the Non-Secure Cluster</DESCRIPTION>
<CREATEDBY>NA</CREATEDBY>
<CREATETIME>NA</CREATETIME>
</CLUSTER>
</CLUSTERS>
```

Example:

```
<CLUSTERS>
<CLUSTER ID="CDH531">
<NAME>CDH531</NAME>
<PRINCIPAL>ofsaa@DEV.ORACLE.COM</PRINCIPAL>
<CONFPATH>/scratch/ofsaaweb/CHEF_OFSAA/OFS_CA_PACK/conf/clientconf</CON
FPATH>
<KEYTAB>ofsaa.keytab</KEYTAB>
<REALM>krb5.conf</REALM>
<CORESITE>core-site.xml</CORESITE>
<HDFSSITE>hdfs-site.xml</HDFSSITE>
<MAPREDSITE>mapred-site.xml</MAPREDSITE>
<YARNSITE>yarn-site.xml</YARNSITE>
```

```
<DESCRIPTION>Cloudera Distribution for Hadoop with Hive
0.13.1</DESCRIPTION>

<CREATEDBY>sysadmn</CREATEDBY>

<CREATETIME>2015/05/18 04:24:49 PM</CREATETIME>

</CLUSTER>

</CLUSTERS>
```

1.5 Configuration of Oracle R distribution and Oracle R enterprise (ORE)

For information on configuration of Oracle R distribution and Oracle R Enterprise, see the Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide – Release 8.0.0.0.0.

1.5.1 Configuration of Open R

The R based models can be executed on open R runtime without ORE installed. By configuring OFSAAI and with a run time parameter, a model execution can be done on any node. The R server can be installed in the same machine as that of FIC_DB layer or in a remote machine.

The R server details and the implementation details have to be configured in ModelingFramework.xml file which is available in $FIC_DB_HOME/conf and $FIC_WEB_HOME/webroot/conf folder. By default, the configuration is done with the implementation of open R invocation from Enterprise Modeling.

You must install the following packages as a prerequisite along with R (Version 3.0.1) in the R server machine:

- DBI - version 0.2-7 (Download link - http://cran.r-project.org/web/packages/DBI/index.html)
- Cairo - version 1.5-6 (Download link: http://cran.r-project.org/web/packages/Cairo/index.html)
- rJava- version 0.9-6(Download link - http://cran.r-project.org/web/packages/rJava/index.html)
- RJDBC - version 0.2-4(Download link - http://cran.rproject.org/web/packages/RJDBC/index.html)
- Rserve - version 1.8-0(Download link - http://rforge.net/Rserve/files/). This package is required only for remote mode of execution.

To configure the `ModelingFramework.xml` file, follow these steps:

1. Navigate to `$FIC_DB_HOME/conf/` and `$FIC_WEB_HOME/webroot/conf`.
2. Edit the tags mentioned in the following table in the ModelingFramework.xml file.

Tag Name	Description
`<HOST id="$HOST$" PRIMARY_NODE =`	▪ Replace $HOST$ with IP Address/Host Name of the

Tag Name	Description
"$TRUE/FALSE$" >	remote machine where Rserve is running. If the PRIMARY_NODE is $TRUE, then it indicates that this is the primary node where it is executed when the host is not passed as a runtime execution. ▪ If it is local execution $HOST$ should be replaced with `local`. **Note**: Online execution will always happen on the primary node.
<REMOTE_FILE_PATH>$FILE_PATH$</REMOTE_FILE_PATH>	▪ Replace $FILE_PATH$ with the path in the remote machine that has the complete access rights to all the users. This path contains the created R scripts and outputs. ▪ In case of local R execution, the `ftpshare` area path is considered for creating the R file and the output file storage.
<REMOTESERVICE_PORT>$PORT$</REMOTESERVICE_PORT>	Replace $PORT$ with the port configured for Rserve. The default Rserve port is 6311.
<USER> <NAME>$USERNAME$</NAME> <PASSWORD>$PASSWORD$</PASSWORD> </USER>	▪ Replace the $USERNAME$ and $PASSWORD$ with user access to the Rserve. ▪ For local execution Rserve is not required, so this tag values can be left blank. ▪ Also, in case of remote execution authentication is disabled for Rserve these tag values can be left blank.
<IS_OUTPUT_REQ_IN_OFSAA>N</IS_OUTPUT_REQ_IN_OFSAA>	This flag indicates whether the outputs are written back in the framework tables. If the value is 'Y', then RJDBC package is required.
<IS_DETAILED_OUTPUT_REQUIRED>Y</IS_DETAILED_OUTPUT_REQUIRED>	This flag indicates whether the csv output file has to be created in the machine where models are executed.
<CLASS_NAME>	This flag indicates the implementation class for executing the script in different engines.
<INPUT_DATA_IN_FILE>	▪ This flag indicates input data is in file or not. If its blank the Data frame is created in R script.
<PRE_SCRIPT_FILE>	This flag indicates the prescript to be appended to user script. By default R prescript is configured.

Tag Name	Description
<POST_SCRIPT_FILE>	This flag indicates the post script to be appended to user script By default R postscript is configured.
<DELETE_RFILE>	This flag indicates the whether the script generated should be deleted or not. By default generated script file will be deleted.
<IS_OUTPUT_REQ_IN_OFSAA>	Enter Y if you want outputs in the OFSAA framework tables.

3. In case of remote execution, for the hive connection the respective jar files (`apache - hadoop` and `hive jars / cdh - hadoop` and `hive` jars) should be copied to the lib folder of the remote R server node.

   In case of local execution, the jar files should be copied in the `$FIC_DB_HOME/lib` folder .

4. If RJDBC connection is required, place the `ojdbc7.jar` in the lib folder. RJDBC package is required if the outputs are required in Enterprise Modeling output tables.

   For the Kerberos authentication the required `jaas-conf`, `krb-conf` and `keytab` files should be copied to conf folder of the remote R server node in case of remote execution.

   In case of local execution, the conf files should be copied in the `$FIC_DB_HOME/conf` folder.

   Create the `jaas-conf` file with the same name as that of the keytab file.

5. The following jar files needs to be copied to `$FIC_DB_HOME/lib/` and `$FIC_WEB_HOME/webroot/WEB-INF/lib` folders:

   - `RserveEngine.jar`
   - `REngine.jar`

   The download link is https://rforge.net/Rserve/files/.

   Note: Rserve is required only for remote node.

6. Generate the application EAR/WAR file and redeploy the application onto your configured web application server. For more information on generating and deploying EAR / WAR file, see the *Post Installation Configuration* section in Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide – Release 8.0.0.0.0.

1.5.1.1 Configurations for Rserve in remote nodes where open –R engine is installed

Create Rserv.conf file in `/etc` and make following entries:

- workdir /tmp/Rserv - Provide complete access to this path.
- pwdfile /etc/Rserveusers - The username and password details should be configured in this file.
- remote enable
- auth enable
- plaintext enable - right now encrypted password validation is not handled.
- port 6311
- maxsendbuf 0
- control enable
- interactive no

For more information, see the link: http://rforge.net/Rserve/doc.html.

1.5.2 Known Issues

1. When installing multiple packs on a single environment, that is, OFS Profitability Pack on OFS Customer Analytics Pack or OFS Customer Analytics Pack on OFS Profitability Pack, the installation log of the latter pack will have the following SQL script error:

   ```
   Error:ORA-00904: "N_PROJ_DATE_SKEY": invalid identifier
   ```

   This is an error due to redundancy of a script when installing two packs on the same setup. This error will have no bearing on the functionality of the applications and needs to be ignored.

2. Duplicate entries for the T2T definition "`T2T_FCT_PARTNER_EXPENSE`" in the `ETLREPOSITORY.XML` file. To fix this, do the following:

   a. Open the `ETLREPOSITORY.XML` file.

   b. Search for `T2T_FCT_PARTNER_EXPENSE`.

   c. Remove one of the two instances of `T2T_FCT_PARTNER_EXPENSE`.

   d. Save and close the file.

1.6 Configuring Open R – ORAAH Models

1.6.1 Creating Tables for Attrition and Propensity

Run the following create table scripts before the execution of ORAAH Models to create the Attrition and Propensity tables:

/hive/create/fsi_wla_attr_acct_cust_summary.hql

/hive/create/fsi_wla_prop_acct_cust_summary.hql

Do the reverse model generation in the big data infodom after you execute the above scripts.

1.6.2 Creating Hive Sandbox and Metadom Schemas in Oracle

1. Create the hive sandbox and metadom schemas in oracle by using similar script to the following.

   Following code assumes SBXWLAMDOM as metadom schema and RCACONF975 as config schema:

```
create user SBXWLAMDOM IDENTIFIED by password;
ALTER USER SBXWLAMDOM QUOTA UNLIMITED ON USERS;
grant create SESSION to SBXWLAMDOM;
grant create PROCEDURE to SBXWLAMDOM;
grant create SEQUENCE to SBXWLAMDOM;
grant create TABLE to SBXWLAMDOM;
grant create TRIGGER to SBXWLAMDOM;
grant create VIEW to SBXWLAMDOM;
grant create MATERIALIZED VIEW to SBXWLAMDOM;
grant create SYNONYM to SBXWLAMDOM;
GRANT CREATE SESSION TO SBXWLAMDOM;
GRANT CREATE VIEW TO SBXWLAMDOM;
GRANT CREATE SEQUENCE TO SBXWLAMDOM;
GRANT CREATE TABLE TO SBXWLAMDOM;
GRANT CREATE PROCEDURE TO SBXWLAMDOM;
grant create RULE to SBXWLAMDOM;
GRANT CREATE TRIGGER TO SBXWLAMDOM;
grant create type to SBXWLAMDOM;
grant select on SYS.V_$PARAMETER to SBXWLAMDOM;
grant select on sys.dba_free_space to SBXWLAMDOM;
grant select on sys.dba_tables to SBXWLAMDOM;
grant select on sys.Dba_tab_columns to SBXWLAMDOM;
```

```
GRANT CREATE SYNONYM TO SBXWLAMDOM;

GRANT DEBUG CONNECT SESSION TO SBXWLAMDOM;

GRANT DEBUG ANY PROCEDURE TO SBXWLAMDOM;

GRANT CREATE MATERIALIZED VIEW TO SBXWLAMDOM;

GRANT OLAP_USER TO SBXWLAMDOM;

GRANT CONNECT TO SBXWLAMDOM;

GRANT OLAP_USER TO SBXWLAMDOM;

GRANT CREATE ANY MATERIALIZED VIEW TO SBXWLAMDOM;

GRANT CREATE ANY TABLE TO SBXWLAMDOM;

GRANT CREATE MATERIALIZED VIEW TO SBXWLAMDOM;

GRANT CREATE PROCEDURE TO SBXWLAMDOM;

GRANT CREATE SEQUENCE TO SBXWLAMDOM;

GRANT CREATE SESSION TO SBXWLAMDOM;

GRANT CREATE SYNONYM TO SBXWLAMDOM;

GRANT CREATE TABLE TO SBXWLAMDOM;

GRANT CREATE TRIGGER TO SBXWLAMDOM;

GRANT CREATE TYPE TO SBXWLAMDOM;

GRANT CREATE VIEW TO SBXWLAMDOM;

GRANT DEBUG CONNECT SESSION TO SBXWLAMDOM;


grant select on RCACONF975.CSSMS_USR_PROFILE to SBXWLAMDOM;

grant select on RCACONF975.CSSMS_ROLE_MAST to SBXWLAMDOM;

grant select on RCACONF975.CSSMS_GROUP_MAST to SBXWLAMDOM;

grant select on RCACONF975.CSSMS_FUNCTION_MAST to SBXWLAMDOM;

grant select on RCACONF975.CSSMS_USR_GROUP_MAP to SBXWLAMDOM;

grant select on RCACONF975.CSSMS_USR_GROUP_DSN_SEG_MAP to
SBXWLAMDOM;

grant select on RCACONF975.CSSMS_ROLE_FUNCTION_MAP to
SBXWLAMDOM;

grant select on RCACONF975.CSSMS_GROUP_ROLE_MAP to SBXWLAMDOM;
```

```
grant select on RCACONF975.CSSMS_SEGMENT_MAST to SBXWLAMDOM;

grant select on RCACONF975.BATCH_TASK to SBXWLAMDOM;

grant select on RCACONF975.CSSMS_USR_DSN_SEG_MAP to SBXWLAMDOM;

grant select on RCACONF975.CSSMS_USR_ROLE_MAP to SBXWLAMDOM;

grant select on RCACONF975.CSSMS_METADATA_SEGMENT_MAP to
SBXWLAMDOM;

grant select on RCACONF975.BATCH_RUN to SBXWLAMDOM;

grant select on RCACONF975.PR2_FILTERS to SBXWLAMDOM;

grant select on RCACONF975.PR2_TASK_FILTER to SBXWLAMDOM;

grant select on RCACONF975.PR2_TASK_FILTER_DETAIL to SBXWLAMDOM;

grant select on RCACONF975.ST_STRESS_MASTER to SBXWLAMDOM;

grant select on RCACONF975.ST_SCENARIO_MASTER to SBXWLAMDOM;

grant select on RCACONF975.ST_SHOCK_MASTER to SBXWLAMDOM;

grant select on RCACONF975.BATCH_MASTER to SBXWLAMDOM;

grant select on RCACONF975.ICC_MESSAGELOG to SBXWLAMDOM;

grant select on RCACONF975.PR2_MASTER to SBXWLAMDOM;

grant select on RCACONF975.PR2_RUN_REQUEST to SBXWLAMDOM;

grant select on RCACONF975.MF_MODEL_SCRIPT_MASTER to SBXWLAMDOM;

grant select on RCACONF975.MF_INPUT_VALUES to SBXWLAMDOM;

grant select on RCACONF975.MF_MODEL_OUTPUT_VALUES to SBXWLAMDOM;

grant select on RCACONF975.DB_MASTER to SBXWLAMDOM;

grant select on RCACONF975.DSNMASTER to SBXWLAMDOM;


grant select on RCACONF975.pr2_rule_map to SBXWLAMDOM;

grant delete on RCACONF975.pr2_rule_map_pr to SBXWLAMDOM;

grant insert on RCACONF975.pr2_rule_map_pr to SBXWLAMDOM;

grant update on RCACONF975.pr2_rule_map_pr to SBXWLAMDOM;

grant select on RCACONF975.pr2_rule_map_pr to SBXWLAMDOM;

grant delete on RCACONF975.pr2_rule_map_pr_tmp to SBXWLAMDOM;

grant insert on RCACONF975.pr2_rule_map_pr_tmp to SBXWLAMDOM;
```

```
grant update on RCACONF975.pr2_rule_map_pr_tmp to SBXWLAMDOM;

grant select on RCACONF975.pr2_rule_map_pr_tmp to SBXWLAMDOM;

grant select on RCACONF975.pr2_rule_map_exclude to SBXWLAMDOM;

grant delete on RCACONF975.pr2_rule_map_exclude_pr to
SBXWLAMDOM;

grant insert on RCACONF975.pr2_rule_map_exclude_pr to
SBXWLAMDOM;

grant update on RCACONF975.pr2_rule_map_exclude_pr to
SBXWLAMDOM;

grant select on RCACONF975.pr2_rule_map_exclude_pr to
SBXWLAMDOM;

grant delete on RCACONF975.pr2_rule_map_exclude_pr_tmp to
SBXWLAMDOM;

grant insert on RCACONF975.pr2_rule_map_exclude_pr_tmp to
SBXWLAMDOM;

grant update on RCACONF975.pr2_rule_map_exclude_pr_tmp to
SBXWLAMDOM;

grant select on RCACONF975.pr2_rule_map_exclude_pr_tmp to
SBXWLAMDOM;

grant select on RCACONF975.pr2_run_object to SBXWLAMDOM;

grant select on RCACONF975.pr2_run_object_member to SBXWLAMDOM;

grant select on RCACONF975.pr2_run_map to SBXWLAMDOM;

grant select on RCACONF975.pr2_run_execution_b to SBXWLAMDOM;

grant select on RCACONF975.pr2_run_execution_filter to
SBXWLAMDOM;

grant select on RCACONF975.pr2_firerun_filter to SBXWLAMDOM;

grant select on RCACONF975.pr2_filters to SBXWLAMDOM;

grant select on RCACONF975.configuration to SBXWLAMDOM;

grant select on RCACONF975.batch_parameter to SBXWLAMDOM;

grant select on RCACONF975.component_master to SBXWLAMDOM;
```

```
grant select on RCACONF975.MDB_OBJECT_TYPE_ATT_LAYOUT to
SBXWLAMDOM;

grant select on RCACONF975.REV_OBJECT_ATTRIBUTE_DTL to
SBXWLAMDOM;

grant select on RCACONF975.FORMS_LOCALE_MASTER to SBXWLAMDOM;

grant select on RCACONF975.mdb_object_dependencies to
SBXWLAMDOM;

grant select on RCACONF975.mdb_execution_details to SBXWLAMDOM;

grant select on RCACONF975.REV_STAT_DATA to SBXWLAMDOM;

grant select on RCACONF975.REV_OBJECT_REPOSITORY_B to
SBXWLAMDOM;

grant select on RCACONF975.REV_OBJECT_REPOSITORY_TL to
SBXWLAMDOM;

grant select on RCACONF975.REV_OBJECT_ATTRIBUTE_DTL_MLS to
SBXWLAMDOM;

grant select on RCACONF975.REV_OBJECT_APPLICATION_MAP to
SBXWLAMDOM;

grant select on RCACONF975.MDB_OBJ_EXPR_DETAILS to SBXWLAMDOM;

grant select on RCACONF975.MDB_EXECUTION_DETAILS to SBXWLAMDOM;

grant select on RCACONF975.REV_OBJECT_TYPES_CD to SBXWLAMDOM;

grant select on RCACONF975.REV_OBJECT_TYPES_MLS to SBXWLAMDOM;

grant select on RCACONF975.REV_APPLICATIONS_CD to SBXWLAMDOM;

grant select on RCACONF975.REV_APPLICATIONS_MLS to SBXWLAMDOM;

grant select on RCACONF975.METADATA_BROWSER_LOCALE to
SBXWLAMDOM;

grant select on RCACONF975.MDB_STAT_DATA to SBXWLAMDOM;

grant select on RCACONF975.MDB_OBJECT_TYPE_LAYOUT to SBXWLAMDOM;

grant select on RCACONF975.ofsa_md_id_ref to SBXWLAMDOM;

grant select on RCACONF975.MDB_ETL_MAPPING to SBXWLAMDOM;

grant select on RCACONF975.setupinfo to SBXWLAMDOM;

grant select on RCACONF975.LOCALEREPOSITORY to SBXWLAMDOM;

grant select on RCACONF975.MF_MODEL_MASTER to SBXWLAMDOM;
```

```
grant select on RCACONF975.MF_SANDBOX_MASTER to SBXWLAMDOM;

grant select on RCACONF975.MF_VARIABLE_MASTER to SBXWLAMDOM;

grant select on RCACONF975.MF_TECHNIQUE_MASTER to SBXWLAMDOM;

grant select on RCACONF975.ST_SCENARIO_SHOCK_DATA to SBXWLAMDOM;


grant select on RCACONF975.MDB_RULE_SOURCE_HEADER to SBXWLAMDOM;

grant select on RCACONF975.MDB_RULE_TARGET_HEADER to SBXWLAMDOM;

grant select on RCACONF975.MDB_RULE_TARGET_MEMBER_HEADER to
SBXWLAMDOM;

grant select on RCACONF975.MDB_RULE_GRID_DATA to SBXWLAMDOM;

grant select on RCACONF975.MDB_MODEL_MAPPING to SBXWLAMDOM;

grant delete on RCACONF975.AAI_MAP_MAPPER to SBXWLAMDOM;

grant insert on RCACONF975.AAI_MAP_MAPPER to SBXWLAMDOM;

grant update on RCACONF975.AAI_MAP_MAPPER to SBXWLAMDOM;

grant select on RCACONF975.AAI_MAP_MAPPER to SBXWLAMDOM;

grant select on RCACONF975.MDB_OBJECTS_GROUPING to SBXWLAMDOM;

grant select on RCACONF975.MDB_OBJECTS_GROUP_MASTER to
SBXWLAMDOM;


grant select on RCACONF975.RTI_UI_EXCLUDE_PDM_LIST  to
SBXWLAMDOM;

grant select on RCACONF975.RTI_VIR_PHY_TBL_NAME  to SBXWLAMDOM;

grant select on RCACONF975.infodom_patches to SBXWLAMDOM;
```

2. Create hive datadom schema.

   ```
   CREATE SCHEMA IF NOT EXISTS SBXWLAHDF
   ```

3. Create the OFSAAI database definitions for datadom and metadom with key configuration example as follows:

   ```
   Hive jdbc url:jdbc:hive2://<hive server hive or host name>:<hive
   server2 port>/<hive db name>

   Hive driver:com.cloudera.hive.jdbc4.HS2Driver
   ```

Oracle JDBC url:jdbc:oracle:thin:@<oracle db server ip or host name>: <oracle db service port>:<SID>

Infodom jndi id: <jndi name>

1.6.3 Creating Infodom and Sandbox

1. Create hive sandbox infodom and segment using the above. For more information, see Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide – Release 8.0.0.0.0.
2. Create data sets by selecting each of the following entities for CI Propensity Dataset and CI Attrition Dataset for ORAAH:

   FSI_WLA_PROP_ACCT_CUST_SUMMARY

   FSI_WLA_ATTR_ACCT_CUST_SUMMARY

   FCT_COMMON_ACCOUNT_SUMMARY

   DIM_PRODUCT

   DIM_PRODUCT_TYPE

   DIM_WLA_MODEL

   FSI_WLA_MODEL_EVENT_MAP

   DIM_WLA_EVENT

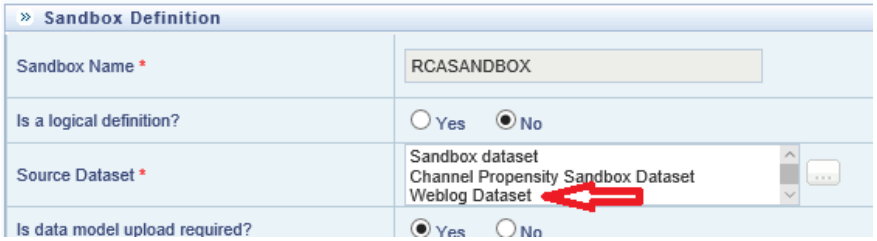
   DIM_CUSTOMER

   DIM_ACCOUNT

   FCT_WLA_CUST_EVENT_SUMMARY

   fsi_model_parameters

   So to use WLA models, manual step is needed to add the above created datasets to the sandbox along with other datasets before the sandbox population batch is executed.



3. Open the Config Schema and change in the below tables:

   Replace '##ORAAH_ATTR_DTST##' with the Hive Dataset for ATTRITION DATASET in the tables MF_MODEL_MASTER and MF_MODEL_SCRIPT_MASTER.

Replace '##ORAAH_XSLL_DTST##' with the Hive Dataset for PROPENSITY DATASET in the tables MF_MODEL_MASTER and MF_MODEL_SCRIPT_MASTER.

Replace '##HIVE_SBX_INFODOM##' with the hive sandbox infodom in the tables MF_MODEL_MASTER, MF_MODEL_SCRIPT_MASTER, and MF_MODEL_DS_QUERY.

Replace '##HIVE_SBX_ID##' with the hive sandbox id in the tables MF_MODEL_MASTER, MF_MODEL_SCRIPT_MASTER, and MF_MODEL_DS_QUERY.

Replace '##HIVE_INFODOM##' with the hive infodom in the table MF_VARIABLE_MASTER for V_INFODOM and V_FOLDER.

4. Create sand box on hive based on data set created in the above step.

1.6.4 Installing R and Rserv

1. Install R on edge node.
2. Configure Renviron file generally available at the folder /usr/lib64/R/etc/Renviron following sample configuration as under (all paths,ports and file references are sample and have to be changed as per the target env):

```
###############ORAAH related config###################

TZ=EDT

ORACLE_HOME=/scratch/oracle/app/product/12.1.0/client_1

ORACLE_SID=<oracle sid>

ORACLE_HOSTNAME=<host name>

SQOOP_HOME=<if needed sqoop location>

JAVA_HOME=<java home>

HADOOP_CONF_DIR=<HADOOP CONF DIR MAY BE /etc/hadoop/conf >

HIVE_CONF_DIR=<HIVE CONF DIR MAY BE /etc/hive/conf>

HIVE_HOME=<hive home like /usr/lib/hive>

ORCH_HDFS_CHECK=0

ORCH_MAPRED_CHECK=0

R_HOME=/usr/lib64/R

LD_LIBRARY_PATH=ld lib path with java jre/lib/amd64 server , db
lib , R lib,hadoop native lib folders

##Like
/scratch/jdk1.7.0_72/jre/lib/amd64/server:/scratch/oracle/app/pr
```

```
oduct/12.1.0/client_1/lib:/usr/lib64/R/lib:/usr/lib/hadoop/lib/n
ative


PATH=path entries with Rserv location etc.

#like
/etc:/scratch/Rserv:/scratch:/scratch/ftpshare/:/scratch/ofsaaap
p:/usr/lib64/qt-
3.3/bin:/usr/local/bin:/bin:/usr/bin:/usr/local/sbin:/usr/sbin:/
sbin:/usr/lib64/R/bin:/scratch/jdk1.7.0_72/bin:/scratch/oracle/a
pp/product/12.1.0/client_1/bin:/usr/lib64/R/bin:/scratch/jdk1.7.
0_72/bin:/scratch/oracle/app/product/12.1.0/client_1/bin:

#/home/oracle/scripts:/u01/sqlcl/bin:/opt/bin:/home/oracle/bin:/
u01/Middleware/jdeveloper/jdev/bin:/home/oracle/scripts:/opt/bin

SPARK_HOME=/usr/lib/spark

HADOOP_HOME=/usr/lib/hadoop

CDH_VERSION=5.4.10


ORCH_STREAMING_LIB=/usr/lib/hadoop-mapreduce/hadoop-
streaming.jar

#all jars and other high lighted needed

CLASSPATH=/usr/lib/spark/conf:/etc/hadoop/conf:/usr/lib/spark/li
b/spark-assembly.jar:/usr/lib/hadoop/client/htrace-core-
3.0.4.jar:/usr/lib/hadoop/client/jackson-
annotations.jar:/usr/lib/hadoop/client/jackson-
core.jar:/usr/lib/hadoop/client/jackson-
databind.jar:/usr/lib/hadoop/hadoop-
common.jar:/usr/lib/hadoop/lib/slf4j-
log4j12.jar:/usr/lib/hadoop/lib/slf4j-api-
1.7.5.jar:/usr/lib/hadoop/lib/log4j-
1.2.17.jar:/usr/lib/hadoop/lib/guava-
11.0.2.jar:/usr/lib/hadoop/lib/commons-collections-
3.2.2.jar:/usr/lib/hadoop/lib/commons-configuration-
1.6.jar:/usr/lib/hadoop/lib/commons-lang-
2.6.jar:/usr/lib/hadoop/hadoop-
auth.jar:/usr/lib/hadoop/lib/snappy-java-
1.0.4.1.jar:/usr/lib/hadoop/lib/protobuf-java-
2.5.0.jar:/usr/lib/hadoop-hdfs/hadoop-
```

```
hdfs.jar:/usr/lib/hadoop/lib/commons-cli-
1.2.jar:/usr/lib/hadoop-mapreduce/hadoop-mapreduce-client-
core.jar:/usr/lib/hadoop-yarn/hadoop-yarn-
common.jar:/usr/lib/hadoop-yarn/hadoop-yarn-
api.jar:/usr/lib/hadoop-yarn/hadoop-yarn-
client.jar:/usr/lib/hadoop-yarn/hadoop-yarn-server-web-
proxy.jar:/usr/lib/hadoop/client/jersey-
core.jar:/usr/lib/hadoop/lib/jersey-server-1.9.jar


HADOOP_CLASSPATH=/etc/hive/conf:/scratch/oracle/app/product/12.1
.0/client_1/jdbc/lib/*:/usr/lib/hive-
hcatalog/share/hcatalog/hive-hcatalog-core.jar

#/u01/orahivedp/jlib/*:/u01/connectors/olh/jlib/*:/u01/connector
s/osch/jlib/*:/u01/nosql/kv-ee/lib/kvstore.jar:

SPARK_JAVA_OPTS=-Djava.library.path=/usr/lib64/R/lib
```

3. Install rserv package in R edge node.
4. Configure /etc/Rserv.conf with the following details (all paths, ports, and file references are sample and have to be changed as per the target env):

```
workdir <provide an working directory with permission>

pwdfile /etc/Rserveusers

remote enable

auth enable

plaintext enable

port 6311

maxinbuf 262144

maxsendbuf 0

interactive yes
```

5. Configure the User authentication file as follows:

```
as per Rserv.conf entry below

pwdfile /etc/Rserveusers
```

6. Copy the `Rengine.jar` and `Rserve.jar` files from R serv installation to OFSAAI installation `$FIC_HOME/ficdb/lib` folder.

7. Install the `OFSAAIRunnerHDFS-x.x.x.tar.gz` using the following command in the DB server:

   `'R CMD INSTALL OFSAAIRunnerHDFS-x.x.x.tar.gz'`

8. Install cairo package from CRAN in R.
9. Create HDFS out folder in the edge node and give write access to user group of the R user.

1.6.5 Configuring Oracle R Advanced Analytics for ORAAH

1. Configure the HDFS open R config section of `ModelingFramework.xml` at `$FIC_HOME/ficdb/conf`. Ensure that you provide remote file path ending with '/' password may or may not be encrypted. A sample modeling framework xml is given below (all paths, ports, and file references are sample and have to be changed as per the target env):

   ```
   <Target EXE_ENV=""Standard R Engine"" INPUT_DATA_TYPE=""HDFS""
   LANGUAGE=""R"" NAME=""ORAAH_Spark"" PRIMARY_NODE=""TRUE""
   id=""whf00amu"">

   <CLASS_NAME>modeling.client.impl.ExecuteScript</CLASS_NAME>

   <REMOTE_FILE_PATH>/scratch/ftpshare/</REMOTE_FILE_PATH>

   <REMOTESERVICE_PORT>6311</REMOTESERVICE_PORT>

   <INPUT_DATA_IN_FILE/>

   <HIVE_HOST>whf00amu.in.oracle.com</HIVE_HOST>

   <HIVE_PORT>10000</HIVE_PORT>

   <DFS_NAME_NODE>whf00amu.in.oracle.com</DFS_NAME_NODE>

   <SPRK_MEMORY_PER_PROCESS>0.5G</SPRK_MEMORY_PER_PROCESS>

   <USER>

   <NAME>ofsaaapp</NAME>

   <PASSWORD>ofsaaapp</PASSWORD>

   </USER>

   <HDFS_LOCATION>/user/hive/warehouse/</HDFS_LOCATION>

   <IS_OUTPUT_REQ_IN_OFSAA>N</IS_OUTPUT_REQ_IN_OFSAA>

   <IS_DETAILED_OUTPUT_REQUIRED>N</IS_DETAILED_OUTPUT_REQUIRED>

   <PRE_SCRIPT_FILE>REXEC_PREFIX_HDFS,REXECUTION_PREFIX_2,R_PREF_HD
   FS_RCA_BASE.r,R_PREF_HDFS_RCA_XREF.r</PRE_SCRIPT_FILE>
   ```

<POST_SCRIPT_FILE>REXECUTION_SUFFIX_0,REXECUTION_SUFFIX</POST_SCRIPT_FILE>

<DELETE_OUTPUTFILES>N</DELETE_OUTPUTFILES>

</Target>

Note: For the following sample configuration a folder named ‘outprop’ needs to be created under mentioned folder.

<HDFS_LOCATION>/user/hive/warehouse/</HDFS_LOCATION>

If the folder is as above the path of the new folder needs to be

user/hive/warehouse/outprop

The outprop folder needs to be given write permission with hadoop command.

For encryption of password, see modeling framework documentation.

ModelingFramework.xml needs to be updated in $FIC_HOME/ficweb/webroot/conf and <web server home>/<context root>/conf.

2. Move pre script files R_PREF_HDFS_RCA_BASE.r, R_PREF_HDFS_RCA_XREF.r from $FIC_HOME/OFS_WLA/deploy_wla/conf to $FIC_HOME/ficdb/bin and $FIC_HOME/ficdb/conf folders.
3. Create a ‘log’ folder with write permission at the remote file path where model output will be generated.
4. Copy the ojdbc6.jar to the remote file path folder inside 'lib' directory. In other words, log folder should have a sibling directory named 'lib' and under that you place ojdbc6.jar file.
5. Restart all servers.

1.6.6 Notes on NBO installation

Following additional actions may be needed for NBO installation:

1. Logger configuration:

   Inspect RevLog4JConfig.xml file at <context home>/conf (which is webapps/<context home>/conf in case of tomcat) for RCA NBO logger as under

   NBO logger entries are as follows:

   ‘RCANBOPPENDER’ appender and logger as ‘RCANBOML’. If not found then as the following entries:

```
<appender class="org.apache.log4j.RollingFileAppender"
name="RCANBOPPENDER">
     <param name="File" value="/scratch/ofsaaapp/apache-tomcat-
     8.0.32/webapps/CADEV/logs/NBO.log"/>
     <param name="Append" value="true"/>
     <param name="MaxFileSize" value="500KB"/>
     <param name="MaxBackupIndex" value="5"/>
     <layout class="org.apache.log4j.PatternLayout">
      <param     name="ConversionPattern"     value="[%d{dd-MM-yy
     HH:mm:ss aa}] ~ %-5p ~ %c ~ %m %n"/>
     </layout>
     <filter class="org.apache.log4j.varia.LevelRangeFilter">
      <param name="LevelMin" value="DEBUG"/>
     </filter>
</appender>
<logger additivity="false" name="RCANBOML">
     <appender-ref ref="RCANBOPPENDER"/>
</logger>
```

Inspect `/ftpshare/<infodom>/erwin/fipxml/<infodom>_TFM.XML` to find entries for following tasks

`FN_NBO_OFFER_WT, FN_NBO_PROD_PAGE_WT_LOAD, TD_FN_NBO_LOAD_CLUSTER, DT_NBO_OFFER_SCORE`

In case not found, add them from `FUSION_TFM_OFS_CA.XML` in the same folder.

2. Privileges for production schema: Drop table rights are needed for atomic schema.

   `NBOConf.xml` in `<context home>/conf` (which is `webapps/<context home>/conf` in case of tomcat) should be edited with infodom name.

2 Deploying RPD/ Catalog for OBIEE 11g

This section covers the following topics:

2.1 Installing OBIEE Server

To install Oracle Business Intelligence Enterprise Edition (OBIEE) server, see the Oracle Fusion Middleware Installation Guide for Oracle Business Intelligence11g Release 1 (11.1.1). After installing Oracle Business Intelligence Enterprise Edition (OBIEE) server, get the Enterprise Manager URL, username, password, and OBIEE installed directory from the System Administrator.

Note: Once the OBIEE server is installed, it should be upgraded to the version as mentioned in the Environment section.

2.2 Installing OBIEE Windows Administration Client

To install OBIEE repository administration client for Windows machine, see the Oracle® Fusion Middleware Installation Guide for Oracle Business Intelligence11g Release 1 (11.1.1).

2.3 Deploying RCA Pack Report Analytics

To deploy Analytic Reports, follow these steps:

1. Copy CIRCA.rpd and CIRCA.catalog files from $FIC_HOME/CIRCA/OBIEE/11.1.1.9.5/ of Web layer to windows machine where the OBIEE windows administration client is installed and deploy. For the more information on deployment, refer to your OBIEE 11g documentation.
2. Open the CIRCA.rpd file online with default password as **Admin123**.
3. Configure the Connection Pool details acoording to the atomic schema.
4. Click **File** menu and then click **Save**.
5. Click **Yes** on the pop-up message Do you want to check global consistency?
6. Click **OK**, on the pop-up message Consistency check didn't find any errors, warning or best practices violations.

Note: Warnings on consistency check can be ignored.

2.4 HTML5 Compliance of OBIEE Reports in IE11

Perform the following steps in order to verify the HTML5 compliance of OBIEE reports in IE11:

1. Remove the compatibility settings for analytics.
2. Change the instanceconfig.xml file to make all the chart views to be shown in HTML5 by default.

   You can find the instanceconfig.xml file in the following location:

   OBIEE_HOME/instances/instance1/config/OracleBIPresentationServicesComponent/coreapplication_obips1

   ```
   <Charts>

   <DefaultWebImageType>html5</DefaultWebImageType>

   </Charts>
   ```

3. Verify all the BI reports by removing the default chart view setting (to ensure that these reports show up as usual irrespective of HTML5 or flash web Image formats).

2.4.1 Details on OBIEE11.1.9.5

In a browser that does not support the html5 format, the image renders in the flash format instead (which is also interactive).

3 Deploying RPD/ Catalog for OBIEE 12c

3.1 Deploying OFS RCA Application Pack Dashboards and Analytics

This chapter covers the following sections:

- Installing OBIEE Server
- Installing OBIEE Windows Administration Client
- Deploying RCA Pack Report Analytics

3.1.1 Installing OBIEE Server

To install Oracle Business Intelligence Enterprise Edition (OBIEE) server, see the Oracle Fusion Middleware Installation Guide for Oracle Business Intelligence Release 12.2.1.2.0. After installing Oracle Business Intelligence Enterprise Edition (OBIEE) server, get the Enterprise Manager URL, username, password, and OBIEE installed directory from the System Administrator.

Note: Once the OBIEE server is installed, it should be upgraded to the version as mentioned in the Environment section.

3.1.2 Installing OBIEE Windows Administration Client

To install OBIEE repository administration client for Windows machine, see the Oracle® Fusion Middleware Installation Guide for Oracle Business Intelligence Release 12.2.1.2.0.

3.1.3 Deploying RCA Pack Report Analytics

To deploy Analytic Reports, follow these steps:

1. Copy CIRCA.rpd and CIRCA.catalog files from $FIC_HOME/CIRCA/OBIEE/12.2.1.2.0/ of Web layer to windows machine where the OBIEE windows administration client is installed and deploy. For the more information on deployment, refer to your OBIEE 12c documentation.
2. Open the CIRCA.rpd file online with default password as **Admin123**.
3. Configure the Connection Pool details acoording to the atomic schema.
4. Click **File** menu and then click **Save**.
5. Click **Yes** on the pop-up message Do you want to check global consistency?
6. Click **OK**, on the pop-up message Consistency check didn't find any errors, warning or best practices violations.

Note: Warnings on consistency check can be ignored.

Appendix A

Frequently Asked Questions

What checks does the 8.0.5.0.0 CA Release patch perform?

- Environment Check- As part of environment check, it performs Java validation, Environment Variables validation, OS specific validation, DB specific validation, and it shuts down all OFSAAI Services (Infrastructure Server, ICC Server, and back-end services).
- Post Install check- As part of Post install check, it checks if OFSAAI services can be successfully started.

Which version of ERwin Data Modeler does OFSAAI support?

OFSAAI now supports ERwin version 9.5, 9.6 and 9.7 generated xmls in addition to ERwin 4.1, ERwin 7.1, ERwin 7.3, ERwin 9.0, and Erwin 9.2 formats.

What should I do for viewing the log files in Debug level for troubleshooting?

By default, the log level is set as INFO. You need to manually change it to Debug to view the log files in debug level. Based on your requirement, you can change the log level to Warn, Error, or Fatal as well.

1. Navigate to *$FIC_HOME/conf* in the APP layer of your OFSAAI installation.
   - Change the **priority value** to **Debug** in the *RevLog4jConfig.xml* file.

     For example:

     ```
     <root>
       <priority value ="debug" />
       <appender-ref ref="ConsoleAppender1"/>
     </root>
     ```

   - Change the value of **LOGGERLEVEL** in the *DynamicServices.xml* file from **20** to **0**. (**20** is the value for Info and **0** for Debug.)

NOTE: For multi-tier installation, you need to change the log level to Debug in the *DynamicServices.xml* and *RevLog4jConfig.xml* files, which are present in *$FIC_APP_HOME/conf*, *$FIC_DB_HOME/conf*, and *$FIC_WEB_HOME/conf* as well.

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2. Navigate to *$FIC_WEB_HOME/webroot/conf* and change the **priority value** to **Debug** in the *ExportLog4jConfig.xml* , *MDBLogger.xml*, and *PR2Logger.xml* files for viewing log files in Debug level for the modules Archive/Restore, Metadata Browser and RRF respectively.
3. Generate the application EAR/WAR file and redeploy the application onto your configured web application server. For more information on generating and deploying EAR / WAR file, refer to the

Post Installation Configuration section in OFS Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide – Release 8.0.

4. Restart the OFSAAI Services (APP and WEB). For more information, refer to the *Start/Stop Infrastructure Services* section in OFS Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide – Release 8.0.

What naming conventions need to be followed for the Hive metadom and datadom schemas?

The Big data processing requires manual steps to create the hive infodom. This requires one Hive-based schema for the datadom and one RDBMS-based schema for the metadom. Once these schemas are created, the RDBMS and hive schemas are used to create database definitions, which in turn are used to create the hive infodom. So, the naming convention that needs to be followed is that the hive database name and the metadom schema name must be the same.

Oracle Financial Services Customer Analytics Application Pack
8.0.5.0.0 Installation and Configuration Guide

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