

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

Version 8.0.4.0.0



DOCUMENT CONTROL

Version Number	Revision Date	Changes Done
1.0	June 2017	Captured 8.0.4.0.0.CA Release enhancement updates.

Executive Summary

This document includes the necessary instructions to apply 8.0.4.0.0 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 8.0.4.0.0 Interim Release.

This chapter discusses the following topics:

- [Audience](#)
- [Prerequisites for the Audience](#)
- [How this Guide is Organized](#)
- [Recommended Environment](#)
- [Related Documents](#)
- [Conventions and Acronyms](#)

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

How this Guide is Organized

The Oracle Financial Services Customer Analytical Applications Pack Installation and Configuration Guide include the following topics:

- OFSAAI Release 8.0.1.0.0.

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 8.0.4.0.0 documents available in [MOS](#).

Conventions and Acronyms

Conventions	Description
Actions are indicated in Bold .	
Command or query is indicated in <code>Courier New</code> 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 8.0.4.0.0

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)	Oracle Linux Server release 6.0 and above - 64 bit Note: Same versions of RHEL is supported
	Shell	KORN Shell (KSH)
Java Runtime Environment	Oracle Linux / Red Hat Enterprise Linux	Oracle Java Runtime Environment (JRE) 1.7.x - 64 bit
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 1.4. (Optional)
		Note: Ensure that the following patches are applied: <ul style="list-style-type: none"> ▪ 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

Requirement	Sub-Category	Value
	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
	Oracle OLAP	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: <ul style="list-style-type: none"> ▪ IBM WebSphere Application Server 8.5+ with IBM Java Runtime (64 bit)
Big Data Software Hadoop distribution	Pivotal	<ul style="list-style-type: none"> ▪ Pivotal 2.0.1 ▪ Pivotal Command Center 2.3 ▪ PHD Enterprise 2.1.0 ▪ Hadoop-2.2.0-gphd-3.1.0.0 ▪ Hive-0.12.0-gphd-3.1.0.0 ▪ Pivotal HAWQ 1.2.1
Desktop Requirements	Operating System	MS Windows 7/ Windows 8/ Windows 8.1
	Browser	MS Internet Explorer 9, 10, 11(Compatibility Mode) and 11 (Compatibility Mode) Oracle Java plug-in 1.7.0+* Note:

Requirement	Sub-Category	Value
		- Enable caching of static content (static files, images, CSS, and so on).
	Office Tools	MS Office 2007/ 2010/2013 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.
	<p>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.</p>	

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 AAI.
2. Install 8.0.0.0.0 CA.
3. Install 8.0.4.0.0 AAI. For more information, refer to the [Oracle Financial Services Analytical Applications Infrastructure User Guide](#).
4. 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.
5. Login to <https://support.oracle.com/> and search for **26076194** under the *Patches & Updates* tab.
6. Download the OFS Customer Analytics Application Pack v8.0.4.0.0 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.

7. 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](#).
8. 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
```
9. 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 8.0.3.0.0IR.

- 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_80100_<OperatingSystem>.zip
```

10. Extract the contents of the 8.0.4.0.0IR 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_80100_<OperatingSystem>.zip
```

11. Update the 'params.conf' file in 'CA_PACK/OFS_CA/conf' folder as per the instructions given in that file.
12. Give EXECUTE permission to the IR archive file. Navigate to the path *OFSAAI_80100_<OperatingSystem>.zip* and execute the command:

```
chmod 750 OFSAAIUpdate.sh
```

13. 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 8.0.3.0.0](#).

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

15. After successful installation of IR, perform the these steps:

- Clear the application cache. Navigate to the following path depending on the configured web application server and delete the files.

- **Tomcat:**

```
<Tomcat installation folder>/work/Catalina/localhost/<Application name>/org/apache/jsp
```

- **Weblogic:**

```
<Weblogic installation location>/domains/<Domain name>/servers/<Server name>/tmp/_WL_user/<Application name>/qaelce/jsp_servlet
```

- **Websphere:**

```
<Websphere installation directory>/AppServer/profiles/<Profile name>/temp/<Node name>/server1/<Application name>/<.war file name>
```

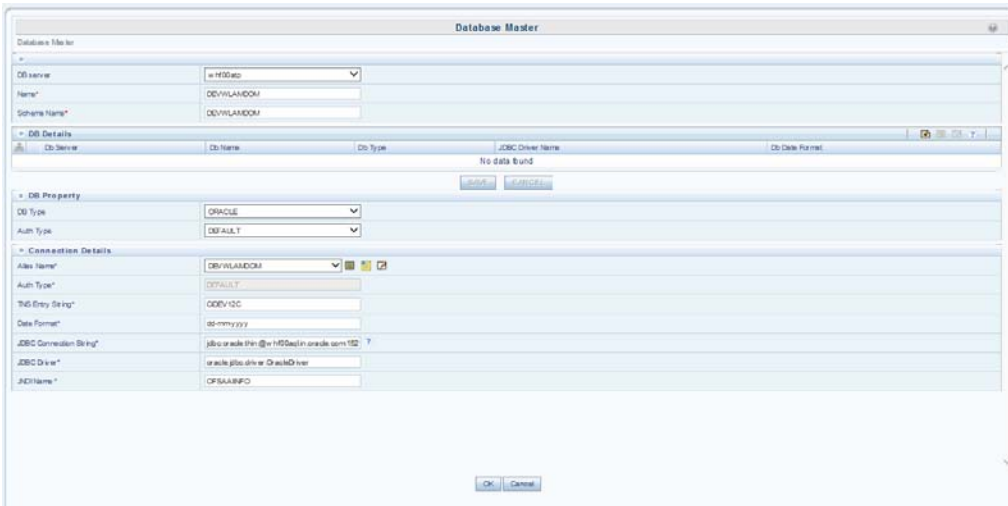
16. Add umask 0027 in the `.profile` of the UNIX account which manages the WEB server to ensure restricted access permissions.

17. 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.
18. 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](#).
19. 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 Installation and Configuration 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:

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"/>
</PROPERTIES>
```

```

<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:

Database Master

DB server: whf00akv
 Name: hfcadv
 Schema Name: hfcadv

DB Details

DB Server	DB Name	DB Type	JDBC Driver Name	DB Date Format
No data found				

DB Property

DB Type: HIVE
 Auth Type: NRBRCOS_WITH_KEYTAB

Connection Details

Alias Name: of saa
 Auth Type: NRBRCOS_WITH_KEYTAB
 Date Format: yyyy-mm-dd
 JDBC Connection String: jdbc:oracle:oci4thin://dev.oracle.com
 JDBC Driver: com.oracle.jdbc.oci4thin.Driver
 Key Tab File Name: of_saa_keytab
 REALM File Name: wfc.conf

User Info

Created By	Creation Date
Last Modified By	Last Modification Date

For non-kerberos environment:

Database Master

DB server: whf00akv
 Name: wlamdom8302
 Schema Name: wlamdom8302

DB Details

DB Type	JDBC Driver Name	IP Address	Name	Date Format	Select
HIVE	org.apache.hive.jdbc.HiveDriver	whf00akv	wlamdom8302	yyyy-mm-dd	*

DB Property

DB Type: HIVE
 Auth Type: DEFAULT

Connection Details

Alias Name: cloudera-scm
 Auth Type: DEFAULT
 Date Format: yyyy-mm-dd
 JDBC Connection String: jdbc:hive2://10.184.155.107:10000/wlamdom83
 JDBC Driver: org.apache.hive.jdbc.HiveDriver

User Info

Created By	Creation Date
SYSADMIN	2017-06-01 18:53:53
Last Modified By	Last Modification Date
SYSADMIN	2017-06-01 18:53:53

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

Webpage Dialog

Alias details

Auth Alias: of_saa
 User/Principal Name: of_saa@DEV.Oracle.com
 Auth String:

Save Cancel

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

ORACLE Financial Services Analytical Applications

System Configuration & Identity Management | My Inbox

Financial Services Analytical Applications Infrastructure > Administration and Configuration > System Configuration > Information Domain

Information Domain Maintenance

Information Domain Maintenance

> Information Domain Details

Name	BIGAPP
Description	Infodom for BigData
<input type="checkbox"/> Is authorization required for Business Metadata?	
<input checked="" type="checkbox"/> Is this a Staging Information Domain?	

Add Next Save Delete Cancel

System Configuration & Identity Management | My Inbox

Financial Services Analytical Applications Infrastructure > Administration and Configuration > System Configuration > Information Domain

Information Domain Maintenance

Information Domain Maintenance

> Database Details for DB Server

Database Server	whf00atp
Database Name	hdfcadev
OLAP Server	127.0.0.1
OLAP Type	ESSBASE

> Generate BI hierarchy

On Data Load ?

On Transformation ?

On Data Load and Transformation ?

None ?

<Back Next Cancel

System Configuration & Identity Management | My Inbox

Financial Services Analytical Applications Infrastructure > Administration and Configuration > System Configuration > Information Domain

Information Domain Maintenance

Information Domain Maintenance

> Paths on the APP Server

ERWIN File Path	/scratch/vofsaaweb/CHEF_OFSAA/tpshare/BIGAPP/erwin
Log File Path	/scratch/vofsaaweb/CHEF_OFSAA/tpshare/BIGAPP/erwin
Scripts File Path	/scratch/vofsaaweb/CHEF_OFSAA/tpshare/BIGAPP/scripts

> Paths on the DB Server

ERWIN File Path	/scratch/vofsaaweb/CHEF_OFSAA/tpshare/BIGAPP/erwin
Log File Path	/scratch/vofsaaweb/CHEF_OFSAA/tpshare/BIGAPP/erwin
Scripts File Path	/scratch/vofsaaweb/CHEF_OFSAA/tpshare/BIGAPP/scripts

> Database Details for Meta DB Server

Meta Database Server	whf00atp
Meta Database Name	devwlanrdm

<Back Next Save Cancel

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:

The screenshot shows the 'Segment Maintenance' dialog box. The title bar reads 'Segment Maintenance'. Below the title bar, there is a breadcrumb trail: 'Segment Maintenance > Segment Definition (view)'. The main area contains a table with the following fields:

Domain *	BIGAPP	Segment Code *	WLASEG
Segment Name *	WLASEG	Segment Description	Segment for Big data infodom
Segment/Folder Type	Public	Owner Code	

A 'Close' button is located at the bottom center of the dialog.

For more information, see the *Segment Maintenance* section in [Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack User Guide – Release 8.0.3.0.0](#).

20. Create Domain Map to Infodom as shown below:

The screenshot shows the 'User Group Domain Map' dialog box. The title bar reads 'User Group Domain Map'. Below the title bar, there is a search and filter section with 'User Group ID' set to 'rca'. Below this is a table of user groups:

User Group ID	Description
<input checked="" type="checkbox"/> UGRCAADMIN	RCA Application Administrator
<input type="checkbox"/> UGRCABIAN	RCA Application Analyst
<input type="checkbox"/> UGRCADAN	RCA Application User

Below the user groups table is a section for 'Mapped Domains':

BIGAPP-WLASEG
OFSCANFO-Folder For Enterprise Modeling
OFSCANFO-OFSCASEG
OFSSBXCIRCA-CIRCASEG

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:

Create New Application

Create New Application > Create New Application (view)

» Application			
Application ID *	OFS_BIGAPP	Application Name *	BigApp
Application Description	Bigdata Application	Application Pack Name*	OFS_BIGAPP PACK
Information Domain*	BIGAPP	Enabled*	<input checked="" type="checkbox"/>

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

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

The screenshot shows the 'User Group Role Map' interface. On the left is a navigation tree with 'User Group Role Map' selected. The main area displays a table of roles for the user group 'fca':

User Group ID	Description
<input checked="" type="checkbox"/> UGRCAADMIN	RCA Application Administrator
<input type="checkbox"/> UGRCABIAN	RCA Application Analyst
<input type="checkbox"/> UGRCADAN	RCA Application User

Below this, the 'Mapped Roles' for 'UGRCAADMIN' are listed:

- CIRCA Administrator
- CIRCA BI Analyst
- CIRCA Data Analyst
- RCA Administrator
- Role to access OFS_BIGAPP

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

27. Upload the WLA data model as shown below:

The screenshot shows the 'Business Model Upload' dialog box. It is connected to 'BIGAPP'. The 'Name' field contains 'WLA_803' and the 'Upload Mode' is set to 'New'. Under 'Model Upload Options', 'Erwin' is selected. The 'File Name' is 'OFS_WLA_Datamodel.xml'. Under 'Upload Options', 'Update the database schema with Model changes' is set to 'Yes' and 'Alter constraints in NOVALIDATE State' is set to 'No'.

For more information, see the *Upload Business Model* section in [Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack User Guide – Release 8.0.3.0.0](#).

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 the data under `<MODELGENERATED></MODELGENERATED>` tag is becoming "NO" from "YES" `ETLRepository.xml` in the folder `ftpshare/etlapphome`. If this is "NO" for any of the sources of WLA, replace "NO" with "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 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.

Financial Services Analytical Applications Infrastructure > Administration and Configuration > System Configuration > Manage OFSAA Product License(s)

MANAGE OFSAA APPLICATION PACK LICENSE

» INSTALLED APPLICATION PACKS

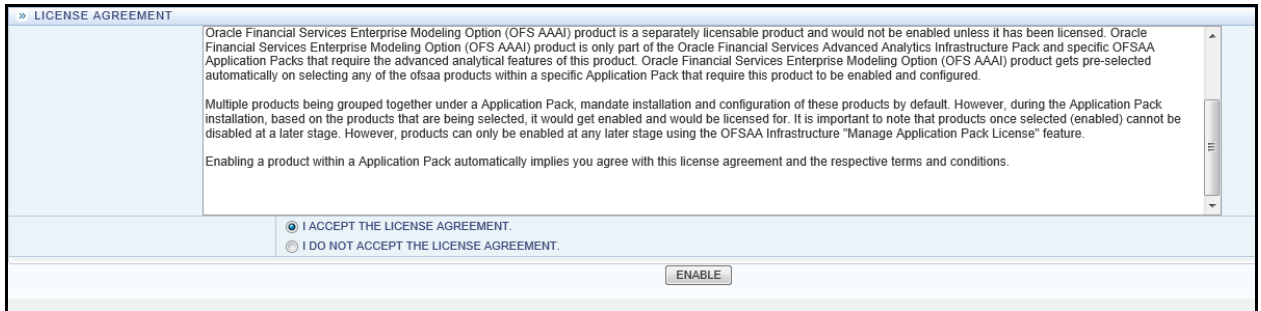
APPLICATION PACK ID	APPLICATION PACK NAME	DESCRIPTION	INSTALL DATE	VERSION
<input checked="" type="radio"/> OFS_AAAI_PACK	Financial Services Advanced Analytics Infrastructure Pack	Applications for Advanced Analytics using Oracle R, Modeling & Stress Testing Framework and Inline Processing Engine	2015-04-02 11:52:55.0	8.0.1.0.0
<input type="radio"/> OFS_CAP_ADDO_PACK	Financial Services Capital Adequacy Applications Pack	Applications for Basel Basic, IRB & Analytic, Operational Risk Economic Capital & Analytic and Retail Portfolio Risk Models and Pooling in Banking and Financial Services Domain	2015-03-26 12:59:44.0	8.0.0.0.0

» PRODUCTS IN THE APPLICATION PACK

ENABLE	PRODUCT ID	PRODUCT NAME	DESCRIPTION	ENABLE DATE
<input checked="" type="checkbox"/>	OFS_AAAI	Financial Services Enterprise Modeling	Base Infrastructure for Advanced Analytical Applications	2015-03-26 11:52:55.0
<input checked="" type="checkbox"/>	OFS_AAI	Financial Services Analytical Applications Infrastructure	Base Infrastructure for Analytical Applications Infrastructure	2015-03-26 11:52:55.0
<input checked="" type="checkbox"/>	OFS_AAIB	Financial Services Analytical Applications Infrastructure - Big Data Option	Base Infrastructure for Analytical Applications Infrastructure - Big Data Option	2015-04-01 17:01:59.246
<input checked="" type="checkbox"/>	OFS_IPE	Financial Services Inline Processing Engine	Framework for Inline Processing Engine	2015-03-26 11:52:55.0

VIEW LICENSE AGREEMENT RESET

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.

1.4.2 Grants to be given to METADOM Schema

Privilege Granted On (METADOM)	Target Resources of CONFIG Schema
<pre> 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 CREATE TABLE TO <DEVWLAMDOM> GRANT CREATE PROCEDURE TO <DEVWLAMDOM> grant create RULE to <DEVWLAMDOM> GRANT CREATE TRIGGER TO <DEVWLAMDOM> </pre>	<pre> 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 <DEVWLAMDOM>; grant select on <DEVXCACONF>.BATCH_TASK to <DEVWLAMDOM>; grant select on <DEVXCACONF>.CSSMS_USR_DSN_SEG_MAP to <DEVWLAMDOM>; </pre>

Privilege Granted On (METADOM)	Target Resources of CONFIG Schema
<pre>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></pre>	<pre>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>; grant select on <DEVXCACONF>.DB_MASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.DSNMASTER to <DEVWLAMDOM>;</pre>

Privilege Granted On (METADOM)	Target Resources of CONFIG Schema
	<pre> 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 <DEVXCACONF>.pr2_rule_map_exclude_pr_tmp to <DEVWLAMDOM>; grant insert on <DEVXCACONF.pr2_rule_map_exclude_pr_tmp> to <DEVWLAMDOM>; </pre>

Privilege Granted On (METADOM)	Target Resources of CONFIG Schema
	<pre> 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 <DEVWLAMDOM>; grant select on <DEVXCACONF>.FORMS_LOCALE_MASTER to <DEVWLAMDOM>; grant select on <DEVXCACONF>.mdb_object_dependencies to </pre>

Privilege Granted On (METADOM)	Target Resources of CONFIG Schema
	<pre> <DEVWLAMD0M>; grant select on <DEVXCACONF>.mdb_execution_details to <DEVWLAMD0M>; grant select on <DEVXCACONF>.REV_STAT_DATA to <DEVWLAMD0M>; grant select on <DEVXCACONF>.REV_OBJECT_REPOSITORY_B to <DEVWLAMD0M>; grant select on <DEVXCACONF>.REV_OBJECT_REPOSITORY_TL to <DEVWLAMD0M>; grant select on <DEVXCACONF>.REV_OBJECT_ATTRIBUTE_DTL_MLS to <DEVWLAMD0M>; grant select on <DEVXCACONF>.REV_OBJECT_APPLICATION_MAP to <DEVWLAMD0M>; grant select on <DEVXCACONF>.MDB_OBJ_EXPR_DETAILS to <DEVWLAMD0M>; grant select on <DEVXCACONF>.MDB_EXECUTION_DETAILS to <DEVWLAMD0M>; grant select on <DEVXCACONF>.REV_OBJECT_TYPES_CD to <DEVWLAMD0M>; grant select on <DEVXCACONF>.REV_OBJECT_TYPES_MLS to <DEVWLAMD0M>; grant select on <DEVXCACONF>.REV_APPLICATIONS_CD to <DEVWLAMD0M>; grant select on <DEVXCACONF>.REV_APPLICATIONS_MLS to <DEVWLAMD0M>; grant select on <DEVXCACONF>.METADATA_BROWSER_LOCALE to <DEVWLAMD0M>; grant select on <DEVXCACONF>.MDB_STAT_DATA to <DEVWLAMD0M>; grant select on <DEVXCACONF>.MDB_OBJECT_TYPE_LAYOUT to <DEVWLAMD0M>; grant select on <DEVXCACONF>.ofsa_md_id_ref to <DEVWLAMD0M>; grant select on <DEVXCACONF>.MDB_ETL_MAPPING to </pre>

Privilege Granted On (METADOM)	Target Resources of CONFIG Schema
	<pre> <DEVWLAMD0M>; grant select on <DEVXCACONF>.setupinfo to <DEVWLAMD0M>; grant select on <DEVXCACONF>.LOCALEREPOSITORY to <DEVWLAMD0M>; grant select on <DEVXCACONF>.MF_MODEL_MASTER to <DEVWLAMD0M>; grant select on <DEVXCACONF>.MF_SANDBOX_MASTER to <DEVWLAMD0M>; grant select on <DEVXCACONF>.MF_VARIABLE_MASTER to <DEVWLAMD0M>; grant select on <DEVXCACONF>.MF_TECHNIQUE_MASTER to <DEVWLAMD0M>; grant select on <DEVXCACONF>.ST_SCENARIO_SHOCK_DATA to <DEVWLAMD0M>; grant select on <DEVXCACONF>.MDB_RULE_SOURCE_HEADER to <DEVWLAMD0M>; grant select on <DEVXCACONF>.MDB_RULE_TARGET_HEADER to <DEVWLAMD0M>; grant select on <DEVXCACONF>.MDB_RULE_TARGET_MEMBER_HEADER to <DEVWLAMD0M>; grant select on <DEVXCACONF>.MDB_RULE_GRID_DATA to <DEVWLAMD0M>; grant select on <DEVXCACONF>.MDB_MODEL_MAPPING to <DEVWLAMD0M>; grant delete on <DEVXCACONF>.AAI_MAP_MAPPER to <DEVWLAMD0M>; grant insert on <DEVXCACONF>.AAI_MAP_MAPPER to <DEVWLAMD0M>; grant update on <DEVXCACONF>.AAI_MAP_MAPPER to <DEVWLAMD0M>; grant select on <DEVXCACONF>.AAI_MAP_MAPPER to <DEVWLAMD0M>; grant select on <DEVXCACONF>.MDB_OBJECTS_GROUPING to <DEVWLAMD0M>; grant select on </pre>

Privilege Granted On (METADOM)	Target Resources of CONFIG Schema
	<pre> <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>; </pre>

1.4.3 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
- 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.

1.4.4 Copying HDFS related jars to OFSAA

The HDFS jars deployed as part of Pivotal installation needs to be copied to OFSAAI 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 `$FIC_DB_HOME/lib` path of OFS AAI installation directory should be copied `$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

1.4.5 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](#).

1.4.6 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>
<HDFS SITE>Name of hdfs-site.xml</HDFS SITE>
<MAPRED SITE>Name of mapred-site.xml</MAPRED SITE>
<YARN SITE>Name of yarn-site.xml</YARN SITE>
<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/ofsaa/web/CHEF_OFSAA/OFS_CA_PACK/conf/clientconf</CONFPATH>
<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>sysadm</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
<code><HOST id="\$HOST\$" PRIMARY_NODE = "\$TRUE/FALSE\$" ></code>	<ul style="list-style-type: none">▪ Replace \$HOST\$ with IP Address/Host Name of the 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. <p>Note: Online execution will always happen on the primary node.</p>

Tag Name	Description
<pre><REMOTE_FILE_PATH>\$FILE_PATH\$</REMOTE_FILE_PATH></pre>	<ul style="list-style-type: none"> ▪ 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.
<pre><REMOTESERVICE_PORT>\$PORT\$</REMOTESERVICE_PORT></pre>	<p>Replace \$PORT\$ with the port configured for Rserve. The default Rserve port is 6311.</p>
<pre><USER> <NAME>\$USERNAME\$</NAME> <PASSWORD>\$PASSWORD\$</PASSWORD> </USER></pre>	<ul style="list-style-type: none"> ▪ 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.
<pre><IS_OUTPUT_REQ_IN_OFSAA>N</IS_OUTPUT_REQ_IN_OFSAA></pre>	<p>This flag indicates whether the outputs are written back in the framework tables. If the value is 'Y', then RJDBC package is required.</p>
<pre><IS_DETAILED_OUTPUT_REQUIRED>Y</IS_DETAILED_OUTPUT_REQUIRED></pre>	<p>This flag indicates whether the csv output file has to be created in the machine where models are executed.</p>
<pre><CLASS_NAME></pre>	<p>This flag indicates the implementation class for executing the script in different engines.</p>
<pre><INPUT_DATA_IN_FILE></pre>	<ul style="list-style-type: none"> ▪ This flag indicates input data is in file or not. If its blank the Data frame is created in R script.
<pre><PRE_SCRIPT_FILE></pre>	<p>This flag indicates the prescript to be appended to user script. By default R prescript is configured.</p>
<pre><POST_SCRIPT_FILE></pre>	<p>This flag indicates the post script to be appended to user script By default R postscript is configured.</p>
<pre><DELETE_RFILE></pre>	<p>This flag indicates the whether the script generated should be deleted or not. By default generated script file will be deleted.</p>
<pre><IS_OUTPUT_REQ_IN_OFSAA></pre>	<p>Enter Y if you want outputs in the OFSAA framework tables.</p>

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 infodomain after you execute the above scripts.

1.6.2 Creating Hive Sandbox and Metadata Schemas in Oracle

1. Create the hive sandbox and metadata schemas in Oracle by using a similar script to the following.

Following code assumes SBXWLAMDOME as metadata schema and RCACONF975 as config schema:

```
create user SBXWLAMDOME IDENTIFIED by password;
ALTER USER SBXWLAMDOME QUOTA UNLIMITED ON USERS;
grant create SESSION to SBXWLAMDOME;
grant create PROCEDURE to SBXWLAMDOME;
grant create SEQUENCE to SBXWLAMDOME;
grant create TABLE to SBXWLAMDOME;
grant create TRIGGER to SBXWLAMDOME;
grant create VIEW to SBXWLAMDOME;
grant create MATERIALIZED VIEW to SBXWLAMDOME;
grant create SYNONYM to SBXWLAMDOME;
GRANT CREATE SESSION TO SBXWLAMDOME
GRANT CREATE VIEW TO SBXWLAMDOME
GRANT CREATE SEQUENCE TO SBXWLAMDOME
GRANT CREATE TABLE TO SBXWLAMDOME
GRANT CREATE PROCEDURE TO SBXWLAMDOME
grant create RULE to SBXWLAMDOME
GRANT CREATE TRIGGER TO SBXWLAMDOME
grant create type to SBXWLAMDOME
```

```

grant select on SYS.V_$PARAMETER to SBXWLAMD0M
grant select on sys.dba_free_space to SBXWLAMD0M
grant select on sys.dba_tables to SBXWLAMD0M
grant select on sys.Dba_tab_columns to SBXWLAMD0M
GRANT CREATE SYNONYM TO SBXWLAMD0M
GRANT DEBUG CONNECT SESSION TO SBXWLAMD0M
GRANT DEBUG ANY PROCEDURE TO SBXWLAMD0M
GRANT CREATE MATERIALIZED VIEW TO SBXWLAMD0M
GRANT OLAP_USER TO SBXWLAMD0M
GRANT CONNECT TO SBXWLAMD0M
GRANT OLAP_USER TO SBXWLAMD0M
GRANT CREATE ANY MATERIALIZED VIEW TO SBXWLAMD0M
GRANT CREATE ANY TABLE TO SBXWLAMD0M
GRANT CREATE MATERIALIZED VIEW TO SBXWLAMD0M
GRANT CREATE PROCEDURE TO SBXWLAMD0M
GRANT CREATE SEQUENCE TO SBXWLAMD0M
GRANT CREATE SESSION TO SBXWLAMD0M
GRANT CREATE SYNONYM TO SBXWLAMD0M
GRANT CREATE TABLE TO SBXWLAMD0M
GRANT CREATE TRIGGER TO SBXWLAMD0M
GRANT CREATE TYPE TO SBXWLAMD0M
GRANT CREATE VIEW TO SBXWLAMD0M
GRANT DEBUG CONNECT SESSION TO SBXWLAMD0M

grant select on RCACONF975.CSSMS_USR_PROFILE to SBXWLAMD0M;
grant select on RCACONF975.CSSMS_ROLE_MAST to SBXWLAMD0M;
grant select on RCACONF975.CSSMS_GROUP_MAST to SBXWLAMD0M;
grant select on RCACONF975.CSSMS_FUNCTION_MAST to SBXWLAMD0M;
grant select on RCACONF975.CSSMS_USR_GROUP_MAP to SBXWLAMD0M;

```

```
grant select on RCACONF975.CSSMS_USR_GROUP_DSN_SEG_MAP to
SBXWLAMDODM;

grant select on RCACONF975.CSSMS_ROLE_FUNCTION_MAP to
SBXWLAMDODM;

grant select on RCACONF975.CSSMS_GROUP_ROLE_MAP to SBXWLAMDODM;
grant select on RCACONF975.CSSMS_SEGMENT_MAST to SBXWLAMDODM;
grant select on RCACONF975.BATCH_TASK to SBXWLAMDODM;
grant select on RCACONF975.CSSMS_USR_DSN_SEG_MAP to SBXWLAMDODM;
grant select on RCACONF975.CSSMS_USR_ROLE_MAP to SBXWLAMDODM;
grant select on RCACONF975.CSSMS_METADATA_SEGMENT_MAP to
SBXWLAMDODM;

grant select on RCACONF975.BATCH_RUN to SBXWLAMDODM;
grant select on RCACONF975.PR2_FILTERS to SBXWLAMDODM;
grant select on RCACONF975.PR2_TASK_FILTER to SBXWLAMDODM;
grant select on RCACONF975.PR2_TASK_FILTER_DETAIL to SBXWLAMDODM;
grant select on RCACONF975.ST_STRESS_MASTER to SBXWLAMDODM;
grant select on RCACONF975.ST_SCENARIO_MASTER to SBXWLAMDODM;
grant select on RCACONF975.ST_SHOCK_MASTER to SBXWLAMDODM;
grant select on RCACONF975.BATCH_MASTER to SBXWLAMDODM;
grant select on RCACONF975.ICC_MESSAGELOG to SBXWLAMDODM;
grant select on RCACONF975.PR2_MASTER to SBXWLAMDODM;
grant select on RCACONF975.PR2_RUN_REQUEST to SBXWLAMDODM;
grant select on RCACONF975.MF_MODEL_SCRIPT_MASTER to SBXWLAMDODM;
grant select on RCACONF975.MF_INPUT_VALUES to SBXWLAMDODM;
grant select on RCACONF975.MF_MODEL_OUTPUT_VALUES to SBXWLAMDODM;
grant select on RCACONF975.DB_MASTER to SBXWLAMDODM;
grant select on RCACONF975.DSNMASTER to SBXWLAMDODM;

grant select on RCACONF975.pr2_rule_map to SBXWLAMDODM;
grant delete on RCACONF975.pr2_rule_map_pr to SBXWLAMDODM;
```

```
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

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.

» Sandbox Definition	
Sandbox Name *	RCASANDBOX
Is a logical definition?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Source Dataset *	Sandbox dataset Channel Propensity Sandbox Dataset Weblog Dataset
Is data model upload required?	<input checked="" type="radio"/> Yes <input type="radio"/> No

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 ATTRITION 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/ofsaap
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_OFSA>N</IS_OUTPUT_REQ_IN_OFSA>
<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>REEXECUTION_SUFFIX_0 ,REEXECUTION_SUFFIX</POST_SC  
RIPT_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 folder.
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/ofsaapp/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.

Appendix A

Configuration for WebLog analytics on Hive Infodom

Prerequisite:

1. Create RDBMS schema for Hive Metadom corresponding to Hive Infodom.
2. Create database definition for the above created RDBMS schema. For more information, refer to the *Adding Database Detail for DB Server* section in [Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack User Guide – Release 8.0.3.0.0](#).
3. Copy Hadoop jars, Kerberos files, and client config of hadoop into `$FIC_HOME/ext/lib` and `$TOMCAT_HOME/webapps/<context>/WEB-INF/lib`. Following are the files for CDH 5.3.1
4. Create Hive Schema and create Database definition for the Hive Schema created. For more information, refer to the *Adding Database Detail for DB Server* section in [Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack User Guide – Release 8.0.3.0.0](#).
5. Create big data.
6. Create segment. For more information, refer to the *Segment Maintenance* section in [Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack User Guide – Release 8.0.3.0.0](#). Select the same Big Data Information Domain that has been created.
7. Map the required user group to the Big Data Information Domain. For more information, refer to the *User Group Domain Map* section in [Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack User Guide – Release 8.0.3.0.0](#).
8. Create Application
9. Assign the required role for the web analytics to the user group. For more information, refer to the *User Group Role Map* section in [Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack User Guide – Release 8.0.3.0.0](#).
10. Upload WLA Data Model. For more information, refer to the *Upload Business Model* section in [Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack User Guide – Release 8.0.3.0.0](#).

Appendix B

Frequently Asked Questions

What checks does the 8.0.3.0.0 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 9.2 and 9.5 generated xmls in addition to ERwin 4.1, ERwin 7.1, ERwin 7.3 and ERwin 9.0 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.

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
8.0.4.0.0 Installation and Configuration Guide

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