Oracle® Financial Services Price Creation and Discovery Installation and Configuration Guide





Oracle Financial Services Price Creation and Discovery Installation and Configuration Guide, Release 8.1.2.0.0

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1

Preface

This section provides information about the Oracle Financial Services Price Creation and Discovery Application Pack (OFS PCD Pack) Installation and Configuration Guide.

You can find the latest copy of this document in the OHC Documentation Library which includes all the recent additions and revisions (if any) done to date.

Before you begin the installation, ensure that you have access to My Oracle Support with the required login credentials to quickly notify us of any issues at any stage.

Topics:

- Intended Audience
- Related Documents
- Conventions
- Abbreviations

1.1 Intended Audience

The OFS PCD Pack Installation and Configuration Guide is intended for administrators, and implementation consultants who are responsible for installing and maintaining the application pack components.

Anyone performing the installation is expected to be experienced in installing enterprise components and possess basic knowledge of the following:

- OFS Price Creation and Discovery Application Pack components
- OFSAA architecture
- UNIX commands
- Database concepts
- Web server or web application server

1.2 Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For more information, visit My Oracle Support or visit Oracle Accessibility Learning and Support if you are hearing impaired.

1.3 Related Documents

We strive to keep this document and all other related documents updated regularly; visit the OHC Documentation Library to download the latest version available. The list of related documents is provided here.

OHC Documentation Library for the OFS PCD Pack

- Oracle Financial Services Price Creation and Discovery Release Notes
- OFS Price Creation and Discovery User Guide
- Oracle Financial Services Price Creation and Discovery Security Guide
- Oracle Financial Services Price Creation and Discovery Cloning Reference Guide

OHC Documentation Library for OFS AAAI Application Pack:

- OFS Analytical Applications Infrastructure Installation Guide
- OFS Analytical Applications Infrastructure User Guide
- OFS Analytical Applications Infrastructure Environment Check Utility Guide
- OFS Analytical Applications Infrastructure Application Pack Administration and Configuration Guide
- OFS AAAI Application Security Guide
- OFS Analytical Applications Infrastructure Cloning Guide

Other Documents

- OFSAA Licensing User Manual, Release 8.1.2.0.0
- OFS Analytical Applications 8.1.2.0.0 Technology Matrix

1.4 Conventions

The following text conventions are used in this document:

Table 1-1 Conventions Used in this Guide

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, file names, text that appears on the screen, or text that you enter.
Hyperlink	Hyperlink type indicates the links to external websites, internal document links to sections.

1.5 Abbreviations

The following table lists the abbreviations used in this document:

Abbreviation	Meaning
BDP	Big Data Processing
DBA	Database Administrator
DDL	Data Definition Language



Abbreviation	Meaning
DEFQ	Data Entry Forms and Queries
DML	Data Manipulation Language
EAR	Enterprise Archive
EJB	Enterprise JavaBean
ERM	Enterprise Resource Management
FTP	File Transfer Protocol
HDFS	Hadoop Distributed File System
HTTPS	Hypertext Transfer Protocol Secure
J2C	J2EE Connector
J2EE	Java 2 Enterprise Edition
JCE	Java Cryptography Extension
JDBC	Java Database Connectivity
JDK	Java Development Kit
JNDI	Java Naming and Directory Interface
JRE	Java Runtime Environment
JVM	Java Virtual Machine
LDAP	Lightweight Directory Access Protocol
LHS	Left Hand Side
MFA	Multi-Factor Authentication
MOS	My Oracle Support
OFSAA	Oracle Financial Services Analytical Applications
OFSAAI	Oracle Financial Services Analytical Application Infrastructure
OFSAAAI	Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack
OHC	Oracle Help Center
OLAP	On-Line Analytical Processing
OLH	Oracle Loader for Hadoop
ORAAH	Oracle R Advanced Analytics for Hadoop
os	Operating System
RAM	Random Access Memory
RDBMS	Relational Database Management System
RHEL	Red Hat Enterprise Linux
SFTP	Secure File Transfer Protocol
SID	System Identifier
SSL	Secure Sockets Layer
TNS	Transparent Network Substrate
URL	Uniform Resource Locator
VM	Virtual Machine
WAR	Web Archive
XML	Extensible Markup Language



2

About Oracle Financial Services Advanced Analytical Applications Infrastructure (OFSAAAI) Application Pack

Oracle Financial Services Advanced Analytical Applications Infrastructure (OFSAAAI) Application Pack provides integrated stress testing and modeling capabilities that you can readily apply across multiple risk areas enabling institutions to devise appropriate enterprisewide and holistic risk and economic capital strategies.

OFSAAAI enables you to comply with regulatory requirements on stress testing, enables advanced customer and portfolio analytics, utilize multiple industry-standard techniques, test and model with complete data integrity.

OFSAAAI Application Pack includes the following applications:

Financial Services Analytical Applications Infrastructure: This application powers the Oracle Financial Services Analytical Applications family of products to perform the processing, categorizing, selection and manipulation of data and information required to analyze, understand and report on specific performance, risk, compliance and customer insight issues by providing a strong foundation for the entire family of Oracle Financial Services Analytical Applications across the domains of Risk, Performance, Compliance and Customer Insight.

Financial Services Enterprise Modeling: This application helps banking institutions to identify the business opportunities and to measure the risk prevailing in the competitive market to safeguard the regulatory and economic capital of banks.

Financial Services Big Data Processing: This option introduces, into the OFSAA platform (OFSAAI), the capability to run analytics on data stored in Hadoop Distributed File System (HDFS).

With the Big Data Processing (BDP) add-on option, all core data management frameworks within OFSAA such as Data Management Framework (T2T/ F2T), Data Quality Framework, and Rules framework are enhanced to operate on both Oracle RDBMS data sources as well as Apache Hive data sources. An OFSAA Run definition can contain tasks that transform data held in the Hive. OFSAA applications that use these platform frameworks for expressing application logic automatically gain the ability to manage data held in the Hive. The OFSAA platform leverages HiveQL and Map Reduce to process data directly in the Hadoop cluster without having to stage data in a relational database.

Financial Services Inline Processing Engine: This application provides real-time monitoring, detection and interdiction of single and complex fraud events across multiple channels and lines of business.



2.1 Oracle Financial Services Analytical Applications Infrastructure (OFSAAI)

Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) powers the Oracle Financial Services Analytical Applications family of products to perform the processing, categorizing, selection and manipulation of data and information required to analyze, understand and report on specific performance, risk, compliance and customer insight issues by providing a strong foundation for the entire family of Oracle Financial Services Analytical Applications across the domains of Risk, Performance, Compliance and Customer Insight.

2.1.1 Components of OFSAAI

The OFSAA Infrastructure includes frameworks that operate on and with the Oracle Financial Services Analytical Applications Data Model and forms the array of components within the infrastructure.

The OFSAA Infrastructure components/frameworks are installed as two layers; primarily, the metadata server and Infrastructure services run on one layer, while the UI and presentation logic runs on the other. The UI and presentation layer is deployed on any of the supported J2EE Servers.

The following figure depicts the various frameworks and capabilities that make up the OFSAA Infrastructure.

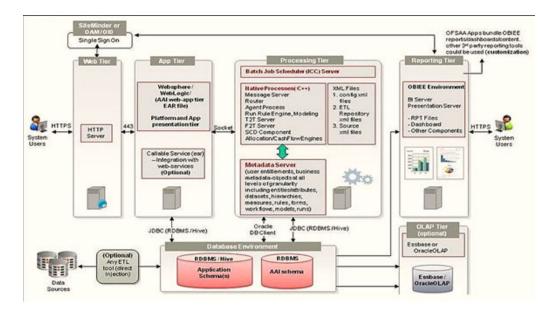


Figure 2-1 Components of OFSAAI

2.1.2 OFSAA Infrastructure High Availability

The current release of the OFSAA Infrastructure supports only the "Single Instance" installation for the Infrastructure components. However, the High Availability (HA) for

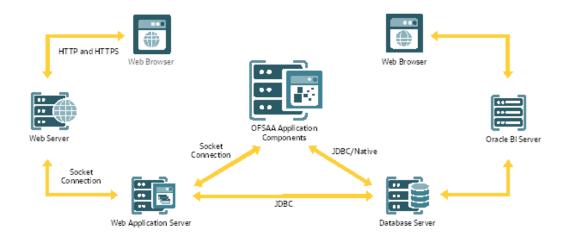
the Database Server and/ or the Web application server clustering and deployment are supported in this release.

This release supports the Active-Passive model of implementation for OFSAAI components. For more information, see Oracle Financial Services Analytical Applications Configuration for High Availability Best Practices Guide.

2.1.3 Deployment Topology

The following figure illustrates the deployment topology of OFSAA application packs.

Figure 2-2 Logical Architecture Implemented for OFSAA Application Packs



2.2 About Oracle Financial Services Analytical Applications Infrastructure Extension Pack

The Oracle Financial Services Analytical Applications Infrastructure Extension (OFS AAIE) Pack adds a set of new advanced features for 8.1.2.0.0 Release across OFSAA applications. This pack can be installed on an OFSAA instance having one or more OFSAA application packs.

The Oracle Financial Services Analytical Applications Infrastructure Extension Pack includes the following advanced features and functionalities:

- Distributed Processing Capabilities
- Analytic Pipeline and Process models
- Attribution Analysis
- Content Management Interoperability Services



The pack is enabled by procurement of an additional license. For more information, see the OFS AAIE Release Notes and Installation Guide on the OHC



2.3 OFS Price Creation and Discovery Application Pack

OFS Price Creation and Discovery Application Pack (OFS PCD Pack) provides integrated stress testing and modeling capabilities that you can readily apply across multiple risk areas enabling institutions to devise appropriate enterprise-wide and holistic risk and economic capital strategies.

OFS PCD Pack enables you to comply with regulatory requirements on stress testing, enables advanced customer and portfolio analytics, utilize multiple industry-standard techniques, test, and model with complete data integrity. OFS PCD Pack includes the following applications:

- Financial Services Analytical Applications Infrastructure: This application powers the Oracle Financial Services Analytical Applications family of products to perform the processing, categorizing, selection, and manipulation of data and information required to analyze, understand and report on specific performance, risk, compliance, and customer insight issues by providing a strong foundation for the entire family of Oracle Financial Services Analytical Applications across the domains of Risk, Performance, Compliance and Customer Insight.
- Oracle Financial Services Price Creation and Discovery: The Price Creation and Discovery application is intended to be used as a tool to aid a banker price an asset product or a liability product or a bundle across all enterprise product, for a customer while taking into account the customer and product attributes, depth of the customer, that is his or her relationship with the bank and the overall profitability at an account or customer level.
 The product satisfies the pricing needs of both retail as well as institutional customers through two-three methodologies Carded, Negotiated and User Input pricing. It enables the banker to take into account the TP rate and the capital charge components associated with the deal along with a projection of expenses, other revenue and all existing relationships (made available through the OFSAA FTP, Basel, and IPA/RPA products) to generate the rate. The rate thus generated

is saved and available for further analysis and tweaking through What-if analysis.

2.4 Installation Overview

Release 8.1.2.0.0 of OFS PCD Application Pack supports the fresh installation.

The following illustration shows the sequence of steps you need to follow to perform the installation.



Degin

Verify System Environment

Obtain the Software

Configure and Execute the Schema Creator Utility

Install the OFS Application Pack

Configure the OFS Application Pack

End

Figure 2-3 Installation Flow of OFSAA Application Packs



Complete Installation Checklist

For a successful installation, perform the steps listed in the Complete Installation Checklist. You can use this checklist to have a glance at everything that you do to install this application. The link provided in each step takes you to a section either within this document or to another referenced document.

Table 3-1 Pre-installation Checklist

SI. No.	Pre-installation Activity
1	Install all the prerequisite hardware and software given in the Tech Stack.
2	Verify the System Environment using the Environment Check Utility.
3	Configure the Database Instance settings.
4	Install and configure the web application server.
5	Configure the HTTP settings on the webserver.
6	Create the Installation, Download, and Metadata Repository Directories:
	Installation directory
	 Temporary directory
	Staging Area/Metadata RepositoryDownload directory
7	Configure the following Operating System and File System settings:
	File Descriptor
	 Total number of processes
	Port(s)
	 .profile file permissions
	 Add FTP/SFTP configuration for file transfer
8	Update the following Environment Settings required for the installation in the .profile file:
	 Java Settings
	 Oracle Database Server and Client Settings
	 Add TNS entries in the tnsnames.ora file
	Oracle Essbase Settings
	Time Zone Settings
9	Download the installer kit and erwin data models.
10	Perform prerequisites for installation.

Table 3-2 Installation Checklist

SI. No.	Installation Activity
1	Extract the installer kit.
2	Configure the OFS_PM_PACK.xml file.



Table 3-2 (Cont.) Installation Checklist

SI. No.	Installation Activity
3	Configure the OFS_PM_SCHEMA_IN.xml file.
4	Execute the Schema Creator Utility in Offline, Online, or TCPS modes and verify the log file.
5	Configure the OFSAAI_InstallConfig.xml file.
6	Configure the Silent.props file.
7	Trigger the application installation.

Table 3-3 Post-installation Checklist

SI. No.	Post-installation Activity
1	Verify the installation logs.
2	Patch OFSAA Infrastructure Installation.
3	Back up the SCHEMA_CREATOR.xml, OFS_PM_SCHEMA_OUTPUT.xml, and Silent.props files.
4	Stop the OFSAA Infrastructure services.
5	Create and deploy EAR/WAR files.
6	Start the OFSAA Infrastructure services.
7	Configure the webserver.
8	Configure the Resource Reference in web application servers.
9	Configure the Resource Reference in web application servers.
10	Access the OFSAA application.
11	OFSAA Landing Page
12	Change the ICC batch ownership.
13	Add TNS entries in the tnsnames.ora file.
14	Create Application Users.
15	Map the Application User(s) to User Groups.
16	Excel upload mapping and template.
17	Configure TDE and Data Redaction in OFSAAI.
18	18
19	Implement Data Protection in OFSAA.

Table 3-4 Additional Configuration

SI. No.	Additional Configuration Activity
1	Add FTP/SFTP Configuration for File Transfer.
2	Configure the Infrastructure Server Memory.
3	Retrieve the Patch Information
4	Change IP or Hostname, Ports, Deployed Paths of the OFSAA Instance.
5	Configure the Infrastructure LDAP.



Table 3-4 (Cont.) Additional Configuration

SI. No.	Additional Configuration Activity
6	Configure and deploy the OFSAAI web services.
7	Enable the parallel execution of DML statements.
8	Configure the message details in the Forms Designer.
9	Clear the application cache.
10	Configure the password changes.
11	Configure the Java Virtual Machine.
12	Configure the internal service (Document Upload/Download).



4

Hardware and Software Requirements

This section describes the Operating Systems, Database, Web Servers, and Web Application Server versions, and other variants on which this release of the OFS PCD Application Pack is qualified.

See the Oracle Financial Services Analytical Applications 8.1.2.0.0 Technology Matrix for the hardware and software required for OFSAAI Release 8.1.2.0.0.



OFS PCD Application Pack installation can be performed on both Virtual and Physical servers.

The following software combinations are recommended.

Table 4-1 Recommended Software Combination

Operating System	Database	Web Application Server	Web Server
Oracle Linux	Oracle Database	Oracle WebLogic Server/ Apache Tomcat Server	Oracle HTTP Server/ Apache HTTP Server
Oracle Solaris	Oracle Database	Oracle WebLogic Server/ Apache Tomcat Server	Oracle HTTP Server/ Apache HTTP Server

4.1 Third-party Licensing Information

For details on the third-party software tools used in OFS PCD Application Pack, see the OFSAA Licensing Information User Manual.

4.2 Verify System Environment

To verify your system environment meets the minimum requirements for the installation, a Pre-Install Check utility is available within the Install Kit archive file. This utility can also be obtained separately by contacting Oracle Support Services.

Though the system environment verification is an integral and automated part of the installation of this software product, Oracle strongly recommends running this utility before beginning the installation as part of your organization's "Installation Readiness Verification Process".

For more details on download and usage of this utility, see the Oracle Financial Services Analytical Applications Infrastructure Environment Check Utility Guide.

4.3 Oracle Database Instance Settings

Ensure that the following database instance settings are configured:

- NLS CHARACTERSET to AL32UTF8
- NLS LENGTH SEMANTICS to BYTE
- OPEN CURSORS limit to greater than 1000

4.4 Web Application Server Settings

Ensure that the web application server is installed and the profile (when using WebSphere) or domain (when using WebLogic) is created.

Note the path values as shown in the following table as you will be prompted to enter the WebSphere Profile path, the WebLogic Domain path, or the Tomcat Deployment path during OFSAAI installation.

Table 4-2 Web Application Server Settings

Description	Example Value
For WebSphere, specify the WebSphere path as <websphere directory="" profile="">/ installedApps/<nodecellname>.</nodecellname></websphere>	/data2/test//WebSphere/AppServer/ profiles/ <profile_name>/ installedApps/aiximfNode01Cell, where aix-imf is the Host name.</profile_name>
For WebLogic, specify the WebLogic home directory path.	<pre>/<weblogic directory="" home="" path="">/bea/ wlserver_10.3</weblogic></pre>
For Tomcat, specify the Tomcat directory path till /webapps.	/oradata6/ revwb7/tomcat/webapps/



See Configure the Web Server for WebSphere Profile and WebLogic Domain creation.

4.5 Web Server Settings

This is an optional requirement. If you have installed an HTTP Server, then configure the appropriate HTTP server settings:



Table 4-3 Web Server Settings

Description	Example Value
Apache HTTP Server/ Oracle HTTP Server/ IBM HTTP Server	Configure the HTTP Server and note down the IP/ Hostname and Port details as you will be prompted to enter these details during installation. Note: See Configure the Web Server for web server configuration.

4.6 Create the Installation, Download, and Metadata Repository Directories

To install OFSAAI, create the following directories:

- OFSAA Download Directory (Optional): This is the directory where the downloaded installer/ patches can be copied. Create a download directory and copy the OFSAA Application Pack Installer File (archive). Assign 755 permission to this directory.
- **Temporary Directory**: Default temporary directory where the installation files are stored for a short time to support faster installation. Configure adequate space on the /tmp directory. It is recommended that you allocate more than 10 GB of space. Assign 755 permission to this directory with NOEXEC option disabled.



If NOEXEC option is enabled, the extraction of files by the installer into the /tmp directory is prevented and the binaries will not execute in the directory, which will fail the installation.

- OFSAA Installation Directory (Mandatory): Create an installation directory where the product binaries are installed. Assign 755 user permission to the installation directory.
- OFSAA Staging/Metadata Directory (Mandatory): A directory to hold the application
 metadata artifacts and additionally act as the staging area for the flat files. This directory
 is also referred to as "FTPSHARE". Create a Staging/Metadata Repository Directory to
 copy data files, save data extracts, and so on.

The directory must exist on the same system as the OFSAA Installation. This directory can be configured on a different mount or under a different user profile. However, the owner of the installation directory must have RWX (775) permissions to this directory.



Ensure the OFSAA staging directory is not set to the same path as the OFSAA installation directory and is not a subdirectory inside the OFSAA installation directory.



4.7 Configure the OS File System Settings and Environment Settings in the .profile File

A .profile file is a start-up file of a UNIX user. Create the .profile file at the home directory of the logged-in user if it is not already available. The user must have 755 permission on the file to execute it. This file consists of various parameters for Environment Settings, OS, and File System Settings.

To set the parameters for the .profile file, login as a non-root user, and configure the environment settings.



Do not modify any other parameters other than the parameters mentioned in the following subsections.

4.7.1 Configure Operating System and File System Settings

Parameter	Configuration Action
Installation Directory	In the .profile file, set the variable
	FIC_HOME to point to the OFSAA Installation
	Directory.



Parameter	Configuration Action
File Descriptor Settings	In the sysctl.conf file, to change the number of file descriptors, do the following as the root user:
	<pre>1. Edit the following line in the /etc/ sysctl.conf file: fs.file-max = <value> where <value> is greater than 15000</value></value></pre>
	 Apply the change by running the following command: # /sbin/ sysctl -p
	Note:

The value specified here is the minimum value to be set for the installation process to go forward. For other modules, this value may depend on the available resources and the number of processes executed in parallel.



Parameter	Configuration Action
Total Number of Process Settings	In the sysctl.conf File set the value to greater than 15000.
	The value specified here is the Minimum Value to be set for the Installation Process to go forward. For other modules, this value may depend on the available resources and the number of processes executed in parallel.
Port Settings	Default port numbers to be enabled on the system are 6500, 6501, 6505, 6507, 6509, 6510, 6666, 9999, and 10101.

4.7.2 Configure the Environment Settings

4.7.2.1 Java Settings

Description	Example Value	
In the .profile file, set PATH to include the Java Runtime Environment (JRE) absolute path.	For example: PATH=/usr/java/ jre1.8.0_221/bin:\$ORACLE_ HOME/ bin:\$PATH	
Ensure that SYMBOLIC links to JAVA installation are not set in the PATH variable.	export PATH	
	Note:	
	OFSAA does not support Open IDK and	



JRE.

Description	Example Value
In the .profile file, set PATH to include the Java Runtime Environment bin path.	JAVA_BIN=/scratch/ < <version>>/jre/bin</version>
	For example:
	PATH=/usr/java/jre1.8.0_221/ bin:\$ORACLE_ HOME/bin:\$PATH
Enable unlimited cryptographic policy for Java.	For more information, see the section <i>Enabling Unlimited Cryptographic Policy</i> from the OFS Analytical Applications Infrastructure Administration Guide.

4.7.2.2 Oracle Database Server and Client Settings

Description	Example Value
In the .profile file, set TNS_ADMIN pointing to the appropriate tnsnames.ora file.	TNS_ADMIN=\$HOME/tns
In the .profile file, set ORACLE_HOME pointing to the appropriate Oracle Client installation.	ORACLE_HOME=/scratch/oraofss/app_client18c/product/ 18.0.0/client_1
In the .profile file, set PATH to include the appropriate \$ORACLE_HOME/bin path.	PATH=\$JAVA_HOME/bin:\$ORACLE_HOME/bin

4.7.2.3 TNS entries in the TNSNAMES.ORA file for Non-TCPS and TCPS

4.7.2.3.1 Non-TCPS

Description	Example Value
Ensure that an entry (with SID/ SERVICE NAME) is added in the thinnames.ora file on the OFSAA server.	<pre> <sid_name> = DESCRIPTION =(ADDRESS_LIST = (ADDRESS = (PROTOCOL = TCP)(HOST = <host_name>.in.oracle.com) (PORT = 1521)))(CONNECT_DATA = (SERVICE_NAME = <sid_name>)))<atomic_schema_name> = (DESCRIPTION = (ADDRESS_LIST = (ADDRESS = (PROTOCOL = TCP)(HOST = <host_name>.in.oracle.com)(PORT = 1521))) (CONNECT_DATA = (SERVICE_NAME = <sid_name>))) </sid_name></host_name></atomic_schema_name></sid_name></host_name></sid_name></pre>

```
<SID NAME> =

(DESCRIPTION =

    (ADDRESS_LIST =

          (ADDRESS = (PROTOCOL = TCP) (HOST = <HOST
          NAME>) (PORT = <PORT NUMBER>))

)

(CONNECT_DATA =
```

```
(SERVICE_NAME = <SID NAME>)
)

<ATOMICSCHEMANAME> =

(DESCRIPTION =

(ADDRESS_LIST =

   (ADDRESS = (PROTOCOL = TCP) (HOST = <HOST NAME>) (PORT = <PORT NUMBER>))
)

(CONNECT_DATA =
```

Note:

The ATOMIC SCHEMA NAME must be the same as defined in the OFS_<App Pack>_SCHEMA_IN.xml file.

4.7.2.3.2 TCPS

Table 13: TNS entries in the TNSNAMES.ORA file for TCPS

Description	Example Value
Ensure that an entry (with SID/ SERVICE NAME) is added in the tnsnames.ora file on the OFSAA server.	<pre> <sid_name> = DESCRIPTION</sid_name></pre>



Description	Example Value
Ensure that an entry (with WALLET_HOME and wallet parameters) is added in the sqlnet.ora file on the OFSAA server must be same as Oracle database server running with TCPS.	NAMES.DIRECTORY_PATH= (TNSNAMES, EZCONNECT)WALLET_LOCATION = (SOURCE = (METHOD = FILE) (METHOD_DATA = (DIRECTORY = <path directory="" to="" wallet="">)))SQLNET.WALLET_OVERRID E = TRUE SSL_CLIENT_AUTHENTICATION = FALSE</path>
	SQLNET.AUTHENTICATION_SERVICES = (TCPS,NTS,BEQ)
	SSL_CIPHER_SUITES = (SSL_RSA_WITH_AES_256_CBC_SHA, SSL_RSA_WITH_3DES_EDE_CBC_SHA)

```
<SID NAME> =
          (DESCRIPTION =
          (ADDRESS LIST =
           (ADDRESS = (PROTOCOL = TCPS) (HOST = <HOST NAME>) (PORT = <PORT
          NUMBER>))
          (CONNECT DATA =
           (SERVICE NAME = <SID NAME>)
(security=(ssl server cert dn=CN=<HOST NAME>))
          ) <ATOMICSCHEMANAME>=
           (DESCRIPTION =
             (ADDRESS LIST =
(ADDRESS = (PROTOCOL = TCPS) (HOST = <HOST NAME>) (PORT = <PORT
          NUMBER>))
          (CONNECT DATA =
      (SERVICE NAME = <SID NAME>) (security=(ssl server cert dn=CN=<HOST
            NAME>))
```

Note:

The ATOMIC SCHEMA NAME must be the same as defined in the OFS_<App Pack>_SCHEMA_IN.xml file, which also includes prefix without underscore. For example, DEVOFSAAATM.

4.7.2.4 Oracle Essbase Settings

In the .profile file, set the following parameters if you want to use Oracle Hyperion Essbase OLAP features.



Description	Example Value
ARBORPATH to point to an appropriate Oracle Essbase Client installation.	PATH=\$PATH:\$ARBORPATH/bin
ESSBASEPATH to point to an appropriate Oracle Essbase Client installation.	ESSBASEPATH=/scratch/essps3/Oracle/ MiddlewareHome/EPMSystem11R1/common/ EssbaseRTC-64/11.1.2.0
	export ESSBASEPATH
HYPERION_HOME to point to an appropriate Oracle Essbase Client installation.	HYPERION_HOME=/scratch/essps3/ Oracle/MiddlewareHome/EPMSystem11R1/ common/EssbaseRTC-64/11.1.2.0 export HYPERION_HOME

4.7.2.5 Time Zone Settings

In the .profile file, set the Time Zone parameter to indicate the time zone of your region/ location.

Description	Example Value
Time Zone	TZ=Asia/Calcutta

4.8 Remove ContextDocLoader from the web.xml File in WebLogic

Before deploying OFS PCD application, remove or comment the ContextDocLoader from the web.xml file for WebLogic, follow these steps:

- 1. Navigate to the <code>\$FIC_WEB_HOME/pcd.war/WEB-INF/web.xml</code> folder.
- 2. Open the web.xml file in a text editor.
- Search for ContextDocLoader parameter and remove or comment the following servlet entry:

```
<servlet>
<servlet-name>context</servlet-name>
<servlet-
class>com.ofs.fsapps.commonapps.core.summary.common.ContextDocLoade
r</servlet-class>
<load-on-startup>1</load-on-startup>
</servlet>
```



5

Pre-installation

This section contains the pre-installation requirements to install the OFS PCD Application Pack.

Topics:

- Pre-installation Checklist
- Preparing for Installation

5.1 Pre-installation Checklist

(Required) <Enter a short description here.>

You can use this checklist to have a glance at everything that you do before installing this application. The link provided in each step takes you to a section either within this document or to another referenced document.

Table 5-1 Pre-installation Checklist

SI. No.	Pre-installation Activity
1	Install all the prerequisite hardware and software given in the Tech Stack.
2	Verify the System Environment using the Environment Check Utility.
3	Configure the Database Instance settings.
4	Install and configure the web application server.
5	Configure the HTTP settings on the webserver.
6	Create the Installation, Download, and Metadata Repository Directories:
	 Installation directory Temporary directory Staging Area/Metadata Repository Download directory
7	Configure the following Operating System and File System settings:
	 File Descriptor Total number of processes Port(s) .profile file permissions Add FTP/SFTP configuration for file transfer



Table 5-1 (Cont.) Pre-installation Checklist

SI. No.	Pre-installation Activity
8	Update the following Environment Settings required for the installation in the .profile file:
	 Java Settings
	 Oracle Database Server and Client Settings
	 Add TNS entries in the tnsnames.ora file
	 Oracle Essbase Settings
	 Time Zone Settings
9	Download the installer kit and erwin data models.
10	Perform prerequisites for installation.

5.2 Preparing for Installation

This section describes how to download the installer and the mandatory prerequisites you must ensure installing the OFS PCD Pack.

5.2.1 Download the OFS PCD Application Pack Installer and Erwin Data Models

To download the OFS PCD Application Pack Installer Release v8.1.2.0.0, follow these steps:

- 1. Log in to the Oracle Software Delivery Cloud with a valid Oracle account.
- 2. Search for the full product name Oracle Financial Services Price Creation and Discovery Application Pack and download the installer archive.
- Download the installer archive and copy (in Binary mode) to the download directory in the setup identified for OFS PCD Application Pack installation. You can search for the patch number in the Patches and Updates tab and download it.
- 4. Download the following erwin data model from My Oracle Support:
 - OFS PCD erwin data model: Patch ID 34637009.
 You can search for the patch number in the Patches and Updates tab and download it.



Note:

Data model patches are now released at the granularity of each application. This is in contrast to the strategy followed for OFS PCD Application Pack 8.0.x releases, where data model patches were only released at the pack level. Customers must download the data models as per the application licenses they hold and merge them with the custom data model.

- The installer only uploads the data model of the selected applications. Data models of the unselected or unlicensed applications are not uploaded, that is data model upload is skipped for the unselected or unlicensed applications.
- The installer only executes the installer scripts of the selected applications.
 Scripts of the unselected or unlicensed applications are not executed and are skipped.
- If all applications in the pack are selected, then the installer handles both the data model upload and the installation scripts execution.

5.2.2 Prerequisites for Installation

Before beginning the installation, ensure that:

- You have executed the .profile file.
- Apex 21.1 and ORDS 21.1.3.153.1102 Software Installation to Database.

5.2.2.1 Apex 21.1 and ORDS 21.1.3.153.1102 Software Installation to Database

To install Apex 21.1 and ORDS 21.1.3.153.1102 software, follow these steps:

- 1. Ensure that Apex 21.1 is installed.
 - a. Download the APEX 21.1 software from the following link: Oracle APEX

b. Installation Guide from the following link: Oracle APEX Installation Guide

- 2. Install ORDS.
 - a. Download the ORDS 21.1.3.153.1102 software from the following link: Oracle REST Data Services

b. Installation Guide
Oracle REST Data Services Installation Guide

5.2.2.1.1 Mandatory Steps during ORDS Installation

The following are the mandatory steps to follow while installing the ORDS:

Unzip the ORDS distribution as follows:

```
cd /scratch/<user>/ORDS
unzip ords-21.1.3.153.1102.zip
```

1. Make a directory to hold the configuration under the ORDS zip kit path.



mkdir -p /scratch/<user>/ORDS/conf

2. Edit the following details in the ords/params/ords_params.properties file provided with the ORDS software such as hostname, port, and servicename.

Figure 5-1 ords_params.properties File

```
db.hostname=whf00be1
db.port=1521
db.servicename=OFSAAWS2
db.sid=
db.username=AFEX_PUBLIC_USER
migrate.apex.rest=false
rest.services.apex.add=
rest.services.ords.add=true
schema.tablespace.default=SYSAUX
schema.tablespace.temp=TEMP
standalone.http.port=8080
standalone.static.images=
user.tablespace.default=USERS
user.tablespace.temp=TEMP
```

3. Use the ords.war file to specify the configuration directory using the following command.

```
java -jar ords.war configdir /scratch/<user>/ORDS/conf
```

4. Configure ORDS using the following command.

```
java -jar ords.war
```

Database connection and URL mapping ORDS commands.Ensure that ofsaa is the database connection name. Run the following command.

```
java -jar ords.war setup --database ofsaa
```

Create a URL mapping to the new database connection by running the following command.

```
$JAVA_HOME/bin/java -jar ords.war map-url --type base-path /ofsaa ofsaa
```

Copy the Apex images from its Apex installer Kit extract to webapps path(deployment location in server):

```
mkdir $CATALINA_HOME/webapps/i/
```

```
cp -R /scratch/<user>/Apex/apex/images/* $CATALINA_HOME/webapps/i/
```

- 8. Deploy ORDS on server like Tomcat or WebLogic.
 - If it is Tomcat configure server.xml with ords context name.
 - In WebLogic deploy and create the datasource for ords as well.

For deploying on WebLogic server, follow these steps:

 In the setup where apex images are present run below command which will generate i.war.

```
jar -cvf i.war -C apex/images
```

- **b.** Move the configuration folder of ORDS setup to the WebLogic host location.
- c. Create a folder at the deployed location ords.ear.



- d. Create ords.war folder in the ords.ear folder and place ords.war in it.
- e. Inflate the ords.war file using the command: jar -xvf ords.war
- f. Update the web.xml file in ords.war/WEBINF/ to give config.dir path.
- g. Delete the ords.war file in ords.war folder.
- h. Create a folder at the deployed location i.ear.
- i. Create i.war folder in the i.ear folder and place i.war in it.
- j. Inflate the i.war file using command: jar -xvf i.war
- k. Delete the i.war file in the i.war folder.
- I. Navigate to the WebLogic console and then deploy i.war and ords.war.
- 9. Check the conf path (/scratch/<user>/ORDS/conf) in the web.xml file of ords if it is correctly configured. This path holds the configurations for ords. <deployed path>/ords/WEB-INF/web.xml



CORS filter needs to be enabled in ords to avoid CORS-related vulnerabilities.

- 10. This filter to be added to the web.xml file at <deployed path>/ords/WEB-INF/web.xml.
- 11. Start the Servers.

5.2.3 Add Atomic Schema Details in the tnsnames.ora File

Add TNS entries in the tnsnames.ora file for every Schema created for the Application Pack.

To add the Atomic Schema in the tnsnames.ora file, follow these steps:

- 1. Log in to the system as a non-root user.
- 2. Navigate to the OFS PM PACK/Schema Creator/conf directory.
- 3. Edit the tnsnames.ora file using a text editor and add the Atomic Schema as follows and save the file.

```
<ATOMICSCHEMANAME> =
  (DESCRIPTION =
   (ADDRESS_LIST =
    (ADDRESS = (PROTOCOL = TCP) (HOST = <HOST NAME>) (PORT = <PORT NUMBER>)))
)
(CONNECT_DATA =
  (SERVICE_NAME = <SID NAME>)
)
```

5.3 Oracle Database Instance Settings

Ensure that the following database instance settings are configured:

NLS_CHARACTERSET to AL32UTF8

- NLS_LENGTH_SEMANTICS to BYTE
- OPEN CURSORS limit to greater than 1000

5.4 Web Application Server Settings

Ensure that the web application server is installed and the profile (when using WebSphere) or domain (when using WebLogic) is created.

Note the path values as shown in the following table as you will be prompted to enter the WebSphere Profile path, the WebLogic Domain path, or the Tomcat Deployment path during OFSAAI installation.

Table 5-2 Web Application Server Settings

Description	Example Value
For WebSphere, specify the WebSphere path as <websphere directory="" profile="">/installedApps/<nodecellname>.</nodecellname></websphere>	/data2/test//WebSphere/AppServer/ profiles/ <profile_name>/ installedApps/aiximfNode01Cell, where aix-imf is the Host name.</profile_name>
For WebLogic, specify the WebLogic home directory path.	<pre>/<weblogic directory="" home="" path="">/bea/ wlserver_10.3</weblogic></pre>
For Tomcat, specify the Tomcat directory path till /webapps.	/oradata6/ revwb7/tomcat/webapps/



See Configure the Web Server for WebSphere Profile and WebLogic Domain creation.

5.5 Web Server Settings

This is an optional requirement. If you have installed an HTTP Server, then configure the appropriate HTTP server settings:

Table 5-3 Web Server Settings

Description	Example Value
Apache HTTP Server/ Oracle HTTP Server/ IBM HTTP Server	Configure the HTTP Server and note down the IP/ Hostname and Port details as you will be prompted to enter these details during installation.
	Note: See Configure the Web Server for web server configuration.



5.6 Create the Installation, Download, and Metadata Repository Directories

To install OFSAAI, create the following directories:

- OFSAA Download Directory (Optional): This is the directory where the downloaded installer/ patches can be copied. Create a download directory and copy the OFSAA Application Pack Installer File (archive). Assign 755 permission to this directory.
- **Temporary Directory**: Default temporary directory where the installation files are stored for a short time to support faster installation. Configure adequate space on the /tmp directory. It is recommended that you allocate more than 10 GB of space. Assign 755 permission to this directory with NOEXEC option disabled.



If NOEXEC option is enabled, the extraction of files by the installer into the /tmp directory is prevented and the binaries will not execute in the directory, which will fail the installation.

- **OFSAA Installation Directory (Mandatory)**: Create an installation directory where the product binaries are installed. Assign 755 user permission to the installation directory.
- OFSAA Staging/Metadata Directory (Mandatory): A directory to hold the application
 metadata artifacts and additionally act as the staging area for the flat files. This directory
 is also referred to as "FTPSHARE". Create a Staging/Metadata Repository Directory to
 copy data files, save data extracts, and so on.

The directory must exist on the same system as the OFSAA Installation. This directory can be configured on a different mount or under a different user profile. However, the owner of the installation directory must have RWX (775) permissions to this directory.



Ensure the OFSAA staging directory is not set to the same path as the OFSAA installation directory and is not a subdirectory inside the OFSAA installation directory.

5.7 Configure the OS File System Settings and Environment Settings in the .profile File

A .profile file is a start-up file of a UNIX user. Create the .profile file at the home directory of the logged-in user if it is not already available. The user must have 755 permission on the file to execute it. This file consists of various parameters for Environment Settings, OS, and File System Settings.

To set the parameters for the .profile file, login as a non-root user, and configure the environment settings.





Do not modify any other parameters other than the parameters mentioned in the following subsections.

5.7.1 Configure Operating System and File System Settings

Parameter	Configuration Action
Installation Directory	In the .profile file, set the variable FIC_HOME to point to the OFSAA Installation Directory.
File Descriptor Settings	In the sysctl.conf file, to change the number of file descriptors, do the following as the root user:
	<pre>1. Edit the following line in the /etc/ sysctl.conf file: fs.file-max = <value> where <value> is greater than 15000</value></value></pre>
	 Apply the change by running the following command: #/sbin/ sysctl -p

Note:

The value specified here is the minimum value to be set for the installation process to go forward. For other modules, this value may depend on the available resources and the number of processes executed in parallel.



Parameter	Configuration Action	
Total Number of Process Settings	In the sysctl.conf File set the value to greater than 15000.	
	The value specified here is the Minimum Value to be set for the Installation Process to go forward. For other modules, this value may depend on the available resources and the number of processes executed in parallel.	
Port Settings	Default port numbers to be enabled on the system are 6500, 6501, 6505, 6507, 6509, 6510, 6666, 9999, and 10101.	

5.7.1.1 Configure the Environment Settings

5.7.1.1.1 Java Settings

Description	Example Value		
In the .profile file, set PATH to include the Java Runtime Environment (JRE) absolute path.	For example: PATH=/usr/java/jre1.8.0_221/bin:\$ORACLE_ HOME/bin:\$PATH		
Ensure that SYMBOLIC links to JAVA installation are not set in the PATH variable.	export PATH		
	Note: OFSAA does not support OpenJDK and JRE.		

In the .profile file, set PATH to include the Java $\,$ JAVA_BIN=/scratch/<<version>>/jre/bin $\,$ Runtime Environment bin path.

For example:

PATH=/usr/java/jre1.8.0_221/ bin:\$ORACLE_ HOME/bin:\$PATH



Description	Example Value
Enable unlimited cryptographic policy for Java.	For more information, see the section <i>Enabling Unlimited Cryptographic Policy</i> from the OFS Analytical Applications Infrastructure Administration Guide.

5.7.1.1.2 Oracle Database Server and Client Settings

Description	Example Value
In the .profile file, set TNS_ADMIN pointing to the appropriate tnsnames.ora file.	TNS_ADMIN=\$HOME/tns
In the .profile file, set ORACLE_HOME pointing to the appropriate Oracle Client installation.	ORACLE_HOME=/scratch/oraofss/ app_client18c/product/ 18.0.0/client_1
In the .profile file, set PATH to include the appropriate \$ORACLE_HOME/bin path.	PATH=\$JAVA_HOME/ bin:\$ORACLE_HOME/bin

5.7.1.1.3 TNS entries in the TNSNAMES.ORA file for Non-TCPS and TCPS

5.7.1.1.3.1 Non-TCPS

Description	Example Value
Ensure that an entry (with SID/ SERVICE NAME) is added in the thinnames.ora file on the OFSAA server.	<pre> <sid_name> = DESCRIPTION</sid_name></pre>



```
(ATOMICSCHEMANAME> =

(DESCRIPTION =

    (ADDRESS_LIST =

        (ADDRESS = (PROTOCOL = TCP) (HOST = <HOST NAME>) (PORT = <PORT NUMBER>))

)

(CONNECT DATA =
```

Note:

The ATOMIC SCHEMA NAME must be the same as defined in the OFS_<App Pack>_SCHEMA_IN.xml file.

5.7.1.1.3.2 TCPS

Table 13: TNS entries in the TNSNAMES.ORA file for TCPS

Description	Example Value
Ensure that an entry (with SID/ SERVICE NAME) is added in the tnsnames.ora file on the OFSAA server.	<pre> <sid_name> = DESCRIPTION</sid_name></pre>



Description	Example Value	
Ensure that an entry (with WALLET_HOME and wallet parameters) is added in the sqlnet.ora file on the OFSAA server must be same as Oracle database server running with TCPS.	NAMES.DIRECTORY_PATH= (TNSNAMES, EZCONNECT)WALLET_LOCATION = (SOURCE = (METHOD = FILE) (METHOD_DATA = (DIRECTORY = <path to="" wallet<br="">DIRECTORY>)))SQLNET.WALLET_OVERRIDE = TRUE SSL_CLIENT_AUTHENTICATION = FALSE</path>	
	SQLNET.AUTHENTICATION_SERVICES = (TCPS,NTS,BEQ)	
	SSL_CIPHER_SUITES = (SSL_RSA_WITH_AES_256_CBC_SHA, SSL_RSA_WITH_3DES_EDE_CBC_SHA)	

```
<SID NAME> =
          (DESCRIPTION =
          (ADDRESS LIST =
           (ADDRESS = (PROTOCOL = TCPS) (HOST = <HOST NAME>) (PORT =
<PORT
          NUMBER>))
          )
          (CONNECT DATA =
           (SERVICE NAME = <SID NAME>)
(security=(ssl server cert dn=CN=<HOST NAME>))
          ) <ATOMICSCHEMANAME>=
           (DESCRIPTION =
             (ADDRESS LIST =
(ADDRESS = (PROTOCOL = TCPS) (HOST = <HOST NAME>) (PORT = <PORT
          NUMBER>))
          (CONNECT DATA =
      (SERVICE NAME = <SID NAME>) (security=(ssl server cert dn=CN=<HOST
            NAME>))
          )
```

Note:

The ATOMIC SCHEMA NAME must be the same as defined in the OFS_<App Pack>_SCHEMA_IN.xml file, which also includes prefix without underscore. For example, DEVOFSAAATM.

5.7.1.1.4 Oracle Essbase Settings

In the .profile file, set the following parameters if you want to use Oracle Hyperion Essbase OLAP features.

Description	Example Value
-------------	---------------

ARBORPATH to point to an appropriate Oracle PATH=\$PATH: \$ARBORPATH/bin Essbase Client installation.

Description	Example Value	
ESSBASEPATH to point to an appropriate Oracle Essbase Client installation.	ESSBASEPATH=/scratch/essps3/Oracle/MiddlewareHome/EPMSystem11R1/common/EssbaseRTC-64/11.1.2.0	
	export ESSBASEPATH	
HYPERION_HOME to point to an appropriate Oracle Essbase Client installation.	HYPERION_HOME=/scratch/essps3/ Oracle/MiddlewareHome/EPMSystem11R1/ common/EssbaseRTC-64/11.1.2.0	
	export HYPERION_HOME	

5.7.1.1.5 Time Zone Settings

In the .profile file, set the Time Zone parameter to indicate the time zone of your region/ location.

Description	Example Value
Time Zone	TZ=Asia/Calcutta

5.7.2 Preparing for Installation

This section describes how to download the installer and the mandatory prerequisites you must ensure installing the OFS PCD Pack.

5.7.2.1 Download the OFS PCD Application Pack Installer and Erwin Data Models

To download the OFS PCD Application Pack Installer Release v8.1.2.0.0, follow these steps:

- 1. Log in to the Oracle Software Delivery Cloud with a valid Oracle account.
- 2. Search for the full product name Oracle Financial Services Price Creation and Discovery Application Pack and download the installer archive.
- Download the installer archive and copy (in Binary mode) to the download directory in the setup identified for OFS PCD Application Pack installation.You can search for the patch number in the Patches and Updates tab and download it.
- 4. Download the following erwin data model from My Oracle Support:
 - OFS PCD erwin data model: Patch ID 34637009.
 You can search for the patch number in the Patches and Updates tab and download it.



Note:

Data model patches are now released at the granularity of each application. This is in contrast to the strategy followed for OFS PCD Application Pack 8.0.x releases, where data model patches were only released at the pack level. Customers must download the data models as per the application licenses they hold and merge them with the custom data model.

- The installer only uploads the data model of the selected applications.
 Data models of the unselected or unlicensed applications are not uploaded, that is data model upload is skipped for the unselected or unlicensed applications.
- The installer only executes the installer scripts of the selected applications. Scripts of the unselected or unlicensed applications are not executed and are skipped.
- If all applications in the pack are selected, then the installer handles both the data model upload and the installation scripts execution.

5.7.2.2 Prerequisites for Installation

Before beginning the installation, ensure that:

- You have executed the .profile file.
- Apex 21.1 and ORDS 21.1.3.153.1102 Software Installation to Database.

5.7.2.2.1 Apex 21.1 and ORDS 21.1.3.153.1102 Software Installation to Database

To install Apex 21.1 and ORDS 21.1.3.153.1102 software, follow these steps:

- 1. Ensure that Apex 21.1 is installed.
 - a. Download the APEX 21.1 software from the following link: Oracle APEX

b. Installation Guide from the following link: Oracle APEX Installation Guide

- 2. Install ORDS.
 - a. Download the ORDS 21.1.3.153.1102 software from the following link: Oracle REST Data Services

b. Installation Guide Oracle REST Data Services Installation Guide

5.7.2.2.1.1 Mandatory Steps during ORDS Installation

The following are the mandatory steps to follow while installing the ORDS:

Unzip the ORDS distribution as follows:

```
cd /scratch/<user>/ORDS
unzip ords-21.1.3.153.1102.zip
```

1. Make a directory to hold the configuration under the ORDS zip kit path.



```
mkdir -p /scratch/<user>/ORDS/conf
```

2. Edit the following details in the ords/params/ords_params.properties file provided with the ORDS software such as hostname, port, and servicename.

Figure 5-2 ords_params.properties File

```
db.hostname=whf00be1
db.port=1521
db.servicename=OFSAAWS2
db.sid=
db.username=AFEX_PUBLIC_USER
migrate.apex.rest=false
rest.services.apex.add=
rest.services.ords.add=true
schema.tablespace.default=SYSAUX
schema.tablespace.temp=TEMP
standalone.static.images=
user.tablespace.default=USERS
user.tablespace.temp=TEMP
```

- 3. Use the ords.war file to specify the configuration directory using the following command. java -jar ords.war configdir /scratch/<user>/ORDS/conf
- Configure ORDS using the following command. java -jar ords.war
- Database connection and URL mapping ORDS commands.Ensure that ofsaa is the database connection name. Run the following command.

```
java -jar ords.war setup --database ofsaa
```

Create a URL mapping to the new database connection by running the following command.

```
$JAVA HOME/bin/java -jar ords.war map-url --type base-path /ofsaa ofsaa
```

7. Copy the Apex images from its Apex installer Kit extract to webapps path(deployment location in server):

```
mkdir $CATALINA_HOME/webapps/i/
cp -R /scratch/<user>/Apex/apex/images/* $CATALINA HOME/webapps/i/
```

- 8. Deploy ORDS on server like Tomcat or WebLogic.
 - If it is Tomcat configure server.xml with ords context_name.
 - In WebLogic deploy and create the datasource for ords as well.

For deploying on WebLogic server, follow these steps:

a. In the setup where apex images are present run below command which will generate i.war.

```
jar -cvf i.war -C apex/images
```

- b. Move the configuration folder of ORDS setup to the WebLogic host location.
- c. Create a folder at the deployed location ords.ear.
- d. Create ords.war folder in the ords.ear folder and place ords.war in it.



e. Inflate the ords.war file using the command:

```
jar -xvf ords.war
```

- f. Update the web.xml file in ords.war/WEBINF/ to give config.dir path.
- g. Delete the ords.war file in ords.war folder.
- h. Create a folder at the deployed location i.ear.
- i. Create i.war folder in the i.ear folder and place i.war in it.
- j. Inflate the i.war file using command: jar -xvf i.war
- k. Delete the i.war file in the i.war folder.
- I. Navigate to the WebLogic console and then deploy i.war and ords.war.
- 9. Check the conf path (/scratch/<user>/ORDS/conf) in the web.xml file of ords if it is correctly configured. This path holds the configurations for ords. <deployed path>/ords/WEB-INF/web.xml



CORS filter needs to be enabled in ords to avoid CORS-related vulnerabilities.

- 10. This filter to be added to the web.xml file at <deployed_path>/ords/WEB-INF/web.xml.
- 11. Start the Servers.

5.7.2.3 Add Atomic Schema Details in the themas.ora File

Add TNS entries in the tnsnames.ora file for every Schema created for the Application Pack.

To add the Atomic Schema in the tnsnames.ora file, follow these steps:

- **1.** Log in to the system as a non-root user.
- 2. Navigate to the OFS PM PACK/Schema Creator/conf directory.
- 3. Edit the tnsnames.ora file using a text editor and add the Atomic Schema as follows and save the file.

```
<ATOMICSCHEMANAME> =
  (DESCRIPTION =
  (ADDRESS_LIST =
    (ADDRESS = (PROTOCOL = TCP) (HOST = <HOST NAME>) (PORT = <PORT NUMBER>))
)
(CONNECT_DATA =
  (SERVICE_NAME = <SID NAME>)
)
```



5.8 Remove ContextDocLoader from the web.xml File in WebLogic

Before deploying OFS PCD application, remove or comment the <code>ContextDocLoader</code> from the web.xml file for WebLogic, follow these steps:

- 1. Navigate to the \$FIC WEB HOME/pcd.war/WEB-INF/web.xml folder.
- 2. Open the web.xml file in a text editor.
- 3. Search for ContextDocLoader parameter and remove or comment the following servlet entry:

```
<servlet>
<servlet-name>context</servlet-name>
<servlet-
class>com.ofs.fsapps.commonapps.core.summary.common.ContextDocLoade
r</servlet-class>
<load-on-startup>1</load-on-startup>
</servlet>
```



6

Installation

This section provides detailed steps to install the OFS PCD Application Pack.

Topics:

- Installation Checklist
- Extract the Software
- Configure OFS PM PACK.xml File
- Configure Schema Creator Utility
- Configure the OFSAAI_InstallConfig.xml File
- Configure the Silent.props file
- Install the OFS PCD Application Pack

6.1 Installation Checklist

You can use this checklist to have a glance at everything that you need to do to install this application. The link provided in each step takes you to a section either within this document or to another referenced document.

Table 6-1 Installation Checklist

SI. No.	Installation Activity
1	Extract the installer kit.
2	Configure the OFS_PM_PACK.xml file.
3	Configure the OFS_PM_SCHEMA_IN.xml file.
4	Execute the Schema Creator Utility in Offline, Online, or TCPS modes and verify the log file.
5	Configure the OFSAAI_InstallConfig.xml file.
6	Configure the Silent.props file.
7	Trigger the application installation.

6.2 Extract the Software

You must be logged in to the UNIX operating system as a non-root user to perform the following steps.

1. If you already have an unzip utility to extract the contents of the downloaded archive, skip this step. Download the unzip utility (OS-specific) unzip_<os>.Z and copy it in Binary mode to the directory that is included in your PATH variable.

Uncompress the unzip installer file with the command:

uncompress unzip <os>.Z

Note:

chmod 751 unzip <OS>

If an error message "uncompress: not found [No such file or directory]" is displayed, contact your UNIX administrator.

2. Assign 751 permission to the file using the following command:

```
For example: chmod 751 unzip sparc
```

- 3. Extract the contents of the OFS PCD Application Pack Release 8.1.2.0.0 installer archive file in the download directory using the following command: unzip OFS PM 8.1.2.0.0 LINUX.zip
- 4. Navigate to the download directory and assign 755 permission to the installer directory using the following command: chmod -R 755 OFS PM Pack

6.3 Configure the OFS_PM_PACK.xml File

The OFS_PM_PACK.xml file contains details on the various products that are packaged in the OFS PCD Application Pack.

The OFS_PM_PACK.xml file has details of the products that are packaged in the OFS PCD Application Pack. This section provides information about the tags and parameters available in this file and the values you must update before installing the OFS PCD Application Pack. Enable licenses as per your Service Level Agreement (SLA).

To configure the OFS PM PACK.xml file, follow these steps:

- 1. Navigate to the OFS PM PACK/conf directory.
- Open the OFS PM PACK.xml file in a text editor.

Figure 6-1 Sample OFS_PM_PACK.xml File

```
<APP_PACK_CONFIG>
   <APP PACK ID>OFS PM PACK</APP PACK ID>
   <APP_PACK_NAME>Financial Services Pricing Management Applications Pack</app_PACK_NAME>
   <APP PACK DESCRIPTION>Applications for Pricing Management/APP PACK DESCRIPTION>
   <VERSION>8.1.2.0.0</VERSION>
       <APP ID PREREQ="" DEF SEL FLG="YES" ENABLE="YES">OFS AAI</APP ID>
       <APP_NAME>Financial Services Analytical Applications Infrastructure</app_NAME>
       <APP_DESCRIPTION>Base Infrastructure for Analytical Applications/APP_DESCRIPTION>
       <VERSION>8.1.2.0.0</VERSION>
   <APP>
       <APP ID PREREQ="OFS AAI" ENABLE="YES">OFS PCD</APP ID>
       <APP_NAME>Financial Services Price Creation and Discovery</aPP_NAME>
       <APP_DESCRIPTION>Application for Price Creation and Discovery</APP_DESCRIPTION>
        <VERSION>8.1.2.0.0</VERSION>
   </APP>
</APP_PACK_CONFIG>
```

3. Configure the OFS PM PACK.xml file as mentioned in the following table.



Table 6-2 OFS_PM_PACK.xml File Parameters

Tag Name and Attribute Name	Description	Mandatory (Y or N)	Comments
APP_PACK_ID	Unique Application Pack Identifier	Y	Unique Seeded Value. Do not modify this value.
IS_OPT_INSTALL VALUE="TRUE"	Unique Application Entry	Υ	Unique Seeded Value. Do not modify this value.
APP_PACK_NAME	Unique Application Pack Name	Υ	Unique Seeded Value. Do not modify this value.
APP_PACK_DESCRIP TION	Unique Application Pack Description	Υ	Unique Seeded Value. Do not modify this value.
VERSION	Unique release version	Υ	Unique Seeded Value. Do not modify this value.
APP	Unique Application Entries	Y	Unique Seeded Value. Do not modify this value.
APP_ID	Unique Application Identifier	Υ	Unique Seeded Value. Do not modify this value.
APP_ID/ PREREQ	Prerequisite	Υ	Unique Seeded Value.
	Application or Product		For most applications, the prerequisite that is set is OFS AAAI. For all other applications, the default Application ID is set to none.
			You can set it for the applications you want to install.
			Do not modify this value.
APP_ID/ DEF_SEL_FLAG	Default Selected Flag	Υ	In all Application Packs, Infrastructure would have this value set to YES.
			Do not modify this value.



Table 6-2 (Cont.) OFS_PM_PACK.xml File Parameters

Tag Name and Attribute Name	Description	Mandatory (Y or N)	Comments
APP_ID/ ENABLE	Enable Application or Product	Y	 Default YES for Infrastructure NO for others Set this attribute value to YES against every APP_ID which is licensed and must be enabled for use. NOTE: The Application/Product cannot be disabled once enabled.
			Only Applications/ Products which are enabled are installed. To enable other licensed Applications/ Products, you need to reinstall by making the flag as Y for the App_ID. However, in case of reinstallation to enable the other Applications/Products, execution of the schema creation utility must be skipped if it does not include any additional sandboxes to be created.
APP_NAME	Unique Application or Product Name	Υ	Unique Seeded Value. Do not modify this value.
APP_DESCRIPTION	Unique Application or Product Name	Υ	Unique Seeded Value. Do not modify this value.
VERSION	Unique release version	Y	Unique Seeded Value. Do not modify this value.

^{4.} Save and close the file.

6.4 Configure the Schema Creator Utility

Creating database users/schemas (RDBMS) is one of the primary steps in the complete OFSAAAI installation process. The Schema Creator utility enables you to quickly get started with the installation by creating Database User(s)/ Schema(s) (RDBMS), assigning the necessary GRANT(s), creating the required entities in the schemas and so on.

The schema creator utility must be configured and executed before the installation of the OFS PCD Application Pack.

6.4.1 Prerequisites

To configure the Schema Creator Utility, ensure that you obtain the following details:

- Oracle User ID and Password with SYSDBA privileges.
- JDBC Connection URL for RAC or Non-RAC database.
- The HOSTNAME and IP of the server on which OFSAA is being installed.

<Enter a single subject here.>

6.4.2 Configure the Schema Creator Utility for RDBMS Installation

If the installation is being performed for RDBMS, provide the Pack specific schema details in the ofs pm schema in.xml file.

You can configure the following types of schemas:

- CONFIG: This schema holds the entities and other objects required for OFSAA setup configuration information. There can be only one CONFIG schema per OFSAA instance
- ATOMIC: This schema holds the data model entities. One ATOMIC schema is attached
 to one Information Domain. There can be multiple ATOMIC schemas per OFSAA
 Instance.

6.4.2.1 Configure the OFS PM SCHEMA IN.xml File

This section describes how to create database schemas, objects within schemas, and assign appropriate grants.

Specify the database schemas required for the installation in the OFS_PM_SCHEMA_IN.xml. Update the required values in this file before executing the Schema Creator Utility.

To configure the OFS PM SCHEMA IN.xml file, follow these steps:

- Log in to the system as a non-root user.
- 2. Navigate to the OFS PM PACK/schema creator/conf directory.
- 3. Edit the OFS_PM_SCHEMA_IN.XML file using a text editor and configure the values as mentioned in the following table.



Figure 6-2 Sample OFS_PM_SCHEMA_IN.xml File

4. Save and close the file.

Example: The following snippet shows that TDE is enabled and hence the tablespace is shown with encryption ON.

```
<ADV SEC OPTIONS>
<OPTION NAME="TDE" VALUE="FALSE"/>
<OPTION NAME="DATA REDACT" VALUE="FALSE" />
</ADV SEC OPTIONS>
<TABLESPACES>
<TABLESPACE NAME="OFS AAI TBSP 1" VALUE="TS USERS1" DATAFILE="/
scratch/ora12c/app/oracle/oradata/OFSPQA12CDB/ts users1.dbf"
SIZE="500M" AUTOEXTEND="ON" ENCRYPT="ON" />
<TABLESPACE NAME="OFS AAI TBSP 2" VALUE="TS USERS2" DATAFILE="/
scratch/ora12c/app/oracle/oradata/OFSPQA12CDB/ts users2.dbf"
SIZE="500M" AUTOEXTEND="ON" ENCRYPT="ON" />
</TABLESPACES>
<SCHEMAS>
<SCHEMA TYPE="CONFIG" NAME="ofsaaconf" PASSWORD="" APP ID="OFS AAI"</pre>
DEFAULTTABLESPACE="##OFS_AAI_TBSP_1##" TEMPTABLESPACE="TEMP"
QUOTA="unlimited"/>
<SCHEMA TYPE="ATOMIC" NAME="ofsaaatm" PASSWORD="" APP ID="OFS AAAI"</pre>
DEFAULTTABLESPACE="##OFS AAI TBSP 2##" TEMPTABLESPACE="TEMP"
QUOTA="unlimited" INFODOM="OFSAAAIINFO"/>
</SCHEMAS>
```

6.5 Execute the Schema Creator Utility

Depending on your requirement, select the appropriate schema creator utility execution option from the following options:

- Execute the Schema Creator Utility in Offline Mode
- Execute the Schema Creator Utility in Online Mode
- Execute the Schema Creator Utility in TCPS Mode



6.5.1 Execute the Schema Creator Utility in Offline Mode

Choose the Offline Mode option if you do not have login credentials to the database with SYSDBA privileges. In this mode, the utility generates an SQL script with all the required DDLs for Users, Objects, and Grants. That script must be executed by the DBA on the appropriate database identified for OFSAA usage.

To execute the schema creator utility in the offline mode, you must have the following privileges:

- SELECT ON DBA ROLES
- SELECT ON DBA USERS
- SELECT ON DBA DIRECTORIES
- SELECT ON DBA TABLESPACES
- CREATE SESSION



Explicit Grants to the User are required. Grants assigned through Roles are not supported.

To execute the schema creator utility in the offline mode, follow these steps:

- 1. Log in to the system as a non-root user.
- 2. Navigate to the OFS PM PACK/schema creator/bin directory.
- Execute the osc.sh file using the following command: ./osc.sh -o -s

The following message is displayed:

You have chosen OFFLINE mode. Triggering the utility in OFFLINE mode will generate the script. Do you wish to proceed? (Y/y or N/n).

Enter Y to proceed.

- 4. Enter the DB Username with SELECT privileges.
- 5. Enter the User Password.

The console runs the initial validation checks and displays the following message:

You have chosen to install this Application Pack on <Name of the Atomic Schema> ATOMIC schema. Do you want to proceed? (Y/N).

6. Enter Y to start the script generation.

The following message is displayed:

You have chosen to install this Application Pack on <Name of the Infodom>. Do you want to proceed? (Y/N). Enter Y to proceed.



Figure 6-3 Schema Creation in Offline Mode – Script Generation

```
Checking OFDAA installation...

Found OFDAA installation at /scratch/ofsaadh/OFDAAI

Validating the dat file OFD AAAI CFG.dat started...

Successfully validated OFD AAAI CFG.dat started...

Successfully validated OFD AAAI CFG.dat file

Parsing /scratch/ofsaadh/OFDAAI/conf/DynamicServices.wal

Successfully connected to User - day confl UNL - pubcioracle:thin:@ofsa2J06J3:1531:MEDIADS

Validating the input XML file.../scratch/ofsaadh/OFS_AAAI_FACK/schema_creator/conf/OFS_AAAI_SCREMA_IN_wal

Input XML file validated successfully.

Validating Connection URL ...jdbc:oracle:thin:@ofsa2J06J3:1521:MEDIADS

Successfully connected to User - sample URL - jdbc:oracle:thin:@ofsa2J06J3:1521:MEDIADS

Connection URL successfully validated...

You have chosen to install this Application Fack on "ust_atm_anuray" ATOMIC sche

ma. Do you want to proceed? (Y/W)

Y

You have chosen to install this Application Fack on INFODOM "ofsaasiinfol". Do y

oo want to proceed? (Y/W)

Y
```

On successful execution of the schema creator utility, the console displays the following status message: Schema Creator executed successfully.

Execute the file scratch/ofsaaapp/OFS_PM_PACK/schema_creator/sysdba output scripts.sql before proceeding with the installation.

Note:

If there are any errors during the SQL script execution, reconfigure the ${\tt OFS_PM_SCHEMA_IN.xml}$ file and repeat steps in this procedure to execute the utility. This regenerates the script with the correct information.

- 8. Navigate to the OFS PM PACK/schema creator directory.
- 9. Log in to the database using credentials with SYSDBA privileges.
- 10. Execute the sysdba_output_scripts.sql file using the following command: @sysdba_output_scripts.sql

Alternatively, you can copy the <code>sysdba_output_scripts.sql</code> file and SQLScripts folder to a remote server, and execute the <code>sysdba_output_scripts.sql</code> file after providing appropriate execute permissions.

Note:

See the <code>sysdba_output_scripts.log</code> file for execution status. If there are any errors, contact <code>My Oracle Support</code>. If there are no errors in the execution, the log file is empty.

As a result of this procedure, the $OFS_PM_SCHEMA_OUTPUT.XML$ file is generated. Do not modify this file.

6.5.2 Execute the Schema Creator Utility in Online Mode

In Online mode, the utility connects to the database and executes the DDLs for Users, Objects, and Grants. If you have SYSDBA privileges you can execute the Schema Creator Utility in Online mode and thereby create the Users, Objects, and Grants during the execution process. To execute the utility in the Online mode, you must connect as "<User> AS SYSDBA".

If you want to run the OFSAA Application Pack Installer in Online mode, it is mandatory to execute the schema creator utility with -s option.

To execute the utility with -s option in online mode, follow these steps:

- 1. Log in to the system as a non-root user.
- Navigate to the OFS PM_PACK/schema_creator/bin directory.
- **3.** Execute the utility.

For Example: ./osc.sh -s

The OFS PM SCHEMA OUTPUT.XML file is successfully generated. Do not modify this file.

6.5.3 Execute the Schema Creator Utility in TCPS Mode

If you intend to run the OFS PCD Application Pack Installer in TCPS mode, it is mandatory to execute the schema creator utility with -s option and in online mode.

6.5.3.1 Prerequisites

The following are the prerequisites for this configuration:

- 1. UNIX user credentials with which OFSAA was installed.
- UNIX user credentials with which Web Application Server (Oracle WebLogic (WLS)/ Apache Tomcat/ IBM WebSphere) was installed.
- 3. OFSAAI version should be 8.1.2.0.0 and later.
- Ensure OFSAA installed and deployed is having JAVA 8 (Java version must support Java unlimited cryptographic policy. Java version 1.8.0_161+ supports unlimited cryptographic policy.)
- 5. Create Oracle Wallet on the OFSAA processing tier. For information on Creating and Managing Oracle Wallet, see https://blogs.oracle.com/dev2dev/ssl-connection-to-oracle-db-using-jdbc,-tlsv12,-jks-or-oracle-wallets and https://blogs.oracle.com/weblogicserver/weblogic-jdbc-use-of-oracle-wallet-for-ssl.
- 6. Configure the Oracle Wallet with trusted certificates between the database server with TCPS configured and the database client to enable communication through the SSL protocol. For example, all the database utils such as sqlplus, tnsping, and sqlldr must work between the Client and the Server.

6.5.3.1.1 Configure OFSAA to Store Config Schema, Atomic Schema, and SysDBA Credentials with Oracle Wallet

To configure the OFSAA to store the Config and Atomic schema credentials with Oracle Wallet, follow these steps:



- 1. Log in as a UNIX user with the permission to modify the Oracle Wallet.
- 2. Execute the following command to configure Config Schema credentials. Enter the password to store the credentials in the Wallet when prompted.

```
$ORACLE_HOME/bin/mkstore -wrl <WALLET_HOME> -createCredential -nologo
CONFIG <CONFIG DATABASE USERNAME> <CONFIG DATABASE PASSWORD>
```

3. Execute the following command to configure the Atomic Schema credentials, Enter the password to store the credentials in the Wallet when prompted.

```
$ORACLE_HOME/bin/mkstore -wrl <WALLET_HOME> -createCredential -nologo
<ATOMICALIASNAME> <ATOMIC_DATABASE_USERNAME>
<ATOMIC_DATABASE_PASSWORD>
```

 Configure SysDBA credentials. Execute the following command to configure SysDBA Schema credentials. Enter the password to store the credentials in the Wallet when prompted.

\$ORACLE_HOME/bin/mkstore -wrl <WALLET_HOME> -createCredential -nologo
SYS <SYS DATABASE USERNAME> <SYS DATABASE PASSWORD>

Note:

ATOMICALIASNAME value is a TNS alias for Atomic Schema and must not contain underscores.

For example, if the Atomic Schema Name is PROD_OFSAAATM, then the value for ATOMICALIASNAME must be entered as PRODOFSAAATM.

For more detailed information about configuring Wallet with OFSAA, see the Configuring OFSAA and various Web Application Servers with Oracle Wallet section in the OFS Analytical Applications Infrastructure Application Pack Administration and Configuration Guide Release 8.1.x.

6.5.4 Execute the Schema Creator Utility while Installing Subsequent Applications Pack

When executing the Schema Creator Utility during the installation of a subsequent application pack, you can choose to install the pack either on the same Information Domain/Atomic Schema of the existing application pack or on a new Information Domain/Atomic Schema. You can execute the Schema Creator Utility either in the Online or Offline modes.

To execute the Schema Creator Utility while creating the schemas for a subsequent application pack, follow these steps:

- 1. Edit the OFS_PM_PACK/schema_creator/conf/OFS_PM_SCHEMA_IN.xml file in a text editor. See the Configure the OFS_PM_SCHEMA_IN.xml File file for values you must modify in the XML file.
- 2. Execute the utility.

 For Example: ./osc.sh -s



Figure 6-4 Schema Creator Utility

```
Validating Connection URL ...jdbc:oracle:thin:@ofss220623:1521:MEDIADB
Successfully connected to User - sample URL - jdbc:cracle:thin:@ofss220623:1521:
MEDIADB
Connection URL successfully validated ...
You have chosen to install this Application Pack on "uat atm anurag" ATCMIC sche
ma. Do you want to proceed? (Y/N)
You have chosen to install this Application Pack on INFODOM "ofsaaaiinfol". Do y
ou want to proceed? (Y/N)
Generating TableSpace creation Scripts started...
Generating TableSpace creation Scripts completed ...
Generating Schema creation scripts started ...
CONFIG User uat_conf_anurag creation script generated successfully on Default Ta
bleSpace : USERS on Temp TableSpace : TEMP
Generation of grants creation scripts started ...
Generation of grants creation scripts completed...
Scripts Generation for CONFIG schema started ...
Scripts Generation for CONFIG schema completed ...
User uat_conf_anurag details updated into the dbmaster table
User uat atm anurag details updated into the dbmaster table
User uat atm anurag creation script generated successfully on Default TableSpace
: USERS on Temp TableSpace : TEMP
User uat atm anurag creation is skipping as the user is already created.
Generating Schema creation scripts completed ...
Generating Roles creation Scripts started...
Generating Roles creation Scripts completed...
Generating Grants creation scripts started...
Generating Grants creation scripts completed...
                          Generating Schema Creation Scripts Completed
Schema Creator executed Successfully.Please execute /scratch/ofsaaapp/OFS_AAAI_P
ACK/schema_creator/sysdba_output_scripts.sql before proceeding with the installa
```



You must use the same config schema user name as the previous application pack.

- 3. The utility identifies the application packs that are already installed on the current OFSAA setup and displays the following on the console:
 - Atomic schema of the existing application pack.
 - Information Domain Name of the existing pack.



- List of installed application packs.
- 4. Select the Atomic User on which you want to install the application pack.

Figure 6-5 Select the Atomic User

```
Validating the dat file OFS IBCE CFG.dat started...
The path is:/scratch/bcuser/kit/OFS IBCE PACK/schema_creator/conf
Sucessfully validated OFS IBCE_CFG.dat file
Validating the input XML file .../scratch/bcuser/kit/OFS IBCE_PACK/schema_creator/conf/OFS_IBCE_SCHEMA_IN.xml
Input XML file validated successfully.

Validating Connection URL ...jdbc.oracle:thin:@whf00atu.in.oracle.com:1521/ORCLPDB1
Connection jdbc.oracle:thin:@whf00atu.in.oracle.com:1521/ORCLPDB1
Successfully connected to User - sys as sysdba URL - jdbc:oracle:thin:@whf00atu.in.oracle.com:1521/ORCLPDB1
Connection URL successfully validated...
localhost name - whf00ots IFAddress - 10.40.158.56
INT_IB_ROST not there in schema
IS_HYBRID not there in schema
IS_HYBRID not there in schema
AIW_SEC_TAG not there in schema
AIW_SEC_TAG not there in schema
Checking: app: OFS_AAI schema_name: T2_BCXOMPIG8IT schema_type: CONPIG
Checking: app: OFS_IBCE_schema_name: T2_BCXOMPIG8IT schema_type: CONPIG
Checking: app: OFS_IBCE_schema_name: T2_BCXOMPIG8IT schema_type: ATOMIC
You have chosen to install this Application Fack on "t2_bcatcenic@it" ATOMIC schema. Do you want to proceed? (Y/N)
You have chosen to install this Application Fack on INFODOM "bcinfo". Do you want to proceed? (Y/N)
```

On successful execution of the Schema Creator Utility, the console displays the following status message:

Success. Please proceed with the installation.

Note:

- a. See the log file in the OFS_PM_PACK/schema_creator/logs directory for the execution status.
- b. See the sysdba_output_scripts.log file for execution status if executed in offline mode. This log is empty if there are no errors in the execution.
- c. If there are any errors, contact My Oracle Support.

6.6 Configure the OFSAAI_InstallConfig.xml File

To configure the OFS InstallConfig.xml file, follow these steps:

- Navigate to the OFS_AAAI_PACK/OFS_AAI/conf/ directory.
- Open the OFSAAI_InstallConfig.xml file in a text editor.
- Configure the OFSAAI_InstallConfig.xml file as mentioned in the following table.

You must manually set the InteractionVariable parameter values as mentioned in the table. If a value is not applicable, enter NA. Ensure that the value is not entered as NULL.



Table 6-3 Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Mandatory
<layer name="GENERAL"></layer>		
InteractionGroup name="Web\$	ServerType"	
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components are deployed.	Yes
	Set the following numeric value depending on the type of web application server:	
	Apache Tomcat = 1IBM WebSphere Application Server = 2	
	• Oracle WebLogic Server = 3 For example, <interactionvariablename= "webappservertype"="">3<!-- InteractionVari able--></interactionvariablename=>	

InteractionGroup name="OFSAA Infrastructure Server Details"



Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Mandatory
DBSERVER_IP	Identifies the host name or IP address of the system on which the Database Engine is hosted.	Yes

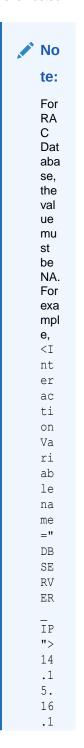




Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

nteractionVariable Name	Significance and Expected Value	Mandatory
	7/	
	7<	
	, In	
	te	
	ra	
	ct	
	io	
	nV	
	ar	
	ia	
	bl	
	e>	
	or	
	G.	

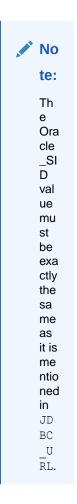
<InteractionVariable
name="DBSERVER_
IP">dbhost.server.com</
InteractionVariable>

InteractionGroup name="Database Details"



Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Mandatory
ORACLE_SID/SERVICE_NAME	Identifies the Oracle DB Instance SID or SERVICE NAME	Yes



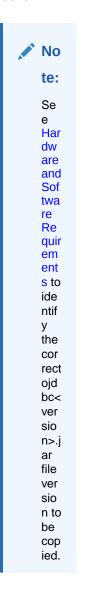
For example,

<InteractionVariable
name="ORACLE_SID/
SERVICE_NAME">ofsaser/
InteractionVariable>



Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Mandatory
ABS_DRIVER_PATH	Identifies the directory where the JDBC driver (ojdbc <version>.jar) exists. This is typically the \$ORACLE_HOME/jdbc/lib directory.</version>	Yes
	For example, <interactionvariable name="ABS_DRIVER_ PATH">">/oradata6/revwb7/ oracle <!--</td--><td></td></interactionvariable>	
	InteractionVariable>	



InteractionGroup name="OLAP Detail



Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Mandatory
OLAP_SERVER_ IMPLEMENTATION	Identifies whether the OFSAA Infrastructure OLAP component must be configured. It depends on whether you intend to use the OLAP feature. The following numeric value must be set depending on the choice: YES: 1 NO: 0	No

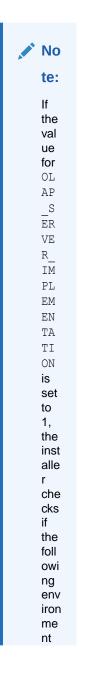




Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name Significance and Expected Mandatory Value vari abl es are set in the .p ro fi le file:

- ARBORPATH
- HYPERION_HOME
- ESSBASEPATH

InteractionGroup name="SFTP Details"

SFTP_ENABLE

Identifies if the SFTP (Secure Yes File Transfer Protocol) feature is to be enabled. The following numeric value must be set depending on the choice:

- SFTP: 1
- FTP: 0

Note:

The default value for SFTP_ENABLE is 1, which signifies that SFTP is used. Oracle recommends using SFTP instead of FTP because SFTP is more secure. However, you can ignore this recommendation and use FTP by setting SFTP_ENABLE to 0. You can change this selection later from the OFSAAI administration interface.

Set SFTP_ENABLE to -1 to configure ftpshare and weblocal path as a local path mounted for the OFSAAI server.

FILE_TRANSFER_PORT

Identifies the port used for the file transfer service. The default value specified is 22 (SFTP).

Specify the value as 21 or any other PORT value if the value for SFTP_ENABLE is 0.

For example,

<InteractionVariable
name="FILE_TRANSFER_
PORT">21
InteractionVariable>



Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Mandatory
InteractionGroup name="Local	e Detail"	
LOCALE	Identifies the locale information to be used during the installation. This release of the OFSAA Infrastructure supports only US English.	Yes
	For example, <interactionvariable name="LOCALE">en_US<!-- InteractionVariable--></interactionvariable>	

InteractionGroup name="OFSAA Infrastructure Communicating ports"



The following ports are used internally by the various OFSAA Infrastructure services. The default values mentioned are set in the installation. If you intend to specify a different value, update the parameter value accordingly, ensure that the port value is in the range 1025 to 65535, and the respective port is enabled.

9999	Yes
6666	Yes
6510	Yes
6507	Yes
6509	Yes
10101	Yes
6501	Yes
6500	Yes
6505	Yes
	6666 6510 6507 6509 10101 6501

InteractionGroup name="Web Details"

Note: If the value for <code>HTTPS_ENABLE</code> is set to 1, ensure that you have a valid certificate available from a trusted CA and it is configured on your web application server.

HTTPS_ENABLE

Identifies whether the UI must be Yes accessed using HTTP or HTTPS scheme. The default value is set to 0. The numeric value must be set depending on the following options:

- YES: 1
- NO: 0

For example,

<InteractionVariable
name="HTTPS_ENABLE">0</
InteractionVariable>



Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Mandatory
WEB_SERVER_IP	Identifies the HTTP Server IP/ Host name or Web application server IP/ Host name, to be used to access the UI. This IP is typically the HTTP Server IP.	No
	If a separate HTTP Server is not available, then the value must be Web application server IP/Host name.	
	For example, <interactionvariable name="WEB_SERVER_ IP">10.11.12.13<!-- InteractionVariable--></interactionvariable>	
	or	
	<pre><interactionvariable name="WEB_SERVER_ IP">myweb.server.com<!-- InteractionVariable--></interactionvariable></pre>	
WEB_SERVER_PORT	Identifies the Web Server Port, which is typically 80 for non SSL and 443 for SSL. If a separate HTTP Server exists, the port value must be the value configured for the Web Server.	No
	Warning: The installer will not accept the port value as:	
	 80, if the HTTPS_ENABLE variable is 1 	
	• 443, if the HTTPS_ENABLE variable is 0	
	For example, <interactionvariable< td=""><td></td></interactionvariable<>	
	name="WEB_	
	SERVER_PORT">80 InteractionVariable	
	THE CLUCKTOH VALIANTE/	



Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Mandatory
CONTEXT_NAME	Identifies the web application context name which is used to build the URL to access the OFSAA application. You can identify the context name from the following URL format:	Yes
	<pre><scheme>://<host>:<port>/ <context-name>/ login.jsp</context-name></port></host></scheme></pre>	
	The following is an example:	
	https://myweb:443/ ofsaadev/login.jsp	
	For example, <interactionvariable name="CONTEXT_ NAME">ofsaadev<!-- InteractionVariable--></interactionvariable>	



Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Mandatory
WEBAPP_CONTEXT_PATH	Identifies the absolute path of the exploded EAR file on the web application server.	Yes
	 For Tomcat, specify the Tomcat directory path till / webapps. For example, / oradata6/ revwb7/ tomcat/webapps/. For WebSphere, specify the WebSphere path as < WebSphere profile directory>/ installedApps/ <nodecellname>. For example, / data2/test// WebSphere/AppServer/ profiles/ <profile_name>/ installedApps/ aiximfNode01Cell, where aix-imf is the Host name.</profile_name></nodecellname> For WebLogic, specify the WebLogic home directory path. For example, / <weblogic directory="" home="" path="">/bea/ wlserver_10.3</weblogic> 	

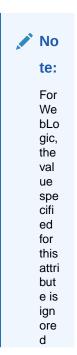




Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

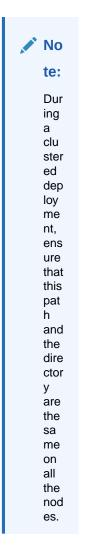
InteractionVariable Name	Significance and Expected Value	Mandatory
	and	
	and the	
	val	
	ue	
	pro	
	vid	
	ed	
	aga	
	inst	
	the	
	attri	
	but e	
	WE	
	BL	
	OG	
	IC	
	_D	
	_B OM	
	AI	
	N	

HO ME is con sid ere d.



Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Mandatory
WEB_LOCAL_PATH	Identifies the absolute path to any directory on the web application server that can hold temporary files, which are uploaded as part of the usage of the application. Set this in the FTPSHARE location.	Yes



InteractionGroup name="Weblogic Setup Details"

Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Mandatory
WEBLOGIC_DOMAIN_HOME	Identifies the WebLogic Domain Home. For example, <interactionvariable name="WEBLOGIC_DOMAIN_HOM E">/home/weblogic/bea/ user_projects/domains/ mydomain <!-- InteractionVariable--></interactionvariable>	Yes. Specify the value only if WEBAPPSERVERTYPE is set as 3 (WebLogic)

InteractionGroup name="OFSAAI FTP Details"



Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Mandatory
OFSAAI_FTPSHARE_PATH	Identifies the absolute path of the directory that is identified as the file system stage area.	Yes

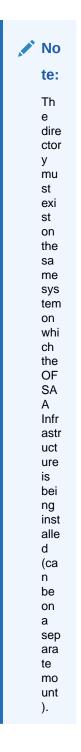




Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Mandatory
	The user mentioned in the APP_SFTP_USER_ID parameter in the following example must have RWX permission on the directory. For example, <interactionvariable name="APP_FTPSHARE_PATH"> ">/oradata6/revwb7/ ftpshare<!-- InteractionVariable--></interactionvariable>	
OFSAAI_SFTP_USER_ID	Identifies the user who has RWX permissions on the directory identified for the parameter APP_FTPSHARE_PATH.	Yes
OFSAAI_SFTP_PRIVATE_KEY	Identifies the SFTP private key for OFSAAI.	No
	For example, <interactionvariable name="OFSAAI_SFTP_PRIVATE _KEY">/home/ofsaapp/.ssh/ id_rsa<!-- InteractionVariable--> By default, the value is NA, which indicates that, for</interactionvariable>	
	authentication, you are prompted to enter the password for the user <ofsaai_sftp_user_ id="">.</ofsaai_sftp_user_>	
	For more information on how to generate an SFTP Private key, see the Set Up SFTP Private Key section.	
OFSAAI_SFTP_PASSPHRASE	Identifies the passphrase for the SFTP private key for OFSAAI.	No
	For example,	
	<pre>InteractionVariable name="OFSAAI_SFTP_PASSPHR ASE">enter a pass phrase here</pre> InteractionVariable>	
	By default, the value is NA. If the OFSAAI_SFTP_PRIVATE_KEY value is given and the OFSAAI_SFTP_PASSPHRASE value is NA, then the passphrase	



Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name Significance and Expected Mandatory Value

InteractionGroup name="Hive Details"

The default value set for the interaction variables under this group is NA.

Note:

The following values are required only for Hive Configuration.

Yes

HIVE_SERVER_PORT Identifies the port used for the

file transfer service. The default value is 22 (SFTP). To use this port for FTP, set this value to 21.

For example,

<InteractionVariable
name="HIVE_SERVER_PORT">2
2</InteractionVariable>

HIVE_SERVER_FTPDRIVE Identifies the absolute path to the Yes

directory identified as file system stage area of the HIVE server.

For example,

<InteractionVariable
name="HIVE_SERVER_FTPDRIV</pre>

E">/scratch/ofsaa/

ftpshare</

InteractionVariable>

HIVE_SERVER_FTP_USERID Identifies the user who has RWX Yes

permissions on the directory identified under the parameter HIVE SERVER FTPDRIVE.

For example,

<InteractionVariable
name="HIVE SERVER FTP USE</pre>

RID">ofsaa</

InteractionVariable>

HIVE_SERVER_FTP_PROTOC

OL

If the HIVE_SERVER_PORT is 21, Yes

then set the value to **FTP**. If not, set it to **SFTP**.

For example,

<InteractionVariable
name="HIVE SERVER FTP PRO</pre>

TOCOL">SFTP</

InteractionVariable>



Table 6-3 (Cont.) Table 19: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Mandatory
HIVE_SFTP_PRIVATE_KEY	Identifies the SFTP private key for the HIVE server.	
	For example,	
	<pre><interactionvariable name="HIVE_SFTP_PRIVATE_ KEY">/scratch/ testuser/.ssh/id_rsa<!-- InteractionVariable--></interactionvariable></pre>	
	By default, the value is NA , which indicates that, for authentication, you are prompted to enter the password for the user <pre><hive_server_ftp_userid></hive_server_ftp_userid></pre> .	
	For more information on generating SFTP Private key, see the Set Up SFTP Private Key section.	
HIVE_SFTP_PASSPHRASE	Identifies the passphrase for the SFTP private key for HIVE.	
	For example,	
	<interactionvariable name="HIVE_SFTP_ PASSPHRASE">NA<!--<br-->InteractionVariable></interactionvariable 	
	By default, the value is NA .	
	If the HIVE_SFTP_PRIVATE_KEY value is NA , then the passphrase is identified as empty.	

6.6.1 Set Up the SFTP Private Key

Log in to OFSAA UNIX user using the Putty tool, where you plan for installation and generate a pair of authentication keys using the ssh-keygen command. If required, set passphrase. Otherwise, the OFSAAI_SFTP_PASSPHRASE tag must be set to NA.

To generate a private key, enter the commands as shown:

```
ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/ofsaapp/.ssh/id_rsa):
Created directory '/home/ofsaapp/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/ofsaapp/.ssh/id_rsa.
Your public key has been saved in /home/ofsaapp/.ssh/id_rsa.pub.
The key fingerprint is:
3e:4f:05:79:3a:9f:96:7c:3b:ad:e9:58:37:bc:37:e4
```



Ensure the following permissions exist for the given directories:

- permissions of .ssh must be 700
- permissions of .ssh/authorized_keys must be 640
- permission of .ssh/id_rsa must be 400
- Permission of UNIX User created must be 755

6.7 Configure the Silent.props File

This section is applicable for a new installation of OFS PCD Application Pack Release 8.1.2.0.0. In the installer kit path $OFS_PM_PACK/appsLibConfig/conf/$, rename the Silent.template file to Silent.props. Edit the Silent.props file and modify only the following parameters.



In the pack-on-pack scenario, the parameters $OFS_PM_SEGMENT_1_CODE$ must be the same as the parameters $SEGMENT_1_CODE$ of the previously installed application pack.

Do not modify these parameters if there are no other packs than the OFS PCD pack installed.

Table 6-4 Parameters for the Silent.props File

Property Name	Description of Property	Permissible Values	Comments
SEGMENT_1_CODE	Segment Code	Not Applicable	Mandatory
			NOTE : The Segment Code should be in the upper case.
APPFTP_LOG_PATH	Infodom Maintenance log path (to be created) for the new Infodom for applayer	Not Applicable	# Mandatory if this an App Layer Installation and if you want to create a new infodom.
			# That is, you have specified INSTALL_APP=1 and INFODOM_TYPE=0
DBFTP_LOG_PATH	Infodom Maintenance log path (to be created) for the new Infodom for DBLayer	Not Applicable	# Mandatory if this an App Layer Installation and if you want to create a new infodom.
			# That is, you have specified INSTALL_APP=1 and INFODOM_TYPE=0



Table 6-4 (Cont.) Parameters for the Silent.props File

Property Name	Description of Property	Permissible Values	Comments
UPLOAD_MODEL	To perform the Model Upload.	0: No 1: Yes	Mandatory
MODEL_TYPE	The released data model or a customized data model.	0: Released 1: Customized	Mandatory only if you want to upload the data model.
DATAMODEL	The path for the customized data model.	Not Applicable	Mandatory only if you want to upload the customized data model.
DM_DIRECTORY	The file name for the customized data model.	Not Applicable	Mandatory only if you want to upload the customized data model.
OBI Parameters			
OBI_HOST	The hostname or IP Address of the OBIEE server.	For example: 10.11.12.13 Or myweb.server.com	Mandatory
ODL DODT	T	•	NA 1 4
OBI_PORT	The port number of the OBIEE server.	For example 9500	Mandatory
OBI_CONTEXT	The context of the OBIEE.	For example: Analytics	Mandatory
OBI_PROTOCOL	The protocol details of the OBIEE server.	http or https	Mandatory
ETL_APPSRC_TYPE	Create a new ETL App or Src pair or use an existing one	0 = New 1 = Existing	#Mandatory if this an App layer installation. # That is, you have specified INSTALL_APP=1.
			# 0 = If you want to create a new ETL app or src pair # 1 = If you want to use
			an existing pair
ETL_APP_1_DESC	Description for the ETL App	Not Applicable	# Mandatory if you want to create a new ETL app or src pair.
			#That is, you have specified ETL_APPSRC_TYPE=0
ETL_SRC_1_DESC	Description for the ETL Staging source description	Not Applicable	# Mandatory if you want to create a new ETL app or src pair.
			#That is, you have specified ETL_APPSRC_TYPE=0



Table 6-4	(Cont.)	Parameters 1	for the Si	ilent.props File
-----------	---------	--------------	------------	------------------

Property Name	Description of Property	Permissible Values	Comments
ETL_SRC_2_DESC	Description for the ETL Processing source description	Not Applicable	# Mandatory if you want to create a new ETL app or src pair.
			#That is, you have specified ETL_APPSRC_TYPE=0
ETL_SRC_3_DESC	Description for the ETL Result source description	Not Applicable	# Mandatory if you want to create a new ETL app or src pair.
			#That is, you have specified ETL_APPSRC_TYPE=0
ETL_APP_1_NAME	ETL application name	Not Applicable	This is for the App Layer installation.
ETL_SRC_1_NAME	ETL Staging source name	Not Applicable	This Source must be mapped to the above ETL Application.
ETL_SRC_2_NAME	ETL Processing source name	Not Applicable	This Source must be mapped to the above ETL Application.
ETL_SRC_3_NAME	ETL Result source name	Not Applicable	This Source must be mapped to the above ETL Application.

6.8 Install the OFS PCD Application Pack

(Required) <Enter a short description here.>

Note:

Before you begin the installation, ensure you have configured and executed the following files:

- 1. Configure the OS File System Settings and Environment Settings in .profile file
- 2. Configure the OFS_PM_PACK.xml file
- 3. Configure the OFS_PM_SCHEMA_IN.xml file
- 4. Configure the OFSAAI_InstallConfig.xml file (Do not configure this file if an installation of OFSAAI 8.1.2 already exists.)
- 5. Execute the Schema Creator Utility

To install the OFS PCD Application Pack, follow these steps:

- 1. Log in to the system as a non-root user.
- 2. Identify a directory for installation and set the same in the user .profile file as follows:

```
FIC_HOME=<OFSAA Installation Directory>
export FIC_HOME
```

- **3.** Execute the user .profile file.
 - . ./.profile
- 4. Navigate to the OFS_PM_PACK/bin directory.



Do not install the new applications in the same segment if the preinstalled applications use the Run Management functionality of OFSAAI.

5. Enter the following command in the console to execute the application pack installer.

./setup.sh SILENT

The installer proceeds with the pre-installation checks.

Figure 6-6 Installation

6. Enter the OFSAA Processing Tier FTP/SFTP password value when prompted in the Command Prompt and proceed.



Figure 6-7 OFSAA Processing Tier FTP/SFTP password

```
OFFICE Client version: 11.2.0.2.0. Status: SUCCESS
CREATE SISSION has been granted to user. Status: SUCCESS
CREATE VIEW has been granted to user. Status: SUCCESS
CREATE VIEW has been granted to user. Status: SUCCESS
CREATE VIEW has been granted to user. Status: SUCCESS
CREATE MATERIALIZED VIEW has been granted to user. Status: SUCCESS
CREATE MATERIALIZED VIEW has been granted to user. Status: SUCCESS
CREATE SEQUENCE has been granted to user. Status: SUCCESS
CREATE SEQUENCE has been granted for User. Status: SUCCESS
CREATE SEQUENCE has been granted for User. Status: SUCCESS
SILECT privilege is granted for V. $nis_parameters view. Current value: SELECT. Status: SUCCESS
NLS_CREATE SEQUENCE has been granted for V. $parameters view. Current value: SELECT. Status: SUCCESS
NLS_CREATE SEQUENCE is granted for V. $parameters view. Current value: SELECT. Status: SUCCESS
NLS_CREATE SEQUENCE is granted for V. $parameters view. Current value: SELECT. Status: SUCCESS
SELECT privilege is granted for V. $parameter view. Current value: SELECT. Status: SUCCESS
Open cursor value is granted for V. $parameter view. Current value: SELECT. Status: SUCCESS
SELECT privilege is granted for USER IS GUOTAS view. Current value: SELECT. Status: SUCCESS
Schema is granted with at least 500 MB table space. Current value: SELECT. Status: SUCCESS
Schema is granted with at least 500 MB table space. Current value: SELECT. Status: SUCCESS
DB specific Validation Completed. Status: SUCCESS
Environment check utility Status: SUCCESS
Environment check utility
```

7. The process displays the OFSAA License. Enter Y and proceed.

Figure 6-8 OFSAA License Agreement



8. The installer installs the OFS AAI application.

Figure 6-9 OFS AAI Installation

```
Are you accepting the terms and conditions mentioned above? [Y/N]:

Please enter password for default Infrastructure administrator user SYSADMN:

Please re-enter password for default Infrastructure administrator user SYSADMN:

Please enter password for default Infrastructure authorizer user SYSADTH:

Please re-enter password for default Infrastructure authorizer user SYSADTH:

Starting installation...

Preparing to install...

Extracting the installation resources from the installer archive...

Configuring the installer for this system's environment...

Launching installer...

Preparing SILENT Mode Installation...

OFSAAInfrastructure (created with InstallAnywhere)

Installing...
```

9. After OFS AAAI is installed, the OFS PCD Application Pack installation begins.

Figure 6-10 OFS PCD InstallationOFS PCD Installation



The data model is also installed with the OFS PCD Application Pack. Note that the data model installation takes some time to complete.

The OFSAA Infrastructure installation performs a post-install health check automatically on the successful installation of the product.

The following message is displayed in the console:

Installation completed

- **10.** To verify if the release is applied successfully, check the log files mentioned in the Verify the Log File Information section.
- **11.** After the installation OFS PCD Pack 8.1.2.0.0 is successful, complete the required Post-installation steps.



7

Post-installation

After the successful installation of the OFS PCD Applications Pack Release 8.1.2.0.0, follow the post-installation procedures.

Topics:

- · Post-installation Checklist
- Verify the Log File Information
- Backup the SCHEMA_CREATOR.xml, OFS_PM_SCHEMA_OUTPUT.xml, and Silent.props Files
- Change the ICC Batch Ownership
- · Excel Upload Mapping and Template
- Additional Configuration

7.1 Post-installation Checklist

You can use this checklist to have a quick glance at everything that you will be doing post-installing this application. The link provided in each step takes you to a section either within this document or to another referenced document.

Table 7-1 Post-installation Checklist

SI. No.	Post-installation Activity
1	Verify the installation logs.
2	Patch OFSAA Infrastructure Installation.
3	Back up the SCHEMA_CREATOR.xml, OFS_PM_SCHEMA_OUTPUT.xml, and Silent.props files.
4	Stop the OFSAA Infrastructure services.
5	Create and deploy EAR/WAR files.
3	Start the OFSAA Infrastructure services.
7	Configure the webserver.
3	Configure the Resource Reference in web application servers.
)	Configure the Resource Reference in web application servers.
10	Access the OFSAA application.
11	OFSAA Landing Page
12	Change the ICC batch ownership.
13	Add TNS entries in the tnsnames.ora file.
14	Create Application Users.
15	Map the Application User(s) to User Groups.
16	Excel upload mapping and template.



Table 7-1 (Cont.) Post-installation Checklist

SI. No.	Post-installation Activity
17	Configure TDE and Data Redaction in OFSAAI.
18	18
19	Implement Data Protection in OFSAA.

7.2 Verify the Log File Information

See the following logs files for more information:

- Pack Install.log file in the OFS PM PACK/logs/ directory.
- Infrastructure installation log files in the OFS_PM_PACK/OFS_AAI/logs/ directory.
- OFS PM PACK installation.log file in the OFS PM PACK/OFS PM/logs directory.

7.3 Backup SCHEMA_CREATOR_IN.xml, OFS_PM_SCHEMA_OUTPUT.xml, and Silent.props Files

Back up the SCHEMA_CREATOR.xml, OFS_PM_SCHEMA_OUTPUT.xml, and Silent.props files as they can be reused when upgrading existing applications or installing new applications.

Table 7-2 Directory of Files to Backup

File Name	Directory
OFS_PM_SCHEMA_IN.xml	OFS_PM_PACK/schema_creator/conf
OFS_PM_SCHEMA_OUTPUT.xml	OFS_PM_PACK/schema_creator/
Silent.props	OFS_PM_PACK/appsLibConfig/conf

7.4 Patch OFSAA Infrastructure Installation

Oracle strongly recommends installing the latest available patch set to be up-to-date with the various releases of the OFSAA product.

After the installation of OFSAAAI 8.1.2.0.0, apply the following mandatory patch:

33663417

Note:

On the 10th of December 2021, Oracle released Security Alert CVE-2021-44228 in response to the disclosure of a new vulnerability affecting Apache Log4J before version 2.15. The application of the 33663417 Mandatory Patch fixes the issue.

For details, see the My Oracle Support Doc ID 2827801.1.

Ensure that you reapply the 33663417 Mandatory Patch whenever you install or upgrade the application, or apply an incremental patch.

For patch download information, see the Download the OFSAAAI Applications Pack Installer and Patches section in Pre-installation for a new installation and in Upgrade for an upgrade installation.

See My Oracle Support for more information on the latest release.

7.5 Stop the Infrastructure Services

To stop Infrastructure services, follow these steps:

- On the machine where the Infrastructure Application components are installed, navigate to the \$FIC_APP_HOME/common/FICServer/bin directory, and execute the following command:
 - ./stopofsaai.sh
- 2. To stop the ICC server on the machine where the Infrastructure Default Application components are installed, navigate to the \$FIC_HOME/ficapp/icc/bin directory, and execute the following command:
 - ./iccservershutdown.sh



Only the Infrastructure Default Application Server will hold the ICC component.

- 3. To stop the Back-end server on the machine where the Infrastructure database components are installed, navigate to the \$FIC_DB_HOME/bin directory, and execute the following command:
 - ./agentshutdown.sh

7.6 Create the EAR/WAR File

The EAR/WAR files are automatically generated during the new installation. However, see this section if you have to create EAR/WAR files after installation or upgrade.

7.7 Start the Infrastructure Services

Start the infrastructure servers after the installation and the post-installation steps are completed. Log on to each machine and execute the .profile file. Start all the servers mentioned from the same shell encoding.



Note:

The servers mentioned in this section are dependent on each other. It is mandatory to maintain the order in which the servers are started. Allow each of the servers to initialize completely before starting the next server.

1. On the machine where the Infrastructure Application components are installed, navigate to the <code>\$FIC_APP_HOME/common/FICServer/bin</code> directory, and execute the following command to start the Infrastructure Server:

./startofsaai.sh

Note:

- a. You can also start the Infrastructure Server by executing the command "nohup./ startofsaai.sh &". Starting the process using "nohup" and "&" returns the command prompt without having to wait until the process completes. However, this command cannot be used when you are starting the server for the first time or starting after changing the user password in the configuration database schema.
- b. When you start the server, the following error is displayed: java.io.FileNotFoundException:

/ftpshare/<INFODOM>/erwin/fipxml/<INFODOM>_DATABASE.XML (No such file or directory)

Ignore this error.

2. Start the ICC server.

On the machine where the Infrastructure Default Application components are installed, navigate to the \$FIC_HOME/ficapp/icc/bin directory, and execute the following command to start the "ICC server":

./iccserver.sh



Only the Infrastructure Default Application Server holds the ICC component.

- 3. Start the Backend Services using one of the following options:
 - On the machine where Infrastructure Database components are installed, navigate to the \$FIC_DB_HOME/bin directory, and execute the following command to start the "Agent server":

./agentstartup.sh

Using nohup execute the following command:

nohup ./agentstartup.sh &





This agent internally starts the Router, Message Server, OLAP Data Server, and AM Services.

7.8 Configure the Web Server

This step assumes the installation of a web server exists as per the prerequisites.

Refer to the product-specific installation guide to install and configure the web server. If an installation already exists, skip, and proceed to the next step.

Note:

- See the Oracle Financial Services Analytical Applications Infrastructure Security Guide for configurations to secure your web server.
- You must enable a sticky session/affinity session configuration on the web server. See the respective product-specific Configuration Guide for more details. Additionally, you also must enable the sticky session/ affinity session configuration at the Load Balancer level if you have configured a Load Balancer in front of the web server.

This step assumes the installation of a web application server exists as per the prerequisites. To configure the Web application server for OFSAA Deployment refer to the following sections.

Topics:

- Configure WebSphere Application Server for Application Deployment
- Configure WebLogic for Application Deployment
- Configure Apache Tomcat Server for Application Deployment
- Additional Configurations for Web Servers

Note:

- Make a note of the IP Address/ Hostname and Port of the webapplication server. This information is required during the installation process (required if the web server is not configured).
- Add umask 0027 in the .profile of the UNIX account which manages the WEB server to ensure restricted access permissions.
- See the OFSAA Secure Configuration Guide/ Security Guide mentioned in the Related Documents section for additional information on securely configuring your web server.



7.8.1 Configure WebSphere Application Server for Application Deployment

You can deploy multiple OFSAA applications on different profiles of a stand-alone WebSphere application server. To create multiple WebSphere "Profiles" in a stand-alone server, use the command line option as explained in the following section. A profile is the set of files that define the runtime environment. At least one profile must exist to run the WebSphere Application Server.

7.8.1.1 Create a New Profile in WebSphere

The Profile is created in WebSphere through the command line using the manageprofiles.sh that resides in the <WebSphere Install directory>/ AppServer/bin directory.

Use the following command to create a profile without admin security through the command line:

```
"manageprofiles.sh -create -profileName <profile> -profilePath <profile_
path> -templatePath <template_path> -nodeName <node_name> -cellName
<cell name> -hostName <host name>"
```

Example:

```
$usr/home>./manageprofiles.sh -create -profileName mockaix
-profilePath/websphere/webs64/Appserver/profiles/mockaix
-templatePath/websphere/webs64/Appserver/profileTemplates/default
-nodeName ipa020dorNode04 cellName ipa020dorNode04Cell -hostName ipa020dor
```

The command to create a profile with admin security through command line is as follows:

```
"manageprofiles.sh -create -profileName <profile> -profilePath <profile_
path> -templatePath <template_path> -nodeName <node_name> -cellName

<cell_name> -hostName <host_name> -enableAdminSecurity true -
adminUserName<Admin User Name> -adminPassword < Admin User Password> -
samplespassword<sample User Password>"
```

Example:

```
$usr/home>./manageprofiles.sh -create -profileName mockaix
-profilePath/websphere/webs64/Appserver/profiles/mockaix
-templatePath/websphere/webs64/Appserver/profileTemplates/default
-nodeName ipa020dorNode04 -cellName ipa020dorNode04Cell -hostName
ipa020dor -enableAdminSecurity true -adminUserName ofsaai -adminPassword
ofsaai -samplespassword ofsaai"
```





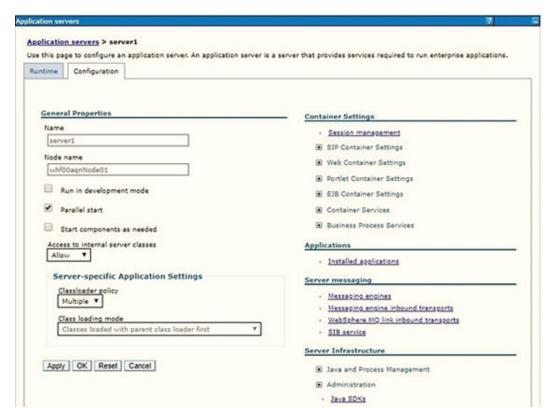
While using the manageprofiles.sh command to create a New Profilein WebSphere, you can also use "-validatePorts"to validate if the specified ports are not reserved or in use. Additionally, you can specify new ports with "-startingPort
baseport>" which specifies the starting port number to generate and assign allports for the profile. For more information on using these ports, refer to WebSphere manageprofilescommand.

7.8.1.2 Manage IBM WebSphere SDK Java Technology Edition Versions

Follow these steps to check the java version and set it to JAVA 8.X SDK:

- 1. Enter the WebSphere URL in the format http://HOST_NAME:PORT_ NUMBER/ibm/ console (use https if SSL is enabled.). For example, http://192.168.1.0:9000/ibm/console.
- Log in with your administrator user ID and password.
- 3. From the LHS menu, click **Servers** to expand and view the menu.
- Click Server Types to expand the menu further and then click WebSphere Enterprise Application Servers to view the Application servers window.
- 5. On the Application servers window, click the required Application Server link. For example, server1 in the following figure:

Figure 7-1 Application Server Java SDKs



Click the Java SDKs link from the Server Infrastructure section to view the list of Java SDKs.



Figure 7-2 Application Server List of Java SDKs

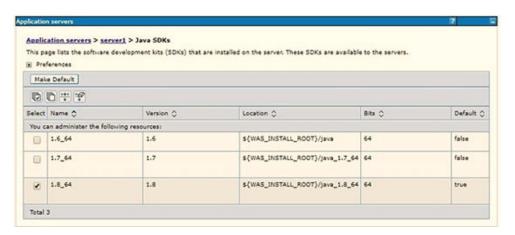
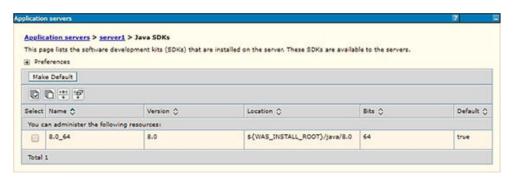


Figure 7-3 Application Server List of Java SDKs



- Select 8.0_64.
- 8. Click **Make Default** and save to master repository.
- Restart the WebSphere Application Server to apply the changes to the IBM application profile.

7.8.1.3 Manage Applications in WebSphere

To manage the installed applications in WebSphere, follow these steps:

1. Open the administrator console using the following URL:

http://<ipaddress>:<Administrative Console Port>/ibm/console

For example: http://10.111.222.333:9003/ibm/console (https if SSL is enabled.)



Administrative Console Port value is available in the serverindex.xml file within the <WebSphere Profile Directory>/config/cells/<Node Cell>/ nodes/<Node Name> directory.

The Integrated Solutions Console Login window is displayed.

WebSphere Integrated Solutions Console

User ID:
admin

Password:
...... I

Log in

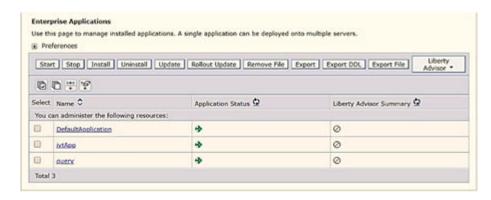
Licensed Materials - Property of IBM (c) Copyright IBM Corp. 1997, 2011 All Rights Reserved. IBM, the IBM logo, ibm.com and WebSphere are trademarks or registered trademarks of International Business Machines Corp., registered in many furisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of

Figure 7-4 Integrated Solutions Console Login

- 2. Log in with the User ID provided with admin rights.
- 3. From the LHS menu, expand the **Applications > Application Type> WebSphere Enterprise Applications** to display the Enterprise Applications window.

IBM trademarks is available on the Web at Copyright and trademark information.

Figure 7-5 Enterprise Applications



This Enterprise Applications window helps you to:

- Install new application
- Uninstall existing applications
- Start or Stop the installed applications



7.8.1.4 Configure WebSphere Application Server to Initialize Filters before Initializing Load-On-Startup Servlets and Allowing Empty Servlets Maps

The custom configuration information in this section initializes the filters before initializing load-onstartup servlets and allows empty servlet maps when you start an application.

To configure custom properties for filters, follow these steps:

This is a mandatory configuration for OFSAA with WebSphere for both fresh and upgrade installation.

- Enter the WebSphere URL in the format http://HOST_NAME:PORT_ NUMBER/ibm/console (use https if SSL is enabled.). For example, http:// 192.168.1.0:9000/ibm/console.
- 2. Log in with your administrator user ID and password.
- 3. From the left menu, click Servers to expand the menu.
- 4. Click Server Types to expand the menu further and then click WebSphere Enterprise Application Servers to view the Application servers window.
- 5. On the Application servers window, click the required Application Server link.
- 6. Click **Web Container Settings** and then **Custom Properties** to view the Custom Properties window.

Web Container Initialize Filters Before Servlet

Figure 7-6 Web Container Initialize Filters Before Servlet



- 7. Click **New** and enter the following properties:
 - com.ibm.ws.webcontainer.initFilterBeforeInitServlet to true.
 - com.ibm.ws.webcontainer.invokeFilterInitAtStartup to true.
 - com.ibm.ws.webcontainer.emptyServletMappings to true.
- 8. Click **OK** and then click **Save** on the Console to save the customized configurations.
- 9. Restart the WebSphere Application Server to apply the changes.



7.8.1.5 Configure WebSphere Application Server Persistence to JPA Specification 2.0

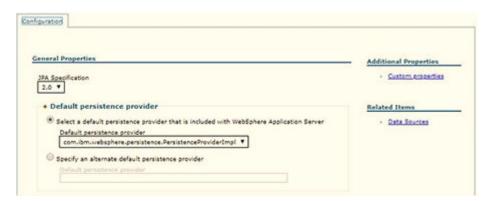
The persistence configuration information in this section sets JPA 2.0 specification in WebSphere over the default JPA 2.1 specification.

This is a mandatory configuration for OFSAA with WebSphere for both fresh and upgrade installation.

To set the JPA 2.0 as the default persistence provider, follow these steps:

- 1. Enter the WebSphere URL in the format http://HOST_NAME:PORT_ NUMBER/ibm/ console (use https if SSL is enabled.). For example, http://192.168.1.0:9000/ibm/console.
- 2. Log in with your administrator user ID and password.
- 3. From the LHS menu, click **Servers** to expand the menu.
- 4. Click **Server Types** to expand the menu further and then click WebSphere Enterprise Application Servers to view the Application servers window.
- 5. On the Application servers window, click the required Application Server link.
- 6. Click Container Services and then click Default Java Persistence API settings to display the Configuration window:

Figure 7-7 Default Java Persistence Settings JPA Specification 2.0



- From the JPA Specification drop-down, select 2.0 to change the default JPA Specification from 2.1 to 2.0.
- 8. Click **OK** and then click **Save** on the Console to save the customized configurations.
- Restart the WebSphere Application Server to apply the changes.

7.8.1.6 Configure WebSphere Application Server to Use a Load Balancer or Proxy Server

The configuration prevents the process server from redirecting to an internal port when using a load balancer or proxy server.

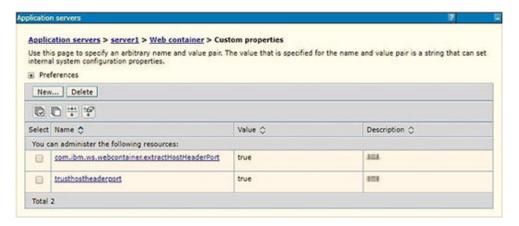
The following steps describe the configuration:

1. Enter the WebSphere URL in the format http://HOST_NAME:PORT_NUMBER/ibm/console (use https://ssl.is.enabled.). For example, http://192.168.1.0:9000/ibm/console.



- 2. Log in with your administrator user ID and password.
- 3. From the LHS menu, click **Servers** to expand and view the menu.
- 4. Click **Server Types** to expand the menu further and then click **WebSphere Enterprise Application Servers** to view the Application servers window.
- **5.** On the **Application servers** window, click the required **Application Server** link. For example, server1.
- Click Web Container Settings and then Custom Properties to view the Custom Properties window.

Figure 7-8 Application Servers Load Balancer Proxy Server



- 7. Click **New** and enter the following properties:
 - com.ibm.ws.webcontainer.extractHostHeaderPort: true
 - Trusthostheaderport: true
- 8. Click **OK** and then click **Save** on the Console to save the customized configurations.
- 9. Restart the WebSphere Application Server to apply the changes.

7.8.1.7 Delete WebSphere Profiles

To delete a WebSphere profile, follow these steps:

- 1. Select the check box adjacent to the required application and click **Stop**.
- **2. Stop** the WebSphere profile to be deleted.
- 3. Navigate to WebSphere directory:

```
<WebSphere Installation Directory>/AppServer/bin/
```

4. Execute the command:

```
manageprofiles.sh -delete -profileName <profile name>
```

5. Delete the profile directory.

```
Example: <WebSphere_Installation_ Directory>/AppServer/profiles/
file name>
```

6. Execute the command:

manageprofiles.sh -validateAndUpdateRegistry

7.8.1.8 Configure WebSphere HTTPS

To configure an HTTPS Transport on WebSphere, follow these steps:

1. Create a profile using the Profile Creation Wizard in WebSphere.



Record the https port specified during this process and use it as a servlet port or web server port during OFSAAI installation.

To enable https configuration on Infrastructure, assign value 1 to "HTTPS_ ENABLE" in OFSAAI InstallConfig.xml for Silent mode OFSAAI installation.

7.8.1.9 Configure WebSphere Memory Settings

To configure the WebSphere Memory Settings, follow these steps:

- Navigate to WebSphere applications server > Application servers > server1 >
 Process definition > Java Virtual Machine.
- 2. Change the memory setting for Java Heap:
 - Initial heap size = 512
 - Maximum heap size = 3072

7.8.1.10 Configure WebSphere for Rest Services Authorization

For more information, see the OFS Analytical Applications Infrastructure Administration Guide.

7.8.2 Configure WebLogic for Application Deployment

You can deploy multiple Infrastructure applications on different domains of a stand-alone WebLogic application server. To create multiple WebLogic "Domains" in a stand-alone server, you can use the Domain Creation wizard. A domain is the set of files that define the runtime environment. At least one domain must exist to run the WebLogic Application Server.

You can deploy multiple Infrastructure applications on different domains of a stand-alone WebLogic application server. To create multiple WebLogic "Domains" in a stand-alone server, you can use the Domain Creation wizard. A domain is the set of files that define the runtime environment. At least one domain must exist to run the WebLogic Application Server.

This section covers the following topics:

- Create Domain in WebLogic Server
- Delete Domain in WebLogic
- Configure WebLogic Memory Settings

7.8.2.1 Create Domain in WebLogic Server

To create a new domain using Configuration Wizard in WebLogic, follow these steps:



Navigate to the directory <WLS_HOME>/wlserver/common/bin and execute the command:

./config.sh

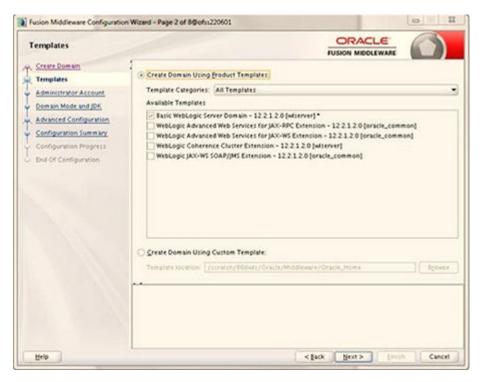
The **Welcome** window of the Configuration Wizard is displayed.

Figure 7-9 Configuration Type



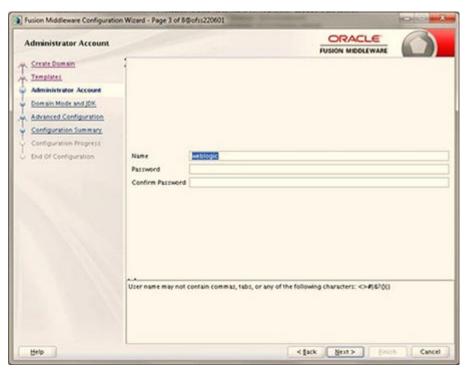
2. Select Create a new domain option and click Next to the Templates window.

Figure 7-10 Templates



3. Select the **Create Domain Using Product Templates** option and click **Next** to display the **Administrator Account** window.

Figure 7-11 Administrator Account



4. Enter the user name to be assigned to the administrator, the password, and confirm the password. Click **Next** to the Domain Mode and JDK window.



Figure 7-12 Domain Mode and JDK

- **5.** Select from the following options:
 - **a.** In the Domain Mode section, select the required mode (Development or Production).
 - b. In the JDK section, select the required option. If you select Other JDK Location, click Browse, navigate to the JDK location, and select. Click Next to display the Advanced Configuration window.

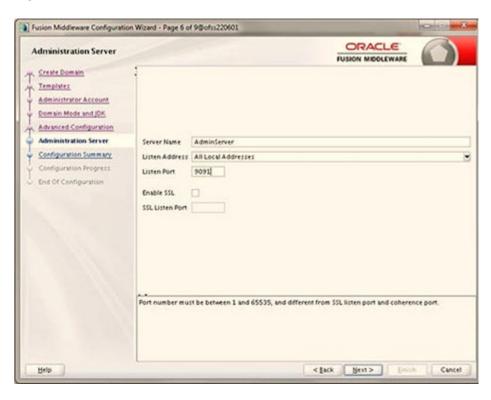




Figure 7-13 Advanced Configuration

6. Select the Administration Server. A WebLogic Server domain must have an Administration Server. You can also select Manages Servers, Clusters and Machines, and RDBMS Security Store if required. Click Next to display the Administration Server window.

Figure 7-14 Administration Server





7. Enter Administration Server details such as the Server Name, Listen address, Listen Port, Enable SSL (for secure login using https, select this check box), and SSL Listen Port. Click Next to display the Configuration Summary window.



Make a note of the Listen Port or SSL Listen Port value (for example: 7007) since the same has to be re-entered in the Servlet port field during Infrastructure installation.

Figure 7-15 Configuration Summary



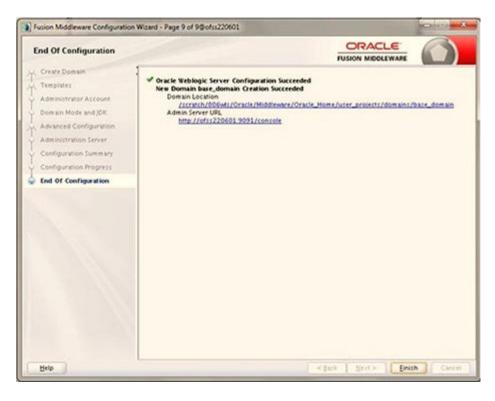
 Verify the configuration details of the WebLogic domain and click Create to display the Configuration Progress window with the status indication of the domain creation process.

Figure 7-16 Creating Domain



Click Next when 100% of the activity is complete. The End of Configuration window is displayed.

Figure 7-17 End of Configuration





10. Click **Finish**. The domain server is created enabling the deployment of multiple Infrastructure applications on a single WebLogic.



- Record the HTTPS port specified during this process and use it as a servlet port or web server port during OFSAAI Installation.
- To enable https configuration on Infrastructure, assign value 1 to "HTTPS_ENABLE" in OFSAAI_InstallConfig.xml for silent mode OFSAAI installation.
- 11. Add a java option entry -DUseSunHttpHandler=true in the WLS_HOME/bin/ "setDomainEnv.sh" file (Required only if a self-signed certificate is used).

7.8.2.2 Delete Domain in WebLogic

To delete a domain in WebLogic, follow these steps:

1. Navigate to the following directory:

```
<WebLogic Installation directory>/user_projects/domains/<domain name>/
bin
```

- 2. Execute stopWebLogic.sh to stop the Weblogic domain.
- 3. Delete the Weblogic domain.

7.8.2.3 Configure WebLogic Memory Settings

To configure the WebLogic Memory Settings, follow these steps:

- 1. Change the memory setting for Java Heap to -Xmx512m -Xmx3072m in the setDomainEnv.sh file, which resides in the <DOMAIN_HOME>/bin directory and the CommEnv.sh file which resides in the common/bin directory
- 2. Edit this file for customizing memory settings and garbage collector settings depending on the available hardware configuration.

Example 1:

```
if [ "${JAVA_VENDOR}" = "Sun" ] ; then WLS_MEM_ARGS_64BIT="-Xms512m
-
Xmx1024m"
export WLS_MEM_ARGS_64BIT WLS_MEM_ARGS_32BIT="-Xms512m -Xmx1024m"
export WLS_MEM_ARGS_32BIT else WLS_MEM_ARGS_64BIT="-Xms512m -
Xmx1024m"
export WLS_MEM_ARGS_64BIT WLS_MEM_ARGS_32BIT="-Xms512m -Xmx1024m"
export WLS_MEM_ARGS_32BIT
```

Example 2:

```
JAVA_VM=
MEM ARGS="-Xms256m -Xmx1024m"
```



7.8.3 Configure Apache Tomcat Server for Application Deployment

This section is applicable only when the Web application server type is Tomcat. This section includes the following topics:

7.8.3.1 Tomcat User Administration

The Tomcat administration and manager application does not provide a default login. You are required to edit "\$CATALINA HOME/conf/tomcat-users.xml" as follows:

This file contains an XML <user> for each user that will display the username and password used by the admin to log in to Tomcat and the role names to which the admin user is associated with.

For example, <user name="admin" password="admin" roles="standard,manager" />

- Add the manager role to any one of the existing username/password combinations as shown in the preceding example.
- Use the same username/password to which the manager role is assigned to access the Tomcat Application Manager.
- If the Tomcat server is already running, it requires a re-start after the preceding configuration is done.

7.8.3.2 Configure Servlet Port

The default servlet port configured for the Tomcat installation is 8080. Ignore this section if you must use the default port.

If you must use a different port number, you must first configure the port in the server.xml file in the conf directory of the Tomcat Installation directory. To configure the Servlet Port, follow these steps:

Navigate to \$CATALINA_HOME/conf. Open server.xml and locate the tag: "Define a non-SSL HTTP/1.1 Connector on port 8080 "

Against this tag, a parameter is specified 'Connector port = "8080". Edit this value to the new port number that was used during the Infrastructure installation process.

2. Save your changes in the server.xml file.



Make a note of the servlet port configured. This information is required during the installation of the OFSAA Application Pack.

7.8.3.3 Configure SSL Port

If you must configure and access your OFSAA setup for HTTPS access, ensure that the following connect tag under Define a SSL HTTP/1/1 Connector on port 8443 in the <Tomcat_installation_directory>/conf/server.xml file is uncommented for SSL Configuration. (By default, it is commented).



<Connector port="8443" protocol="HTTP/1.1" SSLEnabled="true" maxThreads="150" scheme="https" secure="true" clientAuth="false" sslProtocol="TLS"</p>



- Make a note of the servlet port configured. This information is required during the installation of the OFSAA Application Pack.
- To enable https configuration on Infrastructure, assign value 1 to "HTTPS_ENABLE" in the OFSAAI_InstallConfig.xml file for SILENT mode OFSAAI installation.

For more information related to SSL Configuration on Tomcat, see http://tomcat.apache.org/.

7.8.3.4 Configure Apache Tomcat Memory Settings

To configure the Apache Tomcat Memory Settings, follow these steps:

- 1. Locate the catalina.sh file that resides in the <CATALINA HOME>/bin directory.
- 2. Edit this file for customizing the memory settings and garbage collector settings depending on the available hardware configuration.
- 3. Add the memory setting for Java Heap to -Xms512m -Xmx1024m. For example:

```
if [ -z "$LOGGING_MANAGER" ]; then JAVA_OPTS="$JAVA_OPTS -Xms512m -
Xmx1024m
-Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManager"
else
JAVA_OPTS="$JAVA_OPTS -Xms512m -Xmx1024m $LOGGING_MANAGER"
fi
```

7.8.3.5 Configure Tomcat for User Group Authorization

Users with system authorization roles can access User Group Authorization. However, to make it available on the Tomcat web server, you must follow these configuration steps:

- 1. Navigate to the \$CATALINA HOME/conf directory and open the web.xml file.
- 2. Enter the following in the web.xml file.

```
<init-param>
<param-name>mappedfile</param-name>
<param-value>false</param-value>
</init-param>
```

3. Save and close the file.

7.8.3.6 Uninstall WAR Files in Tomcat

To uninstall WAR files in Tomcat, refer to Uninstalling WAR Files in Tomcat.

7.9 Configure Application Security in WebSphere

This is a mandatory security procedure for WebSphere to restrict the unauthorized access of configuration files in directories. For detailed information, see the Oracle Financial Services Analytical Applications Infrastructure Security Guide.

7.9.1 Configure Resource Reference in WebSphere Application Server

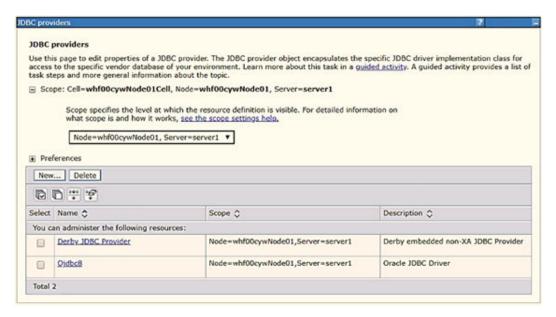
This section is applicable only when the Web application server type is WebSphere.

7.9.1.1 Create a JDBC Provider

To create the JDBC Provider in WebSphere Application Server, follow these steps:

- Open the WebSphere admin console in the browser window: http://<ipaddress>:<administrative console port>/ibm/console (https, if SSL is enabled). The Login window is displayed.
- 2. Log in with the user ID that has admin rights.
- Expand the Resources option in the LHS menu and click JDBC > JDBC Providers to display the JDBC Providers window.

Figure 7-18 JDBC Providers



- 4. Select the **Scope** from the drop-down list. The Scope specifies the level at which the resource definition is visible.
- 5. Click **New** to add the new JDBC Provider under the Preferences section. The Create new JDBC Provider window is displayed.



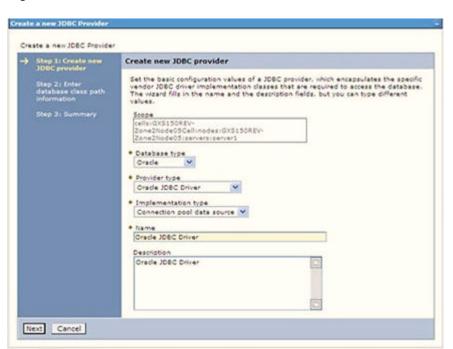
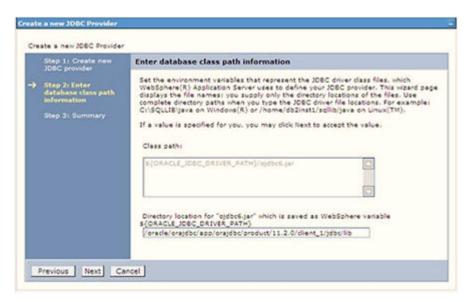


Figure 7-19 Create a new JDBC Provider

- **6.** Enter the following details:
 - a. Database Type: Oracle
 - b. Provider Type: Oracle JDBC Driver
 - c. Implementation Type: Connection pool data source
 - **d. Name**: The required display name for the resource.
 - e. **Description**: The optional description for the resource.
- Click Next.

Figure 7-20 Enter database class path information





8. Specify the directory location for the ojdbc<version>.jar file. Do not use the trailing slash file separators.

The Oracle JDBC driver can be downloaded from the following Oracle Download site:

- Oracle Database 18cg Release 3 JDBC Drivers
- Oracle Database 19c Release 3 JDBC Drivers

After downloading, you must copy the file in the required directory on the server.



See Hardware and Software Requirements to identify the correct ojdbc<version>.jar file version to be copied.

9. Click **Next** to display the **Summary** window.

Figure 7-21 Summary



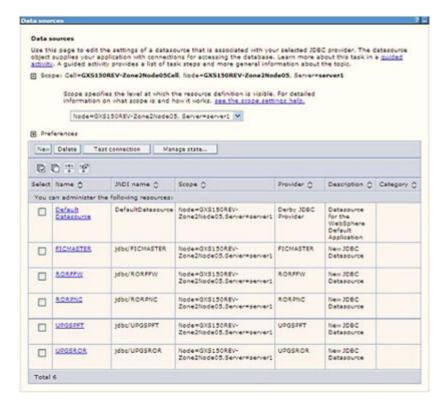
- 10. Verify the details and click **Finish** to create the JDBC Provider.
- 11. The options to Save and Review are displayed. Click Save.

7.9.1.2 Create Data Source

The following steps apply to both config and atomic data source creation. To create the data source, follow these steps:

- 1. Open the following URL in the browser window: http://<ipaddress>:<administrative console port>/ibm/console (https if SSL is enabled). The Login window is displayed.
- 2. Log in with the user ID that has admin rights.
- Expand the Resources option in the LHS menu and click JDBC > Data sources to display the Data sources window.

Figure 7-22 Data Sources



- 4. Select the **Scope** from the drop-down list. The scope specifies the level at which the resource definition is visible.
- 5. Click **New** to display the Create a Data Source window.

Figure 7-23 Create Data Source



- Specify the Data source name and JNDI name for the new "Data Source".
- 7. The **JNDI** name and **Data source** name are case sensitive and ensure that JNDI name is the same as the "Information Domain" name.

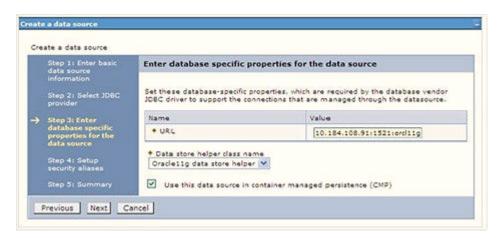
8. Click **Next** to display the Select JDBC provider window.

Figure 7-24 Select JDBC provider



Select the option Select an Existing JDBC Provider and select the required JDBC provider from the drop-down list. Click Next.

Figure 7-25 Enter database specific properties



10. Specify the database connection URL.

11. Select **Data Store Helper Class Name** from the drop-down list and ensure that the **Use** this data source in container managed persistence (CMP) check box is selected.



For RAC configuration, provide the RAC URL specified during installation.

Example: jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_ LIST=(ADDRESS=(PROTOCOL=TCP) (HOST=10.11.12.13) (port=1521)) (ADDRESS=(PROTOCOL=TCP) (HOST=10.11.12.14) (PORT=1521)) (LOAD_ BALANCE=no) (FAILOVER=yes)) (CONNECT_DATA=(SERVICE_NAME=pqadb)))



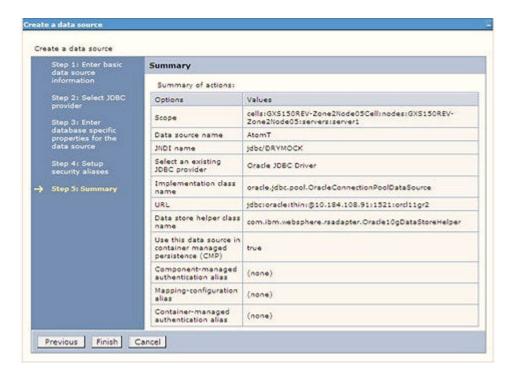
12. Click Next.

Figure 7-26 Enter Database specific properties



13. Map the J2C authentication alias, if already created. If not, you can create a new J2C authentication alias by accessing the link given (Global J2C authentication alias) or you can continue with the data source creation by clicking Next and then Finish.

Figure 7-27 Summary





You can also create and map J2C authentication alias after creating the data source.

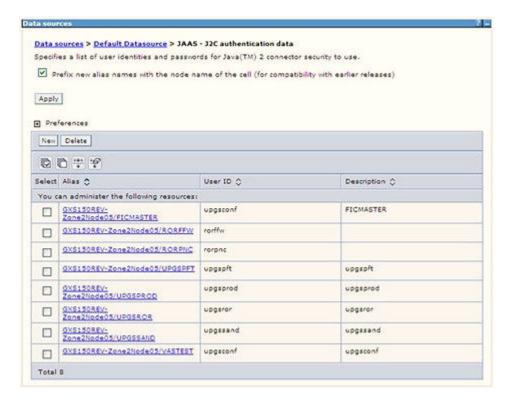
14. You must create another Data source by following the same procedure with jdbc/ FICMASTER as JNDI name pointing to the "configuration schema" of Infrastructure.

7.9.1.3 Create J2C Authentication Details

The following steps apply to create both config and atomic J2C Authentication. To create J2C Authentication details, follow these steps:

 Select the newly created Data Source and click JAAS J2C authentication data link under Related Items.

Figure 7-28 JAASJ2C authentication data



2. Click New under the Preferences section.



Data sources > Default Datasource > JAAS - J2C authentication data > New

Specifies a list of user identities and passwords for Java(TM) 2 connector security to use.

General Properties

+ Alias
 Atm

+ User ID
 Upgs73

• Password
 Description
 Atomic Instance

Apply OK Reset Cancel

Figure 7-29 JAASJ2C authentication data New

Enter the Alias, User ID, Password, and Description. Verify that the user ID is the Oracle user ID created for the respective Config and Atomic Schema for the "Information Domain".

Specify the Config database user ID and password information for the jdbc/FICMASTER data source, and the Atomic database user ID and password information for the Atomic schema data source that you created earlier.

4. Click **Apply** and save the details.

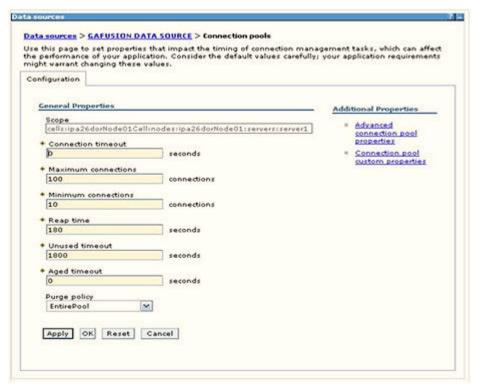
7.9.1.4 Define JDBC Connection Pooling

To define the JDBC connection pooling, ensure that you have created JDBC Provider and Data source to access the data from the database.

- Expand the Resources option in the LHS menu and click JDBC > Data sources option to display the Data sources window.
- 2. Click the newly created Data Source \$DATA_SOURCE\$ and navigate to the path Data sources > GAFUSION DATA SOURCE > Connection pools.



Figure 7-30 Connection Pools



- 3. Set the following values:
 - a. Connection timeout: 0
 - b. Maximum connections: 100
 - c. Minimum connections: 10

You can also define Reap time, Unused timeout, and Aged timeout as required.

7.9.2 Configure Resource Reference in WebLogic Application Server

This section applies only when the Web application server type is WebLogic. This section includes the following topics:

- Create Data Source
- · Create GridLink Data Source
- Configure Multi Data Sources
- Configure Advanced Settings for Data Source
- Configure JDBC Connection Pooling
- Create WorkManager

In the WebLogic server, you can create a "Data Source" in the following ways:

- For a non-RAC Database instance, a Generic Data Source must be created. See Create Data Source.
- For a RAC Database instance, a Gridlink Data Source must be created. See Create GridLink Data Source.



When Load Balancing/Fail over is required, a Multi Data Source must be created.
 See Configure Multi Data Sources.

7.9.2.1 Create Data Source

The following steps apply to both config and atomic data source creation.

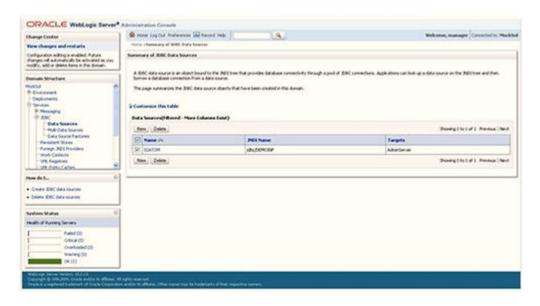
- Open the following URL in the browser window: http://<ipaddress>:<administrative console port>/console. (https, if SSL is enabled). The Welcome window is displayed.
- 2. Log in with the Administrator **Username** and **Password**.

Figure 7-31 Welcome



3. From the LHS menu (Domain Structure), click Services > Data Sources to display the Summary of JDBC Data Sources window.

Figure 7-32 Summary of JDBC Data Sources





4. Click New and select Generic Data Source to display the Create a New JDBC Data Source window.

Figure 7-33 Create a New JDBC Data Source



You can also select **GridLink Data Source** or **Multi Data Source** while creating a Data Source. For more information, see Create Data Source or Configure Multi Data Sources.

Figure 7-34 JDBC Data Source Properties



- Enter JDBC data source Name, JNDI Name, and select the Database Type from the drop-down list.
- **6.** Ensure the following:
 - a. The JNDI Name field must be in the format jdbc/informationdomain
 - b. The same steps must be followed to create a mandatory data source pointing to the "configuration schema" of infrastructure with jdbc/FICMASTER as JNDI name.
 - c. JNDI Name is the same as mentioned in the web.xml file of OFSAAI Application.
 - d. Required "Database Type" and "Database Driver" must be selected.

Data sources must be created for atomic and atomiccnf schemas following the same steps.



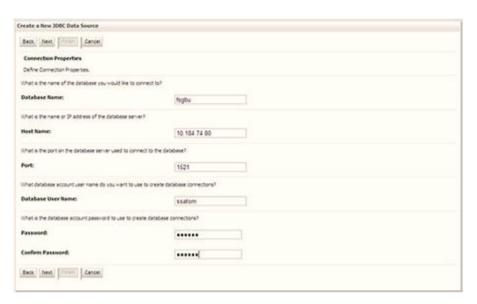
Click Next.

Figure 7-35 Transaction Options



8. Select the **Database Driver** from the drop-down list. You must select the Database Driver depending on database setup, that is, with or without RAC. Click **Next**.

Figure 7-36 Database Name



- Select the Supports Global Transactions check box and the One-Phase Commit option.
- 10. Click **Next** to display the Connection Properties window.



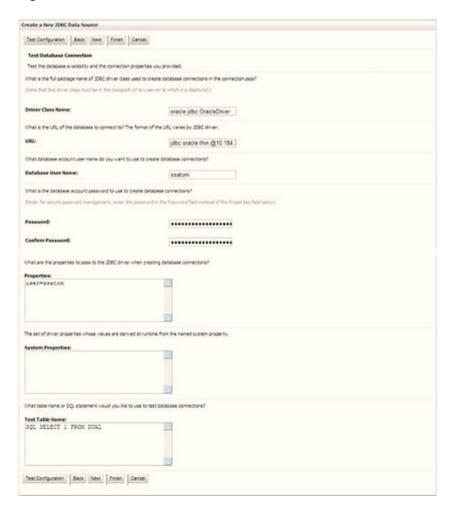
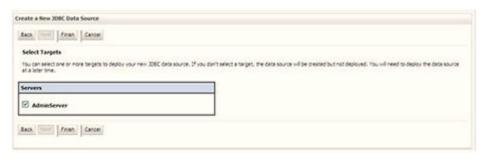


Figure 7-37 Database Details

- 11. Enter the required details such as the **Database Name**, **Host Name**, **Port**, **Oracle User Name**, **Password**, and **Confirm Password**.
- **12.** Click **Next** to display the Test Database Connection window.

Figure 7-38 Select Targets



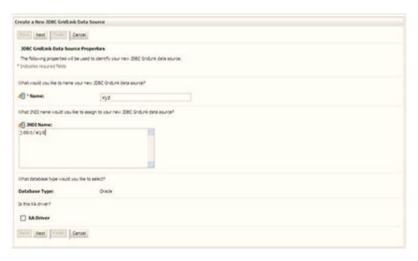
- **13.** Verify the details and click **Test Configuration** and test the configuration settings. A confirmation message is displayed stating "Connection test succeeded."
- **14.** Click **Finish**. The created "Data Source" is displayed in the list of Data Sources.



Note:

- "User ID" is the Oracle user ID that is created for the respective "Information Domain".
- "User ID" specified for a data source with "FICMASTER" as "JNDI" name must be the Oracle user ID created for the "configuration schema".
- 15. Select the new Data Source and click the Targets tab.

Figure 7-39 Data Source



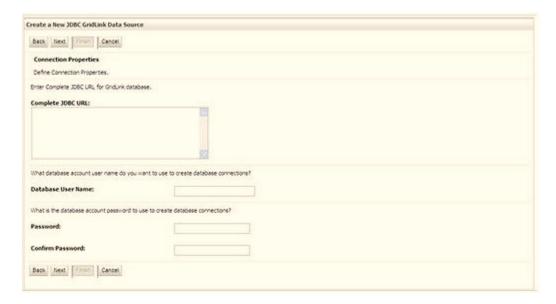
16. Select the AdminServer option and click Finish.

7.9.2.2 Create GridLink Data Source

If you have selected the option, New > GridLink Data Source while creating the "Data Source", you can directly specify the JDBC URL as indicated.



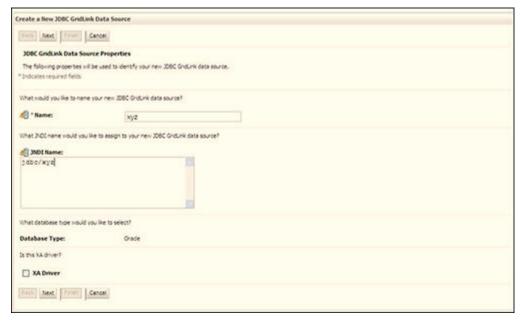
Figure 7-40 GridLink Data Source



1. Enter the Data Source Name and JNDI Name.

Ensure that the "JNDI Name" field is specified in the format "jdbc/infodomname" and the XA Driver check box is not selected. Click Next.

Figure 7-41 JNDI Name



2. Specify Complete JDBC URL, Database User Name, and Password. Click Finish. The created "Data Source" is displayed in the list of Data Sources.

7.9.2.3 Configure Multi-data Sources

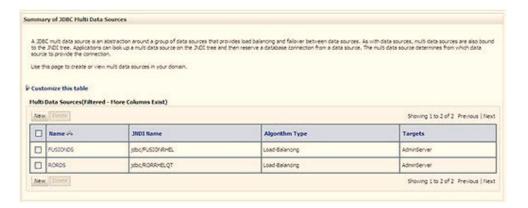
A JDBC multi-data source is an abstraction around a group of data sources that provides load balancing and failover between data sources. As with data sources, multi-data sources

are also bound to the JNDI tree. Applications can look up a multi-data source on the JNDI tree and then reserve a database connection from a data source. The multi-data source determines from which data source to provide the connection.

When the database used is Oracle RAC (Real Application Clusters), which allows Oracle Database to run across a set of clustered servers, then a group of data sources can be created for instances running on a set of clustered servers and a JDBC multidata source can be created so that applications can look up a multi-data source on the JNDI tree to reserve database connection. If a clustered server fails, Oracle continues running on the remaining servers.

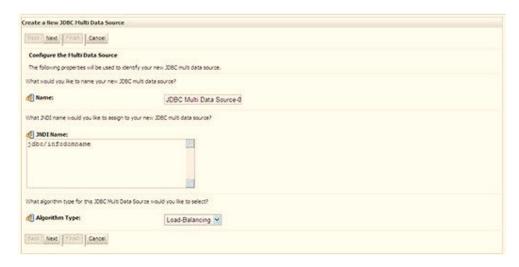
- Open the WebLogic Admin Console in the browser window: http:// <ipaddress>:<administrative console port>/console. (https if SSL is enabled). The Login window is displayed.
- 2. Login with the User ID that has admin rights.
- In the LHS menu (Domain Structure), select Services > JDBC > Multi Data Sources to display the Summary of JDBC Multi Data Sources window.

Figure 7-42 Multi Data Sources



4. Click **New** to display the New JDBC **Multi Data Source** window.

Figure 7-43 Configure Multi Data Source





Ensure that the Data Sources which must be added to the new JDBC Multi Data Source are created.

5. Enter the **JDBC Source Name**, **JNDI name**, and select the **Algorithm Type** from the drop-down list. Click **Next**.

Note:

- The JNDI Name must be specified in the format jdbc/ infodomname.
- The JNDI Name of the Data Sources that is added to the new JDBC Multi data source must be different from the JNDI name specified during Multi Data Source.
- The same steps must be followed to create a mandatory data source pointing to the "configuration schema" of infrastructure with jdbc/ FICMASTER as JNDI name for Data Source.
- The JNDI Name provided in the multi-data source must be the same name that is mentioned in the web.xml file of OFSAAI Application.
- You can select the Algorithm Type as Load-Balancing.

Figure 7-44 Select Targets



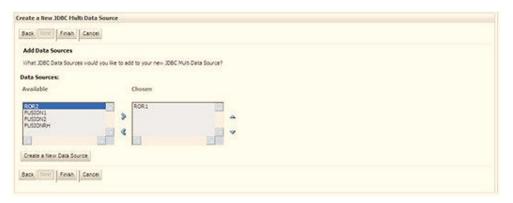
6. Select the **AdminServer** check box and click **Next**.

Figure 7-45 Select Data Source Type



7. Select the type of data source to add to the new JDBC Multi Data Source. Click **Next**.

Figure 7-46 Add Data Sources



 Map the required Data Source from the Available Data Sources. Click Finish. The New JDBC Multi Data Source is created with added data sources.

7.9.2.4 Configure Advanced Settings for Data Source

To configure the advanced setting for the data source, follow these steps:

- Click the new Data Source from the Summary of JDBC Data Sources window to display the Settings for Data Source Name window.
- 2. Select the Connection Pooling tab given under Configuration.
- 3. Navigate to the Advanced option at the bottom of the window, and check the Test Connection of Reserve check box (enables WebLogic Server to test a connection before giving it to a client).

To verify if the data source is valid, select "Data Source Name". For example, FICMASTER.

4. Select the server and click Test Data Source. A message is displayed indicating that the test was successful.

After the "Data Source" is created successfully, the following messages are displayed: All changes are activated. No restart is necessary.

Settings updated successfully.

If not, follow these same steps to recreate the data source.

7.9.2.5 Configure JDBC Connection Pooling

To define the JDBC connection pooling, ensure that you have created the JDBC Provider and Data Source to access the data from the database.

- Click the newly created Data Source \$DATA_SOURCE\$ and navigate to the path Home >Summary of Services: JDBC >Summary of JDBC Data Sources >JDBC Data Source-<INFODDOM_NAME>.
- 2. Set the following values:

a. Initial Capacity: 10

b. Maximum Capacity: 100

c. Capacity Increment: 1

d. Statement Cache Type: LRU



- e. Statement Cache Size: 10
- 3. Click Save.

7.9.2.6 Create Workmanager

A Workmanager is used to re-trigger failed messages. To create a Workmanager, follow these steps:

- The Name field must have the value wm/WorkManager-TFLT
- The Type field must have the value Work Manager.
- The Targets field must have the value AdminServer
- The Scope field must have the value Global
- The Stuck Thread Action field must have the value Ignore stuck threads Click Save.

Figure 7-47 WorkManager Screen 1

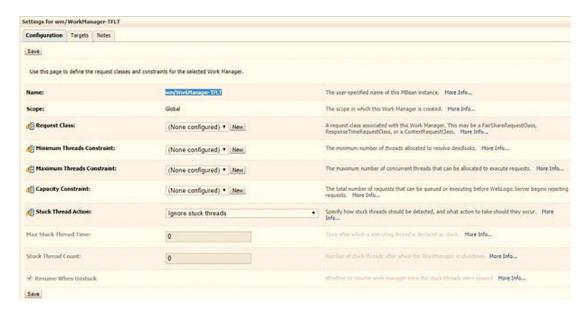
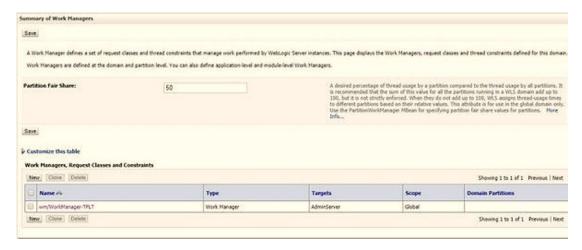


Figure 7-48 Workmanager Screen 2





7.9.3 Configure Resource Reference in Tomcat Application Server

This section is applicable only when the Web application server type is Tomcat and includes the following topics:

- Create Data Source
- Define JDBC Connection Pooling
- Configure ClassLoader for Apache Tomcat

Copy the Oracle JDBC driver file, ojdbc<version>.jar from <Oracle Home>/jdbc/lib and place it in <Tomcat Home>/lib.

See Hardware and Software Requirements to identify the correct ojdbc<version>.jar file version to be copied.

7.9.3.1 Create Data Source

To create a "data source" for Infrastructure application, navigate to <Tomcat Home>/
conf directory and edit the following block of text by replacing the actual values in the
server.xml file.

Note:

The User-IDs for configuration/ atomic schemas have the prefix of setup info depending on the value set for PREFIX_SCHEMA_NAME in the <code><<APPPack>> SCHEMA IN.XML</code> file of the Schema Creator Utility.

For example: If the value set for PREFIX_SCHEMA_NAME is DEV and the schema name is mentioned as ofsaaconf, then the actual schema created in the database is DEV_ofsaaconf.

```
<Context path ="/<context name>" docBase="<Tomcat Installation Directory>/
webapps/<context name>" debug="0" reloadable="true" crossContext="true">
<Resource auth="Container" name="jdbc/FICMASTER"</pre>
type="javax.sql.DataSource"
driverClassName="oracle.jdbc.driver.OracleDriver" username="<user id for
the configuration schema>" password="<password for the above user id>"
url="jdbc:oracle:thin:@<DB engine IP address>:<DB Port>:<SID>"
maxActive="100" maxIdle="30" maxWait="10000"/>
<Resource auth="Container"</pre>
name="jdbc/< INFORMATION DOMAIN NAME >"
type="javax.sql.DataSource"
driverClassName="oracle.jdbc.driver.OracleDriver" username="<user id for
the atomic schema>" password="<password for the above user id>"
url="jdbc:oracle:thin:@<DB engine IP address>:<DB Port>:<SID>"
maxActive="100" maxIdle="30" maxWait="10000"/>
</Context>
```



Note:

- The <Resource> tag must be repeated for each Information Domain created.
- After the configuration, the "WAR" file must be created and deployed in Tomcat.

7.9.3.2 Define JDBC Connection Pooling

To define the JDBC connection pooling, follow these steps:

 Copy the \$ORACLE_HOME/jdbc/lib/ojdbc<version>.jar file to the path \$TOMCAT_ DIRECTORY/lib/ directory.

See Hardware and Software Requirements to identify the correct ojdbc<version>.jar file version to be copied.

2. Edit the server.xml file present under the \$TOMCAT_DIRECTORY/conf/ directory with the following changes, which is required for connection pooling.

```
<Context path="/ $CONTEXTNAME$" docBase=" $APP_DEPLOYED_PATH$ " debug="0"
reloadable="true" crossContext="true">

<Resource auth="Container" name="jdbc/ $INFODOM_NAME$"
type="javax.sql.DataSource"
driverClassName="oracle.jdbc.driver.OracleDriver"
username=" $ATOMICSCHEMA_USERNAME$" password="$ATOMICSCHEMA_PASSWORD$"
url="$JDBC_CONNECTION_URL"
maxTotal="300" maxIdle="30" maxWaitMillis="10000"
removeAbandonedOnBorrow="true" removeAbandonedTimeout="60"
logAbandoned="true"/>
</Context>
```

Note:

- \$APP_DEPLOYED_PATH\$ must be replaced by the OFSAAI application deployed path.
- \$INFODOM_NAME\$ must be replaced by Infodom Name.
- \$ATOMICSCHEMA_USERNAME\$ must be replaced by an Atomic schema database user name.
- \$ATOMICSCHEMA_PASSWORD\$ must be replaced by an Atomic schema database password.
- \$JDBC_CONNECTION_URL must be replaced by JDBC connection string jdbc:Oracle:thin:<IP>:<PORT>:<SID>.

For example,

- jdbc:oracle:thin
- 192.168.0.1:1521:soluint



The User-IDs for configuration/ atomic schemas have the prefix of setupinfo depending on the value set for PREFIX_SCHEMA_NAME in the <<APP Pack>>_ SCHEMA IN.XML file of Schema Creator Utility.

For example: if the value set for PREFIX_SCHEMA_NAME is DEV and the schema name is mentioned as ofsaaconf, then the actual schema created in the database is DEV_ofsaaconf.

7.9.3.3 Configure ClassLoader for Apache Tomcat

To configure the ClassLoader for Apache Tomcat, follow these steps:

- 1. Edit the server.xml file available in \$TOMCAT HOME/conf/ directory.
- Add the tag <Loader delegate="true" /> within the <Context> tag, above before the <Resource> tag. This is applicable only when the web application server is Apache Tomcat 8.

7.10 Configure Work Manager in Web Application Servers

The process Modelling framework requires creating a Work Manager and mapping it to the OFSAA instance. This configuration is required for WebSphere and WebLogic Web application server types.

7.10.1 Configure Work Manager in WebSphere Application Server

7.10.1.1 Create Work Manager

To create the Work Manager, follow these steps:

1. Open the WebSphere admin console in the browser window:

http://<ipaddress>:<administrative console port>/ibm/console. (https if SSL is enabled). The Login window is displayed.



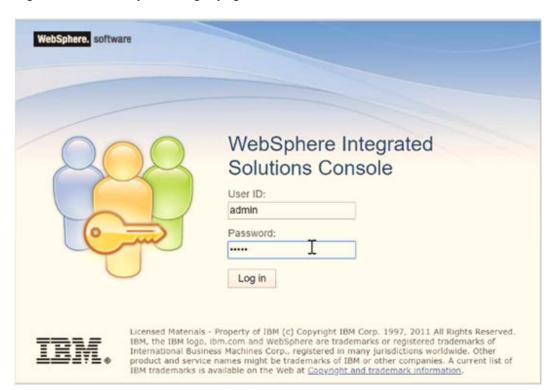


Figure 7-49 WebSphere Login page

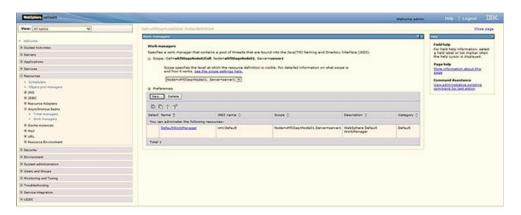
2. Log in with the user ID which has admin rights.

Figure 7-50 Home page



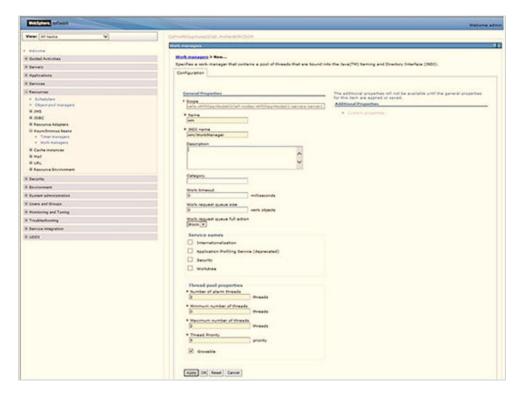
From the LHS menu, expand Resources > Asynchronous beans and select Work Managers.

Figure 7-51 Work Managers



- Select the required Scope from the drop-down list.
 For example, Node=whf00agnNode01, Server=server1.
- 5. Click New in the Preferences section.

Figure 7-52 New Work Managers



- Enter the Name as 'wm' and JNDI name as 'wm/WorkManager' in the respective fields.
- 7. Enter the Thread pool properties.
- 8. Click Apply.



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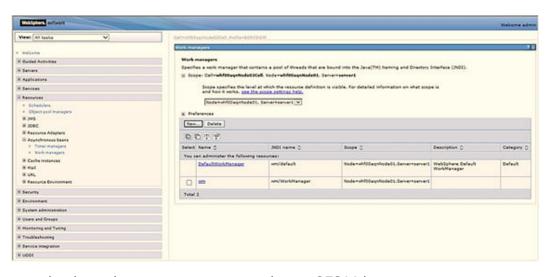
If only managers

If o Specifies a work manager that contains a good of threads that are bound into the Java(TW) Naming and Directory Interface (JND1). Additional Properties Seege [afa s4750ag/hode020el/nodes s4400ag/hode01 servers server3] * Name * 3500 name lum/WorkManager A Security A Environment Description If System administration it Users and Groups it Troubleshooting Category H 4001 Work request queue size opin objects Work request queue full action Block V

Figure 7-53 Configure Work Managers

9. Click Save.

Figure 7-54 Work Managers Preferences



After creating the work manager, you must map it to an OFSAA instance.

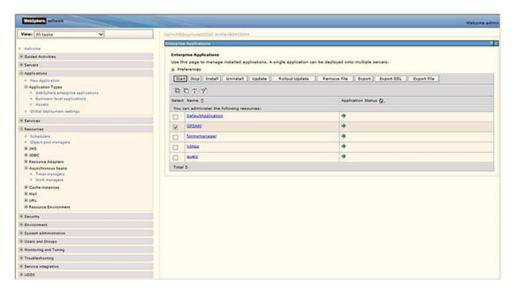
7.10.1.2 Map Work Manager to OFSAA WebSphere Instance

To map the Work Manager to an OFSAA WebSphere Instance, follow these steps:

 From the LHS menu, expand Applications > Application Types and click WebSphere enterprise applications.

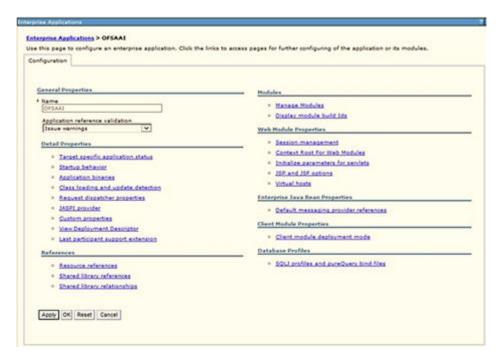


Figure 7-55 Enterprise Applications



Click OFSAAI instance hyperlink.

Figure 7-56 OFSAAI



3. Click the Resource references link under the References section.

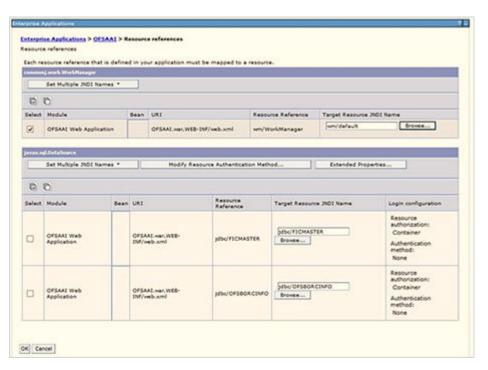


Figure 7-57 Resource References

 Click Browse corresponding to the Work Manager Resource Reference. The available resources are displayed.

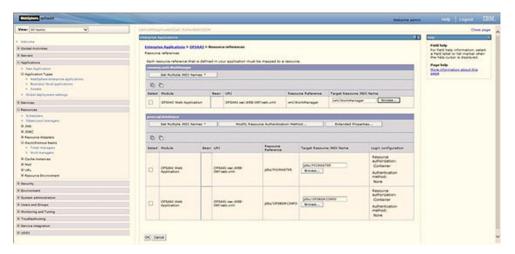
Figure 7-58 Available Resources



5. Select the newly created Work Manager ('wm') and click **Apply**.

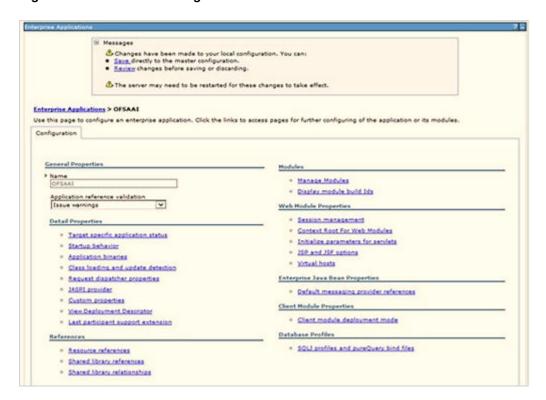


Figure 7-59 Select Work Manager



Select the Work Manager ('wm/WorkManager') and click OK.

Figure 7-60 OFSAAI Configuration



Click Save.

Enterprise Applications

Use this page to manage installed applications. A single application can be deployed onto multiple servers.

Enterprise Applications

Enterprise Applications

Enterprise Applications

Start Stop Entall Uninstall Update Rollout Update Remove File Export Export DDL Export File

Export File

Export Enter DDL Export File

Application Status Q.

You can administer the following resources:

DefaultApplication

GESAAI

GESAAI

Start

S

Figure 7-61 Enterprise Applications Preferences

7.10.2 Configure Work Manager in WebLogic Application Server

To create the Work Manager in WebLogic application server, follow these steps:

Open the WebLogic admin console in the browser window: http://
<ipaddress>:<administrative console port>/console. (https if SSL is enabled). The
Welcome window is displayed.



Figure 7-62 WebLogic Login page

- 2. Log in with the user ID that has admin rights.
- From the Domain Structure menu in the LHS, expand Environment and select Work Managers to display the Summary of Work Managers window.



Figure 7-63 Work Manager



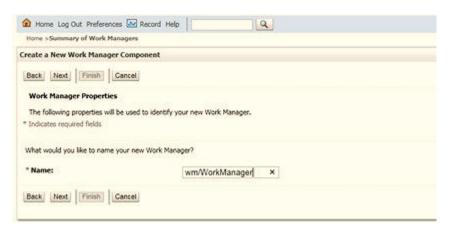
4. Click **New** to create a new Work Manager component.

Figure 7-64 New Work Manager



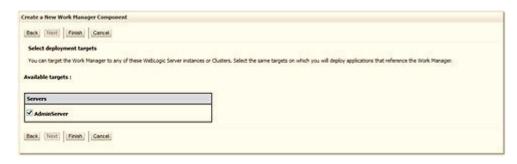
5. Select the Work Manager and click **Next**.

Figure 7-65 Work Manager



6. Enter the Name as 'wm/WorkManager' and click Next.

Figure 7-66 Select Deployment Targets



7. Select the required deployment target and click Finish.

Figure 7-67 Summary of Work Managers



7.11 Access the OFSAA Application

To access the OFSAA application, follow these steps:

1. Open a browser and enter the URL in the following format:

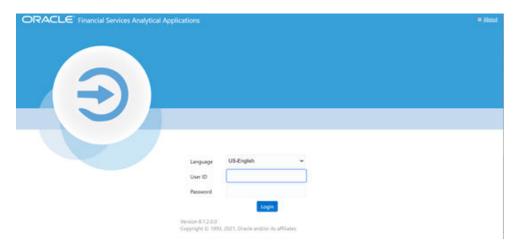
<scheme>://<IP address/ hostname>:<port>/<context-name>/login.jsp

For example, https://192.0.2.2/ofsaa/login.jsp

The OFSAA Login window is displayed.



Figure 7-68 OFSAA Login Window



With the installation of every OFSAA Application Pack, there are two seeded user profiles configured in the system:

- SYSADMN System Administrator
- SYSAUTH System Authorizer

The SYSADMN and SYSAUTH users are configured with a default password, which you will require to login for the first time. See the MOS Doc ID: 2691681.1 for the password.

2. Log in to the application using the "SYSADMN" User ID and the default password. After the first login, you are prompted to change the password.



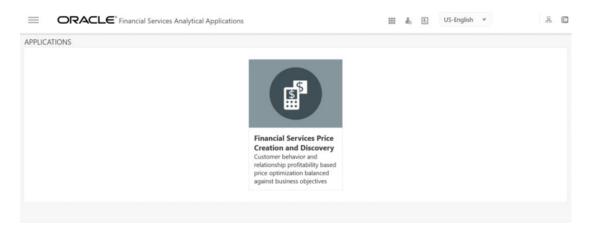
The password change is required only for a new installation scenario and not for upgrade scenarios.

7.12 OFSAA Landing Page

On the successful login, the OFSAA Landing page is displayed.



Figure 7-69 OFSAA Landing Page



OFSAA Landing page shows the available Applications as tiles, for which a user has access. Click the Application tile to launch that particular application. You can change the landing page based on your preference.

7.13 View OFSAA Product Licenses after Installation of Application Pack

In an integrated environment, where you have multiple applications installed on the same domain or infrastructure, OFSAAI allows you to see the other licensed applications through the UI.

For more information, see the *View OFSAA Product Licenses after Installation of Application Pack* in the OFS Analytical Applications Infrastructure User Guide Release 8.1.2.0.0.

7.14 Data Minimization

Data Collection is driven by the source systems of the bank, which in turn flows as a download to OFS PCD.

7.15 Change the ICC Batch Ownership

All the seeded batches in the OFS PCD Application are automatically assigned to the SYSADMN user during installation. To see the batches in the Batch Maintenance menu, execute the following query in the Config Schema of the database:

```
begin AAI_OBJECT_ADMIN.TRANSFER_BATCH_OWNERSHIP
('fromUser','toUser','infodom'); end; OR begin
AAI_OBJECT_ADMIN.TRANSFER_BATCH_OWNERSHIP ('fromUser','toUser'); end;
```

Where:

- fromUser indicates the user who currently owns the batch.
- toUser indicates the user to whom the ownership must be transferred.

 infodom is an optional parameter. If specified, the ownership of the batches pertaining to that infodom will be changed.

7.16 Add TNS entries in the TNSNAMES.ORA File

Add TNS entries in the tnsnames.ora file for every schema created for the Application Pack.

To find the tnsname for the entries, follow these steps:

- 1. Log in to the application using System Administrator privileges.
- 2. Navigate to System Configuration & Identity Management tab.
- 3. Click Administration and Configuration, select System Configuration, and click Database Details.
- 4. Expand Name to get the list of TNS entry names.

Alternatively, you can connect to the CONFIG schema and execute the following query:

select dbname from db master where dbname !='CONFIG'

7.17 Create Application Users

Create the application users in the OFSAA setup before use. For more information, see the User Administrator section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.



This step may not be required if you have already set up users in the OFSAA setup.

7.18 Map Application User(s) to User Group

Starting the OFSAA 8.1 release, with the installation of every OFSAA Application Pack, pre-configured application user groups are seeded. These user groups are unique to every OFSAA Application Pack and have application roles pre-configured.

User Groups seeded with the OFSAAAI Application Pack are listed in the Seeded User Groups Table

Table 7-3 Seeded User Groups

Name	Description
Modeler Group	A user mapped to this group has access to all the menu items for Enterprise modeling but does not have authorization rights for sandbox population, model deployment, and modeling technique authorization.



Table 7-3 (Cont.) Seeded User Groups

Name	Description
Name	Description
Modeling Administrator Group	A user mapped to this group has access to all the menu items for Enterprise modeling and has authorization rights for the sandbox population, model deployment, and modeling technique authorization.
Business Administrator	A user mapped to this group has access to all the menu items and actions for the advanced operations of metadata objects.
Business Authorizer	A user mapped to this group has access to all the menu items and actions for authorization of changes to metadata objects.
Business Owner	A user mapped to this group has access to all the menu items and actions for read and write of metadata objects
Business User	A user mapped to this group has access to all the menu items and actions for access and read of metadata objects.
Identity Administrator	A user mapped to this group has access to all the menu items for managing User entitlements, User Group Entitlements, and Access Management configurations.
Identity Authorizer	A user mapped to this group has access to all the menu items for authorizing User entitlements, User Group Entitlements, and Access Management configurations.
System Administrator	A user mapped to this group has access to all menu items for managing the setup configurations.
Object Administrator	A user mapped to this group has access to all menu items for managing object migration and metadata traceability using the metadata browser.
Guest Group	A user mapped to this group has access to certain menu items with only access privileges.

Map the application user (s) to the respective Application User Group (s) and subsequently authorize the entitlements by logging in as SYSAUTH (System Authorizer) user.

For more information, see the Mapping/Unmapping Users section from the Oracle Financial Services Analytical Applications Infrastructure User Guide.

7.19 Excel Upload Mapping and Template

This section provides steps about the Excel Upload.

- Post-installation, navigate to the ExcelUpload directory present in the path:p
 Extracted Installer location/\$FIC_HOME/dumps
- 2. In the ExcelUpload directory, change the directory name from infodom to the name of the respective Infodom.

- 3. Copy the ExcelUpload directory to the ftpshare/STAGE directory.
- 4. Create the STAGE directory in the path <TOMCAT HOME>.
- Copy the ExcelUpload directory to the STAGE directory in the path <TOMCAT HOME>.

7.20 Configure Transparent Data Encryption (TDE) and Data Redaction in OFSAA

Two features comprise of Oracle Advanced Security: Transparent Data Encryption and Oracle Data Redaction.

This section details the configurations required in case you want to enable TDE or Data Redaction in OFSAA applications.

- Prerequisites
- Transparent Data Encryption (TDE)

7.20.1 Prerequisites

Ensure the required Oracle Database Server versions are installed:

- Oracle Database Server Enterprise Edition 18c Release 3 64 bit RAC/Non-RAC with/without partitioning option, Advanced Security Option.
- Oracle Database Server Enterprise Edition 19c Release 3 64 bit RAC/Non-RAC with/without partitioning option, Advanced Security Option.

7.20.2 Transparent Data Encryption (TDE)

Transparent Data Encryption (TDE) enables you to encrypt sensitive data, such as Personally Identifiable Information (PII), that you store in tables and tablespaces. After the data is encrypted, this data is transparently decrypted for authorized users or applications when they access this data. To prevent unauthorized decryption, TDE stores the encryption keys in a security module external to the database, called a Keystore. For more details on TDE, see the Database Advanced Security Guide.

TDE tablespace encryption enables you to encrypt all of the data stored in a tablespace. To control the encryption, you use a Keystore and TDE master encryption key. Oracle Database supports both software keystores and hardware, or HSM-based, keystores. A software keystore is a container for the TDE master encryption key, and it resides in the software file system.

To configure TDE for OFSAA, follow these steps:

- Create a new PDB (19c)/ instance (18c) on the same or different Database Server for TDE. For more information, see Configure Software Keystore and Encrypted Tablespace Creation.
- Shutdown the OFSAAI Services.
- Export all Configuration, Atomic, and Sandbox Schemas as per the applications installed in your OFSAA instance.

For example:



expdp SYSTEM/oracle@OFSA19c2DB DIRECTORY=data_pump_dir DUMPFILE=ofsaaconf_
ofsaaatm_%U.dmp filesize=2G SCHEMAS=ofsaaconf,ofsaaatm LOGFILE=ofsaaconf_
ofsaaatm exp.log



The above command will create data dumps as files of 2GB size each (multiples). Any other commands/ tools as appropriate may be used to archive the schemas.

Import all schemas that are exported using the above command, into the new DB instance.

For example:

impdp SYSTEM/oracle@OFSA12nDB DIRECTORY=data_pump_dir DUMPFILE=ofsaaconf_
ofsaaatm_%U.dmp SCHEMAS=ofsaaconf,ofsaaatm LOGFILE=ofsaaconf_ofsaaatm_
imp.log

Note:

- Restoring the exported dumps creates Configuration and Atomic Schema(s) with the same user credentials as that of the source, along with the existing grants.
- If schemas are restored using a tool/ mechanism other than as mentioned in Steps 1 and 2, retain the user credentials of Configuration and Atomic Schemas the same as in the Source environment, along with the Schema grants.
- 5. Provide select grants on sys.V_\$parameter to view Configuration and Atomic Schemas of Target Environment database.

For example:

```
Log in as sys user:
SQL> GRANT SELECT ON SYS.V_$PARAMETER TO ofsaaconf;
Grant succeeded
SQL> GRANT SELECT ON SYS.V_$PARAMETER TO ofsaaatm;
Grant succeeded
```

- 6. Update .profile for ORACLE SID environment variable with new ORACLE SID.
- 7. Update JDBC URL by executing Port Changer utility. For details on how to execute Port Changer utility, see Changing IP/Hostname, Ports, Deployed paths, Protocol of the OFSAA Instance section under Generic Configurations chapter in OFS Analytical Applications Infrastructure Administration Guide.
- 8. Navigate to the \$FIC_WEB_HOME directory and execute the following command to trigger the creation of the EAR/WAR file:

```
./ant.sh
```

9. The EAR/WAR file - <contextname>.ear/.war - is created in the \$FIC_WEB_HOME directory.



- **10.** On completion of the EAR/WAR file creation, the message "BUILD SUCCESSFUL" is displayed.
- **11.** Edit the existing Connection Pool settings to point to the new JDBC URL and verify connections.
- Clear the webserver cache and redeploy the application onto your configured web application server.
- **13.** Restart the OFSAA Services. For more information, see Start the Infrastructure Services.

7.20.2.1 Configure a Software Keystore and Encrypted Tablespace Creation

A software keystore is a container for the TDE master encryption key, and it resides in the software file system. You must define a location for the key in the sqlnet.ora file so that the database locates the keystore (one per database) by checking the keystore location in the sqlnet.ora file. After defining the location, create the keystore and open it. Set the TDE master key after opening it and then encrypt the data.

To find whether a wallet is already existing, check the following entries:

- 1. The location specified by the ENCRYPTION_WALLET_LOCATION parameter in the sqlnet.ora file.
- The location specified by the WALLET_LOCATION parameter in the sqlnet.ora file

Encrypted tablespaces can share the default database wallet. However, Oracle recommends that you use a separate wallet for transparent data encryption functionality by specifying the ENCRYPTION_WALLET_LOCATION parameter in the sqlnet.ora file.



You must have the required privileges to perform the following actions.

To configure the software keystore, follow the instructions in the following sections:

- Set the Software Keystore Location in the sqlnet.ora File
- Create the Software Keystore
- Open the Software Keystore
- Set the Software TDE Master Encryption Key
- Encrypting your Data

7.20.2.2 Test the Encryption

Test the encryption by checking if a tablespace is encrypted or not. Execute the following query to check:

```
SELECT tablespace name, encrypted FROM dba tablespaces;
```

The following result is displayed, which indicates whether the TABLESPACE is encrypted or not in the ENCRYPTED column.



Table 7-4 Testing the Encryption

TABLESPACE_NAME	ENCRYPTED
SYSTEM	NO
SYSAUX	NO
UNDOTBS1	NO
TEMP	NO
USERS	NO
ENCRYPTED_TS	YES

The above example indicates TABLESPACE ENCRYPTED TS is created with Encryption ON.

7.20.3 Data Redaction

OFSAA is enhanced to enable masking of sensitive data and Personal Identification Information (PII) to adhere to Regulations and Privacy Policies. Oracle Data Redaction provides selective, on-the-fly redaction of sensitive data in database query results before display by applications so that unauthorized users cannot view the sensitive data. The stored data remains unaltered, while displayed data is transformed into a pattern that does not contain any identifiable information.

To enable Data Redaction, perform the following steps:

- Log in as SYSDBA into the database.
- Execute the \$FIC_HOME/utility/data_security/scripts/create_data_sec_roles.sql file only once per database (PDB in case of 18c/19c).
- 3. Execute the following SQL statement to find out the list of atomic users from the table: select v_schema_name from aai_db_detail where V_DB_NAME <> 'CONFIG' AND V_DB_TYPE = 'ORACLE'
- 4. Execute the \$FIC_HOME/utility/data_security/scripts/grant_data_sec_roles.sql file for all atomic users found in the previous step.
- From the Configuration window in the System Configuration module, select the Allow Data Redaction checkbox.
- Run the Data Redaction utility.

For more details on enabling Data Redaction, see the *Data Redaction* section in the *Data Security and Data Privacy* topic in the OFS Analytical Applications Infrastructure Administration Guide.



Additional Configuration

You can use this checklist to have a glance at some additional configurations. The link provided in each step takes you to a section either within this document or to another referenced document.

Table 8-1 Additional Configuration

SI. No.	Additional Configuration Activity
1	Add FTP/SFTP Configuration for File Transfer.
2	Configure the Infrastructure Server Memory.
3	Retrieve the Patch Information
4	Change IP or Hostname, Ports, Deployed Paths of the OFSAA Instance.
5	Configure the Infrastructure LDAP.
6	Configure and deploy the OFSAAI web services.
7	Enable the parallel execution of DML statements.
8	Configure the message details in the Forms Designer.
9	Clear the application cache.
10	Configure the password changes.
11	Configure the Java Virtual Machine.
12	Configure the internal service (Document Upload/ Download).

8.1 Add FTP/SFTP Configuration for File Transfer

In OFSAA, certain modules require the transfer of files from the web application server to the OFSAA server over SSH.

Follow these steps to ensure the OFSAA server recognizes the web application server during file transfers.

- 1. Log in to the web application server.
- 2. Type sftp <user>@<OFSAA Server>.
- **3.** Specify **Yes** when prompted for permission.

Are you sure you want to continue connecting (Yes/No)?

This will add an entry into the "known_hosts" file.

4. A confirmation message is displayed:

Permanently added <OFSAA Server> RSA) to the list of known hosts.

8.2 Configure Infrastructure Server Memory

The memory settings for Infrastructure Application Server, Tomcat, WebSphere, and WebLogic can be edited for customizing memory settings and garbage collector settings depending on the available hardware configuration as explained in the following section. These settings are the bare minimum and have to be incremented considering the deployment metrics into account. The increments are usually handled in multiples of 128 MB for heap and 64 MB for the stack.

You can configure the Infrastructure Application Memory settings as follows:

- Locate the .profile file.
- 2. Edit X_ARGS field in this file for customizing memory settings and garbage collector settings depends on the hardware configuration.

This has a default value X_ARGS="-Xms200m" X_ARGS=" "\$X_ARGS" \$DELIM - Xmx2048m"



Modify X_ARGS_APP variable in the .profile file to customize Java Memory Settings for Model Upload based on the Data Model size.

For Run and Rule executions, the following value is recommended:

```
X_ARGS_RNEXE="-Xms1g -Xmx1g -XX:+UseAdaptiveSizePolicy
-XX:MaxPermSize=512M -XX:+UseParallelOldGC
-XX:+DisableExplicitGC"
X_ARGS_RLEXE="-Xms1g -Xmx1g -XX:+UseAdaptiveSizePolicy
-XX:MaxPermSize=512M -XX:+UseParallelOldGC
-XX:+DisableExplicitGC"
```

8.3 Retrieve Patch Information

To identify the list of patches installed on your OFSAA setup, follow these steps:

- 1. Log in to the OFSAA application as a user with Object AdminAdvanced Role.
- 2. Navigate to **Object Administration** tab, expand **Utilities**, and click **Patch Information**.
- **3.** The window displays the list of patches installed on the OFSAA setup across Applications/Platforms.

8.4 Change IP/ Hostname, Ports, Deployed Paths of the OFSAAInstance

For information on this section, see OFS Analytical Applications Infrastructure Administration User Guide.

8.5 Set Infrastructure LDAP Configuration

For more information on LDAP configuration, see OFSAAI Administration Guide.

8.6 Configure OFSAAI Web Services

Web Services in OFSAAI is meant for exposing a web service to "asynchronously" or "synchronously" execute requested tasks offered by OFSAAI. The following configuration steps are to be done only if you are using the Web Services feature of OFSAAI.

8.7 Enable Parallel Execution of DML statements

A configuration file, OracleDB.conf is introduced to accommodate any configurable parameter related to operations on the oracle database. If you do not want to set a parameter to a specific value, then the respective parameter entry can be removed/commented off form the OracleDB.conf file that resides in the path \$FIC DB HOME/conf.

As of now, the <code>OracleDB.conf</code> file has only one parameter namely CNF_DEGREE_OF_PARALLELISM. This parameter indicates the degree of parallelism to be used for a DML operation if parallel DML is explicitly enabled in the session with the ENABLE PARALLEL DML clause of the ALTER SESSION statement. The default mode of a session is DISABLE PARALLEL DML. If CNF_DEGREE_OF_PARALLELISM is not set, then the default degree, as decided by Oracle will be used.

8.8 Configure Message Details in Forms Designer

You can configure the Message Details in Forms Designer under Data Entry Forms and Queries module by updating the details of the mail server in the NotificationConfig.cfg file that resides in the path \$FIC APP HOME/common/FICServer/conf.

Ensure that the "authorized User details" for whom you must configure the Message details are included in Administration > Security Management > User Administrator > User Maintenance window.

Update the following parameters in the "NotificationConfig.cfg" file:

Table 8-2 NotificationConfig.cfg File Attributes

Parameter	Description
SMTP_SERVER_IP	Specify the hostname or IP address of the SMTP Server.
SMTP_DEBUG_MODE	To run SMTP service in Debug mode, set value to 'true', otherwise set value to 'false'.
SMTP_AUTHORIZATION	Set to 'true' if the SMTP server requires the client to be authenticated, otherwise set to 'false'.
SMTP_USERNAME	Username required for logging into the SMTP server, if authentication is not required use a dummy value.
SMTP_PASSWORD	Password required for logging into the SMTP server. If authentication is not required, use false value.



Table 8-2 (Cont.) NotificationConfig.cfg File Attributes

Parameter	Description
SMTP_MAILID	If the Messages must go from a Particular ID that ID must be added. The exchange server forces you to set a valid ID that is there in the exchange server. (Based on Security settings)

8.9 Clear the Application Cache

Ensure to clear the application cache before the deployment of Applications Pack Web Archive. This applies to all Web Servers (WebSphere, WebLogic, and Tomcat).

Before the deployment of the Infrastructure, Application Service Packs, or one-off patches, navigate to the following path depending on the WebServer configured and clear the cache:

Tomcat

<Tomcat installation directory>/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>

8.10 Configure Password Changes

This section explains about how to modify the OFSAA Infrastructure Config Schema and Atomic Schema passwords for non Wallet-based and Wallet-based setups.

8.11 Configure Java Virtual Machine

While running several database intensive tasks in parallel, fetching the database connection from the connection pool may face an error. To ensure no such error is encountered, add the line securerandom.source=file:/dev/./urandom in the java.security configuration file available in \$JAVA_HOME/jre/lib/security/ path.

This must be configured on all the machines or virtual machines where the OFSAAI database components (ficdb layer) are installed.

8.12 Configure Internal Service (Document Upload/ Download)

This step can be ignored if it has already been configured as part of any previous IR/ML installation.

The Document Upload /Download feature has changed and can now be configured to use Internal service for document upload/download instead of the earlier ExeWebService.

To facilitate internal service for document upload/ download, perform the following configurations:

- 1. Create the directories download, upload, TempDocument, and Temp in the local path of the Web application server and provide Read/Write permission.
 - To find the exact location, execute the following query in the CONFIG schema: select localpath from web server info
 - To create directories with Read/Write permission, execute the command: mkdir -m 777 download upload TempDocument Temp
- 2. Create DocStorage directory in the FTPSHARE location of APP tier and provide Read/Write permission.
 - To find the exact location, execute the query in the CONFIG schema: select ftpdrive from app server info
 - To create a directory with Read/Write permission, execute the command: mkdir -m 777 DocStorage

By default, the parameter DOCUMENT_SERVICE_TYPE_EXTERNAL value is set to FALSE in the Configuration table in CONFIG schema and hence the application "ExeWebService" will not be used. It is recommended that the value be set to FALSE and use the Internal service for document upload/ downloads. If you intend to continue using the External ExeWebService, set the value to TRUE.

Navigate to \$FIC_HOME/EXEWebService/<WEBSERVER_TYPE> directory of WEB tier and type ./ ant.sh. This triggers the creation of the EAR/WAR file EXEWebService.ear/.war. The EAR/WAR file EXEWebService.ear/.war is created in the \$FIC_HOME/EXEWebService/

<WEBSERVER_TYPE> directory of WEB tier. Redeploy the generated EAR/WAR file onto your configured web application server.



9

Migrate Excel Upload Functionality

This section provides detailed instructions to migrate excel upload functionality.



10

Frequently Asked Questions (FAQs) and Error Dictionary

This section consists of resolution to the frequently asked questions and error codes noticed during OFSAAI installation.

- Frequently Asked Questions
- Error Dictionary



A

ORDS Limitation for Web Sphere

ORDS has a limitation if the Web Server used is WebSphere. If you are using the WebSphere, then follow these steps:

- 1. Deploy the Apex images and ORDS in Tomcat.
- 2. Navigate to \$FIC_HOME/ficweb/webroot/dashboard, edit the file launchUIApp.html. Make changes in the variable var host with the servername and port number where the ORDS is deployed. For example: var host =" whf00pkx:9080"; See the following code snippet:

You will be redirected to the page in a new window. Click to launch the page.

```
<script>
    var app_id=getUrlParameter('uiAppId');
    var user_id=getUrlParameter('userId');
    var infodom=getUrlParameter('dsn');
    var locale=getUrlParameter('locale');
    var host ="EDIT THIS PART";
```

- 3. Take a backup of the ear and war file from \$FIC HOME/ficweb.
- 4. After making changes run the ant.sh file to generate the ear and war file.
- **5.** Deploy the ear file on the WebSphere and run the application.

B

Integrating OFS FTP and OFS PCD

This appendix describes the steps to integrate OFS Funds Transfer Pricing application with OFS PCD application.

B.1 Software requirements

The following are the prerequisite:

- Oracle Database Server version 19.3
- Oracle Client version 19.3
- JRE version 1.8

B.2 Installation Sequence

Install OFS FTP 8.1.2.0.0 full installer.



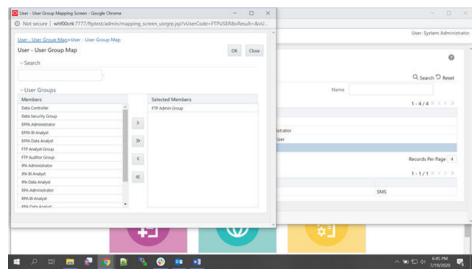
When PCD and FTP are installed Pack-on-Pack, you can see some integrity constraint errors in FTP 8.1.2.0.0 log which can be ignored.

B.3 Post-installation Steps

After the installation of OFS PCD, follow these post-installation steps:

- 1. Deploy war and test data execution:
 - Deploy the war file and restart the servers.
 - Create new user by logging in as sysadmn and authorize using sysauth user.
 - Map the FTP admin group to new user and authorize using sysauth user.

Figure B-1 User Group Mapping



 Navigate to the deployed path /WEB-INF/classes folder and update the Infodom name and userId in ofsaaws.properties file.
 Path example: /scratch/pmuser/apache-tomcat-8.5.31/webapps/ofsaapcd/ WEB-INF/classes

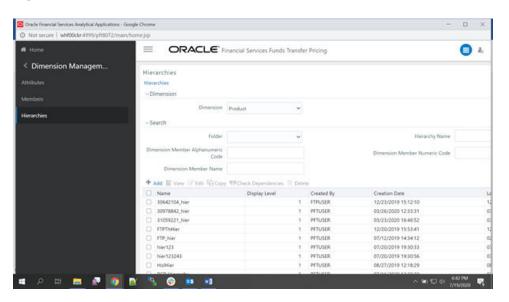
Figure B-2 ofsaaws.properties File

```
infodom=OFSPFTINFO
userId=pftuser
pollFrequency=1000
pollIterations=3
Instrument_tables=210,230~FSI_D
```

- After above configuration, restart the Tomcat server.
- Execute the products and IRC files in FTP Atomic Schema.
- If FTP OFSAA instance is present in different Host, you have to add the following entry in the web.xml present at \$CATALINA_HOME/webapps/<FTP context>/web-inf/web.xml folder.

- **2.** Product hierarchy creation:
 - Login with New User (like FTPUSER).
 - Navigate to Common Object Maintainance, select Dimension Management, and then select Hierarchies.
 - a. Select the Product under Dimension drop-down.

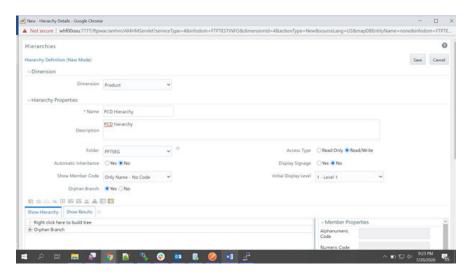




- b. Click Add.
- c. Enter the Name like PCD Hierarchy, enter the description,0 and then select folder.

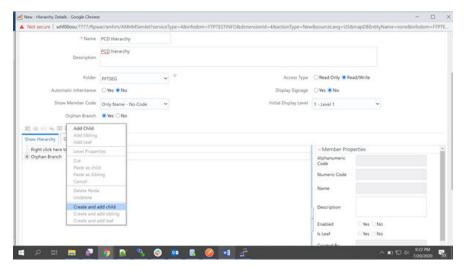


Figure B-4 Hierarchy Definition



d. Right-click below the Show Hierarchy section and click Create and add child.

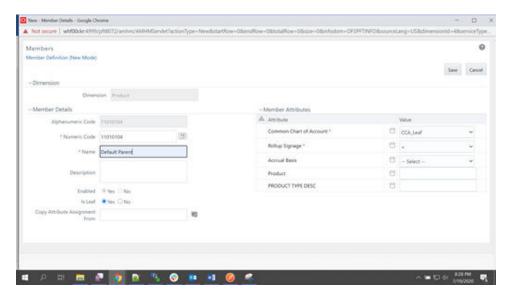
Figure B-5 Hierarchy Definition



e. Fill the mandatory fields like numeric code and Name like Default Parent. Click Generate Numeric Code icon for Numeric code to generate and click Save.

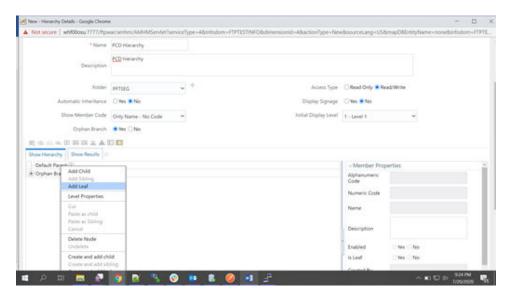


Figure B-6 Member Definition



f. The Parent Hierarchy will be displayed like Default Parent. Right-click on that and select **Add leaf**.

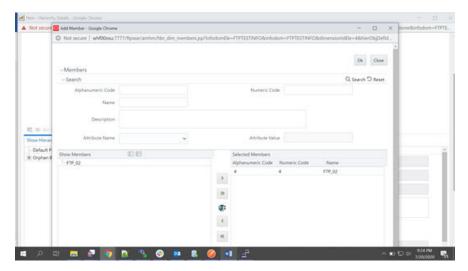
Figure B-7 Member Definition



g. Move the products from LHS to RHS and click on Ok.

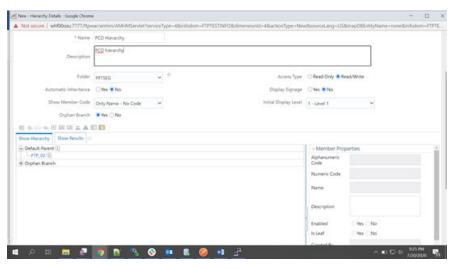


Figure B-8 Add Member



h. The mapped products will be listed under the newly created hierarchy. Then click Save.

Figure B-9 Member Definition



- 3. Default Hierarchy: Navigate to **Fund Tranfer Pricing** and select **Application Preferences**.
 - **a.** Select the newly created hierarchy as default hierarchy and click **Apply**. In this example, PCD Hierarchy is the default Hierarchy.
 - **b.** Select debugging Output level drop-down as show All SQL and select Legal entity as default member and click **Apply**.



Figure B-10 Application Preferences

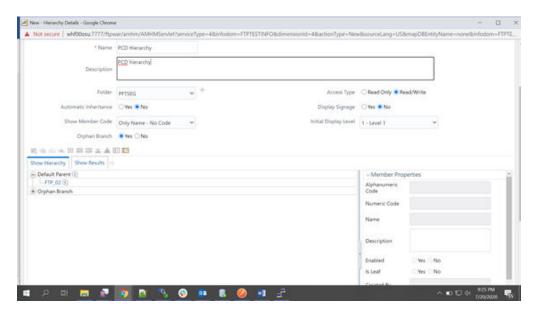
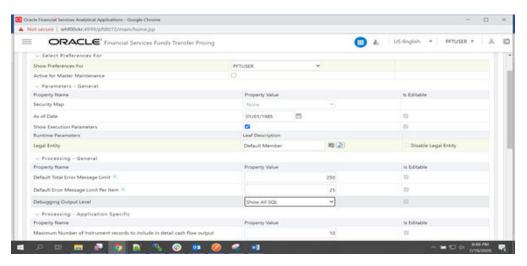
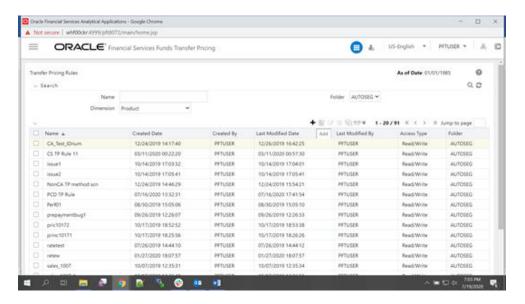


Figure B-11 Application Preferences



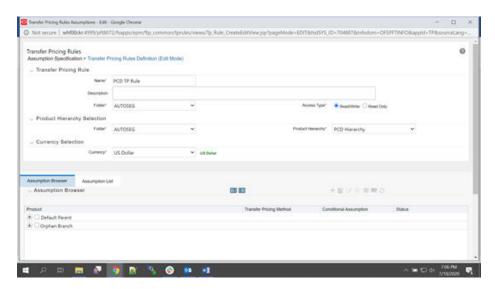
4. Create Transfer Pricing Rules (TP Rule): Navigate to Fund Transfer Pricing, FTP Assumption Specification, Transfer Pricing Rules, and then click Add.

Figure B-12 Transfer Pricing Rules



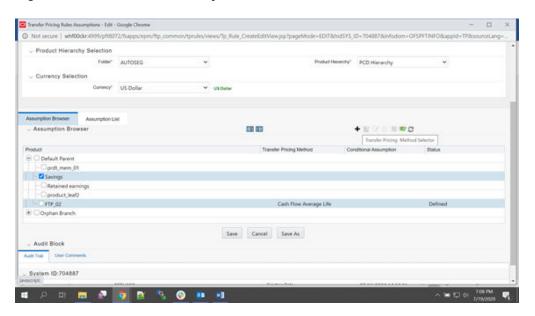
a. Enter the Mandatory fields, select PCD Hierarchy as Product Hierarchy.

Figure B-13 Transfer Pricing Rule: Definition Mode



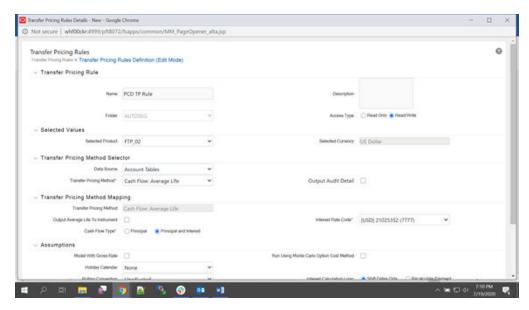
b. Expand the product parent and select any product to which you want to add Transfer Pricing Rule.

Figure B-14 Product Hierarchy Selection



c. Add the Transfer Pricing Rule as follows. Select any Transfer Pricing method. For example: Cash: Average Life and select the IRC code.

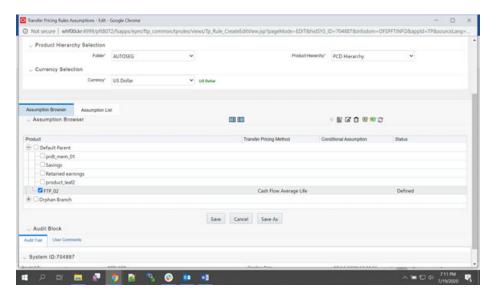
Figure B-15 Transfer Pricing Rules



d. The selected Transfer Pricing Method will be displayed for that product as follows. Save the Transfer Pricing Rule.

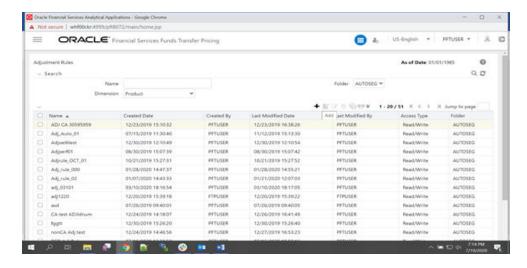


Figure B-16 Transfer Pricing Rules



 Create Adjustment Rules: Navigate to Funds Transfer Pricing, select FTP Assumption Specification, and then select Adjustment Rules. Click Add.

Figure B-17 Adjustment Rules



- a. Enter all the Mandatory fields.
- **b.** Click **Adjustment Type Hierarchy** and select the below Adjustment Types by moving from LHS to RHS, and then click **Ok**.

Assistance Type Selection - Google Oreans

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Assistance Type

Assistance Type

Assistance Adjustment Type

Selected Members

Publication Adjustment Types

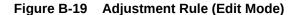
Publication Adjustment

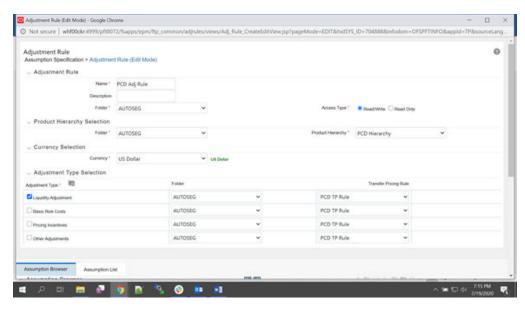
Publication Adjustments

Publi

Figure B-18 Adjustment Type Hierarchy Browser

c. Adjustment types will be displayed as follows. Select Transfer Pricing Rule for each Adjustment types.





- d. Adjustment Method has to be added for each Adjustment Types:
 - Select any one Adjustment Type say Liquidity Adjustment. Below the Assumption Browser expand Product Hierarchy and then select the same product for which TP Rule was created.



Adjustment Rule (lide Moder - Google Chrome

Not secure | wh900der-R999/ph89727/fappplegem/ftp_common/adjurlen/sievn/Adj_Rule_CreateEditView.jsp/pageMode=EDIT&hid5YS_ID+7048886/infodom=OFSFT1NFOBappids+TP6sourceLang_Chrome

Adjustment Type Selection

Adjustment Type Selection

Apparent Type Selection

Formula Based Rate

Defined

Apparent Type Selection

Apparent Type Selection

Formula Based Rate

Defined

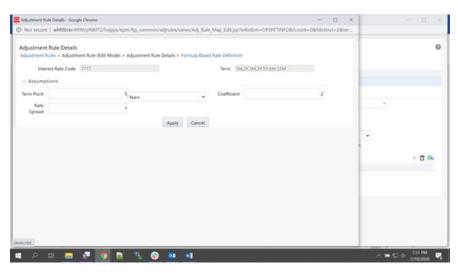
Apparent Type Selection

Apparent T

Figure B-20 Adjustment Type Selection

- Click Add to select the Adjustment Method.
- Select any Adjustment method from drop-down like Formula Based rate.
- Fill the mandatory fields. Under Parameters grid, define Formula by selecting the row as follows. Then click the **Delete** icon which is displayed next to delete icon on right side of the Parameters grid.
- Formula window is displayed as follows. Fill all the fields and click Apply.





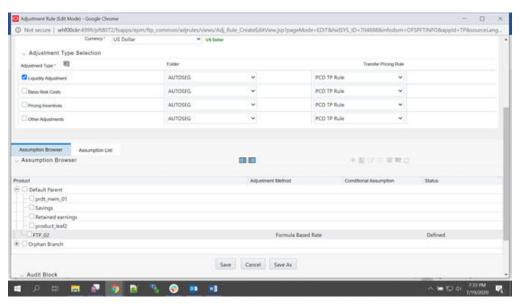
 If the Adjustment method is Fixed Rate then refer to the following screenshot.

Adjustment Rule Details - Google Chrome O Not secure | whf00ckr.4999/pft8072/fsapps/common/MM_PageOpener_alta_jsp 0 Adjustment Rules > Adjustment Rule (Edit Mode) > Adjustment Rule Details · Adjustment Type Adjustment Type Selection Liquidity Adjustment - Define Adjustment Rule Selected Product FTP 02 Adjustment Method* Formula Based Rate Output Audit Detail Do not calculate Formula Based Rate Reference Terrer Fixed Amount Assignment Date* As Of Date Interest Rate Code" UseTP Method from Selected TP Rule Lookup Method* () Range ... Interpolation + 0 · Parameters Multiplier Formula ≜ ☐ Term 1 Months v (51°-2)-1 Apply Cancel 🔳 夕 計 🗯 🗗 🧑 💆 🦠 🙃 👊

Figure B-22 Adjustment Rule Details

e. Now the defined Adjustment Method will be displayed for the product as follows.

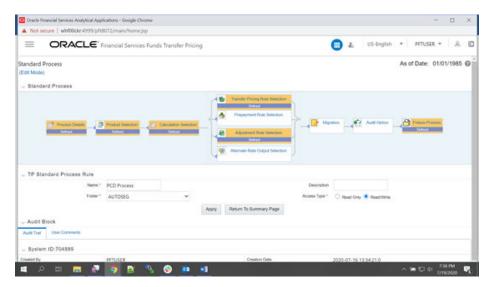




- f. Repeat adding Adjustment Method for each of the Adjustment Types namely Basic Risk Costs, Pricing Incentives, and Other Adjustments. Then click **Save**.
- 6. Create the Standard Process: Navigate to Funds Transfer Pricing, FTP Processing, Standard Process, and then click Add.
 - a. Enter Process details and click Apply.



Figure B-24 Standard Process (Edit Mode)



b. Under Product Selection section, click **Source** and select the Source Hierarchy as PricingManagementGeneratedInstruments as shown below.

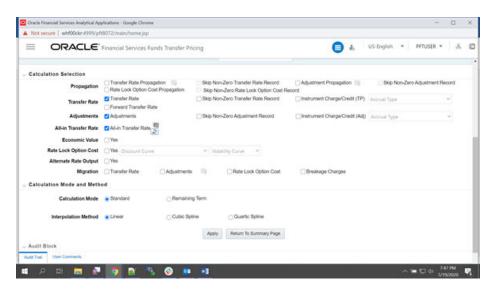
Note:

If Source Hierarchy has no data then for Source Hierarchy to load data in Standard Process screen execute the following update query in Atomic Schema.

update REV_TABLE_CLASS_ASSIGNMENT set validated_flag = 'Y' ;
commit;

c. Click **Apply** to navigate to Calculation Section. Fill the details as follows:

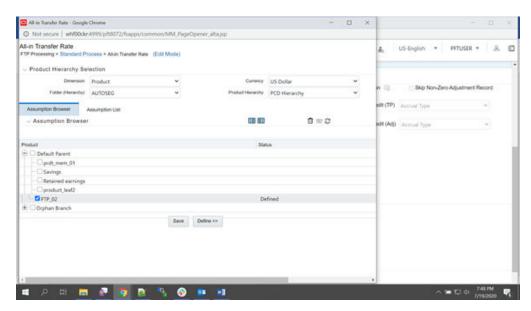
Figure B-25 Calculation Selection





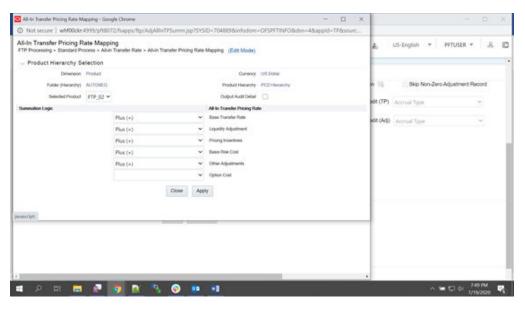
d. Select All-In Transfer Rate Hierarchy. Then select a product and click Define.

Figure B-26 All-In Transfer Rate Hierarchy



 All in Transfer Rate mapping window will be displayed as follows. Select Plus for each Adjustment Types and click Apply.

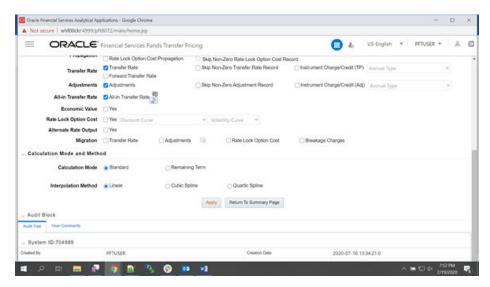
Figure B-27 All-In Transfer Pricing Rate Mapping



f. Click Apply to navigate to Transfer Pricing Rule list. Select TP rule and then select Adjustment Rule.

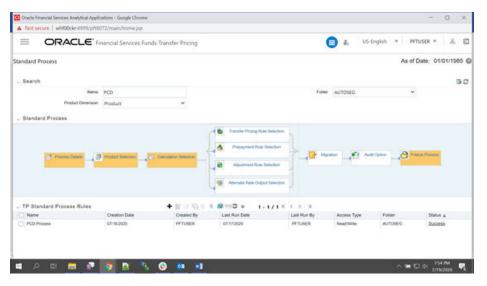


Figure B-28 Calculation Selection



g. In the last section select Freeze and then Confirm. The created Standard Process and displayed in the summary as shown in screenshot.

Figure B-29 Standard Pricing Process Summary



- 7. Execute the Standard Process to test the status:
 - a. Select the Process and click the **Run** icon.
 - b. Select As of Date as Todays date and click **OK**.



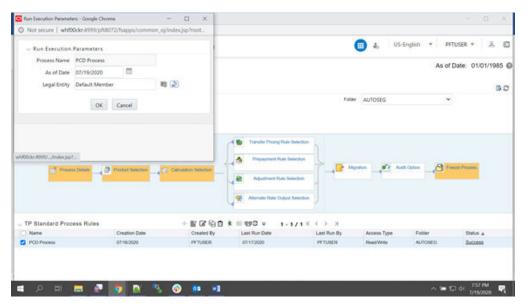


Figure B-30 Run Execution Parameters

c. Refresh the summary screen and verify the status of the process. It should show success. If it is failed verify the logs.
Log path: ../ftpshare/logs

B.4 Manual Steps to do before testing FTP from PCD UI

To do the testing FTP integration from the PCD UI manually, follow these steps:

- Login to PCD Config Schema.
- 2. Execute the following update query to enable FTP:

update configuration set PARAMVALUE ='Y' where paramname ='FTP_ENABLED';
commit;



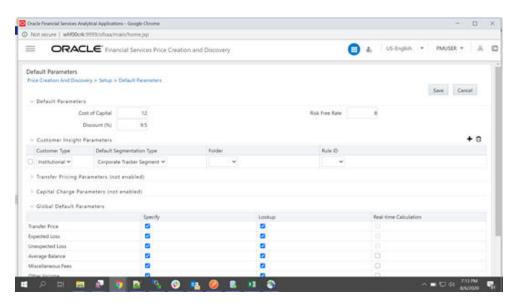
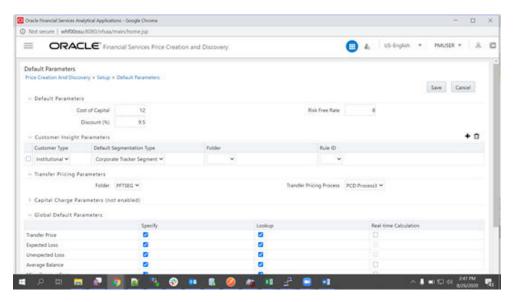


Figure B-31 Defualt Parameters when FTP is not enabled

Figure B-32 Defualt Parameters when FTP is enabled



- 3. Login to PCD Atomic Schema and execute following queries:
 - To update the Standard Process API:

update API_DETAILS set URI='<ftp_host:port/context>/rest-api/
ftpPcdRestservice/v1/getStandardProcessList' where
endpoint='FTP_1';
commit;

Example URL: http://whf00osu:7777/ftpwar/rest-api/ftpPcdRestservice/v1/getStandardProcessList



To update the Pricing API:

```
update API_DETAILS
set URI='<ftp_host:port/context>/rest-api/ftpPcdRestservice/v1/
getPricing'
where endpoint='FTP_2';
commit;
```

Example URL: http://whf00osu:7777/ftpwar/rest-api/ftpPcdRestservice/v1/getPricing

Timed out URL:

```
update API_DETAILS
set URI='<ftp_host:port/context>/rest-api/ftpPcdRestservice/v1/
getPricingData'
where endpoint='FTP_3';
commit;
```

Example:

```
update API_DETAILS set URI='http://whf00osu:7777/ftpwar/rest-api/
ftpPcdRestservice/v1/getPricingData' where endpoint='FTP_3';
commit;
```

• In the API_DYNAMIC_HEADERS table, set the headers_values with FTP login username and base64 encoded password.

Note:

Base 64 encoded password should be generated for username:password. To get the base64 encoded password go to following link. https://www.base64encode.org/

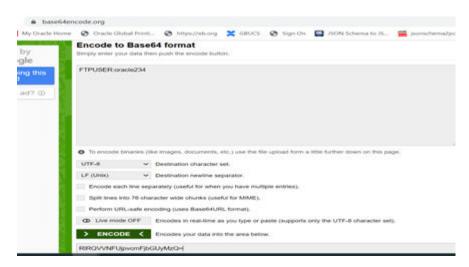
Example: If username is FTPUSER and password is oracle234:

Username:password: FTPUSER:oracle234

Encoded password: RIRQVVNFUjpvcmFjbGUyMzQ=







- update API_DYNAMIC_HEADERS the UserId header with username: update API_DYNAMIC_HEADERS set headers_values='FTPUSER' where headers='userid'; commit;
- b. Update authorization header with base64 encoded password as shown above to table with Basic as prefix:

```
update API_DYNAMIC_HEADERS
set headers_values='Basic RlRQVVNFUjpwYXNzd29yZDE='
where headers='authorization';
commit;
```

Note:

The following 3rd Step has to be executed only when PCD 8.1.2.0.0 is installed and RM Summary is enabled.

c. Grants to execute from sysdba:

```
grant execute on utl_http to <pcd_atomic_schema>;
grant execute on dbms_lock to <pcd_atomic_schema>;
grant execute on DBMS NETWORK ACL ADMIN to <pcd_atomic_schema>;
```

After executing above grants From PCD Atomic schema: execute the following blocks.

i. Enter unique acl name in the following block like ex: 'pcd acl file.xml':

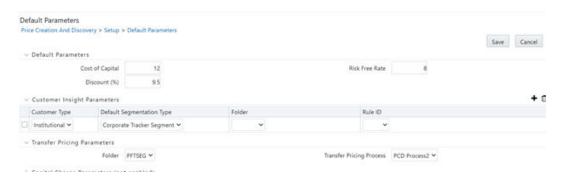


```
privilege => 'connect',
    start_date => SYSTIMESTAMP,
    end_date => NULL);
end;

/
begin
    DBMS_NETWORK_ACL_ADMIN.assign_acl (
    acl => 'pcd_acl_file.xml',
    host => 'whf00osu', -- ftp hostname
    lower_port => 7777, -- ftp port
    upper_port => NULL);
end;
//
```

4. Login to PCD Application: Navigate to Default Parameters and select the Standard Process under Transfer Pricing parameters section.

Figure B-34 Default Parameters

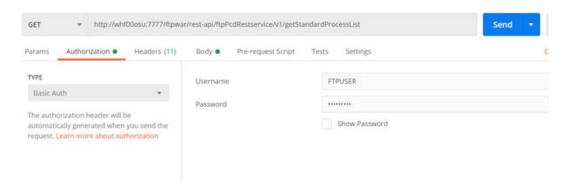


B.4.1 Testing the Services through Postman

1. Standard Process Service: Request Type: GET

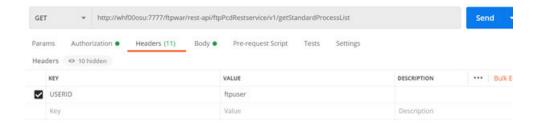
Header: UserID: FTPUSER

Figure B-35 Standard Process Service



Authorization: Type: Basic Auth Username : FTPUSER password1

Figure B-36 Authorization



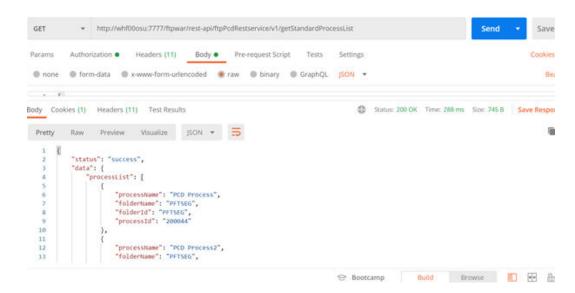
 $\label{lem:url:limit} \begin{tabular}{ll} URL: http://whf00osu:7777/ftpwar/rest-api/ftpPcdRestservice/v1/getStandardProcessList \end{tabular}$

Response:

```
{
    "status": "success",
    "data": {
        "processList": [
                "processName": "PCD Process",
                "folderName": "PFTSEG",
                "folderId": "PFTSEG",
                "processId": "200044"
            },
                "processName": "PCD Process2",
                "folderName": "PFTSEG",
                "folderId": "PFTSEG",
                "processId": "200063"
    },
    "messages": null
}
```



Figure B-37 getStandardProcessList Reponse



B.4.2 Pricing Service

Request Type: POST

URL: http://whf00osu:7777/ftpwar/rest-api/ftpPcdRestservice/v1/getPricing

Payload Request:

```
{
    "processId": "200044",
    "instrumentParameters": [{
        "accountNumber": "Prod1",
        "asOfDate": "20200730",
        "currentNetRate": "12",
        "originalTermToMaturity": "5",
        "originalTermMultiplier": "Y",
        "paymentFrequency": "1",
        "paymentFrequencyMultiplier": "M",
        "adjustableTypeCode": "0",
        "currentGrosBookBalance": "250000",
        "accuralBasisCode": "0",
        "amortizationTerm": null,
        "amortizationTermMultiplier": "D",
        "amortizationTypeCode": "0",
        "currentGrossParBalance": "250000",
        "currentPaymentAmount": 4167,
        "interestRateCode": 7777,
        "lastRepricingDate": "20200723",
        "maturityDate": "20200730",
        "nextPaymentDate": "20200724",
        "nextRepricingDate": "20200723",
        "originalGrossparBanalce": "250000",
        "originationDate": "20200723",
        "issueDate": "20200723",
        "remainingNoOfPayments": 0,
```



```
"lastPaymentDate": "20200730",
        "interestTypeCode": "0",
        "compoundingBasisCode": "-1",
        "repricingFrequency": null,
        "repricingFrequencyMultiplier": null,
        "productCode": 4,
        "currency": "USD",
        "orgPaymentAmt": 50000
    } ]
Response:
{
    "status": "success",
    "data": {
        "requestId": 15,
        "calculatedData": [
                "requestId": "15",
                "accountNumber": "NEW ACCOUNT1",
                "transferRate": "6.580822",
                "liquidityPremiumRate": "15",
                "pricingIncentiveRate": "9",
                "basisRiskCostRate": "9",
                "otherAdjustmentRate": "9",
                "allInTPRate": "48.580822",
                "asOfDate": "2020-07-16 00:00:00.0"
        ]
    },
    "messages": null
}
```

Request Timed out:

Method: GET

URL: http://whf00osu:7777/ftpwar/rest-api/ftpPcdRestservice/v1/getPricingData? requestId=26

