Oracle Financial Services Credit Risk Analytics

Installation Guide

Release 8.1.0.0.0

November 2023

F35026-01

ORACLE
Financial Services

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OFS Credit Risk Analytics Installation Guide

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Document Control

Table 1: Document Version Control

Version Number	Revision Date	Change Log
6.0	Nov 2023	Updated Java tool options to be included in the .profile file for all versions JDK 11.0.20 and above updates (36018169).
5.0	June 2022	Added information about installing the application on AAI with Linux 8.
4.0	May 2022	Updated the Post Installation section with link to Configure Tomcat for User Group Authorization.
3.0	March 2022	Updated the document for the OFS Credit Risk Analytics Release 8.1.0.0.7 release. Updated the steps for the OBIEE presentation server configuration.
2.0	September 2021	Added section - View OFSAA Product Licenses after Installation of Application Pack
1.0	September 2020	Created the document with instructions for the installation of the OFS Credit Risk Analytics Release 8.1.0.0.0.

Table of Contents

1 Preface 7

1.1 Intended Audience 7
1.2 Access to Oracle Support 7
1.3 Related Documents 7
1.4 Conventions 8
1.5 Abbreviations 9

Part I 11

2 Introduction 12

2.1 Oracle Financial Services Analytical Applications Infrastructure (OFS AAI) 13
2.1.1 Components of OFSAA Infrastructure 13
2.1.2 OFSAA Infrastructure High Availability 14
2.1.3 Deployment Topology 15
2.2 About OFS Credit Risk Analytics Application 15
2.3 Installation Overview 15
2.4 OFS AAI Extension Pack 16
2.5 Installation Scenarios 17
2.6 Compatibility Matrix 17

3 Complete Installation Checklist 18

4 Hardware and Software Requirements 21

4.1 Third-party Licensing Information 21
4.2 Verify System Environment 21

5 Pre-installation 22

5.1 Pre-installation Checklist 22
5.2 Oracle Database Instance Settings 23
5.3 Web Application Server Settings 23
5.4 Web Server Settings 24
5.5 Create the Installation, Download, and Metadata Repository Directories 24
5.6 Configure the OS File System Settings and Environment Settings in the .profile File 25
5.6.1 Configure Operating System and File System Settings 25

5.6.2 Configure the Environment Settings *26*
5.7 Download the OFS CRA Application Pack Installer and Erwin Data Model 30
5.8 Extract the Software 31
5.9 Install Pre-installation Patches 31

6 Installation 33

6.1 Installation Checklist 33
6.2 Configure the OFS_CRA_PACK.xml File 35
6.3 Configure the Schema Creator Utility 36
6.3.1 Prerequisites *37*
6.3.2 Configure the Schema Creator Utility for RDBMS Installation *37*
6.4 Execute the Schema Creator Utility 47
6.4.1 Execute the Schema Creator Utility in Offline Mode *47*
6.4.2 Execute the Schema Creator Utility in Online Mode *50*
6.4.3 Execute the Schema Creator Utility while Installing Subsequent Applications Pack *52*
6.5 Configure the OFSAAI_InstallConfig.xml File 54
6.5.1 Set Up the SFTP Private Key *60*
6.6 Install the OFS CRA Application Pack 61
6.6.1 Verify the Log File Information *68*

7 Post-installation 70

7.1 Post-Installation Checklist 71
7.2 Patch OFS CRA Installation 72
7.3 Backup the OFS_CRA_SCHEMA_IN.xml, OFS_CRA_SCHEMA_OUTPUT.xml, and Silent.props Files 72
7.4 Stop the Infrastructure Services 72
7.5 Start the Infrastructure Services 72
7.6 Configure the Web Server 72
7.6.1 Additional Configurations for Web Servers *74*
7.7 Configure Resource Reference in Web Servers 78
7.8 Configure Work Manager in Web Application Servers 78
7.9 Create and Deploy the EAR or WAR Files 78
7.10 EAR or WAR File - Build Once and Deploy Across Multiple OFSAA Instances 79
7.11 Access the OFSAA Application 79
7.11.1 OFSAA Landing Page *80*
7.12 Configure the excludeURLList.cfg File 84

7.13 View OFSAA Product Licenses after Installation of Application Pack 84
7.14 Configure Tomcat 84
7.15 Change the ICC Batch Ownership 84
7.16 Add TNS entries in the tnsnames.ora File 85
7.17 Update OBIEE URL 85
7.18 Configure Data Source 85
7.19 Configure Data Redaction in OFSAA 86
7.19.1 Prerequisites 86
7.19.2 Data Redaction 86
7.20 Data Protection Implementation in OFSAA 87
7.20.1 Right to be Forgotten 87
7.21 Post-deployment Configurations 88
7.21.1 OBIEE Configuration - Deploy OFS CRA Analytics 88
7.21.2 Logging as System Administrator 94
7.21.3 Creating Application Users 95
7.21.4 Mapping Application User (or Users) to User Group 96
7.21.5 CRA Pack User Group Names 96

8 Remove OFSAA Infrastructure 97

Part II 98

9 Additional Configuration 99

10 Migrate Excel Upload Functionality 100

11 Frequently Asked Questions (FAQs) and Error Dictionary 101

11.1 Application Pack 8.1.0.0.0 FAQs 101

1 Preface

This section provides supporting information for the Oracle Financial Services Credit Risk Analytics (OFS CRA) Pack Installation Guide.

You can find the latest copy of this document in the OHC Documentation Library which includes all the recent additions or 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
- Access to Oracle Support
- Related Information Sources
- Conventions
- Abbreviations

1.1 Intended Audience

The OFS CRA Installation Guide is intended for administrators, business users, strategists, data analysts, and implementation consultants who are responsible for installing and maintaining the application pack components.

This document assumes that you have experience installing enterprise components and basic knowledge of the following:

- Oracle Financial Services Credit Risk Analytics 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 information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info

Or, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

1.3 Related Documents

Oracle strives 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 OFS Credit Risk Analytics:**
  - *OFS Credit Risk Analytics Application Pack 8.1.0.0.0 Release Notes*
  - *OFS Credit Risk Analytics Application Pack 8.1.0.0.0 Installation Guide*
  - *OFS Credit Risk Analytics Release 8.1.0.0.0 User Guide*
- OHC Documentation Library **for OFS AAAI Application Pack:**
  - *OFS Advanced Analytical Applications Infrastructure (OFS AAAI) Application Pack Installation and Configuration Guide*
  - *OFS Analytical Applications Infrastructure User Guide*
  - *OFS Analytical Applications Infrastructure Administration Guide*
  - *Oracle Financial Services Analytical Applications Infrastructure Environment Check Utility Guide*
- **Additional Reference Documents:**
  - OFSAA Licensing User Manual, Release 8.1.0.0.0
  - OFS Analytical Applications 8.1.0.0.0 Technology Matrix
  - OFS Analytical Applications Infrastructure Security Guide
  - OFS CRA Security Guides Release 8.1.x
  - OFS Analytical Applications Infrastructure Cloning Guide
  - OFS CRA Cloning Guide Release 8.0.x
  - OFS CRA Cloning Guide Release 8.1.x

1.4 Conventions

The following text conventions are used in this document.

Table 2: Document Conventions

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 need to update specific 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 links to external websites and internal document links.

1.5 Abbreviations

The following table lists the abbreviations used in this document.

Table 3: Abbreviations

Abbreviation	Meaning
BDP	Big Data Processing
OFS CRA	Oracle Financial Services Credit Risk Analytics
DBA	Database Administrator
DDL	Data Definition Language
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

Abbreviation	Meaning
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

Part I

Topics:

- Introduction
- Complete Installation Checklist
- Hardware and Software Requirements
- Pre-installation
- Installation
- Post-installation
- Remove OFSAA Infrastructure

2 Introduction

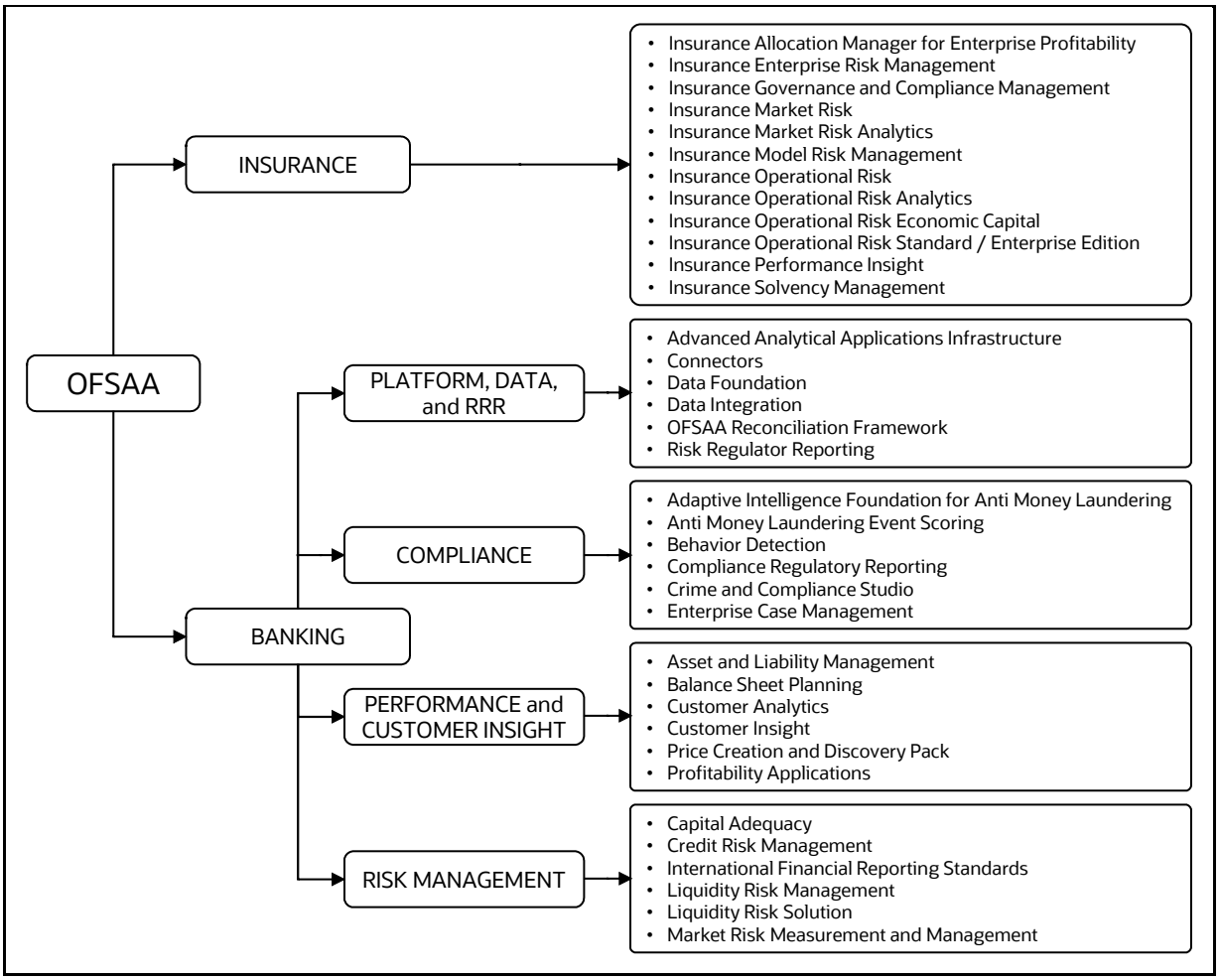
In today's turbulent markets, financial institutions require a better understanding of their risk-return, while strengthening competitive advantage and enhancing long-term customer value. Oracle Financial Services Analytical Applications (OFSAA) enable financial institutions to measure and meet risk-adjusted performance objectives, cultivate a risk management culture through transparency, lower the costs of compliance and regulation, and improve insight into customer behavior.

OFSAA uses industry-leading analytical methods, shared data models, and applications architecture to enable integrated risk management, performance management, customer insight, and compliance management. OFSAA actively incorporates risk into decision making, enables to achieve a consistent view of performance, promote a transparent risk management culture, and provide pervasive intelligence.

Oracle Financial Services Analytical Applications delivers a comprehensive, integrated suite of financial services analytical applications for both banking and insurance domains.

The following figure depicts the various application packs that are available across the OFSAA Banking and Insurance domains.

Figure 1: OFSAA Application Packs



Topics:

- Oracle Financial Services Analytical Applications Infrastructure (OFS AAI)
- About OFS Credit Risk Analytics Application Pack
- Installation Overview
- Installation Scenarios
- Compatibility Matrix

2.1 Oracle Financial Services Analytical Applications Infrastructure (OFS AAI)

Oracle Financial Services Analytical Applications Infrastructure (OFS AAI) 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.

Topics:

- Components of OFSAA Infrastructure
- OFSAA Infrastructure High Availability
- Deployment Topology

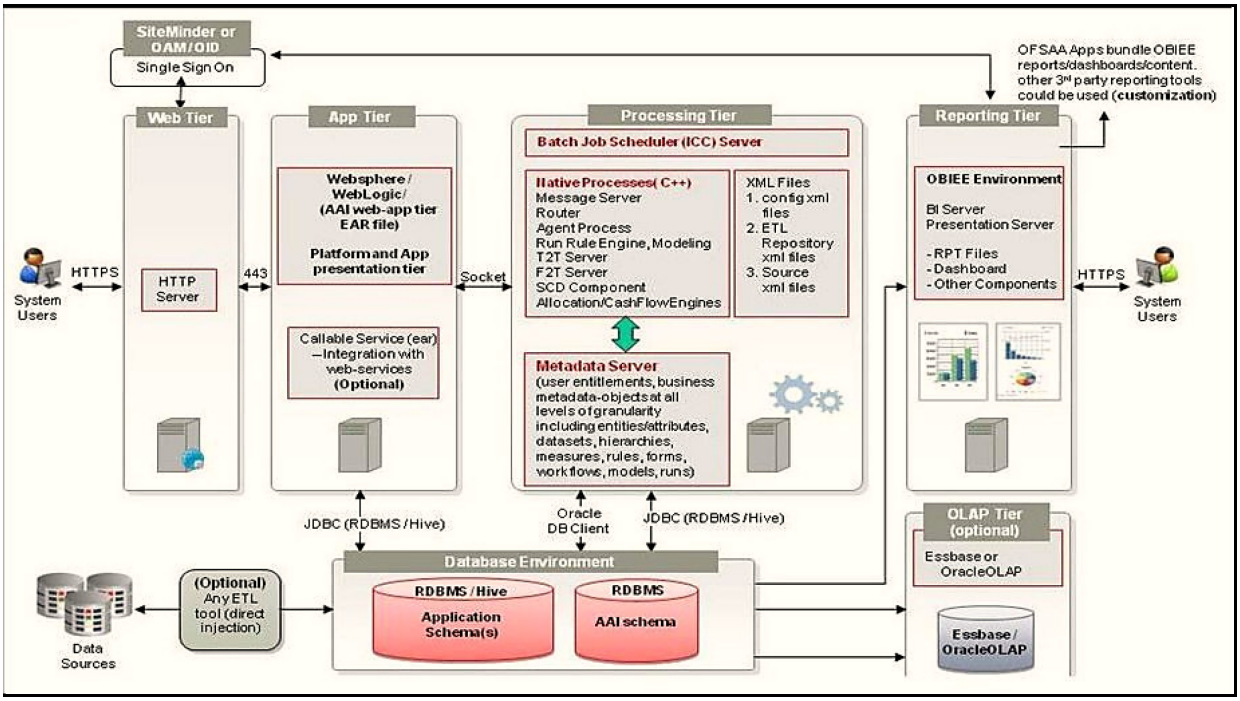
2.1.1 Components of OFSAA Infrastructure

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 or frameworks are installed as two layers; primarily, the metadata server and Infrastructure services run on one layer, while the UI and presentation logic run on the other. The UI and presentation layer are 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: Components of OFSAAI



2.1.2 OFSAA Infrastructure High Availability

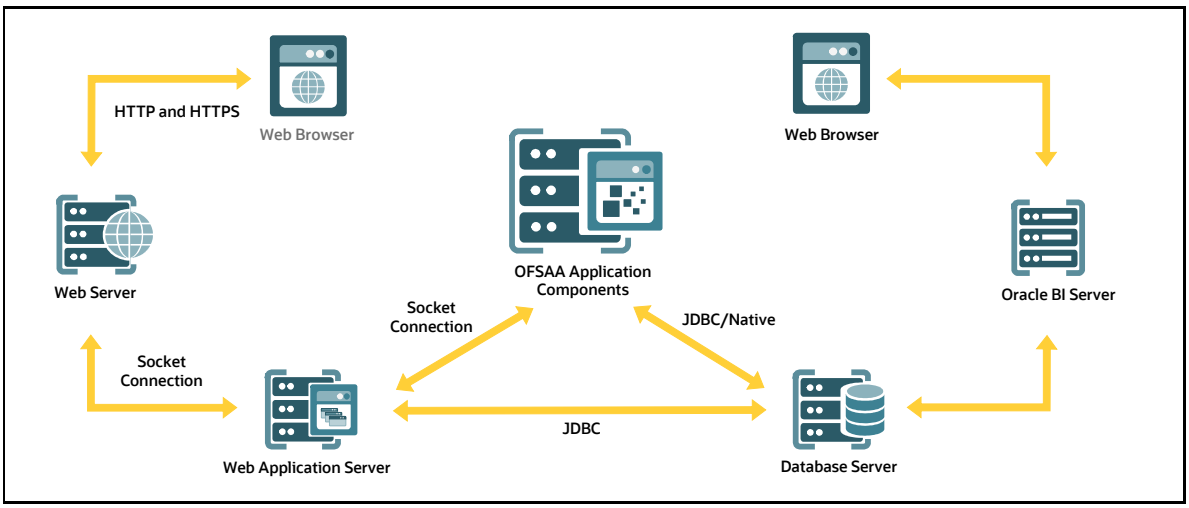
The current release of the OFSAA Infrastructure supports only the Single Instance installation for the Infrastructure components. However, the High Availability (HA) for the Database Server and (or) the Web application server clustering and deployment is supported in this release.

This release supports the Active-Passive model of implementation for OFSAAI components. For more information, see the 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 3: Logical Architecture Implemented for OFSAA Application Packs



2.2 About OFS Credit Risk Analytics Application

OFS CRA Application Release v8.1.0.0.0 includes the following products:

- **Oracle Financial Services Credit Risk Analytics (OFS CRA)**:

  OFS CRA empowers financial institutions to proactively identify, measure, and mitigate enterprise wide credit risk though its comprehensive, dynamic, and high-quality reports. The application helps gain a holistic enterprise wide view of credit risk present across the banking and trading book. It also enables mitigation of credit and compliance costs by proactively identifying stressed pockets, credit concentrations, undifferentiated credit expansions, provisioning, capital shortfalls, and so on.

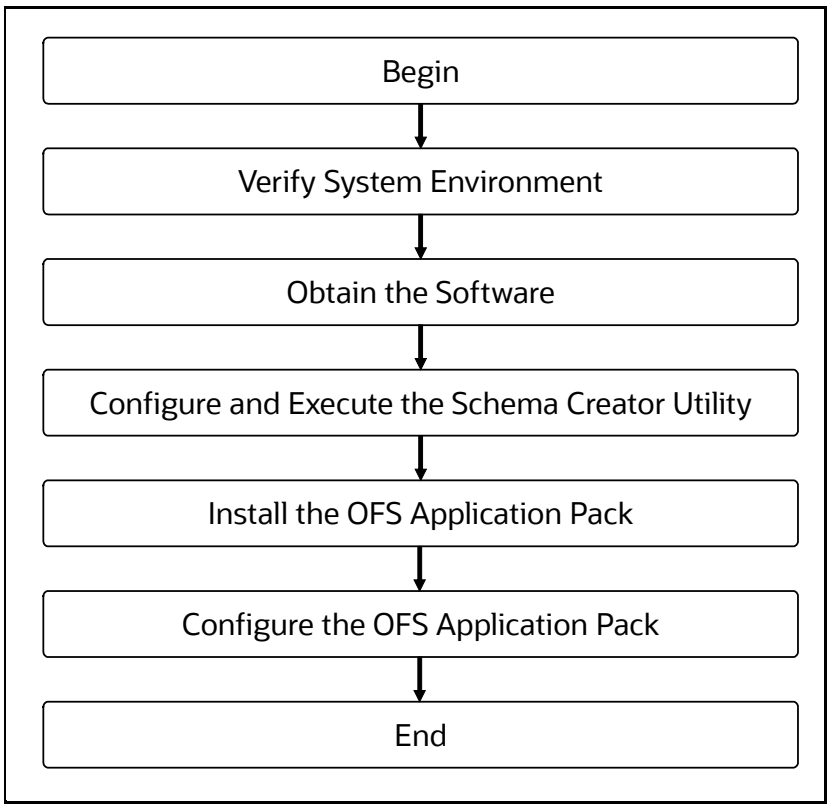
  The application enables financial institutions to realign their Credit, Non-performing Assets (NPA), Provisioning, and Capital Management policy. The application is packaged with prebuilt infographic reports and dashboards using Oracle Business Intelligence Enterprise Edition (OBIEE), which also offers enhanced flexibility to customize these prebuilt reports through the inbuilt Visual Analyser. OFSCRA is a one-stop solution crafted to adequately address the credit risk management challenges faced by all categories of financial institutions.

2.3 Installation Overview

To install an OFS CRA application v8.1.0.0.0 instance, users and administrators must download this installer. The following figure displays the order of procedures you must follow to install a new OFS CRA v8.1.0.0.0 instance.

> **NOTE** This installer supports the fresh installation of OFS CRA v8.1.0.0.0.

Figure 4: Installation Flow



2.4 OFS AAI Extension Pack

The Oracle Financial Services Analytical Applications Infrastructure Extension (OFS AAIE) Pack adds a set of new advanced features for v8.1.0.0.0 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

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

2.5 Installation Scenarios

Release 8.1.0.0.0 of OFS CRA supports the following installation scenarios. A high-level overview of the possible scenarios is provided in the following table. Detailed procedural steps are provided in the succeeding sections of this document.

Table 4: OFS CRA Release 8.1.0.0.0 Installation and Upgrade Scenarios

Scenario	Installation and Upgrade Instructions
New Installation	
Installing Release 8.1.0.0.0 application pack for the first time (new installation).	1. Prepare for the Installation. 2. Execute the Schema Creator Utility. 3. Install the OFS CRA Application Pack.
Install OFS CRA Application Pack v8.1.0.0.0 on an Existing OFSAA Instance You have already installed an application pack from release 8.1 and now you want to install another application pack from Release 8.1.0.0.0. Example: OFS ALM Pack is already installed and now you want to install OFS CRA Pack.	1. Run the schema creator utility ONLY for the new pack. 2. Update the `OFS_CRA_PACK.xml` file for the newly licensed pack. 3. Update the `Silent.props` file of the newly licensed pack. 4. Trigger the Release v8.1.0.0.0 installation.

2.6 Compatibility Matrix

This table lists the applications or app-combinations that must not be installed on a single infodom.

Table 5: CRA 8.1 Application Compatibility Matrix

If you are installing	Do not Install the Listed Application in the Same Environment
OFS_CRA_PACK	None

3 Complete Installation Checklist

For a successful installation, perform the steps listed in the Complete Installation Checklist. You can use this checklist to have a quick glance at everything that you will be doing 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: Complete Installation Checklist

Sl. No.	Pre-installation Activity
1	Install all the prerequisite hardware and software given in the OFS Analytical Applications Technology Matrix.
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 web server.
6	Create the Installation, Download, and Metadata Repository Directories: • Installation directory • Temporary directory • Staging Area/Metadata Repository directory • Download directory
7	Configure the following Operating System and File System settings: • File Descriptor • Total number of processes • Port (or ports) • `.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 OFS CRA installer kit and erwin data model.
10	Extract the installer kit.

Sl. No.	Installation Activity
1	Configure the `OFS_CRA_PACK.xml` file.
2	Configure the `OFS_CRA_SCHEMA_IN.xml` file.
3	Execute the Schema Creator Utility in Online, Offline modes, and verify the log file.
4	Configure the `silent.props` file.
5	Configure the `OFSAAI_InstallConfig.xml` file.
6	Trigger the application installation.
7	Verify the installation logs.

Sl. No.	Post-installation Activity
1	Verify that all patches are successfully installed.
2	Back up the `OFS_CRA_SCHEMA_IN.xml`, `OFS_CRA_SCHEMA_OUTPUT.xml`, and `Silent.props` files.
3	Stop the OFSAA Infrastructure services.
4	Start the OFSAA Infrastructure services.
5	Configure the webserver.
6	Configure the Resource Reference in web application servers.
7	Configure the Work Manager in the web application servers.
8	Create and Deploy EAR or WAR files.
9	EAR/WAR File - Build Once and Deploy Across Multiple OFSAA Instances.
10	Access the OFSAA application.
11	Configure the `excludeURLList.cfg` file.
12	Configure the Tomcat server.
13	Change the ICC batch ownership.
14	Add TNS entries in the `tnsnames.ora` file.
15	Update the OBIEE URL.
16	Configure Data Source.
17	Set Data Redaction in OFS CRA.
18	Implement Data Protection in OFSAA.
19	Post-deployment Configuration. • OBIEE Configuration – Deploy OFS CRA Analytics. • Logging as System Administrator. • Create Application Users. • Map the Application User (or users) to User Groups.

Sl. No.	Post-installation Activity
	• Map the CRA Pack User Group Names.

Sl. No	Additional Configuration Activity
1	Add FTP/SFTP Configuration for File Transfer.
2	Configure the Infrastructure Server Memory.
3	Retrieve Patch Information.
4	Set OLAP Data Server Configuration.
5	Change IP Address or Hostname, Ports, Deployed Paths of the OFSAA Instance.
6	Configure the Infrastructure LDAP Configuration.
7	Configure and Deploy the OFSAAI web services.
8	Enable Parallel Execution of DML statements
9	Configure the Message Details in the Forms Designer.
10	Clear the application cache.
11	Configure password changes.
12	Configure Java Virtual Machine.
13	Configure Internal Service (Document Upload/Download).

4 Hardware and Software Requirements

For a list of all the hardware and software requirements including operating systems, database, web servers, and web application server versions for which this release of the OFS CRA Applications Pack is qualified see the OFS Analytical Applications Technology Matrix.

Topics:

- Third-Party Licensing Information
- Verify System Environment

> **NOTE** OFS CRA Application Pack installation can be performed on both Virtual and Physical servers.

OFS CRA application pack recommends the following software combinations for deployment.

Table 7: Recommended Software Combination

Operating System	Database	Web Application Server	Web Server
Oracle Linux	Oracle Database	Oracle WebLogic Server or Apache Tomcat Server or IBM WebSphere	Oracle HTTP Server or Apache HTTP Server or IBM HTTP Server
Oracle Solaris	Oracle Database	Oracle WebLogic Server or Apache Tomcat Server	Oracle HTTP Server or Apache HTTP Server

4.1 Third-party Licensing Information

For more information about the third-party software tools used in OFS CRA, see the OFSAA Licensing Information User Manual Release 8.1.0.0.0.

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 My Oracle Support.

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 information about downloading and using this utility, see the OFSAA Environment Check Utility Guide.

5 Pre-installation

This chapter provides the necessary information to review before installing the OFS CRA Pack v8.1.0.0.0.

Topics:

- Pre-installation Checklist
- Oracle Database Instance Settings
- Web Application Server Settings
- Web Server Settings
- Create the Installation, Download, and Metadata Repository Directories
- Configure the OS File System Settings and Environment Settings in the .profile File
- Download the OFS CRA Applications Pack Installer and erwin Data Model
- Extract the Software

> **NOTE** When merging the lower version of an application with an integrated data model, retain the larger size of column length.

5.1 Pre-installation Checklist

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

The Installer Environment Check utility notifies you if any requirements are not met.

Table 8: Pre-Installation Checklist

Sl. No.	Pre-installation Activity
1	Install all the prerequisite hardware and software given in the OFS Analytical Applications Technology Matrix.
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 web server.
6	Create the Installation, Download, and Metadata Repository Directories: • Installation directory • Temporary directory • Staging Area/Metadata Repository directory • Download directory

Sl. No.	Pre-installation Activity
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 OFS CRA installer kit and erwin data model.
10	Extract the installer kit.

5.2 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

5.3 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 9: Web Application Server Settings

Description	Example Value
For WebSphere, specify the WebSphere path as `<WebSphere profile directory>/installedApps/<NodeCell Name>`.	`/data2/test//WebSphere/AppServer/profiles/<Profile_Name>/installedApps/aiximfNode01Cell`, where aix-imf is the Host name.
For WebLogic, specify the WebLogic home directory path.	`/<WebLogic home directory path>/bea/wlserver_10.3`
For Tomcat, specify the Tomcat directory path till `/webapps`.	`/oradata6/ revwb7/tomcat/webapps/`

> **NOTE** See Configure the Web Server section for WebSphere Profile and WebLogic Domain creation.

5.4 Web Server Settings

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

Table 10: Web Server Settings

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

5.5 Create the Installation, Download, and Metadata Repository Directories

To install OFS CRA, create the following directories:

- **OFSAA Download Directory (Optional)**: This is the directory where the downloaded installer or 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.

> **NOTE** 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. Set the variable FIC_HOME in the .profile file to point to the OFSAA Installation Directory. Assign 755 user permission to the installation directory.

- **OFSAA Staging or 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 or 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.

> **NOTE** 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.

5.6 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.

Topics:

- Configure Operating System and File System Settings
- Configure the Environment Settings

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

5.6.1 Configure Operating System and File System Settings

The following table displays the required settings for the operating system and file system.

Table 11: 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:
	1. Edit the following line in the `/etc/sysctl.conf` file:
	`fs.file-max = <value>`
	where `<value>` is greater than 15000
	2. 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.

Total Number of Process Settings	In the `sysctl.conf` file set the value to greater than 4096. **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.
Port Settings	Default port numbers to be enabled on the system are 6500, 6501, 6505, 6507, 6509, 6510, 6666, 9999, and 10101.
.profile permissions	You must have 755 permission on the `.profile` file.
OS Locale	**Linux**: en_US.UTF-8 **Solaris**: en_US.UTF-8 To check the locale installed, execute the following command: `locale -a | grep -i en_US.utf`

5.6.2 Configure the Environment Settings

This section provides information to configure the environment settings before installation.

Topics:

- Java Settings
- Oracle Database Server and Client Settings
- TNS Entries in TNSNAMES.ORA File
- Oracle Essbase Settings
- Time Zone Settings
- Mandatory Patches

5.6.2.1 Java Settings

The following table displays the Java settings required for installation.

Table 12: Java Settings

Description	Example Value
In the `.profile` file, set PATH to include the Java Runtime Environment (JRE) absolute path. Ensure that SYMBOLIC links to JAVA installation are not set in the PATH variable.	For example: `PATH=/usr/java/jre1.8.0_221/bin:$ORACLE_HOME/bin:$PATH` `export PATH` **NOTE:** OFSAA does not support OpenJDK and JRE.
In the .profile file, set the Java tool options for all versions JDK 11.0.20 and above updates	`JAVA_TOOL_OPTIONS="Djdk.util.zip.disableZip64ExtraFieldValidation=true"`

In the `.profile` file, set PATH to include the Java Runtime Environment bin path.	`JAVA_BIN=/scratch/<<version>>/jre/bin`
	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 *Enabling Unlimited Cryptographic Policy* section from the OFS Analytical Applications Infrastructure Administration Guide.

5.6.2.2 Oracle Database Server and Client Settings

The following table displays the Oracle Database server and client settings required for installation.

Table 13: 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`

Description	Example Value
OFSAA Processing Server	ORACLE_HOME must be set in the `.profile` file and point to appropriate Oracle DB Client installation. PATH in the .profile file must be set to include the appropriate `$ORACLE_HOME/bin` path. Ensure that an entry (with SID or SERVICE NAME) is added in the `tnsnames.ora` file.

5.6.2.3 TNS Entries in the TNSNAMES.ORA File

The section includes information about the TNS entries in the TNSNAMES.ORA file.

Table 14: TNS entries in the TNSNAMES.ORA file

Description	Example Value
Ensure that an entry (with SID or SERVICE NAME) is added in the `tnsnames.ora` file on the OFSAA server.	`<SID_NAME> = DESCRIPTION =(ADDRESS_LIST = (ADDRESS = (PROTOCOL = TCP)(HOST = <HOST_NAME>)(PORT = 1521)))(CONNECT_DATA = (SERVICE_NAME = <SID_NAME>)))<ATOMIC_SCHEMA_NAME> = (DESCRIPTION =(ADDRESS_LIST = (ADDRESS = (PROTOCOL = TCP)(HOST = <HOST_NAME>)(PORT = 1521)))(CONNECT_DATA = (SERVICE_NAME = <SID_NAME>)))`

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

NOTE The ATOMIC SCHEMA NAME must be the same as defined in the `OFS_CRA_SCHEMA_IN.xml` file.

5.6.2.4 Oracle Essbase Settings

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

Table 15: Oracle Essbase Settings

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`

5.6.2.5 Time Zone Settings

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

Table 16: Time Zone Settings

Description	Example Value
Time Zone	TZ=Asia/Calcutta

5.6.2.6 Mandatory Patches

The following table includes information about the mandatory patches that must be applied.

Table 17: Mandatory Patches

One-Off Patch	Description
31605076	This is a mandatory OFS AAI post-installation one-off patch. Access to features owing to the additional license functionality that gets installed through the OFS AAI Extension Pack.
31545589	This is a mandatory OFS AAI pre-installation one-off patch for pack-on-pack installation on a new atomic schema.

One-Off Patch	Description
31654438	This is a mandatory OFS AAI post-installation one-off patch for pack-on-pack installation.

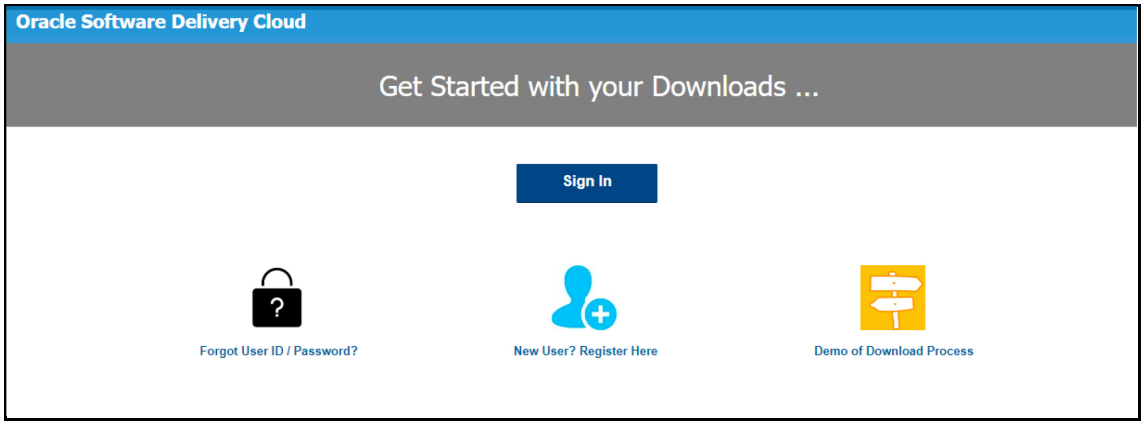
NOTE Ensure that the tablespace (or tablespaces) used for the database user (or users) is set to AUTOEXTEND ON.

5.7 Download the OFS CRA Application Pack Installer and Erwin Data Model

To download the OFS CRA Applications Pack Installer Release 8.1.0.0.0 (Bug Number: **31888448**), follow these steps:

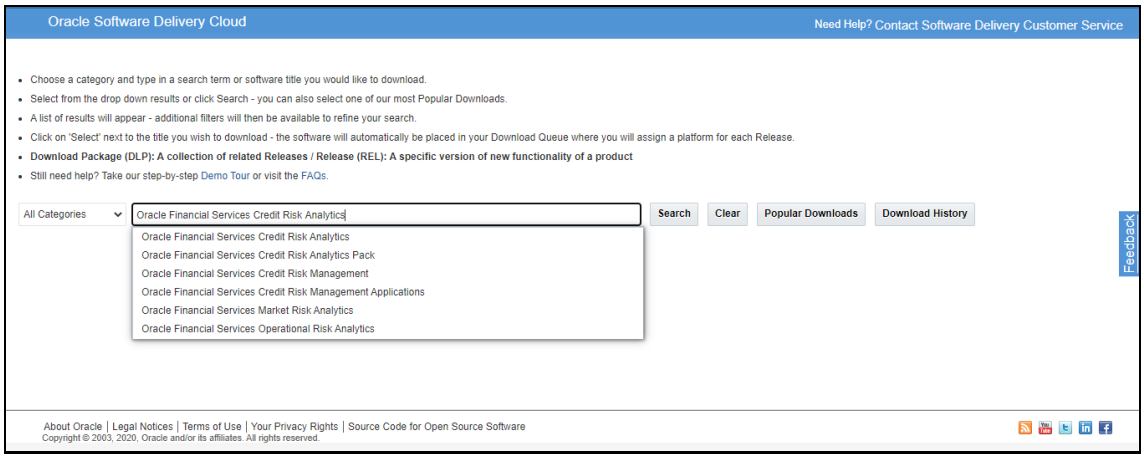
1. Log in to the Oracle Software Delivery Cloud (OSDC) with a valid Oracle account.

Figure 5: OSDC Login Window



2. Enter *Oracle Financial Services Credit Risk Analytics* in the search box.

Figure 6: OSDC - Search Results



3. Download the installer archive and copy (in Binary mode) to the download directory that exists in the OFS CRA installation setup.

> **NOTE** Download the OFS CRA erwin data model patch **31888544** from My Oracle Support. You can search for the patch number in the **Patches and Updates** tab and download.

5.8 Extract the Software

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

1. 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.

   If you already have an unzip utility to extract the contents of the downloaded archive, skip this step.

2. Uncompress the unzip installer file using the following command:

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

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

3. Assign execute (751) to the file using the following command:

   ```
   chmod 751 unzip_<OS>
   ```

   For example: `chmod 751 unzip_sparc`

4. Extract the contents of the OFS CRA Application Pack Release 8.1.0.0.0 installer archive file in the download directory using the following command:

   ```
   unzip OFS_CRA_PACK.zip
   ```

5. Download and extract the following one-off patches in the download directory:
   - 31545589
   - 31605076
   - 31654438

6. Navigate to the download directory and assign execute permission to the installer directory using the following command:

   ```
   chmod -R 750 OFS_CRA_Pack
   ```

5.9 Install Pre-installation Patches

Before installing OFS CRA 8.1.0.0.0, apply the **31545589** one-off patch. See the **Readme** packaged with the patch for further instructions on how to install it.

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

If you are installing CRA on an existing AAI version, run the following script in the config schema and then continue with the CRA installation:

1. Insert into AAI_APP_B (V_APP_ID,V_VERSION,V_COMMENTS,V_MDB_APP_ID,V_ACCESS_CODE,F_IS_SEEDED,F_IS_CLOUD_ENABLED,V_TILE_ICON,V_TILE_COLOR,V_HOME_PAGE,V_TARGET) values ('OFS_CRA','8.0.0.0.0','Financial Services Credit Risk Analytics','OFS_CRA','OFSCRA','Y','N',null,null,null,null);
2. Insert into AAI_APP_TL (V_APP_ID,V_APP_NAME,V_APP_DESC,V_LOCALE_CODE) values ('OFS_CRA','Financial Services Credit Risk Analytics','Financial Services Credit Risk Analytics','en_US');
3. INSERT INTO AAI_APP_PACK_B (V_APP_PACK_ID, V_VERSION, F_IS_MEDIA_PACK) VALUES ('OFS_CRA_PACK', '8.0.0.0.0', 'T');

NOTE If you plan to install OFS CRA 8.1.0.0.0 on AAI version 8.1.1.0.0, ensure to add Linux 8 entry (Linux_VERSION=7,8) in the following files:

- /OFS_LRS_PACK/OFS_AAI/bin/VerInfo.txt
- /OFS_LRS_PACK/OFS_AAAI_PACK/OFS_AAI/bin/VerInfo.txt

6 Installation

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

Topics:

- Configure the OFS_CRA_PACK.xml File
- Configure the Schema Creator Utility
- Execute the Schema Creator Utility
- Configure the OFSAAI_InstallConfig.xml File
- Install the OFS CRA Application Pack

6.1 Installation Checklist

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

NOTE

If you are installing OFS CRA in an environment where OFS Hedge Management, OFS Loan Loss Forecasting and Provisioning, OFS Asset and Liability Management, OFS Enterprise Financial Performance Analytics, and OFS Balance Sheet Planning are installed, then ensure to take the backup of the FSI_FISCAL_YEAR_INFO table and drop the table from the environment, by following the mentioned steps:

1. Log in into Atomic schema
2. Create the backup table for the FSI_FISCAL_YEAR_INFO table by executing the following statement.

```
CREATE TABLE FSI_FISCAL_YEAR_INFO_BKP
AS SELECT * FROM FSI_FISCAL_YEAR_INFO
/
DROP TABLE FSI_FISCAL_YEAR_INFO
```

Post- installation of CRA, merge the data from backup table to the FSI_FISCAL_YEAR_INFO table, by following the mentioned steps:

1. Insert data in the table for the FSI_FISCAL_YEAR_INFO table by executing the below steps:

```
INSERT INTO FSI_FISCAL_YEAR_INFO
(
FISCAL_PERIOD,
START_MONTH
)
SELECT
FISCAL_PERIOD,
START_MONTH
FROM FSI_FISCAL_YEAR_INFO_BKP
```

Table 18: Installation Checklist

Sl. No.	Installation Activity
1	Configure the `OFS_CRA_PACK.xml` file.
2	Configure the `OFS_CRA_SCHEMA_IN.xml` file.
3	Execute the Schema Creator Utility in Online, Offline modes, and verify the log file.
4	Configure the `Silent.props` file.
5	Configure the `OFSAAI_InstallConfig.xml` file.
6	Trigger the application installation.

7	Verify the installation logs.

6.2 Configure the OFS_CRA_PACK.xml File

The `OFS_CRA_PACK.xml` file contains details on the various products that are packaged in the OFS CRA Application Pack. This section details the various tags and parameters available in the file and the values that must be updated. Before installing the CRA Application Pack, it is mandatory to update this file.

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

1. Navigate to the `OFS_CRA_PACK/conf` directory.
2. Open the `OFS_CRA_PACK.xml` file in a text editor.

Figure 7: Sample OFS_CRA_PACK.xml File

```
<APP_PACK_CONFIG>
    <APP_PACK_ID>OFS_CRA_PACK</APP_PACK_ID>
    <APP_PACK_NAME>Financial Services Credit Risk Analytics Application</APP_PACK_NAME>
    <APP_PACK_DESCRIPTION>Pack for Financial Services Credit Risk Analytics Applications</APP_PACK_DESCRIPTION>
    <VERSION>8.1.0.0.0</VERSION>
    <APP>
        <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>8.1.0.0.0</VERSION>
    </APP>
    <APP>
        <APP_ID PREREQ="OFS_AAI" ENABLE="YES">OFS_CRA</APP_ID>
        <APP_NAME>Financial Services Credit Risk Analytics</APP_NAME>
        <APP_DESCRIPTION>Credit Risk Analytics Application</APP_DESCRIPTION>
        <VERSION>8.1.0.0.0</VERSION>
    </APP>
</APP_PACK_CONFIG>
```

3. Configure the `OFS_CRA_PACK.xml` file as mentioned in the following table.

Table 19: OFS_CRA_PACK.xml File Parameters

Tag Name or 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	Y	Unique Seeded Value. Do not modify this value.
APP_PACK_NAME	Unique Application Pack Name	Y	Unique Seeded Value. Do not modify this value.
APP_PACK_DESCRIPTION	Unique Application Pack Description	Y	Unique Seeded Value. Do not modify this value.

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Comments
VERSION	Unique release version	Y	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	Y	Unique Seeded Value. Do not modify this value.
APP_ID/ PREREQ	Prerequisite Application or Product	Y	Unique Seeded Value. For most applications, the prerequisite that is set is OFSAAAI. 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	Y	In all Application Packs, Infrastructure requires this value to be set to YES. Do not modify this value.
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 or Product cannot be disabled once enabled. However, an Application or Product which is not enabled during installation can be enabled later through the Administration UI.
APP_NAME	Unique Application or Product Name	Y	Unique Seeded Value. Do not modify this value.
APP_DESCRIPTION	Unique Application or Product Name	Y	Unique Seeded Value. Do not modify this value.
VERSION	Unique release version	Y	Unique Seeded Value. Do not modify this value.

6.3 Configure the Schema Creator Utility

Creating database users or schemas (RDBMS) is one of the primary steps in the complete OFS CRA installation process. The Schema Creator utility enables you to quickly get started with the installation

by creating Database User (or Users) or Schema (or Schemas) (RDBMS), assigning the necessary GRANT (or GRANTs), creating the required entities in the schemas, and so on.

Configure and execute the schema creator utility before installing the OFSAA Application Pack.

Topics:

- Prerequisites
- Configure Schema Creator Utility for RDBMS Installation

6.3.1 Prerequisites

Ensure you have the following before configuring the Schema Creator Utility:

- Oracle User ID and Password with SYSDBA privileges
- JDBC Connection URL for RAC or Non-RAC database
- The HOSTNAME or IP of the server on which OFSAA is being installed.
- It is recommended to set the PGA_AGGREGATE_LIMIT database-parameter value sufficiently when Oracle 18c or 19c is installed.
- You must add a TNS entry before the installation.
- You must create a directory named `ftpshare`.

6.3.2 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_CRA_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. Only one CONFIG schema per OFSAA instance is permitted.
- **ATOMIC**: This schema holds the data model entities. One ATOMIC schema is attached to one Information Domain. You can have multiple ATOMIC schemas for a single OFSAA instance.

6.3.2.1 Configure the OFS_CRA_SCHEMA_IN.xml File

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

Specify the database schemas required for the installation in the `OFS_CRA_SCHEMA_IN.xml` file. Update the values of the various tags and parameters available in this file before executing the schema creator utility.

This file must be configured only if the database is RDBMS.

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

1. Log in to the system as a non-root user.
2. Navigate to the `OFS_CRA_PACK/schema_creator/conf` directory.
3. Edit the `OFS_CRA_SCHEMA_IN.xml` file using a text editor.

Figure 8: Sample OFS_CRA_SCHEMA_IN.xml File

```
<APPPACKSCHEMA>
    <APP_PACK_ID>OFS_CRA_PACK</APP_PACK_ID>
    <IS_TCPS>FALSE</IS_TCPS>
    <JDBC_URL>jdbc:oracle:thin:@whf00pgh.in.oracle.com:1521/ORA19CDB</JDBC_URL>
    <JDBC_DRIVER>oracle.jdbc.driver.OracleDriver</JDBC_DRIVER>
    <HOST>whf00pgm</HOST>
    <SETUPINFO NAME="IUT" PREFIX_SCHEMA_NAME="N"/>
    <PASSWORD APPLYSAMEFORALL="Y" DEFAULT=""/>
    <ADV_SEC_OPTIONS>
        <OPTION NAME="TDE" VALUE="FALSE"/>
        <OPTION NAME="DATA_REDACT" VALUE="TRUE" />
    </ADV_SEC_OPTIONS>
    <SCHEMAS>
        <SCHEMA TYPE="CONFIG" NAME="CRA81DEVCONF" PASSWORD="" APP_ID="OFS_AAI" DEFAULTTABLESPACE="USERS" TEMPTABLESPACE="TEMP" QUOTA="UNLIMITED"/>
        <SCHEMA TYPE="ATOMIC" NAME="CRA81DEVATM" PASSWORD="" APP_ID="OFS_CRA" APP_GRP="1" DEFAULTTABLESPACE="USERS" TEMPTABLESPACE="TEMP" QUOTA="UNLIMITED" INFODOM="CRAINFO"/>

    </SCHEMAS>
</APPPACKSCHEMA>
```

4. Configure the values as mentioned in the following table and save the file.

> **NOTE** On successful execution of the utility, the passwords entered in the `OFS_CRA_SCHEMA_IN.xml` file are nullified.

Table 20: OFS_CRA_SCHEMA_IN.xml file Parameters

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Default Value or Permissible Value	Comments
<APP_PACK_ID>	Seeded unique ID for the OFSSAA Application Pack	Y	OFS_CRA_PACK	Do not modify this value.
<IS_TCPS>	Enter if the TCPS configuration is required.	Y	Seeded, with FALSE as the default value.	Do not modify this value.
<JDBC_URL>	Enter the JDBC URL. **NOTE:** You can enter the following JDBC URL type: RAC or NON-RAC enabled database connectivity URL.	Y	**Example**: jdbc:oracle:thin:@< DBSERVER IP/ HOST/ IP>:<PORT>:<SID> or jdbc:oracle:thin:@//[HOS T][:PORT]/ SERVICE or jdbc:oracle:thin:@(DESCRI PTION=(ADDRESS_ LIST=(ADDRESS=(PROT OCOL=TCP)(HOST=[HO ST])(port=[PORT]))(ADD RESS=(PROTOCOL=TCP) (HOST=[HOST])(PORT=[PORT]))(LOAD_ BALANCE=yes)(FAILOV ER=yes))(CONNECT_ DATA=(SERVICE_ NAME=[SERVICE]))) For example: jdbc:oracle:thin:@//dbhos t.server.com:1521/service 1 or jdbc:oracle:thin:@//dbsho st.server.com:1521/scan-1 or jdbc:oracle:thin:@(DESCRI PTION=(ADDRESS_ LIST=(ADDRESS=(PROT	Ensure that you add an entry (with SID or SERVICE NAME) in the `tnsnames.ora` file on the OFSAA server. The entry must match the SID or SERVICE NAME used in the JDBC URL. Ensure that you have configured the JDBC URL as follows: `jdbc:oracle:thin:/@`

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Default Value or Permissible Value	Comments
			OCOL=TCP)(HOST=dbhost1.server.com) (port=1521))(ADDRESS=(PROTOCOL=TCP)(HOST=dbhost2.server.com)(PORT=1521))(LOAD_BALANCE=yes)(FAILOVER=yes))(CONNECT_ DATA=(SERVICE_NAME=service1))) or <JDBC_URL>jdbc:oracle:thin:@(DESCRIPTION = (ADDRESS = (PROTOCOL=TCPS)(HOST = dbhost.server.com)(PORT = 2484)) (CONNECT_DATA =(SERVER = DEDICATED) (SERVICE_NAME=SERVICEID))(security=(ssl_server_cert_dn=CN=dbhost))) or jdbc:oracle:thin:/@	
<JDBC_DRIVER>	The name of the driver is seeded.	Y	**Example**: oracle.jdbc.driver.OracleDriver	Only JDBC Thin Driver is supported. Do not modify this value.
<HOST>	Enter the Hostname or IP Address of the system on which you are installing the OFSAA components.	Y	Hostname or IP Address	
<SETUPINFO>/PREFIX_SCHEMA_NAME	Identifies whether the value specified in <SETUPINFO>/NAME attribute must be prefixed to the schema name.	N	Y or N	The default value is N.

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Default Value or Permissible Value	Comments
<SETUPINFO>/NAME	Enter the acronym for the type of implementation. This information is displayed in the OFSAA Home Page. On executing the schema creator utility, this value is prefixed with each schema name. For example: dev_ofsaaconf, uat_ofsaatm.	Y	Seeded, with REG PREFIX_SCHEMA_NAME="N as the default value. Accepts strings with a minimum length of two and a maximum of four. **Example**: DEV, SIT, PROD	This message appears in the OFSAA Landing Page as "Connected To: xxxx". The schemas that are created get this prefix. For example, dev_ofsaaconf, uat_ofsaaconf, and so on.
<PASSWORD>/ DEFAULT*	Enter the password if you want to set a default password for all schemas. You also must set the APPLYSAME-FORALL attribute as Y to apply the default password for all the schemas.	N	The maximum length allowed is 30 characters. Special characters are not allowed.	On successful execution of the utility, the entered password in the `OFS_CRA_SCHEMA_IN.xml` file is cleared.
<PASSWORD>/ APPLYSAMEFORALL	If you have entered Y in APPLYSAME-FORALL attribute and have specified individual passwords for all the schemas, then the specified individual passwords will take precedence.	Y	Default N Permissible: Y or N. Enter Y if you want to apply the password specified in the DEFAULT attribute for all the schemas. If you enter N, provide individual passwords for all schemas.	Setting this attribute value is mandatory if the DEFAULT attribute is set.

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Default Value or Permissible Value	Comments
<SCHEMA>/TYPE	The types of schemas supported in this release are ATOMIC, CONFIG, SANDBOX, and ADDON. By default, the schema types are seeded based on the Application Pack.	Y	ATOMIC or CONFIG	Only One CONFIG schema can exist in the file. Do not edit this attribute value. This schema identifies as the CONFIGURATION schema that holds the OFSAA setup details and other Metadata information. Multiple ATOMIC schemas can exist in the file.
<SCHEMA>/NAME	The schemas' names are seeded based on the Application Pack by default. You can edit the schema names if required. The Schema Name will have a prefix of the SETUPINFO/ NAME attribute. SCHEMA NAME must be the same for all the ATOMIC Schemas of the applications within an Application Pack.	Y	Seeded, with OFSCONFIG as the default value. The permissible length is 15 characters and only alphanumeric characters are allowed. No special characters allowed except underscore '_'.	SETUPOINFO/NAME attribute value is prefixed to the schema name being created. For example, if a name is set as 'ofsaatm' and setupinfo as 'uat', then schema created is 'uat_ofsaatm'. NAME must be the same where APP_GRP=1 for all SCHEMA tags (Not applicable for this Application Pack).
<SCHEMA>/PASSWORD	Enter the password of the schema to be created. If this attribute is left blank, then the password specified in the <PASSWORD>/DEFAULT attribute is taken as the Schema Password.	N	The maximum length allowed is 30 characters. Special characters are not allowed.	It is mandatory to enter the password if you have set the <PASSWORD>/ APPLYSAMEFORALL attribute as N.

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Default Value or Permissible Value	Comments
<SCHEMA>/APP_ID	The Application ID is seeded based on the Application Pack.	Y	Unique seeded values are: OFS_AAI OFS_CRA	Identifies the Application or Product for which the schema is being created. Do not modify this attribute value.
<SCHEMA>/DEFAULTTABLESPACE	Enter the available default tablespace for DB User. If this attribute is left blank, then USERS is set as the default tablespace.	N	Seeded, with USERS as the default value. Any existing valid tablespace name is Permissible.	Modify this value to associate any valid tablespace with the schema.
<SCHEMA>/TEMPTABLESPACE	Enter the available temporary tablespace for DB User. If this attribute is left bank, TEMP is set as the default tablespace.	N	Seeded, with TEMP as the default value. Any existing valid temporary tablespace name is Permissible.	Modify this value to associate any valid tablespace with the schema.
<SCHEMA>/QUOTA	Enter the quota to be set on the DEFAULTTABLESPACE attribute for the schema or user. By default, the quota size is set to 500M. Minimum: 500M or Unlimited on default Tablespace.	N	Seeded, with UNLIMITED as the default value. **Example**: 600M/m 20G/g UNLIMITED/unlimited	Modify this value to grant the specified quota on the mentioned tablespace to the user.
<SCHEMA>/INFODOM	Enter the name of the Information Domain to associate this schema. The schema creator utility automatically derives an Information Domain Name based on the Application Pack if no value is specified for this attribute.	N	Seeded, with OFSINFDOM as the default value. Permissible length is 16 characters and only alphanumeric characters are allowed. No special characters are allowed.	

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Default Value or Permissible Value	Comments
<ADV_SEC_OPTIONS> /	Parent tag to hold Advance Security Options.	N		Uncomment the tag and edit if you want to add security options. For example, TDE and Data Redact. For details, see the example in the comments for the <TABLESPACE>/ENCRYPT tag.
<ADV_SEC_OPTIONS> /TDE	Tag to enable or disable TDE.	N	The default is FALSE. To enable TDE, set this to TRUE.	Ensure this tag is not commented if you have uncommented <ADV_SEC_OPTIONS>
<ADV_SEC_OPTIONS> /DATA_REDACT	Tag to enable or disable the Data Redaction feature.	N	The default is FALSE. To enable DATA_REDACT, set this to TRUE	Ensure this tag is not commented if you have uncommented<ADV_SEC_OPTIONS>
<TABLESPACES>	Parent tag to hold <TABLESPACE> elements	N	NA	Uncomment the tag and edit. ONLY if tablespaces are to be created as part of the installation. For details, see the example following the table. When TDE is TRUE in ADV_SEC_OPTIONS, then the <TABLESPACES> tag must be present in the XML file.
<TABLESPACE>/NAME	Logical Name of the tablespace to be created.	Y		Name, if specified, must be referred in the <SCHEMA DEFAULTTABLESPACE= "##NAME##"> attribute. Note the ## syntax.
<TABLESPACE>/VALUE	Physical Name of the tablespace to be created.	Y	NA	Value, if specified, is the actual name of the TABLESPACE.
<TABLESPACE>/DATAFILE	Specifies the location of the data file on the server.	Y	NA	Enter the absolute path of the file to be created.
<TABLESPACE>/AUTOEXTEND	Specifies if the tablespace must be extensible or have a hard limit.	Y	ON or OFF	Set to ON to ensure that the tablespace does not run out of space when full.

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Default Value or Permissible Value	Comments
<TABLESPACE>/ENCRYPT	Specifies if the tablespace(s) must be encrypted using TDE	Y	ON or OFF	Set to ON to ensure that the tablespaces when created are encrypted using TDE. **NOTE**: Encryption of tablespaces requires enabling Transparent Data Encryption (TDE) on the Database Server. **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/ora19c/app/oracle/oradata/OFSPQA19cDB/ts_users1.dbf" SIZE="500M" AUTOEXTEND="ON" ENCRYPT="ON" /> <TABLESPACE NAME="OFS_AAI_TBSP_2" VALUE="TS_USERS2" DATAFILE="/scratch/ora19c/app/oracle/oradata/OFSPQA19cDB/ts_users2.dbf" SIZE="500M" AUTOEXTEND="ON" ENCRYPT="ON" /> </TABLESPACES> <SCHEMAS>

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Default Value or Permissible Value	Comments
				<SCHEMA TYPE="CONFIG" NAME="ofsaaconf" PASSWORD="" APP_ID="OFS_AAI" DEFAULTTABLESPACE="##OFS_AAI_TBSP_1##" TEMPTABLESPACE="TEMP" QUOTA="unlimited"/> <SCHEMA TYPE="ATOMIC" NAME="ofsaaatm" PASSWORD="" APP_ID="OFS_AAAI" DEFAULTTABLESPACE="##OFS_AAI_TBSP_2##" TEMPTABLESPACE="TEMP" QUOTA="unlimited" INFODOM="OFSAAAIINFO"/> </SCHEMAS>

6.4 Execute the Schema Creator Utility

Depending on the option selected, select the appropriate schema creator utility execution option:

- Execute the Schema Creator Utility in Offline Mode
- Execute the Schema Creator Utility in Online Mode
- Execute the Schema Creator Utility while Installing Subsequent Applications Pack

> **NOTE** If upgrading in an Application-on-Application scenario, you must provide the same schema details you provided earlier.

After creating the schema, proceed to Configure the OFSAAI_InstallConfig.xml File.

6.4.1 Execute the Schema Creator Utility in Offline Mode

In the Offline mode, the utility generates an SQL script with all the required DDLs for Users, Objects, and Grants. This script must be executed by the DBA on the appropriate database identified for OFSAA usage. If you do not have the SYSDBA privileges, you can execute the Schema Creator Utility in Offline mode and generate the script file that contains the Schemas, Objects, and Grants information. Subsequently, an SYSDBA user can execute the script file manually. To run the OFSAA Application Pack installer in Silent mode, it is mandatory to execute the schema creator utility with -s option.

To execute the utility in Offline mode, you must have a database user with the following GRANTS (alternatively, you can also connect as a user with SYSDBA privileges):

- SELECT ON DBA_ROLES
- SELECT ON DBA_USERS
- SELECT ON DBA_DIRECTORIES
- SELECT ON DBA_TABLESPACES
- CREATE SESSION

> **NOTE** 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 following path: `OFS_CRA_PACK/schema_creator/bin`.
3. Execute the `osc.sh` file using the following command:

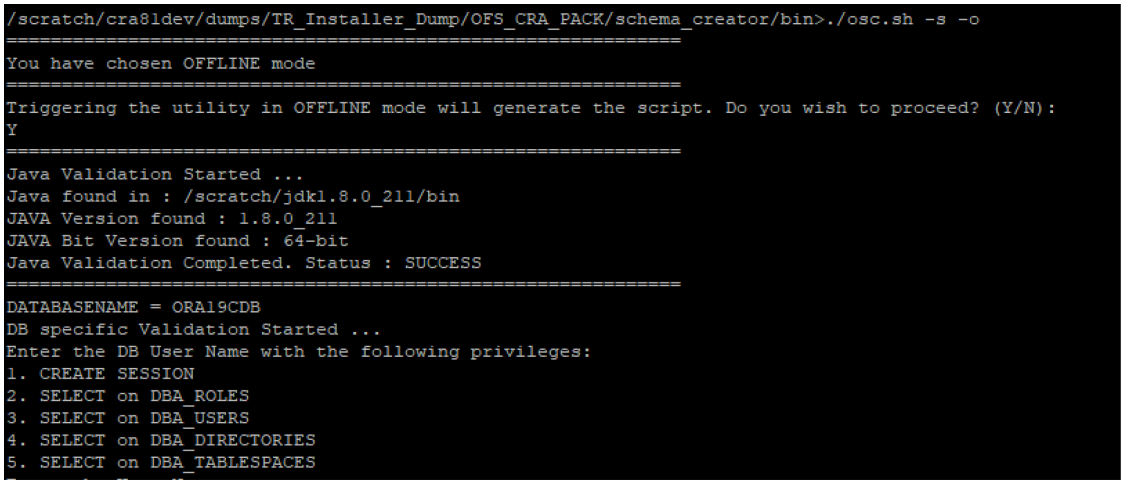
   ```
   ./osc.sh -s -o
   ```

   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).

4. Enter `Y` to proceed.
5. Enter the DB Username with SELECT privileges.
6. Enter the User Password.

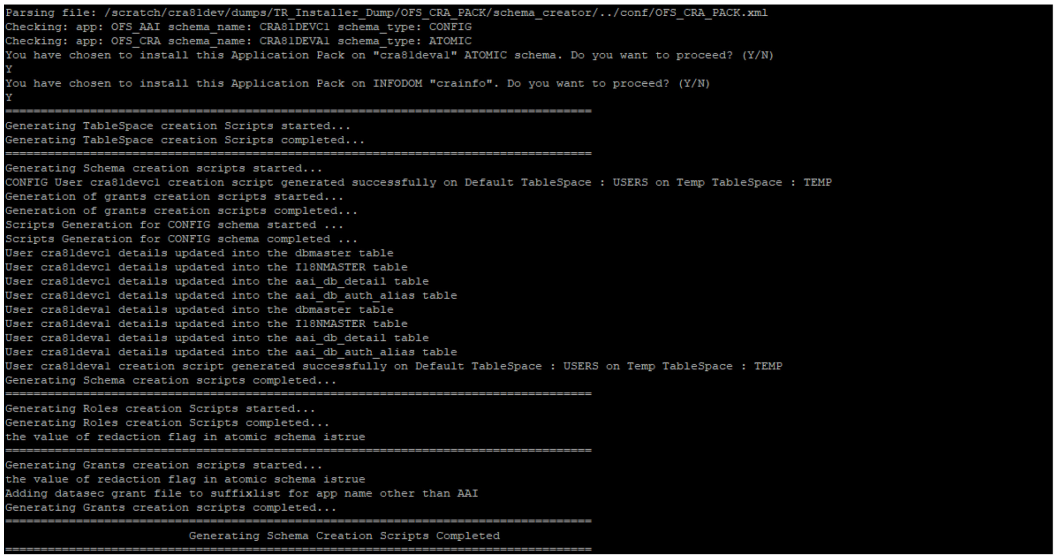
Figure 9: Schema Creation in Offline Mode



7. 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 or N).

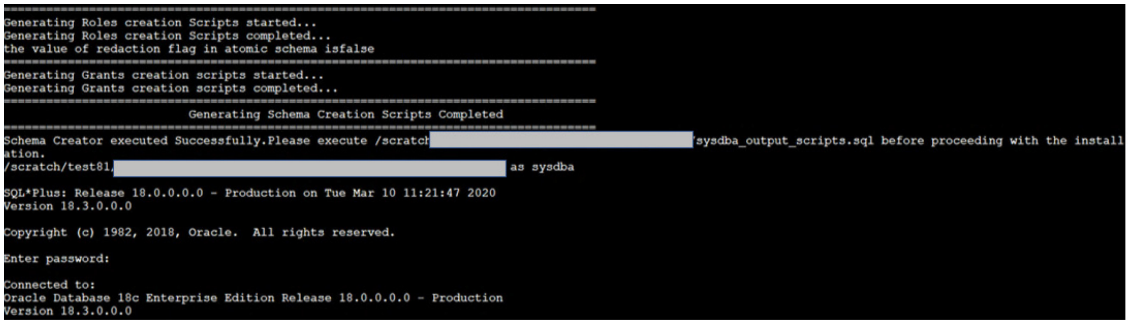
Figure 10: Schema Creation in Offline Mode Script Generation



8. 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 or N).

Figure 11: Schema Creation in Offline Mode Successful



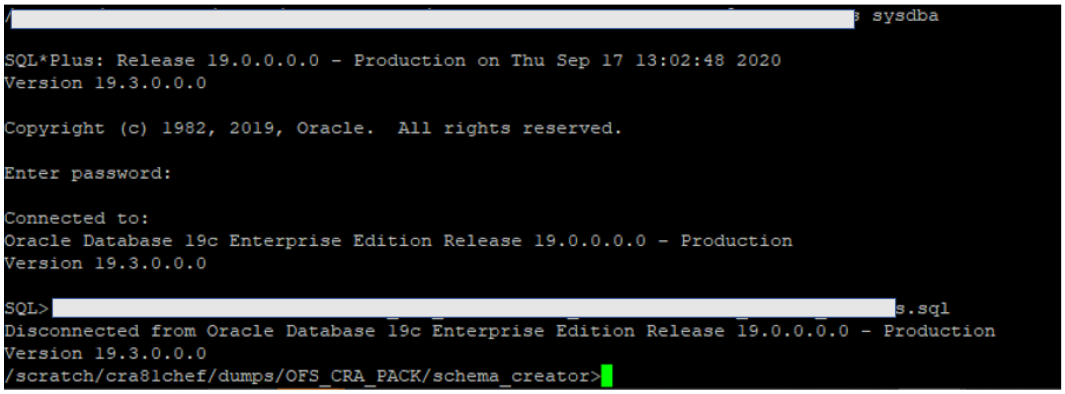
On successful execution of the schema creator utility, the console displays the following status message:

Schema Creator executed successfully. Please execute `scratch/ofsaaapp/OFS_CRA_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 `OFS_CRA_SCHEMA_IN.xml`, and repeat steps in this procedure to execute the utility. This regenerates the scripts with the correct information.

9. Navigate to the `OFS_CRA_PACK/schema_creator` directory.
10. Log in to SQLPLUS as a user having SYSDBA Privileges.

Figure 12: Schema Creation in Offline Mode – Execute sysdba_output_scripts.sql



11. Execute the `sysdba_output_scripts.sql` file using the following command:

    `SQL>@sysdba_output_scripts.sql`

    Alternatively, you can copy the `sysdba_output_scripts.sql` file and `SQLScripts` directory to a remote server and execute the `sysdba_output_scripts.sql` file, after providing appropriate execute permissions.

12. Make a TNS entry for the new users created. For details, see Add the TNS entries in TNSNAMES.ORA file section.

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

As a result of this task, the `OFS_CRA_SCHEMA_OUTPUT.XML` file is generated. Do not modify this file.

After creating the schema, proceed to Configure the OFSAAI_InstallConfig.xml File section.

6.4.2 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. Edit the file `OFS_CRA_PACK/schema_creator/conf/OFS_CRA_SCHEMA_IN.xml` in a text editor. See Configure the OFS_CRA_SCHEMA_IN.xml File section for values to modify in the XML file.
2. Execute the utility with -s option. For example: `./osc.sh -s`
3. Make a TNS entry for the new users created. For details, see Add the TNS entries in TNSNAMES.ORA file.

Figure 13: Schema Creation in Online Mode

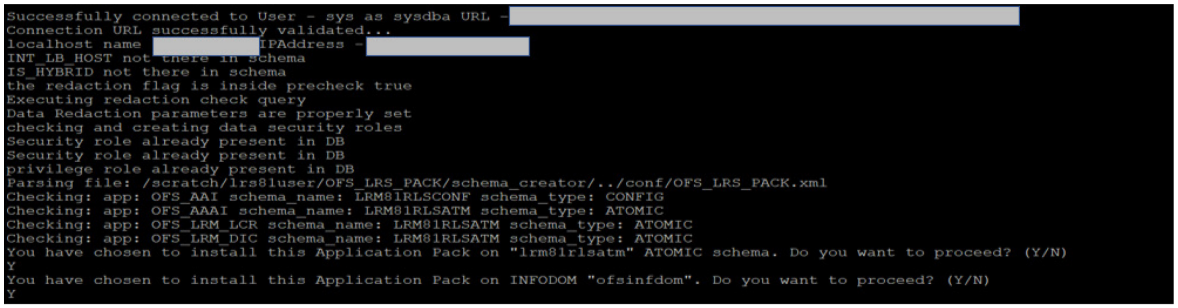
```
/scratch/cra81dev/dumps/TR_Installer_Dump/OFS_CRA_PACK/schema_creator/bin>./osc.sh -s
============================================================
You have chosen ONLINE mode
============================================================
Triggering the utility in ONLINE mode will execute the DDLs directly on the Database. Do you wish to proceed? (Y/N):
Y
============================================================
Java Validation Started ...
Java found in : /scratch/jdk1.8.0_211/bin
JAVA Version found : 1.8.0_211
JAVA Bit Version found : 64-bit
Java Validation Completed. Status : SUCCESS
============================================================
DATABASENAME = ORA19CDB
DB specific Validation Started ...
Enter the DB User Name With SYSDBA Privileges:
sys as sysdba
Enter the User Password:
user name is sys
Oracle Client version : 19.0.0.0.0. Status : SUCCESS
Oracle Server version Current value : 19.0.0.0.0. Status : SUCCESS
DB specific Validation Completed. Status : SUCCESS
================================================================================
                        Schema Creation Started
================================================================================
Checking OFSAA installation...
OFSAA installation not found.
Validating the dat file OFS_CRA_CFG.dat started...
The path is:/scratch/cra81dev/dumps/TR_Installer_Dump/OFS_CRA_PACK/schema_creator/conf
Sucessfully validated OFS_CRA_CFG.dat file
Validating the input XML file.../scratch/cra81dev/dumps/TR_Installer_Dump/OFS_CRA_PACK/schema_creator/conf/OFS_CRA_SCHEMA_IN.xml
```

The following message is displayed:

You have chosen ONLINE mode. Triggering the utility in ONLINE mode will execute the DDLs directly on the Database. Do you wish to proceed? (Y/y or N/n).

4. Enter `Y` to proceed.

Figure 14: Schema Creation in Online Mode – DDL Execution

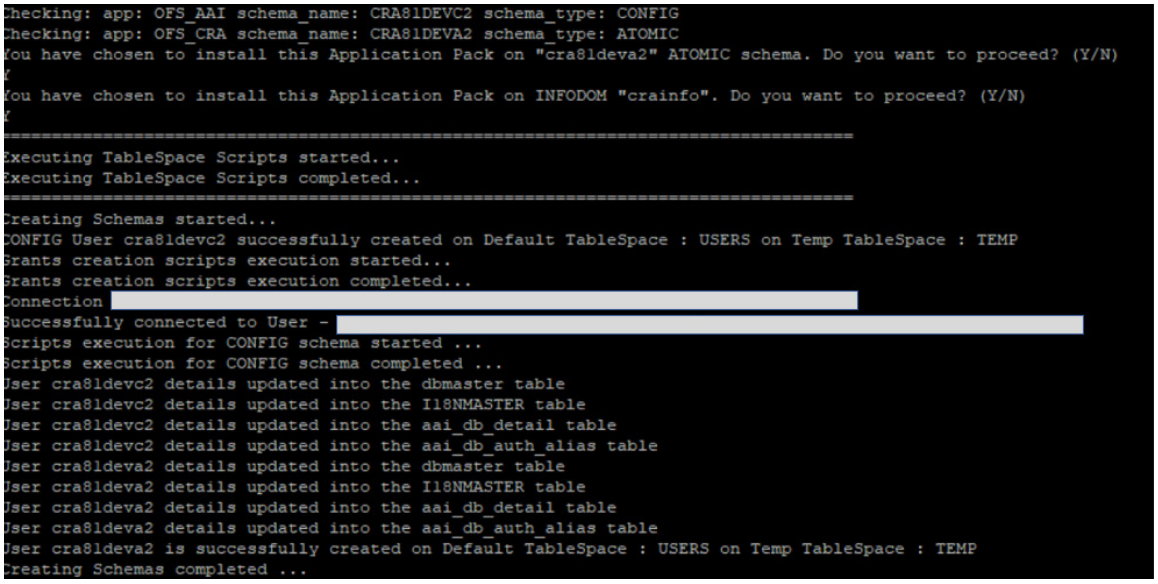


The following message is displayed:

You have chosen to install this application pack on INFODOM "<INFODOM_NAME>". Do you wish to proceed? (Y/y or N/n).

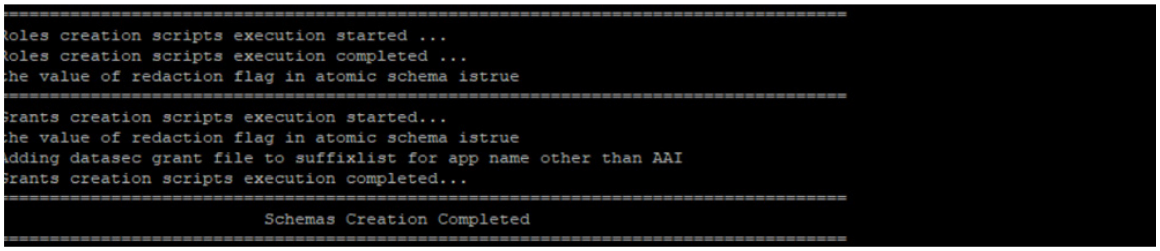
5. Enter `Y` to proceed.

Figure 15: Schema Creation in Online Mode – Infodom Confirmation



6. After Schema creation is successful, proceed to Configure the OFSAAI_InstallConfig.xml File.

Figure 16: Schema Creation in Online Mode –Successful



As a result of this task is the `OFS_CRA_SCHEMA_OUTPUT.XML` file is generated. Do not modify this file.

6.4.3 Execute the Schema Creator Utility while Installing Subsequent Applications Pack

When executing the schema creator utility during the installation of a subsequent Applications Pack, you can choose to install the pack either on the same Information Domain or Atomic Schema of the existing application pack or on a new Information Domain or Atomic Schema. You can execute the schema creator utility either in Online or Offline mode.

To execute the schema creator utility while installing OFS CRA Application Pack over an existing Application Pack, follow these steps:

1. Edit the file `OFS_CRA_PACK/schema_creator/conf/OFS_CRA_SCHEMA_IN.xml` in a text editor. See the Configure the OFS_CRA_SCHEMA_IN.xml File section for values you must modify in the XML file.
2. Execute the utility with -s option. For Example: `./osc.sh -s -o`

Figure 17: Execute the Schema Creator Utility to Install Subsequent Applications Pack

```
/scratch/cra81dev/dumps/TR_Installer_Dump/OFS_CRA_PACK/schema_creator/bin>./osc.sh -s -o
============================================================
You have chosen OFFLINE mode
============================================================
Triggering the utility in OFFLINE mode will generate the script. Do you wish to proceed? (Y/N):
Y
============================================================
Java Validation Started ...
Java found in : /scratch/jdk1.8.0_211/bin
JAVA Version found : 1.8.0_211
JAVA Bit Version found : 64-bit
Java Validation Completed. Status : SUCCESS
============================================================
DATABASENAME = ORA19CDB
DB specific Validation Started ...
Enter the DB User Name with the following privileges:
1. CREATE SESSION
2. SELECT on DBA_ROLES
3. SELECT on DBA_USERS
4. SELECT on DBA_DIRECTORIES
5. SELECT on DBA_TABLESPACES
```

After successful schema creation, execute the `sysdba_output_scripts.sql` file.

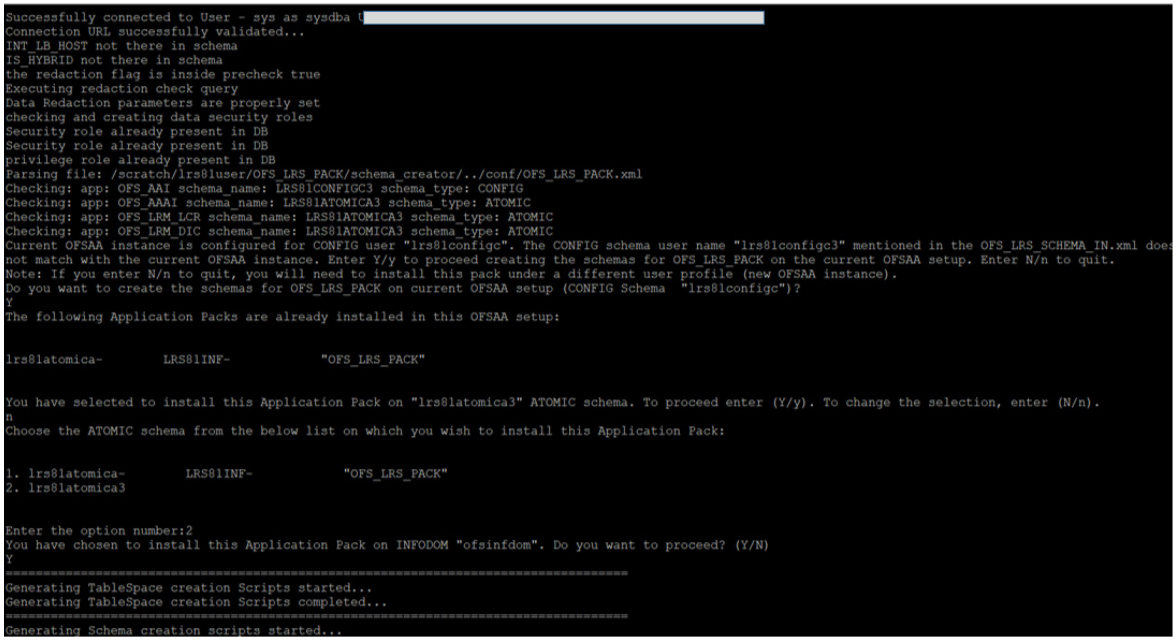
Figure 18: Install Subsequent Applications Pack– Execute sysdba_output_scripts.sql

```
Parsing file: /scratch/cra81dev/dumps/TR_Installer_Dump/OFS_CRA_PACK/schema_creator/../conf/OFS_CRA_PACK.xml
Checking: app: OFS_AAI schema_name: CRA81DEVC1 schema_type: CONFIG
Checking: app: OFS_CRA schema_name: CRA81DEVA1 schema_type: ATOMIC
You have chosen to install this Application Pack on "cra81deva1" ATOMIC schema. Do you want to proceed? (Y/N)
Y
You have chosen to install this Application Pack on INFODOM "crainfo". Do you want to proceed? (Y/N)
Y
============================================================================
Generating TableSpace creation Scripts started...
Generating TableSpace creation Scripts completed...
============================================================================
Generating Schema creation scripts started...
CONFIG User cra81devc1 creation script generated successfully on Default TableSpace : 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 cra81devc1 details updated into the dbmaster table
User cra81devc1 details updated into the I18NMASTER table
User cra81devc1 details updated into the aai_db_detail table
User cra81devc1 details updated into the aai_db_auth_alias table
User cra81deva1 details updated into the dbmaster table
User cra81deva1 details updated into the I18NMASTER table
User cra81deva1 details updated into the aai_db_detail table
User cra81deva1 details updated into the aai_db_auth_alias table
User cra81deva1 creation script generated successfully on Default TableSpace : USERS on Temp TableSpace : TEMP
Generating Schema creation scripts completed...
============================================================================
Generating Roles creation Scripts started...
Generating Roles creation Scripts completed...
the value of redaction flag in atomic schema istrue
============================================================================
Generating Grants creation scripts started...
the value of redaction flag in atomic schema istrue
Adding datasec grant file to suffixlist for app name other than AAI
Generating Grants creation scripts completed...
============================================================================
                    Generating Schema Creation Scripts Completed
============================================================================
```

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

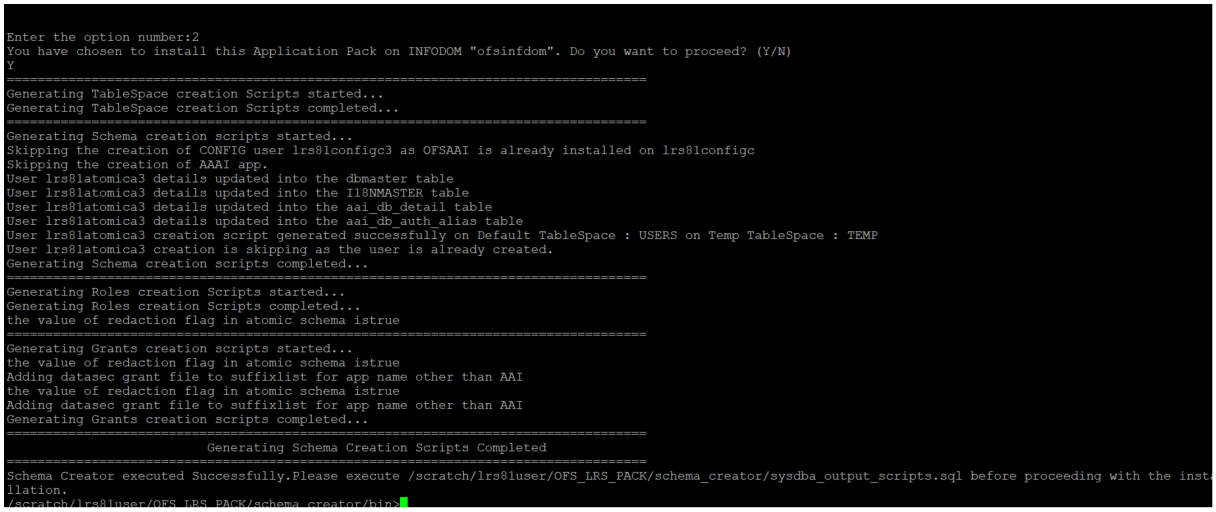
3. The utility identifies the application packs that are already installed on the current OFSAA setup and displays the following on the console:
   - Atomic schema of the existing application pack
   - Information Domain Name of the existing pack
   - List of installed application packs

Figure 19: Install Subsequent Applications Pack– Select Atomic Schema and Infodom



4. Enter Y or y to start the schema creation.
5. If you enter N or n, the list of Atomic Users is displayed.
6. Select the Atomic User on which you want to install the application pack.
7. Make a TNS entry for the new users created. For details, see Add the TNS entries in TNSNAMES.ORA file section.

Figure 20: Install Subsequent Applications Pack– Select Atomic Schema and Infodom



On successful execution of schema creator utility, the console displays the following status message:

Success. Please proceed with the installation.

NOTE

1. See the log file in the `OFS_CRA_PACK/schema_creator/logs` directory for the execution status.
2. See the log file `sysdba_output_scripts.log` for the execution status if executed in offline mode. The log will be empty if there are no errors in the execution.
3. If there are any errors, contact My Oracle Support.

6.5 Configure the OFSAAI_InstallConfig.xml File

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

1. Navigate to the `OFS_CRA_PACK/OFS_AAI/conf/` directory.
2. Open the `OFSAAI_InstallConfig.xml` file in a text editor.
3. 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 21: OFSAAI_InstallConfig.xml file Parameters

InteractionVariable Name	Significance and Expected Value	Mandatory
<Layer name="GENERAL">		
InteractionGroup name="WebServerType"		
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components are deployed. Set the following numeric value depending on the type of web application server: • Apache Tomcat = 1 • IBM WebSphere Application Server = 2 • Oracle WebLogic Server = 3 For example, `<InteractionVariable name="WEBAPPSERVERTYPE">3</InteractionVari able>`	Yes
InteractionGroup name="OFSAA Infrastructure Server Details"		
DBSERVER_IP	Identifies the hostname or IP address of the system on which the Database Engine is hosted. **NOTE:** For RAC Database, the value must be NA. For example, `<InteractionVariable name="DBSERVER_IP">14.15.16.17</InteractionVariable>` or `<InteractionVariable name="DBSERVER_IP">dbhost.server.com</InteractionVariable>`	Yes
InteractionGroup name="Database Details"		
ORACLE_SID/SERVICE_NAME	Identifies the Oracle DB Instance SID or SERVICE_NAME **NOTE:** The `Oracle_SID` value must be the same as it is mentioned in `JDBC_URL`. For example, `<InteractionVariable name="ORACLE_SID/SERVICE_NAME">ofsaser</InteractionVariable>`	Yes
ABS_DRIVER_PATH	Identifies the directory where the JDBC driver (`ojdbc<version>.jar`) exists. This is typically the `$ORACLE_HOME/jdbc/lib` directory. For example, `<InteractionVariable name="ABS_DRIVER_PATH">">/oradata6/revwb7/ oracle </InteractionVariable>` **NOTE:** See Hardware and Software Requirements to identify the correct `ojdbc<version>.jar` file version to be copied.	Yes

InteractionVariable Name	Significance and Expected Value	Mandatory
InteractionGroup name="OLAP Detail"		
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 your choice: • YES: 1 • NO: 0 **NOTE:** If the value for `OLAP_SERVER_IMPLEMENTATION` is set to 1, the installer checks if the following environment variables are set in the `.profile` file: • ARBORPATH • HYPERION_HOME • ESSBASEPATH	No
InteractionGroup name="SFTP Details"		
SFTP_ENABLE	Identifies if the SFTP (Secure File Transfer Protocol) feature is to be enabled. The following numeric value must be set depending on your choice: • SFTP: 1 • FTP: 0	Yes
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>`	Yes
InteractionGroup name="Locale Detail"		
LOCALE	Identifies the locale information to be used during the installation. This release of the OFSAA Infrastructure supports only US English. For example, `<InteractionVariable name="LOCALE">en_US</InteractionVariable>`	Yes
InteractionGroup name="OFSAA Infrastructure Communicating ports" **NOTE:** 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.		
JAVAPORT	9999	Yes
NATIVEPORT	6666	Yes
AGENTPORT	6510	Yes
ICCPORT	6507	Yes

InteractionVariable Name	Significance and Expected Value	Mandatory
ICCNATIVEPORT	6509	Yes
OLAPPORT	10101	Yes
MSGPORT	6501	Yes
ROUTERPORT	6500	Yes
AMPORT	6505	Yes
InteractionGroup name="Web Details" **NOTE:** If the value for `HTTPS_ENABLE` 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 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>`	Yes
WEB_SERVER_IP	Identifies the HTTP server IP or Hostname or web application server IP or Hostname, to be used to access the UI. This IP is typically the HTTP server IP. If a separate HTTP server is not available, then the value must be Web application server IP or Hostname. For example, `<InteractionVariable name="WEB_SERVER_IP">10.11.12.13</InteractionVariable>` or `<InteractionVariable name="WEB_SERVER_IP">myweb.server.com</InteractionVariable>`	No
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. **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 name="WEB_SERVER_PORT">80</InteractionVariable>`	No

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:
	`<scheme>://<host>:<port>/<context-name>/login.jsp`
	For example:
	`https://myweb:443/ofsaadev/login.jsp`
	For example, <InteractionVariable name="CONTEXT_NAME">ofsaadev</InteractionVariable>
		Yes

InteractionVariable Name	Significance and Expected Value	Mandatory
WEBAPP_CONTEXT_PATH	Identifies the absolute path of the exploded EAR file on the web application server. • 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 Hostname. • For WebLogic, specify the WebLogic home directory path. For example, `/<WebLogic home directory path>/bea/wlserver_10.3` **NOTE:** For WebLogic, the value specified for this attribute is ignored and the value provided against the attribute `WEBLOGIC_DOMAIN_HOME` is considered.	Yes
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. **NOTE:** During a clustered deployment, ensure that this path and the directory are the same on all the nodes.	Yes
InteractionGroup name="Weblogic Setup Details"		
WEBLOGIC_DOMAIN_HOME	Identifies the WebLogic Domain Home. For example, `<InteractionVariable name="WEBLOGIC_DOMAIN_HOME">/home/weblogic/bea/user_ projects/domains/mydomain</InteractionVariable>`	Yes. Specify the value only if WEBAPPSERVERTYPE is set as 3 (WebLogic)
InteractionGroup name="OFSAAI FTP Details"		
OFSAAI_FTPSHARE_PATH	Identifies the absolute path of the directory that is identified as the file system stage area. **NOTE:** The directory must exist on the same system on which the OFSAA Infrastructure is being installed (can be on a separate mount). 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>`	Yes
OFSAAI_SFTP_USER_ID	Identifies the user who has RWX permissions on the directory identified for the parameter APP_FTPSHARE_PATH.	Yes

InteractionVariable Name	Significance and Expected Value	Mandatory
OFSAAI_SFTP_PRIVATE_KEY	Identifies the SFTP private key for OFSAAI. For example, `<InteractionVariable name="OFSAAI_SFTP_PRIVATE_KEY">/home/ofsaapp/.ssh/id_rsa</InteractionVariable>` By default, the value is **NA**, which indicates that, for authentication, you are prompted to enter the password for the user <OFSAAI_SFTP_USER_ID>. For more information on how to generate an SFTP Private key, see the Set Up SFTP Private Key section.	No
OFSAAI_SFTP_PASSPHRASE	Identifies the passphrase for the SFTP private key for OFSAAI. For example, `InteractionVariable name="OFSAAI_SFTP_PASSPHRASE">enter a pass phrase here</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 is identified as empty.	No
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.		
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">22</InteractionVariable>`	Yes
HIVE_SERVER_FTPDRIVE	Identifies the absolute path to the directory identified as the file system stage area of the HIVE server. For example, `<InteractionVariable name="HIVE_SERVER_FTPDRIVE">/scratch/ofsaa/ftpshare</InteractionVariable>`	Yes
HIVE_SERVER_FTP_USERID	Identifies the user who has RWX permissions on the directory identified under the parameter `HIVE_SERVER_FTPDRIVE`. For example, `<InteractionVariable name="HIVE_SERVER_FTP_USERID">ofsaa</InteractionVariable>`	Yes

InteractionVariable Name	Significance and Expected Value	Mandatory
HIVE_SERVER_FTP_PROTOCOL	If the HIVE_SERVER_PORT is 21, then set the value to **FTP**. If not, set it to **SFTP**. For example, <InteractionVariable name="HIVE_SERVER_FTP_PROTOCOL">SFTP</InteractionVariable>	Yes
HIVE_SFTP_PRIVATE_KEY	Identifies the SFTP private key for the HIVE server. For example, <InteractionVariable name="HIVE_SFTP_PRIVATE_KEY">/scratch/testuser/.ssh/id_rsa</InteractionVariable> By default, the value is **NA**, which indicates that, for authentication, you are prompted to enter the password for the user <HIVE_SERVER_FTP_USERID>. 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</InteractionVariable> By default, the value is **NA**. If the HIVE_SFTP_PRIVATE_KEY value is **NA**, then the passphrase is identified as empty.	

6.5.1 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
ofsaapp@OFSASERVER:~> cat /home/ofsaapp/.ssh/id_rsa.pub >>
/home/ofsaapp/.ssh/authorized_keys
```

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

6.6 Install the OFS CRA Application Pack

ATTENTION Before you begin the installation, configure and execute the following files:

1. Configure the OS File System Settings and Environment Settings in the .profile File
2. Configure OFS_CRA_PACK.xml File
3. Configure OFS_CRA_SCHEMA_IN.xml
4. Configure the OFSAAI_InstallConfig.xml File (Do not configure this file if an installation of OFSAAI 8.1 already exists.)
5. Execute the Schema Creator Utility

NOTE

- For enabling the Right to be Forgotten, see Right to be Forgotten.
- For enabling Data Redaction, see the Data Redaction section . For more details, see Data Redaction section, under Data Security and Data Privacy chapter in the OFS Analytical Applications Infrastructure Administration Guide.

To install the OFS CRA 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.
4. Navigate to the `OFS_CRA_PACK` directory.
5. Execute the schema creator utility with `-s` option.

6. Navigate to the path `OFS_CRA_PACK/conf/OFS_CRA_PACK.xml` and enter YES in the enable tag for OFS_AAI.
7. In Release 8.1, CRA supports a single `Silent.template` file available in the path `OFS_CRA_PACK/appsLibConfig/conf`. The `Silent.template` file is populated with default values. Ensure to modify the template in the directory. Create a copy of this file and rename it as `Silent.props`.
8. Installation is achieved through the properties file (`Silent.props`) that must be updated with proper values, before attempting to install using silent mode. Edit the parameters in the `Silent.props` file and specify the parameters as per the requirements.

   The following table lists all the properties that must be specified:

Table 2: Parameters for the Silent.props File

Property Name	Description of Property	Permissible values	Comments
LOG_MODE	Specify Log Mode.	1 = Debug Mode [Password will be printed in the log file] 0 = General Mode [Passwords will not be printed in the log file]	The default value is 0.
APPFTP_LOG_PATH	Specify the Infodom Maintenance log path (to be created) for the new Infodom. Ignore if you are doing the installation on an existing information domain.	User Input	
DBFTP_LOG_PATH	Specify the Infodom Maintenance log path (to be created) for the new Infodom. Ignore if you are doing the installation on an existing information domain.	User Input	
UPLOAD_MODEL	Specify whether you want to perform Model Upload.	0 = If you have already performed Model Upload and want to skip the model upload process. 1 = If you want to perform Model Upload.	The default value is 1.

Property Name	Description of Property	Permissible values	Comments
MODEL_TYPE	Specify whether you want to use the released datamodel or customized datamodel for the model upload process.	0 = If you want to upload the released datamodel. 1 = If you want to upload the customized datamodel.	The default value is 0.
DATAMODEL DM_DIRECTORY	Specify the path (DM_DIRECTORY) and file (DATAMODEL) name for the customized datamodel. Mandatory only if you want to upload the customized datamodel, that is, you have specified MODEL_TYPE=1.	User Input	
SEGMENT_1_CODE	Specify the CRA Segment Code.	CRASEG	The default value is CRASEG.
ETL_APPSRC_TYPE	Specify if you want to create a new ETL App or Src pair or use an existing one.	0 = If you want to create a new ETL App or Src pair. 1 = If you want to use an existing pair.	The default value is 0.
ETL_SRC_2_DESC	ETL CRA Product description.	Describe the ETL Src. Mandatory if you want to create new ETL Src if you have specified ETL_APPSRC_TYPE=0.	The default value is CRA Source.
ETL_SRC_1_DESC	ETL Staging source description.	Mandatory if you want to create new ETL Src if you have specified ETL_APPSRC_TYPE=0.	The default value is Staging Source. Describe the ETL Src.
ETL_SRC_1_NAME	ETL CRA source name	User Input	The default value is STAGING. Specify the ETL Source Name into ETL Area Definitions to be deployed.
ETL_SRC_2_NAME	ETL CRA Product source name.	User Input	The default value is PROCESSING. Specify the ETL Source Name into ETL Area Definitions to be deployed.

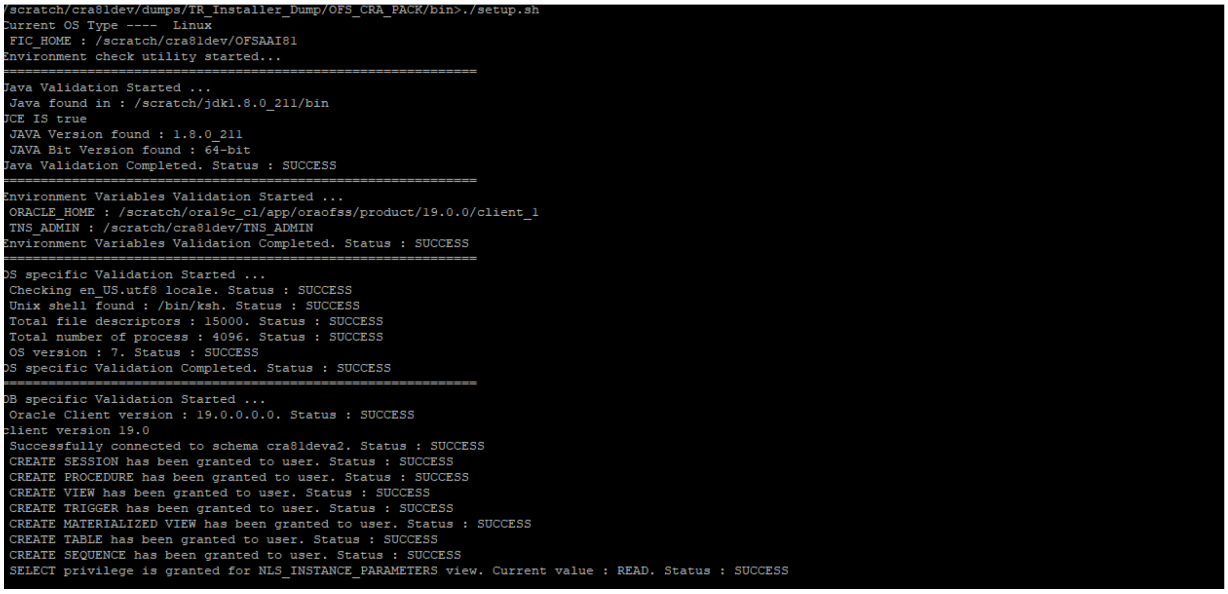
> **ATTENTION** Do not install new packs in the same segment if the preinstalled applications use the Run Management functionality of OFSAAI.

9. Enter the following command in the console to execute the application pack installer with the Silent option.

   ```
   ./setup.sh
   ```

10. The installer proceeds with Pre-Installation Checks.

Figure 21: Silent Mode of Installation

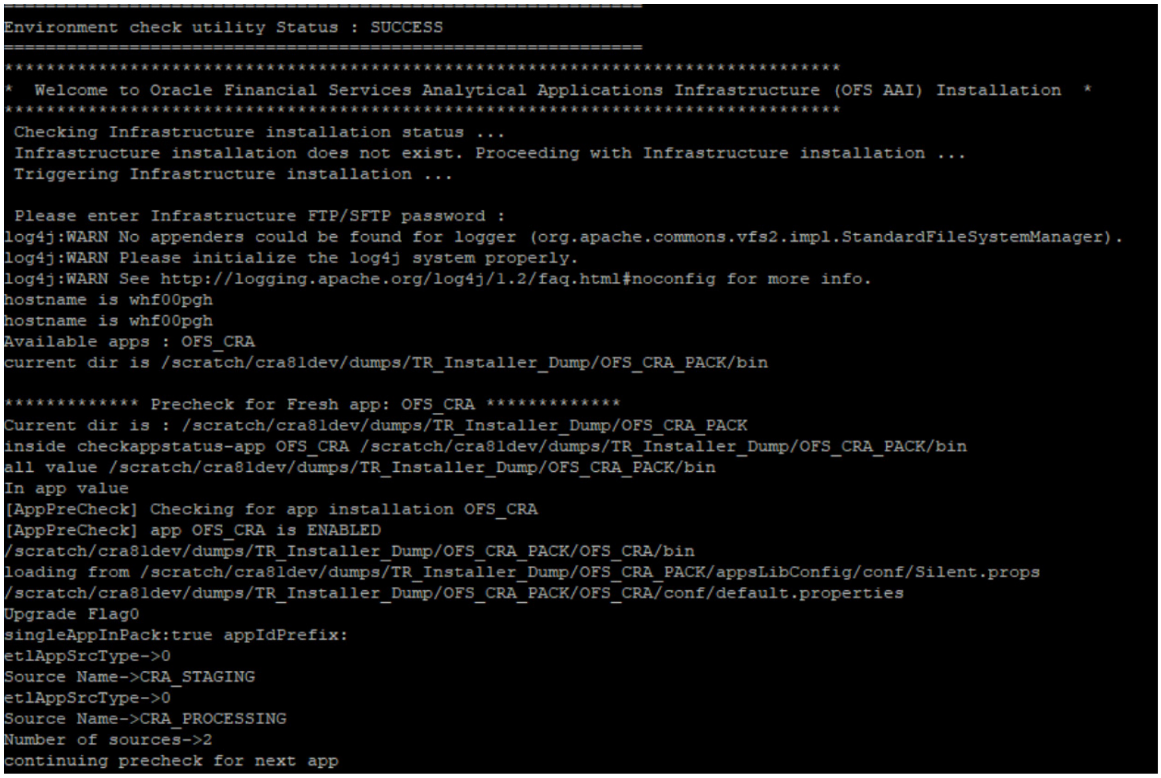


11. Enter the OFSAA Processing Tier FTP or SFTP password value and proceed, when prompted in the command prompt.

Table 22: Console Prompt: Enter the OFSAA Processing Tier FTP/SFTP Password

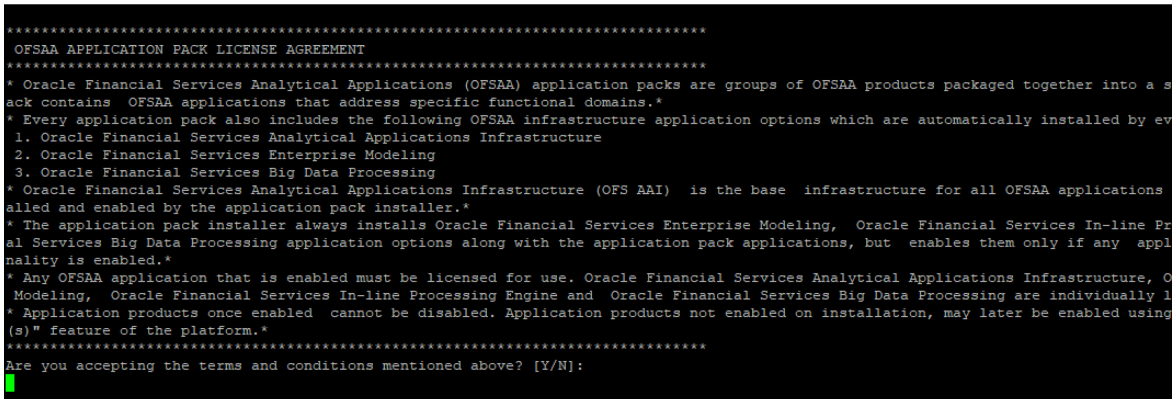
Console Prompts	User Inputs
Please enter OFSAA Processing Tier FTP or SFTP password	Enter the password to access the processing tier in the application server. **NOTE**: If the prompt reads as follows, enter the username and password for accessing the product Staging or Metadata Repository FTPSHARE: • Kerberos username [user] • Kerberos password for user

Figure 22: OFSAA Processing Tier FTP or SFTP Password Prompt



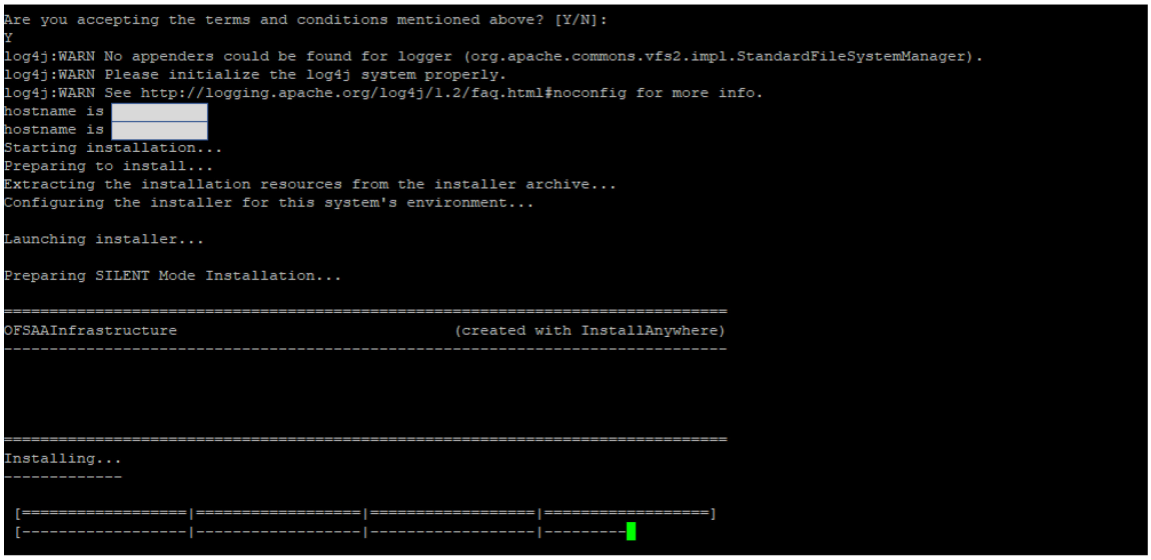
12. The process displays the OFSAA License. Enter **Y** and proceed.

Figure 23: Accept the OFSAA License Agreement



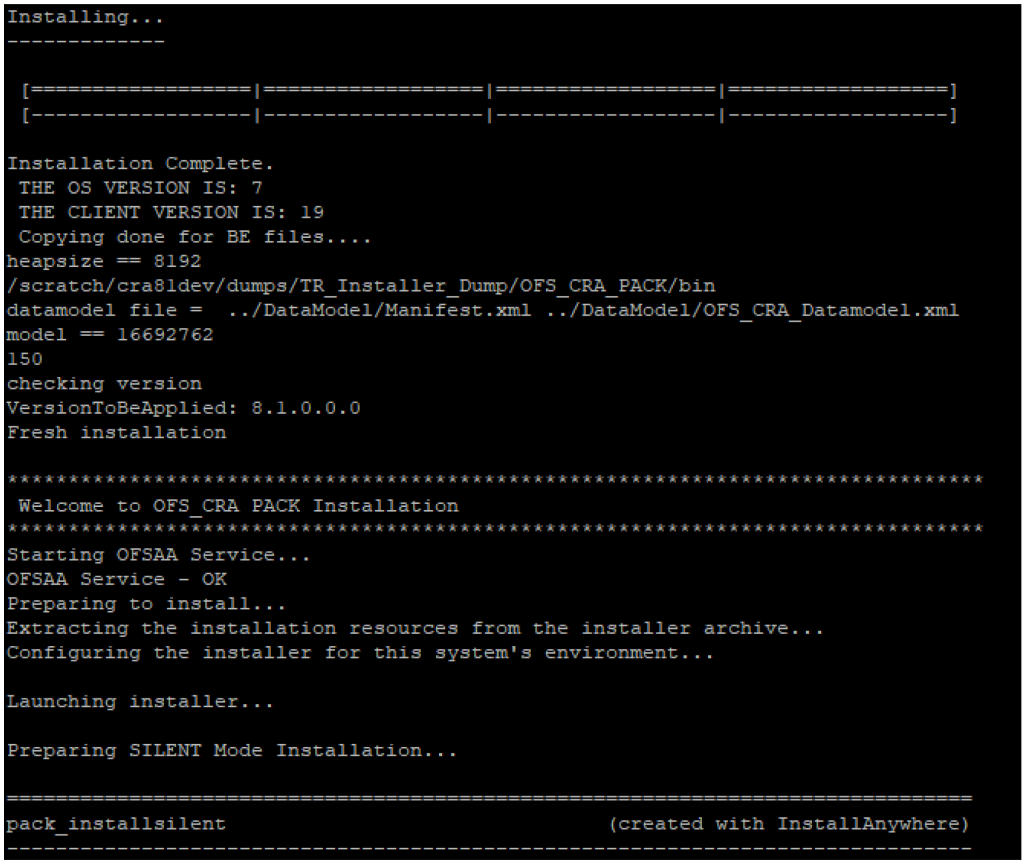
13. The installer installs the AAI application.

Figure 24: OFSAA Silent Mode Installation



14. After the platform is installed, the OFS CRA installation begins.

Figure 25: CRA Silent Mode Installation



15. After Data Model Upload is complete, verify the installation logs in the log directories mentioned in the Verify the Log File Information section.

Figure 26: Silent Mode Installation In Progress

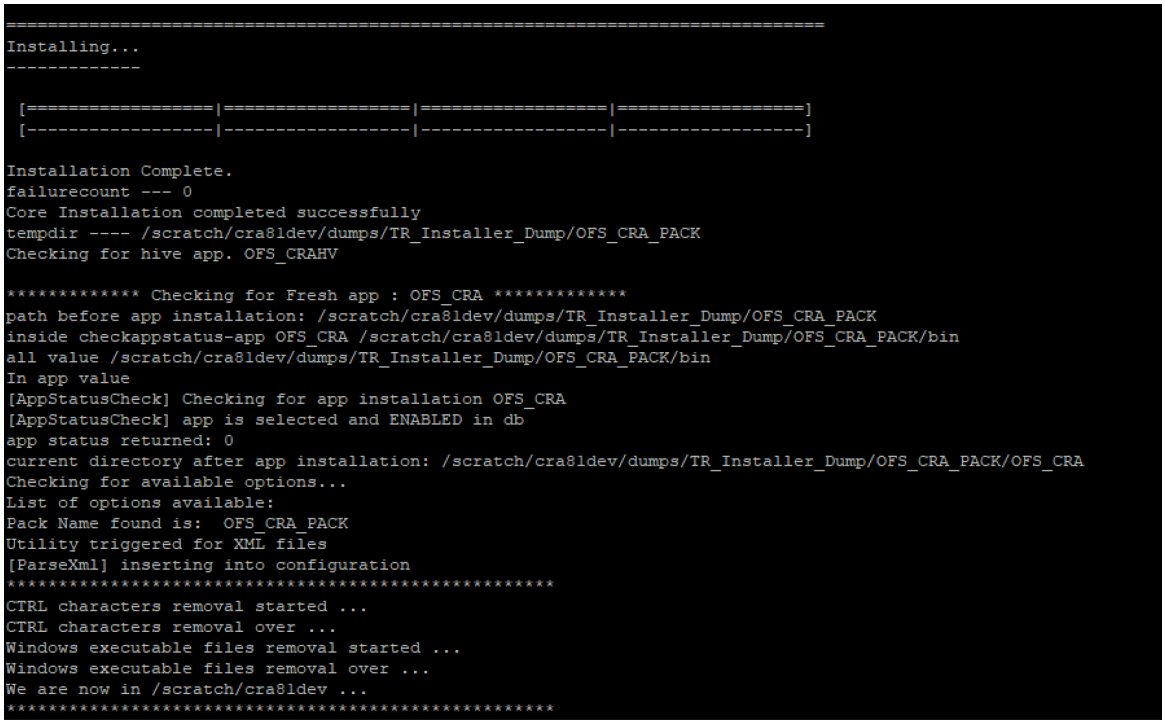
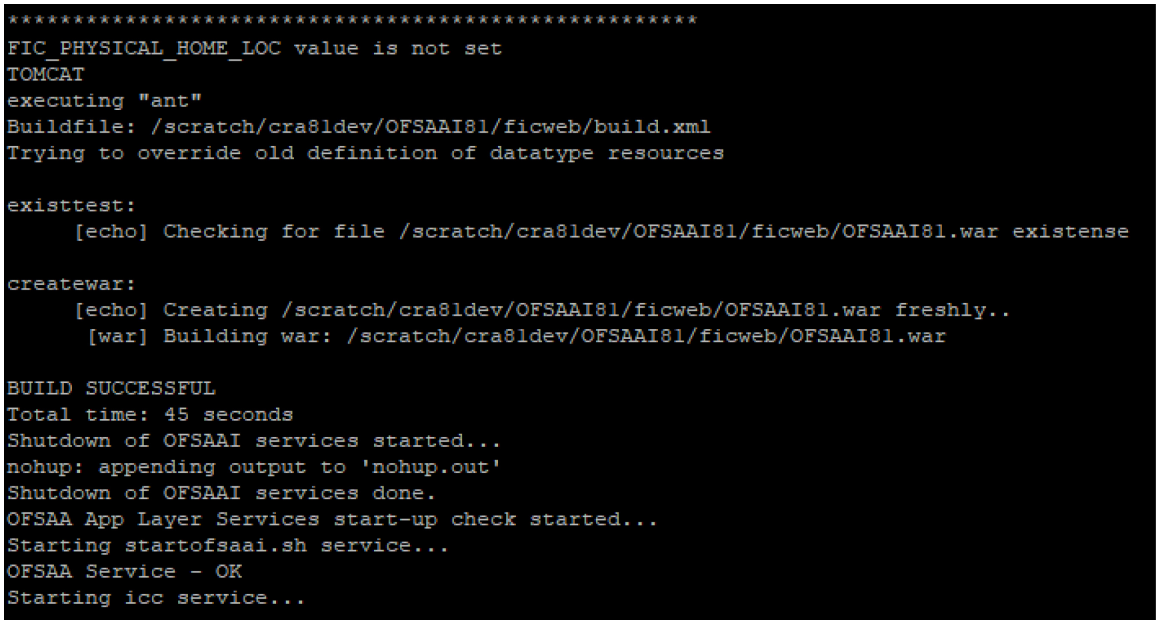
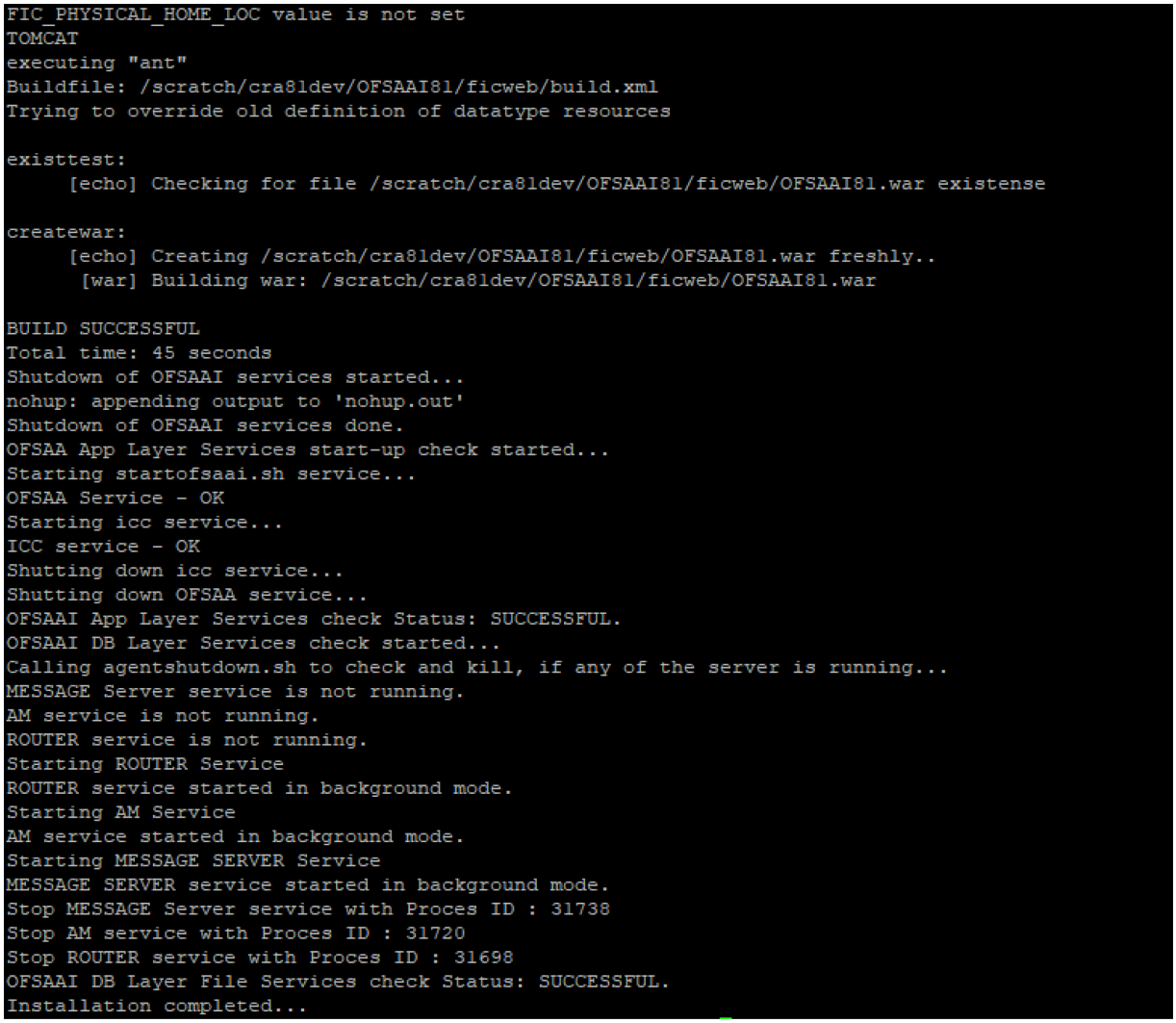


Figure 27: Silent Mode Installation Build Successful



16. After successful CRA pack installation, the WAR file is generated and all the servers are verified and the installation complete message is displayed.

Figure 28: Silent Mode Installation Complete



17. The OFSAA Infrastructure installation performs a post-install health check automatically on the successful installation of the product.
18. On completion of the installation, verify the installation log files mentioned in the Verify the Log File Information section.

> **NOTE** Perform steps mentioned in the Post-Installation section.

6.6.1 Verify the Log File Information

See the following logs files for more information:

- See the OFS CRA log file in the `OFS_CRA_PACK/OFS_CRA/logs` directory.
- See the log file (or files) in the `OFS_CRA_PACK/OFS_AAI/logs/` directory for the Infrastructure installation log.

- See the `OFSAAInfrastucture_Install.log` file located at the `$FIC_HOME` directory for the Infrastructure installation log.
- See the `pack.install` log file in the `OFS_CRA_PACK/logs` directory.

After the installation OFS CRA 8.1.0.0.0 is successful, complete the required Post-installation steps.

7 Post-installation

On successful installation of the Oracle Financial Services CRA application pack, follow the post-installation procedures mentioned in Post-installation Checklist.

> **NOTE** You must clear the application cache before deploying the Application Pack web archive file. This applies to all web servers (WebSphere, WebLogic, Tomcat). For more information, see the Clear Application Cache section.

Topics:

- Post-installation Checklist
- Patch OFSAA Infrastructure Installation
- Backup the OFS_CRA_SCHEMA_IN.xml, OFS_CRA_SCHEMA_OUTPUT.xml, and Silent.props Files
- Stop the Infrastructure Services
- Start the Infrastructure Services
- Configure the Web Server
- Configure Resource Reference in Web Servers
- Configure Work Manager in Web Application Servers
- Create and Deploy the EAR or WAR Files
- Build EAR or WAR file once and Deploy Across Multiple OFSAA Instances
- Access the OFSAA Application
- Configure the excludeURLList.cfg File
- View OFSAA Product Licenses after Installation of Application Pack
- Configure Tomcat
- Change the ICC Batch Ownership
- Add TNS entries in the TNSNAMES.ORA File
- Update OBIEE URL
- Configure Data Source
- Configure Data Redaction in OFSAA
- Data Protection Implementation in OFSAA
- Post-Deployment Configurations

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.

> **NOTE** See the *Post-Installation* section in the OFS AAI Release 8.1.0.0.0 Installation and Configuration Guide to complete the following checklist procedures.

Table 23: Post-installation Checklist

Sl. No.	Post-installation Activity
1	Verify that all patches are successfully installed.
2	Back up the `OFS_CRA_SCHEMA_IN.xml`, `OFS_CRA_SCHEMA_OUTPUT.xml`, and `Silent.props` files.
3	Stop the OFSAA Infrastructure services.
4	Start the OFSAA Infrastructure services.
5	Configure the webserver.
6	Configure the Resource Reference in web application servers.
7	Configure the Work Manager in the web application servers.
8	Create and Deploy EAR or WAR files.
9	EAR/WAR File - Build Once and Deploy Across Multiple OFSAA Instances.
10	Access the OFSAA application.
11	Configure the `excludeURLList.cfg` file.
12	Configure Tomcat.
13	Change the ICC batch ownership.
14	Add TNS entries in the `tnsnames.ora` file.
15	Update OBIEE URL.
16	Configure Data Source.
17	Set Data Redaction in OFS CRA.
18	Implement Data Protection in OFSAA.
19	Post-deployment Configuration. • OBIEE Configuration – Deploy OFS CRA Analytics. • Logging as System Administrator. • Create Application Users. • Map the Application User(s) to User Groups. • CRA Pack User Group Names. • Configure Tomcat for User Group Authorization

7.2 Patch OFS CRA Installation

Oracle strongly recommends installing the latest available patch set to be up-to-date with the various releases of the OFSAA product. For the mandatory patches, see Mandatory Patches section.

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

7.3 Backup the OFS_CRA_SCHEMA_IN.xml, OFS_CRA_SCHEMA_OUTPUT.xml, and Silent.props Files

Backup the `OFS_CRA_SCHEMA_IN.xml`, `OFS_CRA_SCHEMA_OUTPUT.xml`, and `Silent.props` files as they can be reused when upgrading existing applications or installing new applications.

Table 24: Directory of Files to Backup

File Name	Directory
`OFS_CRA_SCHEMA_IN.xml`	`OFS_CRA_PACK/schema_creator/conf`
`OFS_CRA_SCHEMA_OUTPUT.xml`	`OFS_CRA_PACK/schema_creator/`
Silent.props	`OFS_CRA_PACK/appsLibConfig/conf`

7.4 Stop the Infrastructure Services

See Stop the Infrastructure Services in OFS AAI Release 8.1.0.0.0 Installation and Configuration Guide for details.

7.5 Start the Infrastructure Services

See Start the Infrastructure Services in OFS AAI Installation Guide for details.

7.6 Configure the Web Server

This step assumes the installation of a web server exists as per the prerequisites. If an installation already exists, skip, and proceed to the next step. Webserver configuration includes the following activities.

See the Configure the Web Server section in the OFS AAI Release 8.1.0.0.0 Installation and Configuration Guide to complete these procedures.

- Configure WebSphere Application Server for Application Deployment
  - Create a New Profile in WebSphere
  - Manage IBM WebSphere SDK Java Technology Edition Versions
  - Manage Applications in WebSphere
  - Configure WebSphere Application Server to Initialize Filters before Initializing Load-On Startup Servlets

- Configure WebSphere Application Server Persistence to JPA Specification 2.0
- Configure WebSphere Application Server to Use a Load Balancer or Proxy Server
- Delete WebSphere Profiles
- Configure WebSphere HTTPS
- Configure WebSphere Memory Settings

- Configure WebLogic for Application Deployment
  - Create Domain in WebLogic Server
  - Delete Domain in WebLogic
  - Configure WebLogic Memory Settings
- Configure Apache Tomcat Server for Application Deployment
  - Tomcat User Administration
  - Configure Servlet Port
  - Configure SSL Port
  - Configure Apache Tomcat Memory Settings
  - Configure Tomcat for User Group Authorization
  - Uninstall WAR Files in Tomcat

NOTE

- See the Oracle Financial Services Analytical Applications Infrastructure Security Guide for configurations to secure your web server.
- You must enable a sticky session or 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 or affinity session configuration at the Load Balancer level if you have configured a Load Balancer in front of the web server.
- Make a note of the IP Address or Hostname and Port of the web application 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 or Security Guide mentioned in the Related Documents section for additional information on securely configuring your web server.

7.6.1 Additional Configurations for Web Servers

This section provides information for additional configuration required for the web servers on OFS CRA.

> **NOTE** The instructions in this section are applicable if you are upgrading from an earlier version of OFS CRA to Release 8.1.0.0.0.

- **Configuration for WebSphere**: To configure WebSphere, see the Configure WebSphere Application Server for Application Deployment section. Additionally, configure for REST services. For details, see the *Configuring WebSphere for the REST Services Authorization* section in the OFS Analytical Applications Infrastructure Administration Guide.

  Additionally, you must configure the Work Manager in WebSphere and map it to the OFSAA instance. For details, see the *Work Manager Configurations* section in the OFS Analytical Applications Infrastructure Administration Guide.

- **Configuration for WebLogic**: To configure WebLogic, see the Configure WebLogic for Application Deployment section. Additionally, configure for REST services. For details, see the *Configuring WebLogic for the REST Services Authorization* section in the OFS Analytical Applications Infrastructure Administration Guide.

  Additionally, you must configure the Work Manager in WebLogic. For details, see the *Work Manager Configurations* section in the OFS Analytical Applications Infrastructure Administration Guide.

- **Configuration for Tomcat**: For the successful execution of Data Mapping in Tomcat, perform the configurations mentioned in the Configuration for Tomcat section in the OFS Analytical Applications Infrastructure Administration Guide.

  For additional configurations, see the Configure Apache Tomcat Server for Application Deployment section.

7.6.1.1 Configure Application Security in WebSphere

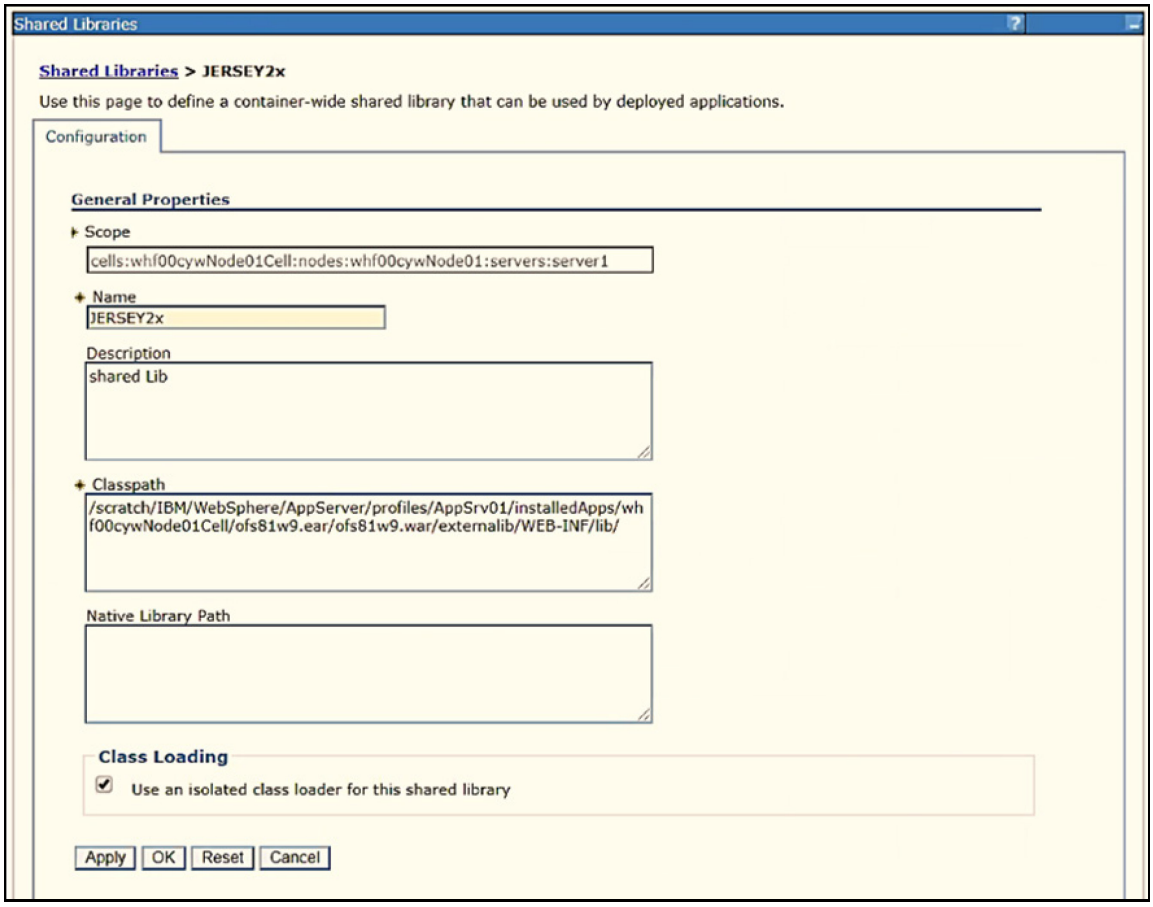
This is a mandatory security procedure for WebSphere to restrict the unauthorized access of configuration files in directories. For detailed information, see the Oracle Financial Services Analytical Applications Infrastructure Security Guide.

7.6.1.2 Configure WebSphere Shared Library to Support Jersey 2x and Jackson 2.9x Libraries

Perform the following configuration to set the WebSphere shared library to support Jersey 2x and Jackson 2.9x libraries.

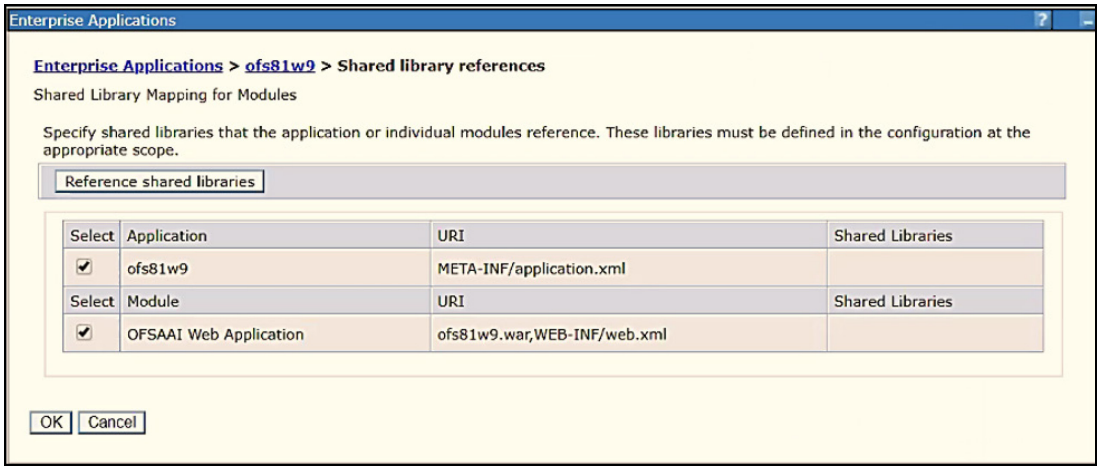
1. Click **Environment** from the menu on the left to expand and view the list. Click **Shared Libraries** to open the Shared Libraries window.

Figure 29: WebSphere Shared Libraries



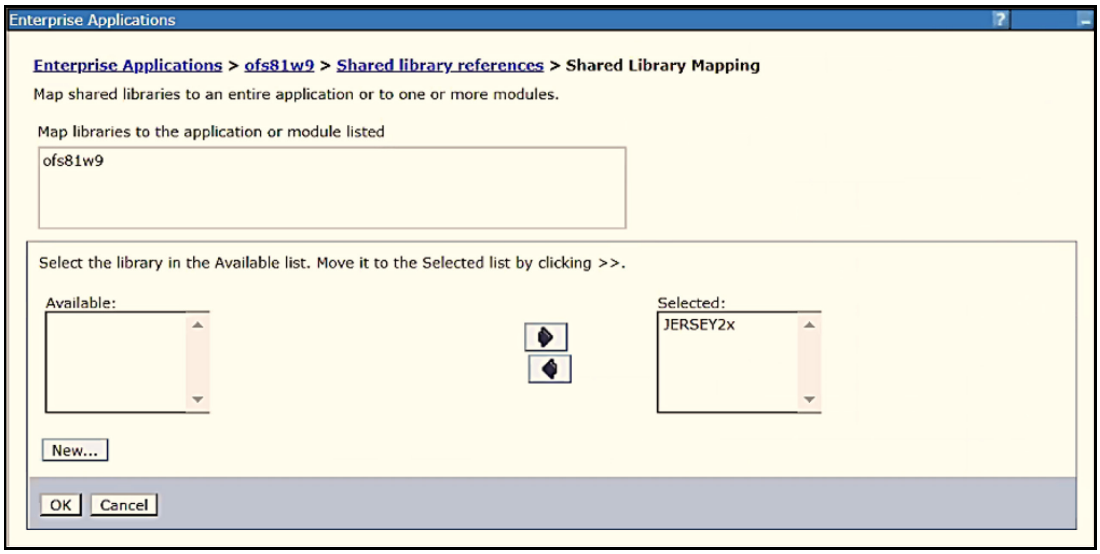
2. Enter the following details:
   - **Name**: Enter a uniquely identifiable name.
   - **Description**: Enter a valid description.
   - **Classpath**: Enter the absolute path where the JARs related to Jersey 2.x and Jackson 2.9x are copied. These jars are available in the `<OFSAA_HOME>/ficweb/webroot/externallib/WEBINF/lib/` directory after creation of the EAR file. Another format of representation of the path is `<ofsaa_deployed_area_location>/externallib/WEBINF/lib/`.
3. Select Use an isolated class loader for this library.
4. Click **OK** to save to master configuration.
5. Select the application or module and map the shared libraries. Click OK. In the following figure, **ofsa** is selected.

Figure 30: WebSphere Shared Library References



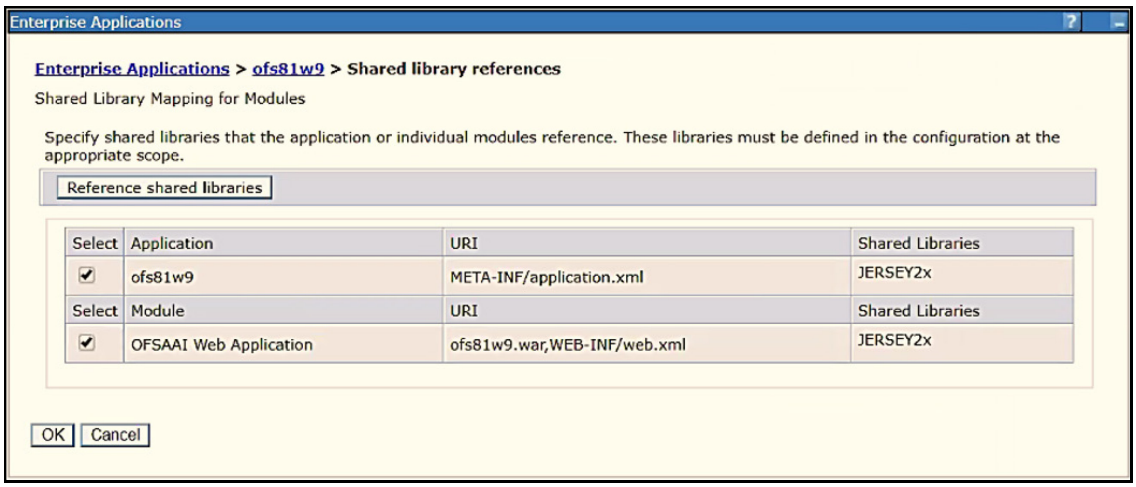
6. From the Shared Library Mapping window, move the required shared libraries from **Available** to **Selected**. In the following figure, JERSEY2x is selected.

Figure 31: WebSphere Shared Libraries Mapping Selection



7. Click **OK**.
8. Similarly, select the next application or module and repeat the procedure from steps 5 to 7.

Figure 32: WebSphere Shared Libraries Select Next Application



9. Disable the built-in JAX-RS via JVM property.

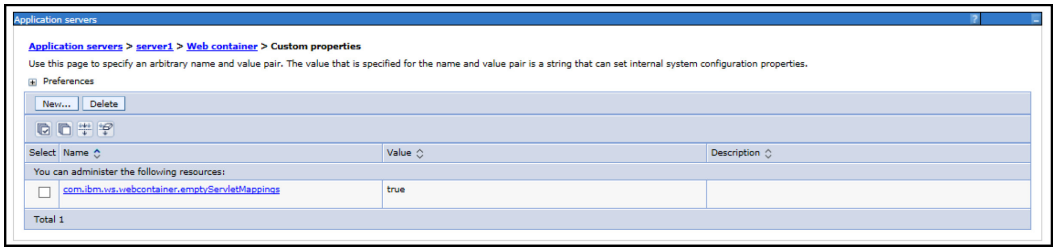
   a. Navigate to the WebSphere admin console in the **Servers** select **WebSphere Application Servers** then select **yourServerName**.

   b. In the Server Infrastructure section, go to Java and **Process Management** select **Process definition**, select **Java Virtual Machine** then select **Custom properties**.

   c. Add the following property:

   com.ibm.websphere.jaxrs.server.DisableIBMJAXRSEngine=true

> **NOTE** If the application does not come up post the steps mentioned above, then, navigate to **Application Servers** select **server 1**, select **Web container** then select **Custom properties** and modify the following property to **True**:
> `com.ibm.ws.webcontainer.emptyServletMappings` = true



10. Restart the application.

7.7 Configure Resource Reference in Web Servers

Configuring resource reference in webservers includes the following activities. See Configure Resource Reference in Web Servers section in the OFS AAI Release 8.1.0.0.0 Installation and Configuration Guide to complete these procedures.

- Configure Resource Reference in WebSphere Application Server
  - Create a JDBC Provider
  - Create Data Source
  - Create J2C Authentication Details
  - Define JDBC Connection Pooling
- Configure Resource Reference in WebLogic Application Server
  - Create Data Source
  - Create GridLink Data Source
  - Configure Multi Data Sources
  - Configure Advanced Settings for Data Source
  - Configure JDBC Connection Pooling
  - Create Work Manager
- Configure Resource Reference in Tomcat Application Server
  - Create Data Source
  - Define JDBC Connection Pooling
  - Configure ClassLoader for Apache Tomcat

7.8 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.

Configuring Work Manager in web application servers includes the following activities. See Configure Work Manager in Web Application Servers section in the OFS AAI Release 8.1.0.0.0 Installation and Configuration Guide to complete these procedures.

- Configure Work Manager in WebSphere Application Server
  - Creating a Work Manager
  - Mapping Work Manager to OFSAA WebSphere Instance
- Configure Work Manager in WebLogic Application Server

7.9 Create and Deploy the EAR or WAR Files

See Create and Deploy the EAR or WAR Files in OFS AAI Release 8.1.0.0.0 Installation and Configuration Guide for details.

7.10 EAR or WAR File - Build Once and Deploy Across Multiple OFSAA Instances

See EAR or WAR File - Build Once and Deploy Across Multiple OFSAA Instances in OFS AAI Release 8.1.0.0.0 Installation and Configuration Guide for details.

7.11 Access the OFSAA Application

To access the OFSAA application, follow these steps:

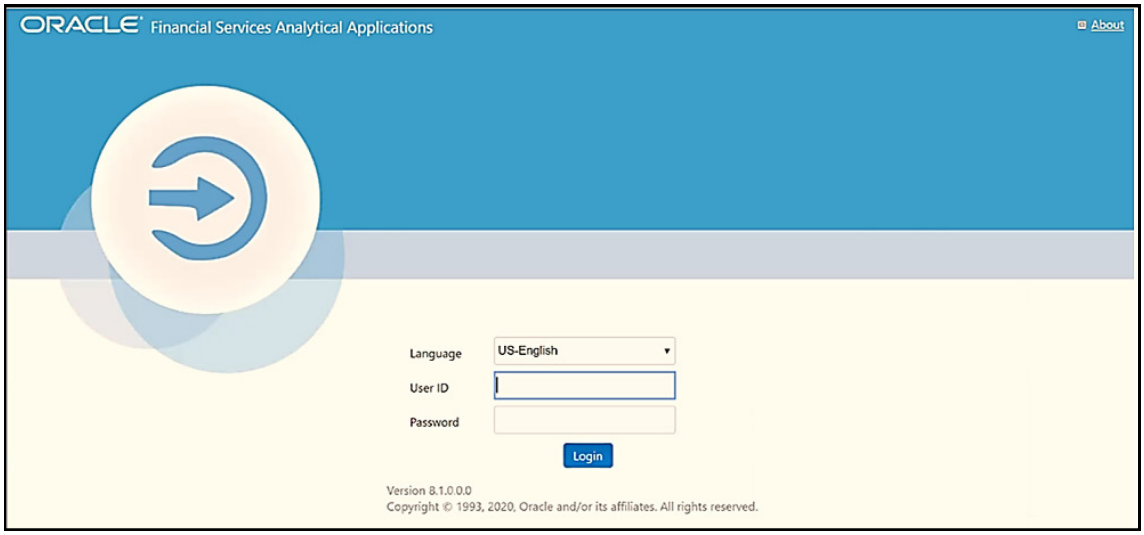
1. Open a browser and enter the URL in the following format:

   `<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 33: 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.

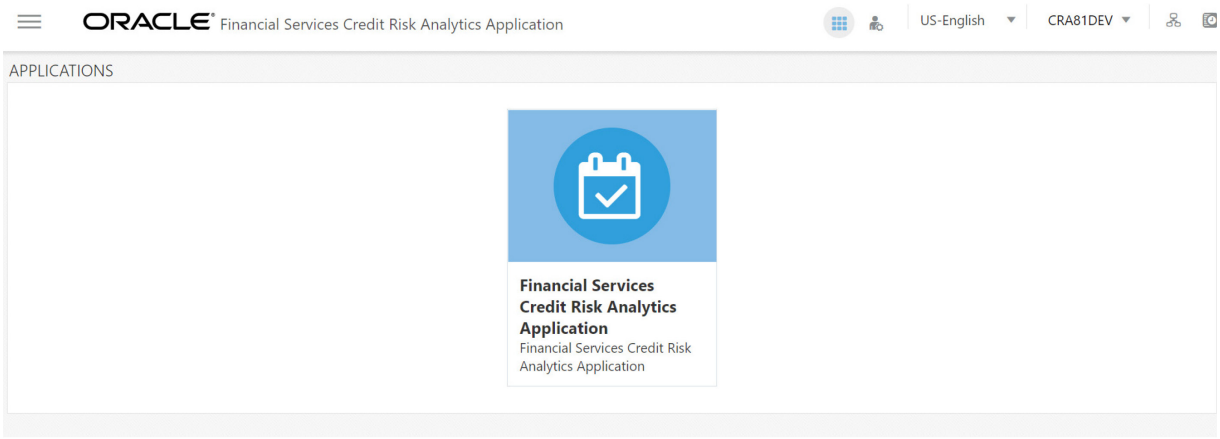
2. Log in to the application using the SYSADMN User ID and the default password. After the first login, you are prompted to change the password.

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

7.11.1 OFSAA Landing Page

On successful login, the **OFSAA Landing** screen is displayed.

Figure 34: OFSAA Landing screen

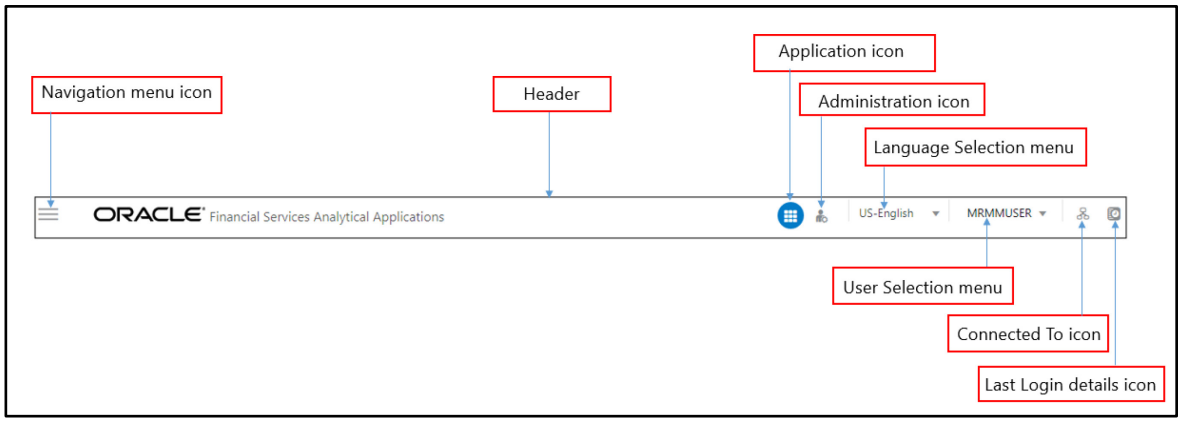


OFSAA Landing screen shows the available Applications as tiles, for which a user has access to. Clicking the respective Application tile launches that particular application. You can change the landing page based on your preference.

7.11.1.1 Masthead

This section describes the user interface components in the OFSAA Landing page.

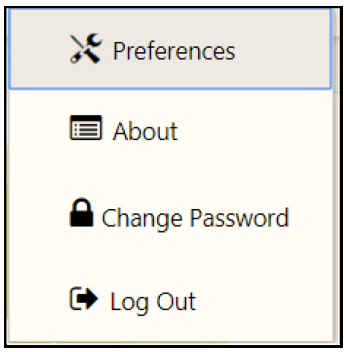
Figure 35: User Interface Components



- **Navigation Menu**: This icon is used to trigger the Application Navigation Drawer.
- **Application Icon**: This icon is used to show the available Applications installed in your environment at any time.
- **Administration Icon**: This icon is used to go to the Administration window. The Administration window displays modules like System Configuration, Identity Management, Database Details, manage OFSAA Product Licenses, Create New Application, Information Domain, Translation Tools, and process Modelling Framework as Tiles.
- **Reports Icon**: This icon is used to launch various User Reports such as user Status Report, User Attribute Report, User Admin Activity Report, User Access Report, and Audit Trial Report.

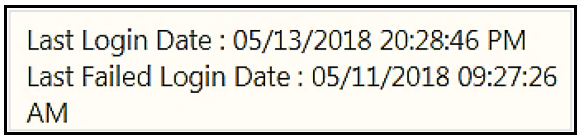
- **Language Menu**: It displays the language you selected in the OFSAA Login Screen. The language options displayed in the Language Menu are based on the language packs installed in your OFSAA instance. Using this menu, you can change the language at any point in time.
- **User Menu**: Clicking this icon displays the following menu:

Figure 36: User Menu



  - **Preferences**: To set the OFSAA Landing Page.
  - **Change Password**: To change your password. For more information, see the *Change Password* section in the OFS AAI User Guide. This option is available only if SMS Authorization is configured.
  - **Log Out**: To log out from OFSAA applications.
  - **Last Login Details**: This displays the last login details as shown.

Figure 37: Last Login Details

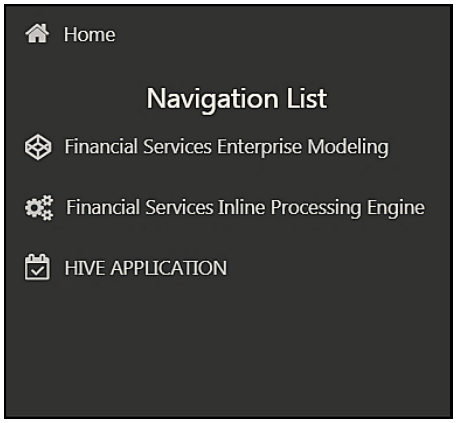


7.11.1.2 Navigation Drawer

To launch the navigation drawer, follow these steps:

1. Click the **Navigation menu** to launch the Navigation Drawer as shown.

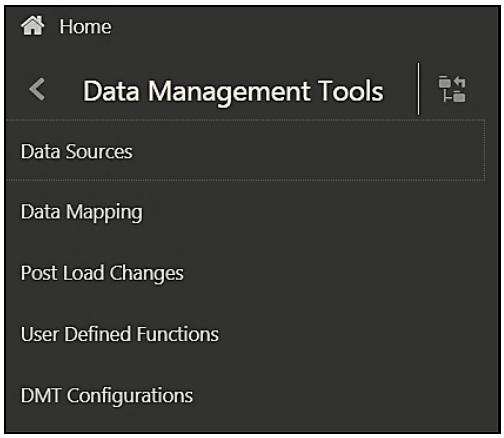
Figure 38: Navigation Drawer



Here the navigation items appear as a list. The First Level menu shows the installed applications. Clicking an application displays the second-level menu with the application name and Common tasks menu. The arrangement of the menu depends on your installed application.

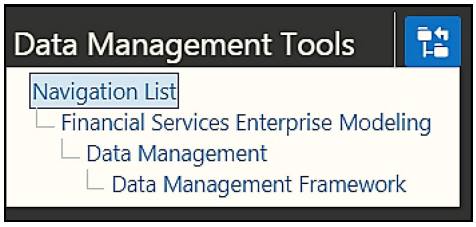
2. Clicking an item in the menu displays the next level sub-menu and so on. For example, to display Data Sources, click **Financial Services Enterprise Modeling** select **Data Management** select **Data Management Framework,** select **Data Management Tools** and then select **Data Sources.**

Figure 39: Navigation Drawer Menus and Submenus



3. Click **Hierarchical Menu** to display the navigation path of the current submenu as shown.

Figure 40: Navigation Submenu



4. The RHS Content Area shows the Summary page of Data Sources. Click anywhere in the Content Area to hide the Navigation Drawer. To launch it back, click the Navigation menu .
5. Click **Home** to display the OFSAA Landing Screen.

7.11.1.3 System Configuration

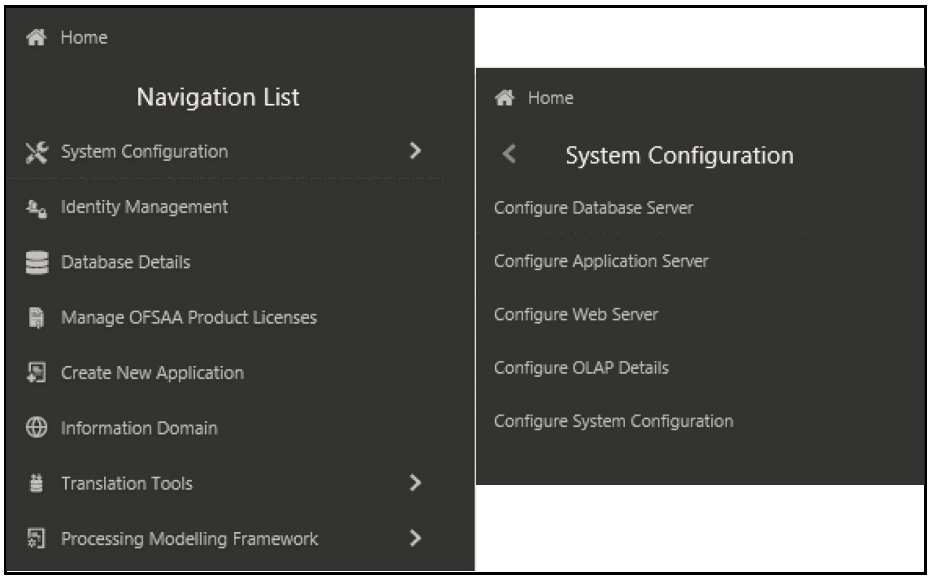
The Administration and Configuration section allows the System Administrators to configure the Server details, Database details, OLAP details, and Information Domain along with the other Configuration process such as segment and metadata mapping, and mapping segment to security. System Configuration is mostly an onetime activity which helps the System administrator to make the Infrastructure system operational for usage.

7.11.1.3.1 Navigate to System Configuration

Click the **Administration Icon** from the header to display the Administration tools in the Tiles menu. Click **System Configuration** from the Tiles menu to view a submenu list.

> **NOTE** After you have accessed a tool from the submenu, the options are also available in the Navigation List to the left. Click the **Navigation menu** to access the Navigation List.

Figure 41: System Configuration Submenu



You (System Administrator) must have full access rights to `FTPSHARE` directory with appropriate User ID and password to add and modify the server details.

7.11.1.3.2 Components of System Configuration

System Configuration consists of the following sections.

- Database Server
- Application Server
- Web Server
- Database Details
- OLAP Details
- Information Domain
- Configuration
- Create Application

7.12 Configure the excludeURLList.cfg File

See Configure the excludeURLList.cfg File in OFS AAI Installation Guide for details.

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 8.1.0.0.0.

7.14 Configure Tomcat

To stop generating static content with one print statement per input line, you must configure the `web.xml` file.

To configure the `web.xml` file, perform the following steps:

1. Navigate to the `tomcat/conf` directory.
2. Edit the `web.xml` file as follows:
3. Set the mapped file parameter to False in the servlet tag mentioned with

```
<servlet-name>jsp</servlet-name>.
<init-param>
<param-name>mappedfile</param-name>
<param-value>false</param-value>
</init-param>
```

7.15 Change the ICC Batch Ownership

All seeded Batches in the OFS CRA pack are automatically assigned to the SYSADMN user during installation. To view the batches in the Batch Maintenance menu, you must 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 of 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. For details see Add TNS entries in the tnsnames.ora File section.

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 Update OBIEE URL

To access the respective Business Intelligence Analytics Application, you must update the OBIEE URL in the AAI_MENU_B table after the OBIEE environment is up and running. Use the following command:

```
UPDATE AAI_MENU_B
SET V_MENU_URL = '&obieeURL'
WHERE V_MENU_ID IN ('OFS_CRA_BI')
/
COMMIT
/
```

7.18 Configure Data Source

This section details the configurations required for Data Sources in the OFSAA applications.

- Create a connection pool in the Information Domain. For more information, see the OFS AAI Release 8.1.0.0.0 Installation and Configuration Guide.
- JNDI name of the connection pool must be `<res-ref-name>` as mentioned in the `web.xml` file. For example: `jdbc/OFSINFDOM`
- Create and deploy the web components into the web server. For more information on deploying the web components, see the OFS AAI Release 8.1.0.0.0 Installation and Configuration Guide.
- The following tag must be added manually in the `web.xml` file if not already present in the `web.xml` file.

  ```
  <resource-ref>
  <!-- description>DB Connection INFODOM</description -->
  ```

```
<res-ref-name>jdbc/ INFODOM</res-ref-name>
<res-type>javax.sql.DataSource</res-type>
<res-auth>Container</res-auth>
</resource-ref>
```

7.19 Configure Data Redaction in OFSAA

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

Topics:

- Prerequisites
- Data Redaction

7.19.1 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.

7.19.2 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:

1. Log in as SYSDBA into the database.
2. 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.
5. From the Configuration window in the System Configuration module, select the Allow Data Redaction checkbox.
6. Run the Data Redaction utility.

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

7.20 Data Protection Implementation in OFSAA

Data Protection implementation in OFSAA applications includes the following:

- Right to be Forgotten
- Data Portability
- Pseudonymization
- Notice and Consent
- Data Archival
- Data Redaction

See the OFSDF Data Protection Implementation Guide for details.

7.20.1 Right to be Forgotten

Right to be Forgotten is the task of removing Personally Identifiable Information (PII) of a Data Subject for the given Party. The financial institution can delete PII for those Data Subjects who have requested this Right to be Forgotten functionality.

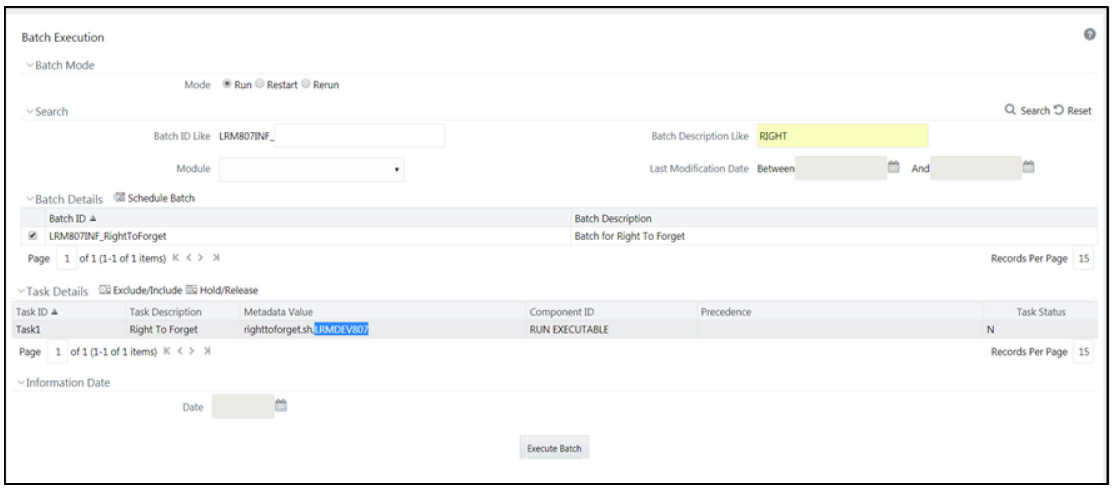
The Data Subjects may have made significant financial transactions, and/or financial information may be required for regulatory or compliance reporting. Deleting the complete record that consists of PII may lead to issues in data reconciliation. In OFSAA, the PII data will be replaced with randomized values and therefore, the complete Data Subject record is retained. As a result, financial information is retained; however, the associated Party PII is removed permanently.

7.20.1.1 Configuring Right to be Forgotten During OFS CRA Installation

To configure Right to be Forgotten, follow these steps:

1. Ensure that you assign the role Data Controller to the CRA user.
2. Edit the task of the batch `<Infodom_name>_RightToForget`. By default the parameter is SYSADMN. Modify the user ID in the Metadata Value field to the CRA Data Controller user ID from Step 1.

Figure 42: Configure Right to be Forgotten for OFS CRA



3. Add the party IDs entries for the Right to Forget in the FSI_PARTY_RIGHT_TO_FORGET table.
4. Execute the batch `<Infodom_name>_RightToForget`, for the specific FIC MIS date mentioned in the FSI_PARTY_RIGHT_TO_FORGET table.

7.21 Post-deployment Configurations

This section includes the post-deployment configuration steps.

Topics:

- Deploy the OFS CRA Analytics
- Logging as System Administrator
- Creating Application Users
- Mapping Application User (or Users) to User Group
- CRA Pack User Group Names

7.21.1 OBIEE Configuration - Deploy OFS CRA Analytics

The OFS CRA Analytics application release 8.1.0.0.0 is based upon a dedicated reporting mart built from the new Fusion Financial Services Data Model. OFS CRA Analytics 8.1.0.0.0 leverages several components of Oracle Business Intelligence Enterprise Edition (OBIEE) or Oracle Analytics Server (OAS) technology including Dashboards and Answers.

Follow these steps to configure the OFS CRA Analytics:

1. Make sure Oracle Business Intelligence 12.2.1.4.0 or OAS 5.5.0 installation is completed and available. See Installing and Configuring Oracle Business Intelligence 12c (12.2.1.4) (E91876-03) or Installing and Configuring Oracle Analytics Server 5.5.0 (F27232-03) for more details.
2. Configure the ODBC data source to connect to the Oracle BI Server:
   a. Navigate to **Control Panel**, select **Administrative Tools**, and then select **Data Sources (ODBC)**.
   b. Select the **System DSN** tab and click **Add**.

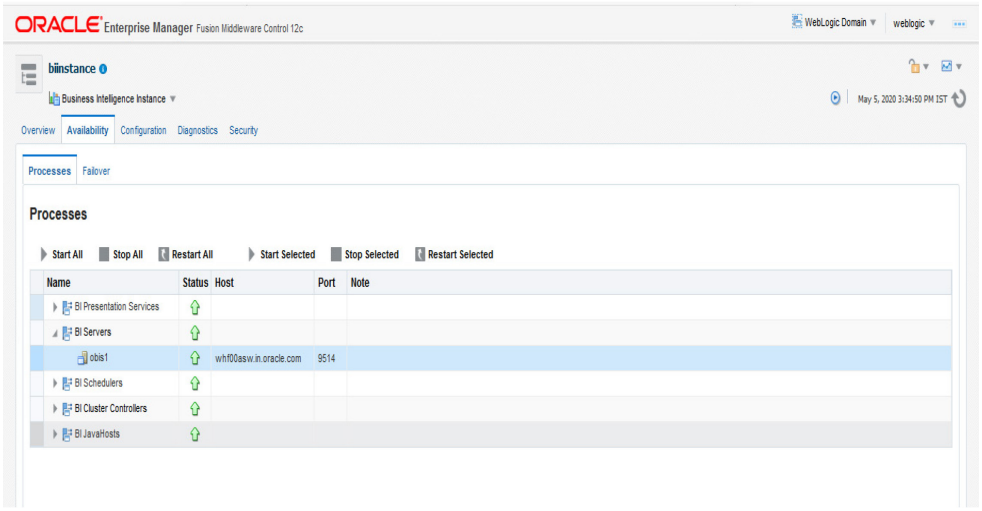
c. Select a driver-specific to **Oracle BI Server 2.2.1.4.0** or **OAS 5.5** and click **Finish**.

d. Enter the **Name** and **Server** details (specify the Hostname or IP Address of the BI Server) and click **Next**.

e. Enter the Oracle BI Server login ID and password (Enter the User Name and Password created at the time of OBIEE or OAS installation). Update the port with the port number available for the BI Server in the **Availability** tab of Business Intelligence in the Enterprise Manager.

For example: In the following figure, the port number is 9514.

Figure 43: Update Port Number in the BI Server



f. Click **Next.**

g. Navigate to the RPD and Catalog folders available in the following directories. Copy the RPD and required Catalog files in the server where the BI client tools are installed:

- `$FIC_HOME/OFS_CRA_DASHBOARDS/12.2.1.4.0/datamodel` directory containing the `CRMBI.rpd` file in the data model directory.
- `CRMBI.catalog` file in the `$FIC_HOME/OFS_CRA_DASHBOARDS/12.2.1.4.0/content/catalog` directory.

h. Click **Finish**.

3. Modify the connection pool and set the properties.

a. Open the OBI Administration tool.

b. Select **Start**, **s**elect **Programs**, select **Oracle Business Intelligence**, and then select **BI Administration**.

c. Select **File**, select **Open**, select **Offline**, and then select the `CRMBI.rpd` file.

d. In the **Open** dialog box, select and open the `CRMBI.rpd` file.

e. Enter the Repository password. See the MOS Doc ID: 2691681.1 for the password.

f. In the **Physical** layer, double-click the **Connect Pool**: *CRMBI* to open its properties.

g. In the **General** tab, edit and check the following entries:

i. **Call Interface**: (OCI 10g/11g).

ii. **Data source name**: `<TNS Entry connecting to OFSAA atomic schema>`

For example:
`(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)(HOST=<Database IP address>)(PORT=1521)))(CONNECT_DATA=(SERVICE_NAME=<Database Name>)))`

iii. **User name**: <enter atomic db user name>.

iv. **Password**: <enter atomic db user password>.

v. Confirm the password and click **OK** to close the window.

vi. Similarly, configure the connection pools for *CRMBITRANS* and *CRMBI_INIT_BLOCK* and *CRMBI*.

- Check **Global Consistency**, that is, press *Ctrl+k*.
- Double-click on the warning (if you are using OAS).
- Click **Reset to defaults** and click **OK**.

vii. Click **Save**.

h. Click **Yes** for the Global Consistency Message. No warnings should be generated at this stage.

i. Close the RPD file (close the file and exit).

4. Log in to the OFS Credit Risk Analytics application using the

URL: `http://<ipaddress>:<port>/analytics` (replace the port number based on your setup).

5. Perform the following OBIEE presentation server configuration steps:

a. Navigate to the `<<Oracle BI Instance Home>/config/fmwconfig/biconfig/OBIPS` directory.

b. Edit the `instanceconfig.xml` file.

c. Insert the following code within the XML tag

```
<Views> </Views>
<Charts>
<MaxVisibleColumns>50000</MaxVisibleColumns>
<MaxVisiblePages>25000</MaxVisiblePages>
<MaxVisibleRows>10000000</MaxVisibleRows>
<MaxVisibleSections>50000</MaxVisibleSections>
<JavaHostReadLimitInKB>10240</JavaHostReadLimitInKB>
</Charts>
```

d. Insert the following code within the XML tag

```
<Views> </Views>
<Table>
```

```
<DefaultRowsDisplayedInDelivery>75</DefaultRowsDisplayedInDelivery>
<DefaultRowsDisplayedInDownload>6500</DefaultRowsDisplayedInDownloa>
<MaxCells>4000000</MaxCells>
<MaxVisibleRows>140000</MaxVisibleRows>
</Table>
<Narrative>
<MaxRecords>500000</MaxRecords>
<DefaultRowsDisplayed>25</DefaultRowsDisplayed>
</Narrative>
```

e. Insert the following code within the XML tag

<Views**> <**/Views**>**

```
<Pivot>
<DefaultRowsDisplayedInDelivery>70000
</DefaultRowsDisplayedInDelivery>
<DefaultRowsDisplayedInDownload>70000
</DefaultRowsDisplayedInDownload>
<DisableAutoPreview>false</DisableAutoPreview>
<MaxCells>10000000</MaxCells>
<MaxVisibleRows>140000</MaxVisibleRows>
<MaxVisibleSections>600000</MaxVisibleSections>
<MaxVisibleColumns>50000</MaxVisibleColumns>
<MaxVisiblePages>10000</MaxVisiblePages>
</Pivot>
```

f. Insert the following code within the XML tag

<Views**> <**/Views**>**

```
<Cube>
<CubeMaxRecords>10000000</CubeMaxRecords>
</Cube>
```

g. Insert the following code within the XML tag

<Views**> <**/Views**>**

```
<Charts>
<MaxVisibleColumns>50000</MaxVisibleColumns>
<MaxVisiblePages>600000</MaxVisiblePages>
<MaxVisibleRows>900000</MaxVisibleRows>
<MaxVisibleSections>600000</MaxVisibleSections>
</Charts>
```

h. Save and close the file.

6. Perform the following OBIEE BI server configuration steps:
   a. Navigate to the <<Oracle BI Instance Home>/config/fmwconfig/biconfig/OBIS directory.
   b. Edit the NQSConfig.INI file.
   c. Update the following code within the NQSConfig.INI file

```
NULL_VALUES_SORT_FIRST = ON;
```

7. Restart the BI services.

> **NOTE** Take a backup of the `instanceconfig.xml` and `NQSConfig.INI` files before making any changes.

7.21.1.1 RPD and Catalog Deployment

This section includes steps for the RPD and Catalog deployment.

7.21.1.1.1 Deploying the RPD

For RPD deployment, follow these steps:

1. Connect to the OBIEE server.
2. Create a folder. For example, `tmp` in the following directory:

```
<Oracle_Home>/user_projects/domains/domain_name
```

3. Copy the `CRMBI.rpd` from the local directory (where you have saved the RPD) to the folder created in the preceding step.
4. Open the command prompt, and navigate to the following directory:

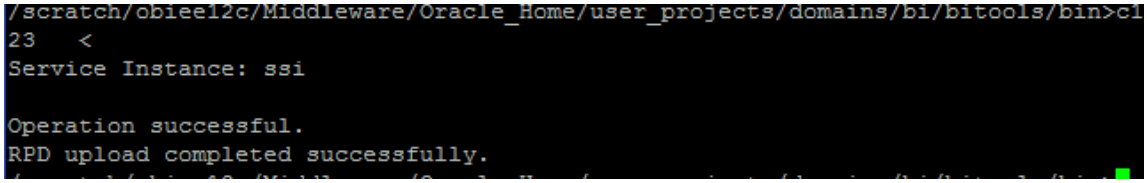
```
/scratch/<mount_name>/Middleware/Oracle_Home/user_projects/domains/bi/bitools/bin
```

5. Execute the following command:

```
./datamodel.sh  uploadrpd -I <RPDfilepath> -W <RPDpassword> -SI ssi -U <username> -P <password>
```

For example:

```
./datamodel.sh  uploadrpd -I /scratch/obiee12c/Middleware/Oracle_Home/user_projects/domains/bi/tmp/CRMBI.rpd -W Administrator1 -SI ssi -U weblogic -P weblogic123
```



7.21.1.1.2 Deploying the Web Catalog

For web catalog deployment, follow these steps:

1. Open the catalog manager, navigate to the File menu and open the catalog online by giving the necessary credentials based on your setup:
   - Type: Online
   - URL: http://<ipaddress>:<port>/analytics-ws
2. After the catalog is opened, it will display a directory structure on the left-hand side. Select the *Catalog Root and select Shared Folders* in the LHS tree structure.
   a. Go to the **File** menu and select **Unarchive**. It will ask for the path for a file.
   b. Browse the path of the archived catalog file saved in your local directory using the **Browse** button and click **OK**.
   c. The catalog must be extracted in the Shared Folders directory for the reports to display. A successful operation message is displayed.
   d. Restart the presentation services once again.
   e. Open the analytics OBIEE URL (http://<ipaddress>:<port>/analytics).
   f. Login with credentials based on your setup and verify that the catalog is available.
      i. Click on catalog in the OBIEE application right top menu list.
      ii. In the LHS menu, navigate to shared directories and verify all the directories are available.

7.21.1.1.3 Starting and Stopping Services in OBIEE

Follow the below steps to start and stop OBIEE services:

1. Connect to the OBIEE server.
2. Navigate to the `/scratch/<mount_name>/Middleware/Oracle_Home/user_projects/domains/bi/bitools/bin` directory.
3. Execute the following commands:
   a. Command to stop service: `./stop.sh`
   b. Command to start service: `./start.sh`

7.21.1.1.4 OBIEE Configurations Post-Deployment of RPD and Catalog Files

For OBIEE reporting, configure the following:

a. Navigate to the `<<obiee <<Oracle BI Instance Home>/config/fmwconfig/biconfig/OBIJH` directory.

b. Modify the `config.xml` file.

c. Increase parameter value for the following tag:

```
<XMLP>
<InputStreamLimitInKB>40000</InputStreamLimitInKB>
<ReadRequestBeforeProcessing>true</ReadRequestBeforeProcessing>
</XMLP>
```

```
<DVT>
<InputStreamLimitInKB>40000</InputStreamLimitInKB>
</DVT>
```

d. Save the `config.xml` file.

e. Navigate to the `<<obiee <<Oracle BI Instance Home>/config/fmwconfig/biconfig/OBIPS` directory.

f. Modify the `instanceconfig.xml` file.

g. Increase the parameter value for tag if already exists or add the following code:

```
<Charts>
<MaxVisibleColumns>50000</MaxVisibleColumns>
<MaxVisiblePages>25000</MaxVisiblePages>
<MaxVisibleRows>100000</MaxVisibleRows>
<MaxVisibleSections>50000</MaxVisibleSections>
<JavaHostReadLimitInKB>10240</JavaHostReadLimitInKB>
</Charts>
and
<Pivot>
<MaxCells>1920000</MaxCells>
<MaxPagesToRollOutInDelivery>10000</MaxPagesToRollOutInDelivery>
<MaxVisibleColumns>50000</MaxVisibleColumns>
<MaxVisiblePages>100000</MaxVisiblePages>
<MaxVisibleRows>10000000</MaxVisibleRows>
<MaxVisibleSections>50000</MaxVisibleSections>
<DefaultRowsDisplayed>100000</DefaultRowsDisplayed>
</Pivot>
under <Views> tag
```

h. Save the `instanceconfig.xml` file.

i. Restart the BI Services.

7.21.2 Logging as System Administrator

This section includes provides information about the system administrator roles and privileges.

Topics:

- Role of an Administrator
- Function Maintenance
- Role Maintenance
- Function - Role Mapping

- User Group Role Mapping

7.21.2.1 Role of an Administrator

There are two types of Administrators as defined by the OFS Analytical Applications Infrastructure: A User Administrator and System Administrator.

- System Administration: refers to a process of managing, configuring, and maintaining confidential data in a multi-user computing environment. A System Administrator creates functions, roles, and mapping functions to specific roles. A System Administrator also maintains segment information, holiday list, and restricted passwords to ensure security within the application. The following are the activities of a System Administrator:
  - Function Maintenance
  - Role Maintenance
  - Function-Role Mapping
- User Administration: is one of the core functions of Security Management which involves administrators to create user definitions, user groups, maintain profiles, authorize users and user groups, and map users to groups, domains, and roles. A User Administrator controls the user privileges in accessing the application and is based on business requirements to provide access to view, create, edit, or delete confidential data.

A User Administrator grants permissions based on user roles and requirements.

The respective roles must be mapped to administrative user SYSADMN.

7.21.2.2 Function Maintenance

For details, see the *System Administrator* section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

7.21.2.3 Role Maintenance

For details, see the *System Administrator* section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

7.21.2.4 Function - Role Mapping

For details, see the *System Administrator* section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

7.21.2.5 User Group Role Map

For details, see the *User Group Role Map* section in Oracle Financial Services Analytical Applications Infrastructure User Guide.

7.21.3 Creating Application Users

Create the application users in the OFSAA setup before use.

For details, see the *User Administrator* section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

7.21.4 Mapping Application User (or Users) to User Group

For details, see the *User Administrator* section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

Starting the OFSAA 8.1.0 release, with the installation of the CRA application pack, preconfigured Application user groups are seeded. These user groups are unique to every OFSAA Application Pack and have application roles preconfigured.

For more information on seeded User Groups, see CRA Pack User Group Names.

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

For details, see the *Mapping or Unmapping Users* section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

7.21.5 CRA Pack User Group Names

The section provides information about the User Group names seeded as part of the OFS CRA application pack.

To access the CRA application, you can map the created users to the following user groups:

- CRAADMNGP - CRA Admin Group
- CRAANLYSTGP - CRA Analyst Group
- CRAAUTHGP - CRA Approver Group

8 Remove OFSAA Infrastructure

See the Remove OFSAA Infrastructure section in the OFS AAI Release 8.1.0.0.0 Installation and Configuration Guide to complete these procedures:

- Uninstall the OFSAA Infrastructure
- Uninstall the EAR Files
  - Uninstall the EAR Files in WebSphere
  - Uninstall the EAR Files in WebLogic
  - Uninstall the EAR Files in Tomcat
- Clean Up the Environment

Part II

Topics:

- Additional Configurations
- Migrate Excel Upload Functionality
- FAQs

9 Additional Configuration

This section provides information for additional configuration required for the OFSAA application packs.

To complete the configuration process, you may require performing the following steps listed in the Additional Configuration Checklist. Use this checklist to verify whether these steps are completed or not. See the Additional Information section in the OFS AAAI Release 8.1.0.0.0 Installation and Configuration Guide to complete these procedures.

Table 25: Additional Configuration Checklist

Sl. No	Additional Configuration Activity
1	Add FTP/SFTP Configuration for File Transfer.
2	Configure the Infrastructure Server Memory.
3	Retrieve Patch Information.
4	Set OLAP Data Server Configuration.
5	Change IP or Hostname, Ports, Deployed Paths of the OFSAA Instance.
6	Configure the Infrastructure LDAP Configuration.
7	Configure and Deploy the OFSAAI web services.
8	Enable Parallel Execution of DML statements
9	Configure the Message Details in the Forms Designer.
10	Clear the application cache.
11	Configure password changes.
12	Configure Java Virtual Machine.
13	Configure Internal Service (Document Upload/Download).

10 Migrate Excel Upload Functionality

See the Migrate Excel Upload Functionality section in the OFS AAAI Release 8.1.0.0.0 Installation and Configuration Guide to complete the procedures.

11 Frequently Asked Questions (FAQs) and Error Dictionary

For FAQs and installation error-related information, see the section Frequently Asked Questions (FAQs) and Error Dictionary in the OFS AAAI Release 8.1.0.0.0 Installation and Configuration Guide.

11.1 Application Pack 8.1.0.0.0 FAQs

You can see the Frequently Asked Questions which is developed with the interest to help you resolve some of the OFS CRA Installation and configuration issues. This intends to share the knowledge of problem resolution to a few of the known issues. This is not an official support document and just attempts to share the knowledge of problem resolution to a few of the known issues.

1. **What is an Application pack?**

   An Application Pack is a suite of products.

2. **Can I get a standalone installer for OFSAAI 8.1?**

   No. AAI is part of every application pack and installs automatically.

3. **Where can I download OFS CRA 8.1.0.0.0 Application Pack?**

   You can download the OFSAAI 8.1.0.0.0 Application Pack from Oracle Software Delivery Cloud (OSDC).

4. **What are the minimum system and software requirements for the OFS CRA 8.1 Application Pack?**

   See the Hardware and Software Requirements for more information.

5. **Is my environment compatible with OFS CRA 8.1.0.0.0 Application Pack?**

   Environment Check utility performs the task. It is part of the install and can also be run separately.

6. **Does the OFS CRA 8.1.0.0.0 Application Pack support all Operating systems?**

   See the Hardware and Software Requirements section.

7. **How can I install the OFS AAI 8.1.0.0.0 Application Pack?**

   See the OFS AAAI Release 8.1.0.0.0 Installation and Configuration Guide.

8. **Does this installation require any Third-party Software?**

   For details on the third-party software tools used, see the OFSAA Licensing Information user Manual *Release 8.1.0.0.0*.

9. **What languages are supported during the OFSAA 8.1.0.0.0 Application Pack installation?**

   US English is the language supported.

10. **What mode of installations OFSAA Application Pack supports [that is., Silent, GUI]?**

    OFSAA Application Packs support only Silent Mode.

11. **Does OFSAA 8.1.0.0.0 Application Pack support Multi-tier Installations?**

    OFSAA 8.1.0.0.0 supports only a single-tier installation. For more information, see the Frequently Asked Questions (FAQs) and Error Dictionary section.

12. **Does this Application Pack validate all prerequisites required for this installation like Memory, Disk Space, and so on?**

    Yes. The pre-requisite checks are done by the respective application pack installer.

13. **What happens if it aborts during the installation of any application or products within an Application pack?**

    You must restore the system and retrigger the installation

14. **Does this Application pack 'Roll Back' if any application installation fails due to errors?**

    The rollback of installation is not supported.

15. **Does the Application pack install all applications bundled?**

    All application pack system files are installed but there is an option to enable the licensed products.

16. **Can I re-install any of the Application Packs?**

    You can retrigger in case of failure.

17. **Does this Application pack allow enabling or disabling any of the applications installed?**

    Yes, you can enable but you cannot disable once the product is enabled in an environment.

18. **I have installed one application in an Application pack, can I install any of the new applications within the Application pack later?**

    No, the installation of additional applications is not required. If you wish to add an application later, you can enable the application at that time.

19. **How many OFSAA Infrastructures can be installed in a single server?**

20. There is no issue in installing separate OFSAAI installations, each with their own PFT/FTP installations and separate associated database instances and separate web server installations on the same server as long as adequate memory is allocated for each instance and as long as each OFSAAI installation is installed using a separate UNIX user and profile. Care must be taken when running multiple OFSAAI installations on a single server. Adequate memory is required for each installation as several OFSAAI processes (model upload, DEFQ services, and so on) take significant amounts of memory. So it depends on your server's memory.

21. **Is it possible to install OFSAA 8.1.0.0.0 Application pack on an existing 'Infodom' where another OFSAA 8.1.0.0.0 application is installed?**

    Yes, however, the Behavioral Detection Application Pack and Compliance Regulatory Reporting Application pack are the exceptions. They must be installed in a different Infodom.

22. **Can I select an Infodom for the Application pack during installation?**

    Yes, you can select or change the required infodom.

23. **Can I install all Application Packs in a Single Infodom?**

    Yes, but the Behavioral Detection Application Pack and Compliance Regulatory Reporting Application Pack are the exceptions. They must be installed in a different Infodom.

24. **Is it possible to install applications on different Infodom within the Application pack (for example, I want to install LRM and MR in two infodoms)?**

    Applications within the application pack have to be installed in the same information domain in the same environment.

25. **How many Infodoms can be created over a single OFSAA Infrastructure of 8.1.0.0.0?**

    You can install only one infodom during installation. But after installation, you can create multiple infodoms.

26. **Is the 'Data Model' bundled specifically to an Application pack or an individual application?**

    A merged data model for all applications within the application pack is bundled and uploaded.

27. **Is it possible to install OFS Enterprise Modeling later?**

    OFS Enterprise Modeling is a separate product and can be enabled as an option later from any application pack that bundles Enterprise Modeling. For more information, see Enable Financial Services Enterprise Modeling on Another Application Pack section in the OFS AAAI Release 8.1.0.0.0 Installation and Configuration Guide.

28. **Does the Application pack create a sandbox automatically for the required applications?**

    Yes, Sandbox creation is part of the application install process.

29. **Are upgrade Kits available for individual applications or the complete Application Pack?**

30. Maintenance Level (ML) Release and Minor Release upgrades are available across all applications.

31. **Can I upgrade AAI only?**

    Yes, you can upgrade AAI alone.

32. **Can I upgrade one application within the Application Pack (for example, I want to upgrade LRM in the Treasury Application pack, but not MR.)?**

    No, an upgrade is applied to all applications in the application pack.

33. **Is it possible to uninstall any Application from the Application pack?**

    No, it is not possible to uninstall any Application from the Application Pack.

34. **Can I uninstall the entire Application Pack?**

    No, you cannot uninstall the Application Pack.

35. **Is it possible to uninstall only the application and retain AAI in the installed environment?**

    No, you cannot uninstall only the application and retain AAI in the installed environment.

36. **Does Application Pack contain all Language Packs supported?**

    Language Packs must be installed on the application packs.

37. **Can I install an Application Pack over another Application Pack (that is the same infodom or different infodom)?**

    Yes, you can install an Application Pack over another Application Pack in the same information domain or different information domain. But Behavioral Detection Application Pack and Compliance Regulatory Reporting Application Pack, Asset Liability Management Application Pack, and Profitability Application Pack are the exceptions. They must be installed in a different Infodom.

38. **What should I do if I get the error message: *HostName in the input XML file is not matching with the local hostname* while running the schema creator utility?**

    One possible reason can be the machine is configured for zonal partitioning. Ensure all the known IP Addresses of the machine are present in the `/etc/hosts` file.

39. **What are the Java versions supported in OFS CRA Application Pack version 8.1.0.0.0?**

    See the Hardware and Software Requirements section.

40. **Is OFSAAAI Application Pack version 8.1.0.0.0 supported on Java 9 and Java 11?**

    For information about supported Java versions, see the Hardware and Software Requirements section

41. **What should I do when I get the message: "*[ERROR] - Error: APP Setup bin file failed.*" during OFS_Application_PACK installation?**

    This is a generic error message that appears during application installation failure. You must check the installation log files for more information about what failed the installation.

    However, if the message is displayed and the log files are not generated, this can be a temp directory issue. The resolution is that your UNIX administrator has to disable the NOEXEC option. The installers extract the installation files into the `/tmp` directory, and if NOEXEC is enabled, the execution of binaries will not happen in the directory and the installation fails. Re-run the installer after the configuration is changed. For detailed information, see the support note at MOS.

OFSAA Support

Raise a Service Request (SR) in My Oracle Support (MOS) for queries related to the OFSAA applications.

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