Oracle Financial Services Sanctions Pack

Installation and Configuration Guide

Release 8.1.2.0.0

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ORACLE
Financial Services

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OFS Sanctions Installation and Configuration Guide

Document Control

Table 1: Document Control

Version Number	Revision Date	Change Log
8.1.2.0.0	July 2024	Updated step 3 in the Steps for Multiple Deployments section.
8.1.2.0.0	July 2022	Added step 3 in Post Installation Steps section.

Contents

1 About OFSAA and OFSAA Application Packs

This chapter includes the following topics:

1.1 About Oracle Financial Services Analytical Applications (OFSAA)

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 model 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 domain.

1.2 About Oracle Financial Services Sanctions Application Pack

Oracle Financial Services Sanctions Pack allows for real time Transaction Filtering against sanctioned lists, internal watch lists and other sources. These are key compliance requirements for financial institutions across the globe.

OFS Sanctions Pack includes the following applications:

- **Financial Services Analytical Applications Infrastructure**: This application powers the Oracle Financial Services Analytical Applications family of products to perform the processing, categorizing, selection and manipulation of data and information needed to analyze, understand and report on specific performance, risk, compliance and customer insight issues by providing a strong foundation for the entire family of Oracle Financial Services Analytical Applications across the domains of Risk, Performance, Compliance and Customer Insight.
- **Financial Services Transactions Filtering**: This application helps banking institutions to identify blocklisted, sanctioned, restricted and sanctioned individuals and entities in financial transactions processed through the Solution.
- **Financial Services Customer Screening**: This application enables organizations to effectively and efficiently screen their customers to successfully meet anti-bribery, anticorruption, export control, and other legal regulations as well as all current anti-money laundering and counter-terrorist financing legislation. It supports multiple sanctions lists, commercial watchlists and private lists and combines data standardisation and advanced matching rules to meet compliance

requirements while reducing operational impact of false positives. The OFS Customer Screening is built using Oracle Enterprise Data Quality and AAI. It is fully integrated with FSDM and ECM.

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

1.3 About 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 needed 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.

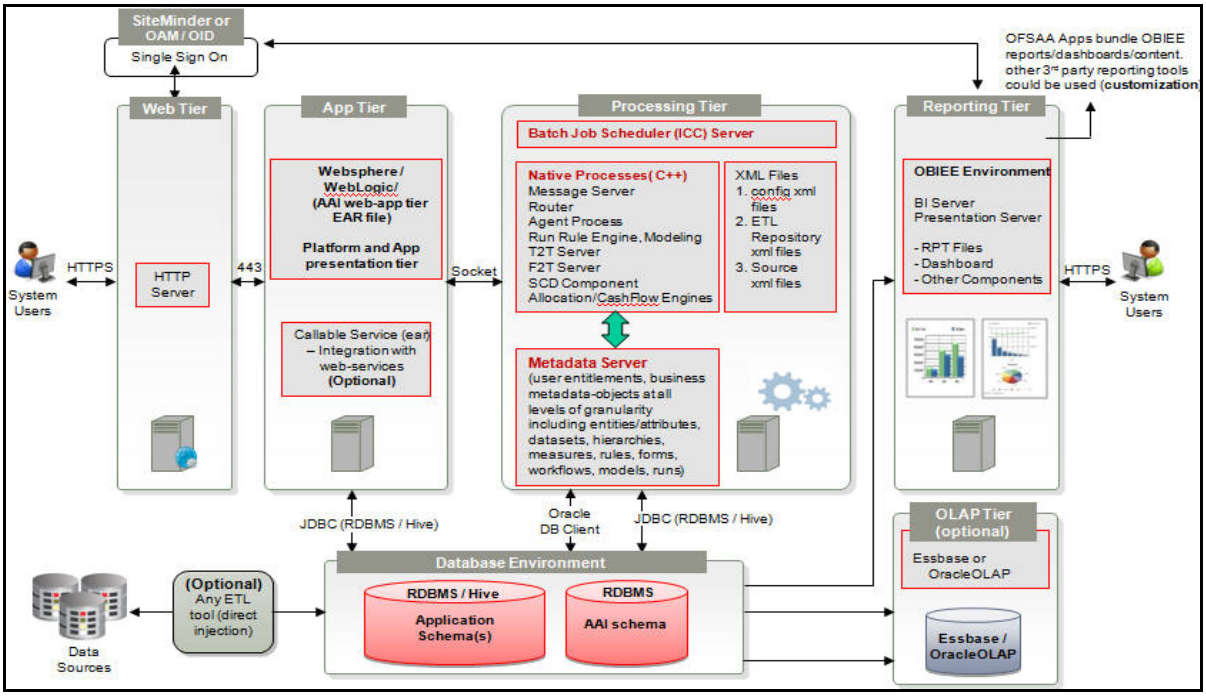
1.3.1 Components of OFSAAI

The OFSAA Infrastructure is comprised of a set of frameworks that operates on and with the Oracle Financial Services Analytical Applications Data Model and form the array of components within the Infrastructure.

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

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

Figure 1: Components of OFSAAI



1.3.2 OFSAA Infrastructure High Availability

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

This release supports Active-Passive model of implementation for OFSAAI components. For more information, refer Configuration for High Availability- Best Practices Guide and High Availability for EDQ.

1.4 About Data Security Configurations

Data Security refers to the protection of data against unauthorized access and data theft. OFSAA ensures Data Security with the following features:

- Multi-Factor Authentication
- Transparent Data Encryption (TDE)
- Data Redaction
- Key Management
- HTTPS
- Logging

For more details on the features in the previous list, see the relevant topics in this guide and the Data Security and Data Privacy sections in the OFS Analytical Applications Infrastructure Administration Guide 8.1.X.0.0.

2 Understanding Sanctions Pack Installation

This chapter includes the following topics:

- Installation Overview
- Deployment Topology
- Hardware and Software Requirements
- Verifying System Environment
- Understanding the Installation Mode

2.1 Installation Overview

Users/ Administrators who wish to install a new OFS Sanctions Pack 8.0.8.0.0 instance should download this installer. Figure 1 shows the order of procedures you will need to follow to install a new Sanctions pack 8.0.8.0.0 instance. The Sanctions pack consists of two applications:

- Oracle Financial Services Transaction Filtering
- Oracle Financial Services Customer Screening

OFS ECM is needed to investigate the Customer Screening cases which are generated after screening and matching. Customer Screening generates alerts, which are then fed into ECM to generate cases.

To install OFS Customer Screening on an EDQ Case Management environment, see the *Customer Screening Administration and Configuration Guide (EDQ Case Management)* in MOS Document 2329509.1.

This release supports Oracle Database 19c in addition to the continued support on Oracle Database 12c. For details about configuring the Oracle Database Release 19c Server and Client for existing installations of OFSAA running Oracle Database Release 12c Server and Client, see the MOS Doc ID: 2699715.1.

> **NOTE** On the 10th of December 2021, Oracle released Security Alert CVE-2021-44228 in response to the disclosure of a new vulnerability affecting Apache Log4J before version 2.15. The application of the **33663417** Mandatory Patch fixes the issue. For details, see the My Oracle Support Doc ID 2827801.1.
>
> Ensure that you reapply the **33663417** Mandatory Patch whenever you install or upgrade the application, or apply an incremental patch.

2.1.1 Prerequisite

Oracle Enterprise Data Quality for Oracle Financial Services Analytical Applications (Oracle EDQ 12.2.1.3.0, 12.2.1.4.0, or 12.2.1.4.2) must be installed. This needs to be installed separately and not on an existing AAI or OFS pack.

OFS Inline Processing Engine must be installed for OFS Transaction Filtering but it is not required for OFS Customer Screening.

Figure 2: Installation Overview

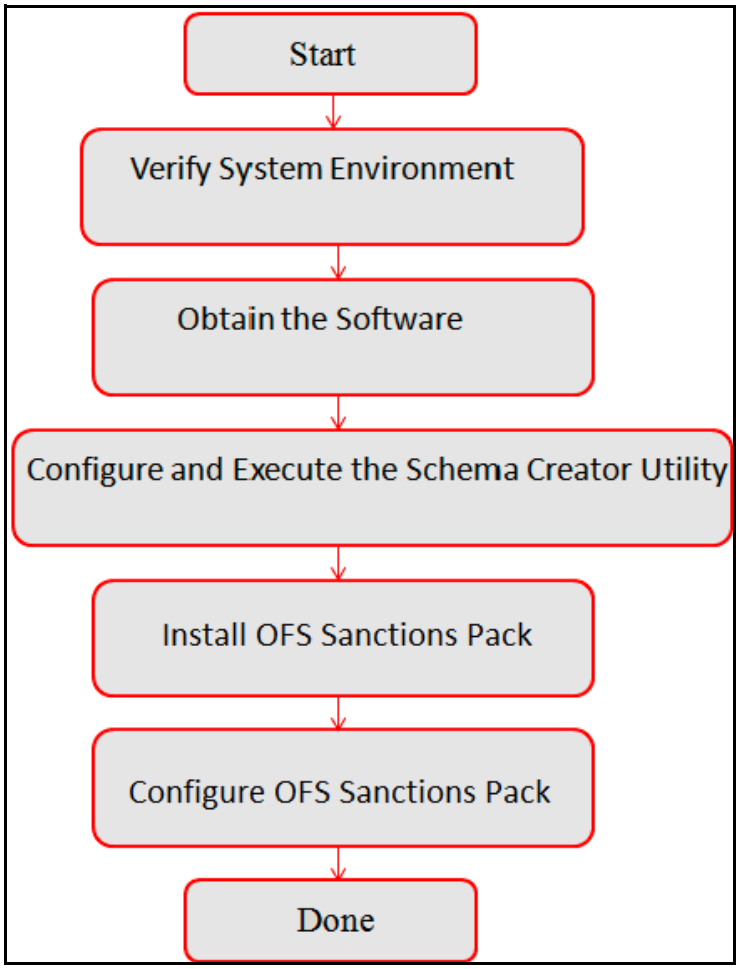


Table 1 provides additional information and links to specific documentation for each task in the flowchart.

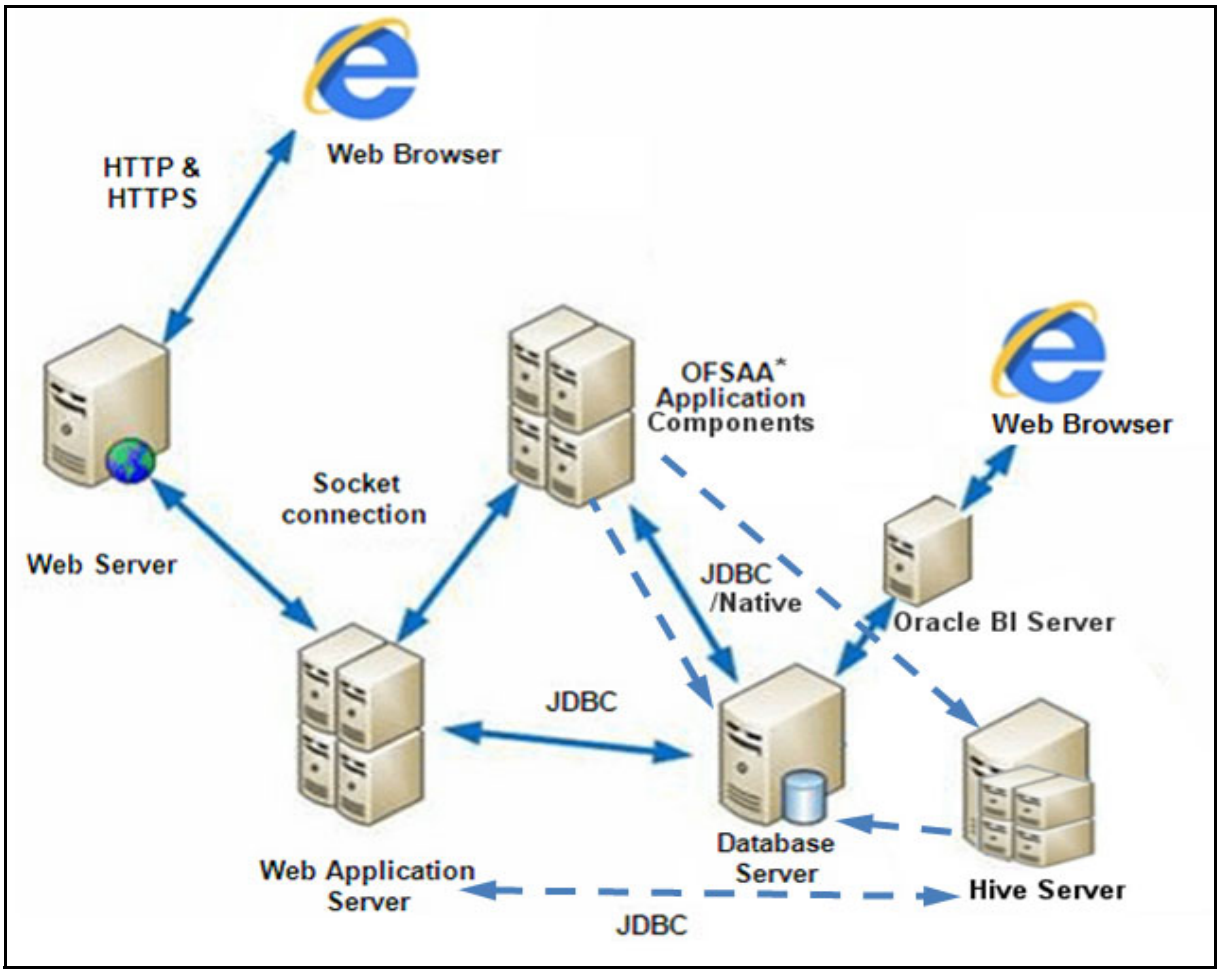
Table 1: OFSAA Application Pack Installation Tasks and Descriptions

Tasks	Details and Documentation
Verify Systems Environment	To verify that your system meets the minimum necessary requirements for installing and hosting the OFSAA Application Pack, see Verifying System Environment.
Configure and Execute the Schema Creator Utility	For instructions on creating the database schemas, see Configuring and Executing the Schema Creator Utility.
Install Sanctions pack	For instructions on Installing OFS Sanctions Pack, see Installing the OFS Sanctions Pack.
Configure Sanctions pack	See Post Installation Configurations.

2.2 Deployment Topology

The following figure depicts the logical architecture implemented for OFS Sanctions Pack.

Figure 3: Deployment Topology



2.3 Hardware and Software Requirements

This section describes the various Operating Systems, Database, Web Server, and Web Application Server versions, and other variant details on which this release of the OFS Sanctions Pack has been qualified.

NOTE

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

This release supports Oracle Database 19c in addition to the continued support on Oracle Database 12c. For details about configuring the Oracle Database Release 19c Server and Client for existing installations of OFSAA running Oracle Database Release 12c Server and Client, see the MOS Doc ID: 2699715.1.

We recommend that there must be dedicated hardware for the Enterprise Data Quality (EDQ) installation. To know about the minimum system requirements for EDQ, see *Installation Prerequisites* section in the EDQ Installation and Configuration Guide.

NOTE The EDQ hardware requirements may vary based on the volume of data used.

The following tables show the minimum hardware and software requirements for installing OFS Sanctions Pack:

2.3.1 Configurations supported for Java 7

Table 2 provides the configuration supported for Java 7

Table 2: Configurations Supported for Java 7

Tasks	Details and Documentation
Shell	KORN Shell (KSH)

Note:
If the operating system is RHEL, install the package lsb_release using one of the following commands by logging in as root user:
`yum install redhat-lsb-core`
`yum install redhat-lsb`	

Java Runtime Environment	
Oracle Linux / Red Hat Enterprise Linux	Oracle Java Runtime Environment (JRE) 6.x/7.1
Oracle Database Server and Client	

Table 2: (Continued)Configurations Supported for Java 7

Oracle Database Server Enterprise Edition 11g Release 2 (11.2.0.3.0 +) - 64 bit RAC/ Non-RAC with/ without partitioning option Oracle Database Server Enterprise Edition 11g Release 2 (11.2.0.4.0 +) - 64 bit RAC/Non-RAC with/ without partitioning option, Advanced Security Option. Oracle Database Server Enterprise Edition 12c Release 1 (12.1.0.1.0 +) - 64 bit RAC/ Non-RAC with/ without partitioning option, Advanced Security Option **Note**: See the Additional Notes section in the 807 Tech Matrix for details. Oracle Client 11g Release 2 (11.2.0.3.0+) - 64 bit Oracle Client 12c Release 1 (12.1.0.2.0) - 64 bit Oracle 11g Release 2 (11.2.0.3+) JDBC driver (Oracle thin driver) Oracle 12c Release 1 (12.1.0.2.0) JDBC driver (Oracle thin driver) Oracle 12c Release 2 (12.2.0.1) JDBC driver (Oracle thin driver) Oracle R Distribution version 3.2.0 (Optional) Oracle R Enterprise (Server) version 1.5 with ORD 3.2.0 and version 1.5.1 with ORD 3.3.0 (Optional)	
Note: Oracle R Enterprise 1.5 and 1.5.1 requires Oracle Database Enterprise Edition / 11.2.0.4/ 2.1.0.1/12.1.0.2/ 12.2.0.1. If you are upgrading the Database Server to Oracle Database 12c Release 1 or 2, see the procedure mentioned in the FAQ - *How do I upgrade to Oracle Database 12c Release 1 or 2, if my previous database versions are Release 11.2.0.2+, 12.1.0.1 or 12.1.0.2?* in FAQs and Error Dictionary	
OLAP	
Oracle Hyperion Essbase	V 11.1.2.1+ (Server and Client) with Oracle 11g Database V 11.1.2.3+ (Server and Client) with Oracle 12c Database
Oracle OLAP	V 11.2.0.3+ with Oracle 11g Database V 12.1.0.1+ with Oracle 12c Database
Note: Oracle Hyperion Essbase is required only if you are using the OLAP feature of OFSAAI.	
Web Server/ Web Application Server	
Note: OFSAA Infrastructure web component deployment on Oracle WebLogic Server with Oracle JRockit is not supported.	
Desktop Requirements	
Operating System	MS Windows 7/ Windows 8/ Windows 8.1
Browser	Microsoft Internet Browser 11.x Chrome 63.x+ FireFox 52.x+ Turn off Pop-up blocker settings. For more information, refer Internet Explorer Settings
Office Tools	MS Office 2010/2013/ 2016 Adobe Acrobat Reader 8 or above

Table 2: (Continued)Configurations Supported for Java 7

Screen Resolution	1024*768 or 1280*1024
Other Software	
Directory Services	OFSAAI is qualified on both OPEN LDAP 2.2.29+ and Oracle Internet Directory v 11.1.1.3.0. However, it can be integrated with other directory services software like MS Active Directory.
Note: Configuration of Directory services software for OFSAAI installation is optional. For more information on configuration, see *LDAP Configuration* section in OFSAAI Administration guide. Open LDAP needs to be installed on MS Windows Server machine only.	

NOTE The tested versions in QA of JAVA are 11.0.11, 11.0.17, and 11.0.19.

2.3.2 Configurations supported for Java 8

Table 3 provides the configurations supported for Java 8.

Table 3: Configurations Supported for Java 8

Operating System	
Oracle Linux / Red Hat Enterprise Linux (x86-64)	• Oracle Linux Server release 6.1 and 7.2 - 64 bit **Note**: Same versions of RHEL is supported
Shell	• KORN Shell (KSH)

Note:
• If the operating system is RHEL, install the package lsb_release using one of the following commands by logging in as root user:
  • `yum install redhat-lsb-core`
  • `yum install redhat-lsb`	

Java Runtime Environment	
Oracle Linux / Red Hat Enterprise Linux	• Oracle Java Runtime Environment (JRE) 6.x/7.1 - 64 bit

Table 3: (Continued)Configurations Supported for Java 8

• Oracle Database Server Enterprise Edition 11g Release 2 (11.2.0.3.0 +) - 64 bit RAC/ Non-RAC with/ without partitioning option • Oracle Database Server Enterprise Edition 12c Release 1 (12.1.0.1.0 +)- 64 bit RAC/ Non-RAC with/ without partitioning option • Oracle Client 11g Release 2 (11.2.0.3.0+) - 64 bit • Oracle Client 12c Release 1 (12.1.0.1.0+) - 64 bit • Oracle 11g Release 2 (11.2.0.3+) JDBC driver (Oracle thin driver) • Oracle 12c Release 1 (12.1.0.1+) JDBC driver (Oracle thin driver) • Oracle 12c Release 2 (12.2.0.1) JDBC driver (Oracle thin driver) • Oracle Distribution of R version 2.15.1, 2.15.2 or 2.15.3.(Optional) • Oracle R Enterprise (Server) version 1.4. (Optional)	
Ensure that the following patches are applied: • Oracle R Enterprise 1.5 and 1.5.1 requires Oracle Database Enterprise Edition / 11.2.0.4/ 12.1.0.1/ 12.1.0.2/12.2.0.1.	
Oracle Hyperion Essbase	• V 11.1.2.1+ (Server and Client) with Oracle 11g Database • V 11.1.2.3+ (Server and Client) with Oracle 12c Database
Oracle OLAP	• V 11.2.0.3+ with Oracle 11g Database • V 12.1.0.1+ with Oracle 12c Database
Oracle Hyperion Essbase & Oracle OLAP is required only if you are using the OLAP feature of OFSAAI. For Oracle OLAP, ensure that you have configured the Oracle Database server with OLAP option.	
• OFSAA Infrastructure web component deployment on Oracle WebLogic Server with Oracle JRockit is not supported. • For deployment on Oracle WebLogic Server 12.1.3.0.0 (64 bit) with Java 8, download and install patch 18729264 from http://support.oracle.com/.	
Operating System	MS Windows 7/ Windows 8/ Windows 8.1
Browser	• MS Internet Explorer 11 • Oracle Java plug-in 1.7.0+ (64- bit) / Oracle Java plug-in 1.8.0+ (64- bit) • Turn on Pop-up blocker settings. For more information, refer Internet Explorer Settings
Office Tools	• MS Office 2010/2013/ 2016 • Adobe Acrobat Reader 8 or above
Screen Resolution	1024*768 or 1280*1024
Other Software	

Table 3: (Continued)Configurations Supported for Java 8

Directory Services	OFSAAI is qualified on both OPEN LDAP 2.2.29+ and Oracle Internet Directory v 11.1.1.3.0. However, it can be integrated with other directory services software like MS Active Directory.
• Configuration of Directory services software for OFSAAI installation is optional. For more information on configuration, see Infrastructure LDAP Configuration. • Open LDAP needs to be installed on MS Windows Server machine only.	

NOTE The tested versions in QA of JAVA are 11.0.11, 11.0.17, and 11.0.19.

OFS Sanctions Pack recommends the following software combinations for deployment:

Table 4 provides the details of recommended software combinations.

Table 4: Recommended Software Combinations

Operating System	Database	Web Application Server	Web Server
Oracle Linux 6.x/ 7.1	Oracle Database	Oracle WebLogic Server	Oracle HTTP Server

2.4 Verifying System Environment

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

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

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

2.5 Understanding the Installation Mode

The following mode of installation is available for the OFS Sanctions Pack.

- SILENT Mode

2.5.1 SILENT Mode

This mode mandates updating the installation configuration files with required details and performs installation in a "Silent" non user interactive format.

3 Installing Sanctions Pack 8.0.8 with BD Application Pack 8.1.2 & ECM 8.1.2

This enables the client to install the Sanctions Pack 8.0.8.0.0 with Behavior Detection Application Pack 8.1.2, and ECM 8.1.2.

To install Sanctions Pack 8.0.8.0.0 with Behavior Detection Application Pack 8.1.2 and ECM 8.1.2, follow these steps:

1. Install the Sanction Pack 8.0.8.0.0 and 8.0.8.2.0 ML on Java8. Complete the post installation configuration and deployment.
2. Take a backup of `FIC_HOME` (complete file system including ftpshare).
3. Take a backup of Atomic and Config Schema.
4. Execute below queries in atomic schema:

   Create table `KDD_BUS_DMN_TEMP` as (select `* from KDD_BUS_DMN`);

   ```
   UPDATE KDD_BUS_DMN SET TF_BUS_DMN_NM=NULL;
   ```

   commit;

   ```
   ALTER TABLE FCC_BATCH_DATAORIGIN RENAME TO
   FCC_BATCH_DATAORIGIN_TEMP;

   ALTER TABLE FCC_BATCH_DETAIL RENAME TO FCC_BATCH_DETAIL_TEMP;

   ALTER TABLE FCC_BATCH_RUN RENAME TO FCC_BATCH_RUN_TEMP;

   ALTER TABLE FCC_PROCESSING_GROUP RENAME TO
   FCC_PROCESSING_GROUP_TEMP;
   ```

5. Install OFS BD8.1.2.0.0, to install refer OFS BD Installation Guide.

Refer installation logs, if installation is success proceed further by following steps:

1. Take a backup of `FIC_HOME` (complete file system including `ftpshare`)
2. Take a backup of Atomic and Config Schema.

   Note:

   Apply the following steps only when planned for Regression after BD 812 Installation or else it is not required, if ECM 812 is going to be installed on top of BD812 without any regression.

3. `ALTER TABLE KDD_BUS_DMN` add `TF_BUS_DMN_NM varchar2(20 CHAR);`
4. Copy data from table `KDD_BUS_DMN_TEMP` to table `KDD_BUS_DMN` against column `TF_BUS_DMN_NM`.

4 Preparing for Installation

This chapter provides necessary information to review before installing the Oracle Financial Services Sanctions Pack v8.1.2.0. This chapter includes the following topics:

4.1 Installer and Installation Prerequisites

Table 5 mentions the list of prerequisites required before beginning the installation for OFS Sanctions pack. The Installer/ Environment Check Utility notifies you if any requirements are not met.

Table 5: Prerequisite Information

Category	Sub-Category	Expected Value
Environment Settings	Java Settings	• PATH in.profile to be set to include the Java Runtime Environment absolute path. The path should include java version (java 7 or java 8) based on the configuration. • Ensure the absolute path to JRE/bin is set at the beginning of PATH variable. • For example, PATH=/usr/java/jre1.7/bin:$ORACLE_HOME/bin:$PATH Ensure no SYMBOLIC links to JAVA installation is being set in the PATH variable.
	Enable unlimited cryptographic policy for Java	• For more information, see the section *Enabling Unlimited Cryptographic Policy* from the OFS Analytical Applications Infrastructure Administration Guide.
	Oracle Database Settings	**Oracle Database Server** • TNS_ADMIN to be set in.profile pointing to appropriate tnsnames.ora file • Enable Transparent Data Encryption (TDE) and/ or Data Redaction. **Note**: For more information, see Configuring Transparent Data Encryption (TDE) and, Data Redaction in OFSAA.
		OFSAA Processing Server • ORACLE_HOME must be set in .profile file pointing to appropriate Oracle DB Client installation. • PATH in .profile must be set to include appropriate $ORACLE_HOME/bin path. • Ensure that an entry (with SID/ SERVICE NAME) is added in the tnsnames.ora file.
	Oracle Essbase Settings	• ARBORPATH, ESSBASEPATH, HYPERION_HOME to be set in the.profile pointing to an appropriate Oracle Essbase Client installation. These settings are required only if you want to use Oracle Hyperion Essbase OLAP features.

Table 5: (Continued)Prerequisite Information

Category	Sub-Category	Expected Value
OS/ File System Settings	File Descriptor Settings	• Greater than 15000 **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	• 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	• User to have 755 permission on the.profile file.
	Installation Directory	• A directory where the product files will be installed. • Set 755 permission on this directory. • This directory needs to be set as FIC_HOME.
	Staging Area/ Metadata Repository	• A directory to hold the application metadata artifacts and additionally act as staging area for flat files. • The directory should exist on the same system as the OFSAA Installation. This directory can be configured on different mount or under a different user profile. However, the owner of the installation directory mentioned above should have RWX permissions on this folder. • Set 775 permission on this directory. **Note:** This directory is also referred as FTPSHARE folder.
	Temporary Directory	Default temporary directory where installation files are stored for a short period of time to support faster installation. • For installation on UNIX OS, your UNIX administrator must give you the required read-write permissions for the /tmp directory and disable the NOEXEC option • Configure adequate space on the /tmp directory. It is recommended that you allocate more than 10 GB of space. **Note**: If NOEXEC 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.
	Download Directory	• A directory where the product installer files will be downloaded/ copied. • Set 755 permission on this directory.

Table 5: (Continued)Prerequisite Information

Category	Sub-Category	Expected Value
Database Settings	Database Instance Settings	• NLS_CHARACTERSET to be AL32UTF8 • NLS_LENGTH_SEMANTICS to be BYTE • OPEN CURSORS limit to be greater than 1000
Web Application Server	WebLogic	• Web Application Server should be installed and profile / domain created. • You will be prompted to enter the WebLogic Domain path during OFSAAI installation. • Note: Refer Configuring Web Server for WebLogic Domain Creation.
Web Server	Apache HTTP Server/ Oracle HTTP Server/ IBM HTTP Server .	This is an optional requirement. HTTP Server Installation to be present. You will be required to enter the Web Server IP/Hostname and Port details during installation. **Note:** Refer Configuring Web Server for Web Server installation.
Others	Oracle R/ Oracle R Enterprise	• This is an optional requirement. • Refer section for more details.
OFSAAI	One-off patch	Install the mandatory one-off patch for **8.0.7.0.2 (29024022)**. This is applicable for Standalone and Upgrade installations from http://support.oracle.com/.

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

4.2 Obtaining Software

The 8.1.2.0 release of OFS Sanctions Applications Pack can be downloaded by logging in to the Oracle Software Delivery Cloud (https://edelivery.oracle.com) with a valid Oracle account.

4.3 Common Installation Tasks

The following are the common pre-installation activities that you need to carry out before installing the OFS Sanctions pack.

This section includes the following topics:

- Identifying the Installation Directory, Download and Metadata Repository Directories
- Downloading and Copying the OFS Sanctions Pack Installer
- Extracting the Software
- Setting Up the Web Application Server

4.3.1 Identifying the Installation Directory, Download and Metadata Repository Directories

To install any of the OFSAA Application Packs, the following folders/ directories are required to be created.

- **OFSAA Download Directory (Optional)**: Create a download directory and copy the OFSAA Application Pack Installer File (Archive). This is the directory where the downloaded installer/ patches can be copied.
- **OFSAA Installation Directory (Mandatory)**: Create an installation directory. This is the directory where the installer installs or copies the product files.
- **OFSAA Staging/Metadata Directory (Mandatory)**: Create a Staging/ Metadata Repository Directory. This is the directory where you should copy data loading files, save data extracts and so on. Additionally, this folder also maintains the OFSAA metadata artifacts. This is commonly referred as "FTPSHARE".

> **NOTE** Ensure the user permission is set to 755 on the installation directory.
>
> Ensure the user permission is set to 777 on the Staging Directory.
>
> Ensure the OFSAA staging directory is not set to the same path as the OFSAA installation directory and is not a sub-folder inside the OFSAA installation directory.

4.3.2 Downloading and Copying the OFS Sanctions Pack Installer

To download and copy the OFS Sanctions Pack Installer, follow these steps:

- The 8.1.2.0 release of OFS Sanctions Applications Pack can be downloaded by logging in to the Oracle Software Delivery Cloud (https://edelivery.oracle.com) with a valid Oracle account.
- Copy the downloaded the installer archive to the Download Directory (in Binary Mode) on the setup identified for OFS SANC installation.

4.3.3 Extracting the Software

> **NOTE** You must be logged in to the UNIX operating system as a non-root user.

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 the unzip utility to extract the contents of the downloaded archive, skip to the next step.
2. Uncompress the unzip installer file using the command:

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

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

3. Give EXECUTE permission to the file using the command:

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

   For example, `chmod 751 unzip_sparc`

4. Extract the contents of the Oracle Financial Services Sanctions Pack 8.0.8.0.0 in Download Directory installer archive file using the following command:

   ```
   unzip OFS_SANC_8.1.2.0.0_LINUX
   ```

5. Give the following permission to the installer folder. Navigate to the Download Directory and execute the command:

   ```
   chmod -R 750 OFS_SANC_PACK
   ```

4.3.4 Setting Up the Web Application Server

For setting up the environment based on your selected Web Application Server, refer to Configuring Web Server for more information.

5 Installing the Sanctions Pack

This chapter describes the steps to be followed to install the OFS Sanctions Applications pack.

Release 8.1.2.0 of OFS Sanctions is not fully backward compatible with earlier versions of OFSAA applications. You can either upgrade all of your applications from existing 8.0.x versions to 8.1.2.0 version or choose to upgrade only selective application packs to v8.1.2.0. In the case of the latter, you must also apply the forthcoming compatibility patches for the required application packs, so that the remaining application-packs can continue to be at their pre-8.1.2.0 versions.

> **NOTE** If you are installing an Applications Pack on an environment, where another Applications Pack is already installed, you may sometimes get a warning message such as Object Already Exists. This message can be ignored.
>
> Ensure to clear the application cache prior to the deployment of Applications Pack Web Archive. For more information, see the Clearing Application Cache section.
>
> Sanctions pack can be installed on the same infodom as BD, ECM and CRR packs.

This chapter includes the following sections:

- About Schema Creator Utility
- Configuring and Executing the Schema Creator Utility
- Installing the OFS Sanctions Pack

5.1 About Schema Creator Utility

Creating database users/schemas is one of the primary steps in the complete OFS Sanctions installation. This release of OFSAA provides a utility to quickly get started with the OFSAA 8.0.8.0.0 installation by allowing easier and faster creation of database User(s)/ Schema(s), assign the necessary GRANT(s), and so on. Additionally, it also creates the required entities in the schemas and so on.

The schema creator utility must be configured and executed before installation of any OFSAA Application Pack.

This section includes the following topics:

- Configuring Schema Creator Utility for RDBMS Installation
- Configuring Schema Creator Utility for HDFS Schema
- Selecting Execution Modes in Schema Creator Utility
- Selecting Execution Modes in Schema Creator Utility
- Selecting Execution Options in Schema Creator Utility

5.1.1 Configuring Schema Creator Utility for RDBMS Installation

Pack specific schema details need to be filled in the OFS_SANC_SCHEMA_IN.xml file before executing the Schema Creator Utility. For more information on the xml file, refer About Schema Creator Utility About Schema Creator Utility.

The types of schemas that can be configured are:

- **CONFIG** :- This schema holds the entities and other objects required for OFSAA setup configuration information.

> **NOTE** There can be only one CONFIG schema per OFSAA instance.

- **ATOMIC**: This schema holds the data model entities. One ATOMIC schema is attached to one Information Domain.

> **NOTE** There can be multiple ATOMIC schemas per OFSAA Instance.

5.1.2 Configuring Schema Creator Utility for HDFS Schema

The following are the types of schemas that can be configured:

- **CONFIG**: This schema holds the entities and other objects required for OFSAA setup configuration information.

> **NOTE** There can be only one CONFIG schema per OFSAA instance. This schema is created only in RDBMS.

- **METADOM**: This schema holds the data model entities. One METADOM schema is attached to one Information Domain.

> **NOTE** There can be multiple DATADOM schemas per OFSAA Instance. This schema is created only in RDBMS. It has only platform entities that hold the metadata details. However, it does not hold the data model entities.

- **DATADOM**: This schema holds data model entities. One DATADOM schema is attached to one Information Domain.

> **NOTE** There can be multiple DATADOM schemas per OFSAA Instance.

5.1.3 Selecting Execution Modes in Schema Creator Utility

Schema creator utility supports the following mode of execution:

- **Offline Mode**: In this mode, the utility generates an SQL script with all the required DDLs for User, Entities and GRANTS. This script must be executed by the DBA on the appropriate database identified for OFSAA usage.

> **NOTE** For running the SQL script generated in offline mode, the script should reside in the same directory where the 'SQLScripts' directory is available.

NOTE

Connect as any database user.

Reconfigure the OFS_SANC_SCHEMA_IN.xml and execute the utility. For more information on reconfiguring these files, see Configuring OFS_SANC_SCHEMA_IN.xml file.

To execute the utility in Offline mode, you must connect as a 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

If there are any errors during the SQL script execution, reconfigure the OFS_SANC_SCHEMA_IN.xml and execute the utility. This regenerates the scripts with corrected information.

For more information, see Configuring OFS_SANC_SCHEMA_IN.xml file.

NOTE:

Do not modify the OFS_SANC_SCHEMA_OUT.XML file generated after the execution of this utility

If there are any errors during the SQL script execution, reconfigure the `OFS_SANC_SCHEMA_IN.xml` file and execute the utility. This regenerates the scripts with corrected information. See Configuring OFS_SANC_SCHEMA_IN.xml file.

Do not keep any backup files of xml's in the download directory.

5.1.4 Selecting Execution Options in Schema Creator Utility

Depending on the option selected to run the OFSAA Applications Pack installer, you must select the appropriate schema creator utility execution option. To run the OFSAA Applications Pack installer in Silent mode, it is mandatory to execute the schema creator utility with `-s` option.

5.2 Configuring and Executing the Schema Creator Utility

This section includes the following topics:

- Prerequisites
- Configuring the Schema Creator Utility
- Executing the Schema Creator Utility

5.2.1 Prerequisites

The following prerequisites must be satisfied before configuring the Schema Creator Utility:

- Oracle User ID/Password with SYSDBA privileges.
- JDBC Connection URL for RAC/Non RAC database.
- HOSTNAME/IP of the server on which OFSAA is getting installed.
- For enabling Transparent Data Encryption (TDE) in your OFSAA instance during installation, perform the steps explained in Configuring Transparent Data Encryption (TDE) and, Data Redaction in OFSAA.

5.2.2 Configuring the Schema Creator Utility

This section explains the steps to configure the Schema Creator Utility.

To configure the Schema Creator Utility, follow these steps:

1. Log in to the system as non-root user.
2. Navigate to the following path: `OFS_SANC_PACK/schema_creator/conf` folder.
3. Edit the `OFS_SANC_SCHEMA_IN.xml` file in a text editor.
4. Configure the elements as described in Configuring OFS_SANC_SCHEMA_IN.xml file. For example, to create schemas only in RDBMS, populate the `OFS_SANC_SCHEMA_IN.xml` file.
5. Save the `OFS_SANC_SCHEMA_IN.xml` file.

> **NOTE** On successful execution of the utility, the entered passwords in the OFS_SANC_SCHEMA_IN.xml file is nullified.

5.2.3 Executing the Schema Creator Utility

You can execute the schema creator utility in Offline Mode. This section includes the following topics:

- Executing the Schema Creator Utility in Offline Mode
- Executing the Schema Creator Utility with -s option

> **NOTE** If you intend to use Oracle OLAP feature, execute the following grant on all ATOMIC schema(s) `grant olap_user to &database_username.`

5.2.3.1 Executing the Schema Creator Utility in Offline Mode

In Offline Mode, the Schema Creator Utility creates an output in SQL file format. This script has to be executed manually by logging as database user with SYSDBA privileges. The SQL file contains the creation of Schemas, Schema Objects, Tablespaces, Grants, and Roles.

Prerequisites:

To execute the utility in Offline mode, you need to connect as any 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 non-root user.
2. Navigate to the `OFS_SANC_PACK/schema_creator/bin` folder.
3. Execute the osc.sh file using the following command:

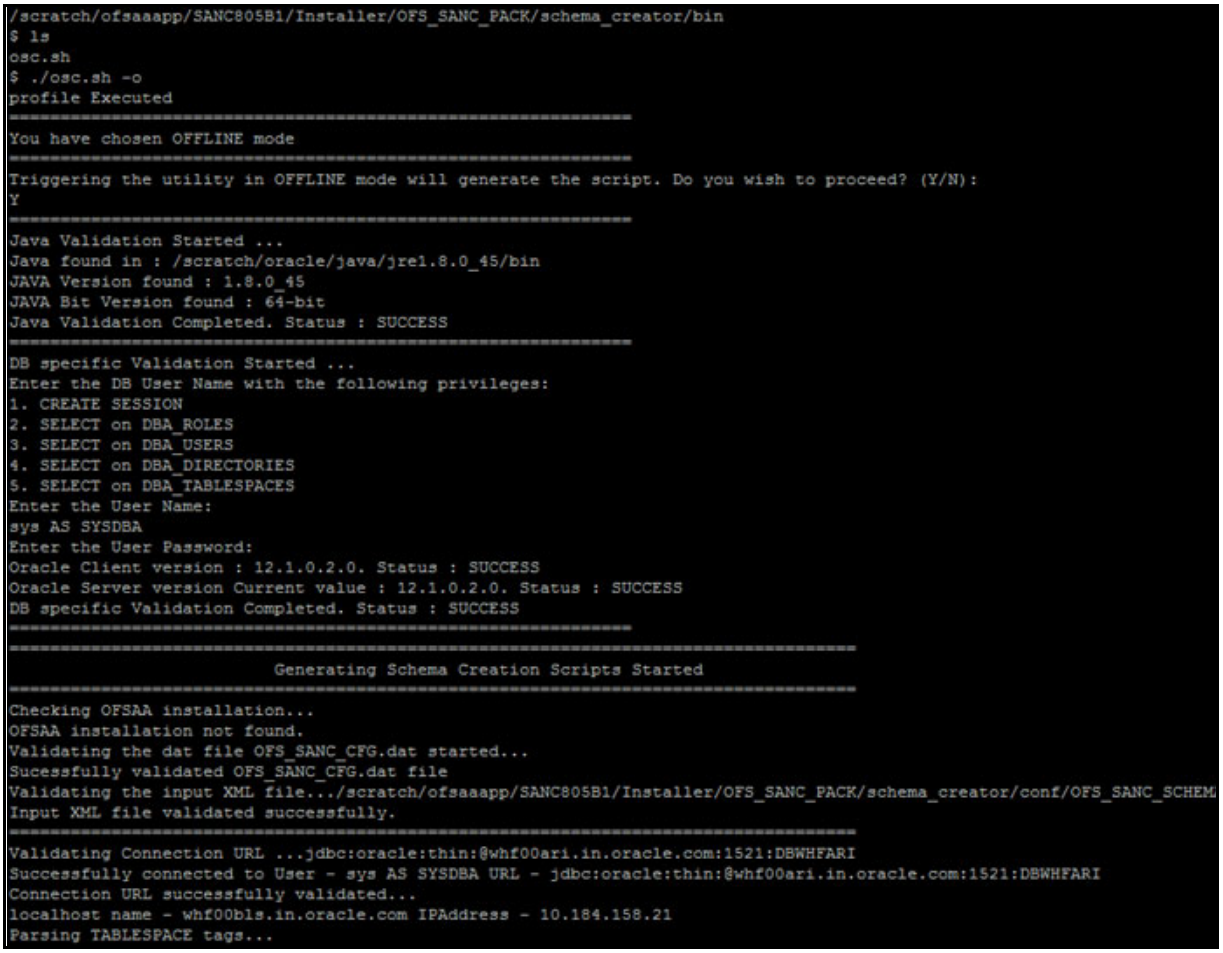
   `./osc.sh -o`
4. The following message is displayed:

   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).
5. Enter Y /y to generate the script.

   or

   Enter N/n to quit the schema creation.
6. Enter the DB Username with `SELECT` privileges.
7. Enter the User Password.

Figure 4: Schema Creation - Offline Mode



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

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

9. Enter Y/y to start the script generation.

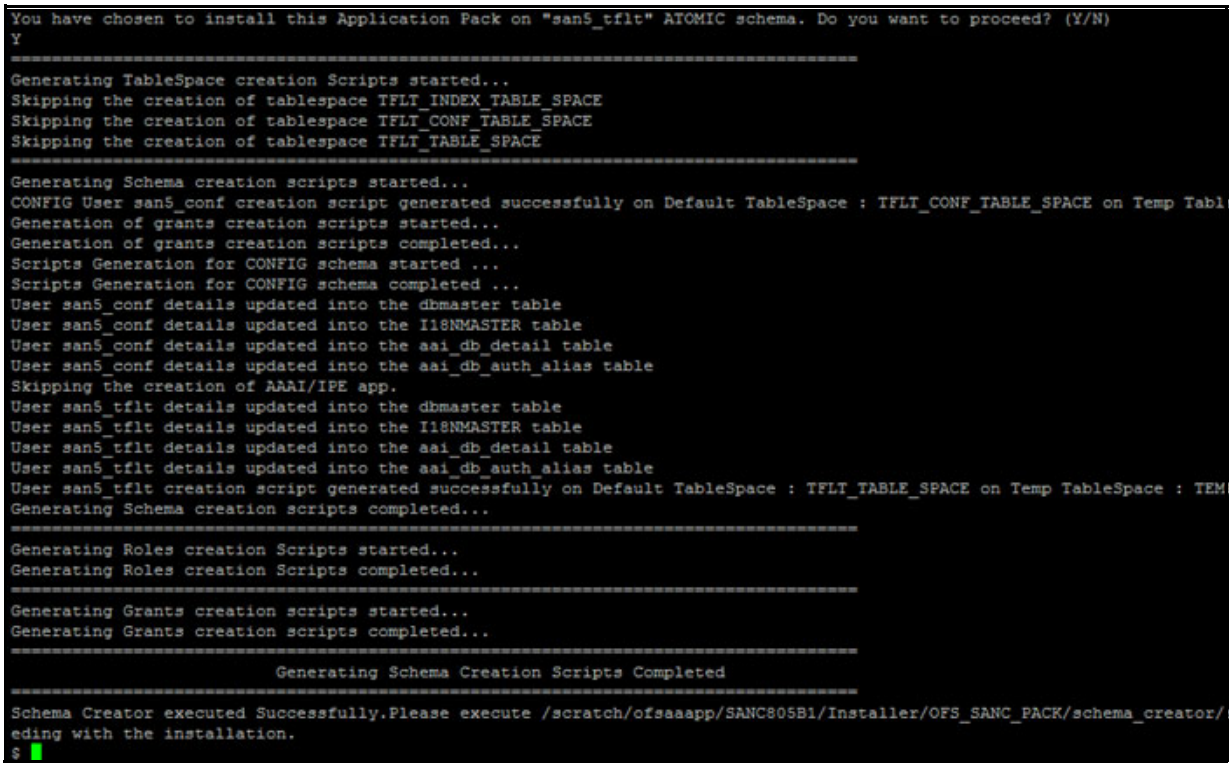
   Or

   Enter N/n if you want to quit the script generation.

   The following message is displayed.

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

Figure 5: Schema Creation - Offline Mode



10. Enter Y/y to start the script generation.

    Or

    Enter N/n if you want to quit the script generation.

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

    Schema Creator executed successfully. Please execute /scratch/ofsaaapp/OFS_SANC_PACK/schema_creator/sysdba_output_scripts.sql before proceeding with the installation.

11. Navigate to the directory `OFS_SANC_PACK/schema_creator`.
12. Log in to SQLPLUS with a user having SYSDBA Privileges.
13. Connect to the Oracle DB Server on which the OFSAA Application Pack installation is to be performed and 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` folder to a remote server and execute `sysdba_output_scripts.sql file`.

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

```
Enter user-name: sys/[redacted] as sysdba

Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing options

SQL> @sysdba_output_scripts.sql

Warning: Package Body created with compilation errors.

Disconnected from Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing options
$
```

Once the above file gets executed, a warning is displayed as shown in the above screen.

14. Run the below script in config schema:
    a. Navigate to the `<OFS_SANC_PACK>/schema_creator/SQLScripts/oracle` folder.
    b. Connect to the config schema through sqlplus
    c. Execute the `@compile_objects.sql` command.
    d. Commit the change.
15. Connect to the HDFS repository using a HUE Browser. Log in to the Hue Browser with System Administrator privileges. Execute the script mentioned under hive_output_scripts.hql (omitting the slash ('/')) in the HIVE Query Editor. For example, the query can be as follows:

    CREATE SCHEMA IF NOT EXIST <<HIVE SCHEMA NAME>>

> **NOTE** See log sysdba_output_scripts.log file for execution status. In case of any errors, contact Oracle Support. If there are no errors in the execution, this log file is empty.
>
> This step is optional and applicable only for HDFS installation.

5.2.3.2 Executing the Schema Creator Utility with -s option

If you intend to run the OFS Sanctions Pack Installer in SILENT mode, it is mandatory to execute the schema creator utility with `-s` option.

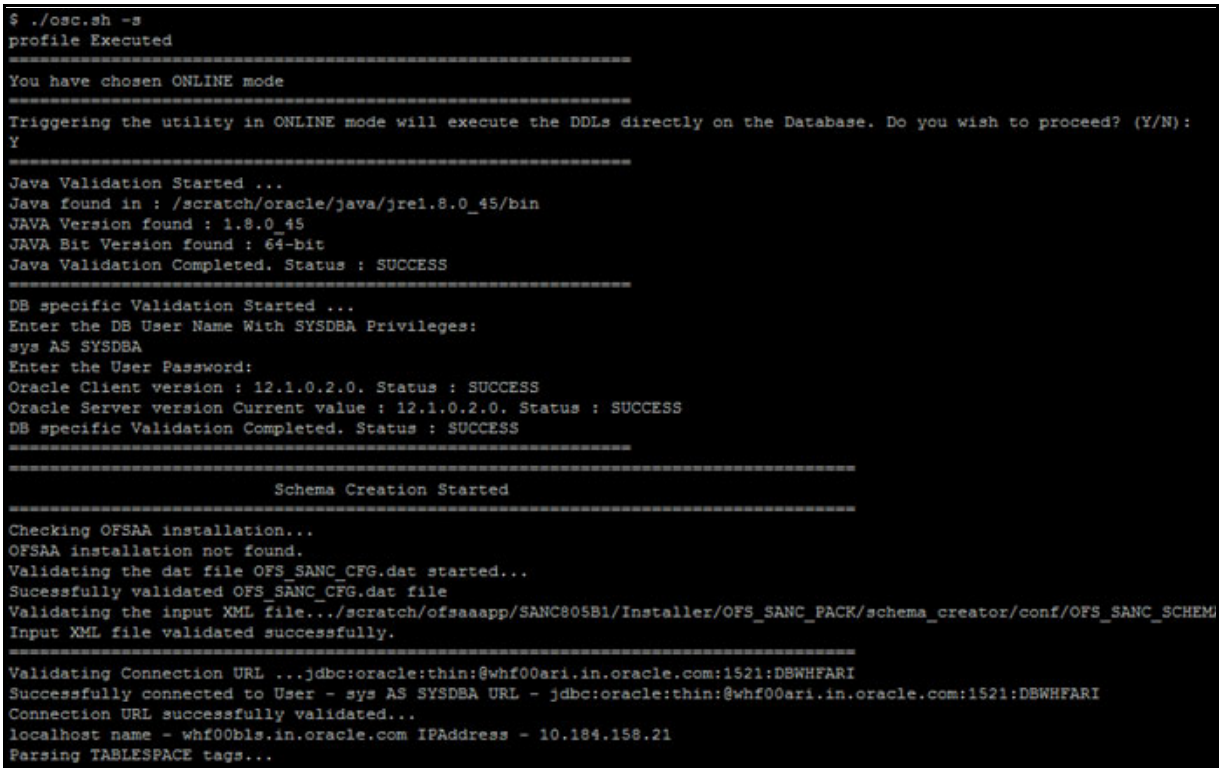
To execute the utility with `-s` option, follow these steps:

1. Edit the file `OFS_SANC_PACK/schema_creator/conf/OFS_SANC_SCHEMA_IN.xml` in text editor.
2. Execute the utility with `-s` option.

   For Example `./osc.sh -s`.

> **NOTE** To execute the utility in OFFLINE mode with SILENT option, enter the following command
>
> ./osc.sh -o -s.

Figure 6: Schema Creator Utility with -s option



5.2.4 Verifying the Schema Creator Log Files

You can verify the log files for any errors faced during the schema creation process in the following location: `OFS_SANC_PACK/schema_creator/logs`.

> **NOTE** Do not clean up the OFS_SANC_SCHEMA_OUTPUT.XML file post-installation as it would be required in future patch installations and upgrades.
>
> On successful execution of the utility, the entered passwords in the OFS_SANC_SCHEMA_OUTPUT.XML file are nullified.

5.3 Installing the OFS Sanctions Pack

Follow the instructions in this section to install the OFS Sanctions Pack.

NOTE

- While installing the 8.1.2 Sanctions pack on an existing 8.1.2 BD or 8.1.2 ECM pack, then you must perform a backup of the `AAI_AOM_APP_COMP_ATTR_MAPPING` table in the CONFIG schema after installing ECM and before installing Sanctions. After installing Sanctions, repopulate the table with the ECM-specific entries which will be deleted by the 8.1.2 Sanctions installer.
- The DMT migration utility is executed during BD installation, to migrate the DMT metadata (PLC/Data Source/Data Mapping/Data File Mapping) to be persisted in tables instead of XML. You may be required to re-run DMT migration utility in some scenarios. To identify whether to run the utility, how to run and how to handle migration issues, see OFSAA DMT Metadata Migration Guide.
- If you have enabled the Inline Processing Engine (IPE) during the installation, see Configuration for OFS Customer Screening and OFS Transaction Filtering.

5.3.1 SILENT Mode Installation

In the SILENT Mode Installation you must configure the product xml files and follow the instructions in command prompt.

To install OFS Sanctions in SILENT mode, follow these steps:

1. Log in to the system as 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.
4. Navigate to `OFS_SANC_PACK` folder.
5. Edit the `OFS_SANC_PACK/conf/OFS_SANC_PACK.xml` to enable the product licenses.

   NOTE See Configuring OFS_SANC_PACK.xml file section for details on configuring this XML file.

6. Edit the `OFS_SANC_PACK/schema_creator/conf/OFS_SANC_SCHEMA_IN.xml` file to set the appropriate attribute values.
7. Edit the `OFS_SANC_PACK/OFS_AAI/conf/OFSAAI_InstallConfig.xml` file to set the appropriate infrastructure installation attribute values.

   NOTE See Configuring OFS_SANC_PACK.xml file section for details on configuring this XML file.

> **NOTE** Skip this step if you are installing OFS Sanctions Pack 8.1.2.0 on OFS Sanctions Applications Pack 8.0.8.0.0.

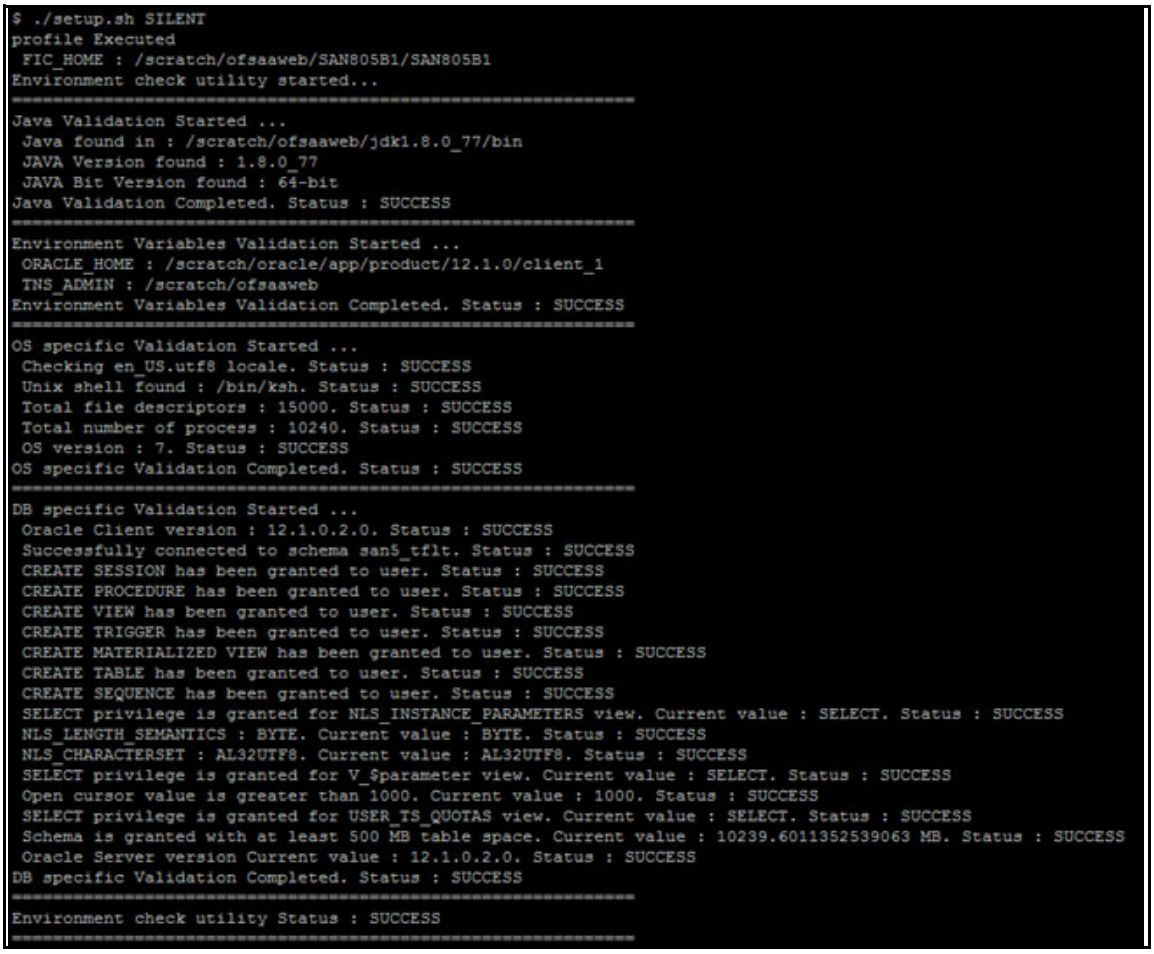
8. Go to <##INSTALLER KIT##>/OFS_SANC_PACK/OFS_TFLT/conf and open default.properties.
9. Provide the infodom name to the parameter SWIFTINFO.
10. Go to <##INSTALLER KIT##>/OFS_SANC_PACK/OFS_CS/conf and open default.properties
11. Provide the infodom name to the parameter SWIFTINFO.
12. Execute the schema creator utility.

> **NOTE**
> - This step is mandatory and should be executed before every OFSAA Application Pack installation.
> - Ensure to execute with `-s` option in Offline Mode.
>   - For more information, refer Configuring OFS_-SANC_SCHEMA_IN.xml file.
>   - If you are installing OFS Sanctions Pack 8.1.2.0 on a pack on pack environment then following message is displayed during execution of schema creator Utility:
>   - The following Application Packs are already installed in this OFSAA setup: bcr_fccm- SANC- CRINF- "OFS_SANCTIONS_PACK"

13. In the console, navigate to the `OFS_SANC_PACK/OFS_SANC/bin` path, enter the following command to execute the application pack installer with SILENT option.

```
./setup.sh SILENT
```

Figure 7: Silent Mode Installation



14. Enter the Infrastructure Application/Database component FTP/SFTP password value, when prompted at the command prompt.

Figure 8: Silent Mode Installation

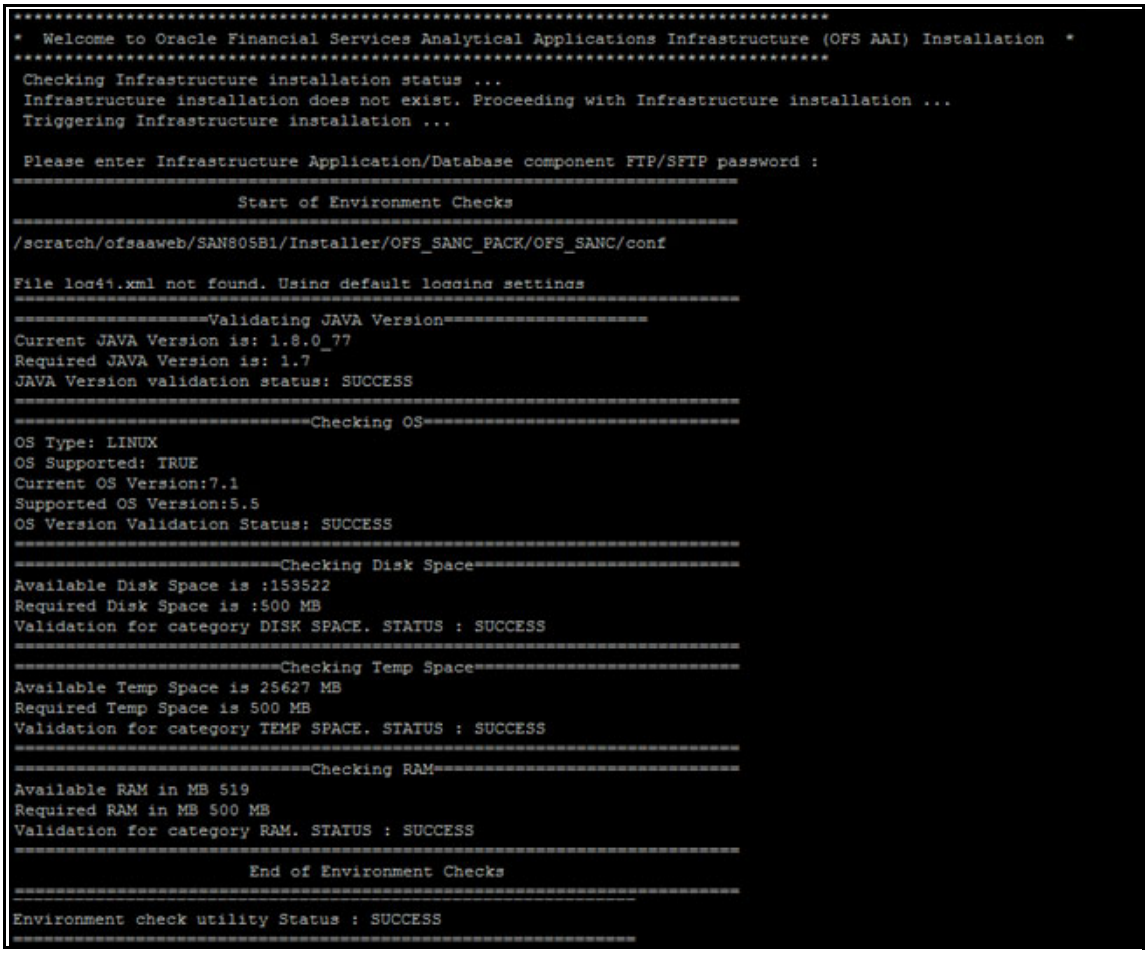


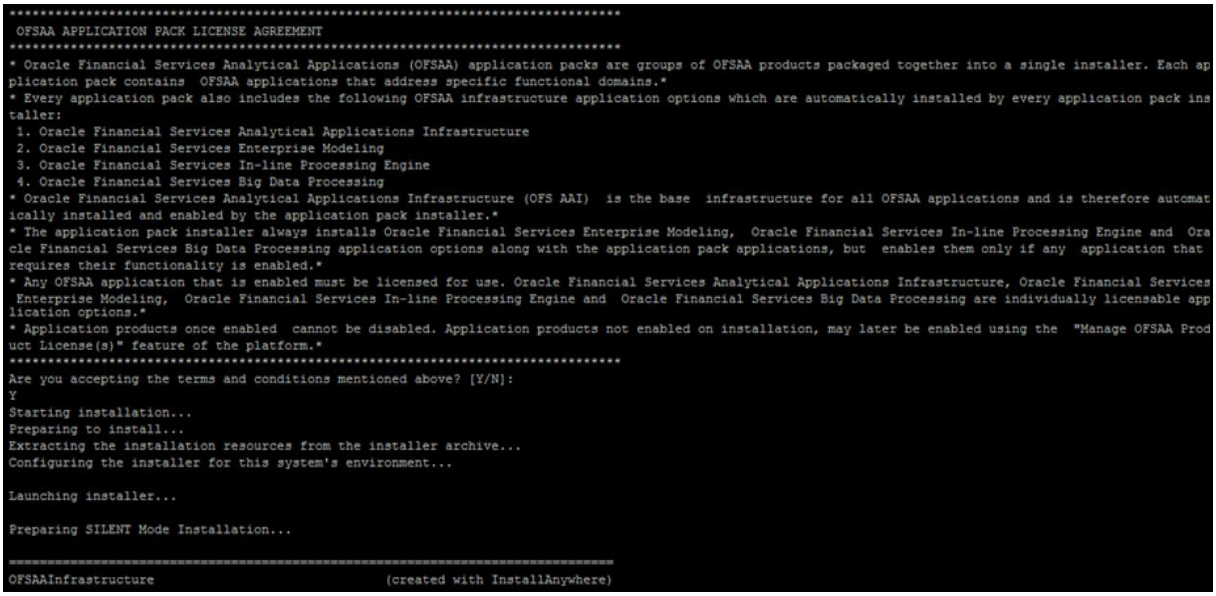
Table 6: Console Prompts - Silent Mode installation

Console Prompts	User Inputs
Please enter Infrastructure Application/Database component FTP/SFTP password	Enter the password to access Product Staging/Metadata repository directory in the application server. **NOTE**: In case the prompt reads as follows, enter the username/ password for accessing the product Staging/ Metadata Repository FTPSHARE • Kerberos username [user] • Kerberos password for user:

15. Enter Always, when prompted to add host key fingerprint.

    The OFSAAI License Agreement is displayed.

Figure 9: Silent Mode Installation



16. Enter Y/y to accept the License Agreement.

Note: A default password, *password*, is displayed for Infrastructure administrator and authorizer users.

Figure 10: Silent Mode Installation

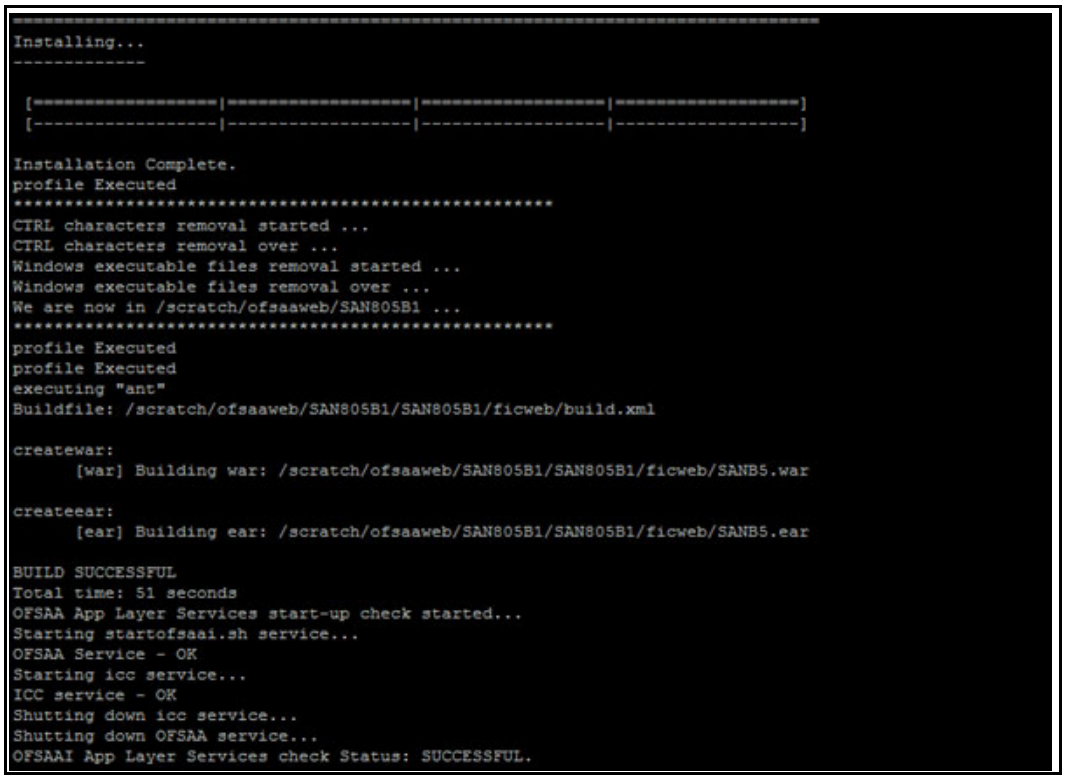
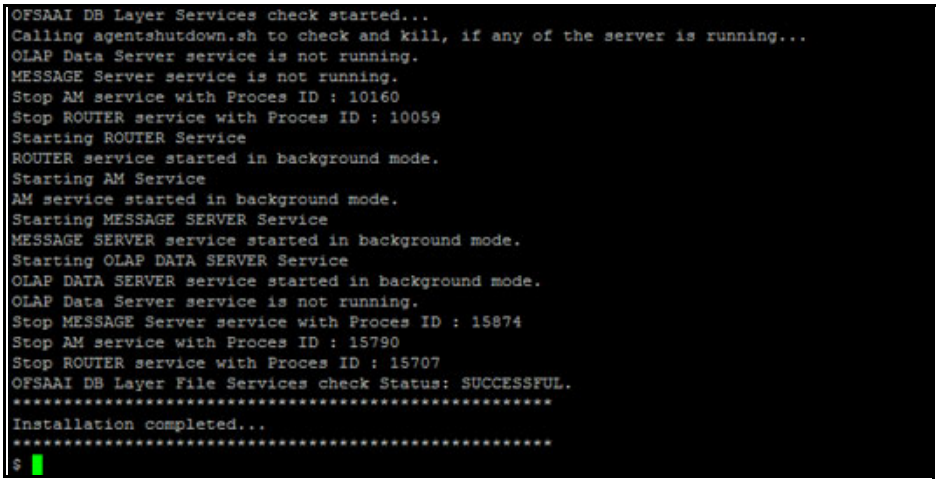


Figure 11: Silent Mode Installation



> **NOTE** The installation process continues on the console. Do not close the console until the installation process is complete.

17. The following message is displayed in the console:

    Installation completed…

18. On completion of installation, refer the related installation log files.
19. Apply the following mandatory patches:
    a. Install OFSAAI 8.1.2.1.0 (patch number 33865657)
    b. Install Inline Processing (patch number 34347180)
       (OR)
    c. Apply the latest available OFSAAI Patch (Contact Support).
20. Perform the steps mentioned in Post Installation Configurations section.

    Note:

    To enable Transparent Data Encryption (TDE), see Configuring Transparent Data Encryption (TDE) and, Data Redaction in OFSAA.

    To enable Data Redaction, see *Data Redaction* section under *Data Security and Data Privacy* chapter in OFS Analytical Applications Infrastructure Administration Guide 8.1.2.0.

6 Upgrading the Sanctions Pack

Release 8.1.2.0 of OFS Sanctions is not fully backward compatible with earlier versions of OFSAA applications. You can upgrade your application from 8.0.7.0.0 to 8.1.2.0 and 8.0.8.0.0 to 8.1.2.0 versions.

This chapter includes the following sections:

> **NOTE** While performing an upgrade of the Sanctions pack on an existing BD or ECM pack, then you must perform a backup of the AAI_AOM_APP_COMP_ATTR_-MAPPING table in the CONFIG schema after the upgrade. After upgrading Sanctions, repopulate the table with the ECM Specification entries which will be deleted by the Sanctions installer.

6.1 Upgrading from 8.0.7.0.0 to 8.0.8.0.0, 8.0.8.1.0, 8.0.8.1.23, and 8.1.2.0.0

To upgrade from 8.0.7.0.0 to 8.0.8.0.0, 8.0.8.1.0, 8.0.8.1.23, and 8.1.2.0.0, perform the following steps:

> **NOTE**
> - Before upgrade to 8.1.2.0.0. take backup of all STG tables. Use the list of the STG tables and create SQL truncate script for truncating STG tables from BD atomic schema. For the list of STG table, see `CSA_Data_Map_812.xlsx` in Components of Sanctions Pack (Doc ID 2329509.1).

> **NOTE** Before you run the patch/installer, perform a backup of the Schemas (Atomic and Config), FIC_HOME, and ftpshare directories.

1. Upgrade to 8.0.8.0.0 (patch number- 30503763).
2. Then upgrade to 8.0.8.1.23. for more information, see 8.0.8.1.23 ReadMe.
3. Take backup of the kdd_centricity table and truncate it.
4. Take backup of fsi_rt_match_service table.
5. Execute the following queries.
   - `alter table fsi_rt_match_service drop CONSTRAINT UK_FSI_RT_MATCH_SERVICE1;`
   - `alter table fsi_rt_match_service drop column V_GOOD_SERVICE_UNIQ_ID;`
6. Apply Sanctions 8.1.2.0.0.
7. Go to <##INSTALLER KIT##>/OFS_SANC_PACK/OFS_TFLT/conf.

8. Open the PatchConfig.xml file and configure the parameters as shown below.

Table 7 lists the patchconfig.xml parameters.

Table 7: PatchConfig.xml Parameters

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
SCHEMA_OUT_XML_PATH	Specifies the Schema XML path	Y	Unique Seeded Value	
DATA_TABLE_SPACE	Provides the tablespace data	Y	Unique Seeded Value	
INDEX_TABLE_SPACE	Provides the tablespace index	Y	Unique Seeded Value	
BIG_DATA_ENABLE	Flag to enable or disable big data	N	False	DO NOT modify this value.
EXECUTE_PRE_AND_POST_SCRIPTS	Provides the pre and post scripts that need to be executed	Y	1	
SWIFT_INFO	Provides the SWIFT information	Y	Unique Seeded Value	
SANC_ATOMIC_USER	Provides the ATOMIC user name.	Y	Unique Seeded Value	

9. Navigate to OFS_SANC_PACK/bin.
10. Execute setup.sh file using the following command:
./setup.sh SILENT
11. Verify the logs in installer.

> **NOTE** You can ignore ORA-00001, ORA-00955, ORA-02260, and ORA-01430 errors in the log file. In case of any other errors, contact Oracle Support.

<Installer kit>OFS_SANC_PACK/logs/

<Installer kit>OFS_SANC_PACK/schema_creator/logs/

<Installer kit>/OFS_SANC_PACK/OFS_AAI/logs/

<Installer kit>/OFS_SANC_PACK/OFS_CS/logs/

<Installer kit>/OFS_SANC_PACK/OFS_TFLT/logs/

12. Apply the latest available OFSAAI Patch (Contact Support).
13. After you complete the upgrade, ensure that you run the following EDQinsert.sh script: refer the Post Installation Configurations chapter.

6.2 Upgrading from 8.0.7.0.0 to 8.0.8.0.0, 8.0.8.2.0, and 8.1.2.0.0

To upgrade from 8.0.7.0.0 to 8.0.8.0.0, 8.0.8.2.0, and 8.1.2.0.0, perform the following steps:

> **NOTE** Before upgrade to 8.1.2.0.0. take backup of all STG tables. Use the list of the STG tables and create SQL truncate script for truncating STG tables from BD atomic schema. For the list of STG table, see `CSA_Data_Map_812.xlsx` in Components of Sanctions Pack (Doc ID 2329509.1).

> **NOTE** Before you run the patch/installer, perform a backup of the Schemas (Atomic and Config), FIC_HOME, and ftpshare directories.

1. Upgrade to 8.0.8.0.0 (patch number- 30503763).
2. Then upgrade to 8.0.8.2.0. (patch number- 33090893) for more information, see 8.0.8.2.0 Installation Guide.
3. Take backup of the kdd_centricity table and truncate it.
4. Take backup of fsi_rt_match_service table.
5. Execute the following queries.
   - `alter table fsi_rt_match_service drop CONSTRAINT UK_FSI_RT_MATCH_SERVICE1;`
   - `alter table fsi_rt_match_service drop column V_GOOD_SERVICE_UNIQ_ID;`
6. Apply Sanctions 8.1.2.0.0.
7. Go to <##INSTALLER KIT##>/OFS_SANC_PACK/OFS_TFLT/conf.
8. Open the PatchConfig.xml file and configure the parameters as shown below.

Table 7 lists the patchconfig.xml parameters.

Table 8: PatchConfig.xml Parameters

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
SCHEMA_OUT_XML_PATH	Specifies the Schema XML path	Y	Unique Seeded Value	
DATA_TABLE_SPACE	Provides the tablespace data	Y	Unique Seeded Value	
INDEX_TABLE_SPACE	Provides the tablespace index	Y	Unique Seeded Value	
BIG_DATA_ENABLE	Flag to enable or disable big data	N	False	DO NOT modify this value.
EXECUTE_PRE_AND_POST_SCRIPTS	Provides the pre and post scripts that need to be executed	Y	1	
SWIFT_INFO	Provides the SWIFT information	Y	Unique Seeded Value	

Table 8: PatchConfig.xml Parameters

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
SANC_ATOMIC_USER	Provides the ATOMIC user name.	Y	Unique Seeded Value	

9. Navigate to OFS_SANC_PACK/bin.
10. Execute setup.sh file using the following command:
    ./setup.sh SILENT
11. Verify the logs in installer.

    <Installer kit>OFS_SANC_PACK/logs/

    <Installer kit>OFS_SANC_PACK/schema_creator/logs/

    <Installer kit>/OFS_SANC_PACK/OFS_AAI/logs/

    <Installer kit>/OFS_SANC_PACK/OFS_CS/logs/

    <Installer kit>/OFS_SANC_PACK/OFS_TFLT/logs/

> **NOTE** You can ignore ORA-00001, ORA-00955, ORA-02260, and ORA-01430 errors in the log file. In case of any other errors, contact Oracle Support.

12. Apply the latest available OFSAAI Patch (Contact Support).

After you complete the upgrade, ensure that you run the following EDQinsert.sh script: refer the Post Installation Configurations chapter.

6.3 Upgrading from 8.0.8.0.0 and 8.0.8.2.0 to 8.1.2.0.0

To upgrade from 8.0.8.0.0 to 8.1.2.0.0, do the following:

NOTE Before upgrade to Sanction pack 8.1.2.0.0 take backup of all STG tables. Use the list of the STG tables and create SQL truncate script for truncating STG tables from BD atomic schema. For the list of STG table, see `CSA_Data_Map_812.xlsx` in Components of Sanctions Pack (Doc ID 2329509.1).

To upgrade from 8.0.8.0.x to 8.1.2.0.0, follow these steps before applying 8.1.2.0.0.

1. Take backup of the kdd_centricity table and truncate it.
2. Execute the following queries.

- alter table fsi_rt_match_service drop CONSTRAINT UK_FSI_RT_MATCH_SERVICE1;
- alter table fsi_rt_match_service drop column V_GOOD_SERVICE_UNIQ_ID;

NOTE Before you run the patch/installer, perform a backup of the Schemas (Atomic and Config), FIC_HOME, and ftpshare directories.

1. Upgrade to 8.0.8.2.0 ML(33090893) of Sanctions pack. For more information, see Installation Guide 8.0.8.2.0.
2. Apply Sanctions 8.1.2.0.0.
3. Go to <##INSTALLER KIT##>/OFS_SANC_PACK/OFS_TFLT/conf.
4. Open the PatchConfig.xml file and configure the parameters as shown below:

Table 7 lists the patchconfig.xml parameters.

Table 9: PatchConfig.xml Parameters

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
SCHEMA_OUT_XML_PATH	Specifies the Schema XML path	Y	Unique Seeded Value	
DATA_TABLE_SPACE	Provides the tablespace data	Y	Unique Seeded Value	
INDEX_TABLE_SPACE	Provides the tablespace index	Y	Unique Seeded Value	
BIG_DATA_ENABLE	Flag to enable or disable big data	N	False	DO NOT modify this value.
EXECUTE_PRE_AND_POST_SCRIPTS	Provides the pre and post scripts that need to be executed	Y	1	

Table 9: PatchConfig.xml Parameters

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
SWIFT_INFO	Provides the SWIFT information	Y	Unique Seeded Value	
SANC_ATOMIC_USER	Provides the ATOMIC user name.	Y	Unique Seeded Value	

5. Navigate to OFS_SANC_PACK/bin.
6. Execute setup.sh file using the following command:
   ./setup.sh SILENT
7. Verify the logs in installer.

   <Installer kit>OFS_SANC_PACK/logs/

   <Installer kit>OFS_SANC_PACK/schema_creator/logs/

   <Installer kit>/OFS_SANC_PACK/OFS_AAI/logs/

   <Installer kit>/OFS_SANC_PACK/OFS_CS/logs/

   <Installer kit>/OFS_SANC_PACK/OFS_TFLT/logs/

   NOTE You can ignore ORA-00001, ORA-00955, ORA-02260, and ORA-01430 errors in the log file. In case of any other errors, contact Oracle Support.

8. Apply the latest available OFSAAI Patch (Contact Support).
9. After you complete the upgrade, ensure that you run the following EDQinsert.sh script: refer the Post Installation steps.

6.4 Upgrading from 8.0.8.1.0 and 8.0.8.1.23 to 8.1.2.0.0

To upgrade from 8.0.8.1.0 to 8.1.2.0.0, do the following:

NOTE Before upgrade sanction 8.1.2.0.0, take backup of all STG tables. Use the list of the STG tables and create SQL truncate script for truncating STG tables from BD atomic schema. For the list of STG table, see `CSA_Data_Map_812.xlsx` in Components of Sanctions Pack (Doc ID 2329509.1).

To upgrade from 8.0.8.1.0 and 8.0.8.1.23 to 8.1.2.0.0, follow these steps before applying 8.1.2.0.0.

1. Take backup of the kdd_centricity table and truncate it.
2. Execute the following queries.

- alter table fsi_rt_match_service drop CONSTRAINT UK_FSI_RT_MATCH_SERVICE1;
- alter table fsi_rt_match_service drop column V_GOOD_SERVICE_UNIQ_ID;

NOTE Before you run the patch/installer, perform a backup of the Schemas (Atomic and Config), FIC_HOME, and ftpshare directories.

1. Upgrade to 8.0.8.1.23 (34073766) of Sanctions pack. For more information, see Patch ReadMe.
2. Apply Sanctions 8.1.2.0.0.
3. Go to <##INSTALLER KIT##>/OFS_SANC_PACK/OFS_TFLT/conf.
4. Open the PatchConfig.xml file and configure the parameters as shown below:

Table 7 lists the patchconfig.xml parameters.

Table 10: PatchConfig.xml Parameters

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
SCHEMA_OUT_XML_PATH	Specifies the Schema XML path	Y	Unique Seeded Value	
DATA_TABLE_SPACE	Provides the tablespace data	Y	Unique Seeded Value	
INDEX_TABLE_SPACE	Provides the tablespace index	Y	Unique Seeded Value	
BIG_DATA_ENABLE	Flag to enable or disable big data	N	False	DO NOT modify this value.
EXECUTE_PRE_AND_POST_SCRIPTS	Provides the pre and post scripts that need to be executed	Y	1	

Table 10: PatchConfig.xml Parameters

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
SWIFT_INFO	Provides the SWIFT information	Y	Unique Seeded Value	
SANC_ATOMIC_USER	Provides the ATOMIC user name.	Y	Unique Seeded Value	

5. Navigate to OFS_SANC_PACK/bin.
6. Execute setup.sh file using the following command:
   ./setup.sh SILENT
7. Verify the logs in installer.

   <Installer kit>OFS_SANC_PACK/logs/

   <Installer kit>OFS_SANC_PACK/schema_creator/logs/

   <Installer kit>/OFS_SANC_PACK/OFS_AAI/logs/

   <Installer kit>/OFS_SANC_PACK/OFS_CS/logs/

   <Installer kit>/OFS_SANC_PACK/OFS_TFLT/logs/

   NOTE You can ignore ORA-00001, ORA-00955, ORA-02260, and ORA-01430 errors in the log file. In case of any other errors, contact Oracle Support.

8. Apply the latest available OFSAAI Patch (Contact Support).
9. After you complete the upgrade, ensure that you run the following EDQinsert.sh script: refer the Post Installation steps.

6.5 Upgrading from 8.0.8.2.0 to 8.1.2.0.0

To upgrade from 8.0.8.2.0 to 8.1.2.0.0, do the following:

NOTE Before upgrade to Sanction pack 8.1.2.0.0 take backup of all STG tables. Use the list of the STG tables and create SQL truncate script for truncating STG tables from BD atomic schema. For the list of STG table, see `CSA_Data_Map_812.xlsx` in Components of Sanctions Pack (Doc ID 2329509.1).

To upgrade from 8.0.8.2.x to 8.1.2.0.0, follow these steps before applying 8.1.2.0.0.

1. Take backup of the kdd_centricity table and truncate it.
2. Execute the following queries.

- alter table fsi_rt_match_service drop CONSTRAINT UK_FSI_RT_MATCH_SERVICE1;
- alter table fsi_rt_match_service drop column V_GOOD_SERVICE_UNIQ_ID;

NOTE Before you run the patch/installer, perform a backup of the Schemas (Atomic and Config), FIC_HOME, and ftpshare directories.

1. Apply Sanctions 8.1.2.0.0.
2. Go to <##INSTALLER KIT##>/OFS_SANC_PACK/OFS_TFLT/conf.
3. Open the PatchConfig.xml file and configure the parameters as shown below:

Table 7 lists the patchconfig.xml parameters.

Table 11: PatchConfig.xml Parameters

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
SCHEMA_OUT_XML_PATH	Specifies the Schema XML path	Y	Unique Seeded Value	
DATA_TABLE_SPACE	Provides the tablespace data	Y	Unique Seeded Value	
INDEX_TABLE_SPACE	Provides the tablespace index	Y	Unique Seeded Value	
BIG_DATA_ENABLE	Flag to enable or disable big data	N	False	DO NOT modify this value.
EXECUTE_PRE_AND_POST_SCRIPTS	Provides the pre and post scripts that need to be executed	Y	1	
SWIFT_INFO	Provides the SWIFT information	Y	Unique Seeded Value	

Table 11: PatchConfig.xml Parameters

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
SANC_ATOMIC_USER	Provides the ATOMIC user name.	Y	Unique Seeded Value	

4. Navigate to OFS_SANC_PACK/bin.
5. Execute setup.sh file using the following command:
   ./setup.sh SILENT
6. Verify the logs in installer.

   <Installer kit>OFS_SANC_PACK/logs/

   <Installer kit>OFS_SANC_PACK/schema_creator/logs/

   <Installer kit>/OFS_SANC_PACK/OFS_AAI/logs/

   <Installer kit>/OFS_SANC_PACK/OFS_CS/logs/

   <Installer kit>/OFS_SANC_PACK/OFS_TFLT/logs/

   NOTE You can ignore ORA-00001, ORA-00955, ORA-02260, and ORA-01430 errors in the log file. In case of any other errors, contact Oracle Support.

7. Apply the latest available OFSAAI Patch (Contact Support).
8. After you complete the upgrade, ensure that you run the following EDQinsert.sh script: refer the Post Installation steps.

6.6 Pack on Pack Upgrade

NOTE Apply the latest available OFSAAI Patch (Contact Support).

NOTE Before you run the patch/installer, perform a backup of the Schemas (Atomic and Config), FIC_HOME, and ftpshare directories.

6.6.1 BD 8.1.2.0.0, AAI 8.1.2.1.0, BD 8.1.2.1.0,ECM 8.1.2.0.0, ECM 8.1.2.1.0, ECM 8.1.2.1.1, Sanctions 8.1.2.0.0, CRR 8.1.2.0.0, and CRR 8.1.2.1.0

Before installing Sanctions pack 8.1.2.0.0., execute the following query in Atomic schema.

```
create table FCC_SAN_STD_CMNTS_DIM_BKP as (select * from FCC_SAN_STD_CMNTS_DIM);

drop table FCC_SAN_STD_CMNTS_DIM;


create table DIM_TF_MSG_TYPE_BKP as (select * from DIM_TF_MSG_TYPE);

drop table DIM_TF_MSG_TYPE;
```

```
create table FCC_ZCS_SCREENING_MODE_DIM_BKP as (select * from FCC_ZCS_SCREENING_MODE_DIM);
truncate table FCC_ZCS_SCREENING_MODE_DIM;

create table FCC_ZCS_ALERT_TYPE_DIM_BKP as (select * from FCC_ZCS_ALERT_TYPE_DIM);
truncate table FCC_ZCS_ALERT_TYPE_DIM;

create table FCC_SAN_STD_CMNTS_TL_BKP as (select * from FCC_SAN_STD_CMNTS_TL);
drop table FCC_SAN_STD_CMNTS_TL;
```

To trigger the installation, follow these steps

1. To install Sanctions 8.1.2.0.0 pack on the pack on pack, see About Schema Creator Utility for configuration of files.

   Note: Schema name must be same.
2. To configure the XML files, see SILENT Mode Installation.
3. Navigate to OFS_SANC_PACK/bin.
4. Execute setup.sh file using the following command:
   `./setup.sh SILENT`
5. Verify the logs in the installer.

   <Installer kit>OFS_SANC_PACK/logs/

   <Installer kit>OFS_SANC_PACK/schema_creator/logs/

   <Installer kit>/OFS_SANC_PACK/OFS_AAI/logs/

   <Installer kit>/OFS_SANC_PACK/OFS_CS/logs/

   <Installer kit>/OFS_SANC_PACK/OFS_TFLT/logs/

6.6.2 Sanctions 8.0.8.0.0, Sanctions 8.0.8.2.0, Sanctions 8.0.8.2.1 to 8.0.8.2.9, BD 8.1.2.0.0, ECM 8.1.2.0.0, AAI 8.1.2.1.0, BD 8.1.2.1, ECM 8.1.2.1.0, ECM 8.1.2.1.1, Sanctions 8.1.2.0, CRR 8.1.2.0.0, CRR 8.1.2.1.0

NOTE Before upgrade to Sanction 8.1.2.0.0, take backup of all STG tables. Use the list of the STG tables and create SQL truncate script for truncating STG tables from BD atomic schema. For the list of STG table, see `CSA_Data_Map_812.xlsx` in Components of Sanctions Pack (Doc ID 2329509.1).

NOTE Before you run the patch/installer, perform a backup of the Schemas (Atomic and Config), FIC_HOME, and ftpshare directories.

To install BD 8.1.2.0.0 in this lane on sanctions 8.0.8.0.0, follow these steps:

1. Follow these mandatory steps before applying BD 8.1.2.0.0.
   a. Take a backup of FIC_HOME (complete file system including ftpshare).
   b. Take a backup of Atomic and Config Schema.
   c. Execute following queries in Atomic schema.

```
create table KDD_BUS_DMN_TEMP as (select * from KDD_BUS_DMN);
UPDATE KDD_BUS_DMN SET TF_BUS_DMN_NM=NULL;
commit;
ALTER TABLE FCC_BATCH_DATAORIGIN RENAME TO FCC_BATCH_DATAORIGIN_TEMP;
ALTER TABLE FCC_BATCH_DETAIL RENAME TO FCC_BATCH_DETAIL_TEMP;
ALTER TABLE FCC_BATCH_RUN RENAME TO FCC_BATCH_RUN_TEMP;
ALTER TABLE FCC_PROCESSING_GROUP RENAME TO FCC_PROCESSING_GROUP_TEMP;
```

2. To install BD 8.1.2.0.0, see Behavior Detection Application Pack Installation Guide.
3. Follow these mandatory steps after applying BD 8.1.2.0.0.
   a. Refer installation logs, if installation is successful follow these steps.
   b. Take a backup of FIC_HOME(complete file system including ftpshare)
   c. Take a backup of Atomic and Config Schema.
   d. Perform regression.

NOTE

- Apply below step only if you plan regression after BD 8.1.2.0.0 Installation.
- Below query is not required, if ECM 8.1.2.0.0 is installed on top of BD 8.1.2.0.0 without any regression.
- `ALTER TABLE KDD_BUS_DMN add TF_BUS_DMN_NM varchar2(20 CHAR);`

```
copy data from table KDD_BUS_DMN_TEMP to table KDD_BUS_DMN against column TF_BUS_DMN_NM
```

NOTE Before upgrade to Sanction pack 8.1.2.0.0 take a backup of all STG tables. Use the list of the STG tables and create SQL truncate script for truncating STG tables from BD atomic schema. For the list of STG table, see `CSA_Data_Map_812.xlsx` in Components of Sanctions Pack (Doc ID 2329509.1).

4. Before triggering Sanction application pack 8.1.2.0.0, Execute following queries in Atomic schema.

```
create table FCC_ZCS_SCREENING_MODE_DIM_BKP as (select * from FCC_ZCS_SCREENING_MODE_DIM);
truncate table FCC_ZCS_SCREENING_MODE_DIM;
create table FCC_ZCS_ALERT_TYPE_DIM_BKP as (select * from FCC_ZCS_ALERT_TYPE_DIM);
truncate table FCC_ZCS_ALERT_TYPE_DIM;
```

To trigger the installation, follow these steps:

1. To install Sanctions 8.1.2.0.0 pack on the pack on pack, see About Schema Creator Utility for configuration of files.

   Note: Schema name must be same.
2. To configure the XML files, see SILENT Mode Installation.
3. Navigate to OFS_SANC_PACK/bin.
4. Execute setup.sh file using the following command:
   `./setup.sh SILENT`
5. Verify the logs in the installer.

   <Installer kit>OFS_SANC_PACK/logs/

   <Installer kit>OFS_SANC_PACK/schema_creator/logs/

   <Installer kit>/OFS_SANC_PACK/OFS_AAI/logs/

   <Installer kit>/OFS_SANC_PACK/OFS_CS/logs/

   <Installer kit>OFS_SANC_PACK/OFS_TFLT/logs/

6.6.3 SANC 8.1.2.0.0, ECM 8.1.2.0.0, AAI 8.1.2.0, ECM 8.1.2.1.0, ECM 8.1.2.1.1, BD 8.1.2.0.0, BD 8.1.2.1 .0, CRR 8.1.2.0, CRR 8.1.2.1.0

> **NOTE** Before you run the patch/installer, perform a backup of the Schemas (Atomic and Config), FIC_HOME, and ftpshare directories.

Before installing ECM 8.1.2.0.0, execute following queries in Atomic schema:

```
create table KDD_BUS_DMN_bkp as (select * from KDD_BUS_DMN);
UPDATE KDD_BUS_DMN SET TF_BUS_DMN_NM=NULL;
COMMIT;

create table FCC_PROCESSING_GROUP_bkp as (select * from FCC_PROCESSING_GROUP);
drop table FCC_PROCESSING_GROUP;

create table FCC_BATCH_DATAORIGIN_bkp as (select * from FCC_BATCH_DATAORIGIN);
drop table FCC_BATCH_DATAORIGIN;

create table FCC_BATCH_DETAIL_bkp as (select * from FCC_BATCH_DETAIL);
drop table FCC_BATCH_DETAIL;

Create table FCC_BATCH_RUN_bkp as (select * from FCC_BATCH_RUN);
drop table FCC_BATCH_RUN;
```

To trigger the installation, follow these steps

1. To install Sanctions 8.1.2.0.0 pack on the pack on pack, see About Schema Creator Utility for configuration of files.

   Note: Schema name must be same.
2. To configure the XML files, see SILENT Mode Installation.
3. Navigate to OFS_SANC_PACK/bin.
4. Execute setup.sh file using the following command:
   `./setup.sh SILENT`
5. Verify the logs in the installer.

   <Installer kit>OFS_SANC_PACK/logs/

   <Installer kit>OFS_SANC_PACK/schema_creator/logs/

   <Installer kit>/OFS_SANC_PACK/OFS_AAI/logs/

   <Installer kit>Installer/OFS_SANC_PACK/OFS_CS/logs/

   <Installer kit>Installer/OFS_SANC_PACK/OFS_TFLT/logs/

6.6.3.1 Post Installation Activities

Execute the following query.

```
ALTER TABLE KDD_BUS_DMN add TF_BUS_DMN_NM varchar2(20 CHAR);
```

1. Copy data from table KDD_BUS_DMN_bkp to table KDD_BUS_DMN against column TF_BUS_DMN_NM
2. BD 8.1.2.0 installation, manually add these columns for the following tables.

   ```
   TABLE NAME     COLUMNS
   EXTRL_ORG    ("JRSDCN_CD");
   EXTRL_ORG_ARC("JRSDCN_CD");
   EXTRL_ORG_STG("ADDR_SEQ_NB");
   EXTRL_ORG_STG("JRSDCN_CD");
   ```
3. The following are the SQL scripts for adding columns:

   ```
   ALTER TABLE EXTRL_ORG
   ADD JRSDCN_CD VARCHAR2(4 CHAR);
   ALTER TABLE EXTRL_ORG_ARC
   ADD JRSDCN_CD VARCHAR2(4 CHAR);
   ALTER TABLE EXTRL_ORG_STG
   ADD ADDR_SEQ_NB VARCHAR2(20 CHAR);
   ALTER TABLE EXTRL_ORG_STG
   ADD JRSDCN_CD VARCHAR2(4 CHAR);
   ```

7 Post Installation Configurations

Release 8.1.2.0.0 of OFS FCCM is not fully backward compatible with earlier versions of OFSAA applications. You can either upgrade all of your applications from existing 8.0.x versions to 8.1.2.0.0 version or choose to upgrade only selective application packs to v8.0.7.0.0. In the case of the latter, you must also apply the forthcoming compatibility patches for the required application packs, so that the remaining application-packs can continue to be at their pre-8.1.2.0.0 versions.

On successful installation of the Oracle Financial Services Sanctions Pack, follow these post installation steps:

> **NOTE** After pack on pack or upgrade, navigate to FIC_HOME and execute the file Sanctions_Duplicate_Jar_Removal.sh. generate the WAR/EAR and deploy the same.

This chapter includes the following sections:

- Configure Resource Reference
- Start OFSAA Infrastructure Services
- Add TNS entries in TNSNAMES.ORA file
- Configuration for Oracle Financial Services Inline Processing Engine (OFS IPE)
- Configuration for OFS Customer Screening and OFS Transaction Filtering
- Create and Deploy the Application Pack Web Archive
- Deploying Analytic Reports
- Access the OFSAA Application
- Perform Post Deployment Configurations

> **NOTE** Ensure to clear the application cache prior to the deployment of Applications Pack Web Archive. For more information, see the Clearing Application Cache section.

7.1 Configure Resource Reference

Configure the resource reference in the Web Application Server configured for OFSAA Applications. See Configuring Resource Reference in WebLogic Application Server for details on configuring the resource reference in the WebLogic Application Server.

7.2 Configure JAVA Home

The `FCCDATAMOVEMENT.sh` file present in the `$FIC_HOME/ficdb/bin` directory needs to be updated with the following information:

```
JAVA_HOME=<PROVIDE JAVA HOME>
```

7.3 Start OFSAA Infrastructure Services

Start the OFSAA Infrastructure Services prior to deployment or accessing the OFSAA Applications. See Starting/ Stopping Infrastructure Services for details on Start/ Stop OFSAA Services.

7.4 Add TNS entries in TNSNAMES.ORA file

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

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

1. Login to the application using System Administrator privileges.
2. Navigate to System Configuration & Identity Management tab.
3. Click Administration and Configuration >> System Configuration >> Database Details.
4. Expand **Name** to get the list of TNS entry names.
5. Alternatively, you can connect to the CONFIG schema and execute the following query:

```
select dbname from db_master where dbname !='CONFIG'
```

7.5 Configuration for Oracle Financial Services Inline Processing Engine (OFS IPE)

This section is applicable only if OFS Inline Processing Engine is licensed and enabled in your OFSAA instance.

You should create an additional resource reference as JDBC/<INFODOMNAME> pointing to the same infodom in which IPE is installed. For information on creating resource reference, see Configuring Resource Reference in WebLogic Application Server.

Follow the instructions in OFS IPE Configuration Guide to configure the OFSAA instance for using OFS Inline Processing Engine. This step is mandatory if you have enabled OFS Inline Processing Engine during the installation.

7.6 Configuration for OFS Customer Screening and OFS Transaction Filtering

The solution uses custom widgets (pre-configured processors), gadgets (match extensions), selection functions and database connectors to extend the functionality of OEDQ. These components are collectively referred to as extensions, and are provided as Java Archive (JAR) files.

7.6.1 Configuring the OFS Customer Screening and OFS Transaction Filtering Components

The Oracle Financial Services Sanctions pack distribution contains a config.zip file (path is `$FIC_HOME/SanctionsCommon`). This file must be extracted over your OEDQ instance's local config folder in order to

install new folders and extensions required for Oracle Financial Services Customer Screening to function.

> **NOTE** OEDQ Config Folder:
>
> Your OEDQ instance's config folder might not be named 'config'. The choice of the config folder's name is made when OEDQ is installed - in some cases a name is automatically allocated. OEDQ release 11g and later has both a 'base' and a 'local' config folder. The base config folder is often called 'oedqhome', and the local config folder is often called 'oedqlocalhome'. In some cases, dots or underscores may be inserted into these names (for example: 'oedq_local_home'). You need to unzip the config.zip file over your OEDQ instance's local config folder. Whenever you see a file path in this document that begins with config, this always refers to your OEDQ instance's local config folder..

> **NOTE** If the OEDQ server uses a different landing area path from that set during installation (i.e. config/landingarea), the landingarea folder created when the config.zip is extracted must be copied over the existing landingarea folder.

When the config.zip file has been extracted, stop and re-start the OEDQ Application Server service before proceeding to the next installation stage.

7.6.2 Importing the OFS Customer Screening and OFS Transaction Filtering Projects

OFS Sanctions Pack includes the following OEDQ package (.dxi) files.

Table 12 details the file names and their roles.

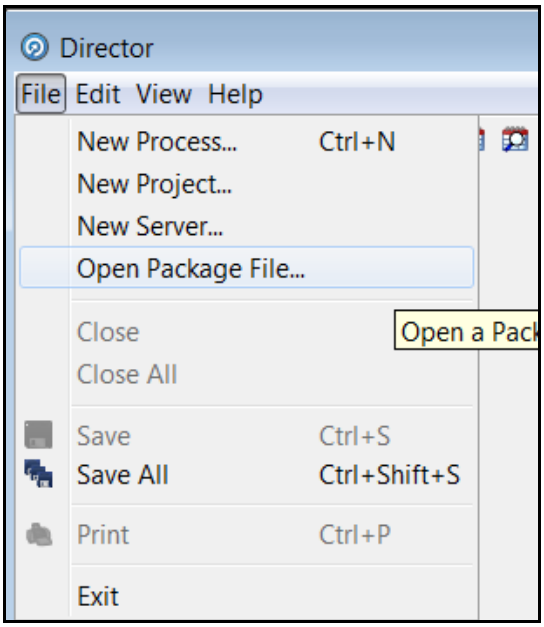
Table 12: OFS Customer Screening Projects

Package Name	Project Name	Description
Watchlist Management_<version>.dxi	Watchlist Management	Contains jobs and processes for handling watch list data. This includes downloading, preparing and exporting the data for use in the screening processes. This section is also shared by Transaction Filtering
customer_screening_<version>.dxi **Note:** After you upload the *.dxi* files, remove the version from the package name.	Customer Screening	Contains jobs, processes and Web services for handling customer data. This includes data quality analysis and data screening.
Transaction_Screening_<version>.dxi	Transaction Screening	Contains jobs, processes and Web services for handling transaction data. This includes data quality analysis and data screening.
Transaction_Screening_Batch<version>.dxi	Transaction Screening Batch	Contains jobs, processes and Web services for handling batch data.

Each of the package files needs to be imported into OEDQ by using the following process:

1. Open the package file in OEDQ using the File > Open Package File.

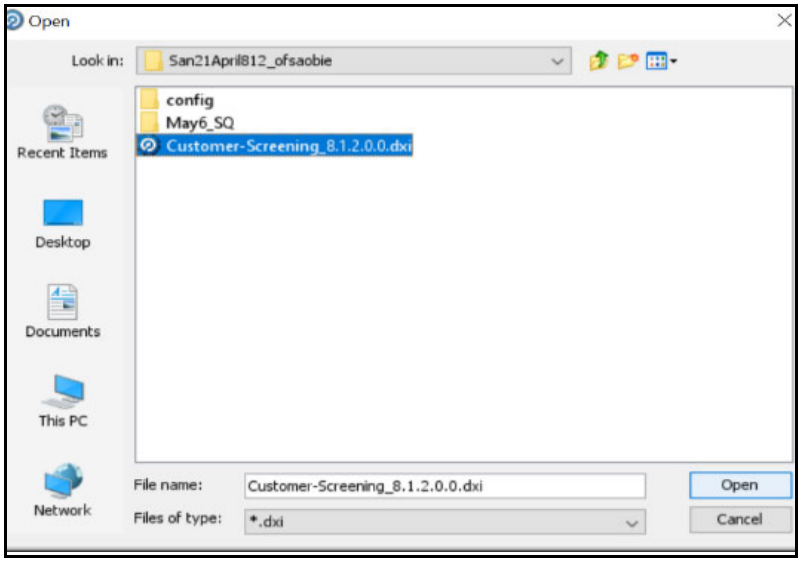
Figure 12: Director



2. Select the package file from your distribution and click Open.

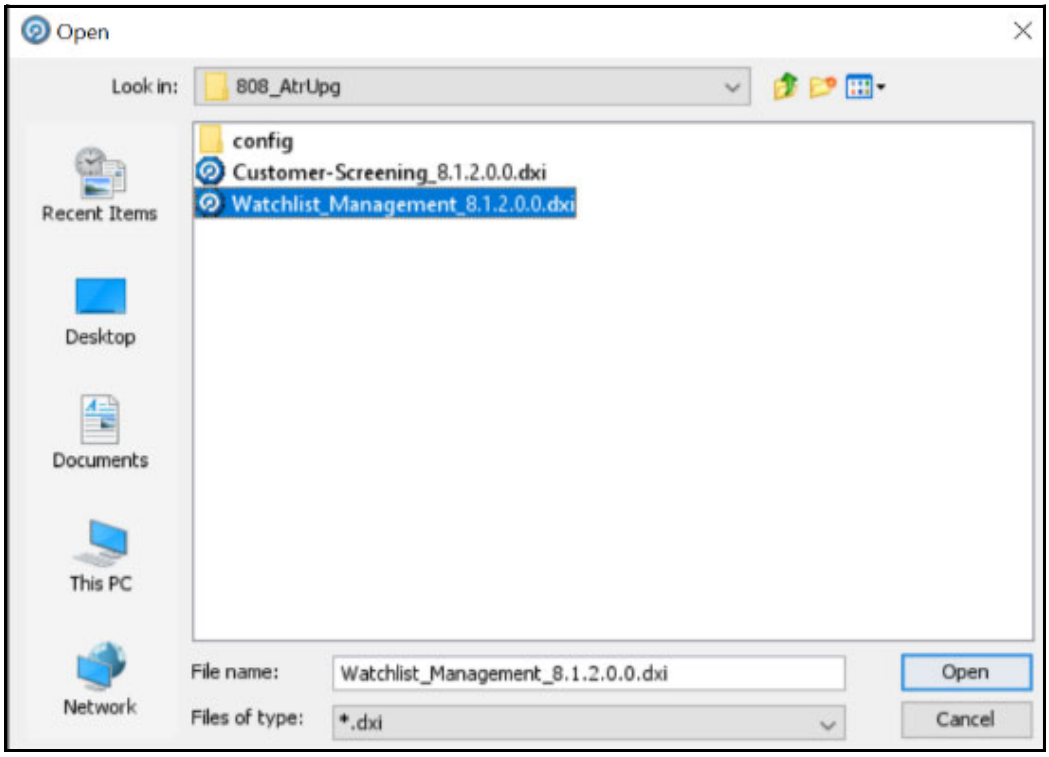
   To open the customer screening file, see the below image:

Figure 13: customer screening file

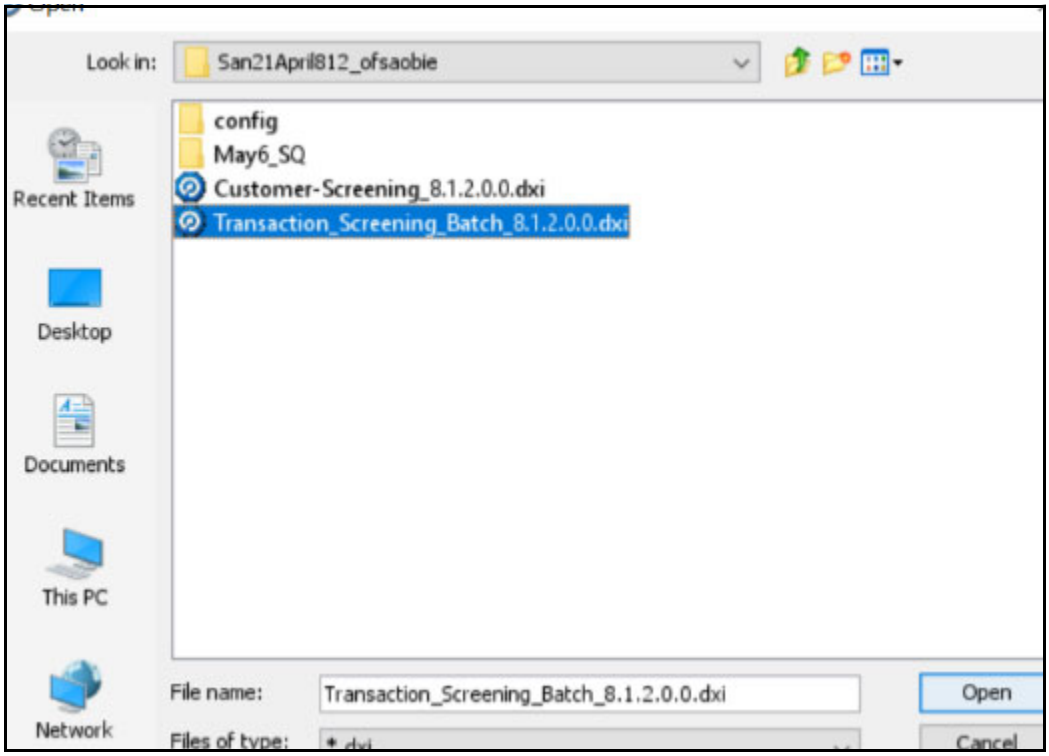


   To open the watch list management file, see the below image:

Figure 14: Watch list management file

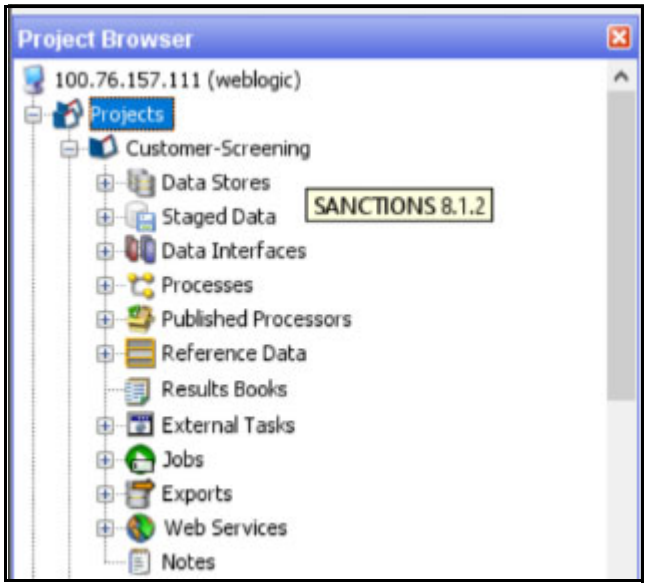


To open the Transaction Filtering file, see the below image



3. The package file and its contents are displayed in the OEDQ project browser.

Figure 15: OEDQ project browser



4. Drag and drop the project from the package file in the project browser to the Projects folder on your server. This will create a copy of the project on your deployment server. Rename the project to something suitable for the implementation (if required) and give it a meaningful description.

7.6.3 Adjusting Server Startup Arguments (WebLogic Only)

If your instance of Oracle Financial Services Customer Screening uses the WebLogic application server, and you are screening against the World-Check watch list, then, in order to download the World-Check reference data successfully, you must add the following to the 'Server Start' arguments of your EDQ managed server:

```
-DUseSunHttpHandler=true
```

This is only required if you are using the WebLogic application server and screening against the World-Check watch list.

7.7 Pack on Pack Post Installation

This section provides the pack on pack, post installation steps for Sanctions application pack.

To perform the pack on pack post installation of the Sanctions application pack above the ECM application pack, execute the following queries in the Config Schema:

> **NOTE** ECM application pack version 8.1.2.0.0 must be already installed.

```
MERGE INTO AAI_AOM_APP_COMP_ATTR_MAPPING T USING ( SELECT '1'
APP_COMP_ATTR_MAP_ID, '1' N_ATTRIBUTE_ID, 'Action' V_ATTR_CODE, '1002'
N_ATTR_TYPE_ID, 'select t.action_cd,t.action_nm from kdd_action t where
t.action_category_code is not null and t.action_category_code not in
(''ENT'',''PR'',''EXP'',''AS'',''DD'', ''OBS'')' V_ATTRIBUTE_VALUE1, ''
V_ATTRIBUTE_VALUE2,'OFS_NGECM' N_APP_ID, '-1' N_COMP_ID, '' V_UDP_CODE,
''V_ATTR_CONTROL_TYPE FROM DUAL) S
```

```
ON ( T.APP_COMP_ATTR_MAP_ID = S.APP_COMP_ATTR_MAP_ID AND T.N_APP_ID =
S.N_APP_ID )

WHEN NOT MATCHED THEN INSERT

(APP_COMP_ATTR_MAP_ID,N_ATTRIBUTE_ID,V_ATTR_CODE,N_ATTR_TYPE_ID,V_ATTRIBUTE_
VALUE1,V_ATTRIBUTE_VALUE2,N_APP_ID,N_COMP_ID,V_UDP_CODE,V_ATTR_CONTROL_TYPE)
VALUES

(S.APP_COMP_ATTR_MAP_ID,S.N_ATTRIBUTE_ID,S.V_ATTR_CODE,S.N_ATTR_TYPE_ID,S.V_
ATTRIBUTE_VALUE1,S.V_ATTRIBUTE_VALUE2,S.N_APP_ID,S.N_COMP_ID,S.V_UDP_CODE,S.
V_ATTR_CONTROL_TYPE)

/

MERGE INTO AAI_AOM_APP_COMP_ATTR_MAPPING T USING ( SELECT '2'
APP_COMP_ATTR_MAP_ID, '2' N_ATTRIBUTE_ID, 'Status' V_ATTR_CODE, '1002'
N_ATTR_TYPE_ID, 'select t.status_cd,t.status_nm from kdd_status t where
t.viewd_result_status_cd is null or  t.viewd_result_status_cd <> ''OBS'''
V_ATTRIBUTE_VALUE1, '' V_ATTRIBUTE_VALUE2,'OFS_NGECM' N_APP_ID, '-1'
N_COMP_ID, '' V_UDP_CODE, ''V_ATTR_CONTROL_TYPE FROM DUAL) S

ON ( T.APP_COMP_ATTR_MAP_ID = S.APP_COMP_ATTR_MAP_ID AND T.N_APP_ID =
S.N_APP_ID )

WHEN NOT MATCHED THEN INSERT

(APP_COMP_ATTR_MAP_ID,N_ATTRIBUTE_ID,V_ATTR_CODE,N_ATTR_TYPE_ID,V_ATTRIBUTE_
VALUE1,V_ATTRIBUTE_VALUE2,N_APP_ID,N_COMP_ID,V_UDP_CODE,V_ATTR_CONTROL_TYPE)
VALUES

(S.APP_COMP_ATTR_MAP_ID,S.N_ATTRIBUTE_ID,S.V_ATTR_CODE,S.N_ATTR_TYPE_ID,S.V_
ATTRIBUTE_VALUE1,S.V_ATTRIBUTE_VALUE2,S.N_APP_ID,S.N_COMP_ID,S.V_UDP_CODE,S.
V_ATTR_CONTROL_TYPE)

/

MERGE INTO AAI_AOM_APP_COMP_ATTR_MAPPING T USING ( SELECT '9'
APP_COMP_ATTR_MAP_ID, '9' N_ATTRIBUTE_ID, 'NextStatus' V_ATTR_CODE, '1002'
N_ATTR_TYPE_ID, 'select t.status_cd,t.status_nm from kdd_status t where
t.viewd_result_status_cd is null or  t.viewd_result_status_cd <> ''OBS'''
V_ATTRIBUTE_VALUE1, '' V_ATTRIBUTE_VALUE2,'OFS_NGECM' N_APP_ID, '-1'
N_COMP_ID, '' V_UDP_CODE, ''V_ATTR_CONTROL_TYPE FROM DUAL) S

ON ( T.APP_COMP_ATTR_MAP_ID = S.APP_COMP_ATTR_MAP_ID AND T.N_APP_ID =
S.N_APP_ID )

WHEN NOT MATCHED THEN INSERT

(APP_COMP_ATTR_MAP_ID,N_ATTRIBUTE_ID,V_ATTR_CODE,N_ATTR_TYPE_ID,V_ATTRIBUTE_
VALUE1,V_ATTRIBUTE_VALUE2,N_APP_ID,N_COMP_ID,V_UDP_CODE,V_ATTR_CONTROL_TYPE)
VALUES

(S.APP_COMP_ATTR_MAP_ID,S.N_ATTRIBUTE_ID,S.V_ATTR_CODE,S.N_ATTR_TYPE_ID,S.V_
ATTRIBUTE_VALUE1,S.V_ATTRIBUTE_VALUE2,S.N_APP_ID,S.N_COMP_ID,S.V_UDP_CODE,S.
V_ATTR_CONTROL_TYPE)

/
```

7.8 Create and Deploy the Application Pack Web Archive

On successful installation of the OFSAA Application Pack, the web archive file is automatically generated. However, you need to deploy the generated web archive file on the Web Application Server.

For identifying the location of the generated web archive file and for generating and deploying the web archive file at any time later, refer Creating and Deploying EAR/ WAR File.

> **NOTE** See Oracle Financial Services Forms Manager User Guide for instructions on Creating and Deploying the Forms Manager Web Archive.

7.9 Deploying Analytic Reports

This section explains how to deploy analytics on Oracle Business Intelligence Enterprise Edition (OBIEE) and integrate analytic reports in the OFS Transaction Filtering UI.

This section includes the following topics:

- Installing Oracle Analytic Server (OAS) 5.9
- Installing Oracle Analytic Server (OAS) 5.9 Windows Administration Client
- Installing Oracle Analytic Server (OAS) 5.9 Windows Administration Client
- Change Default Repository Password
- Configuring ORACLE ANALYTIC SERVER (OAS) 5.9 Connection Pool
- Deploying OFS TF Report Analytics
- Configuring TreeMap Graph
- Disable Single Sign On
- Accessing Reports through OFS Sanctions Application
- Configuring Jurisdictions and Business Domains

7.9.1 Installing Oracle Analytic Server (OAS) 5.9

To install the ORACLE ANALYTIC SERVER (OAS) 5.9, download the software from ORACLE ANALYTIC SERVER (OAS) 5.9 server. After installation, get the Enterprise Manager URL, Username, Password, and ORACLE ANALYTIC SERVER (OAS) 5.9 installed directory from the system administrator.

NOTE:

You should map BI Admin Reporter Role with atomic schema INFODOM.

BI Admin Reporter Role has to be mapped to any group (for example, CASESUPERVISOR in case of Pack on Pack) that you need to provide.

7.9.2 Installing Oracle Analytic Server (OAS) 5.9 Windows Administration Client

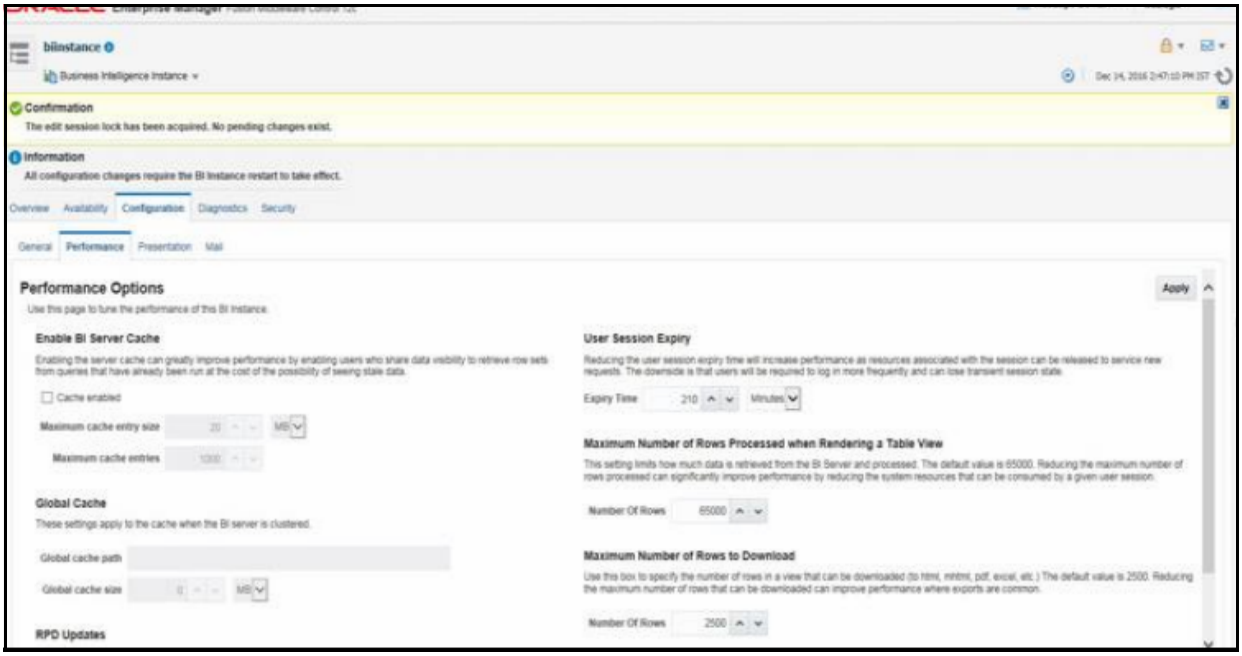
Download and Install OAS client tool for 5.9.

7.9.3 Disabling the Cache Feature in Oracle Analytic Server (OAS) 5.9:

Login to the Enterprise Manager and perform the following steps:

1. Click the Target Navigation icon.
2. Expand the Business Intelligence section and then click instance.
3. Click the Configuration tab.
4. Click the Lock icon and then click Lock & Edit to enable the Cache Enabled check box.
5. Under the Performance tab, in the Enable Bi Server Cache section, de-select the Cache Enabled check box and make the required changes.
6. Click the Lock icon and click Release Configuration to save the Cache Enabled changes.

Figure 16: Disabling the Cache Feature in Oracle Analytic Server (OAS) 5.9



7.9.4 Change Default Repository Password

7.9.4.1 ORACLE ANALYTIC SERVER (OAS) 5.9:

Copy TF80810.rpd from $FIC_HOME/OBIEE/Repository to the Windows machine where the OAS Windows administration client is installed.

To change the default password for the repository follow these steps:

1. Open the Repository using the OAS Windows administration client from Windows machine. From the File menu, select Open and click Offline. Browse to the Repository on Windows machine. The Oracle BI Administration Tool - FCCM81.rpd windows is displayed.
2. Enter default Repository password: TFRPT$807

To change the default password, follow these steps:

3. From File menu, choose Change Password.

4. Enter the new password and click OK.

7.9.5 Configuring ORACLE ANALYTIC SERVER (OAS) 5.9 Connection Pool

7.9.5.1 ORACLE ANALYTIC SERVER (OAS) 5.9:

To configure the Connection Pool of the repository, follow these steps:

1. Open the same Repository (as in the previous step) on the Windows machine. The Oracle BI Administration Tool - TF80810.rpd windows is displayed.
2. Expand the FSI_TF folder in the Physical section.
3. Double-click Connection Pool to open the Connection Pool Properties window.
4. Enter the following in the Data Source Name text box of the Connection Pool Properties window after modifying <Database Server Host Name> and <Database Name> Data Source Name = (DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=<Database Server HostName>)(PORT=1521))(CONNECT_DATA=(SERVER=DEDICATED) (SERVICE_NAME=<Database Name>)))
5. Enter the Atomic Schema user in the User name text box.
6. Enter the Atomic Schema user password in the Password text box.
7. Click OK.
8. Expand the folder and test connection for any one table name by Right Click > view data.
9. Perform similar changes in the Connection Pools for all remaining folders in the Physical Layer by providing the following schema details for all Connection Pools:
   - FSI_TF >Atomic Schema
10. Select **Save** option from the File menu. The following message is displayed: *Do you want to check global consistency?*.
11. Click **Yes**. The following message is displayed: *Consistency check didn't find any errors, warning or best practices violations*.
12. Click **OK**.

7.9.6 Deploying OFS TF Report Analytics

7.9.6.1 ORACLE ANALYTIC SERVER (OAS) 5.9:

To deploy Analytic Reports, follow these steps:

1. Login to System Settings using the below URL: http://<oas server name>:<oas analytics port number>/analytics/systemsettings/

   (Example link for reference: http://testserver:9502/analytics/systemsettings/)
2. Search for Evaluate in the search box
3. Select Level 2 from the Evaluate Support Level drop-down
4. Search for HTML in the search box
5. Enable Allow HTML Content

6. Click Restart.
7. Update the instanceconfig.xml file present in <Oracle Analytic Server (OAS) 5.9_home>/user_projects/domains/bi/config/fmwconfig/biconfig/OBIPS location as detailed here.
8. Replace the following script:

   <Security>

   This Configuration setting is managed by Oracle Enterprise Manager Fusion

   Middleware Control-->

   <ClientSessionExpireMinutes>210</ClientSessionExpireMinutes>

   </Security>

   With the following:

   <Security>

   <!--This Configuration setting is managed by Oracle Enterprise Manager Fusion

   Middleware Control-->

   <ClientSessionExpireMinutes>210</ClientSessionExpireMinutes>

   <InlFrameRenderingMode>allow</InlFrameRenderingMode>

   </Security>
9. Deploy BAR(CATALOG)

   a. Navigate to $FIC_HOME/OBIEE/catalog.

   b. Copy TF_ANALYTICS_8.0.8.1.0.bar to the working location of OAS server.

   c. Copy TF80810.rpd into the working location of OAS server.

   d. Go to, <OAS 5.9 Home directory>/Oracle_Home/user_projects/domains/bi/bitools/bin

   path.

   e. Execute the comand: ./importarchive.sh ssi <working location>/TF_ANALYTICS_8.0.8.1.0.bar.
10. Deploy TF80810.rpd

    a, Navigate to the working directory and execute the following script:<Oracle Analytic Server (OAS) 5.9_home>/user_projects/domains/bi/bitools/bin/datamodel.sh
    uploadrpd -I TF80810.rpd -SI ssi -U <user> -P <password>

    b. Restart Oracle Analytic Server (OAS) 5.9 from Enterprise Manager by following these steps: (see figure Restarting Oracle Analytic Server (OAS) 5.9)

    c. Click the Target Navigation icon.

    d. Expand the Business Intelligence section and then click biinstance.

    e. Click the Availability tab.

    f. Click Stop All.

    g. Click Start All

7.9.7 Configuring TreeMap Graph

To configure the TreeMap Graph, follow these steps:

To configure the TreeMap Graph, follow these steps:

1. Login to Oracle Analytic Server (OAS) 5.9.
2. Navigate to ORACLE ANALYTIC SERVER (OAS) 5.9 Home.

> **NOTE** ORACLE ANALYTIC SERVER (OAS) 5.9 Home is the ORACLE ANALYTIC SERVER (OAS) 5.9 installed path.

3. Execute the following command: cd <Oracle Analytic Server (OAS) 5.9_home>
4. Execute the following command to find the available treemap-canvas.js: find -name treemap-canvas.js
5. Four different files, all named treemap-canvas.js are displayed.
6. Back up these four files.
7. Edit window.top.console to console in these four files and save.

7.9.8 Disable Single Sign On

Execute the following to disable Single Sign On:

```
<Oracle Analytic Server (OAS) 5.9_Home>/oracle_common/common/bin/wlst.sh
disableBISingleSignOn('<Oracle Analytic Server (OAS) 5.9_Home>/
user_projects/domains/bi')
```

7.9.9 Accessing Reports through OFS Sanctions Application

Before you access the Sanctions reports, you must first update the `PARAMNAME` and `PARAMVALUE` records in the `CONFIGURATION` table under the CONFIG schema as follows:

1. `PARAMNAME = OBI_TFLT_URL_FCCMINFO`
2. `PARAMVALUE = ##OBI_PROTOCOL##://##OBI_HOST##:##OBI_PORT##/analytics/saw.dll?dashboard`

7.10 Access the OFSAA Application

Prior to accessing the OFSAA application ensure the Internet Explorer Settings are configured.

See Accessing the OFSAA Application for details on accessing the OFSAA Application on successful deployment of the application web archive.

7.11 Perform Post Deployment Configurations

Prior to using the OFSAA Application perform the Post Deployment Configuration steps detailed in Cloning OFSAA Instance.

7.11.1 Configuring Jurisdictions and Business Domains

To configure the Jurisdiction and Business Domain, do the following:

1. In the atomic schema, prepare two queries:
   a. `MESSAGE_JURISDICTION_QRY: This query returns the jurisdiction according to your business requirement`

b. MESSAGE_BUSINESS_DOMAIN_QRY: This query returns the business domain according to your businesss requirement

Note: The Place holder for this query should only be [GRP_MSG_ID].

2. Fire the below queries:

```
update setup_rt_params t set t.v_attribute_value1 =
[MESSAGE_JURISDICTION_QRY] where t.v_param_name = 'MESSAGE_JURISDICTION';

update setup_rt_params t set t.v_attribute_value1 =
[MESSAGE_BUSINESS_DOMAIN_QRY] where t.v_param_name = 'MESSAGE_BUSINESS_DOMAIN';
```

3. Populate the DOMAIN_JUR_GRP_MAP with the Jurisdiction and Business domains and user group mapping for security access.
4. Prepare a batch to populate the FCC_SWIFT_BUS_DMN_MAP and FCC_SWIFT_JRSDSN_MAP tables according to your business requirement.

8 Post Deployment Configurations

This section provides detailed information about the Post Deployment Configurations.

8.1 Post Deployment Configurations

This section lists the various configurations to be completed before you use the OFSAA Applications.

- Create Application Users
- Map Application User(s) to User Group
- Change ICC Batch Ownership
- Post Installation Steps
- Steps for Multiple Deployments

8.1.1 Create Application Users

Create the application users in the OFSAA setup prior to use.

> **NOTE** This step may not be required if you have already setup users in the OFSAA setup. For more information refer user creation section from the Oracle Financial Services Analytical Applications Infrastructure User Guide.

8.1.2 Map Application User(s) to User Group

Starting the OFSAA 8.X. release, with installation of every OFSAA Application Pack, pre-configured application user groups are seeded. These user groups are unique to every OFSAA Application Pack and have application roles pre-configured.

Table 13 details the User Groups seeded with the OFS Sanctions Pack.

Table 13: Seeded User Groups

Name	Description
Transaction Filtering Analyst Group	User mapped to this group will have access to the alerts generated in the system. They can also escalate the alert to the supervisor group for further investigation.
Transaction Filtering Supervisor Group	User mapped to this group will have access to the alerts escalated by the analyst group. They can decide whether the alert needs to be released or blocked.
Transaction Filtering Administrator Group	User mapped to this group will be able to configure the IPE assessment rules, the audit section, the EDQ URL, the feedback URL, and refresh the notification count interval.
Customer Screening Analyst Group	User mapped to this group will have access to the alerts generated in the system. They can also escalate the alert to the supervisor group for further investigation.
Customer Screening Supervisor Group	User mapped to this group will have access to the alerts escalated by the analyst group. They can decide whether the alert needs to be released or blocked.

Table 13: Seeded User Groups

Name	Description
Customer Screening Administrator Group	User mapped to this group will be able to configure the IPE assessment rules, the audit section, the EDQ URL, the feedback URL, and refresh the notification count interval.
Customer Screening Senior Supervisor	User mapped to this group will be able to configure the IPE assessment rules, the audit section, the EDQ URL, the feedback URL, and refresh the notification count interval.

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

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

8.1.3 Change ICC Batch Ownership

This section is not applicable for OFS Sanctions Pack.

8.1.4 Post Installation Steps

Following are the post installation steps:

> **NOTE** Ensure that you take a backup of the realtime_processing folder in the Installed Area.

1. Navigate to the `<INSTALLED_AREA>/realtime_processing/WebContent/conf` path and make the following changes in the `install.properties` file:
   a. `Replace the <RTI_INFODOM> placeholder with the existing Infodom value`
   b. `Replace the <RTI_SEGMENT> placeholder with the value SF`
   c. `Replace the <RTI_APPID> placeholder with the value OFS_TFLT`
2. Configure IPE in web application servers in real time mode. See section **Configuring IPE in Web Application Servers for Real Time Mode** in the OFS IPE Configuration Guide on OTN.
3. Copy the `spring-postSacalert.properties` file from the path `$FIC_HOME/Transaction_Processing/WebContent/conf/ext` to the path `$FIC_HOME/Fedwire_Processing/WebContent/conf/ext` and `$FIC_HOME/Sepa_Real_Time_Processing/WebContent/conf/ext`.
4. Execute the `ant.sh` file from the `<INSTALLED_AREA>/Transaction_Processing/`path. This generates a WAR file and EAR file. Deploy the EAR file. For more information, see Creating and Deploying EAR/ WAR File.
5. For information on the post-installation steps for real time mode and replacing the placeholders (`jndi_java.naming.provider.url` and `jndi_java.naming.security.credentials parameters`) in the IPE Screen, see Post Installation Steps and Configurations for Real Time Mode. Both these parameters are applicable for the CLEAN RESPONSE Transaction, HOLD RESPONSE Transaction, and TRANSACTION FILTERING FEEDBACK JMS MESSAGE actions.
6. For information on configurations for Real Time mode, see Post Installation Steps and Configurations for Real Time Mode.

7. To do an RTI Assessments import, navigate to the `<INSTALLED_AREA> / Transaction_Processing/IPEAssessmentImport/ RTIExport_TransactionFiltering_IPE_Assessments.xml` path and follow these steps:
   a. Login to the Server where application layer is installed.
   b. Navigate to the `<FIC_HOME>/ficapp/common/FICServer/bin` path.
8. Execute the `/RTIImport.sh $1 $2 $3 $4` command.

In the above command:

- $1 is the File name which has to be imported along with the absolute path where file exists
- $2 is the infodom
- $3 is the APP ID

> **NOTE** The value of $4 should always be false.

For example,

```
RTIImport.sh <INSTALLED_AREA>/Transaction_Processing/
IPEAssessmentImport/RTIExport_TransactionFiltering_IPE_Assessments.xml
##TFLTINFODOM## OFS_TFLT false
```

9. Make the following changes in the Admin Screen:
   a. Select Audit (Yes for Logging level = DEBUG, No for Logging level = INFO)
   b. Enter EDQ SOAP Url
   c. Enter Feedback Url (For sending the feedback message to the feedback queue)
   d. Enter Refresh Interval (Notification Count on the Transaction Filtering Screen will get refresh after these many milliseconds).

> **NOTE** Step 4 to Step 8 are only valid for Transaction Filtering (TF).

10. Copy the config folder from `$FIC_HOME/SanctionsCommon` folder in to EDQ.local.home.
11. Create a Wallet. Using the Wallet, you can establish the database connection and save the database details. For information on creating a wallet, see Creating a Wallet.
12. Copy the `##EDQ_INSTALLATION_PATH##/edq/oracle.edq/jmxtools.jar` file into the `##FIC_DB_HOME##/lib` folder. If this step is not done, the EDQ call from the CS run will fail.
13. Go to the `Director.properties` file in the `/scratch/ofsaebas/Oracle/Middleware/ Oracle_Home/user_projects/domains/base_domain/config/fmwconfig/edq/oedq.local.home` path.
14. In the `Director.properties` file, comment `[expr]management.port = clustered ? -1 : 8090`.
15. In the `Director.properties` file, add "`management.port = 8090`".
16. To configure users in the AAI_EMAIL_CONFIG table in the Config schema, see Oracle Financial Services Analytical Applications Infrastructure Administration Guide, *SMTP Server Configurations* section.
17. Add an entry in the Configuration table as shown below:

```
insert into CONFIGURATION (PARAMNAME, PARAMVALUE, DESCRIPTION) values
('OFS_OFS_TFLT_ADDHIGHLIGHTSFILTERS', 'TRUE', null)
```

18. To enable logger level, run the following query in the Config Schema.

```
update aai_dyn_svcs_servers set V_LOGGERLEVEL='0' where v_loggerlevel is NOT NULL;
```

8.1.5 Steps for Multiple Deployments

If there is more than one application such as ILP, RAOR and TFLT installed, then follow these steps to do multiple deployments:

> **NOTE** ILP (IPE configuration) and TFLT applications are related only to TF.

> **NOTE** If ROAR.war is deployed along with TFAT.war then follow the below steps:
>
> 1. Navigate to Deployed Area/ROAR.ear/ROAR.war/conf/application-env.properties.
>
> Replace:
> spring.profiles.active=JMS,JMSApplicationCache,JMSGateway,JMSFeedBackGateway
>
> with
> #spring.profiles.active=JMS,JMSApplicationCache,JMSGat,JMSFeedBackGateway.
>
> spring.profiles.active=
>
> 2. Navigate to Deployed Area/ROAR.ear/ROAR.war/conf/static.properties.
>
> Replace: jms/sourceEntityQueue with jms/sourceEntityQueuebkp

1. Replace the following text in `web.xml` from `<Installed Area>/realtime_processing/WebContent/WEB-INF/web.xml`:

Actual:

```
<context-param>
        <param-name>webAppRootKey</param-name>
        <param-value>rti.server.web.root</param-value>
```

Change to:

```
<context-param>
        <param-name>webAppRootKey</param-name>
        <param-value>rti1.server.web.root</param-value>
```

2. Replace the following text in `log4j.xml` from `$FIC_HOME/Transaction_Processing/WebContent/WEB-INF`:

Actual:

```
<param name="File" value="${rti.server.web.root}/logs/rti-server.log" />
```

Change to:

```
<param name="File" value="${rti1.server.web.root}/logs/rti-server.log" />
```

3. Update the entry key name in `applicationContext-jmx.xml` from: <Installed Area>/realtime_processing/WebContent/conf/

Actual:

```
 <map>
                      <entry key="realtime:name=StatsManager" value-ref="statMgrBean" />
          <entry key="realtime:name=LogConfig" value-ref="logRuntimeConfigBean" />
```

Change to:

```
 <map>
                     <entry key="realtime1:name=StatsManager" value-ref="statMgrBean" />
        <entry key="realtime1:name=LogConfig" value-ref="logRuntimeConfigBean" />
```

9 Configuring Web Server

This section covers the following topics:

9.1 Configuring Web Server

This step assumes an installation of a Web Server exists as per the prerequisites.

See the product specific installation guide to install and configure the Web Server. If an installation already exists, skip and proceed to the next step.

NOTE

Make a note of the IP Address/ Hostname and Port of the web server. This information is required during the installation process.

Refer Oracle Financial Services Analytical Applications Infrastructure Security Guide mentioned in the Related Documents section for additional information on securely configuring your Web Server.

Ensure to enable sticky session/ affinity session configuration on the web server. For more information, see the respective product specific Configuration Guide for more details. Additionally, you also need to enable the sticky session/ affinity session configuration at Load Balancer level if you have configured a Load Balancer in front of the web server (s)..

9.2 Configuring Web Application Servers

This step assumes the installation of the WebLogic application server as per the prerequisites. To configure the web application Server for OFSAA Deployment refer the following section:

NOTE

Make a note of the IP Address/ Hostname and Port of the web application server. This information is required during the installation process (required if 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 OFSAA Secure Configuration Guide/ Security Guide mentioned in the Related Documents section for additional information on securely configuring your Web Server.

9.2.1 Configuring WebLogic for Application Deployment

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

> **NOTE** For deployment on Oracle WebLogic Server 12.1.3.0.0 (64 bit) with Java 8, download and install patch 18729264.

This section covers the following topics:

- Creating Domain in WebLogic Server
- Delete Domain in WebLogic
- WebLogic Memory Settings
- Configuring WebLogic for REST Services Authorization

9.2.1.1 Creating Domain in WebLogic Server

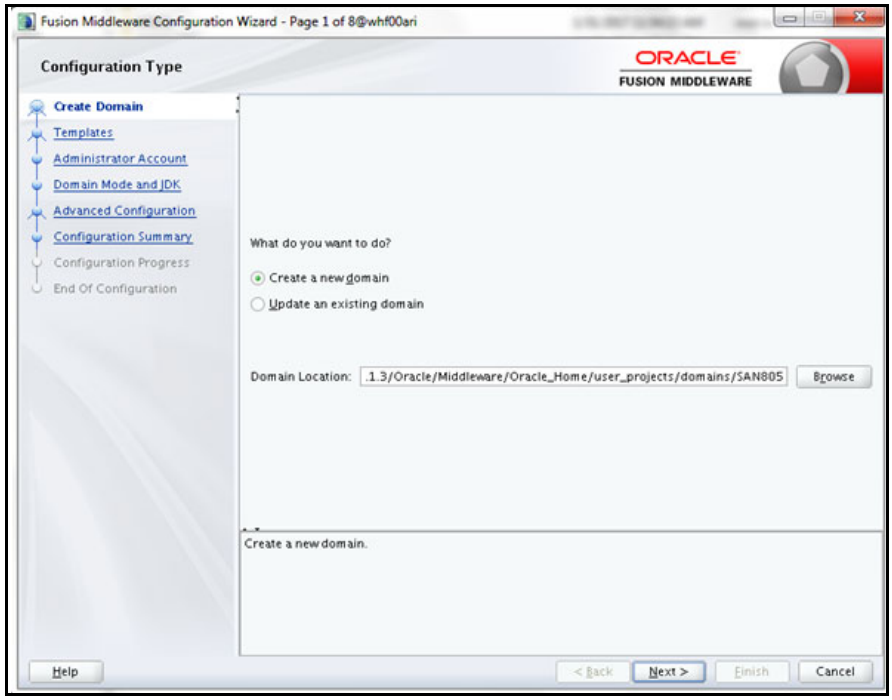
To create a new domain using Configuration Wizard in WebLogic, follow these steps:

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

   `./config.sh`

   The *Configuration Type* window is displayed.

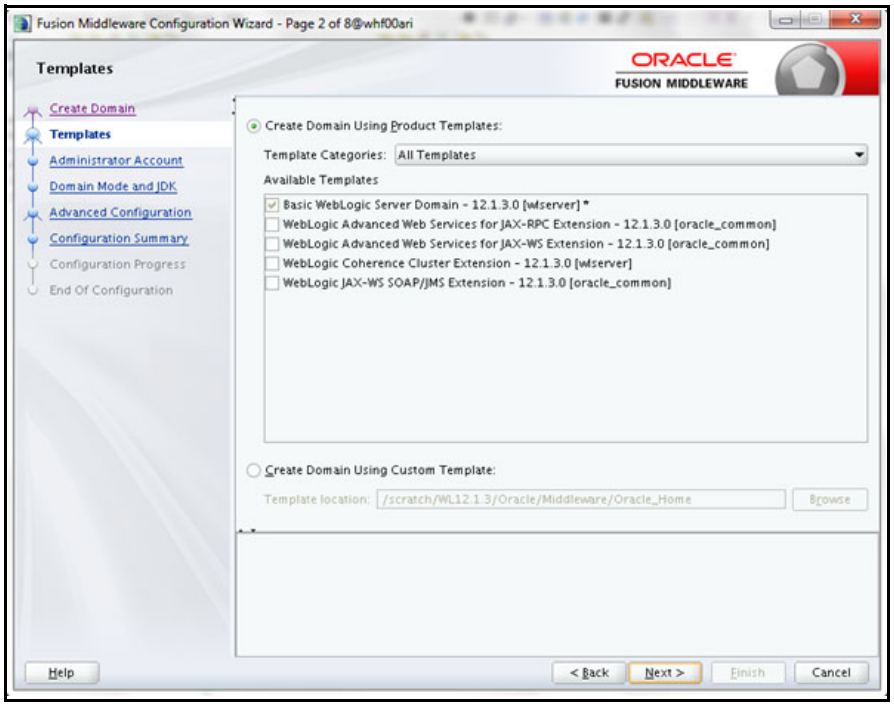
   Configuration Type



2. Select **Create a new domain** option and click **Next**.

   The *Templates* window is displayed.

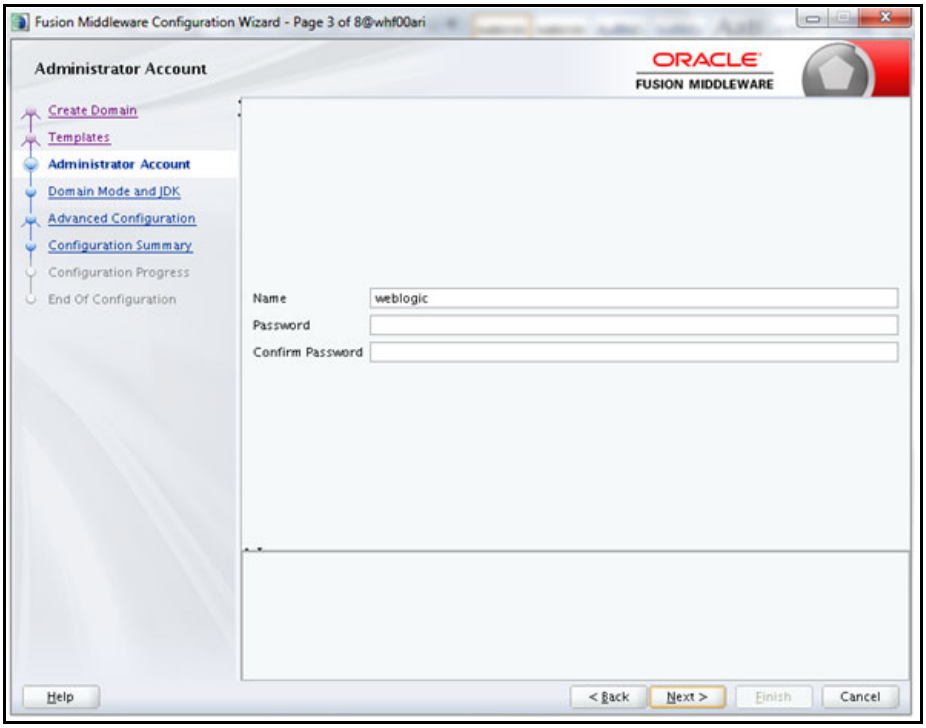
   Templates



3. Select the **Create Domain Using Product Templates** option and click **Next**.

The *Administrator Account* window is displayed.

Administrator Account

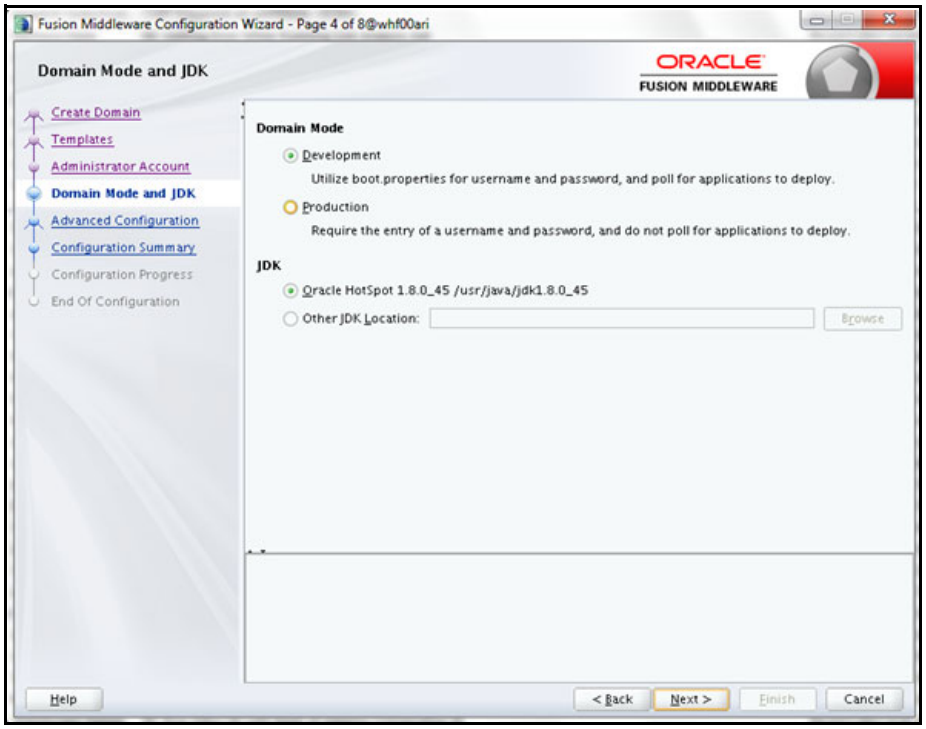


4. Enter the **Name** and **Password** to be assigned to the Administrator. Ensure that the password is of minimum 8 characters in length.

5. Re-enter the password for confirmation and click **Next**.

   The *Domain Mode and JDK* window is displayed.

   Domain Mode and JDK



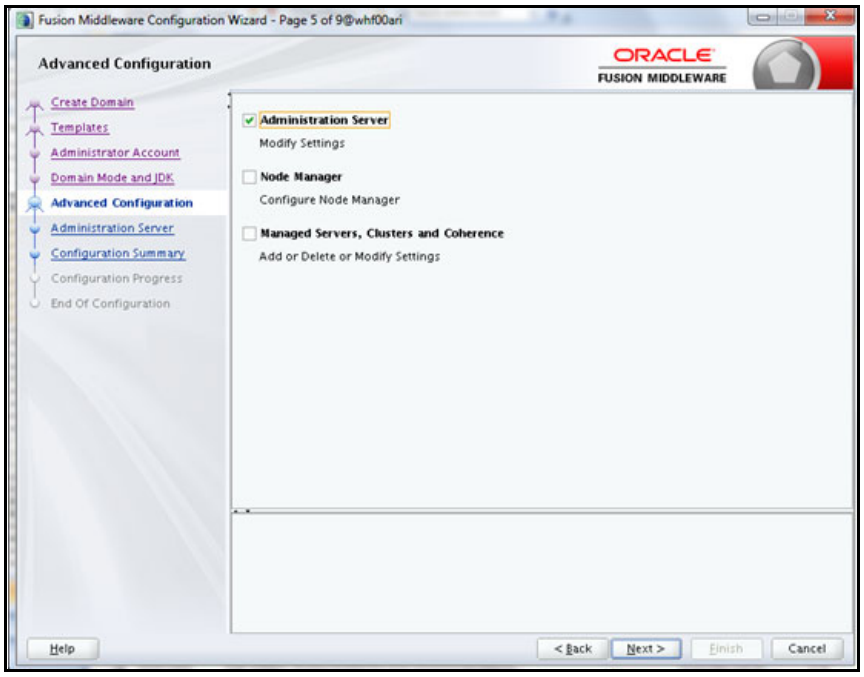
6. Select the following options:

   In the Domain Mode section, select **Development** mode.

   In the JDK section, select **Oracle Hotspot 1.8.0_45 /usr/java/jdk1.8.0_45** and click **Next**.

   The *Advanced Configuration* window is displayed.

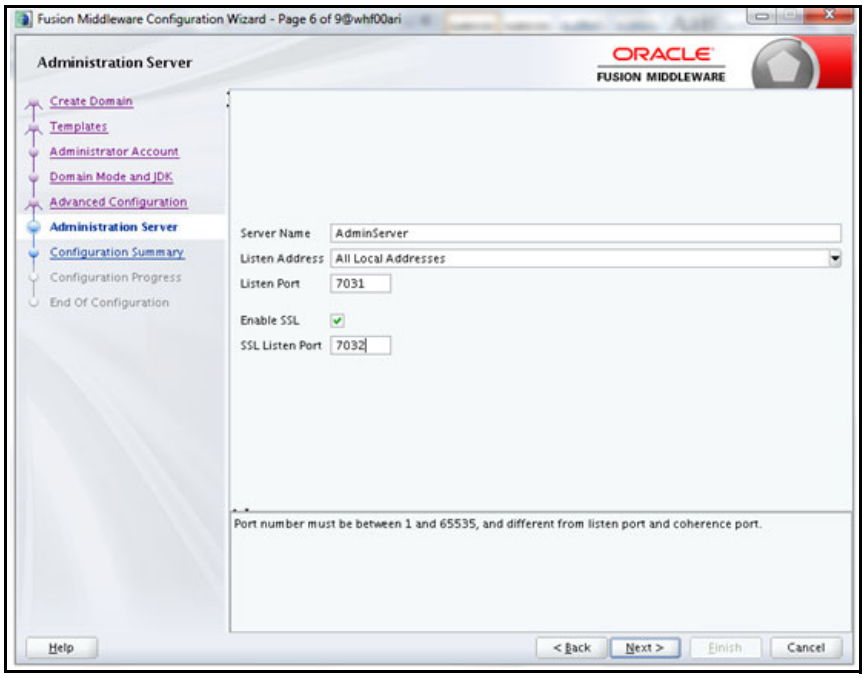
   Advanced Configuration



7. Select **Administration Server**. A WebLogic Server domain must have an Administration Server. You can also select Manages Servers, Clusters and Machines and RDBMS Security Store if required. Click **Next**.

   The *Administration Server* window is displayed.

   Administration Server

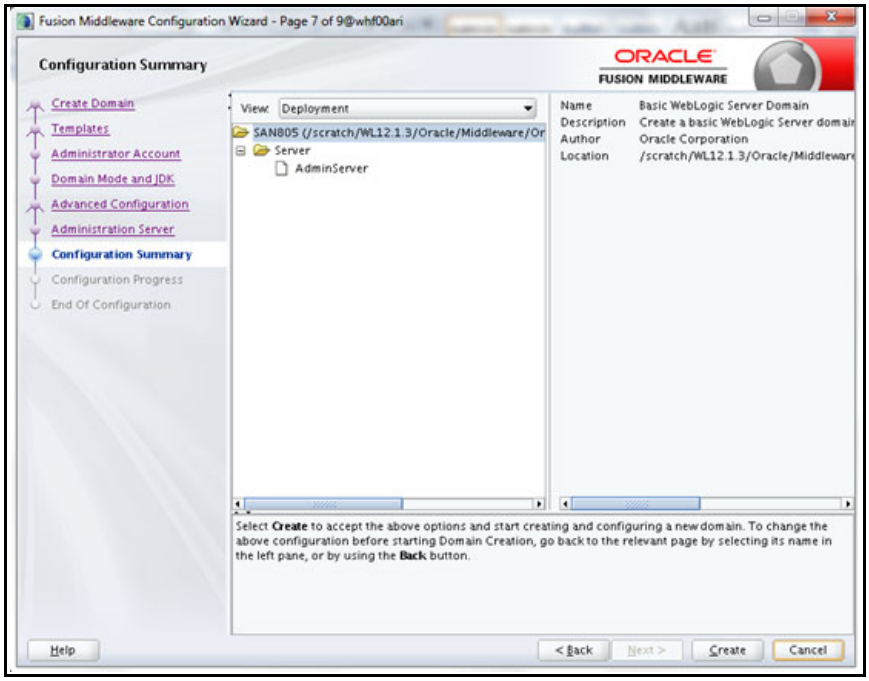


8. Enter Administration Server details such as the Name, Listen address, Listen Port, SSL listen port, and SSL enabled (for secure login using https) check box. Click **Next**.

The *Configuration Summary* window is displayed.

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

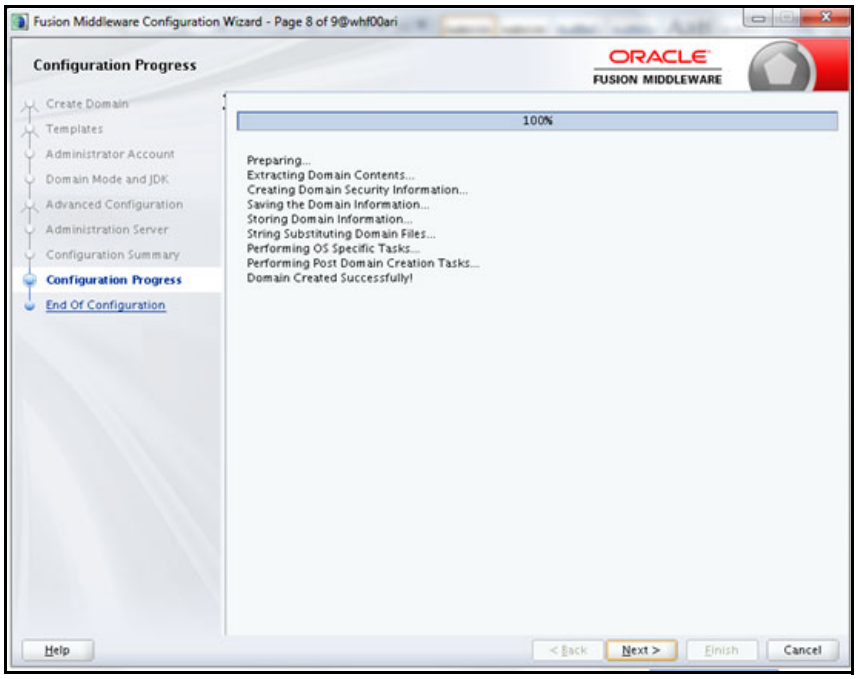
Configuration Summary



9. Verify the configuration details of the WebLogic domain and click **Create**.

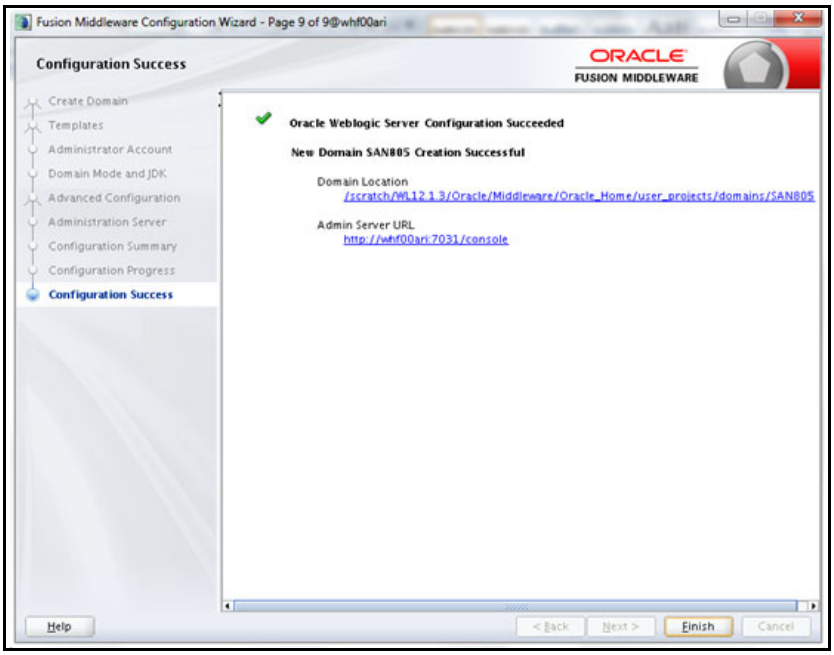
   The *Configuration Process* window is displayed with the status indication of the domain creation process.

   Configuration Process



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

    Configuration Complete



> **NOTE** Note down the HTTPS port specified during this process and use the same as servlet port or web server port during OFSAAI Installation.
>
> To enable https configuration on Infrastructure, assign value 1 to "HTTPS_ENABLE" in.

11. Add a java option entry `-DUseSunHttpHandler=true in WLS_HOME/bin/ "setDomainEnv.sh"` file (Required only if self signed certificate is used).

9.2.1.2 Delete Domain in WebLogic

To delete a domain in WebLogic, follow these steps:

1. Navigate to the following directory:

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

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

9.2.1.3 WebLogic Memory Settings

To configure the WebLogic Memory Settings, follow these steps:

1. Change the memory setting for Java Heap to `-Xms512m -Xmx3072m` in `setDomainEnv.sh` file, which resides in the folder `<DOMAIN_HOME>/bin` and in `CommEnv.sh` file which resides in the folder `common/bin`.
2. Edit this file for customizing memory settings and garbage collector settings depending on the available hardware configuration.

Example 1:

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

Example 2:

```
JAVA_VM=
MEM_ARGS="-Xms256m -Xmx1024m"
```

9.2.1.4 Configuring WebLogic for REST Services Authorization

To enable REST API authorization by OFSAA in WebLogic, perform the following steps:

1. Open the config.xml file located in the domain where OFSAA is deployed, that is `<domain_home>/config/config.xml`
2. Add the following tag in the security-configuration tag:

```
<enforce-valid-basic-auth-credentials>false</enforce-valid-basic-auth-credentials>
```

3. Place the following tag in the `config.xml` file and above the tag mentioned in step 2:

```
/scratch/ofsaaweb/Oracle/user_projects/domains/SAN807RCA/config/config.xml
```

9.2.2 Configuring WebSphere for Application Deployment

This section covers the following topics:

- Configuring the Web.XML file
- Configuring WebSphere Shared Library to Support Jersey 2x and Jackson 2.9x Libraries

9.2.2.1 Configuring the Web.XML file

In the web.xml file in the `<FIC_HOME>/ficweb/webroot/WEB-INF` path, add the following code:

```
com.ofs.aai.rest.v1.service.wf.PMFService

<param-value>com.ofs.aai.rest.v1</param-value>

                                </init-param>

                                <init-param>

                                                <param-
name>jersey.config.server.provider.classnames</param-name>

                                                <param-
value>com.ofs.aai.rest.v1.service.impl.UserService;com.ofs.aai.rest.v1.service.impl.Funct
ionService;com.ofs.aai.rest.v1.service.impl.GroupService;com.ofs.aai.rest.v1.service.impl
.RoleService;com.ofs.aai.rest.v1.service.impl.Infodom;


com.ofs.aai.rest.v1.report.impl.I18nService;com.ofs.aai.rest.v1.report.impl.ActionService
;com.ofs.aai.rest.v1.report.impl.AuditTrailService;com.ofs.aai.rest.v1.report.impl.Report
Service;


com.ofs.aai.rest.v1.impl.DBDetailServices;com.ofs.aai.rest.v1.impl.LogService;com.ofs.aai
.rest.v1.impl.Services;com.ofs.aai.rest.v1.impl.WSService;com.ofs.aai.rest.v1.service.wf.
PMFService

<param-value>
```

After you add the code as shown, you must redeploy the application by executing the `ant.sh` file.

Execute the command:

```
manageprofiles.sh -validateAndUpdateRegistry
```

9.2.2.2 Configuring WebSphere Shared Library to Support Jersey 2x and Jackson 2.9x Libraries

Perform the following configuration to set 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.
2. Enter details as shown in the following:
   - Name: Enter a unique 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>/utility/externallib/WEB-INF/lib` directory after creation of the EAR file.
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 illustration, ofsa is selected.
6. From the Shared Library Mapping window, move the required shared libraries from Available to Selected. In the following illustration, JERSEY2x is selected.
7. Click OK.
8. Similarly, select the next application or module and repeat the procedure from steps 5 to 7.
9. Disable the built-in JAX-RS via JVM property.
   a. Go to WebSphere admin console in Servers > WebSphere Application Servers > yourServerName.
   b. In Server Infrastructure section, go to Java and Process Management > Process definition > Java Virtual Machine > Custom properties.
   c. Add the following property:

   ```
   com.ibm.websphere.jaxrs.server.DisableIBMJAXRSEngine=true
   ```
10. Restart the application.

10 Configuring Resource Reference in WebLogic Application Server

This section includes the following topics:

- Create Data Source
- Create GridLink Data Source
- Advanced Settings for Data Source
- JDBC Connection Pooling
- Workmanager Creation

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

- For a Non RAC Database instance, Generic Data Source has to be created. See Create Data Source.
- For a RAC Database instance, Gridlink Data Source has to be created. See Create GridLink Data Source.
- When Load Balancing/Fail over is required, Multi Data Source has to be created. See Configure Multi Data Sources.

10.0.1 Create Data Source

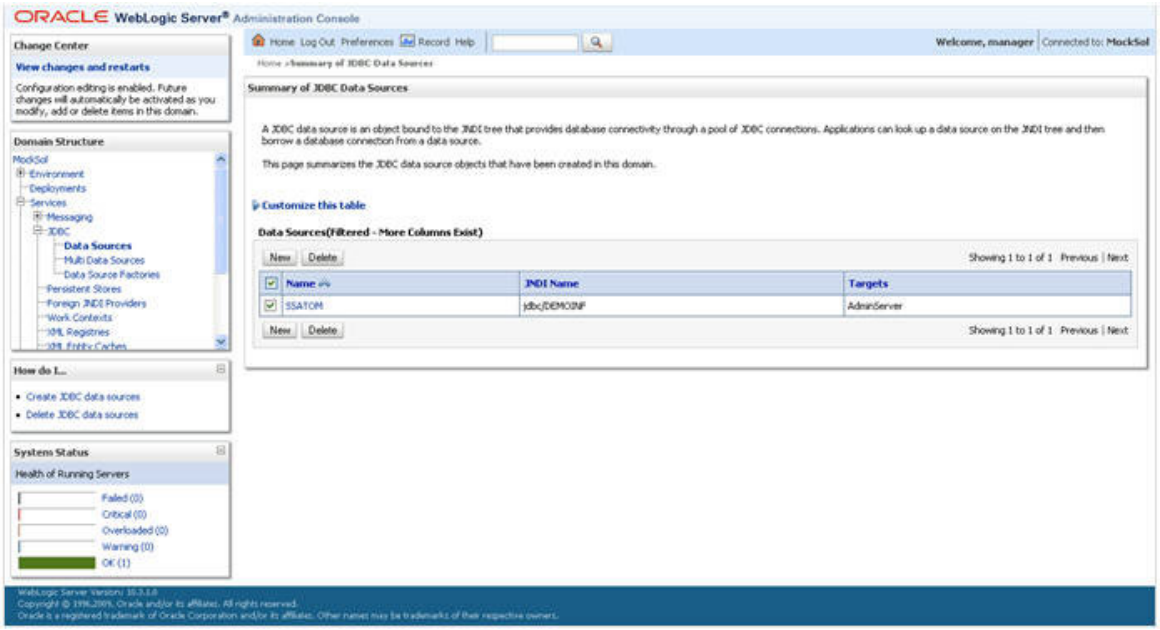
The following steps are applicable for both config and atomic data source creation.

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

Figure 17: *Welcome*

3. From the LHS menu (Domain Structure), click **Services** > **Data Sources**. The Summary of JDBC Data Sources window is displayed.

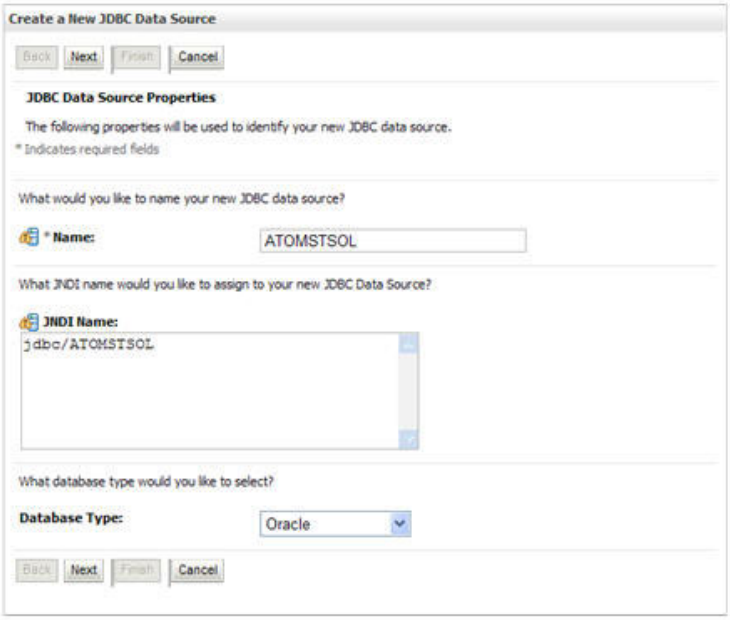
Figure 18: Summary of JDBC Data Sources



4. Click **New** and select **Generic Data Source** option. The Create a New JDBC Data Source window is displayed.

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

Figure 19: Create a New JDBC Data Source



5. Enter JDBC data source **Name**, **JNDI Name**, and select the **Database Type** from the drop-down list. Click **Next**.

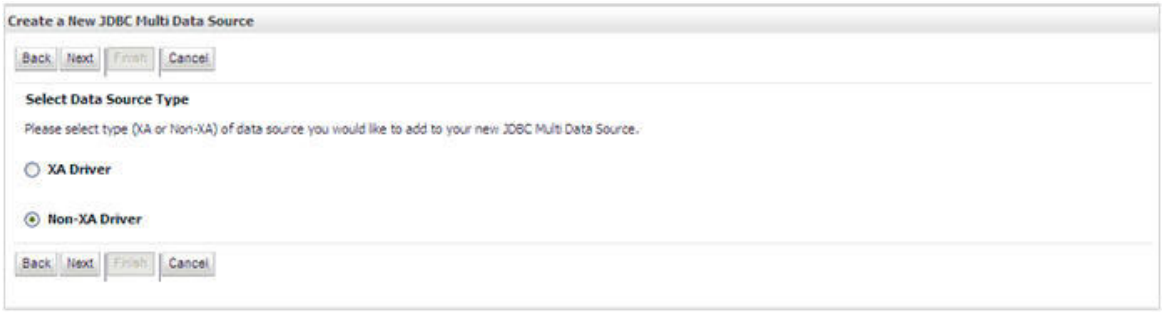
   Ensure the following:

   - The JNDI Name field should be in the format "jdbc/informationdomain"
   - Same steps needs to be followed to create a mandatory data source pointing to the "configuration schema" of infrastructure with `jdbc/FICMASTER` as JNDI name.
   - JNDI Name is the same as mentioned in `web.xml` file of OFSAAI Application.
   - Required "Database Type" and "Database Driver" should be selected.

   Data sources must be created for atomic and atomiccnf schemas. To do this, follow the above steps.<>What is the use of atomiccnf and how does it work? Is it for 807 or later because we have not encounter atomiccnf anywhere in the install document?< >

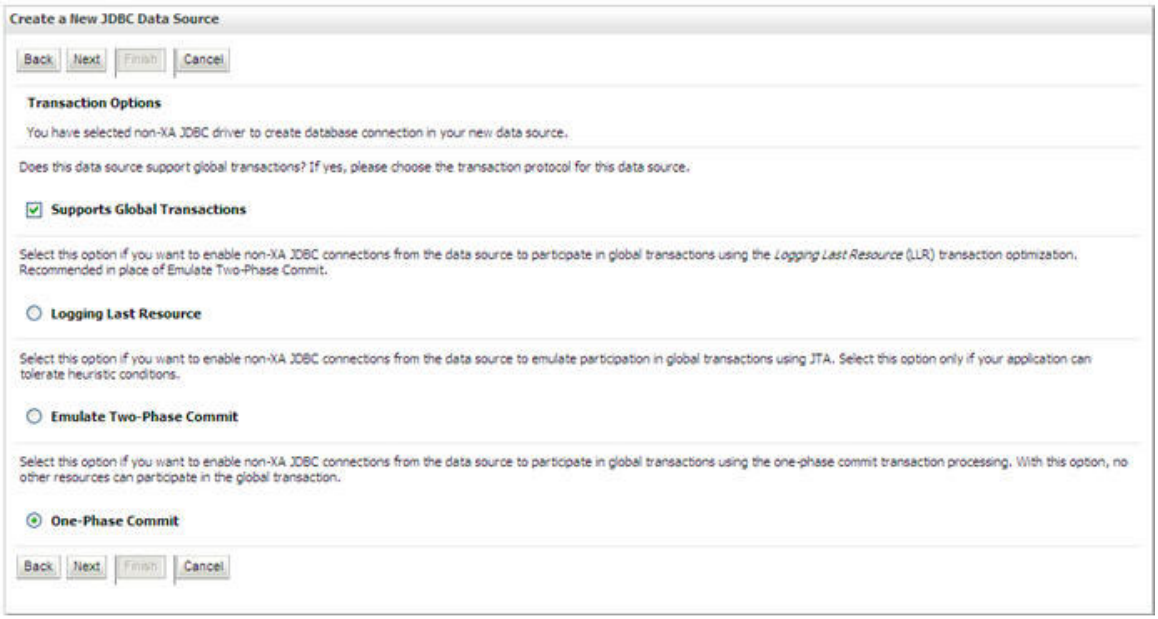
   Note: For more information, see OFS Inline Processing Engine Configuration Guide, *Configuring IPE* chapter.

Figure 20: JDBC Data Source Properties



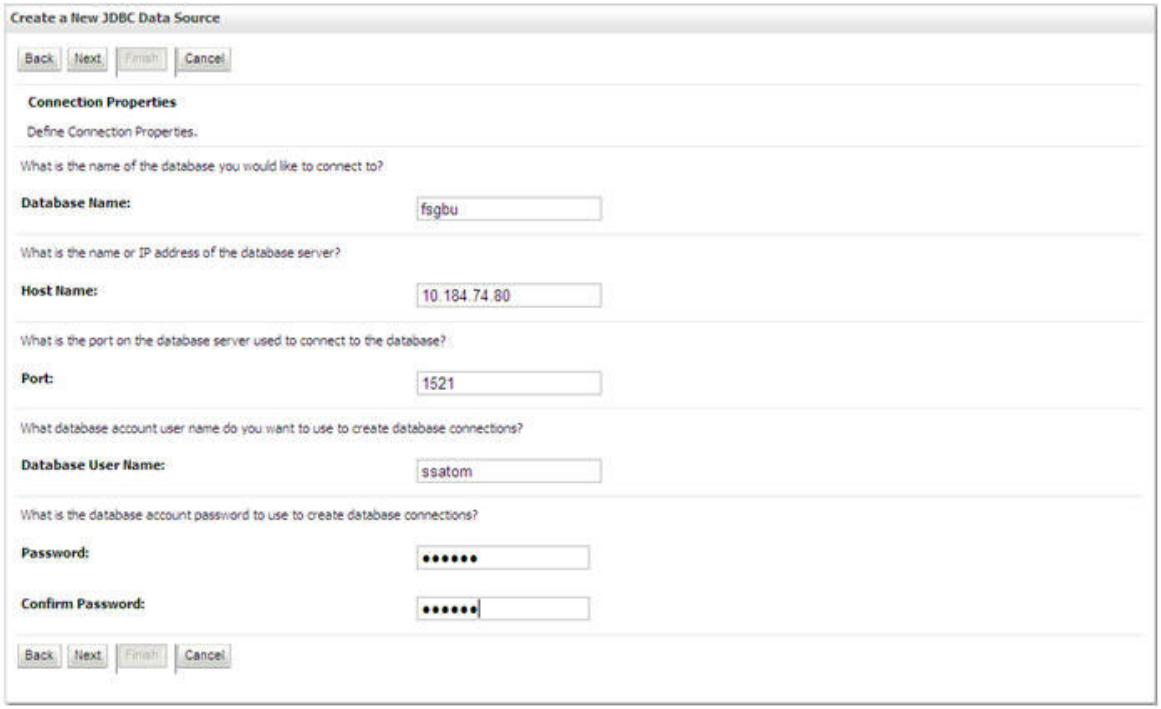
6. Select the **Database Driver** from the drop-down list. You need to select the Database Driver depending on database setup, that is, with or without RAC. Click **Next**.

Figure 21: Transaction Options



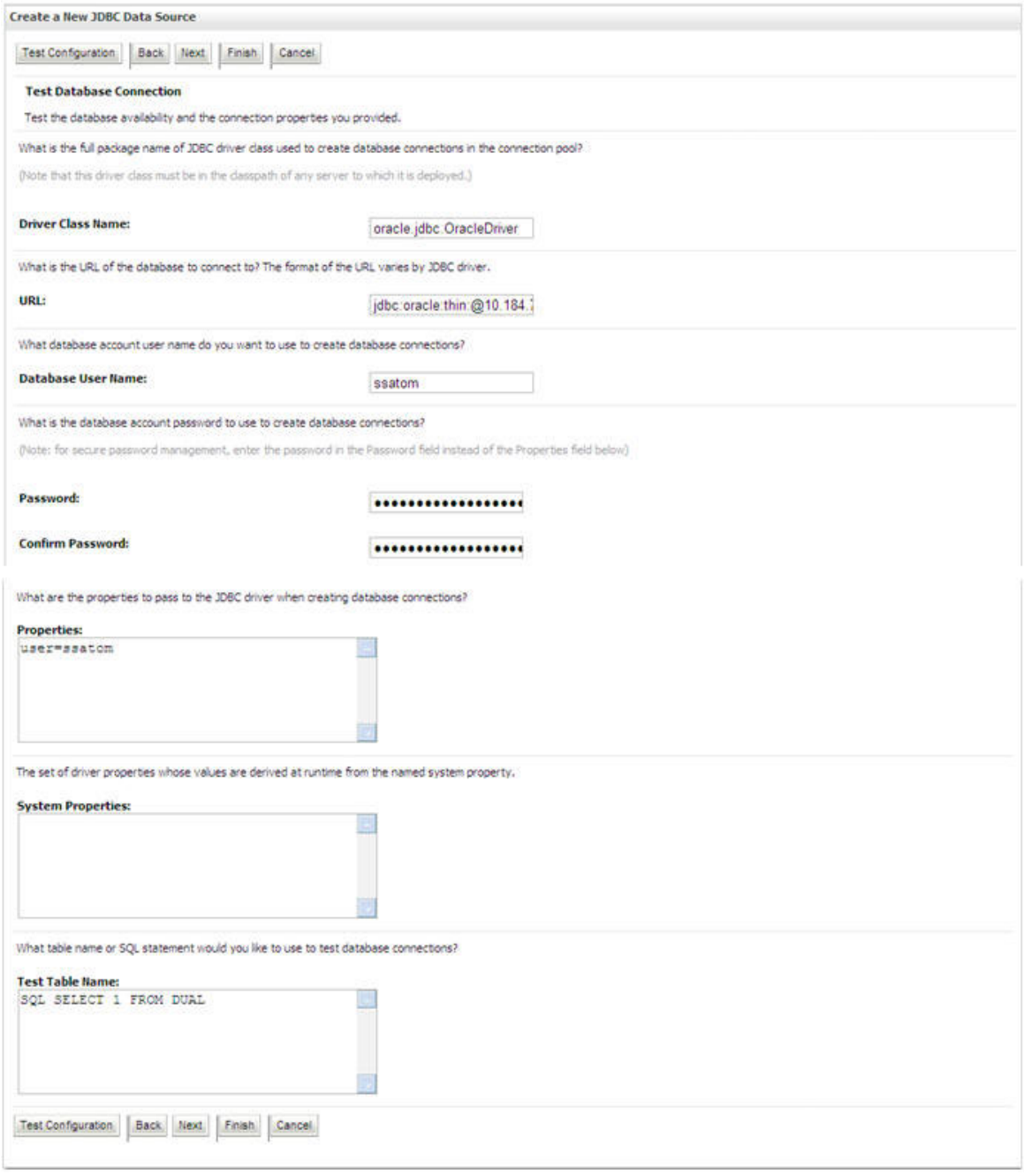
7. Select the **Supports Global Transactions** checkbox and the **One-Phase Commit** option.
8. Click **Next**. The Connection Properties window is displayed.

Figure 22: Connection Properties



9. Enter the required details such as the Database Name, Host Name, Port, Oracle User Name, and Password.
10. Click **Next**. The Test Database Connection window is displayed.

Figure 23: Test Database Connection



11. Verify the details and click **Test Configuration** and test the configuration settings.

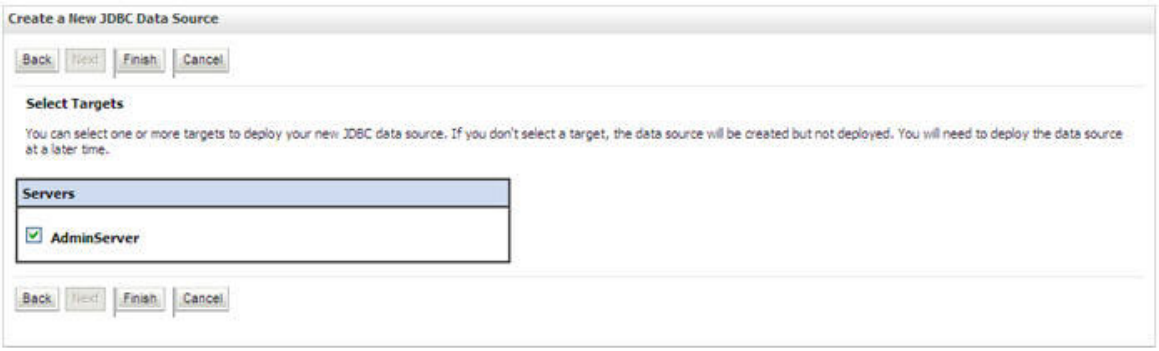
    A confirmation message is displayed stating "Connection test succeeded."

12. Click **Finish**. The created "Data Source" is displayed in the list of Data Sources.

> **NOTE** "User ID" is the Oracle user ID that is created for the respective "Information Domain".
>
> "User ID" to be specified for data source with "FICMASTER" as "JNDI" name should be the Oracle user ID created for the "configuration schema".

13. Select the new Data Source and click the Targets tab.

Figure 24: Select Targets

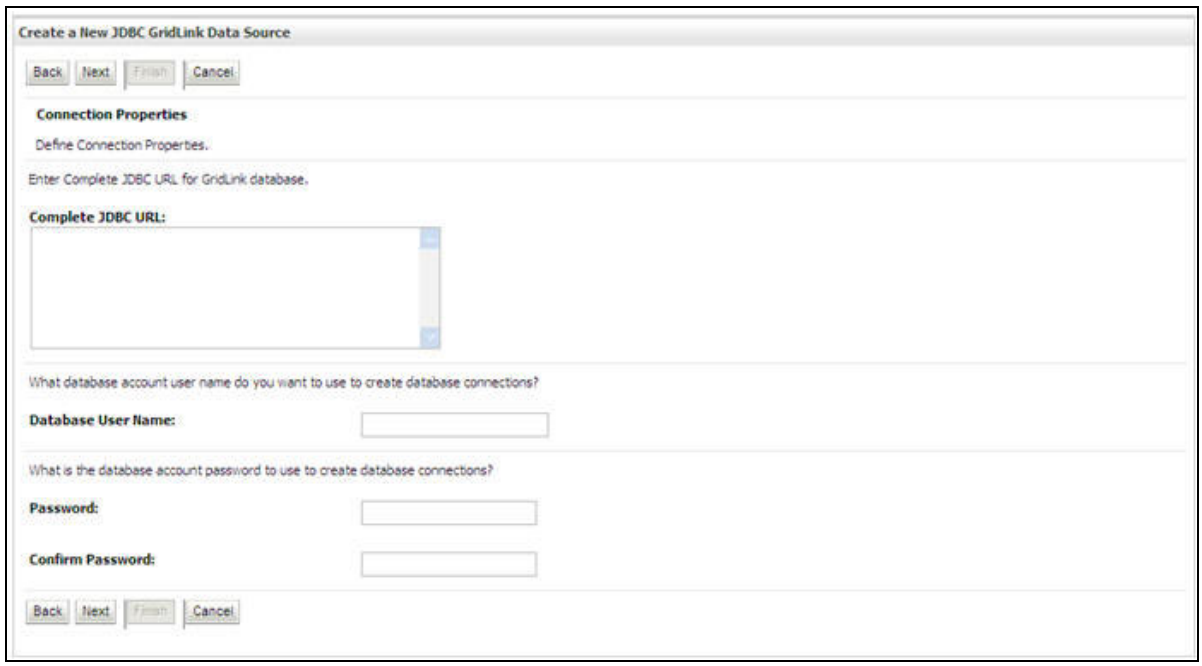


14. Select the **AdminServer** option and click **Finish**.

10.0.2 Create GridLink Data Source

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

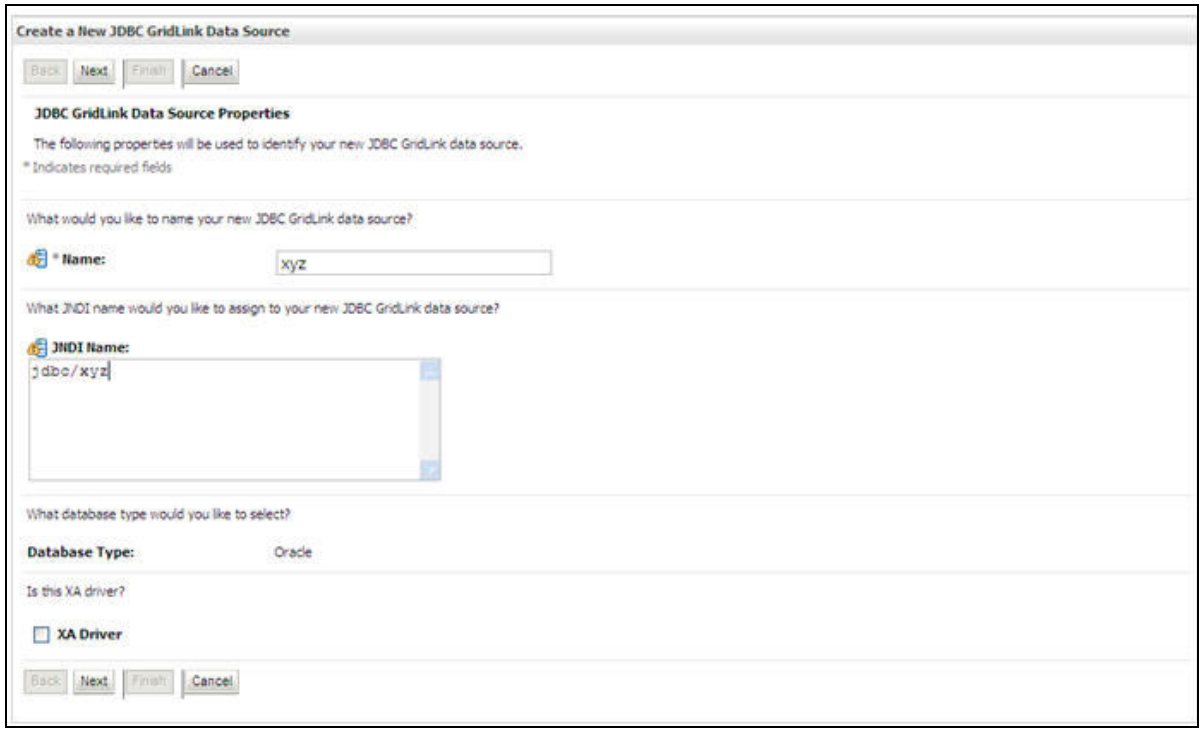
Figure 25: Create a New JDBC GridLinkData Source



1. Enter Data Source **Name**, and **JNDI Name**.

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

Figure 26: JDBC GridLinkData Source- Connection Properties



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

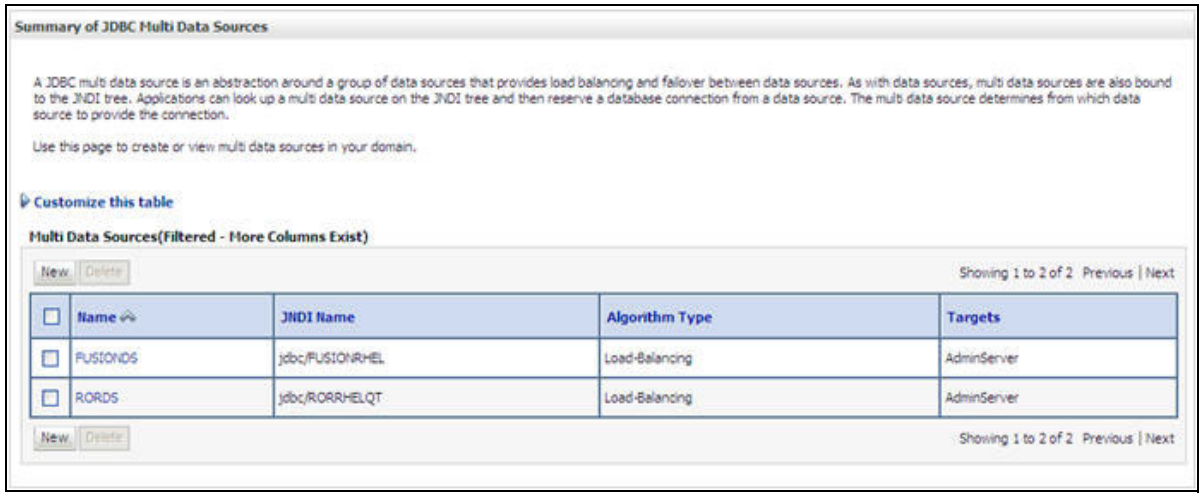
10.0.3 Configure Multi Data Sources

A JDBC multi data source is an abstraction around a group of data sources that provides load balancing and failover between data sources. As with data sources, multi data sources are also bound to the JNDI tree. Applications can look up a multi data source on the JNDI tree and then reserve a database connection from a data source. The multi data source determines from which data source to provide the connection.

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

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

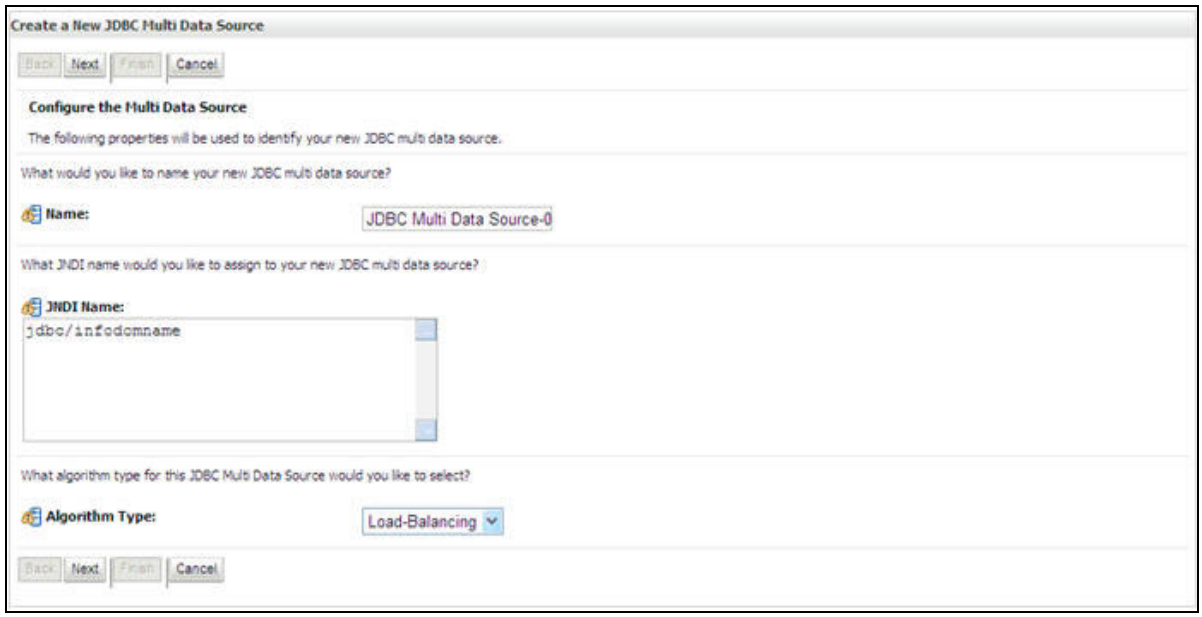
Figure 27: Summary of JDBC Multi Data Sources



4. Click **New**. The New JDBC Multi Data Source window is displayed.

> **NOTE** Ensure that the Data Sources which needs to be added to new JDBC Multi Data Source has been created.

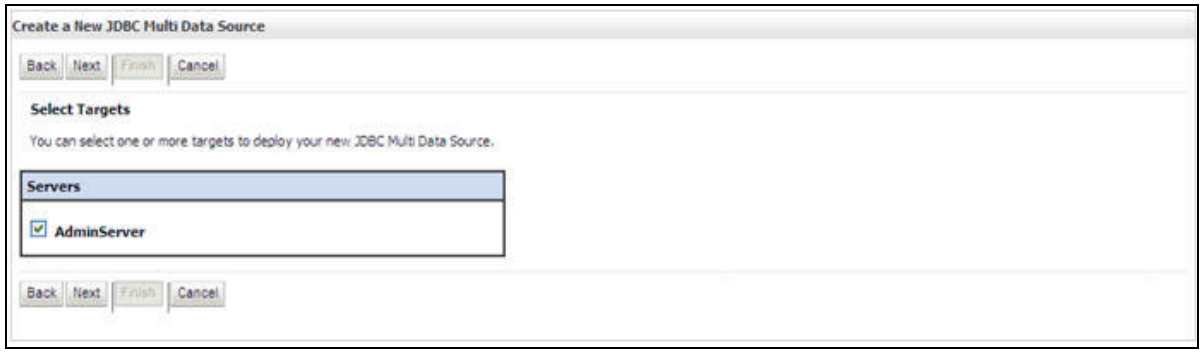
Figure 28: Configure the Multi Data Source



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

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

Figure 29: Select Targets

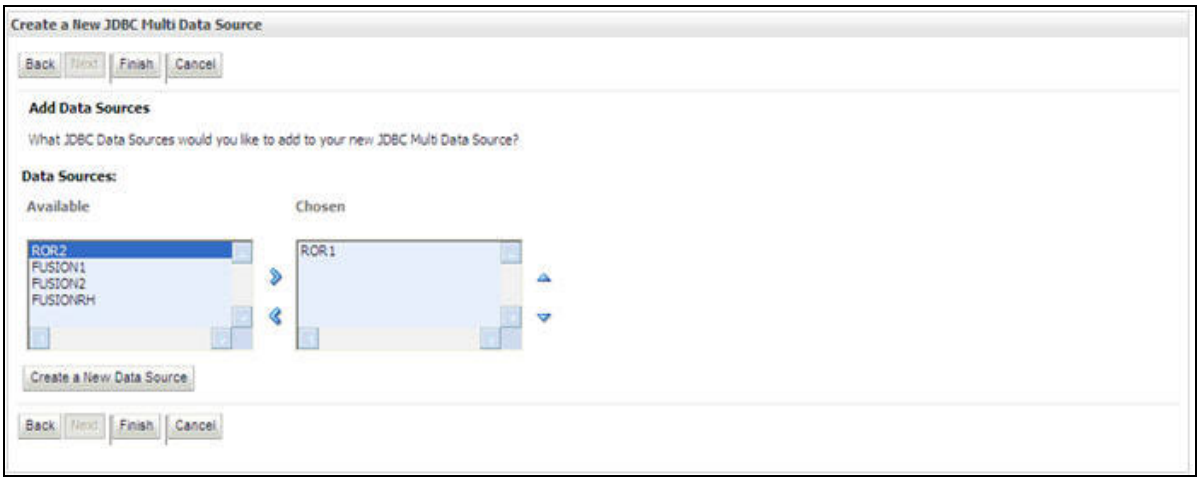


6. Select the **AdminServer** check box and click **Next**.

Figure 30: Select Data Source Type

7. Select the type of data source which will be added to new JDBC Multi Data Source. Click **Next**.

Figure 31: Add Data Sources



8. Map the required Data Source from the Available Data Sources. Click **Finish**.

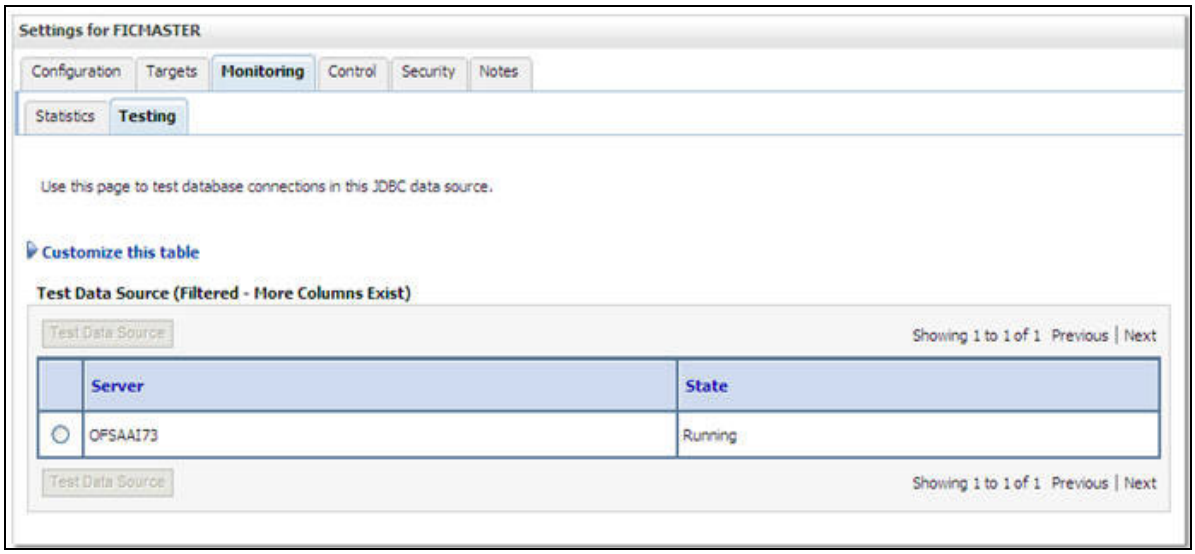
   The New JDBC Multi Data Source is created with added data sources.

10.0.4 Advanced Settings for Data Source

1. Click the new Data Source from the Summary of JDBC Data Sources window. The Settings for <Data Source Name> window is displayed.
2. Select the **Connection Pooling** tab given under Configuration.
3. Go to the **Advanced** option at the bottom of the window, and check the **Test Connection of Reserve** checkbox (Enables Weblogic Server to test a connection before giving it to a client).

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

Figure 32: Settings for <Data Source Name>



4. Select the server and click **Test Data Source**.

   A message is displayed indicating that the test was successful.

5. Once the "Data Source" is created successfully, the following messages are displayed:

   - All changes have been activated. No restart is necessary.
   - Settings updated successfully.

   If not, follow the preceding steps to recreate the data source.

10.0.5 JDBC Connection Pooling

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

1. Click the newly created Data Source $DATA_SOURCE$ and navigate to the path *Home >Summary of Services: JDBC >Summary of JDBC Data Sources >JDBC Data Source-<INFODDOM_NAME>*
2. Set the values for **Initial Capacity** to 10, **Maximum Capacity** to 100, **Capacity Increment** by 1, **Statement Cache Type** to LRU, and **Statement Cache Size** to 10.
3. Click **Save**.

10.0.6 Workmanager Creation

A Workmanager is using to retrigger failed messages.

To create a Workmanager, follow these steps:

- The **Name** field must have the value *wm/WorkManager-TFLT*
- The **Type** field must have the value *Work Manager*
- The **Targets** field must have the value *AdminServer*
- The **Scope** field must have the value *Global*

- The **Stuck Thread Action** field must have the value *Ignore stuck threads*
- Click **Save**

Figure 33: Workmanager screen 1

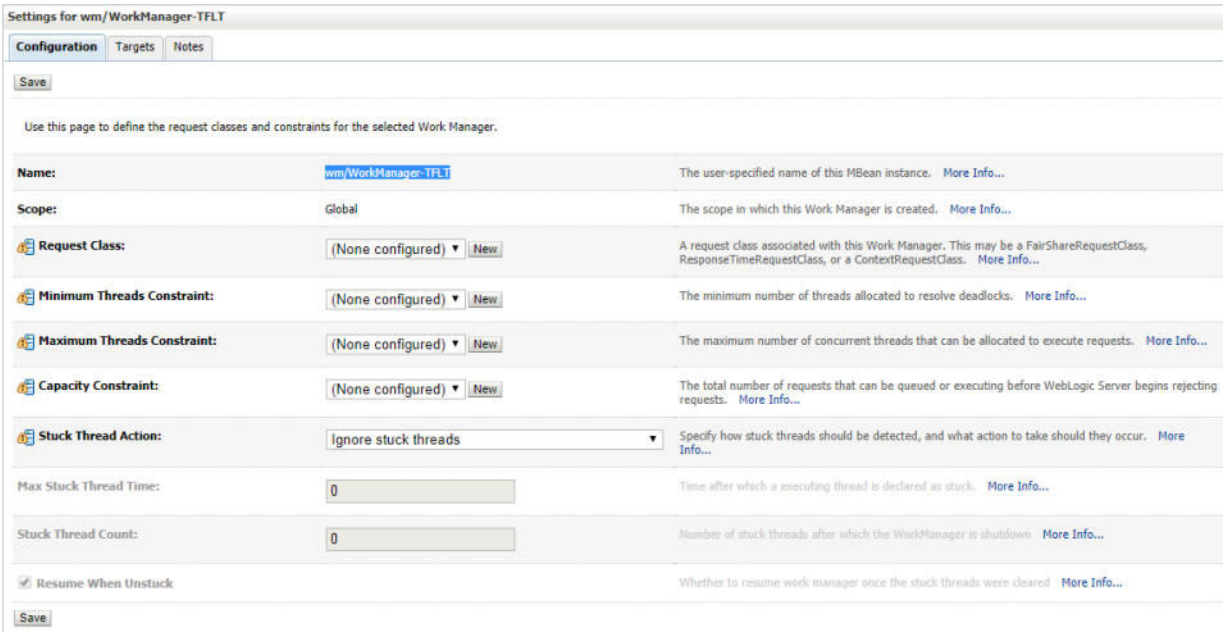
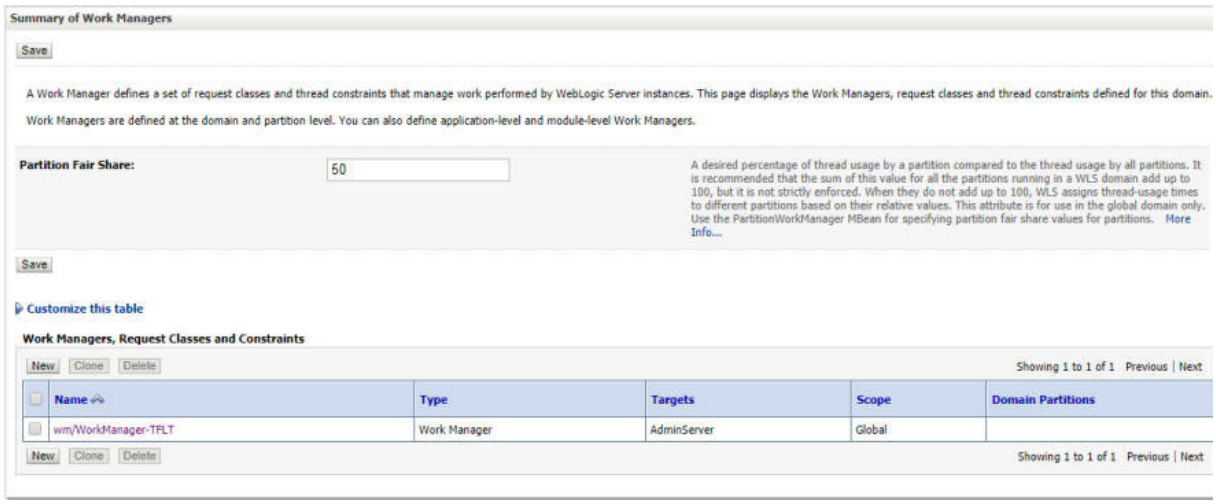


Figure 34: Workmanager screen 2



11 Creating and Deploying EAR/ WAR File

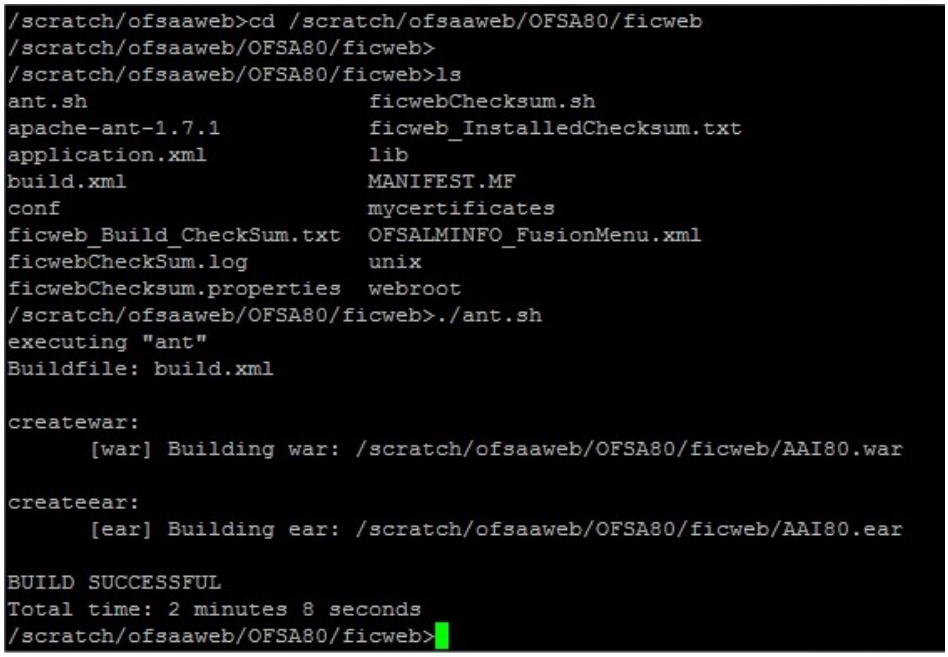
This section covers the following topics:

11.1 Creating EAR/WAR File

To create EAR/WAR File, follow these steps:

1. Navigate to the $FIC_WEB_HOME directory on the OFSAA Installed server.
2. Execute `./ant.sh` to trigger the creation of EAR/ WAR file.
3. On completion of the EAR files creation, the "BUILD SUCCESSFUL" and "Time taken" message is displayed and you will be returned to the prompt.

Figure 35: Creating EAR/ WAR File



4. The EAR/ WAR file - `<contextname>.ear/ .war` - is created.

> **NOTE** The `<contextname>` is the name given during installation. This process overwrites any existing version of EAR file that exists in the path.
>
> ANT warning for `tools.jar` can be ignored while executing `./ant.sh`

11.2 Deploying EAR/WAR File

Two EAR files are deployed: ofaai and tflt.

> **NOTE** Ensure to clear the application cache prior to the deployment of Applications Pack Web Archive. This is applicable to the WebLogic Application Server. For more information, refer Clearing Application Cache section.

Following are the steps for deploying Infrastructure application that would be created during installation:

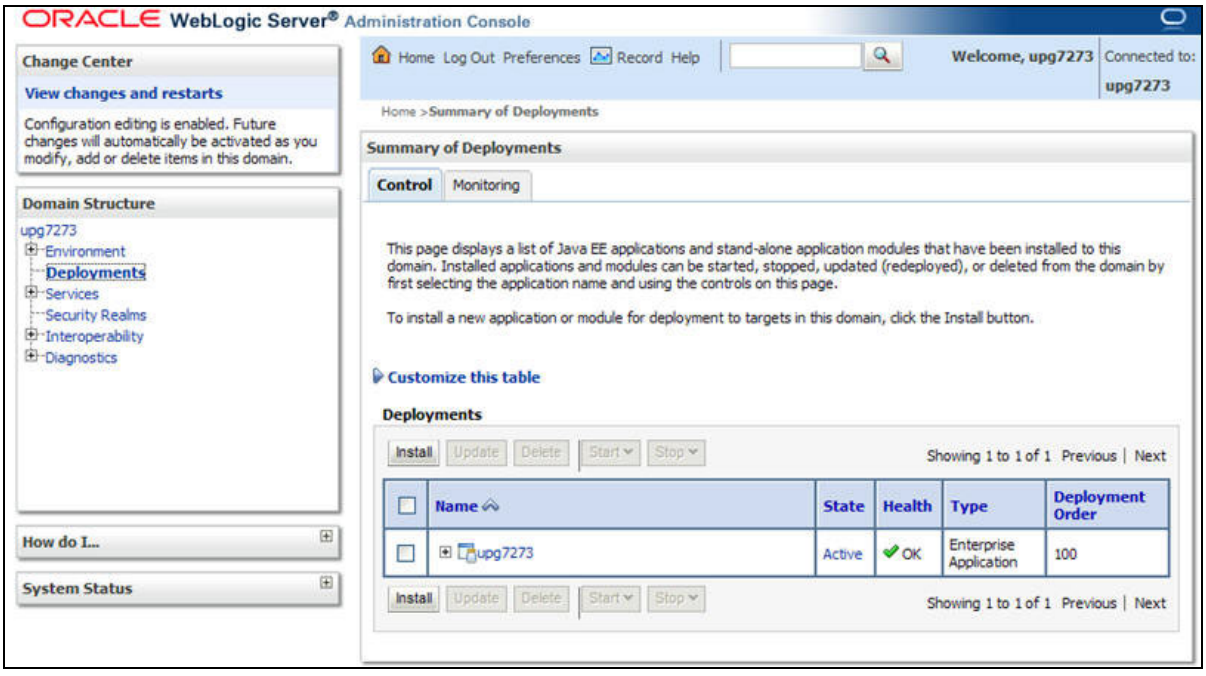
1. Navigate to the path `<WebLogic Installation directory>/user_projects/domains/<domain name>/bin` in the machine in which WebLogic is installed.
2. Start WebLogic by executing the command:

   ./startWebLogic.sh -d64 file
3. Open the URL in the browser window: `http://<ipaddress>:<admin server port>/console` (https if SSL is enabled). The Sign in window of the WebLogic Server Administration Console is displayed.

> **NOTE** Ensure that you have started Infrastructure Server by executing "./startofsaai.sh" as mentioned in, refer Starting Infrastructure Services section.

4. Log on to the WebLogic Server by entering the user credentials having privileges to deploy the EAR file.
5. From the **Domain Structure** LHS menu, click **Deployments**. The Summary of Deployments window is displayed.

Figure 36: Summary of Deployments



6. Click **Install**. The Install Application Assistant window is displayed.

7. Select the Exploded EAR directory after browsing to the directory where it is saved and click **Next**.

11.2.0.1 Explode EAR File

To explode EAR, follow these steps:

1. Create the "applications" folder under domain name. For example, "`/Bea/user_projects/domains/ <Domain _name>/applications`".
2. Create `<context_name>.ear` folder under "applications" folder.
3. Copy the `<$FIC_WEB_HOME/<context_name>.ear` file to `<WEBLOGIC_INSTALL_DIR>/Bea/user_projects/domains/<DOMAIN_NAME>/applications/<context_name>.ear`.
4. Explode the `<context_name>.ear` file by executing the command:

   ```
   jar -xvf <context_name>.ear
   ```

5. Delete the `<context>.ear` and `< context >.war` files (recently created) `<WEBLOGIC_INSTALL_DIR>/Bea/user_projects/domains/<DOMAIN_NAME>/applications/<context_name>.ear`.
6. Create a directory `<context_name>.war` under `<WEBLOGIC_INSTALL_DIR>/Bea/user_projects/domains/<DOMAIN_NAME>/applications/<context_name>.ear`.
7. Copy `<$FIC_WEB_HOME/<context_name>.war` file to `<WEBLOGIC_INSTALL_DIR>/Bea/user_projects/domains/<DOMAIN_NAME>/applications/<context_name>.ear/<context_name>.war`.
8. Explode the `<context_name>.war` file by executing the following command to get the directory structure:

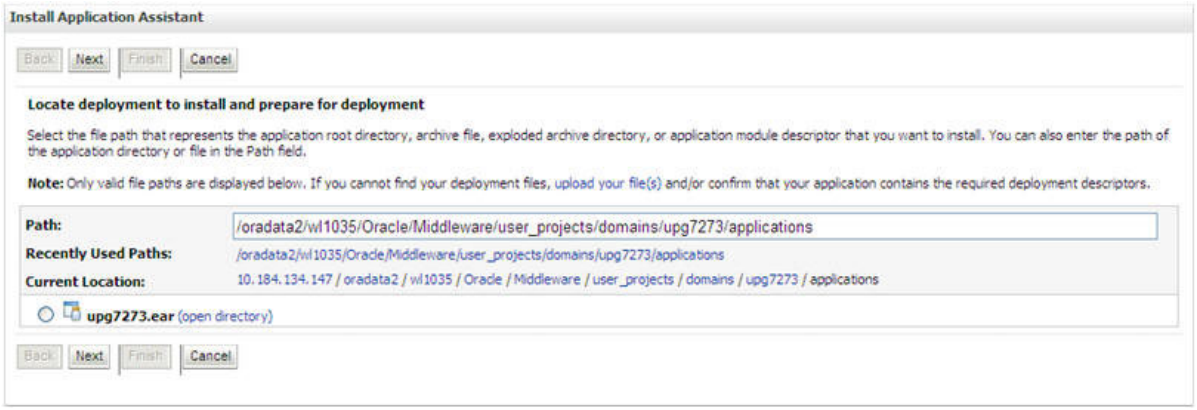
   ```
   jar -xvf <context_name>.war
   ```

11.2.0.2 Install Application

To install Application, follow these steps:

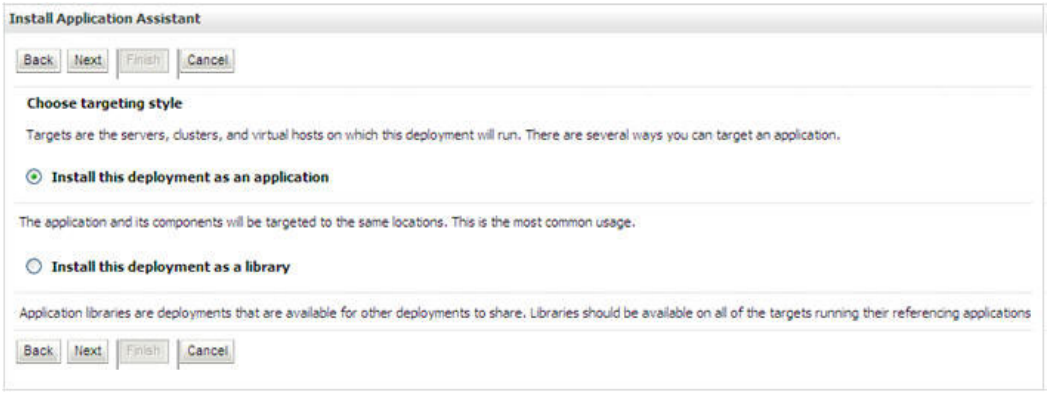
1. Open the Install Application Assistant.

Figure 37: Install Application Assistant



2. Click **Next**.

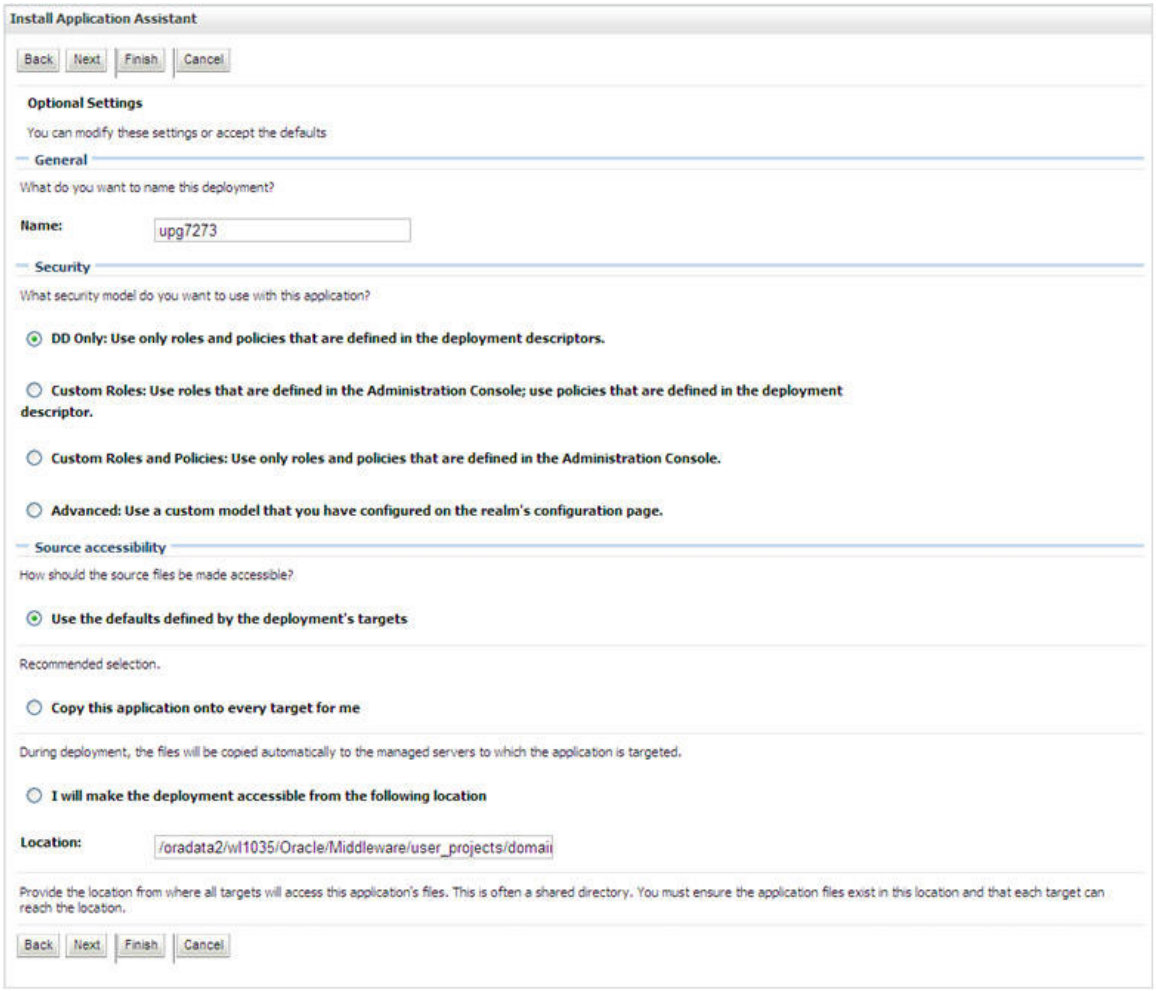
Figure 38: Install Application Assistant



3. From the Choose targeting style section, select the **Install this deployment as an application** option and click **Next**.

   The Optional Settings window is displayed.

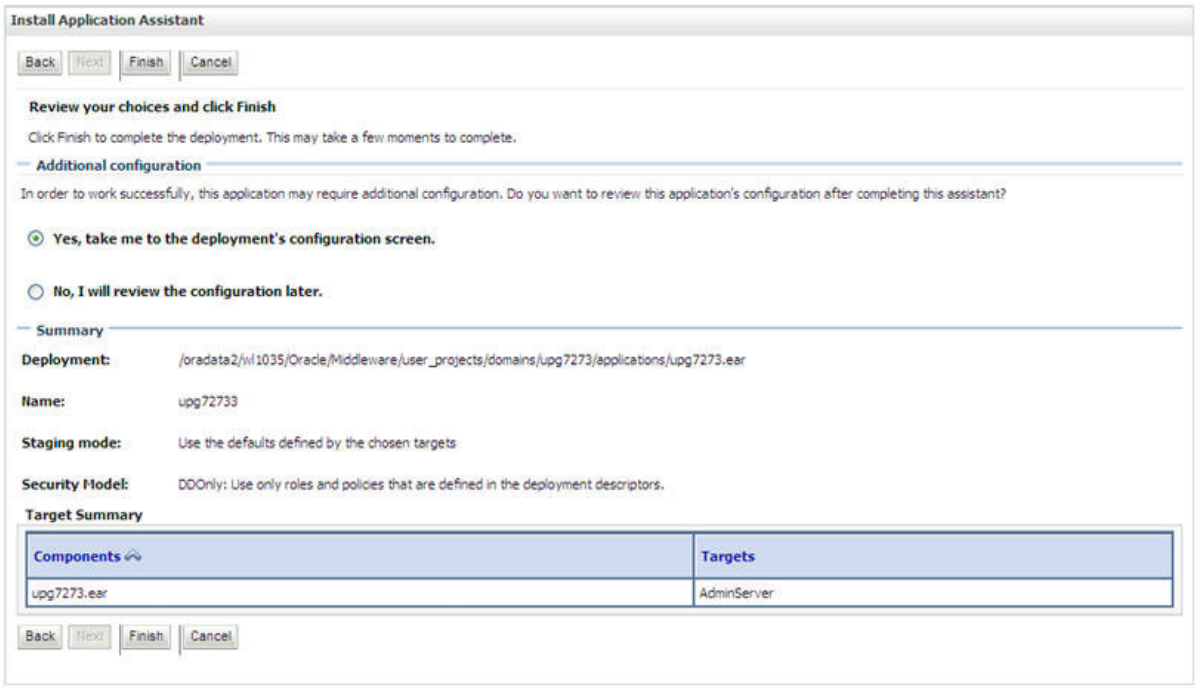
Figure 39: Optional Settings



4. Enter a **Name** for the deployment if required.
5. Under the Security section, select the **DD only** option to specify that only roles and policies that are defined in the deployment descriptors should be used.
6. Select the **I will make the deployment available from the following location** option under the Source accessibility section.
7. Click **Next** to continue.

   The Deployment Summary window is displayed.

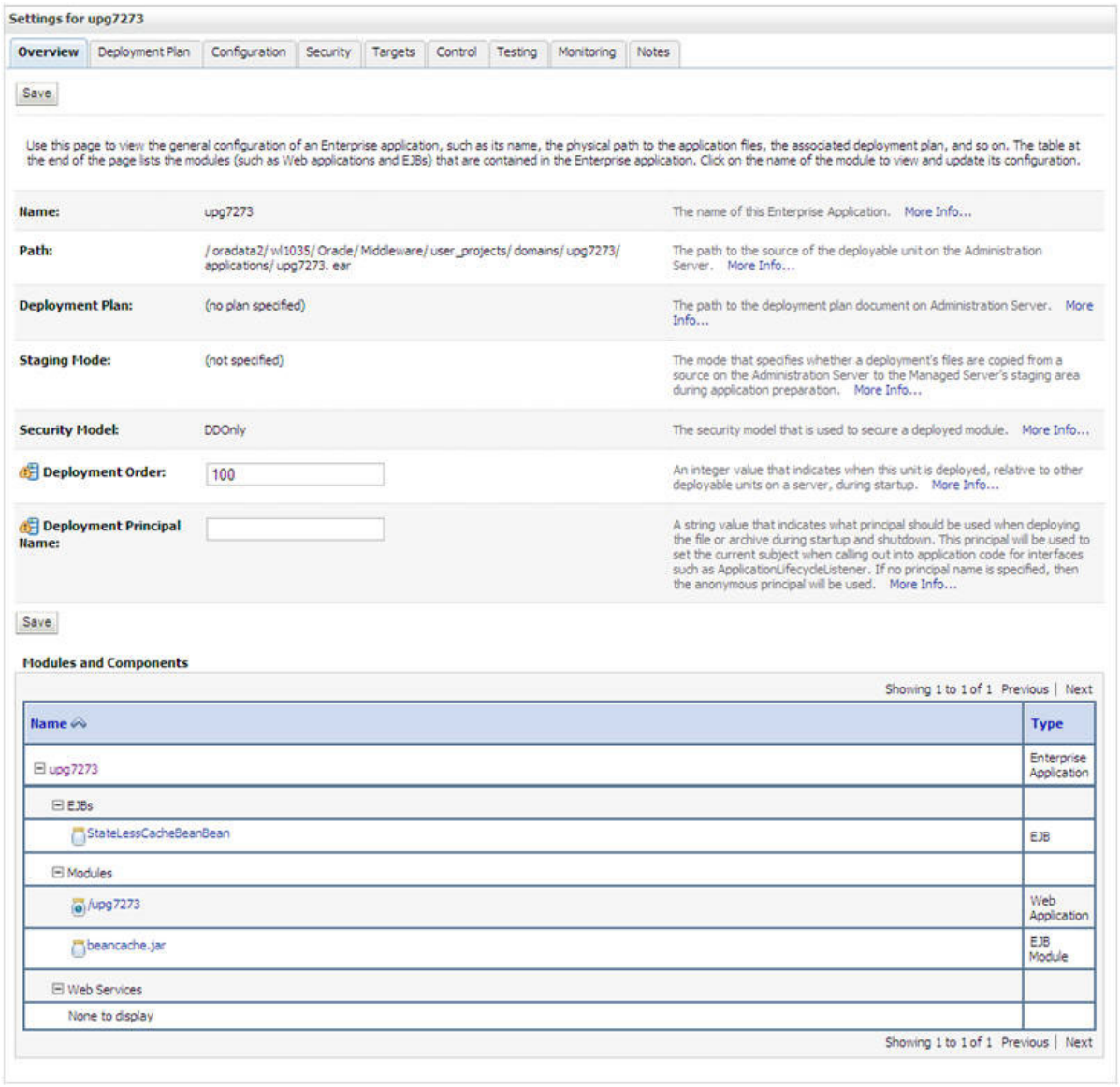
Figure 40: Deployment Summary



8. Select the **Yes, take me to the deployment's configuration screen** option and click **Finish**.

   The Settings for <Deployment Name> window is displayed.

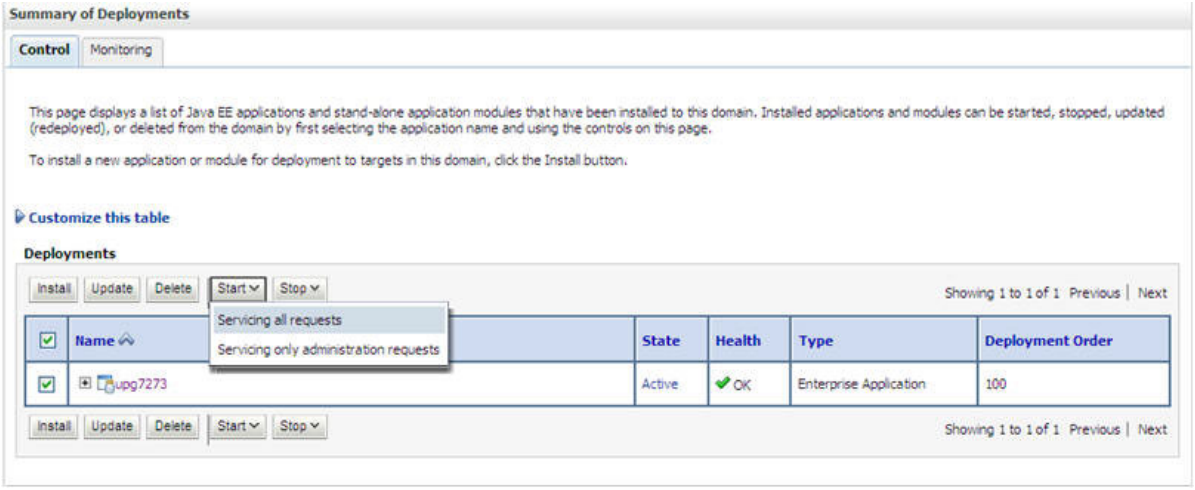
Figure 41: Settings for <Deployment Name>



9. Review the general configuration details of the deployment. You can also update the configuration of the deployment in this window. In the Overview tab, you can view the complete deployment configuration.
10. Click **Save** to update the changes, if any.
11. From the LHS menu, click **Deployments**.

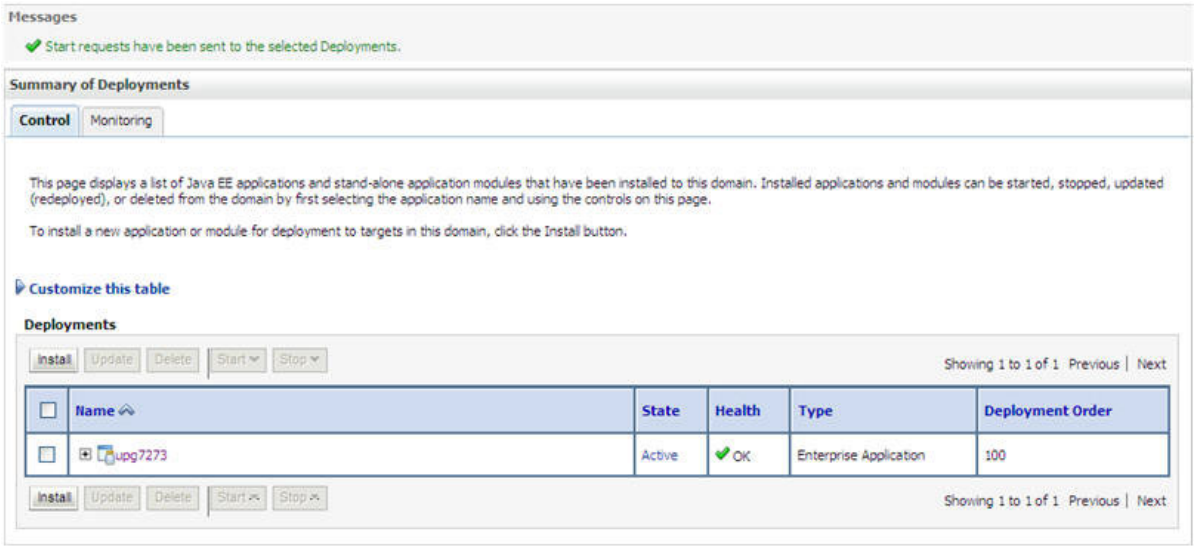
    The Summary of Deployments window is displayed.

Figure 42: Summary of Deployments



12. Select the newly deployed Infrastructure application and click **Start** > **Servicing all requests**. Ensure that the Infrastructure server is up and running.

Figure 43: Summary of Deployments



13. The **State** of the deployed application will be displayed as **Active** if started successfully.

12 Starting/ Stopping Infrastructure Services

This section details about how to start and stop Infrastructure services. This appendix covers the following topics:

- Starting Infrastructure Services
- Stopping Infrastructure Services

12.1 Starting Infrastructure Services

Once the installation of Infrastructure has been completed successfully and the post-installation steps are completed, the servers must be started. Log on to each machine and run the `.profile` file. All servers mentioned must be started from the same shell encoding. The servers mentioned in this section are dependent on each other. It is mandatory to maintain the order in which the servers are started. Allow each of the servers to initialize completely before starting the next server.

1. On the machine in which Infrastructure Application components have been installed, navigate to `$FIC_APP_HOME/common/FICServer/bin` and execute the following command to start the Infrastructure Server.

   ```
   ./startofsaai.sh
   ```

   NOTE You can also start the Infrastructure Server by executing the command "nohup ./ startofsaai.sh &". Starting the process using "nohup" and "&" will return the command prompt without having to wait till the process completes. However, this command cannot be used when you are starting the server for the first time or starting after changing user password in the configuration database schema.

   NOTE IWhen you start the server, the below mentioned error is displayed:

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

   This error must be ignored.

2. Start ICC server:
   - On the machine in which Infrastructure default Application components have been installed, navigate to $FIC_HOME/ficapp/icc/bin
   - Execute the command:

   ```
   ./iccserver.sh
   ```

   NOTE Only Infrastructure Default Application Server would hold ICC component.

3. Start Back-end Services:
   - On the machine on which Infrastructure Database components have been installed, navigate to $FIC_DB_HOME/bin and execute the command to start "Agent server":

   ```
   ./agentstartup.sh
   ```

Or

- Start Back-end services using the command:

```
nohup ./agentstartup.sh &
```

NOTE This agent internally starts the Router, Message Server, OLAP data server and AM services.

12.1.1 Starting WebLogic Application Server

Start the WebLogic Application Server using the description below:

Table 14: Webserver start up options

Start up Option	Description
Starting WebLogic Domain	On the machine in which WebLogic is installed, navigate to `<WebLogic Installation directory>/user_projects/domains/<domain name>/bin` and execute the command: `startWebLogic.sh -d64` **Note**: If WebLogic is already running, access the *WebLogic Admin Console*. Stop and start the `application <context name>.ear`

12.2 Stopping Infrastructure Services

To stop Infrastructure services, follow these steps:

1. On the machine in which Infrastructure Application components have been installed, navigate to $`FIC_APP_HOME/common/FICServer/bin` and execute the command:.

   ```
   ./stopofsaai.sh
   ```

2. To stop ICC server, on the machine in which Infrastructure default Application components have been installed, navigate to `$FIC_HOME/ficapp/icc/bin` and execute the command:

   ```
   ./iccservershutdown.sh
   ```

   NOTE Only the Infrastructure default application server would hold ICC component.

3. To stop the Back-end server, on the machine in which Infrastructure database components have been installed, navigate to `$FIC_DB_HOME/bin` and execute the command:

   ```
   ./agentshutdown.sh
   ```

13 Accessing the OFSAA Application

This section gives details about the steps to be performed to access OFSAA Application.

13.1 Access the OFSAA Application

1. From your desktop, open the 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 44: OFSAA Login Window

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

   SYSADMN - System Administrator

   SYSAUTH - System Authorizer

   NOTE For SYSADMN and SYSAUTH, the default password is password0.

3. Login to the application using the "SYSADMN" User ID. (Note that, there is no "I" in the SYSADMN login USER ID). Enter the password that was provided during installation. On the first login, you will be prompted to change the password.

14 Cloning OFSAA Instance

There is a consistent need for a faster and effective approach of replicating an existing OFSAA instance for further project developments, that is, setting up OFSAA instances that are exact copies of the current OFSAA instance. For more information on cloning, refer OFSAA Cloning Reference Guide.

15 Additional Configuration

This section gives detailed information about the Additional Configuration regarding OFSAA Installation.

15.1 Additional Configuration

This section covers the following topics:

- Configuring FTP/SFTP
- Configuring FTP/SFTP
- Configuring Infrastructure Server Memory
- Internet Explorer Settings
- Retrieving Patch Information
- OLAP Data Server Configuration
- Changing IP/ Hostname, Ports, Deployed Paths of the OFSAA Instance
- OFSAAI Setup Information Fetching Tool
- Encryption Changer
- Infrastructure LDAP Configuration
- Configuring OFSAAI Web Services
- Deploying OFSAAI Web Services
- Configuration to Enable Parallel Execution of DML statements
- Configuring Message Details in Forms Designer
- Clearing Application Cache
- Configuring Passwords Changes
- Configuring Java Virtual Machine
- Configuring Internal Service (Document Upload/ Download)

15.1.1 Configuring FTP/SFTP

This section details about the configurations required for FTP/SFTP.

15.1.1.1 Adding FTP/SFTP Configuration for File Transfer

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

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

1. Login to the web application server.
2. Type `sftp <user>@<OFSAA Server>`
3. Specify Yes when prompted for permission.

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

4. This will add an entry into the "known_hosts" file.
5. A confirmation message is displayed:

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

15.1.2 Configuring FTP/SFTP

This section details about the configurations required for FTP/SFTP.

15.1.2.1 Adding FTP/SFTP Configuration for File Transfer

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

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

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

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

   This will add an entry into the "known_hosts" file.
4. A confirmation message is displayed:

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

15.1.2.2 Setting Up SFTP Private Key

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

To generate private key, enter the commands as shown:

```
ofsaapp@OFSASERVER:~> 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
```

In case, you are generating SFTP Private key for Hive server, append the content of `/home/ofsaapp/.ssh/id_rsa.pub` to Hiveserver authorized_keys file located at `$HOME_DIR_HIVE/.ssh` folder.

Ensure the following permissions exist for the given folders:

- Permission of `.ssh` should be 700
- Permission of `.ssh/authorized_keys` should be 640

- Permission of `.ssh/id_rsa` should be 400
- Permission of Unix user created should be 755

15.1.3 Configuring Infrastructure Server Memory

The memory settings for the infrastructure application server WebLogic can be edited for customizing memory settings and garbage collector settings depending on the available hardware configuration as explained in the following section. These settings are base minimum and has to be incremented considering the deployment metrics into account. The increments are usually handled in multiples of 128mb for heap and 64mb for stack.

15.1.3.1 Infrastructure Application Server Memory Settings

You can configure the Infrastructure Application Memory settings as follows:

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

   This has a default value `X_ARGS="-Xms200m"`

   ```
   X_ARGS=" "$X_ARGS" $DELIM -Xmx2048m"
   ```

> **NOTE** Modify `X_ARGS_APP` variable in the `.profile` file to customize Java Memory Settings for Model Upload based on the Data Model size.
>
> For Run and Rule executions, the following value is recommended:
>
> ```
> X_ARGS_RNEXE="-Xms1g -Xmx1g -XX:+UseAdaptiveSizePolicy -
> XX:MaxPermSize=512M -XX:+UseParallelOldGC -XX:+DisableExplicitGC"
> ```
>
> ```
> X_ARGS_RLEXE="-Xms1g -Xmx1g -XX:+UseAdaptiveSizePolicy -
> XX:MaxPermSize=512M -XX:+UseParallelOldGC -XX:+DisableExplicitGC"
> ```

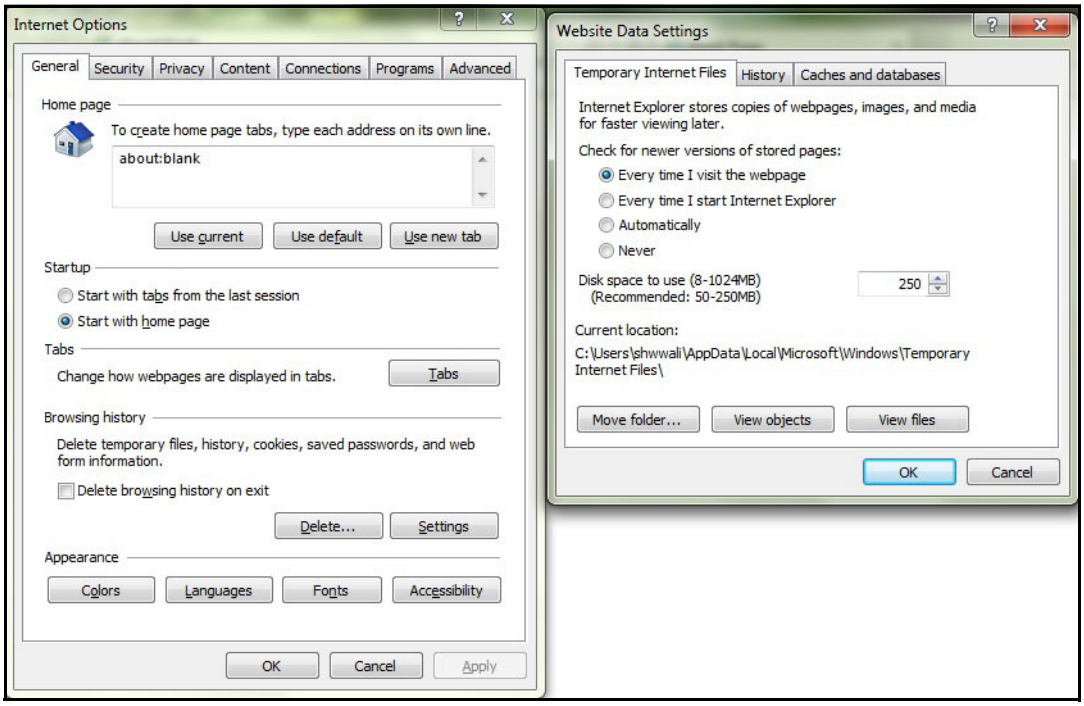
15.1.4 Internet Explorer Settings

> **NOTE** OFSAAI supports only default zoom setting in Internet Explorer, that is, 100%. Cookies should be enabled.

The following browser settings have to be specified at every client machine prior to accessing the Infrastructure application.

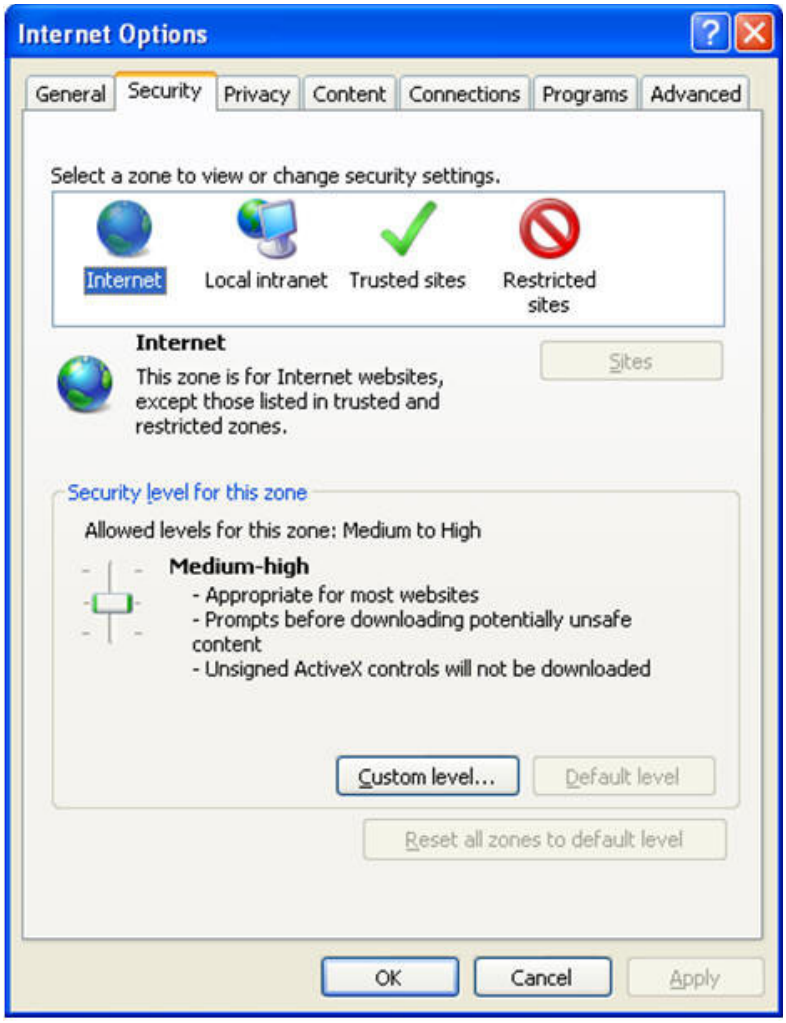
1. Open **Internet Explorer**. Select **Tools** > **Internet Options**. The *Internet Options* window is displayed.
2. Click the **Settings** button. The *Settings* window is displayed.
3. Select the option **Every time I Visit the webpage** and click **OK**.

Figure 45: Internet Options



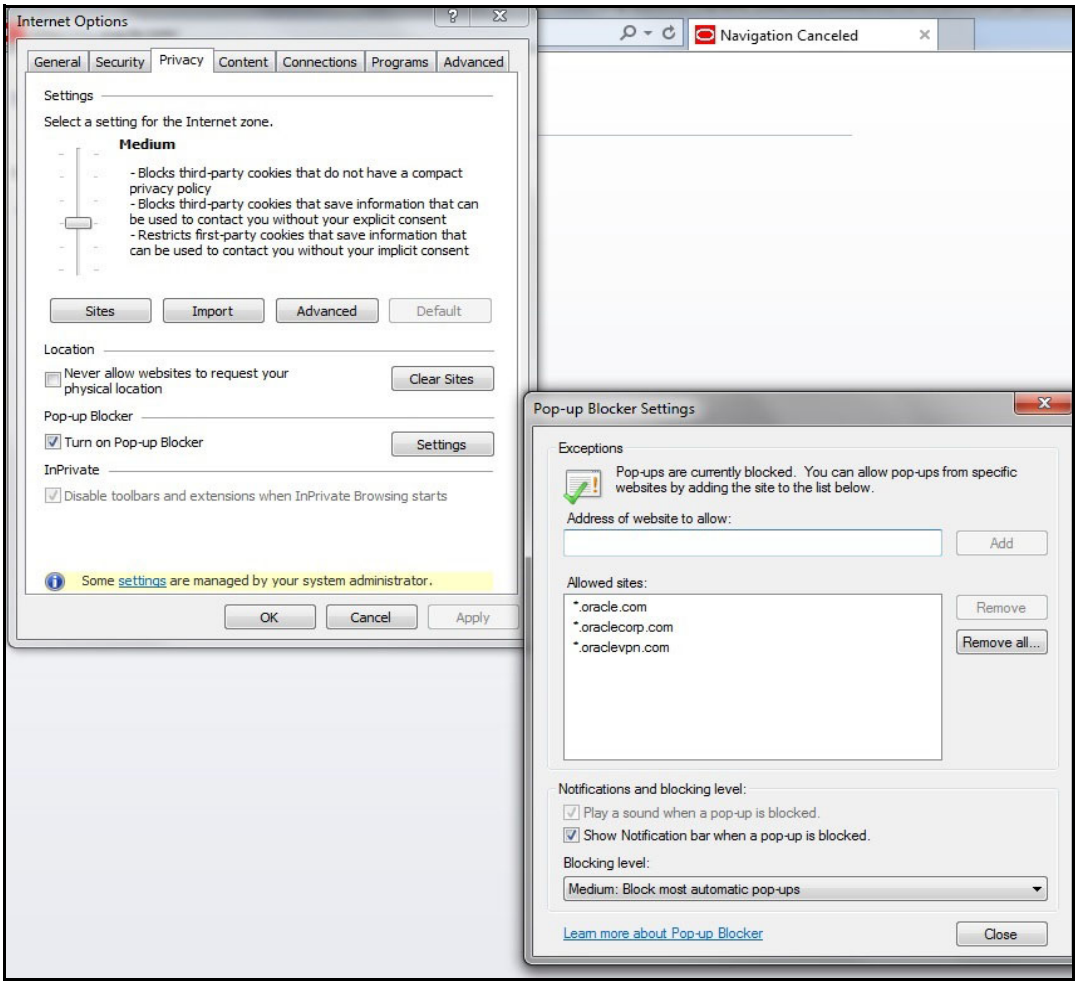
4. In the *Internet Options* window, select the **Security** tab and select the **Internet option** under **Select a zone to view or change the security** settings.
5. Click **Default Level** under **Security level for this zone**.

Figure 46: Internet Options



6. Click **OK** to save.
7. In the *Internet Options* window, select the **Privacy** tab and select the **Turn on Pop-up Blocker** option under **Pop-up Blocker** settings.

Figure 47: Internet Options- Popup Blocker Settings



8. Click **Settings**. The Pop-up Blocker Settings window is displayed.
9. Enter the URL of the OFSAA Application in the **Address of Website to Allow:** field.
10. Click **Add**. The OFSAA URL is displayed in the **Allowed Sites** section.
11. Click **Close.**
12. Click **OK** in the Internet Options window.

15.1.5 Retrieving Patch Information

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

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

15.1.6 OLAP Data Server Configuration

This section is applicable if you are using the OLAP feature of OFSAAI.

The following parameters must be set to ensure that the system limitations are not exceeded at any stage. The values for these OS parameters should be specified based on the expected load at each implementation site.

Example:

Process Memory Limit

Max Thread Stack Size

Max Number of Threads per Process

- **Sort Buffer settings**: This must be set at the Essbase application level appropriate to the anticipated load.
- **Shutdown and Restart:** During shutdown of OFSAAI Server that has an instance of Data Services that is communicating with an OLAP Data Server, it is imperative to ensure that the cleanup of the old instance is completed on the OLAP Data Server before restarting the OFSAAI Server. Pause for a period of time based on the load the system was subjected to, before restarting the Data Services subsystem.

15.1.7 Changing IP/ Hostname, Ports, Deployed Paths of the OFSAA Instance

For information on this section, refer OFS Analytical Applications Infrastructure Administration User Guide in OTN.

15.1.8 OFSAAI Setup Information Fetching Tool

Executing the `SetupInfo.jar` file available in the `FIC_HOME` path will help you retrieve the related information about the OFSAAI Set up such as Operating System Name and version, Database Type and Version, OFSAAI architecture, Log file locations and so on.

To execute `SetupInfo.jar` in console:

1. Navigate to the path `$FIC_HOME`.
2. Enter the command:

   ```
   java -jar SetupInfo.jar
   ```

After execution, the output file location is displayed in the console.

15.1.9 Encryption Changer

This utility helps you to regenerate the new `AESCryptKey.ext` file and encrypt all the encrypted values of the OFSAAI setup according to the new key.

To execute `EncryptC.jar` in console:

1. Navigate to the path `$FIC_HOME`.
2. Enter the command:

   ```
   java -jar EncryptC.jar
   ```

A confirmation message is displayed after execution.

Once executed, you need to create and deploy the EAR / WAR file depending on the configured Web Application Server. For more information, refer Creating and Deploying EAR/ WAR File.

15.1.10 Infrastructure LDAP Configuration

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

15.1.11 Configuring OFSAAI Web Services

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

15.1.11.1 Configure DynamicWSConfig.xml File

For each third party web service that needs to be accessed using the OFSAAI Web services framework and the operations to be invoked, corresponding entries are to be made in the `DynamicWSConfig.xml` template file.

The variable `<WebServer>` denotes the WebLogic application server.

The `DynamicWSConfig.xml` file will be available in the `<OFSAAI Installation Directory>/EXEWebService/ <WebServer>/ROOT/conf` directory. This file can be placed in any directory that is accessible by the application and this location must be specified in the `web.xml file`, as `WSCONFIGFILE` parameter.

The `DynamicWSConfig.xml` template file will be in `<WebServer Deployment Path>/ EXEWebService.ear/EXEWebService.war/conf` directory.

This template is as follows:

```
<XML>
<WEBSERVICES>
<WEBSERVICE CODE="$CODE"
ENDPOINT="$ENDPOINT" TARGETNAMESPACE="$TARGETNAMESPACE"
XMLNS_XSD="$XMLNS_XSD" ENCODINGSTYLE="$ENCODINGSTYLE"
SERVICENAME="$SERVICENAME" PORTTYPENAME="$PORTTYPENAME"
SESSION_MAINTAIN_PROPERTY="$SESSION_MAINTAIN_PROPERTY"
USERNAME="$USERNAME"
PASSWORD="$PASSWORD" STYLE="$WEBSERVICESTYLE"
STUBIMPLEMENTATION="$STUBIMPLEMENTATION">
<OPERATION CODE="$CODE"
NAME="$NAME"
SOAPACTION="$SOAPACTION"
STYLE="$STYLE"
PACKAGENAME="$PACKAGENAME">
<INPUT ORDER="$ORDER"
PARAMNAME="$PARAMNAME"
```

```
ARGTYPE="$ARGTYPE"
CLASSNAME="$CLASSNAME"/>
<OUTPUT PARAMNAME="$PARAMNAME"
RETURNTYPE="$RETURNTYPE"
CLASSNAME="$CLASSNAME"/>
</OPERATION>
</WEBSERVICE>
</WEBSERVICES>
</XML>
```

The DynamicWSConfig.xml has the placeholders as shown in the following table. These have to be updated depending on the web service chosen and the mode of accessing it. For each Web service to be accessed, the entire webservice tag in the DynamicWSConfig.xml file must be repeated. The placeholders tabulated as follows should be set in accordance to the parameters published in the third party wsdl files (webservices) to be accessed. The stub class specified must implement the "com.iflex.Oracle Reveleus.execution.webservice.EXEWebIF" interface.

Attributes for WEBSERVICE tag

Table 15 provides Attributes for WEBSERVICE tag

Table 15: WEBSERVICE tag

Placeholder	Description
$CODE	Unique number within the xml file and cannot be 999 or 0.
$ENDPOINT	soap: address location in the wsdl: service name tag of the wsdl file.
$TARGETNAMESPACE	The attribute value for the targetNamespace of the wsdl: definitions tag.
$XMLNS_XSD	The attribute value for the xmlns:s of the wsdl:definitions tag
$ENCODINGSTYLE	The attribute value for the xmlns:soapenc of the wsdl:definitions tag.
$SERVICENAME	Name of the service found under the wsdl:service name tag of the wsdl file.
$PORTTYPENAME	wsdl port type name as mentioned in the wsdl file.
$SESSION_MAINTAIN_PROPERTY	This could be given as "" also.
$USERNAME	User name to access the web services. Enter "" if no user name is required.
$PASSWORD	Password to access the web services. Enter "" if no password is required.
$WEBSERVICESTYLE	This can take either "rpc" in case of Dll mode of invoking web services or "stub" in case of static mode. This is a mandatory parameter.

Table 15: (Continued)WEBSERVICE tag

Placeholder	Description
$STUBIMPLEMENTATION	Fully qualified class name (package name.classname).

Attributes for OPERATION tag

Ensure that the "operation tag attributes" are repeated for each of the operation tags.

Table 16 provides operations tag.

Table 16: OPERSTION tag

Placeholder	Description
$CODE	Should be unique within the Webservice tag.
$NAME	The name of the Function that is to be called by the wsdl file.
$SOAPACTION	The URL for the Operation to access. This is associated with the Operation tag of the wsdl file.
$STYLE	This can take "rpc" if the web services invoking is in Dll mode or "stub" if it is in static mode. This is a mandatory parameter.
$PACKAGENAME	Represents the JAXB package of input object.

Attributes for INPUT tag

Table 17 provides input tag.

Table 17: INPUT tag

Placeholder	Description
$ORDER	The sequential number of the INPUT tag. Should start from 0. This is in line with the input order of the arguments that the API accepts which is called by this operation.
$PARAMNAME	Input parameter name to be called by the wsdl file.
$ARGTYPE	Input Parameter Data Type. If the input argument type is complex object, specify $ARGTYPE as "xmlstring".
$CLASSNAME	Represents class name of input object parameter.

Attributes for OUTPUT tag

Table 18 provides outpu tag.

Table 18: OUTPUT tag

Placeholder	Description
$PARAMNAME	Output parameter name to be returned by the web service.
$RETURNTYPE	Output parameter Data Type. If the web service response is a complex object, then specify $RETURNTYPE as "object".
$CLASSNAME	Represents class name of output object parameter.

For web.xml Entries, Navigate to <OFSAAI Installation Directory>/EXEWebService/<WebServer>/ROOT/WEB-INF/ and edit the web.xml file as follows:

NOTE In case of Java 7 when WebLogic is used as web application server replace following line of <OFSAAI Installation Directory>/EXEWebService/Weblogic/ROOT/WEB-INF/web.xml file that is

<?xml version='1.0' encoding='UTF-8'?>

<web-app id="WebApp_ID" version="3.0"

xmlns="http://java.sun.com/xml/ns/javaee"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://java.sun.com/xml/ns/javaee

http://java.sun.com/xml/ns/javaee/web-app_3_0.xsd" metadata-complete="true">

with

<?xml version='1.0' encoding='UTF-8'?>

<web-app xmlns="http://java.sun.com/xml/ns/j2ee"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">.

Entry for WSConfig File

The WSCONFIG file (DynamicWSConfig.xml) is available in the <WebServer Deployment Path>/EXEWebService.ear/EXEWebService.war/conf directory. This file can be placed in any directory that is accessible by the application.

The path where the WSCONFIG file is placed must be specified in place of $WSCONFIGFILELOCATION$ in the following block of text in web.xml.

```
<context-param>
<description>WebServices Configuration File</description>
<param-name>WSCONFIGFILE</param-name>
<param-value>$WSCONFIGFILELOCATION$</param-value>
<!--Specify the Location of DynamicWSConFig.xml-->
```

```
</context-param>
```

Proxy Settings

Replace the following <param-value> given in bold in the following block of text in web.xml file, with appropriate values.

If no values are required, leave the <param-value> blank.

```
<context-param>
<description>http Proxy Host</description>
<param-name>http.proxyHost</param-name>
<param-value>$PROXYHOST$</param-value>
<!-- Specify the IP address or hostname of the http proxy server-->
</context-param>
<context-param>
<description>http Proxy Port</description>
<param-name>http.proxyPort</param-name>
<param-value>$PROXYPORT$</param-value>
<!--Port Number for the Proxy Server-->
</context-param>
<context-param>
<description>http proxy UserName</description>
<param-name>http.proxyUserName</param-name>
<param-value>$PROXYUSERNAME$</param-value>
<!-- User ID To get authenticated by proxy server-->
</context-param>
<context-param>
<description>http proxy Password</description>
<param-name>http.proxyPassword</param-name>
<param-value>$PROXYPASSWORD$</param-value>
<!-- User Password To get authenticated by proxy server-->
</context-param>
<context-param>
<description>http non-ProxyHosts</description>
<param-name>http.nonProxyHosts</param-name>
<param-value>$NONPROXYHOST$</param-value>
<!--Hosts for which the proxy settings should get by-passed (Note: Separate them by
"|" symbol) -->
</context-param>
```

OFSAAI Home Entry

This entry should point to the Application layer / Web layer of the OFSAAI installation and should be accessible.

Replace `$FIC_HOME$` in the following block of text in `web.xml` with `<WebServer Deployment Path>/EXEWebService.ear/EXEWebService.war`.

```
<context-param>
<description>OFSAAI Web Home</description>
<param-name>FIC_HOME</param-name>
<param-value>$FIC_HOME$</param-value>
<!--OFSAAI Installation Folder-->
</context-param>
<context-param>
<description>OFSAAI Web Home</description>
<param-name>FIC_PHYSICAL_HOME</param-name>
<param-value>$FIC_HOME$</param-value>
<!--OFSAAI Installation Folder-->
</context-param>
```

DynamicWSConfig.xml

For each third party web service that needs to be accessed using the OFSAAI Web services framework, and the operation to be invoked, make corresponding entries into this file. This file is to be placed in the location that is specified in the `web.xml`, as `WSCONFIGFILE` parameter.

15.1.12 Deploying OFSAAI Web Services

You can deploy OFSAAI Web Services separately if you had not configured OFSAAI Web Services as part of the installation.

1. Complete the manual configuration of OFSAAI Web Services.
2. Navigate to `<OFSAAI Installation Directory>/EXEWebService/<WebServer>` and execute the command:

   ```
   ./ant.sh
   ```

   This will trigger the EAR/WAR file creation, which is required for the deployment.
3. Deploy the generated `EXEWebService.EAR/EXEWebService.WAR` file into the WebServer.

If you have already configured OFSAAI Web Services as part of the installation, deploy the generated `EXEWebService.EAR/ EXEWebService.WAR` file into the OFSAAI Deployment area in WebServer profile.

15.1.13 Configuration to Enable Parallel Execution of DML statements

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

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

15.1.14 Configuring Message Details in Forms Designer

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

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

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

Table 19 provides list of notificationConfig.cfg file.

Table 19: NotificationConfig.cfg File

Parameter	Description
`SMTP_SERVER_IP`	Specify the hostname or IP address of SMTP Server.
`SMTP_DEBUG_MODE`	To run SMTP service in Debug mode, set value to 'true', otherwise set value to 'false'.
`SMTP_AUTHORIZATION`	Set to 'true' if SMTP server requires the client to be authenticated, otherwise set to 'false'.
`SMTP_USERNAME`	Username required for logging into SMTP server, if authentication is not required use a dummy value.
`SMTP_PASSWORD`	Password required for logging into SMTP server, if authentication is not required use a dummy value.
`SMTP_MAILID`	If the Messages has to go from a Particular ID that ID need to be added. Exchange server forces you set a valid ID that is there in the exchange server. (Based on Security settings)

15.1.15 Clearing Application Cache

Prior to the deployment of Infrastructure or Application Service Packs / One-off patches, navigate to the following path and clear the cache:

- **WebLogic**: `<Weblogic installation location>/domains/<Domain name>/servers/<Server name>/tmp/_WL_user/<Application name>/qaelce/jsp_servlet`.

15.1.16 Configuring Passwords Changes

This section explains about how to modify the OFSAA Infrastructure Config Schema and Atomic Schema passwords.

15.1.16.1 OFSAA Infrastructure Config Schema password modification

To change the Config Schema password, perform the following steps:

1. Change the Config schema User Password in the database.
2. Delete the `$FIC_HOME/conf/Reveleus.SEC` file.
3. Shutdown the OFSAAI App service:

   ```
   cd $FIC_APP_HOME/common/FICServer/bin
   ./stopofsaai.sh
   ```

4. Start the infrastructure server in foreground directly on the server or through X-Windows software using the command:

   ```
   ./startofsaai.sh
   ```

5. At the prompt, enter System Password. Enter the "new Config schema" password. The service will start and initialize itself if it is able to successfully connect to the DB.
6. If you are using WebLogic as a Web server:

a. Login to the WebLogic Administration Console, from the left side menu
b. Under Domain Structure list box, expand the appropriate Domain and navigate to *Services > JDBC >Data Sources*. A list of data sources will be populated on the right side.
c. Select the appropriate Data Source and edit the connection details. (In this case, both Config and Atomic data sources need to be modified).

7. Post successful startup of the service, if required, the Infrastructure server may be shut down and restarted in the background using nohup mode.

15.1.16.2 OFSAA Infrastructure Atomic Schema password modification

To change the Atomic Schema password, perform the following steps:

1. Change the Atomic schema User Password in the database.
2. Login to the application from the browser using SYSADMN account or any user id, which has System Administrator role mapped.
3. Navigate to *System Configuration > Database Details* window. Modify the password as explained in the following steps:

a. From the *Database Master* window, select the connection whose password you want to modify and click button from the toolbar.
b. Click  button corresponding to the **Alias Name**. The *Alias Details* window is displayed.
c. Modify the password in the **Auth String** field.

4. For the WebLogic webserver, perform the following steps:

a. Login to the WebLogic Administration Console, from the left side menu
b. Under Domain Structure list box, expand the appropriate Domain and navigate to *Services > JDBC >Data Sources*. A list of data sources will be populated on the right side.
c. Select the appropriate Data Source and edit the connection details. (In this case, both Config and Atomic data sources need to be modified).

5. Restart the OFSAAI services.

15.1.17 Configuring Java Virtual Machine

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

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

15.1.18 Configuring Internal Service (Document Upload/ Download)

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

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

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

1. Create the folders **download**, **upload**, **TempDocument** and **Temp** in the local path of Web application server and provide **Read/Write** permission.
   - To find the exact location, execute the following query in CONFIG schema:

     ```
     select localpath from web_server_info
     ```

   - To create folders with Read/Write permission, execute the command:

     ```
     mkdir -m 777 download upload TempDocument Temp
     ```

2. Create **DocStorage** folder in the FTPSHARE location of APP tier and provide **Read/Write** permission.
   - To find the exact location, execute the query in CONFIG schema:

     ```
     select ftpdrive from app_server_info
     ```

   - To create folder with Read/Write permission, execute the command:

     ```
     mkdir -m 777 DocStorage
     ```

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

     Navigate to `$FIC_HOME/EXEWebService/<WEBSERVER_TYPE>` directory of WEB tier and type **./ant.sh**. This triggers the creation of EAR/WAR file `EXEWebService.ear/.war`. The EAR/WAR file `EXEWebService.ear/.war` will be created in `$FIC_HOME/EXEWebService/<WEBSERVER_TYPE>` directory of WEB tier. Redeploy the generated EAR/WAR file onto your configured web application server.

16 Patching OFSAA Infrastructure Installation

16.1 Patching Your OFSAA Infrastructure Installation

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

See http://support.oracle.com for more information on latest release.

17 Grants for Atomic/ Config Schema

This section mentions about the various grants required for the CONFIG, ATOMIC schemas.

This section discusses the following sections:

- Grants for Atomic Schema
- Grants for Config Schema
- Grants for Config Schema Entities for Atomic Users

17.1 Grants for Atomic Schema

Atomic Schema creation requires certain grants for object creation. This can be located in `$FIC_HOME/privileges_atomic_user.sql file`.

The following are the Grants for Atomic Schema:

```
grant create SESSION to &database_username
/
grant create PROCEDURE to &database_username
/
grant create SEQUENCE to &database_username
/
grant create TABLE to &database_username
/
grant create TRIGGER to &database_username
/
grant create VIEW to &database_username
/
grant create MATERIALIZED VIEW to &database_username
/
grant olap_user to &database_username
/
grant select on SYS.V_$PARAMETER to &database_username
/
grant create SYNONYM to &database_username
/
```

NOTE If you intend to use Oracle OLAP feature, execute the following grant on all ATOMIC schema (s):

```
grant olap_user to &database_username
```

17.2 Grants for Config Schema

Config Schema creation requires certain grants for object creation. This can be located in `$FIC_HOME/privileges_config_user.sql` file.

The following are the Grants for Config Schema:

```
grant create SESSION to &database_username
/
grant create PROCEDURE to &database_username
/
grant create SEQUENCE to &database_username
/
grant create TABLE to &database_username
/
grant create TRIGGER to &database_username
/
grant create VIEW to &database_username
/
grant create MATERIALIZED VIEW to &database_username
/
grant olap_user to &database_username
/
grant select on SYS.V_$PARAMETER to &database_username
/
grant create SYNONYM to &database_username
/
```

17.3 Grants for Config Schema Entities for Atomic Users

Atomic Schema creation requires certain grants for config schema object access. This can be located in `$FIC_HOME/config_table_privileges_for_atomic_user.sql` file.

The following are the Grants for Config Schema entities for Atomic Users:

```
grant select on CSSMS_USR_PROFILE to &database_username
/
grant select on CSSMS_ROLE_MAST to &database_username
/
grant select on CSSMS_GROUP_MAST to &database_username
/
grant select on CSSMS_FUNCTION_MAST to &database_username
```

```
/
grant select on CSSMS_USR_GROUP_MAP to &database_username
/
grant select on CSSMS_USR_GROUP_DSN_SEG_MAP to &database_username
/
grant select on CSSMS_ROLE_FUNCTION_MAP to &database_username
/
grant select on CSSMS_GROUP_ROLE_MAP to &database_username
/
grant select on CSSMS_SEGMENT_MAST to &database_username
/
grant select on CSSMS_USR_DSN_SEG_MAP to &database_username
/
grant select on CSSMS_USR_ROLE_MAP to &database_username
/
grant select on CSSMS_METADATA_SEGMENT_MAP to &database_username
/
grant select on BATCH_RUN to &database_username
/
grant select on PR2_FILTERS to &database_username
/
grant select on PR2_TASK_FILTER to &database_username
/
grant select on PR2_TASK_FILTER_DETAIL to &database_username
/
grant select on ST_STRESS_MASTER to &database_username
/
grant select on ST_SCENARIO_MASTER to &database_username
/
grant select on ST_SHOCK_MASTER to &database_username
/
grant select on BATCH_MASTER to &database_username
/
grant select on ICC_MESSAGELOG to &database_username
/
grant select on PR2_MASTER to &database_username
```

```
/
grant select on PR2_RUN_REQUEST to &database_username
/
grant select on MF_MODEL_SCRIPT_MASTER to &database_username
/
grant select on MF_INPUT_VALUES to &database_username
/
grant select on MF_MODEL_OUTPUT_VALUES to &database_username
/
grant select on DB_MASTER to &database_username
/
grant select on DSNMASTER to &database_username
/
grant select on pr2_rule_map to &database_username
/
grant delete on pr2_rule_map_pr to &database_username
/
grant insert on pr2_rule_map_pr to &database_username
/
grant update on pr2_rule_map_pr to &database_username
/
grant select on pr2_rule_map_pr to &database_username
/
grant delete on pr2_rule_map_pr_tmp to &database_username
/
grant insert on pr2_rule_map_pr_tmp to &database_username
/
grant update on pr2_rule_map_pr_tmp to &database_username
/
grant select on pr2_rule_map_pr_tmp to &database_username
/
grant select on pr2_rule_map_exclude to &database_username
/
grant delete on pr2_rule_map_exclude_pr to &database_username
/
grant insert on pr2_rule_map_exclude_pr to &database_username
```

```
/
grant update on pr2_rule_map_exclude_pr to &database_username
/
grant select on pr2_rule_map_exclude_pr to &database_username
/
grant delete on pr2_rule_map_exclude_pr_tmp to &database_username
/
grant insert on pr2_rule_map_exclude_pr_tmp to &database_username
/
grant update on pr2_rule_map_exclude_pr_tmp to &database_username
/
grant select on pr2_rule_map_exclude_pr_tmp to &database_username
/
grant select on pr2_run_object to &database_username
/
grant select on pr2_run_object_member to &database_username
/
grant select on pr2_run_map to &database_username
/
grant select on pr2_run_execution_b to &database_username
/
grant select on pr2_run_execution_filter to &database_username
/
grant select on pr2_firerun_filter to &database_username
/
grant select on pr2_filters to &database_username
/
grant select on configuration to &database_username
/
grant select on batch_parameter to &database_username
/
grant select on component_master to &database_username
/
grant select on MDB_OBJECT_TYPE_ATT_LAYOUT to &database_username
/
grant select on REV_OBJECT_ATTRIBUTE_DTL to &database_username
```

```
/
grant select on FORMS_LOCALE_MASTER to &database_username
/
grant select on mdb_object_dependencies to &database_username
/
grant select on mdb_execution_details to &database_username
/
grant select on REV_STAT_DATA to &database_username
/
grant select on REV_OBJECT_REPOSITORY_B to &database_username
/
grant select on REV_OBJECT_REPOSITORY_TL to &database_username
/
grant select on REV_OBJECT_ATTRIBUTE_DTL_MLS to &database_username
/
grant select on REV_OBJECT_APPLICATION_MAP to &database_username
/
grant select on MDB_OBJ_EXPR_DETAILS to &database_username
/
grant select on MDB_EXECUTION_DETAILS to &database_username
/
grant select on REV_OBJECT_TYPES_CD to &database_username
/
grant select on REV_OBJECT_TYPES_MLS to &database_username
/
grant select on REV_APPLICATIONS_CD to &database_username
/
grant select on REV_APPLICATIONS_MLS to &database_username
/
grant select on METADATA_BROWSER_LOCALE to &database_username
/
grant select on MDB_STAT_DATA to &database_username
/
grant select on MDB_OBJECT_TYPE_LAYOUT to &database_username
/
grant select on ofsa_md_id_ref to &database_username
```

```
/
grant select on MDB_ETL_MAPPING to &database_username
/
grant select on setupinfo to &database_username
/
grant select on LOCALEREPOSITORY to &database_username
/
grant select on MF_MODEL_MASTER to &database_username
/
grant select on MF_SANDBOX_MASTER to &database_username
/
grant select on MF_VARIABLE_MASTER to &database_username
/
grant select on MF_TECHNIQUE_MASTER to &database_username
/
grant select on MDB_RULE_SOURCE_HEADER to &database_username
/
grant select on MDB_RULE_TARGET_HEADER to &database_username
/
grant select on MDB_RULE_TARGET_MEMBER_HEADER to &database_username
/
grant select on MDB_RULE_GRID_DATA to &database_username
/
grant select on MDB_MODEL_MAPPING to &database_username
/
grant delete on AAI_MAP_MAPPER to &database_username
/
grant insert on AAI_MAP_MAPPER to &database_username
/
grant update on AAI_MAP_MAPPER to &database_username
/
grant select on AAI_MAP_MAPPER to &database_username
/
grant select on RTI_UI_EXCLUDE_PDM_LIST  to &database_username
/
grant select on RTI_VIR_PHY_TBL_NAME  to &database_username
```

```
/
grant select on infodom_patches to &database_username
/
```

18 Configuring Application Pack XML Files

This section explains configuration of OFS_SANC_PACK.xml and OFS_SANC_SCHEMA_IN.xml files.

This section includes the following topics:

18.1 Configuring OFS_SANC_PACK.xml file

The `OFS_SANC_PACK.xml` file holds details on the various OFSAA products that are packaged in a particular Application Pack.

The following table gives details about the various tags/ parameters available in the file and the values that need to be updated. Prior to installing the OFSAA Application Pack in SILENT mode, it is mandatory to update this file.

Table 20 provides list of OFS SANC PACK.xml parameters.

Table 20: OFS_SANC_PACK.xml Parameters

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/Permissible Value	Comments
APP_PACK_ID	Unique Application Pack Identifier	Y	Unique Seeded Value	
APP_PACK_NAME	Unique Application Pack Name	Y	Unique Seeded Value	
APP_PACK_DESCRIPTION	Unique Application Pack Description	Y	Unique Seeded Value	
VERSION	Unique release version	Y	Unique Seeded Value	
APP	Unique Application Entries	Y	Unique Seeded Value	
APP_ID	Unique Application Identifier	Y	Unique Seeded Value	
APP_ID/ PREREQ	Prerequisite Application/ Product	Y	Unique Seeded Value	For most applications Infrastructure would be the prerequisite set. For certain other applications, an appropriate Application ID would be set.
APP_ID/ DEF_SEL_FLAG	Default Selected Flag	Y	Default - YES	In all Application Packs, Infrastructure would have this value set to "YES".

Table 20: OFS_SANC_PACK.xml Parameters

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/Permissible Value	Comments
APP_ID/ ENABLE	Enable Application/ Product	YES if installing in SILENT mode.	YES for OFS_TFLT YES for OFS_CS Permissible - YES or NO	Set this attribute-value to YES against every APP_ID which is licensed and should be enabled for use.
APP_NAME	Unique Application/ Product Name	Y	Unique Seeded Value	
APP_DESCRIPTION	Unique Application/ Product Name	Y	Unique Seeded Value	
VERSION	Unique release version	Y	Unique Seeded Value	

18.2 Configuring OFS_SANC_SCHEMA_IN.xml file

Creating database schemas, objects within schemas and assigning appropriate grants are the primary steps in the installation process of OFSAA Applications. The `OFS_SANC_PACK>>_SCHEMA_IN.xml` file contains details on the various application schemas that should be created prior to the Application Pack installation.

> **NOTE** This file should be configured only in case of OFS Sanctions Pack installation for *RDBMS ONLY* target. This file is not required to be configured for an *HDFS ONLY* target installation.

The following table gives details about the various tags/ parameters available in the file and the values that need to be updated. Prior to executing the schema creator utility, it is mandatory to update this file.

Table 21 provides list OFS SANC SCHEMA IN xml parameters.

Table 21: OFS_SANC_SCHEMA_IN.xml Parameters

Tag Name/ Attribute Nameag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/Permissible Value	Comments
<APP_PACK_ID>	Seeded unique ID for the OFSAA Application Pack	Y	Seeded	
IS_TCPS	Enables the TCPS	Y	Default - False	IS_TCPS
<APP_PACK_ID>	Seeded unique ID for the OFSAA Application Pack	Y	Seeded	

Table 21: OFS_SANC_SCHEMA_IN.xml Parameters

Tag Name/ Attribute Nameag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/Permissible Value	Comments
<JDBC_URL>	Enter the JDBC URL **Note**: You can enter RAC/ NON-RAC enabled database connectivity URL.	Y	Example, jdbc:oracle:thin:@<HOST/IP>:<PORT>:<SID> or jdbc:oracle:thin:@//[HOST][:PORT]/SERVICE or jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)(HOST=[HOST])(port=[PORT]))(ADDRESS=(PROTOCOL=TCP)(HOST=[HOST])(PORT=[PORT]))(LOAD_BALANCE=yes)(FAILOVER=yes))(CONNECT_DATA=(SERVICE_NAME=[SERVICE]))) For example, jdbc:oracle:thin:@//dbhost.server.com:1521/service1 or jdbc:oracle:thin:@//dbshost.server.com:1521/scan-1 or jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=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)))	Ensure to add an entry (with SID/ SERVICE NAME) in the tnsnames.ora file on the OFSAA server. The entry should match with the SID/ SERVICE NAME used in the JDBC URL.
<JDBC_DRIVER>	By default this driver name is seeded. **Note**: Do not edit this attribute value.	Y	Example, oracle.jdbc.driver.OracleDriver	Only JDBC Thin Driver is supported.

Table 21: OFS_SANC_SCHEMA_IN.xml Parameters

Tag Name/ Attribute Nameag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/Permissible Value	Comments
<HOST>	Enter the Hostname/ IP Address of the system on which you are installing the OFSAA components.	Y	Host Name/ IP Address	
<SETUPINFO> / PREFIX_SCHEMA_NAME	Identifies if the value specified in <SETUPINFO>/ NAME attribute should be prefixed to the schema name.	N	YES or NO	Default value is YES.
<SETUPINFO> / NAME	Enter the acronym for the type of implementation. This information will be displayed in the OFSAA Home Page. **Note:** On executing the schema creator utility, this value will be prefixed with each schema name. For example: dev_ofsaaconf, uat_ofsaaatm.	Y	Accepts strings with a minimum length of two and maximum of four. Example, DEV, SIT, PROD	This name would appear in the OFSAA Landing Page as "Connected To: xxxx" The schemas being created would get this prefix. For E.g. dev_ofsaaconf, uat_ofsaaconf etc.
<PASSWORD>/ DEFAULT*	Enter the password if you want to set a default password for all schemas. **Note:** You also need to set APPLYSAMEFORALL 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.	

Table 21: OFS_SANC_SCHEMA_IN.xml Parameters

Tag Name/ Attribute Nameag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/Permissible Value	Comments
<PASSWORD>/ APPLYSAMEFORALL	Enter as Y if you want to apply the password specified in DEFAULT attribute for all the schemas. If you enter as N, you need to provide individual passwords for all schemas. **Note:** In case you have entered Y in APPLYSAMEFORALL attribute and also have specified individual passwords for all the schemas, then the specified individual passwords will take precedence.	Y	Default - N Permissible - Y or N	Note: Setting this attribute value is mandatory, If DEFAULT attribute is set.
<TABLESPACE >/NAME	Enter the tablespace name for the three tablespaceattributes.	Y	OFS_TFLT_DATA_TBSP/ OFS_TFLT_INDEX_TBSP/ OFS_TFLT_CONF_TBSP	Do not change this name.
<TABLESPACE >/ AUTOEXTEND	Enter the autoextend value.	Y	OFF	
<TABLESPACE >/SIZE	Enter the tablespace size.	Y	512M	The DBA can change the size as required.
<TABLESPACE >/DATAFILE	Update <CHANGE_ME> place holder with the actual DATAFILE creation path	Y	Example:/scratch/ oracle/app/oracle/ oradata/	
<TABLESPACE >/VALUE	As per naming conventions, User can modify the default values provided under the VALUE attribute	Y	For example, RRS_DATA_TABLE_SPACE and RRS_INDEX_TABLE_SPACE	

Table 21: OFS_SANC_SCHEMA_IN.xml Parameters

Tag Name/ Attribute Nameag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/Permissible Value	Comments
<SCHEMA>/ TYPE	The different types of schemas that are supported in this release are ATOMIC, CONFIG, SANDBOX, and ADDON. By default, the schemas types are seeded based on the Application Pack. **Note:** Do not edit this attribute value.	Y	ATOMIC/CONFIG/ SANDBOX/ADDON Note: SANDBOX AND ADDON schemas are not applicable for OFS Sanctions Pack.	Only One CONFIG schema can exist in the file. This schema identifies as the CONFIGURATION schema that holds the OFSAA setup details and other metadata information. Multiple ATOMIC/ SANDBOX/ ADDON schemas can exist in the file. ATOMIC schema refers to the Information Domain schema. SANDBOX schema refers to the SANDBOX schema. ADDON schema refers to other miscellaneous schema (not applicable for this Application Pack).
<SCHEMA>/ NAME	By default, the schemas names are seeded based on the Application Pack. You can edit the schema names if required. Note: The Schema Name will have a prefix of the SETUPINFO/ NAME attribute. SCHEMA NAME must be same for all the ATOMIC Schemas of applications within an Application Pack.	Y	The permissible length is 15 characters and only alphanumeric characters allowed. No special characters allowed except underscore '_'.	SETUPINFO/ NAME attribute value would be prefixed to the schema name being created. For E.g. if name is set as 'ofsaaatm' and setupinfo as 'uat' then schema being created would be 'uat_ofsaaatm'. NAME should be same where APP_GRP=1 for all SCHEMA tags (Not applicable for this Application Pack).

Table 21: OFS_SANC_SCHEMA_IN.xml Parameters

Tag Name/ Attribute Nameag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/Permissible Value	Comments
<SCHEMA>/ PASSWORD	Enter the password of the schema to be created. Note: If this attribute is left blank, then the password specified in the <PASSWORD>/DEFAULT attribute is applied as the Schema Password.	N	The maximum length allowed is 30 characters. Special characters are not allowed.	Note: You need to mandatorily enter the password if you have set the <PASSWORD>/ APPLYSAMEFORALL attribute as N.
<SCHEMA>/ APP_ID	By default, the Application ID is seeded based on the Application Pack. **Note:** Do not edit this attribute value.	Y	Unique Seeded Value	Identifies the Application/ Product for which the schema is being created.
<SCHEMA>/ DEFAULTTABLESPACE	Enter the available default tablespace for DB User. Note: If this attribute is left blank, then USERS is set as the default tablespace.	N	Default - USERS Permissible - Any existing valid tablespace name.	Modify this value to associate any valid tablespace with the schema.
<SCHEMA>/ TEMPTABLESPACE	Enter the available temporary tablespace for the DB User. Note: If this attribute is left blank, then TEMP is set as the default tablespace.	N	Default - TEMP Permissible - Any existing valid temporary tablespace name.	Modify this value to associate any valid tablespace with the schema.
<SCHEMA>/ QUOTA	Enter the quota to be set on DEFAULTTABLESPACE attribute for the schema/ user. By default, the quota size is set to 500M.Minimum: 500M or Unlimited on default Tablespace	N	Example, 600M/m 20G/g UNLIMITED/unlimited	Modify this value to grant the specified quota on the mentioned tablespace to the user.

Table 21: OFS_SANC_SCHEMA_IN.xml Parameters

Tag Name/ Attribute Nameag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/Permissible Value	Comments
<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	Permissible length is 16 characters and only alphanumeric characters allowed. No special characters allowed.	
<ADV_SEC_OPTIONS>	Parent tag to hold Advance Security Options.	N	NA	Uncomment the tag and edit if you want to add security options. For example, TDE and Data Redact. For details, see the example following the table.
<ADV_SEC_OPTIONS>/TDE	Tag to enable/disable TDE.	N	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/disable Data Redaction feature.	N	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. Note: When TDE is TRUE in ADV_SEC_OPTIONS, then it is mandatory for the <TABLESPACES> tag to be present in the xml file.

Table 21: OFS_SANC_SCHEMA_IN.xml Parameters

Tag Name/ Attribute Nameag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/Permissible Value	Comments
<TABLESPACE >/ NAME	Logical Name of tablespace to be created.	Y	NA	Name, if specified, should 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 will be 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 should 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.
<TABLESPACE >/ ENCRYPT	Specifies if the tablespace(s) should 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 to enabling Transparent Data Encryption (TDE) on the Database Server.

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

```
<ADV_SEC_OPTIONS>

<OPTION NAME="TDE" VALUE="FALSE"/>

<OPTION NAME="DATA_REDACT" VALUE="FALSE" />

</ADV_SEC_OPTIONS>

<TABLESPACES>

<TABLESPACE NAME="OFS_AAI_TBSP_1" VALUE="TS_USERS1" DATAFILE="/scratch/ora12c/app/oracle/
oradata/OFSPQA12CDB/ts_users1.dbf" SIZE="500M" AUTOEXTEND="ON" ENCRYPT="ON" />

<TABLESPACE NAME="OFS_AAI_TBSP_2" VALUE="TS_USERS2" DATAFILE="/scratch/ora12c/app/oracle/
oradata/OFSPQA12CDB/ts_users2.dbf" SIZE="500M" AUTOEXTEND="ON" ENCRYPT="ON" />

</TABLESPACES>


<SCHEMAS>
```

```
<SCHEMA TYPE="CONFIG" NAME="ofsaaconf" PASSWORD="" APP_ID="OFS_AAI"
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>
```

19 Configuring OFSAAI_InstallConfig.xml Files

This section gives details about the configurations required in the `InstallConfig.xml`and `OFSAAI_InstallConfig.xml` files.

Table 22 provides the OFSAA infrastructure installation tasks and description

Table 22: OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Man-datory
<Layer name="GENERAL">		
InteractionGroup name="WebServerType"		
VARIABLE NAME	**Identifies the Infodom.** The variable should be provided as shown below: `Variable name="SWIFTINFO">CSTF807INFO</Variable>`	Yes
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components would be deployed. The following numeric value should be set for WebLogic: • Oracle WebLogic Server = 3 For example, `<InteractionVariable name="WEBAPPSERVERTYPE">3</InteractionVariable>`	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 should 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 should be exactly 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 would typically be the `$ORACLE_HOME/jdbc/lib` For example, `<InteractionVariable name="ABS_DRIVER_PATH">">/oradata6/revwb7/oracle </ InteractionVariable>` **Note**: See Appendix 21 for identifying the correct "ojdbc<version>.jar" version to be copied.	Yes

Table 22: (Continued)OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Man-datory
<Layer name="GENERAL">		
InteractionGroup name="WebServerType"		
VARIABLE NAME	**Identifies the Infodom.** The variable should be provided as shown below: `Variable name="SWIFTINFO">CSTF807INFO</Variable>`	Yes
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components would be deployed. The following numeric value should be set for WebLogic: • Oracle WebLogic Server = 3 For example, `<InteractionVariable name="WEBAPPSERVERTYPE">3</InteractionVariable>`	Yes
InteractionGroup name="OLAP Detail"		
OLAP_SERVER_ IMPLEMENTATION	Identifies if the OFSAA Infrastructure OLAP component needs to be configured depending on whether you intend to use the OLAP feature. The following numeric value should be set depending on the choice: • YES - 1 • NO - 0	No
Note: If value for `OLAP_SERVER_IMPLEMENTATION` is set to **1**, it checks for following environment variables are set in.profile: `ARBORPATH`, `HYPERION_HOME` and `ESSBASEPATH`.		
InteractionGroup name="SFTP Details"		
SFTP_ENABLE	Identifies if the SFTP (Secure File Transfer Protocol) feature is to be enabled. The following numeric value should be set depending on the choice: • SFTP - 1 • FTP - 0	Yes
Note: The default value for SFTP_ENABLE is 1, which signifies that SFTP will be used. Oracle recommends using SFTP instead of FTP because SFTP is considered more secure. However, a client may choose to ignore this recommendation and to use FTP by setting SFTP_ENABLE to 0. This selection may be changed later by using the OFSAAI administration interface.		
FILE_TRANSFER_PORT	Identifies the port used for the file transfer service. The default value specified is **22** (SFTP). Specify value as **21** or any other PORT value if value for `SFTP_ENABLE` is **0**. For example, `<InteractionVariable name="FILE_TRANSFER_PORT">21</InteractionVariable>`	Yes
InteractionGroup name="Locale Details"		

Table 22: (Continued)OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Man-datory
<Layer name="GENERAL">		
InteractionGroup name="WebServerType"		
VARIABLE NAME	**Identifies the Infodom.** The variable should be provided as shown below: `Variable name="SWIFTINFO">CSTF807INFO</Variable>`	Yes
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components would be deployed. The following numeric value should be set for WebLogic: • Oracle WebLogic Server = 3 For example, `<InteractionVariable name="WEBAPPSERVERTYPE">3</InteractionVariable>`	Yes
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 and ensure this port value is in the range of `1025` to `65535` and the respective port is enabled.		
JAVAPORT	`9999`	Yes
NATIVEPORT	`6666`	Yes
AGENTPORT	`6510`	Yes
ICCPORT	`6507`	Yes
ICCNATIVEPORT	`6509`	Yes
OLAPPORT	`10101`	Yes
MSGPORT	`6501`	Yes
ROUTERPORT	`6500`	Yes
AMPORT	`6505`	Yes
InteractionGroup name="Web Details" **Note**: If value for `HTTPS_ENABLE` is set to **1**, ensure you have a valid certificate available from a trusted CA and the same is configured on your web application server.		

Table 22: (Continued)OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Man-datory
<Layer name="GENERAL">		
InteractionGroup name="WebServerType"		
VARIABLE NAME	**Identifies the Infodom.** The variable should be provided as shown below: `Variable name="SWIFTINFO">CSTF807INFO</Variable>`	Yes
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components would be deployed. The following numeric value should be set for WebLogic: • Oracle WebLogic Server = 3 For example, `<InteractionVariable name="WEBAPPSERVERTYPE">3</InteractionVariable>`	Yes
HTTPS_ENABLE	Identifies if the UI should be accessed using HTTP or HTTPS scheme. The default value set is **0**. The following numeric value should be set depending on the choice: • YES - 1 • NO - 0 For example, `<InteractionVariable name="HTTPS_ENABLE">0</InteractionVariable>`	Yes
WEB_SERVER_IP	Identifies the HTTP Server IP/ Hostname or Web Application Server IP/ Hostname, to be used for accessing the UI. This IP would typically be the HTTP Server IP. If no separate HTTP Server is available, the value should be Web Application Server IP/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. This would typically be **80** for non SSL and **443** for SSL. If no separate HTTP Server exists, the value should be the port configured for Web Server. **Note**: The port value will not be accepted as 80 if `HTTPS_ENABLE` is 1 and as 443, if `HTTPS_ENABLE` is 0. For example, <InteractionVariable name="WEB_SERVER_PORT">80</InteractionVariable>	No

Table 22: (Continued)OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Man-datory
<Layer name="GENERAL">		
InteractionGroup name="WebServerType"		
VARIABLE NAME	**Identifies the Infodom.** The variable should be provided as shown below: `Variable name="SWIFTINFO">CSTF807INFO</Variable>`	Yes
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components would be deployed. The following numeric value should be set for WebLogic: • Oracle WebLogic Server = 3 For example, `<InteractionVariable name="WEBAPPSERVERTYPE">3</InteractionVariable>`	Yes
CONTEXT_NAME	Identifies the web application context name which will be used to built the URL to access the OFSAA applications. The context name can be identified from a URL as follows: `<scheme>://<host>:<port>/<context-name>/login.jsp` Sample URL: `https://myweb:443/ofsaadev/login.jsp` **For example**, `<InteractionVariable name="CONTEXT_NAME">ofsaadev</InteractionVariable>`	Yes
WEBAPP_CONTEXT_PATH	Identifies the absolute path of the exploded .ear file on the web application server. For WebLogic, provide the WebLogic home directory path as `/<WebLogic home directory path>/bea/wlserver_10.3` **Note:** For WebLogic, value specified for this attribute is ignored and value provided against 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 being uploaded as part of the applications usage. Note: In case of a clustered deployment, ensure this path and directory is 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 WEBSERVERTYPE is set as 3 (WebLogic)

Table 22: (Continued)OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Man-datory
<Layer name="GENERAL">		
InteractionGroup name="WebServerType"		
VARIABLE NAME	**Identifies the Infodom.** The variable should be provided as shown below: `Variable name="SWIFTINFO">CSTF807INFO</Variable>`	Yes
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components would be deployed. The following numeric value should be set for WebLogic: • Oracle WebLogic Server = 3 For example, `<InteractionVariable name="WEBAPPSERVERTYPE">3</InteractionVariable>`	Yes
InteractionGroup name="OFSAAI FTP Details"		
OFSAAI_FTPSHARE_PATH	Identifies the absolute path to the directory identified as file system stage area. **Note**: • The directory should exist on the same system on which the OFSAA Infrastructure is being installed (can be on a separate mount). • The user mentioned in the following APP_SFTP_USER_ID parameter should 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 under the preceding parameter APP_FTPSHARE_PATH.	Yes
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 password will be prompted for the user <OFSAAI_SFTP_USER_ ID> for authentication. For more information on generating SFTP Private key, see the Setting Up SFTP Private Key section.	OFSAAI_SFTP_PRIVATE_KEY

Table 22: (Continued)OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Man-datory
<Layer name="GENERAL">		
InteractionGroup name="WebServerType"		
VARIABLE NAME	**Identifies the Infodom.** The variable should be provided as shown below: `Variable name="SWIFTINFO">CSTF807INFO</Variable>`	Yes
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components would be deployed. The following numeric value should be set for WebLogic: • Oracle WebLogic Server = 3 For example, `<InteractionVariable name="WEBAPPSERVERTYPE">3</InteractionVariable>`	Yes
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 OFSAAI_SFTP_PRIVATE_KEY value is given and this is kept as NA, then it is assumed as empty passphrase.	OFSAAI_SFTP_PASSPHRASE
InteractionGroup name="Hive Details" The default value set for the interaction variables under this group is set as NA. These are required only for Hive Configuration.		
HIVE_SERVER_PORT	Identifies the port used for the file transfer service. The default value set is 22 (SFTP). Set this value as 21 for FTP. For example, InteractionVariable name="HIVE_SERVER_PORT">22</InteractionVariable>	Yes, only for HIVE Configuration
HIVE_SERVER_FTPDRIVE	Identifies the absolute path to the directory identified as file system stage area of HIVE server. For example, InteractionVariable name="HIVE_SERVER_FTPDRIVE">/scratch/ofsaa/ftpshare</InteractionVariable>	
HIVE_SERVER_FTP_USERID	Identifies the user who has RWX permissions on the directory identified under the preceding parameter HIVE_SERVER_FTPDRIVE. For example, InteractionVariable name="HIVE_SERVER_FTP_USERID">ofsaa</InteractionVariable>	

Table 22: (Continued)OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Man-datory
<Layer name="GENERAL">		
InteractionGroup name="WebServerType"		
VARIABLE NAME	**Identifies the Infodom.** The variable should be provided as shown below: `Variable name="SWIFTINFO">CSTF807INFO</Variable>`	Yes
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components would be deployed. The following numeric value should be set for WebLogic: • Oracle WebLogic Server = 3 For example, `<InteractionVariable name="WEBAPPSERVERTYPE">3</InteractionVariable>`	Yes
HIVE_SERVER_FTP_PROTOCOL	If the HIVE_SERVER_PORT is 21, then set value as FTP, else set it as SFTP. For example, InteractionVariable name="HIVE_SERVER_FTP_PROTOCOL">SFTP</ InteractionVariable>	
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 password will be prompted for the user <HIVE_SERVER_FTP_USERID> for authentication. For more information on generating SFTP Private key, see the Setting 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 HIVE_SFTP_PRIVATE_KEY value is given and this is kept as NA, then it is assumed as empty passphrase.	

20 JDBC Jar Files

The `ojdbc<version>.jar` file should be copied based on Database & Java version. See to the following table for details.

Table 23 provides the JDBC Jar files version details.

Table 23: JDBC Jar files version details

Oracle Database Version	JDK/JRE Version Supported	JDBC Jar files specific to the release
12.1 or 12cR1	JDK 8,JDK 7 and JDK 8	ojdbc7.jar for JDK 7/JDK 8
11.2 or 11gR2	JDK 7 supported in 11.2.0.3 and 11.2.0.4	ojdbc6.jar for JDK 7

21 Removing OFSAA

This chapter includes the following sections:

21.1 Uninstalling OFSAA Infrastructure

This section will guide you through the necessary steps to uninstall the OFSAA Infrastructure product.

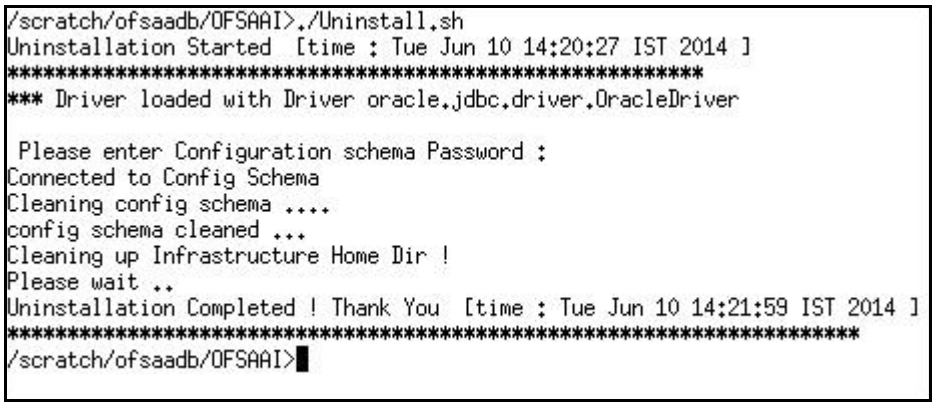
Before you start the uninstallation process, ensure that no open connections exist to the OFSAA Infrastructure Config and Atomic Schemas and Infrastructure services are brought down.

To uninstall OFSAA Infrastructure:

1. Log in to the system as non-root user.
2. Navigate to the `$FIC_HOME` directory and execute the command:

   `./Uninstall.sh`
3. Enter the password for OFSAAI Configuration Schema when prompted as shown in the following figure.

Figure 48: Uninstalling OFSAA Infrastructure



NOTE

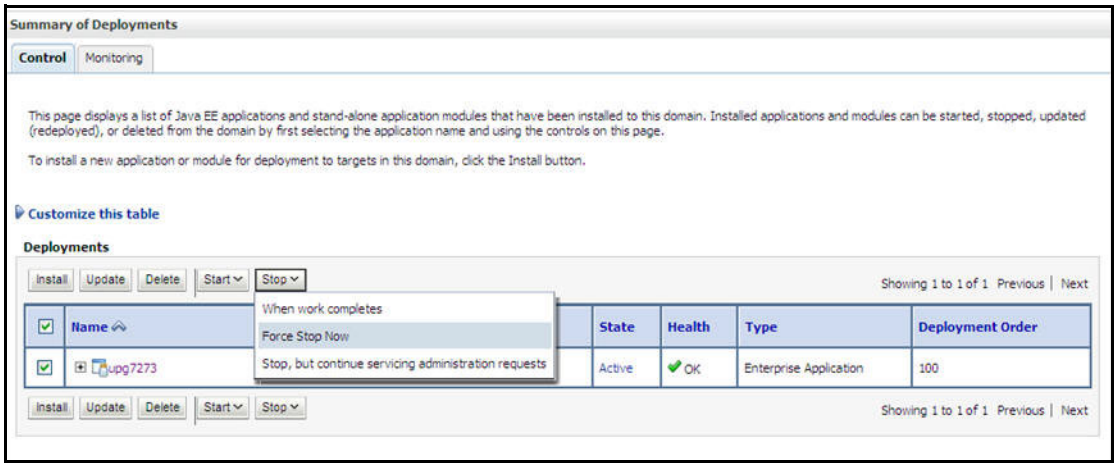
- Uninstallation does not remove the Infrastructure application from the web application server. This has to be done manually.
- The entries in the `.profile` file will have to be removed manually.
- The files/ folders under the file system staging area (ftpshare) have to be deleted manually.
- All the Database objects from Atomic Schemas have to be dropped manually..

21.2 Uninstalling EAR Files in WebLogic

On the machine that hosts WebLogic, perform the following steps to uninstall any previously deployed application:

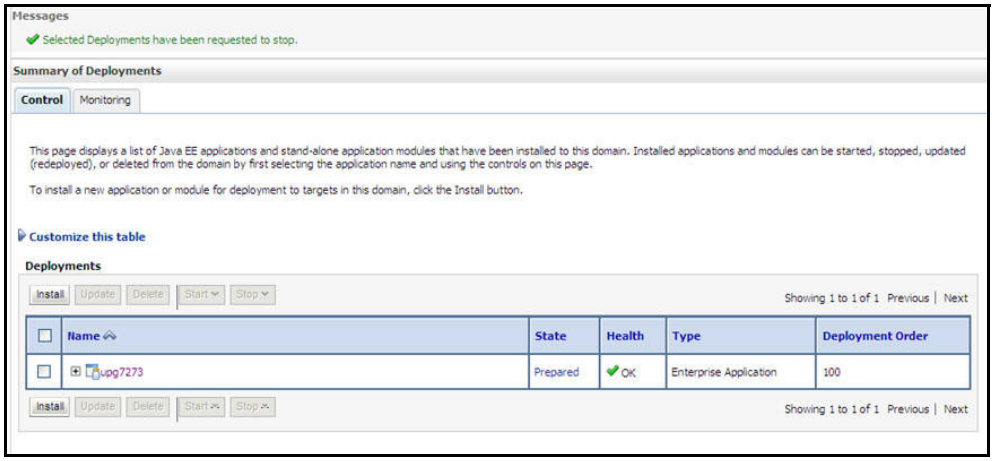
1. Open the URL in the browser window: `http://<ipaddress>:<admin server port>/console` (https if SSL is enabled). The *Login* window of the WebLogic server administration console is displayed.
2. Login with the WebLogic user credentials having administrator privileges.
3. From the **Domain Structure** LHS menu, click **Deployments**. The *Summary of Deployments* window is displayed.

Figure 49: Summary of Deployments



4. Select the checkbox adjacent to the application to be uninstalled and click **Stop> Force Stop Now**.
5. Click **Yes** in the confirmation dialog to stop the selected deployment.

Figure 50: Summary of Deployments- Messages



6. Select the checkbox adjacent to the application and click **Delete** to delete the selected deployment.
7. Click **Yes** in the confirmation dialog to remove the selected deployment from the domain configuration.

22 FAQs and Error Dictionary

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

- Frequently Asked Questions
- Error Dictionary

OFSAAI installer performs all the pre-requisite validation check during installation. Any errors encountered in the process is displayed with an appropriate Error Code. You can refer to the Error Dictionary to find the exact cause and resolution to rectify the error.

22.1 Frequently Asked Questions

You can refer to the Frequently Asked Questions which has been developed with the interest to help you resolve some of the OFSAAI 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.

This section includes the following topics:

- OFSAAI FAQs
- Application Pack 8.1.2.0.0 FAQs

22.1.1 OFSAAI FAQs

What are the different components that get installed during OFSAAI?

The different components of OFSAAI are illustrated in Figure 1, "Components of OFSAAI".

What are the different modes of OFSAAI installation?

OFSAAI can be installed in Silent Mode.

Can the OFSAA Infrastructure components be installed on multi-tier?

No. OFSAA Infrastructure components (ficapp, ficweb, ficdb) cannot be installed on multi-tier. By default, they will be installed on single-tier. However, OFSAA Infrastructure can be deployed within the n-Tier architecture where the Database, Web Server and Web Application Server is installed on separate tiers.

Is JDK (Java Development Kit) required during installation of OFSAA? Can it be uninstalled after OFSAA installation?

JDK is not required during installation of OFSAA and only a run time is needed. For details, see Hardware and Software Requirements, Java Runtime Environment section.

Is JRE required during installation of OFSAA? Can it be uninstalled after OFSAAI installation?

Only JRE (Java Runtime Environment) is required during installation of OFSAA and cannot be uninstalled as the JRE is used by the OFSAA system to work.

How do I know what are the Operating system, webservers and other software versions that OFSAA supports?

Refer to OFSAA Technology Stack Matrices.

What are the different files required to install OFSAAI?

The following files are required:

- setup.sh.
- envCheck.sh
- preinstallcheck.sh
- VerInfo.txt
- OFSAAInfrastructure.bin
- validatedXMLinputs.jar
- MyResources_en_US.properties
- log4j.xml
- OFSAAI_PostInstallConfig.xml
- OFSAAI_InstallConfig.xml
- privileges_config_user.sql
- privileges_atomic_user.sql

What should I do if I get the following error message during installation:

"Execute Permission denied"?

Check whether all the files provided for OFSAAI installation has execute permissions.

To give execute permissions,

- Navigate to the path `OFSAAI_80200` and execute the command

```
chmod 755
```

"Graphical installers are not.."

If error resembles "Graphical installers are not supported by the VM. The console mode will be used instead..." then check whether any of the X-windows software has been installed.

Example: Hummingbird Exceed is started and configured to Graphical mode installation.

NOTENote

Type '`xclock`' from prompt and this should display clock in graphical mode.

"No Java virtual machine could be..."

If the error message reads "No Java virtual machine could be found from your PATH environment variable. You must install a VM prior to running this program", then

- Check whether "java path" is set in PATH variable. See the Table 4–1, " Prerequisite Information"section in this document.
- Check whether sufficient temporary space is available.
- Ensure that the movement of OFSAAI Installer text files to the target system is done in the Text mode so that `setup.sh` file does not contain control line feed characters (^M).

What should I do if I get the following error message during installation, "OracleDriver Files Not Found, Please Choose the Right Path To Continue"?

Check whether the provided path for Oracle Driver files is correct and whether the user has permissions to access the files.

What should I do if I get the following error message during installation, "User must have CREATE TABLE, CREATE VIEW, CREATE TRIGGER, CREATE INDEX, CREATE SEQUENCE, CREATE PROCEDURE" even though the oracle schema user created has the mentioned privileges?

OFSAAI installer validates the database details provided during installation, so ensure:

- Whether the oracle schema user has the required set of privileges for successful installation.
- Whether the oracle schema user has been created with quota privileges on tablespace to create database objects.

See the Table 4–1, " Prerequisite Information"section in this document.

Installation of OFSAAI was completed successfully! What next?

Post the successful completion of OFSAAI installation, one has to perform the Post Installation steps. See Post Installation Configurations.

What is to be done when OFSAAI Installation is unsuccessful?

OFSAAI installer generates log file `OFSAAInfrastructure_Install.log` in the Infrastructure Installation Directory. There is also another log file created in the path configured in `Log4j.xml`. If the logs of any of these reported Warnings, Non Fatal Errors, Fatal Errors or Exceptions, they should be brought to the notice of the OFSAAI Oracle Support Services. It is recommended not to proceed, until the reported problems are adequately addressed.

How do I completely uninstall OFSAAI?

OFSAAI can be completely uninstalled by performing the steps provided in Uninstalling OFSAA Infrastructure section in this guide.

Can OFSAAI config and atomic schemas be on different databases?

OFSAAI requires both config and atomic schemas to be present on the same database instance.

How do I grant privileges if a new information domain is created?

If you are creating a new information domain, provide a set of privileges (database permissions) to the new Atomic schema.

- Log into the database as **sys** and connect as **sysdba** user.
- Execute the file `privileges_config_user.sql` available under `$FIC_HOME` directory
- Enter the database schema for which you want to grant privileges.

When should I run the MLS utility?

See the Multiple Language Support (MLS) Utility section in OFS AAI Administration Guide available on OTN.

Does OFSAAI support Oracle Linux versions other than 5.5?

OFSAAI supports the Oracle Linux versions from 5.5 up to 5.10 and also from 6.0 and above.

What should I do if I get the following error message on the UNIX System terminal while executing ./setup.sh, "Insert New Media. Please insert Disk1 or type its location"?

a. Login as root user on the Unix machine where OFSAAI is getting installed.

b. Navigate to the path `/etc/security/`.

c. Edit the file `limits.conf` to add/edit a row for the unix user installing OFSAA:

```
<Unix User> soft nofile 9216
```

d. After saving the changes, log in as unix user with which OFSAAI is getting installed and execute the command:

```
ulimit -n
```

The command should return the value 9216.

How do I verify if the system environment is ready for OFSAAI installation?

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

See Verifying System Environment section for additional information.

How do I know if the installation is completed successfully?

The OFSAA Infrastructure installation performs a post install health check automatically on successful installation of the product. To rerun the post install verification at a later time, perform the following steps:

a. Navigate to the path `$FIC_HOME` (Product Installation Directory).

b. Execute the command:

```
./piverify.sh
```

What should I do if there are any exceptions or errors in installation and how to proceed?

a. Please backup the installation logs.

b. Share the backup logs with Oracle Support Services.

What should I do if the installation process is abruptly terminated or aborted?

If the installation process is abruptly terminated, then the installation will be incomplete. To recover from this, follow these steps:

a. Drop the DB objects in the config schema created by OFSAAI installation.

b. Open the `.profile` and remove the entries made by the OFSAAI installation which are made between the comment statements, #Beginning of entries by OFSAA Infrastructure installation and #End of entries by OFSAA Infrastructure installation.

c. Delete the OFSAA install directory created by the OFSAAI installer.

d. Perform the OFSAAI installation again.

Does OFSAA support any other web server types, other than the ones stated in Tech Matrix and Installation Guide?

No, all the supported softwares and versions are stated in the OFSAA Technology Stack Matrices.

What should I do if the database connection from connection pool displays the following error message, "java.sql.SQLRecoverableException: IO Error: Connection reset"?

This happens while running several database intensive tasks in parallel. To correct this error, add the line `securerandom.source=file:/dev/./urandom` in the `java.security` configuration file available in `$JAVA_HOME/jre/lib/security/` path.

> **NOTE** This needs to be configured on all the machines or VMs where the OFSAAI components are installed.

If the issue is not resolved even with the preceding settings, check the MTU(Maximum Transmission Unit) settings on the linux box. For details on MTU settings and updating them, contact your system Administrator.

What should I do when I get syntax errors/file not found error messages while invoking setup.sh file from my install archive?

This could mostly happen:

- When installer was not unzipped rightly or corrupted during unzip.
- setup.sh file which resides within the install archive was not transferred in ASCII or text mode, which could have corrupted the file.

To correct this, follow the steps:

a. Copy the installer (in BINARY mode) to the system on which the OFSAA Infrastructure components will be installed.

b. Unzip the installer using the command:

```
unzip <OFSAAI_Installer>.zip
```

c. The corrupted `setup.sh` file would have introduced certain ^M characters into the file. You can remove ^M characters from setup.sh file by following these steps:

i. Login to the server where the installer is copied.

ii. Navigate to the directory `OFSAAI_80200`.

iii. Open the `setup.sh` file in the **vi** editor using the command: `vi setup.sh`.

iv. Inside vi editor in Esc mode, type: **`%s/^M//g`**

> **NOTE** To enter ^M, hold the CTRL key then press V and M in succession.

v. Save the `setup.sh` file by typing: **`wq!`**

Does OFSAA support Oracle DB 11g Standard edition?

The OCI client and the jdbc driver does not change depending on whether it is a standard or enterprise edition. So, OFSAAI will work with standard edition as well.

We do not recommend standard edition because it will not scale and does not support partition pack, database security vault, or advanced analytics.

What should I do if I get the following error message while executing ./startofsaai.sh file on the UNIX System terminal "./startofsaai.sh: /java: Execute permission denied"?

- Ensure JAVA_BIN environment variable path is set on the "unix user" terminal from where the `startofsaai.sh` file is invoked.
  - Ensure the `.profile` where the environment/ path settings are made has been executed successfully.

What should I do if the OFSAAI Application Server does not proceed even after providing the system password?

Ensure that, the System Password provided when prompted is "password0" provided during installation. Also check whether the connection to the "configuration schema" can be established through sqlplus.

Although the OFSAAI installation has completed successfully, when OFSAAI servers are started, and the application URL is accessed, it gives an error message "the page cannot be found or displayed" or "Could not retrieve list of languages from Server. Please contact the system administrator". What should one do?

Ensure OFSAAI servers have been started and are running successfully. For details on start up parameters options, see Starting Infrastructure Services section.

For more details on the issue, refer to the Revappserver log in `$FIC_APP_ HOME/common/FICServer/logs` directory or the Web Server log files.

Is it necessary to provide the specified grants to the Oracle schema user before installation? If yes, can it be revoked after completing the installation?

The "Oracle schema" user requires the necessary grants specified before, during, and after the installation process. Grants provided should never be revoked as the application makes use of these grants all the time.

Can we have distributed OFSAAI Application Server for load balancing?

OFSAAI Application server can be scaled out/distributed across different JVM's (machines) based on the various services and Information Domains, in other words, Load balancing could be achieved with distribution of services.

Why do we need FTPSHARE on all the layers? Can we have ftpshare on another machine other than the machines where OFSAAI is installed?

FTPSHARE is a Metadata Repository directory. All the metadata related files used in Infrastructure are stored in the FTPSHARE directory. The ftpshare contains folders for each Information Domain, with each Information Domain folders holding Erwin, log, and scripts folder. The transfer of data among the Web, Application, and Database servers in Infrastructure takes place through FTP/SFTP.

You need to configure FTP/SFTP and enable communication between the servers by providing App server's FTP/SFTP credentials to the Web server and DB server users.

Yes, you can have FTPSHARE on another machine other than the machines where OFSAAI is installed.

Is it mandatory to provide the FTP/SFTP password?

Yes, OFSAAI needs credentials of the user who has complete permissions on FTPSHARE directory, and the user should be able to independently login to the unix server.

What are the permissions required for FTPSHARE and when should I give them?

It is recommended to provide permissions on FTPSHARE in case of installations done across different machines or VMs (multitier installation).

In case of single tier installation, 770 permissions can be provided if the Unix users of OFSAAI and web server belong to the same Unix group.

Additionally, any new file that is created in the FTPSHARE folder of any installation layer should be granted specific/explicit permission.

Port Change utility can be used to have the Port number modified, which are currently being used by the Infrastructure application. For more information, refer *Changing IP/ Hostname, Ports, Deployed Paths of the OFSAA Instance* section in OFS Analytical Applications Infrastructure Administration User Guide in OTN.

Are there any in-built system administration users within OFSAAI Application?

The three in-built system administration users are provided to configure and setup OFSAAI.

- SYSADMN
- SYSAUTH
- GUEST

Does OFSAAI Application support both FTP and SFTP?

OFSAAI supports both FTP and SFTP configuration.

Is it necessary to enable the FTP/SFTP services to use the OFSAAI?

Yes, enabling of FTP/SFTP services and its ports is a pre-requisite step towards using the OFSAAI.

OFSAAI Configuration: Unable to save the server details?

- Ensure the input User ID, Password, and Share Name are correct.
- Ensure FTP/SFTP services are enabled.
- Have a test FTP/SFTP connection made and confirm if they are successful.

What should I do if I get the following message while creating Information Domain, "Please create a database and then create the information domain"?

Information Domain is mapped to only one Database; and thus before the creation of Information Domain, at least one database details should exist.

What should I do if I get the following message during the startup of backend engine message server, "ConnectToDatabase: FatalError, could not connect to the DB server"?

- Verify whether connection to the Configuration Schema can be established through SQL*PLUS.
- Verify Configuration Schema password is modified post installation.
- Ensure Oracle Database Alias Name created for Oracle Instance and Oracle Service Name are same.
- On a multi tier installation mode, ensure TNSNAME and SID are same in both the Application and Database Layers.

What should I do if I get the following message during the startup of backend engine message server, "Fatal Error, failed to get user ID from LibSmsConnect"?

Ensure Reveleus.sec file exist under the $FIC_HOME/conf directory where the Database components are installed.

Does OFSAAI Application support LDAP authentication?

OFSAAI supports LDAP configuration and authentication.

Does OFSAAI support multiple languages?

Yes, OFSAAI supports multiple languages.

Does OFSAAI provide any data back-up features?

OFSAAI does not have built-in back up facility. External Storage Infrastructure is recommended for back-up.

What kind of security features does the OFSAAI provide?

OFSAAI provides security at:

- Segment Level - Users can access only the segment they are mapped to.
- Application Level - Users can perform an operation only if mapped to appropriate role and functions.

Does OFSAAI have the ability to enforce periodic password change?

OFSAAI provides configurable parameters to define number of days after which the user password would expire and then the user is forced to change the password after expiration period.

What is the password policy followed in OFSAAI?

OFSAAI enforces a minimum password length with a combination of Upper and Lower case characters and alpha-numeric strings.

Which version of Erwin Data Modeller does OFSAAI support?

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

Does OFSAAI provide the mechanism to upload Business Data model?

- OFSAAI also provides a model upload utility "`upload.sh`" for uploading the business data model through the command line parameter by executing this shell script file under the path `<FIC_HOME>/ficapp/common/FICServer/bin`.

For more details, see Configuration for Model Upload Utility section of the OFS Analytical Applications Infrastructure User Guide available on OTN.

How do I apply incremental change to the existing model when the Business Data model undergoes a change?

Modified data model can be uploaded into the system and OFSAAI has the ability to compare the changes within the data model with respect to the one already present in the system and enables propagation of incremental changes in a consistent manner.

What are the different types of uploading a business data Model?

OFSAAI supports uploading of business data model from client desktop and also by picking up the data model from the server location.

Can the OFSAAI Configuration Schema password be modified post installation?

The OFSAAI Configuration Schema password can be modified post installation. OFSAAI application stores the password in the database and few configuration files, thus any changes to the Configuration Schema password will require updating in those files. Contact Oracle Support Services for more details.

Can the OFSAAI Atomic Schema password be modified?

The OFSAAI Atomic Schema password can be modified. OFSAAI application stores the atomic schema password in the database and few configuration files, thus any change to the atomic schema password will require updating those files.

To change the Atomic Schema password, follow the steps:

a. Login to OFSAA.

b. Navigate to System Configuration > Database Details window. Select the appropriate connection, provide the modified password and save.

c. For the WebLogic Web server, follow the steps:

   i. Login to the WebLogic Administration Console from the left side menu.

   ii. Under Domain Structure list box, expand the appropriate Domain and navigate to Services > JDBC >Data Sources. A list of data sources will be populated on the right side.

   iii. Select the appropriate Data Source and edit the connection details. (In this case, both Config and Atomic data sources need to be modified).

d. Restart the OFSAAI services.

> **NOTE** If the modified passwords are not updated, OFSAAI logs display the message ORA-28000: the account is locked.

Does the upload of Business Data model depend on Java Memory?

Business data model upload through OFSAAI depends on the Java memory settings on the client and server machines. Java memory setting varies with the data model size and the available RAM. Contact Oracle Support Services for more details.

Why do the Business Metadata Management screens (Business Processors screen) in User Interface, take more time to load than other screens?

The Log file in `DynamicServices.xml` which resides in `$FIC_HOME/conf` is continuously being updated/refreshed to cache metadata. This can be observed when you are starting `startofsaai.sh` and if any of the log file (For example, SMSService.log) in `DynamicServices.xml` is being continuously refreshed for longer time.

By default, the Metadata Log file cache size is set to 1000. If in case the log is being updated beyond this limit, retrospectively the preceding entries are overwritten. For example, the 1001th entry is overwritten by deleting the first entry. This results in the application window taking a longer time to load.

Increase the cache size limit in `Dynamicservices.xml` located at `<FIC_HOME>/conf`, depending on the currently logged count for the specific metadata.

a. Generate the Log report by executing the following query in config schema.

```
select count(1), t.metadata_name, m.dsn_id

from metadata_master m, metadata_type_master t

where m.metadata_type = t.metadata_type

group by t.metadata_name, m.dsn_id
```

b. The preceding query returns a list of codes with their respective metadata count. You can refer to "metadata_type_master" table to identify the metadata name.

c. View the log report to identify the metadata which is being updated/refreshed beyond the specified cache size limit. Accordingly increase the cache size limit in Dynamicservices.xml depending on the currently logged count for the specific metadata.

For example, if the "MEASURE_CACHE_SIZE" is set to 1000 and total measure reported in log is 1022, increase the limit to 2000 (approximately).

d. Restart Reveleus/OFSAAI servers (Web and APP) and check the issue.

What configurations should I ensure if my data model size is greater than 2GB?

In order to upload data model of size greater than 2GB from OFSAAI Data Model Management -->Data Model Maintenance--> Import Model, you need to configure the required model size in `struts.xml file` available in the path `$FIC_WEB_HOME/webroot/WEB-INF/classes`.

NOTE The size requirements have to be always specified in bytes.

For example, if you need to configure for model size of 2.5GB, then you can approximately set the max size to 3GB (3221225472 bytes) as follows, in order to avoid size constraints during model upload.

```
<constant name="struts.multipart.maxSize" value="3221225472"/>
```

After configuring `struts.xml` file, generate the application EAR/WAR file and redeploy the application onto your configured web application server. For more information on generating and deploying EAR / WAR file, refer Appendix 11.

What should I do if my Hierarchy filter is not reflecting correctly after I make changes to the underlying Hierarchy?

In some cases, the Hierarchy Filters do not save the edits correctly if the underlying Hierarchy has been changed. This can occur in hierarchy maintenance, where you have moved a member to another hierarchy branch, and that member was explicitly selected in the Filter and is now a child of a node which is already selected in the Filter. Refer Support Note for the workaround.

Can I install an Application Pack on an existing Atomic schema/ Information Domain created manually?

No, you cannot install an Application Pack on existing Atomic schema/Information Domain created manually. Application Packs can be installed only on Atomic Schemas/Information Domain created using schema creator utility and/ or the Application Pack installer.

What should I do if I get the following exception while trying to view the model outputs in Model Outputs screen, "Exception ->Local Path/STAGE/Output file name (No such file or directory)"?

Ensure you have created a folder "STAGE" under the path mentioned as "Local Path" in the web server details window. This folder needs to be created under the local path on every node, in case of web application server clustering.

What should I do if I get the following exception during OFSAA services startup, "Exception in thread "main" java.lang.UnsatisfiedLinkError: net (Not a directory)"?

Ensure the JRE referred in .profile is not a symbolic link. Correct the path reference to point to a physical JRE installed.

What is the optimized memory settings required for "New" model upload?

The following table lists the optimized memory settings required for "New" model upload.

Table 0–1 Optimized Memory Settings for New Model Upload

Pick from Server	106 MB	"-Xms1024m -Xmx1024m
	36 MB	"-Xms2048m -Xmx2048m
	815 MB	"-Xms4096m -Xmx4096m
	1243 MB	"-Xms6144m -Xmx6144m
Model Upload Utility	106 MB	"-Xms1024m -Xmx1024m"-Xms2048m -Xmx2048m
	336 MB	"-Xms4096m -Xmx4096m
	815 MB	"-Xms4096m -Xmx4096m
	1243 MB	"-Xms6144m -Xmx6144m
Save New Erwin File In Server	106 MB	"-Xms1024m -Xmx1024m
	336 MB	"-Xms2048m -Xmx2048m
		"-Xms4096m -Xmx4096m
		"-Xms6144m -Xmx6144m

What should I do if I get the following error message, "ORA 01792 maximum number of columns in a table or view is 1000 during T2T execution"?

You should apply the following patch set from Oracle. Applicable only for 12c.

https://support.oracle.com/epmos/faces/DocumentDisplay?id=1937782.1

I did not enable OFS Inline Processing Engine Application license during the installation. However, I have enabled it post installation, using the Manage OFSAA Product License(s) in the Admin UI. Are there any other additional configurations that I need to do?

Yes. Follow the instructions explained in the OFS Inline Processing Engine Configuration Guide available on OTN.

I get an error when I try to build an Oracle OLAP cube. What should I do?

Execute the following grant on the appropriate ATOMIC schema

```
grant olap_user to &database_username
```

How do you turn off unused Information Domains (Infodoms) from caching?

Follow these steps to turn off unused infodoms from caching:

a. Navigate to $FIC_HOME/conf in the APP layer of your OFSAAI installation.

b. In the DynamicServices.xml file, identify the section for <Service code="20">.

c. Modify the value of parameter CACHE_ON_STARTUP to 0 (default is 1).

d. Repeat the same in the WEB layer too. Generate the application EAR/WAR file and redeploy the application onto your configured web application server. For more information on generating and deploying EAR / WAR file, refer to the Appendix 11 section.

e. Restart the OFSAAI Services (APP and WEB). For more information, refer to the Starting Infrastructure Services section.

> **NOTE** This setting will cache the Infodom metadata only for the infodoms that get accessed upon user login. Infodoms which do not get accessed, will not be cached.

Sample code is as follows:

```
<SERVICE CODE="20"
CLASS="com.iflex.fic.metadata.services.MetadataServiceProvider" NAME="BMD"
SERVERID="DEFAULT" PATH=" " LOGGERNAME="UMMLOGGER" LOGGERLEVEL="10">
<PARAMETERS>
<PARAMETER NAME="CACHE_ON_STARTUP" VALUE="0" />
<PARAMETER NAME="BACKUP_XML" VALUE="1" />
<PARAMETER NAME="MAX_BACKUP_XML" VALUE="2" />
<PARAMETER NAME="PC_NONBI_BI_SWITCH" VALUE="2048" />
<PARAMETER NAME="HIERARCHY_NODE_LIMIT" VALUE="2000" />
<PARAMETER NAME="ALIAS_CACHE_SIZE" VALUE="1000" />
<PARAMETER NAME="DATASET_CACHE_SIZE" VALUE="2000" />
<PARAMETER NAME="MEASURE_CACHE_SIZE" VALUE="2000" />
<PARAMETER NAME="HIERARCHY_CACHE_SIZE" VALUE="2000" />
<PARAMETER NAME="DIMENSION_CACHE_SIZE" VALUE="2000" />
<PARAMETER NAME="HIERARCHYATTRIBUTE_CACHE_SIZE" VALUE="1000" />
<PARAMETER NAME="CUBE_CACHE_SIZE" VALUE="1000" />
<PARAMETER NAME="RDM_CACHE_SIZE" VALUE="1000" />
<PARAMETER NAME="BUSINESSPROCESSOR_CACHE_SIZE" VALUE="2000" />
<PARAMETER NAME="DERIVEDENTITY_CACHE_SIZE" VALUE="1000" />
<PARAMETER NAME="LOG_GET_METADATA" VALUE="false" />
<PARAMETER NAME="METADATA_PARALLEL_CACHING" VALUE="0" />
</PARAMETERS>
</SERVICE>
```

While creating an Excel Mapping, after specifying the excel worksheet, the target table, and mapping each column in the worksheet to a target table, I click Save and nothing happens. But when I click Cancel, a message pops up informing me that all changes will be discarded", what is to be done.

Check if the version of Internet Explorer and JRE Plugin are as mentioned in the Desktop Requirements section of this manual. If not, use the qualified versions as mentioned.

Can multiple OFSAA Infrastructure instances share the same Config Schema?

No, only one OFSAA environment can be installed using one Config Schema.

Can Atomic Schema be shared?

Yes, it can be shared between two OFSAA instances.

While setting a firewall, which ports should be opened for communication between the Oracle HTTP Web Server and the WebLogic Application Server for OFSAAI to operate properly?

The OFSAA Servlet port which is same as Web server port should be open. Also the web application port should be open.

Can I modify the NLS_LENGTH_SEMANTICS to BYTE from CHAR for the Database where older versions of OFSAA is Installed?

Yes, NLS_LENGTH_SEMANTICS can be modified to BYTE from CHAR if you are not intending to use multi language support.

Can I install already installed application in a different infodom?

No, it is not possible to install the same application in two different infodoms.

How can I configure the OFSAA application for High Availability?

OFSAA can have active-passive high availability. For more details, refer Configuration for High Availability- Best Practices Guide.

During OFSAA installation should I provide web application server's IP /Hostname and port or web server's IP/Hostname and port, if the Apache HTTP Server/ Oracle HTTP Server/ IBM HTTP Server are configured?

In case the web server is configured, you should enter the Web Server IP Address/Hostname and Port details during OFSAA installation. Here the Servlet port should be same as the Web Server port.

If Web Server is not configured, the Web Application Server's IP Address/ Hostname and Port is required during the installation process. Here the Servlet port should be same as the Web application Server port.

Is "ReveleusAdminConsoleAgent" applicable for OFSAAI 8.0.0.0.0 and higher versions?

No, `ReveleusAdminConsoleAgent` is not applicable starting OFSAAI 7.3.3.0.0. There is a change in the way agentservers are managed through `AGENTSTARTUP.SH` and `AGENTSHUTDOWN.SH`.

What should I do when the message server process does not open and I get the following error message, "CI18NProvider::CI18NProvider, Error, unable to connect to the config database"?

This error is displayed due to the following reasons:

- The Config Schema password is already expired.
- If the Config Schema password is going to expire soon and the message like "ORA-28002: the password will expire within 6 days" displays while connecting to Config Schema through SQLPlus.

- The Config Schema password is modified.

To resolve the error, re-set the Config Schema password to the old password. Else, if the Config Schema password is modified to something else then follow these steps:

a. Delete the $FIC_HOME/conf/Reveleus.SEC file.
b. Shutdown the OFSAAI App service: `cd $FIC_APP_HOME/common/FICServer/bin ./stopofsaai.sh`
c. Shutdown the OFSAAI App service: `cd $FIC_APP_HOME/common/FICServer/bin ./stopofsaai.sh`
d. Start the Infrastructure Server in foreground directly on the server or through XWindows software using the command: `./startofsaai.sh`
e. Enter System Password.
f. Enter the new Config schema password. The service starts and initializes if it is able to successfully connect to the DB and generates the `Reveleus.SEC` file.
g. Post successful startup of the service, if required, the Infrastructure server may be shut down and restarted in the background using nohup mode.

What is the mechanism of Log File sizing and backup?

OFSAAI Log files created under `$FIC_APP_HOME/common/FICServer/logs & <OFSAAI_DEPLOYED_AREA>/<CONTEXT.war>/logs` is configurable in `RevLog4jConfig.xml`.

The default size of the log files (MaxFileSize) is set to 5000kb and number of maximum backup log files (MaxBackupIndex) retained is set to 5, both of which are configurable. Increasing these parameters to a higher value should depend on the server hardware configurations and may reduce the performance.

To configure the Logs file size on OFSAA Application server, follow these steps:

a. Navigate to `$FIC_HOME/conf` where OFSAA is installed.
b. Edit the following parameters in the file `RevLog4jConfig.xml`
    * param name="file" : Enter the path where the Logs are to be generated.
    * param name="MaxFileSize" : Provide the required file size.
    * param name="MaxBackupIndex" : Provide the required number of backup files to be created.

Example:

```
<appender name="REVSERVERAPPENDER" class="org.apache.log4j.RollingFileAppender">
<param name="file" value="$FIC_HOME/ficapp/common/FICServer/logs/RevAppserver.log"/>
<param name="Append" value="true" />
<param name="MaxFileSize" value="5000kb" />
<param name="MaxBackupIndex" value="5" />
<layout class="org.apache.log4j.PatternLayout">
<param name="ConversionPattern" value="[REVELEUSLOG] %m%n"/>
</layout>
</appender>
```

To configure the Deployed area logs file, follow these steps:

a. Navigate to `<EAR/WAR Deploy area>/conf` folder.
b. Repeat step 2 from the preceding section.

Can we modify the Log file path?

Yes, Log file path is configurable, it can be configured in `RevLog4jConfig.xml` file. The default log file path (file) is set by the installer. This can be configured to another path.

Can I point the environment with HTTP enabled to HTTPS after installation and vice versa?

Follow these steps:

a. Create SSL related certificates and import to respective servers.

b. Enable SSL on a desired Port (example 9443) on your existing and already deployed web application servers.

c. Replace the protocol as https and new ssl port (FIC_SERVLET_PORT) configured and in all the URLs specified on the following files:

- $FIC_HOME/ficapp/common/FICServer/conf/FICWeb.cfg and $FIC_HOME/ficweb/webroot/conf/FICWeb.cfg
- $FIC_HOME/ficapp/icc/conf/WSMREService.properties
- $FIC_HOME/ficweb/webroot/conf/ModelExecution.properties
- $FIC_HOME/ficdb/conf/MDBPublishExecution.properties
- $FIC_HOME/ficdb/conf/ObjAppMap.properties
- $FIC_HOME/utility/Migration/conf/WSMigration.properties
- $FIC_HOME/utility/WSExecution/conf/WSExecution.properties
- $FIC_HOME/EXEWebService/weblogic/ROOT/WEB-INF/wsdl/EXEWebServiceImpl.wsdl

d. Replace XML attribute/Node values as specified on the following files:

- $FIC_HOME/ficweb/webroot/WEB-INF/web.xml
- FIC_WEBSERVER_PORT=9443
- FIC_WEBPROTOCOL=https
- $FIC_HOME/conf/LookUpServices.xml and $FIC_HOME/ficweb/webroot/conf/LookUpServices.xml
- `PORT="9443" PROTOCOL="https:"`

e. Login to Config Schema and execute the following SQL command to replace protocol and SSL port.

```
SQL> update configuration cn set cn.paramvalue='9443' where
cn.paramname='SERVLET_ENGINE_PORT';
```

SQL> update configuration cn set cn.paramvalue=replace(cn.paramvalue,'http:','https:') where cn.paramname='FormsManagerCacheReload';

```
SQL> update web_server_info ws  set
ws.servletport='9443',ws.servletprotocol='https';
```

f. Create EAR/WAR file and Re-Deploy.

What should I do if my HIVE connection fails with the following exception:

```
java.sql.SQLException: [Cloudera][HiveJDBCDriver](500164)
```

Error initialized or created transport for authentication:

[Cloudera][HiveJDBCDriver](500168) Unable to connect to server: GSS initiate failed.

```
com.ibm.security.krb5.KrbException, status code: 37
```

message: PROCESS_TGS at com.ibm.security.krb5.KrbTgsRep.<init>(KrbTgsRep.java:20)

This happens if there is a clock skew between the client and the KDC server. To resolve this, there are two solutions:

- **Solution 1:**

Synchronize the clocks between the servers. For more information, refer http://docs.oracle.com/cd/E19253-01/816-4557/setup-192/index.html

- **Solution 2:**

a. Set clockskew parameter on the server side (KDC) krb5.conf file and replace the same file in `HIVE_LIBRARY_PATH` folder. Parameter value should be decided on the basis of the time difference between the two machines.
b. Get the epoch time on the two servers by firing "date +%s" on the command line.
c. Clockskew param value should be chosen as a value sufficiently larger than the difference of the preceding two calculated values.
d. Set "clockskew = <value>" in the /etc/krb5.conf on the KDC server.
e. Restart Kerberos services.

What should I do if my schema creator log has the following exception:

```
Failed to detect a valid hadoop home directory
```

java.io.IOException: HADOOP_HOME or hadoop.home.dir are not set.

at org.apache.hadoop.util.Shell.checkHadoopHome(Shell.java:302)

at org.apache.hadoop.util.Shell.<clinit>(Shell.java:327)

at org.apache.hadoop.util.StringUtils.<clinit>(StringUtils.java:79) at org.apache.hadoop.security.Groups.parseStaticMapping(Groups.java:130)

at org.apache.hadoop.security.Groups.<init>(Groups.java:94)

at org.apache.hadoop.security.Groups.<init>(Groups.java:74)

at org.apache.hadoop.security.Groups.getUserToGroupsMappingService(Groups.java:303)

at org.apache.hadoop.security.UserGroupInformation.initialize(UserGroupInformation.java:283)

at org.apache.hadoop.security.UserGroupInformation.setConfiguration(UserGroupInformation.java:311)

at HdfsDbUtil.connect(HdfsDbUtil.java:162)

at SchemaParserUtil.validateHiveConnection(SchemaParserUtil.java:1359)

at SchemaParserUtil.checkAllPreChecks(SchemaParserUtil.java:1011)

at Main.execute(Main.java:317)

```
at Main.main(Main.java:145)
```

This occurs when HADOOP_HOME environment variable is not set. You can ignore this exception since we do not mandate to install HIVE where OFSAA is installed.

What should I do if the sliced data model upload takes a long time to complete?

```
If the metadata cache size is set to a lower value than the actual count of each
metadata type (hierarchy, dataset, dimension etc), then it gets into performance
degrade issues. We have to increase the cache size for each  metadata type according
to the count in the environment.

Following are the parameters in DynamicServices.xml to be configured depends  on the
metadata count in your environment.
```

```
<PARAMETER NAME="HIERARCHY_NODE_LIMIT" VALUE="2000"/>
 <PARAMETER NAME="ALIAS_CACHE_SIZE" VALUE="1000"/>
<PARAMETER NAME="DATASET_CACHE_SIZE" VALUE="2000"/>
 <PARAMETER NAME="MEASURE_CACHE_SIZE" VALUE="3000"/>
<PARAMETER NAME="HIERARCHY_CACHE_SIZE" VALUE="2000"/>
<PARAMETER NAME="DIMENSION_CACHE_SIZE" VALUE="2000"/>
<PARAMETER NAME="CUBE_CACHE_SIZE" VALUE="1000"/>
<PARAMETER NAME="BUSINESSPROCESSOR_CACHE_SIZE" VALUE="2000"/>
<PARAMETER NAME="DERIVEDENTITY_CACHE_SIZE" VALUE="1000"/>
Metadata count can be derived based on the following queries:
select count(1) from metadata_master where metadata_version=0  --- for all metadata
select count(1) from metadata_master where metadata_version=0  and metadata_type=1
--- for measure
select count(1) from metadata_master where metadata_version=0  and metadata_type=2
--- for Dimension
select count(1) from metadata_master where metadata_version=0  and metadata_type=3
--- for HCY
select count(1) from metadata_master where metadata_version=0  and metadata_type=4
--- for DATASET
select count(1) from metadata_master where metadata_version=0  and  metadata_type=59
--- for BP's
select count(1) from metadata_master where metadata_version=0  and  metadata_type=54
--- for Alias
select count(1) from metadata_master where metadata_version=0  and  metadata_type=5
--- for CUBES
select count(1) from metadata_master where metadata_version=0  and
metadata_type=856  --- for Derived Entity
```

For LDAP authentication, which server connects with the LDAP server, the Application server (where ofsaai is installed), or Web Application server (where EAR is deployed)?

For LDAP authentication, the Application server (ficapp) connects with the LDAP server.

The LDAP server in the setup listens on secure protocol ldaps (port 636). I have the root certificate of the LDAP server for SSL, and would like to know where to offload this certificate?

You need to import the certificate into the JDK/JVM used by Reveleus server in ficapp layer.

How to relocate FTPSHARE folder?

You can run the PortC.jar utility. For more details, refer Changing IP/ Hostname, Ports, Deployed Paths of the OFSAA Instance section in the OFSAAI Admin Guide available on OTN.

How do we identify the list of ports that are used by/configured in an OFSAA environment?

a. Navigate to $FIC_HOME folder on Target.

b. Run the PortC.jar utility using the command:

```
java -jarPortC.jar DMP
```

A file with the name **DefaultPorts.properties** will be created under $FIC_HOME directory which will contain the ports. For more information, refer Changing IP/ Hostname, Ports, Deployed Paths of the OFSAA Instance section in the OFSAAI Admin Guide available on OTN.

> **NOTE** This feature is available only after applying 7.3.5.2.0 Minor Release patch..

What should I do if I get the following error message, "Error while fetching open cursor value Status : FAIL"?

This error occurs while executing `envCheck.sh` because the user does not have access to `V$parameter`. This error does not occur due to sysdba or non sysdba privileges provided they have access/grants to `V$parameter`.

What should I do when an entity containing many attributes (>100 columns) is selected as Source entity and the Data Mapping (T2T definition) save operation takes longer than expected with the hourglass in the UI continuously rotating?

The workaround is:

a. Locate the webserver deployed area `webroot/conf/excludeURLList.cfg` file.
b. Modify the following entries:
   - `[SQLIA]./dataIntegrator/` to `[ALL]./dataIntegrator/`
   - `[SQLIA]./ETLExtractionServlet` to `[ALL]./ETLExtractionServlet`
c. Save the changes and restart the webserver.
d. Resave the definition.

What should I do if I get the following error message when I try to start the OLAP server:

```
./olapdataserver: error while loading shared libraries: libessapinu.so:
cannot open shared object file: No such file or directory
FATAL ERROR:- OLAP DATA SERVER start up failed.
```

This error occurs when OLAP component is not configured and OLAP feature in OFSAA is not used. However, this error can be ignored.

What should I do if I get the error "FATAL ERROR-Problem with OFSAA Service" during OFS_AAAI_PACK installation?

Increase the sleep counter (default value is 80) to a higher value in the following section of the *OFS_AAAI_PACK/OFSAAIUpdate.sh* file:

```
if [ $count -eq 0 ] ; then
sleep 80;
count=` grep -i "FICServer Initialization Complete"
$FIC_HOME/ficapp/common/FICServer/bin/nohup.out|wc -l `
fi
if [[ $count -gt 0 ]] ; then
echo OFSAA Service - OK
else
echo FATAL ERROR-Problem with OFSAA Service
```

```
exit 1

fi
```

How do I upgrade to Oracle Database 12c Release 1 or 2, if my previous database versions are Release 11.2.0.2+, 12.1.0.1 or 12.1.0.2?

If you are upgrading the Database Server from the previous versions to the current versions mentioned in the following table:

Table 24: Database Server

1.	11.2.0.2+ or 12.1.0.1	12c Release 1 (12.1.0.2)
2.	11.2.0.3+, 12.1.0.1 or 12.1.0.2	12c Release 2 (12.2.0.1)

Perform the instructions mentioned in the following MOS documents:

- Doc ID 2412630.1
- Doc ID 2075401.1

22.1.2 Application Pack 8.1.2.0.0 FAQs

What is an Application pack?

An Application Pack is suite of products. For more information, refer .

Can I get a standalone installer for OFSAAI 8.0?

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

Where can I download OFSAA 8.1.2.0.0 Application Pack?

You can download the OFSAAI 8.1.2.0.0 Application Pack from Oracle Software Delivery Cloud (OSDC).

What are the minimum system and software requirements for OFSAA 8.0 Application Pack?

See installation guide section Hardware and Software Requirements.

Is my environment compatible with OFSAA 8.1.2.0.0 Application Pack?

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

Does the OFSAA 8.1.2.0.0 Application Pack support all Operating systems?

OFSAA 8.1.2.0.0 Application pack supports the LINUX Operating System. Refer to Technology Matrix for the technology matrix that OFSAA suite products are/ will be qualified on.

How can I install OFSAA 8.1.2.0.0 Application Pack?

Refer to Oracle Financial Services Advanced Analytical Infrastructure Installation And Configuration Guide published in OTN for the application pack installers.

Does this installation require any Third party Softwares?

Oracle Financial Services Advanced Analytical Infrastructure Installation And Configuration Guide published in OTN lists the third party software that needs to be installed.

What languages are supported during OFSAA 8.1.2.0.0 Application Pack installation?

US English is the language supported.

What mode of installations OFSAA Application Pack support?

OFSAA Application Packs supports Silent Mode.

Does OFSAA 8.1.2.0.0 Application Pack support Multi tier Installations?

OFSAA 8.1.2.0.0 supports only single tier installation. For more information refer to OFSAAI FAQs section.

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.

What happens if it aborts during installation of any application/products within an Application pack?

You must restore the system and retrigger the installation

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

Rollback of installation is not supported.

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.

Can I re-install any of the Application Packs?

You can retrigger in case of failure.

Does this Application pack allow enabling / disabling any of the applications installed?

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

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

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

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

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 should be taken if running multiple OFSAAI installations on a single server. Adequate memory will be required for each installation as several OFSAAI processes (model upload, DEFQ services, etc) take significant amounts of memory. So it depends on your server memory.

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

Yes. You can select or change the required infodom.

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

How many Infodoms can be created over a single OFSAA Infrastructure of 8.0.1.0.0?

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

Is the 'Data Model' bundled specific to an Application pack or to an individual application?

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

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.

Does the Application pack create sandbox automatically for the required applications?

Yes, Sandbox creation is part of application install process.

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

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

Can I upgrade AAI only?

Yes, you can upgrade AAI alone.

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.

Is it possible to uninstall any Application from the Application pack?

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

Can I uninstall entire Application Pack?

No, you cannot uninstall the Application Pack.

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

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

Does Application Pack contain all Language Packs supported?

Language Packs need to be installed on the application packs.

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

Yes, you can install an Applications Packs over another FCCM Application Pack in the same information domain (from 8.0.4.0.0 onwards) or in a different information domain.

Exceptions are the Asset Liability Management and Profitability application packs, which need to be installed in a different Infodom.

Non-FCCM Applications Packs need to be installed in the different information domain.

Can I use an existing manually created schema as information domain for application pack installation?

No. Schemas required by OFSAA applications have to be created using Schema Creator Utility.

Does OFSAA 8.1.2.0.0 support on WebLogic 10.3.6 with Oracle 12c?

Yes, OFSAA 8.1.2.0.0 will support on WebLogic 10.3.6 with Oracle 12c. WebLogic 10.3.6 supports oracle 12c with some additional configurations. Refer the link http://docs.oracle.com/cd/E28280_01/web.1111/e13737/ds_12cdriver.htm#JDBCA655 for additional configurations.

What should I do if I get the following error message while running the schema creator utility, "HostName in input xml is not matching with the local hostname"?

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

What are the Java versions supported in OFS Sanctions Pack version 8.1.2.0.0?

OFS Sanctions Pack supports Java 1.7.x and 1.8.x.

Is OFS Sanctions Pack version 8.1.2.0.0 supported on Java 11?

Yes. To install this release of the OFS Sanctions Pack version 8.1.2.0.0 on Java 11.

Can I upgrade the Oracle Database version from 11g to 12C on which OFSAA 8.1.2.0.0 version is installed?

Yes, you can upgrade. When the DB Server was Oracle 11g, the ojdbc jar used was ojdbc6.jar. But, when the DB is upgraded to 12c, you need to upgrade the `ojdbc6.jar` to `ojdbc7.jar`.

Copy `ojdbc7.jar` from `$ORACLE_HOME/jdbc/lib` to the following locations:

- `$FIC_HOME/utility/OFSAAGenerateRepository/lib/`
- `$FIC_HOME/realtime_processing/WebContent/WEB-INF/lib/`
- `$FIC_HOME/ficdb/lib/`
- `$FIC_HOME/ficapp/icc/lib/`
- `$FIC_HOME/ficapp/common/FICServer/lib/`
- `$FIC_HOME/FMStandalone/FormsManager/WEB-INF/lib/`
- `$FIC_HOME/ficweb/webroot/WEB-INF/lib/`
- `$FIC_HOME/ficdb/etl/classes/`

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

This is a generic error message that appears during application installation failure. You should 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, it could be that it is 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, 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 https://support.oracle.com/epmos/faces/DocumentDisplay?id=2340045.1.

22.1.3 Forms Framework FAQs

What should I do when I have large volume of data to be exported?

It is recommended to use BIP reports or OBIEE reports if you have to export large volume of data.

How do I export the columns added to the grid using Field Chooser option?

Perform Grid Export operation to export the columns added to the grid by Field Chooser option.

'Expand All/ Collapse All' button is not visible in the Hierarchy Browser window. What should I do?

Expand All/ Collapse All button is disabled if the number of hierarchy nodes is more than 50 and if it is a non-custom hierarchy. Hierarchy with more than 50 nodes is considered as large hierarchy and the data will be fetched dynamically when you expand the parent node.

What is the difference between the two Searches available in the Hierarchy Browser window?

In the new *Hierarchy Browser* window introduced from 7.3.5.1.0 version, there are 2 search options available:

- **DB Search (Top search container):** It will search the required node in database and displays the result as shown below. This search is performed on full hierarchy nodes.
- **UI search (Below the hierarchy):** This search will find the required node in the UI and will show in tree structure.

> **NOTE** In case hierarchy nodes are more than 50 and if it is a non-custom hierarchy, then the UI search will not show the required node in tree structure, until all the nodes are expanded and loaded manually in the UI.

What is a Custom Hierarchy?

Custom hierarchies will be having the parameter configuration customQuery as shown below and the customized query will be taken from the `HIERARCHY_FILTER_MASTER` table.

Configuration in xml:

```
<CONTROL ID="1003" TYPE="41">
<CONTROLPROPS>
    <EXTRAPARAMETERS>
<PARAMETER NAME="customQuery" VALUE="Yes"/>
</EXTRAPARAMETERS>
</CONTROLPROPS>
  </CONTROL>
```

For custom hierarchy, all the hierarchy nodes are loaded in UI without any limit.

So, even if the hierarchy nodes are more than 50, the UI search will show the required node in tree structure and ExpandAll and ExpandBranch images will be enabled.

22.2 Error Dictionary

This contents of this section has been created with the interest to help you resolve the installation issues if any. There is a compilation of all the possible errors that might arise during the installation process with the possible cause and the resolution to quickly fix the issue and proceed further with the installation.

This section includes the following topics:

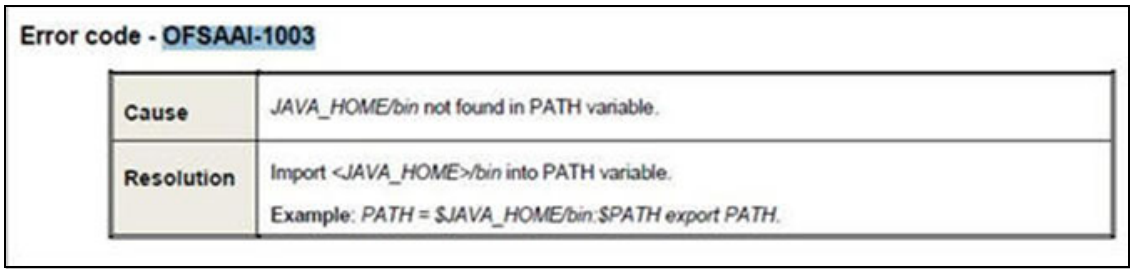
22.2.1 Accessing Error Dictionary

Instead of scrolling through the document to find the error code, you can use the pdf search functionality. In the "Find" dialog available in any of the Adobe Acrobat version that you are using to view the pdf document, follow these instructions to quickly find the error resolution:

1. With the Installation pdf open, press **Ctrl+F** or select **Edit** > **Find**.

2. The *Find* dialog is displayed as indicated.
3. Enter the error code that is displayed on screen during Infrastructure installation.
4. Press **Enter**. The search results are displayed and highlighted as follows:

Figure 51: Error Code



View the details of the issues, its cause, and resolution specific to the error code. Repeat the step to find an answer to any other errors that you notice during installation. If you are not able to resolve the issue even after following the steps provided in resolution, you can contact support.oracle.com along with log files and appropriate screen shots.

22.2.2 Error Code Dictionary

Error code - OFSAAI-1001

Table 0–2 Error code - OFSAAI-1001

Cause	Unix shell is not "korn" shell.
Resolution	Change the shell type to "korn". Use chsh unix command to change SHELL type. Shell type can also be changed by specifying shell path for the Unix user in `/etc/passwd` file.

Error code - OFSAAI-1002

Table 0–3 Error code - OFSAAI-1002

Cause	No proper arguments are available.
Resolution	Provide proper arguments. Invoke `Setup.sh` using SILENT mode. Example: `./Setup.sh SILENT` or `./Setup.sh`

Error code - OFSAAI-1004

Table 0–4 Error code - OFSAAI-1004

Cause	File `.profile` is not present in `$HOME`.
Resolution	Create `.profile` in `$HOME`, i.e. in the home directory of user.

Error code - OFSAAI-1005

Table 0–5 Error code - OFSAAI-1005

Cause	File `OFSAAInfrastructure.bin` is not present in current folder.
Resolution	Copy `OFSAAInfrastructure.bin` into installation kit directory.

Error code - OFSAAI-1006

Table 0–6 Error code - OFSAAI-1006

Cause	File `CustReg.DAT` is not present in current folder.
Resolution	Copy `CustReg.DAT` into installation kit directory.

Error code - OFSAAI-1007

Table 0–7 Error code - OFSAAI-1007

Cause	File `OFSAAI_InstallConfig.xml` is not present in current folder.
Resolution	Copy `OFSAAI_InstallConfig.xml` into installation kit directory.

Error code - OFSAAI-1008

Table 0–8 Error code - OFSAAI-1008

Cause	File `validateXMLInputs.jar` is not present in current folder.
Resolution	Copy `validateXMLInputs.jar` into installation kit directory.

Error code - OFSAAI-1009

Table 0–9 Error code - OFSAAI-1009

Cause	File `log4j.xml` is not present in current folder.
Resolution	Copy `log4j.xml` into installation kit directory.

Error code - OFSAAI-1010

Table 0–10 Error code - OFSAAI-1010

Cause	Unknown error occurred.
Resolution	Make sure to provide proper argument (SILENT) to the `Setup.sh` file.

Error code - OFSAAI-1011

Table 0–11 Error code - OFSAAI-1011

Cause	XML validation failed.
Resolution	Check InfrastructurePreValidations.Log for more details.

Error code - OFSAAI-1012

Table 0–12 Error code - OFSAAI-1012

Cause	Property file with locale name does not exist.
Resolution	Copy `MyResources_en_US.properties` to the setup kit directory and keep `en_US` in `LOCALE` tag of `OFSAAI_InstallConfig.xml`.

Error code - OFSAAI-1013

Table 0–13 Error code - OFSAAI-1013

Cause	File `OFSAAI_InstallConfig.xml/OFSAAI_PostInstallConfig.xml` not found.
Resolution	Copy `OFSAAI_InstallConfig.xml/OFSAAI_PostInstallConfig.xml` to the setup kit directory.

Error code - OFSAAI-1014

Table 0–14 Error code - OFSAAI-1014

Cause	XML node value is blank.
Resolution	Make sure all node values except SMTPSERVER, PROXYHOST, PROXYPORT, PROXYUSERNAME, PROXYPASSWORD, NONPROXYHOST, or RAC_URL are not blank.

Error code - OFSAAI-1015

Table 0–15 Error code - OFSAAI-1015

Cause	XML is not well formed.
Resolution	Execute the command `dos2unix OFSAAI_InstallConfig.xml` to convert plain text file from DOS/MAC format to UNIX format. OR Make sure that `OFSAAI_InstallConfig.xml` is valid. Try to open the file through Internet Explorer for a quick way to check validity. If it is not getting opened, create new `OFSAAI_InstallConfig.xml` using the `XML_Utility.jar`.

Error code - OFSAAI-1016

Table 0–16 Error code - OFSAAI-1016

Cause	User installation directory contain blank spaces.
Resolution	Provide an installation path that does not contain spaces. Check the tag `USER_INSTALL_DIR` in `OFSAAI_InstallConfig.xml` file. This path should not contain any spaces.

Error code - OFSAAI-1017

Table 0–17 Error code - OFSAAI-1017

Cause	User installation directory is invalid.
Resolution	Provide a valid installation path. Check if you are able to create the directory mentioned in `USER_INSTALL_DIR` tag value of `OFSAAI_InstallConfig.xml` file.

23 Configuring Transparent Data Encryption (TDE) and, Data Redaction in OFSAA

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

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

23.1 Transparent Data Encryption (TDE)

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

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

23.2 Configuring TDE During OFS Sanctions Installation Using Full Installer

This section provides information on how to enable TDE (Transparent Data Encryption) in the database. This section consists of the following sub sections:

- Configuring a Software Keystore and Encrypted Tablespace Creation
- Running the Schema Creator Utility with Encryption
- Testing the Encryption
- Configuring TDE in case of Upgrade
- Data Redaction

23.3 Configuring a Software Keystore and Encrypted Tablespace Creation

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

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

a. The location specified by the ENCRYPTION_WALLET_LOCATION parameter in the sqlnet.ora file.

b. The location specified by the WALLET_LOCATION parameter in the sqlnet.ora file.

NOTE: You should have proper privileges to perform the following actions.

For details to configure the software keystore, perform the following steps:

1. Set the Software keystore location in the sqlnet.ora file.

The first step is to designate a location for software keystore in the sqlnet.ora file. The Oracle Database will check the sqlnet.ora file for the directory location of the keystore to determine whether it is a software keystore or a hardware module security (HSM) keystore.

NOTE

- Ensure that the directory location which you want to set for software keystore exists beforehand. Preferably, this directory should be empty.
- In a multitenant environment, the keystore location is set for the entire multitenant container database (CDB), not for individual pluggable databases (PDBs).
- By default, the `sqlnet.ora` file is located in the ORACLE_HOME/network/admin directory or in the location set by the TNS_ADMIN environment variable. Ensure that you have properly set the TNS_ADMIN environment variable to point to the correct `sqlnet.ora` file.

To create a software keystore on a regular file system, use the following format when you edit the `sqlnet.ora` file:

```
ENCRYPTION_WALLET_LOCATION=
  (SOURCE=
    (METHOD=FILE)
    (METHOD_DATA=
    (DIRECTORY=<<path to keystore>>)))
```

Examples:

For regular file system in which the database name is orclb:

```
ENCRYPTION_WALLET_LOCATION=
  (SOURCE=
   (METHOD=FILE)
    (METHOD_DATA=
     (DIRECTORY=/etc/ORACLE/WALLETS/orcl)))
```

When multiple databases share the sqlnet.ora file:

```
ENCRYPTION_WALLET_LOCATION=
  (SOURCE=
   (METHOD=FILE)
    (METHOD_DATA=
     (DIRECTORY=/etc/ORACLE/WALLETS/orcl)))
```

When Oracle Automatic Storage Management (ASM) is configured:

```
ENCRYPTION_WALLET_LOCATION=
 (SOURCE=
  (METHOD=FILE)
   (METHOD_DATA=
```

```
    (DIRECTORY=+disk1/mydb/wallet)))
```

For ASM Diskgroup:

```
ENCRYPTION_WALLET_LOCATION=
 (SOURCE=
  (METHOD=FILE)
   (METHOD_DATA=
    (DIRECTORY=+ASM_file_path_of_the_diskgroup)))
```

2. Create the Software Keystore.

There are three different types of Software Keystores:

- Password-based Software Keystores
- Auto-login Software Keystores
- Local Auto-login Software Keystores

Perform the following steps to create a software keystore:

a. Login as sysdba or user with ADMINISTER KEY MANAGEMENT or SYSKM privilege.

b. Use the following command to create password-based software keystore:

```
CONN sys/password@serviceid AS SYSDBA

ADMINISTER KEY MANAGEMENT CREATE KEYSTORE 'keystore_location' IDENTIFIED BY
software_keystore_password;
```

- keystore_location is the path of the keystore directory you want to create
- software_keystore_password is the password of the keystore that you want to create.

For example, to create the keystore in the /etc/ORACLE/WALLETS/orcl directory:

```
ADMINISTER KEY MANAGEMENT CREATE KEYSTORE '/etc/ORACLE/WALLETS/orcl' IDENTIFIED BY
password;
```

After you run this statement, the ewallet.p12 file, which is the keystore, appears in the keystore location.

Alternatively, you can create an Auto-Login or Local-Login Keystore to avoid opening the Keystore manually every time. Use the following command:

```
ADMINISTER KEY MANAGEMENT CREATE [LOCAL] AUTO_LOGIN KEYSTORE FROM KEYSTORE
'keystore_location' IDENTIFIED BY keystore_password;
```

LOCAL enables you to create a local auto-login software keystore. Otherwise, omit this clause if you want the keystore to be accessible by other computers.

After you run this statement, the cwallet.sso file appears in the keystore location.

> **NOTE** It is important to remember the master key password (<keystore_password>) used during creation of the keystore. There are no ways to retrieve the password if forgotten.

3. Open the Software Keystore

Depending on the type of keystore you create, you must manually open the keystore before you can use it.

You do not need to manually open auto-login or local auto-login software keystores. These keystore are automatically opened when it is required, that is, when an encryption operation must access the key. If necessary, you can explicitly close any of these types of keystores. You can check the status of whether a keystore is open, closed, open but with no master key, or open but with an unknown master key by querying the STATUS column of the V$ENCRYPTION_WALLET view.

> **NOTE** After you open a keystore, it remains open until you manually close it. Each time you restart a database instance, you must manually open the password keystore to re-enable encryption and decryption operations.

Perform the following steps to open the software wallet:

e. Login as sysdba or user with ADMINISTER KEY MANAGEMENT or SYSKM privilege.

f. Use the following command to open password-based software keystore:

```
CONN sys/password@serviceid AS SYSDBA

ADMINISTER KEY MANAGEMENT SET KEYSTORE OPEN IDENTIFIED BY software_keystore_password
[CONTAINER = ALL | CURRENT];
```

- software_keystore_password is the same password that you used to create the keystore in "Step 2: Create the Software Keystore".
- CONTAINER is for use in a multitenant environment. Enter ALL to set the keystore in all of the PDBs in this CDB, or CURRENT for the current PDB.

> **NOTE** In a CDB, open the Keystore in the ROOT (CDB$ROOT) container and in all the associated PDBs, where TDE is enabled.
>
> You do not need to manually open auto-login or local auto-login software Keystores.

4. Set the Software TDE Master Encryption Key

Once the keystore is open, you can set a TDE master encryption key for it. The TDE master encryption key is stored in the keystore. This key protects the TDE table keys and tablespace encryption keys. By default, the TDE master encryption key is a key that Transparent Data Encryption (TDE) generates.

In a multitenant environment, you can create and manage the TDE master encryption key from either the root or the PDB.

Ensure that the database OPEN_MODE is set as READ WRITE. To find the status for a non-multitenant environment, query the OPEN_MODE column of the V$DATABASE dynamic view. If you are using a multitenant environment, then query the V$PDBS view. (If you cannot access these views, then connect as SYSDBA and try the query again. In order to connect as SYSKM for this type of query, you must create a password file for it. See Oracle Database Administrator's Guide for more information.)

Perform the following steps to set the encryption key:

a. Login as sysdba or user with ADMINISTER KEY MANAGEMENT or SYSKM privilege.

b. Use the following command to set the encryption key:

```
CONN sys/password@serviceid AS SYSDBA

ADMINISTER KEY MANAGEMENT SET KEY [USING TAG 'tag'] IDENTIFIED BY password [WITH BACKUP
[USING 'backup_identifier']] [CONTAINER = ALL | CURRENT];
```

- tag is the associated attributes and information that you define. Enclose this setting in single quotation marks (' ').

- password is the mandatory keystore password that you created when you created the keystore in "Step 2: Create the Software Keystore".
- WITH BACKUP creates a backup of the keystore. You must use this option for password-based keystores. Optionally, you can use the USING clause to add a brief description of the backup. Enclose this description in single quotation marks (' '). This identifier is appended to the named keystore file (for example, ewallet_time_stamp_emp_key_backup.p12, with emp_key_backup being the backup identifier). Follow the file naming conventions that your operating system uses.
- CONTAINER is for use in a multitenant environment. Enter ALL to set the key in all of the PDBs in this CDB, or CURRENT for the current PDB.

For example,

```
ADMINISTER KEY MANAGEMENT SET KEY IDENTIFIED BY password WITH BACKUP USING
'emp_key_backup';
```

5. Encrypting your Data

After completing the keystore configuration, encrypt the data. You can encrypt individual columns in a table or entire tablespaces. OFSAA recommends encrypting entire tablespaces and the description in this section covers encrypting entire tablespaces.

Note the following restrictions on using Transparent Data Encryption when you encrypt a tablespace:

- Transparent Data Encryption (TDE) tablespace encryption encrypts or decrypts data during read and write operations, as compared to TDE column encryption, which encrypts and decrypts data at the SQL layer. This means that most restrictions that apply to TDE column encryption, such as data type restrictions and index type restrictions, do not apply to TDE tablespace encryption.
- To perform import and export operations, use Oracle Data Pump.

Encrypting data involves the following steps:

1. Setting the COMPATIBLE initialization parameter for tablespace encryption
2. Setting the tablespace TDE master encryption key
3. Creating the Encrypted Tablespace

23.3.0.1 Setting the COMPATIBLE initialization parameter for tablespace encryption

Prerequisite: You must set the COMPATIBLE initialization parameter for the database to 11.2.0.0 or later. Once you set this parameter to 11.2.0.0, the change is irreversible.

Perform the following steps to set the COMPATIBLE initialization parameter:

1. Log into the database instance. In a multitenant environment, log into the PDB.
2. Check the current setting of the COMPATIBLE parameter.

For example:

```
SHOW PARAMETER COMPATIBLE


NAME                                 TYPE        VALUE
------------------------------------ ----------- --------------------
compatible                           string      12.0.0.0
noncdbcompatible                     BOOLEAN     FALSE
```

3. If you want to change the COMPATIBLE parameter, perform the following steps:
   a. Locate the initialization parameter file for the database instance.

- UNIX systems: This file is in the ORACLE_HOME/dbs directory and is named initORACLE_SID.ora (for example, initmydb.ora).

   b. In SQL*Plus, connect as a user who has the SYSDBA administrative privilege, and then shut down the database.

      For example:

      ```
      CONNECT /AS SYSDBA

      SHUTDOWN
      ```

   c. Edit the initialization parameter file to use the correct COMPATIBLE setting.

      For example:

      ```
      COMPATIBLE = 12.2.0.0
      ```

   d. In SQL*Plus, ensure that you are connected as a user who has the SYSDBA administrative privilege, and then start the database.

      For example:

      ```
      CONNECT /AS SYSDBA

      STARTUP
      ```

   e. If tablespace encryption is in use, then open the keystore at the database mount. The keystore must be open before you can access data in an encrypted tablespace.

      ```
      STARTUP MOUNT;

      ADMINISTER KEY MANAGEMENT SET KEYSTORE OPEN IDENTIFIED BY password;

      ALTER DATABASE OPEN;
      ```

23.3.0.2 Setting the tablespace TDE master encryption key

Make sure that you have configured the TDE master encryption key as shown in *Step 4: Setting the software TDE master encryption key*.

23.3.0.3 Creating the Encrypted Tablespace

After you have set the COMPATIBLE initialization parameter, you are ready to create the encrypted tablespace.

Follow the instruction given in Running the Schema Creator Utility with Encryption section for configuring the schema creator file to create tablespaces.

If you are enabling TDE in case of upgrade or you did not enable it during installation and want to enable at a later point of time, see https://docs.oracle.com/cloud/latest/db121/ASOAG/asotrans_config.htm#ASOAG9555 for details on manually creating encrypted tablespaces:

Configuring TDE in case of Upgrade

Create a new PDB (12c)/ instance (11g) on same or different Database Server for TDE. For more information, see Configuring Software Keystore and Encrypted Tablespace Creation.

Shutdown the OFSAAI Services.

Export all Configuration, Atomic and Sandbox Schemas as per the applications installed in your OFSAA instance.

For example:

```
expdp SYSTEM/oracle@OFSA12C2DB  DIRECTORY=data_pump_dir
DUMPFILE=ofsaaconf_ofsaaatm_%U.dmp filesize=2G SCHEMAS=ofsaaconf,ofsaaatm
LOGFILE=ofsaaconf_ofsaaatm_exp.log
```

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

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

For example:

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

> **NOTE** Restoring the exported dumps creates Configuration and Atomic Schema(s) with the same user credentials as that of the source, along with the existing grants.

If schemas are restored using a tool/ mechanism other than as mentioned in the Step 1 and 2, retain the user credentials of Configuration and Atomic Schemas same as in the Source environment, along with the Schema grants.

Provide select grants on sys.V_$parameter to view Configuration and Atomic Schemas of Target Environment database

For example:

Login as sys user:

SQL> GRANT SELECT ON SYS.V_$PARAMETER TO ofsaaconf;

Grant succeeded

SQL> GRANT SELECT ON SYS.V_$PARAMETER TO ofsaaatm;

Grant succeeded

Update .profile for ORACLE_SID environment variable with new ORACLE_SID.

Update JDBC URL by executing Port Changer utility. For details on how to execute Port Changer utility, see Changing IP/ Hostname, Ports, Deployed paths, Protocol of the OFSAA Instance section.

Navigate to the $FIC_WEB_HOME directory and execute the following command to trigger the creation of EAR/WAR file:

./ant.sh

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

On completion of EAR/WAR file creation, the message "BUILD SUCCESSFUL" will be displayed.

Edit the existing Connection Pool settings to point to new JDBC URL and verify connections.

Clear the webserver cache and redeploy the application onto your configured web application server.

Restart the OFSAA Services. For more information, refer to the Start/Stop Infrastructure Services section in the Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide.

23.4 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 prior to display by applications so that unauthorized users cannot view the sensitive data. The stored data remains unaltered, while displayed data is transformed to a pattern that does not contain any identifiable information.

Enabling Data Redaction in case of Upgrade

This section details about the configurations required in case you want to enable Data Redaction in OFSAA applications after upgrade to OFSAA 8.0.8.0.0 version from a previous version. Additionally, these configurations are required in case you did not enable TDE during OFS AAAI 8.0.8.0.0 installation and want to enable at a later point of time.

Perform the following steps:

1. Login as SYSDBA into the database.
2. Execute the file $FIC_HOME/utility/data_security/scripts/create_data_sec_roles.sql only once per database (PDB in case of 12c).
3. Execute the following sql statement to find out the list of atomic users from the table:
4. select v_schema_name from aai_db_detail where V_DB_NAME 'CONFIG' AND V_DB_TYPE = 'ORACLE'
5. Execute the file $FIC_HOME/utility/data_security/scripts/grant_data_sec_roles.sql for all atomic users found in the previous step.
6. From the Configuration window in the System Configuration module, select the Allow Data Redaction checkbox.
7. Run the Data Redaction utility. For more details on how to run the utility, see Data Redaction section under Data Security and Data Privacy chapter in OFS Analytical Applications Infrastructure Administration Guide 8.0.8.0.0.

23.5 Running the Schema Creator Utility with Encryption

This section is applicable only if you want to enable TDE during installation.

Run the schema creator utility by including the **encrypt=on** option in the Tablespace tag in the `<<APP PACK>>_SCHEMA_IN.xml` Schema in xml file. You have to perform this procedure manually as it is's not a part of the schema `<<APP PACK>>_SCHEMA_IN.xml`.TEMPLATE template originally.

Following is an example for `OFS _AAAI_PACK_ SCHEMA_IN.xml`

```
<APPPACKSCHEMA>

<APP_PACK_ID>OFS_AAAI_PACK</APP_PACK_ID>

<JDBC_URL>jdbc:oracle:thin:@<DB_Server_IP>:1521:</JDBC_URL>

<JDBC_DRIVER>oracle.jdbc.driver.OracleDriver</JDBC_DRIVER>

<HOST><OFSAA_Server_IP/HOST Name></HOST>

<SETUPINFO NAME="<PREFIX_NAME>" PREFIX_SCHEMA_NAME="Y"/>

<PASSWORD APPLYSAMEFORALL="Y" DEFAULT="<PASSWORD>"/>

<TABLESPACES>
```

```
<TABLESPACE NAME="OFS_AAI_TBSP" VALUE="TS_USERS1" DATAFILE="<ABSOLUTE PATH to
TABLESPACE>/<TABLESPACE_DATA_FILE_NAME>.dbf" SIZE="500M" AUTOEXTEND="OFF" ENCRYPT="ON" />

</TABLESPACES>

<SCHEMAS>

<SCHEMA TYPE="CONFIG" NAME="ofsaaconf" PASSWORD="" APP_ID="OFS_AAI"
DEFAULTTABLESPACE="##OFS_AAI_TBSP##" TEMPTABLESPACE="TEMP" QUOTA="unlimited"/>

<SCHEMA TYPE="ATOMIC" NAME="ofsaaatm" PASSWORD="" APP_ID="OFS_AAAI"
DEFAULTTABLESPACE="##OFS_AAI_TBSP##" TEMPTABLESPACE="TEMP" QUOTA="unlimited"
INFODOM="OFSAAAIINFO"/>

<SCHEMA TYPE="ATOMIC" NAME="ofsaaatm" PASSWORD="" APP_ID="OFS_IPE"
DEFAULTTABLESPACE="##OFS_AAI_TBSP##" TEMPTABLESPACE="TEMP" QUOTA="unlimited"
INFODOM="OFSAAAIINFO"/>

</SCHEMAS>

</APPPACKSCHEMA>
```

23.6 Testing the Encryption

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

```
SELECT tablespace_name, encrypted FROM dba_tablespaces;
```

The following result is displayed, which indicates whether the TABLESPACE is encrypted (ENCRYPTED TS - YES) or not (ENCRYPTED TS - NO) in the ENCRYPTED column:

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


6 rows selected.
```

The above example indicates `TABLESPACE ENCRYPTED_TS` is created with Encryption ON.

23.7 Configuring TDE in case of Upgrade

This section details about the configurations required in case you want to enable TDE in OFSAA applications after upgrade to OFSAA 8.0.8.0.0 version from a previous version. Additionally, these configurations are required in case you did not enable TDE during 8.0.8.0.0 installation and want to enable at a later point of time.

1. Create a new PDB (12c)/ instance (11g) on same or different Database Server for TDE. For more information, see Configuring Software Keystore and Encrypted Tablespace Creation.
2. Shutdown the OFSAAI Services.
3. Export all Configuration, Atomic and Sandbox Schemas as per the applications installed in your OFSAA instance.

   For example:

   ```
   expdp SYSTEM/oracle@OFSA12C2DB  DIRECTORY=data_pump_dir
   DUMPFILE=ofsaaconf_ofsaaatm_%U.dmp filesize=2G SCHEMAS=ofsaaconf,ofsaaatm
   LOGFILE=ofsaaconf_ofsaaatm_exp.log
   ```

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

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

   For example:

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

   NOTE Restoring the exported dumps creates Configuration and Atomic Schema(s) with the same user credentials as that of the source, along with the existing grants.

   If schemas are restored using a tool/ mechanism other than as mentioned in the Step 1 and 2, retain the user credentials of Configuration and Atomic Schemas same as in the Source environment, along with the Schema grants..

5. Provide select grants on sys.V_$parameter to view Configuration and Atomic Schemas of Target Environment database

   For example:

   Login as sys user:

   SQL> GRANT SELECT ON SYS.V_$PARAMETER TO ofsaaconf;

   Grant succeeded

   SQL> GRANT SELECT ON SYS.V_$PARAMETER TO ofsaaatm;

   Grant succeeded

6. Update .profile for ORACLE_SID environment variable with new ORACLE_SID.
7. Update JDBC URL by executing Port Changer utility. For details on how to execute Port Changer utility, see *Changing IP/ Hostname, Ports, Deployed paths, Protocol of the OFSAA Instance* sections.
8. Navigate to the `$FIC_WEB_HOME` directory and execute the following command to trigger the creation of EAR/WAR file:

   ```
   ./ant.sh
   ```

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

On completion of EAR/WAR file creation, the message "BUILD SUCCESSFUL" will be displayed.

9. Edit the existing Connection Pool settings to point to new JDBC URL and verify connections.
10. Clear the webserver cache and redeploy the application onto your configured web application server.
11. Restart the OFSAA Services. For more information, refer to the Start/Stop Infrastructure Services section in the Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide.

23.8 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 prior to display by applications so that unauthorized users cannot view the sensitive data. The stored data remains unaltered, while displayed data is transformed to a pattern that does not contain any identifiable information.

23.8.1 Enabling Data Redaction in case of Upgrade

This section details about the configurations required in case you want to enable Data Redaction in OFSAA applications after upgrade to OFSAA 8.0.8.0.0 version from a previous version. Additionally, these configurations are required in case you did not enable TDE during OFS Sanctions 8.0.8.0.0 installation and want to enable at a later point of time.

Perform the following steps:

1. Login 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 12c).
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 **Allow Data Redaction** checkbox.
6. Run the Data Redaction utility. For more details on how to run the utility, see the Data Redaction section in Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide.

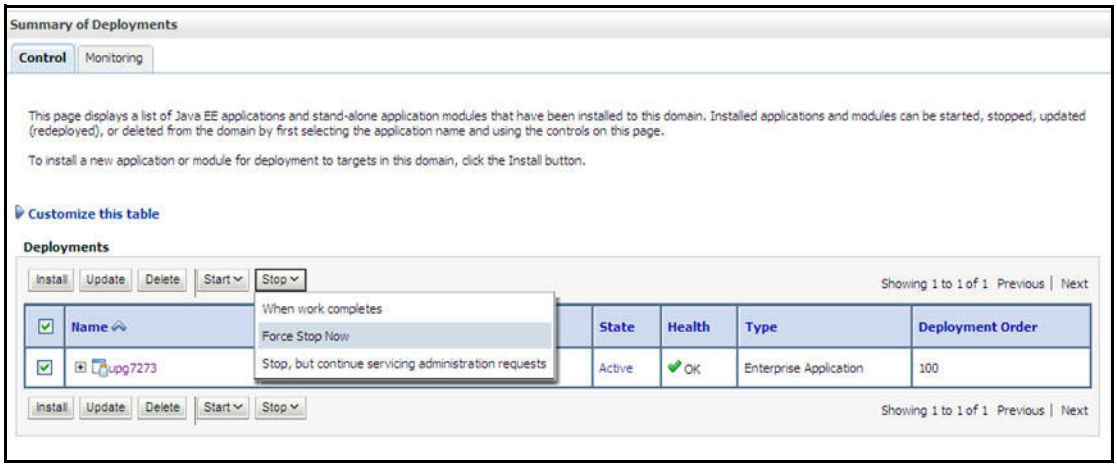
23.9 Uninstalling EAR Files in WebLogic

On the machine that hosts WebLogic, perform the following steps to uninstall any previously deployed application:

1. Open the URL in the browser window: `http://<ipaddress>:<admin server port>/console` (https if SSL is enabled). The *Login* window of the WebLogic Server Administration Console is displayed.
2. Login with the WebLogic user credentials having administrator privileges.

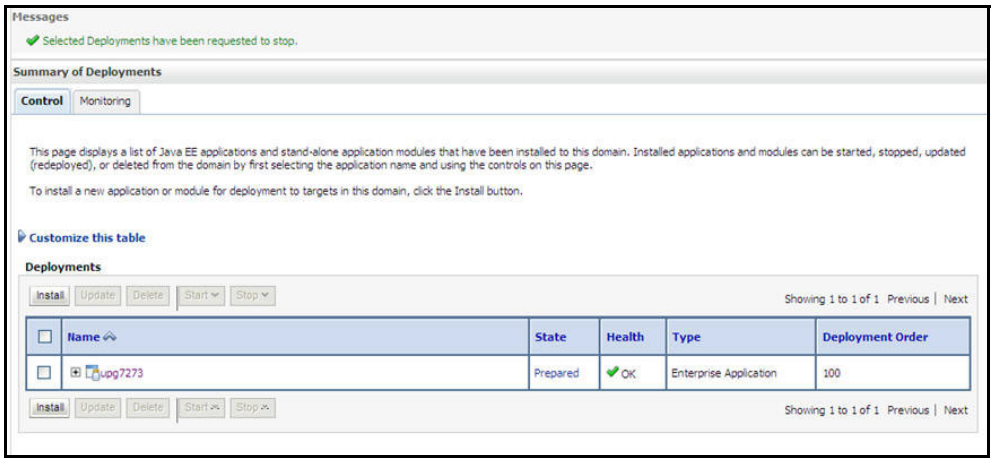
3. From the **Domain Structure** LHS menu, click **Deployments**. The *Summary of Deployments* window is displayed.

Summary of Deployments



4. Select the checkbox adjacent to the application to be uninstalled and click **Stop> Force Stop Now**.
5. Click **Yes** in the confirmation dialog to stop the selected deployment.

Summary of Deployments- Messages



6. Select the checkbox adjacent to the application and click **Delete** to delete the selected deployment.
7. Click **Yes** in the confirmation dialog to remove the selected deployment from the domain configuration.

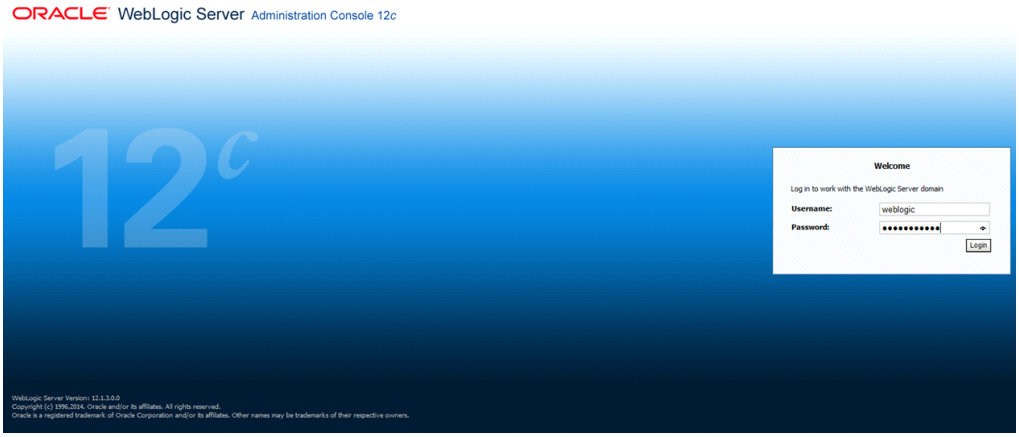
24 Configuring Work Manager in the WebLogic Application Server

This section covers the configuration steps if the Web Application Server type is WebLogic.

24.0.1 Creating Work Manager

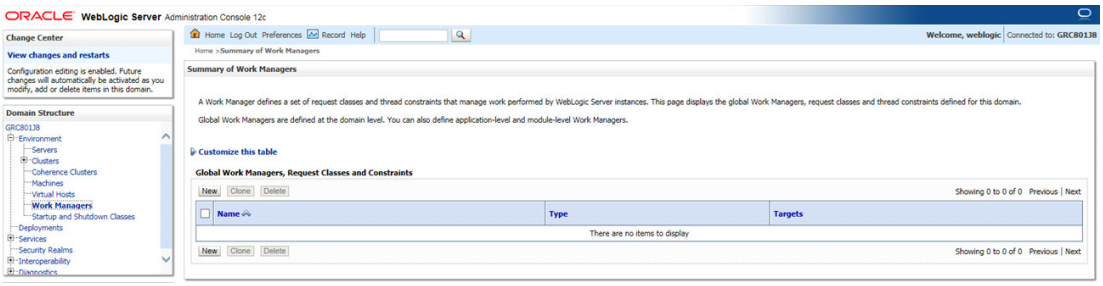
1. Open the WebLogic admin console in the browser window: `http://<ipaddress>:<administrative console port>/ibm/console` (https if SSL is enabled). The *Welcome* window is displayed.

Figure 52: Work Manager Welcome Window



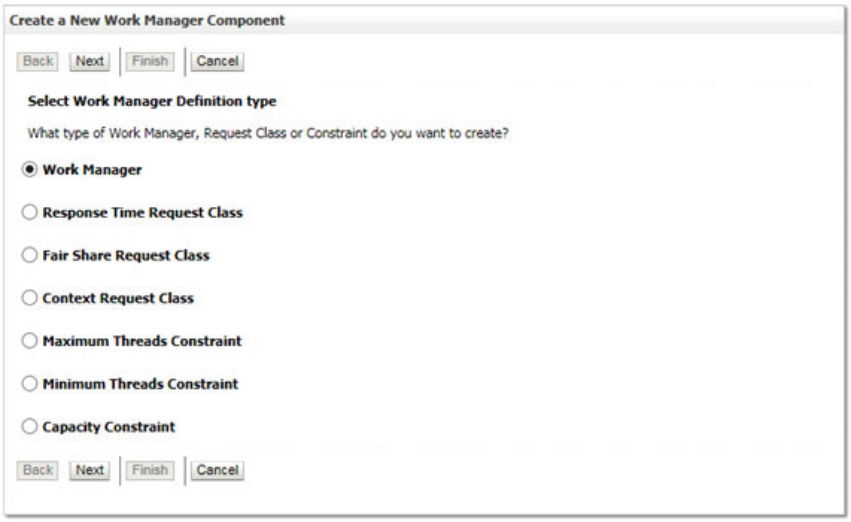
2. Login with the user id which has admin rights.
3. From the *Domain Structure* menu in the LHS, expand Environment and select Work Managers. The *Summary of Work Managers* window is displayed.

Figure 53: Summary of Work Managers Section



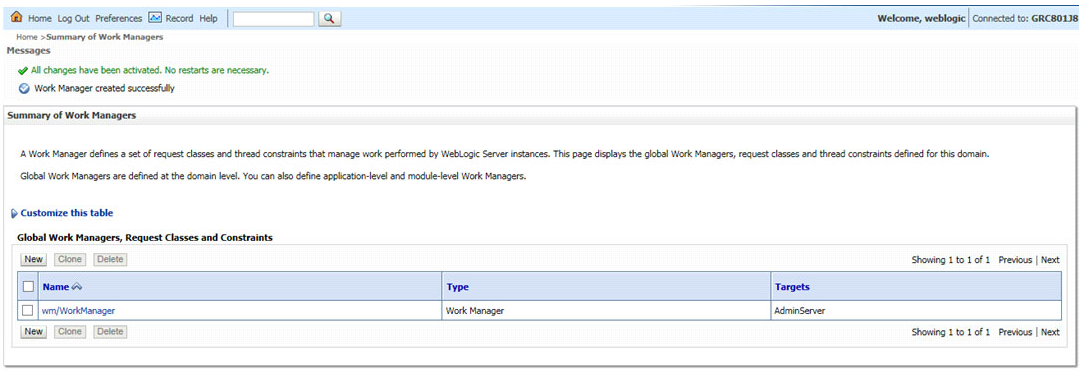
4. Click **New** to create a new work manager component.

Figure 54: New Work Manager Component



5. Select Work Manager and click **Next**.
6. Enter the Name as wm/WorkManager and click **Next**.
7. Select the required deployment target and click **Finish**.

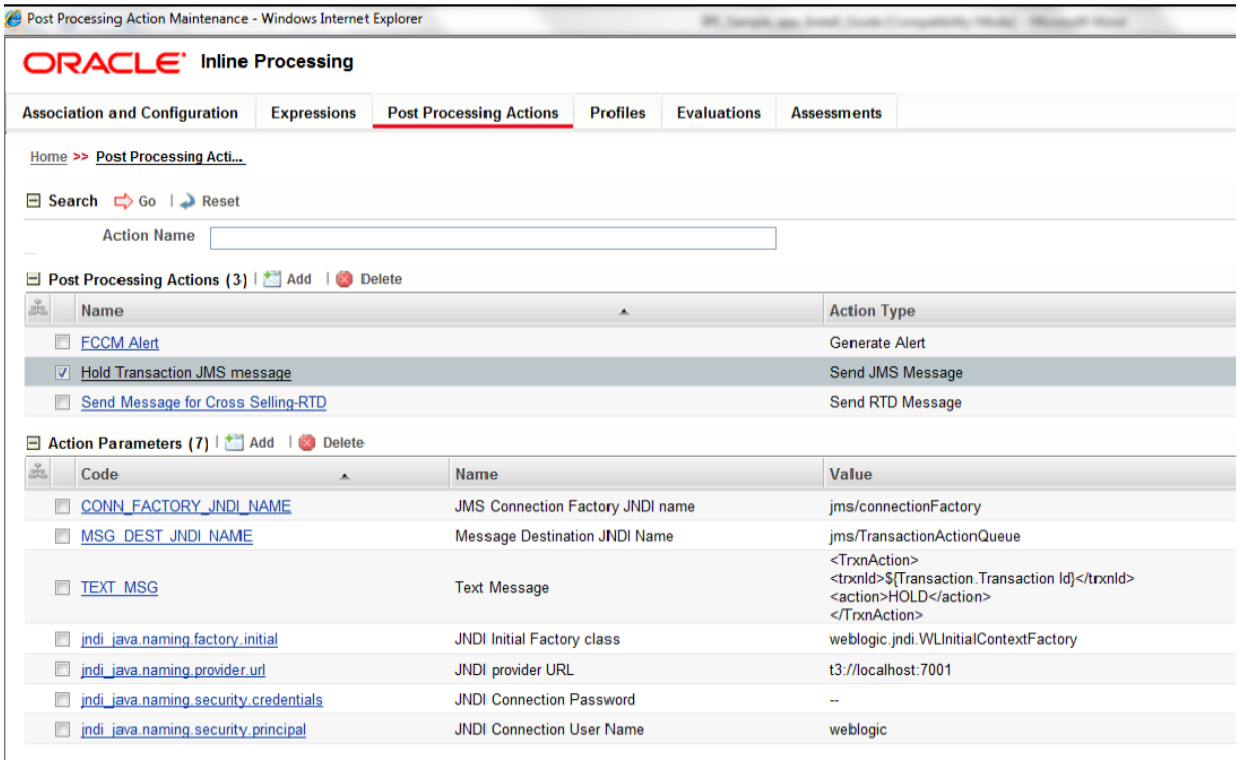
Figure 55: Deployment Target



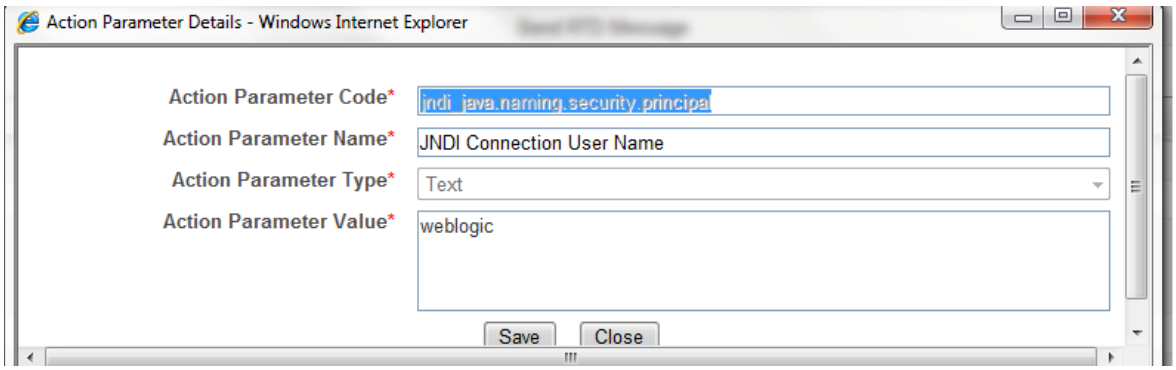
25 Post Installation Steps and Configurations for Real Time Mode

To perform post-installation activities, follow these steps:

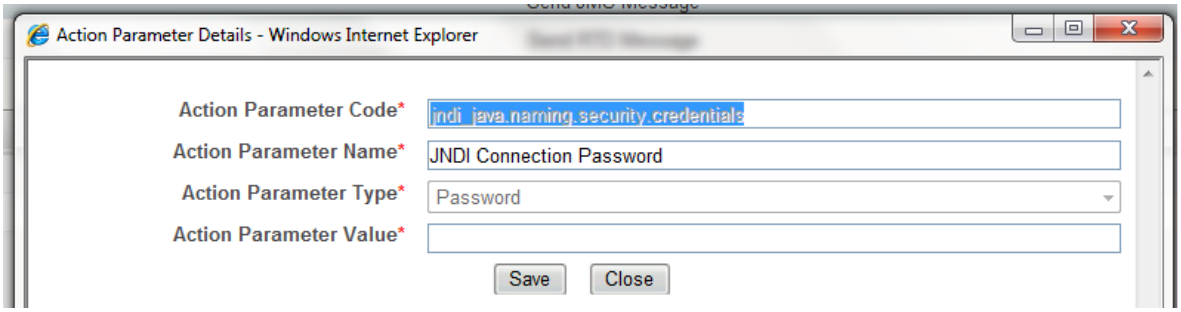
1. Login to OFS AAAI as an Inline Processing Administrative user which is mapped to the IPEADMN.
2. Select the appropriate Infodom and click **Inline Processing**.
3. Click **Post Processing Actions**.



4. Select **Hold Transaction JMS message** under the Post Processing Actions toolbar. The Action Parameter Details window is displayed.
5. Click **jndi_java.naming.security.principal** under the *Action Parameters* toolbar. The *Action Parameter Details* window is displayed.



6. Enter the Action Parameter Value as the user name of the admin console of Web Application Server (weblogic or websphere) and click **Save**.
7. Click **jndi_java.naming.security.credentials** under the *Action Parameters* toolbar. The *Action Parameter Details* window is displayed.



8. Enter the Action Parameter Value as the password of the admin console of the Web Application Server (weblogic or websphere) and click **Save**.
9. Click **jndi_java.naming.provider.url** under the *Action Parameters toolbar*. The *Action Parameter Details* window is displayed.

10. Enter the Action Parameter Value as: **Inline Processing JMS URL**.
11. Click **Save**.

To perform the configurations, follow these steps:

1. Login to the UNIX machine where the OFS AAAI Application Pack is installed with IPE enabled.
2. For the Weblogic webserver, copy the `wljmsclient.jar, weblogic.jar,` and `wlfullclient.jar` files from the `<WL_HOME>/server/lib` path (for example, `Weblogic 12c -/scratch/oracle/Oracle12/Middleware/Oracle_Home/wlserver/server/lib`) to the `<OFSAA_HOME>/realtime_processing/ipesampleapp/client/lib` path.

   For the Websphere webserver, copy the `com.ibm.ws.sib.client.thin.jms_8.5.0.jar, com.ibm.ws.ejb.thinclient_8.5.0.jar, com.ibm.ws.messagingClient.jar,` and `com.ibm.ws.orb_8.5.0.jar files` from the `<WAS_HOME>/runtimes` path (for example, `/scratch/websphere8.5/IBM/WebSphere/AppServer/runtimes`) to the `<OFSAA_HOME>/realtime_processing/ipesampleapp/client/lib` path.

Note: The version of the .jar files may differ based on the version of Websphere.

If the wlfullclient.jar file is not available, you must create it. Follow these steps to create the file:

3. Login to the UNIX machine where Weblogic is installed.
4. Navigate to the `<WL_HOME>/server/lib` directory.
5. Use the following command to create the `wlfullclient.jar` in the `server/lib` directory

   ```
   java -jar wljarbuilder.jar
   ```

For Configurations in Websphere on SOLARIS:

1. Copy the `$FIC_HOME/realtime_processing/ipesample app/client` path to the server where Websphere is installed.
2. Provide execute permission to the following files in the client folder: `IPERESTFULclient.sh`, `IPEJMSQReaderClient.sh` and `IPEJMSClient.sh`.

> **NOTE** The JAVA_BIN should be pointed to WebSphere Java for running the IPE Client, since IBM JAVA (stand-alone) is not available in SOLARIS.

For Configurations in Weblogic (configured with SSL) on AIX:

1. Add the java property `Dweblogic.security.SSL.ignoreHostnameVerification=true` to `JAVA_OPTIONS` in the `setDomainEnv.sh` file in the following the path: `<WEBLOGIC_INSTALL_DIR>/user_projects/domains/<DOMAIN_NAME>/bin`.

   For example:

   ```
   JAVA_OPTIONS=
   "${JAVA_OPTIONS}-
   Dweblogic.security.SSL.ignoreHostnameVerifi
   cation=true ${JAVA_PROPERTIES}"
   export JAVA_OPTIONS
   ```

2. Add the java property

   `Dweblogic.security.SSL.ignoreHostnameVerification=true` to `JAVA_OPTIONS` in `IPEJMSClient.sh` files in the following path: `$FIC_HOME/realtime_processing/ipesample app/client`.

   For example:

   - IPEJMSClient.sh

   ```
   $JAVA_BIN/java -
   Dweblogic.security.SSL.ignoreHostnameVerification=true -classpath $_CLASSPATH
   $MAIN_JAVA_CLASS $1 $2 $3 $4
   ```

   - IPEJMSQReaderClient.sh

   ```
   $JAVA_BIN/java -
   Dweblogic.security.SSL.ignoreHostnameVerification=true -classpath $_CLASSPATH
   $MAIN_JAVA_CLASS $1 $2 $3
   ```

25 Creating a Wallet

To create a wallet, follow these steps:

1. Create a directory called **wallet** which will represent your <wallet_location>

   ```
   mkstore -wrl <wallet_location> -create
   ```

   After executing the command, message appears as below

   ```
   Oracle Secret Store Tool : Version 12.1.0.2

   Copyright (c) 2004, 2014, Oracle and/or its affiliates. All rights reserved.

   Enter password: <Enter the required password.>

   Enter password again: <Re Enter the required password>
   ```

   The mkstore utility is included in the Oracle Database Client installation.

   The wallet is created with the auto-login feature enabled. This feature enables the database client to access the wallet contents without using the password.

   Ensure that the Client and Destination server versions are the same.

2. Create the database connection credentials in the wallet using the following command:

   ```
   mkstore -wrl <wallet_location> -createCredential EXTDB <Atomic Schema User Name>
   ```

   After executing the command, message appears as below.

   ```
   Oracle Secret Store Tool : Version 12.1.0.2

   Copyright (c) 2004, 2014, Oracle and/or its affiliates. All rights reserved.

   Your secret/Password is missing in the command line

   Enter your secret/Password: <Enter the Atomic Schema Password>

   Re-enter your secret/Password: <Re Enter the Atomic Schema Password>

   Enter wallet password:<Enter the password provided in the previous step>
   ```

3. Update the tnsnames.ora file to include the following entry in the <wallet_location>.

   ```
   EXTDB = (DESCRIPTION = (ADDRESS_LIST = (ADDRESS = (PROTOCOL = TCP) (HOST = <host>)
   (PORT = <port>)) ) (CONNECT_DATA = (SERVICE_NAME = <service>) ) )
   ```

   Navigate to the FIC_HOME directory and copy the **DataExport** folder into the `<EDQ_DEPLOYED_AREA>/oedq.local.home/commandarea` path. This is the *Data_Export_ Location*.

4. Copy the jars `osdt_core-<version>.jar`,`oraclepki-<version>.jar`,`osdt_cert-<version>.jar` and `ojdbc7.jar` into the lib folder inside *Data_ Export_ Location*.

   The above jars are made available after the Oracle Database installation. PAth of the jar files is `/<MWH>/wlsserver/server/libWeblogic server`.

5. Copy the wallet directory created in step 1 into *Data_ Export_ Location*.

6. Copy the Data export folder to `#EDQDOMAIN/config/fmwconfig/edq/oedq.local.home/commandarea`.

7. Navigate to the `$FIC_HOME/SanctionsCommon` folder and unzip `config.zip`.

   Copy the extracted files to EDQ.local.home.

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