Oracle Financial Services Market Risk Measurement and Management Application

Installation Guide

Release 8.0.6.0.0

ORACLE
Financial Services

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DOCUMENT CONTROL

Version Number	Revision Date	Changes Done
1.0	Created August 2018	Captured installation and configuration steps for 8.0.6.0.0 Release.
2.0	Updated October 2018	Removed patch 22930093 as per bug 28678359
3.0	Updated January 2019	Added section Upgrading CHLS, and information about one-off patch 29146927
4.0	Updated February 2019	Updated information for one-off patch 29126049, 28569423 and 29284098
5.0	Updated: May 2019	Updated for Doc 29669701. Added section Temporary Directory in the table Installer and Installation Prerequisites and a new FAQ in section Application Pack 8.0.5.0.0 FAQs
6.0	Updated: June 2019	Updated for Doc 29514524 – Update in section Configuring Password Changes Removed patches 29126049, 28569423, 29146927, 29284098 Removed section CHLS Upgrade Added patch 29692946 and 29230516
7.0	Updated: October 2019	▪ Added a new section Configuring WebSphere Application Server to Use a Load Balancer or Proxy Server ▪ Updated information for patch **30273976**
8.0	Updated: January 2020	▪ Updated information for patch 30667112
9.0	Updated: August 2020	▪ Added a note regarding Oracle Database Release 19c in section Configurations for Java 8.
10.0	Updated: November 2020	▪ Added a note with information regarding Doc ID 2724021.1.

Version Number	Revision Date	Changes Done
11.0	Updated: January 2021	▪ Added WebLogic upgrade information in the Installer and Installation Prerequisites section.

This document includes the necessary instructions to install the OFS Market Risk Measurement and Management (MRMM) Application Pack 8.0.6.0.0 and perform the required post installation configurations. The latest copy of this guide can be accessed from OHC Documentation Library.

Preface

This Preface provides supporting information for the Oracle Financial Services Market Risk Measurement and Management (MRMM) Installation Guide and includes the following topics:

- Summary
- Audience
- Documentation Accessibility
- Related Documents
- Abbreviations

Summary

Before you begin the installation, ensure that you have an access to the Oracle Support Portal with the required login credentials to quickly notify us of any issues at any stage. You can obtain the login credentials by contacting Oracle Support.

Audience

The Oracle Financial Services Market Risk Measurement and Management (MRMM) Installation Guide is intended for, Administrators, Business User, Strategists, and Data Analysts, who are responsible for installing and maintaining the application pack components.

Prerequisites for the Audience

The document assumes that you have experience in installing enterprise components, and basic knowledge about the following is recommended. Following are the expected preparations from the administrator before starting the installation:

- Oracle Financial Services MRMM application pack components
- OFSAA Architecture
- UNIX Commands
- Database Concepts
- Web Server/ Web Application Server

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info

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

Related Documents

This section identifies additional documents related to OFS MRMM application. You can access Oracle documentation online from OHC Documentation Library.

- Oracle Financial Services Market Risk Measurement and Management User Guide, Release 8.0.6
- Oracle Financial Services Market Risk Measurement and Management Analytics User guide, Release 8.0.6
- Oracle Financial Services Analytical Applications Infrastructure User Guide (OHC Documentation library)
- Oracle Financial Services Analytical Applications Infrastructure Environment Check Utility Guide (OHC Documentation library)

Abbreviations

Conventions	Description
AIX	Advanced Interactive executive
DEFQ	Data Entry Forms and Queries
DML	Data Manipulation Language
EAR	Enterprise Archive
EJB	Enterprise JavaBean
ERM	Enterprise Resource Management
FTP	File Transfer Protocol
GUI	Graphical User Interface
HTTPS	Hypertext Transfer Protocol Secure
J2C	J2EE Connector
J2EE	Java 2 Enterprise Edition
JDBC	Java Database Connectivity

Conventions	Description
JDK	Java Development Kit
JNDI	Java Naming and Directory Interface
JRE	Java Runtime Environment
JVM	Java Virtual Machine
LDAP	Lightweight Directory Access Protocol
LHS	Left Hand Side
MFA	Multi-Factor Authentication
MOS	My Oracle Support
OFS	Oracle Financial Services
OFSAAI	Oracle Financial Services Analytical Application Infrastructure OLAP
OS	Operating System
OFS MRMM	Oracle Financial Services Market Risk Measurement and Management
RAM	Random Access Memory
RDMS	Relational Database Management System
SFTP	Secure File Transfer Protocol
SID	System Identifier
SSL	Secure Sockets Layer
TDE	Transparent Data Encryption
TNS	Transparent Network Substrate
URL	Uniform Resource Locator
VM	Virtual Machine
Web Archive	WAR
XML	Extensible Markup Language

1 About OFSAA and OFSAA Application Packs

This chapter includes the following topics:

- About Oracle Financial Services Analytical Applications (OFSAA)
- About Oracle Financial Services Analytical Applications (OFSAA) Applications Pack
- About Oracle Financial Services Market Risk Measurement and Management 8.0.6.0.0 Application Pack
- About OFSAA Infrastructure

1.1 About Oracle Financial Services Analytical Applications (OFSAA)

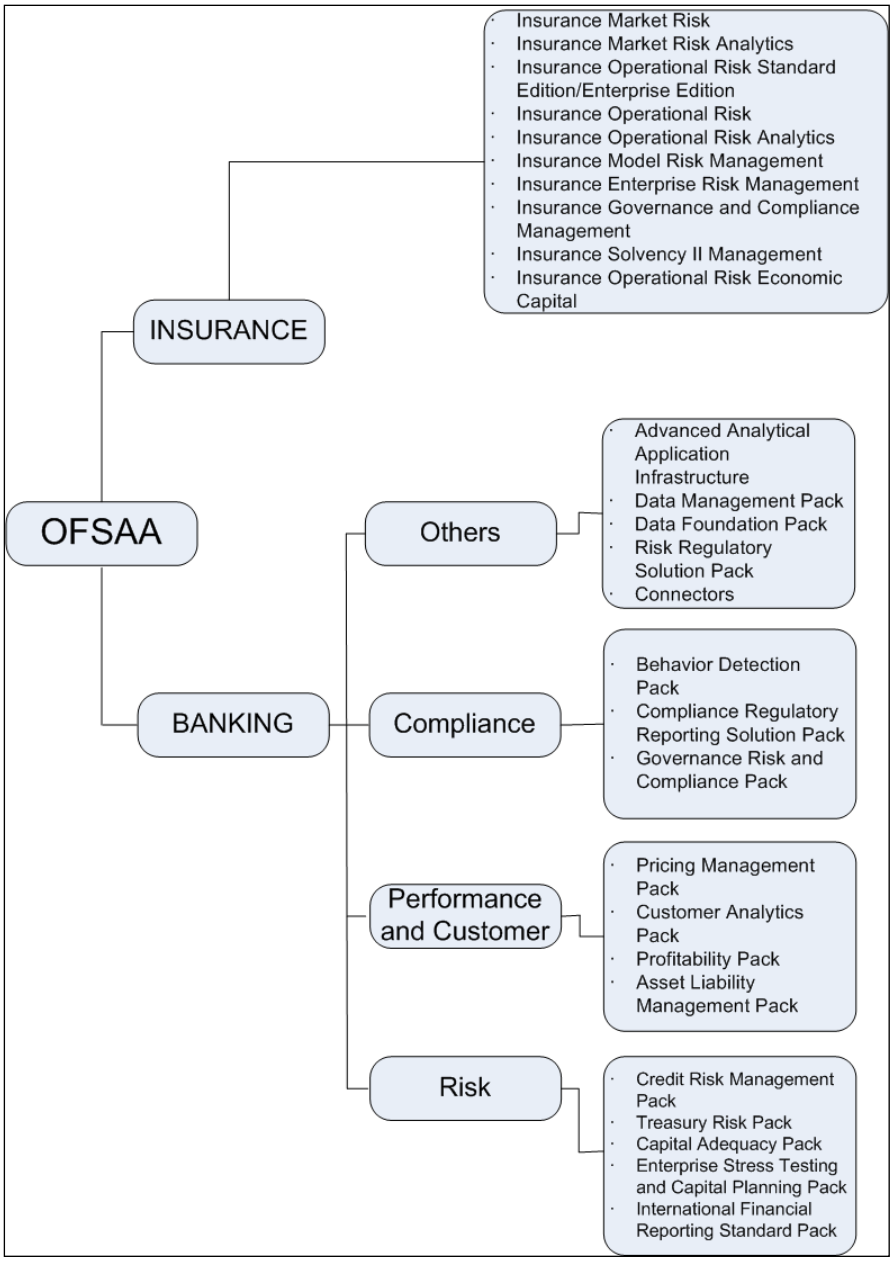
In today's turbulent markets, financial institutions require a better understanding of their risk-return, while strengthening competitive advantage and enhancing long-term customer value. Oracle Financial Services Analytical Applications (OFSAA) enable financial institutions to measure and meet risk 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 Analytical Applications (OFSAA) Applications Pack

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



1.3 About Oracle Financial Services Market Risk Measurement and Management Application Pack

Oracle Financial Services Market Risk Measurement and Management: This application delivers extensive and robust computations, to enable financial institutions to effectively evaluate and manage market risk across the enterprise. OFS MRMM enables financial institutions to accurately measure, evaluate, monitor and manage market risk. Additionally, it enables financial institutions to proactively comply with the regulatory requirements of capital calculation as per the Internal Models Approach (IMA), and the latest market risk capital regulations such as

Fundamental Review of Trading Book (FRTB). The application comes with pre-built reports and dashboards using OBIEE tool which enables financial institutions to monitor and track risk. It works as starter kit which can be utilized by users to further develop their own analytics.

1.4 About OFSAA Infrastructure

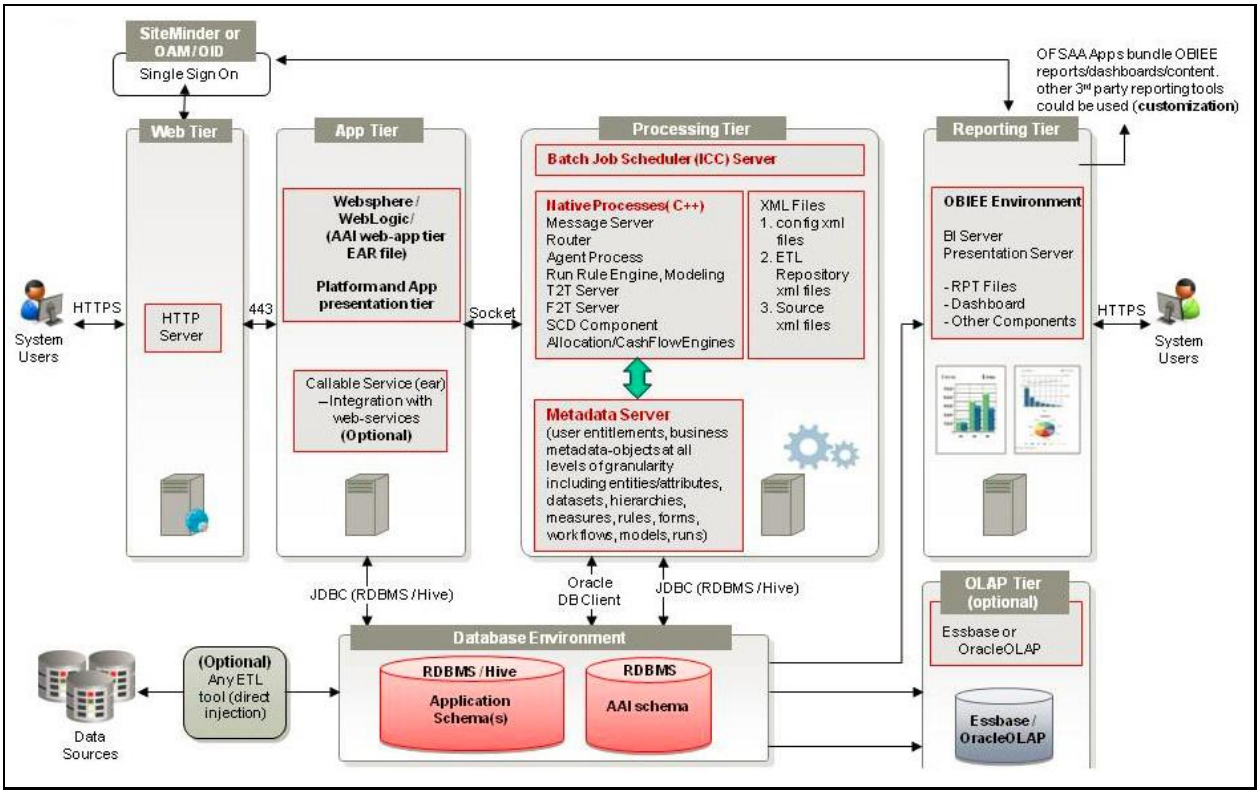
Oracle Financial Services Analytical Applications Infrastructure (OFS AAI) powers the Oracle Financial Services Analytical Applications family of products, to perform the processing, categorizing, selection and manipulation of data and information needed to analyze, understand and report on specific 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.

1.4.1 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:



1.4.2 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.

1.5 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
- Data Redaction
- Right to be Forgotten
- 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 section in the Administration and Configuration Guide.

2 Understanding OFS Market Risk Measurement and Management Application Pack Installation

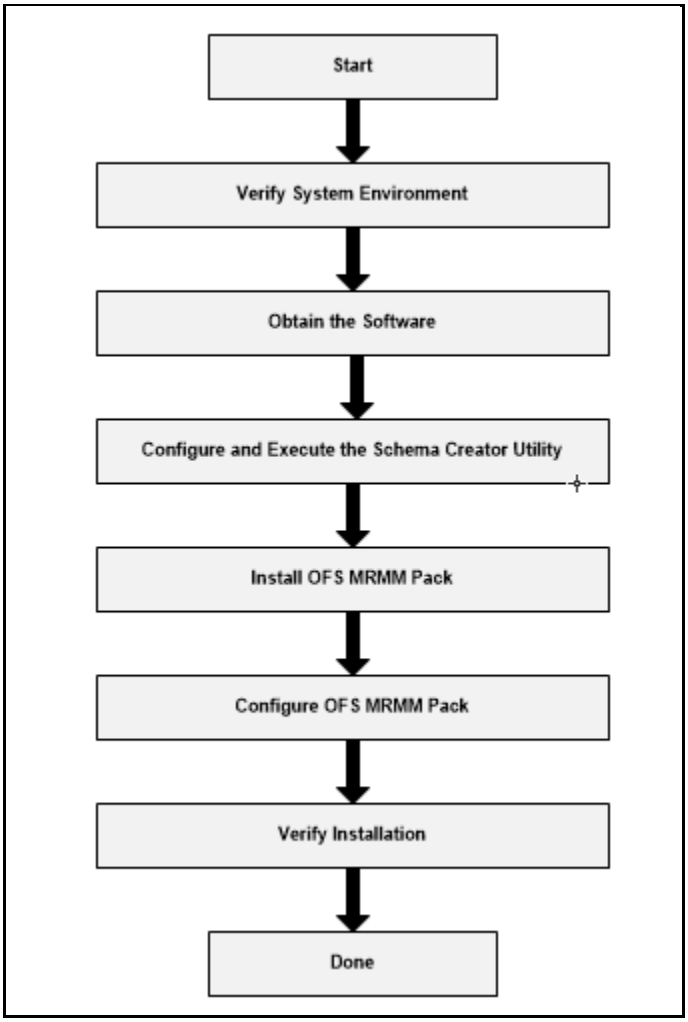
This chapter includes the following topics:

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

2.1 Installation Overview

Users/ Administrators who wish to install a new OFS MRMM Application Pack 8.0.6.0.0 instance should download this installer. The below figure shows the order of procedures you will need to follow to install a new OFS MRMM Pack 8.0.6.0.0 instance.

.



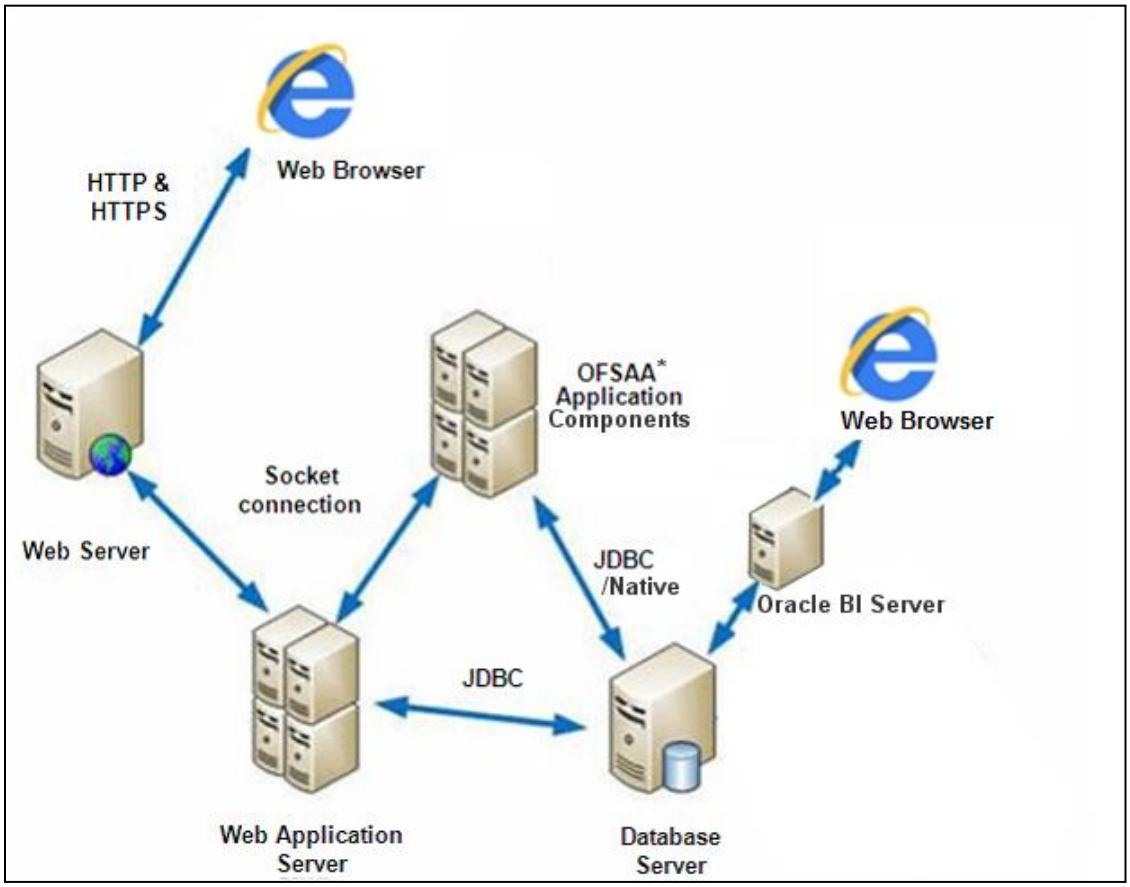
OFS MRMM Application Pack Installation Tasks and Descriptions

Tasks	Details and Documentation
Verify Systems Environment	To verify that your system meets the minimum necessary requirements for installing and hosting the OFS MRMM Application Pack, see. Verifying the System Environment.
Obtain the software	To access and download the OFS MRMM Application, see Obtaining the

Tasks	Details and Documentation
	software
Configure and Execute the Schema Creator Utility	For instructions on creating the database schemas, see Configuring and Executing the Schema Creator Utility.
Install OFS MRMM Application	For instructions on installing OFS MRMM Application Pack see, Installing MRMM Application Pack
Configure OFS MRMM Setup	See Post Installation Configuration and Post Deployment.

2.2 Deployment Topology

The deployment architecture depicts the mapping of a logical architecture to a physical environment. The physical environment includes the computing nodes in an intranet or internet environment, CPUs, memory, storage devices, and other hardware and network devices.



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 Oracle Financial Services MRMM application has been qualified.

NOTE: OFS MRMM Application Pack installation can be performed on both virtual and physical servers.

2.3.1 Configurations supported for Java 8

The following table shows the minimum hardware and software requirements for running OFS MRMM Application (for Java 8). See Technology Matrix Release 8.0.6.0.0 for details.

Requirement	Sub-Category	Value
Operating System	Oracle Linux / Red Hat Enterprise Linux (x86-64)	▪ Red Hat Enterprise Linux or Oracle Linux Server release 6 update 6 and above ▪ Red Hat Enterprise Linux or Oracle Linux Server release 7 update 1 and above **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) 1.8.x - 64 bit

Requirement	Sub-Category	Value
Oracle Database Server and Client		▪ 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 806 Tech Matrix for details. ▪ Oracle Database Server 12c Release 2 (12.2.0.1+) Enterprise Edition with Oracle Database client 12c Release 1 (v12.1.0.1+) ▪ 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 Client 12c Release 2 (12.2.0.1.0+) - 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)
Note: Ensure that the following patches are applied: ▪ Oracle Server 12c, v12.1.0.1 – 17082699 ▪ Oracle Server 12c, v12.1.0.2 – 20698050 For Oracle DB Server 12.1.0.1 and 12.1.0.2, download the patches 27010930 and 22205607 from My Oracle Support and apply them. For Oracle DB Server 11.2.0.4, download the patch 22205607 from My Oracle Support and apply. Also for latest information, refer http://support.oracle.com/, 12.1.0.2 Bundle Patches for Engineered Systems and DB In-Memory - List of Fixes in each Bundle (Doc ID 1937782.1)		
Note: Oracle Hyperion Essbase is required only if you are using the OLAP feature of OFSAAI.		
Web Server/ Web Application Server	Oracle Linux / Red Hat Enterprise Linux	Oracle HTTP Server 11.1.1.7.1+ or 11.1.1.9.+/ Apache HTTP Server 2.2.x/ IBM HTTP Server 8.5.5 ▪ IBM WebSphere Application Server 8.5.5.9+

Requirement	Sub-Category	Value
		(Full Profile) with IBM Java Runtime - 64 bit ▪ Oracle WebLogic Server 12.1.3+ with jersey 1.18 (64 bit)/ Oracle WebLogic Server 12.2.x with jersey 2.25 (64 bit) ▪ Apache Tomcat 8.0.25+ (64 bit)
	Note: OFSAA Infrastructure web component deployment on Oracle WebLogic Server with Oracle JRockit is not supported. For deployment on Oracle WebLogic Server 12.1.3+ (64 bit) with Java 8, download and install patch 18729264 from http://support.oracle.com/.	
Desktop Requirements	Operating System	MS Windows 7/ Windows 8/ Windows 10
	Browser	▪ MS Internet Explorer11.x, Google Chrome 57.x, Mozilla Firefox 52.x ▪ Turn on Pop-up blocker settings. For more information, refer Internet Explorer Settings.
	Office Tools	▪ MS Office 2007/ 2010/2013/2016 ▪ Adobe Acrobat Reader 10 and 11
	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 Infrastructure LDAP Configuration.	

Requirement	Sub-Category	Value
	Open LDAP needs to be installed on MS Windows Server machine only.	

NOTE:

To configure the Oracle Database 19c Server and Client on a new installation, see MOS Doc ID: 2691006.1.

To upgrade an existing OFSAA 8.0.x Java 7 instance to Java 8, refer Appendix P.

OFS MRMM Application Pack recommends the following software combinations for deployment.

Operating System	Database	Web Application Server	Web Server
Oracle Linux 6.0 and above	Oracle Database	Oracle WebLogic Server /Apache Tomcat Server	Oracle HTTP Server/ Apache HTTP Server

2.4 Verifying the System Environment

To verify if your system environment meets the minimum requirements for the installation, a Pre-Install Check utility (Environment Check) is available within the installation kit archive file. You can also obtain this utility 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 Installation Modes

OFS MRMM Application Pack supports the following modes of installation

2.5.1 GUI Mode

This mode launches the product installation in a **Graphical User Interface (GUI) Mode**. You need to enter the required information on various panels within the UI in a user interaction format at various stages.

NOTE: For more information on configuration required for GUI mode installation, refer Configuration for GUI Mode Installation.

2.5.2 SILENT Mode

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

3 Preparing for Installation

This chapter provides necessary information to review before installing the OFS MRMM v8.0.6.0.0.

This chapter includes the following topics:

- Installer and Installation Prerequisites
- Obtaining the Software
- Common Installation Tasks

3.1 Installer and Installation Prerequisites

Refer to the Technology Matrix for Hardware and Software Requirements for this release.

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

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

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

NOTE: This grant should be executed for all existing Atomic Schemas.

The following table, mentions the list of prerequisites required before beginning the installation for OFS MRMM Application Pack. The Installer/ Environment Check utility notifies you if any requirements are not met.

NOTE: OFS MRMM Release v8.0.6.0.0 is compatible with WebLogic 12.2.x and does not support WebLogic 12.1.3. If the WebLogic version is 12.1.3, upgrade to WebLogic 12.2.x.

Installer and Installation Prerequisites

Requirement	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. **Note**: 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

Requirement	Sub-Category	Expected Value
		PATH variable.
	Oracle Database Settings	▪ TNS_ADMIN must be set in `.profile` pointing to appropriate `tnsnames.ora` file ▪ Enable Data Redaction** ** **Note**: For more information, see Appendix R: Enabling 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. **Note**: These settings are required only if you want to use Oracle Hyperion Essbase OLAP features.
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.

Requirement	Sub-Category	Expected Value
	`.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.
	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.
	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 a different mount or under a different user profile. However, the owner of the installation directory that is mentioned in the previous row, must have RWX permissions on this folder. Set 777 permission on this directory. **Note**: This directory is also referred to as FTPSHARE folder.
	Download Directory	A directory where the product installer files will be downloaded/ copied. Set 755 permission on this directory.
	OS Locale	Linux: en_US.utf8 To check the locale installed, execute the following command: locale -a | grep -i 'en_US.utf'

Requirement	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	WebSphere/ WebLogic/ Tomcat	Web Application Server should be installed and profile /domain created. You will be prompted to enter the WebSphere Profile path or WebLogic Domain path or Tomcat Deployment path during OFSAAI installation. Note: Refer Appendix A for WebSphere Profile Creation and WebLogic Domain Creation. For deployment on Oracle WebLogic Server 12.1.3+ (64 bit) with Java 8, download and install patch 18729264 from https://support.oracle.com.
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 Appendix A for Web Server installation.
OFS AAI	1- Off	Download the consolidated one-off patch **27938294** from support.oracle.com. Refer to the Readme available with the patch for further instructions on installing the patch.
OFS AAI	1- Off	Download the mandatory one-off patch **28079607** from My Oracle Support.
OFS AAI	1- Off	Download the mandatory compatibility patch **28033582** from My Oracle Support, which needs to be mandatorily applied. This patch enables you to upgrade selected packs in your OFSAA instance to 8.0.6.0.0, and makes the existing packs from earlier versions compatible with 8.0.6.0.0. **Note**: Execute the DMT Migration Utility to manually migrate the DMT metadata of the Applications which are not upgraded to 8.0.6.0.0.

Requirement	Sub-Category	Expected Value
OFS AAI	One-Off patch	Download the mandatory OFSAAI patch **30273976** from My Oracle Support.
	One-off patch	Download the mandatory OFS MRMM patch **31571680** from My Oracle Support.

NOTE: In an environment consisting of multiple OFSAA applications, if the October 2020 Critical Patch Update is applied for any one application, it is mandatory to apply the respective October 2020 Critical Patch Updates for all other applications on that OFSAA instance, regardless of the application's version. See the My Oracle Support Doc ID 2724021.1 for details.

Following step is applicable, only if existing OFSAA setup version is 8.0.5.x.x and Configuration and Atomic Schema(s) were restored from exported dumps of other environment:

Login to Configuration Schema and execute the following SQL statements:

```
alter table AAI_AOM_APP_COMP_ATTR_MAPPING drop constraint
AOM_APP_COMP_ATTR_PK drop index

/

alter table AAI_AOM_APP_COMP_ATTR_MAPPING add constraint
AOM_APP_COMP_ATTR_PK primary key (APP_COMP_ATTR_MAP_ID)

/
```

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

3.2 Obtaining the Software

This release of OFS MRMM Application v8.0.6.0.0 can be downloaded from My Oracle Support (https://support.oracle.com). You need to have a valid Oracle account in order to download the software.

3.3 Common Installation Tasks

The following are the common pre-installation activities that you need to carry out before installing the OFS MRMM Application Pack.

This section includes the following topics:

- Configuration for GUI Mode Installation
- Identifying the Installation, Download and Metadata Repository Directories

- Download and copy the OFS MRMM Application Pack Installer
- Copying and Extracting the Software
- Setting up the Web Application Server

3.3.1 Configuration for GUI Mode Installation

To install OFS MRMM Application Pack in GUI mode, you need to ensure the below software and configurations are available:

- Install and configure any PC X Server software such as Open Text Exceed (formerly Hummingbird Exceed) on the user desktop system from which the installation is triggered.
- Configure the **DISPLAY** variable.

  Ensure to set the DISPLAY variable on the system on which the OFSAA will be installed, to point to the user desktop system where the PC X Server software has been installed.

  Syntax: `export DISPLAY=hostname:n.n1`

  Where, hostname is the IP Address / Host Name of the user desktop system, and n is the sequence number (usually 0).

  For example, `10.11.12.13:0.0 or myhostname:0.0`

3.3.2 Identifying the Installation, Download and Metadata Repository Directories

For installation of any OFSAA Application Pack, the below folders/directories should 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. FIC_HOME variable to be set in the `.profile` pointing to this OFSAA Installation Directory.
- **OFSAA Staging/ Metadata Repository 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 that the user permission is set to 755 on the Installation and Download Directory. Ensure the user permission is set to 775 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.

3.3.3 Download and copy the OFS MRMM Application Pack Installer

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

- To download the OFS MRMM Applications Pack, log in to the My Oracle Support (https://support.oracle.com) with a valid Oracle account.
- Enter Oracle Financial Services Market risk Measurement and Management in the search box to search.
- Download the patch for bug number **28548227** from http://support.oracle.com/.
- Copy the downloaded installer archive to the Download Directory (in Binary mode) on the setup identified for OFS MRMM installation.
- Download the mandatory installer one-off patch **28398331** from http://support.oracle.com/.

3.3.4 Copying and Extracting the Software

Once you obtain the installer, copy the installer (in BINARY mode) to the system on which the OFSAA Infrastructure components will be installed.

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 Market Risk Measurement and Management Application Pack 8.0.6.0.0 to Download Directory installer archive file using the following command:

   ```
   unzip OFS_MRMM_8.0.6.0.0_LINUX.zip
   ```

   Extract and apply the patch 28398331. Refer to the Readme.txt file packaged with the patch for details on how to apply the patch.

5. Copy the file ctrlRemove.sh to the installer folder in Text mode. Provide execute privileges and execute the file to remove the ^M characters.
6. Give below permission to the installer folder. Navigate to the Download Directory and execute the command:

   ```
   chmod –R 755 OFS_MRMM_PACK
   ```

3.3.5 Setting up the Web Application Server

For information about setting up the environment, based on your selected web application server, refer Appendix A.

4 Installing OFS MRMM Application Pack

Follow the instructions in this chapter to install the OFS MRMM depending on the mode of installation.

NOTE: Release 8.0.6.0.0 of OFS MRMM 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 8.0.6.0.0 version or choose to upgrade only selective application packs to v8.0.6.0.0. In the case of the latter, you must also apply the corresponding compatibility patches so that the remaining application-packs can remain at their pre-8.0.6.0.0 versions.

This chapter includes the following sections:

- Schema creator utility
- Configuring and Executing the Schema Creator Utility
- Installing the OFS MRMM Application Pack

4.1 Schema creator utility

Creating database users/ schemas, is one of the primary steps in the complete OFS MRMM installation. This release of OFSAA provides a utility to quickly get started with the OFSAA 8.0 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 database objects in these schemas.

This section includes the following topics:

- About Schema Creator Utility
- Execution Modes in Schema Creator Utility
- Execution options in Schema Creator Utility

4.1.1 About Schema Creator utility

Configure and Execute the schema creator utility mandatorily, every time prior to installation of any OFSAA application pack.

You can configure the following types of schemas in OFSAA:

- **CONFIG** – Denotes the unique OFSAA setup configuration schema. It contains entities and other objects required for OFSAA setup information.

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

- **ATOMIC** – Denotes the schema that contains the data model entities. One ATOMIC schema is attached to one Information Domain.

4.1.2 Execution Modes in Schema Creator Utility

The Schema Configuration Utility supports the following modes of execution:

- **Online Mode**: In the Online mode, the utility connects to the database and executes the DDLs for Users, Objects and Grants. If you have the SYSDBA privileges, you can execute the Schema Creator Utility in Online mode, and thereby create the Users, Objects and Grants during the execution process.

NOTE: To execute the utility in Online mode, you need to connect as "<User> AS SYSDBA".

- **Offline Mode:** In the Offline mode, the utility generates SQL script with all the required DDLs for Users, Objects and Grants. This script needs to be executed by the DBA on the appropriate database identified for OFSAA usage. If you do not have the SYSDBA privileges, you can execute the Schema Creator Utility in Offline mode, and generate the script file that contains the Schemas, Objects and Grants, information. Subsequently, a SYSDBA user can execute the script file manually.

NOTE:

1. Connect as any database user.

2. Reconfigure the OFS_MRMM_SCHEMA_IN.xml file and execute the utility. For more information on reconfiguring these files, see Configuring OFS_MRMM_SCHEMA_IN.XML file. To execute the utility in Offline mode, you need to connect as any user with below 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

3. If there are any errors during the SQL script execution, reconfigure the OFS_MRMM_SCHEMA_IN.XML file and execute the utility. This regenerates the scripts with corrected information. For more information, refer Configuring OFS_MRMM_SCHEMA_IN.XML file Configuring OFS_MRMM_SCHEMA_IN.XML file.

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

4.1.3 Execution Options in Schema Creator Utility

Depending on the option you choose to run the OFSAA Application Pack Installer, you need to choose the schema creator utility execution option. To run the OFSAA Application Pack installer in SILENT mode, it is mandatory to execute the schema creator utility with `-s` option.

NOTE: If the schema creator utility is executed **without** the option –s, it is mandatory to run the OFSAA Application Pack installer in GUI mode.

4.2 Configuring and Executing the Schema Creator Utility

This section includes the following topics:

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

4.2.1 Prerequisites

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

- You must have the Oracle User ID/Password with SYSDBA privileges (not applicable for offline mode).
- You must have the JDBC Connection URL for RAC/Non RAC database.
- You must have the HOSTNAME/IP of the server on which OFSAA is getting installed.
- For Java 8, navigate to `OFS_AAAI_PACK/bin/` and modify the value for property JAVA_VERSION to 1.8 in the `VerInfo.txt` file and save the changes.
- It is recommended to set the PGA_AGGREGATE_LIMIT database-parameter value sufficiently, when Oracle 12c is installed.
- You must add a TNS entry before the installation.
- The following configuration is required only if you intend to use Oracle Linux/Red Hat Enterprise Linux v7.x.

  For Oracle Linux/RHEL 7.x, navigate to `OFS_AAAI_PACK/bin/` and modify the value for property Linux_VERSION to include 7 in the VerInfo.txt file and save the changes.

  For example, Linux_VERSION=5,6,7

4.2.2 Configuring the Schema Creator Utility

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

To configure the Schema Creator Utility, follow the below steps:

1. Log in to the system as non-root user.
2. Navigate to the path: `OFS_MRMM_PACK/schema_creator/conf` folder.
3. Edit the `OFS_MRMM_SCHEMA_IN.xml` file in a text editor.
4. Configure the elements as described in the section Configuring OFS_MRMM_SCHEMA_IN.XML file.
5. Save the `OFS_MRMM_SCHEMA_IN.xml` file.

NOTE: On successful execution of the utility, the entered passwords in the OFS_MRMM_SCHEMA_IN.xml file are nullified.

4.2.3 Executing the Schema Creator Utility

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

- Executing the Schema Creator Utility in Online Mode
- Executing the Schema Creator Utility in Offline Mode
- Executing the Schema Creator Utility with –s option
- Executing the Schema Creator Utility while Installing Subsequent Application Pack

4.2.3.1 Executing the Schema Creator Utility in Online Mode

In Online Mode, the Schema Creator Utility will create all the Schemas, Schema Objects, Tablespaces, Grants, and Roles in the database during the execution process.

To execute the Schema Creator Utility in Online Mode, follow these steps:

1. Log in to the system as non-root user.
2. Navigate to the folder path: *OFS_MRMM_PACK/schema_creator/bin/*
3. Execute the `osc.sh` file following command.

   ```
   ./osc.sh
   ```

   The following message is displayed:

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

4. Enter Y/y to proceed with the script generation

   or

   Enter N/n to quit script creation.

5. Enter the DB username with SYSDBA privileges. For example: SYS as SYSDBA.
6. Enter the user password.

```
/scratch/ofsaadb/OFS_MRMM_PACK/schema_creator/bin>./osc.sh
============================================================
You have chosen ONLINE mode
============================================================
Triggering the utility in ONLINE mode will execute the DDLs directly on the Database. Do you wish to proceed? (Y/N):
Y
============================================================
Java Validation Started ...
Java found in : /scratch/jdk1.8.0_31/bin
JAVA Version found : 1.8.0_31
JAVA Bit Version found : 64-bit
Java Validation Completed. Status : SUCCESS
============================================================
DB specific Validation Started ...
Enter the DB User Name With SYSDBA Privileges:
sys as sysdba
Enter the User Password:
Oracle Client version : 12.1. Status : SUCCESS
Oracle Server version Current value : 12.1.0.2.0. Status : SUCCESS
DB specific Validation Completed. Status : SUCCESS
============================================================
```

The console runs the initial validation checks and then 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).*

7. Enter Y/y to proceed with the schema creation.

   or

   Enter N/n to quit schema creation.

   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).

```
                        Schema Creation Started
================================================================================
Checking OFSAA installation...
OFSAA installation not found.
Validating the dat file OFS_MRMM_CFG.dat started...
Sucessfully validated OFS_MRMM_CFG.dat file
Validating the input XML file.../scratch/ofsaadb/OFS_MRMM_PACK/schema_creator/conf/OFS_MRMM_SCHEMA_IN.xml
Input XML file validated successfully.
================================================================================
Validating Connection URL ...jdbc:oracle:thin:@10.184.157.126:1521:mr12c
Successfully connected to User - sys as sysdba URL - jdbc:oracle:thin:@10.184.157.126:1521:mr12c
Connection URL successfully validated...
localhost name - whf00ass IPAddress - 10.184.156.12
You have chosen to install this Application Pack on "mr805atom" ATOMIC schema. Do you want to proceed? (Y/N)
Y
```

8. Enter Y/y to start the schema creation.

   Or

   Enter N/n if you want to quit executing the schema creation.

```
Executing TableSpace Scripts started...
Executing TableSpace Scripts completed...
================================================================================
Creating Schemas started...
CONFIG User mr805conf successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
Grants creation scripts execution started...
Grants creation scripts execution completed...
Successfully connected to User - mr805conf URL - jdbc:oracle:thin:@10.184.157.126:1521:mr12c
Scripts execution for CONFIG schema started ...
Scripts execution for CONFIG schema completed ...
User mr805conf details updated into the dbmaster table
User mr805conf details updated into the I18NMASTER table
User mr805conf details updated into the aai_db_detail table
User mr805conf details updated into the aai_db_auth_alias table
User mr805atom details updated into the dbmaster table
User mr805atom details updated into the I18NMASTER table
User mr805atom details updated into the aai_db_detail table
User mr805atom details updated into the aai_db_auth_alias table
User mr805atom is successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
Creating Schemas completed ...
================================================================================
Roles creation scripts execution started ...
Roles creation scripts execution completed ...
================================================================================
Grants creation scripts execution started...
Grants creation scripts execution completed...
================================================================================
                        Schemas Creation Completed
================================================================================
Schema Creator executed Successfully.Please proceed with the installation.
```

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

NOTE: On successful execution of schema creator utility, the console displays the following status message: *Schema Creator executed successfully. Please proceed with the installation*.

Refer log file in `OFS_MRMM_PACK/schema_creator/logs` folder for execution status. In case of any errors, contact *Oracle Support*.

4.2.3.2 Executing the Schema Creator Utility in Offline Mode

In Offline Mode, the Schema Creator Utility will create an output in SQL file format. This script has to be executed manually by logging as database user with SYSDBA privileges. The SQL file will contain the scripts for 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 below grants (alternatively, you can also connect as a user with SYSDBA privileges):

- Database user with below 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 following path: *OFS_MRMM_PACK/schema_creator/bin*
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.

```
/scratch/ofsaaapp/OFS_MRMM_PACK/schema_creator/bin>./osc.sh -o
============================================================
You have chosen OFFLINE mode
============================================================
Triggering the utility in OFFLINE mode will generate the script. Do you wish to proceed? (Y/N):
Y
============================================================
Java Validation Started ...
Java found in : /scratch/jdk1.7.0_72/bin
JAVA Version found : 1.7.0_72
JAVA Bit Version found : 64-bit
Java Validation Completed. Status : SUCCESS
============================================================
DB specific Validation Started ...
Enter the DB User Name with the following privileges:
1. CREATE SESSION
2. SELECT on DBA_ROLES
3. SELECT on DBA_USERS
4. SELECT on DBA_DIRECTORIES
5. SELECT on DBA_TABLESPACES
Enter the User Name:
sys as sysdba
Enter the User Password:
```

The console runs the initial validation checks and displays the following message:
You have chosen to install this Application Pack on <Name of the Atomic Schema>ATOMIC schema. Do you want to proceed? (Y/N).

8. Enter **Y/y** to start the script generation.

   Or

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

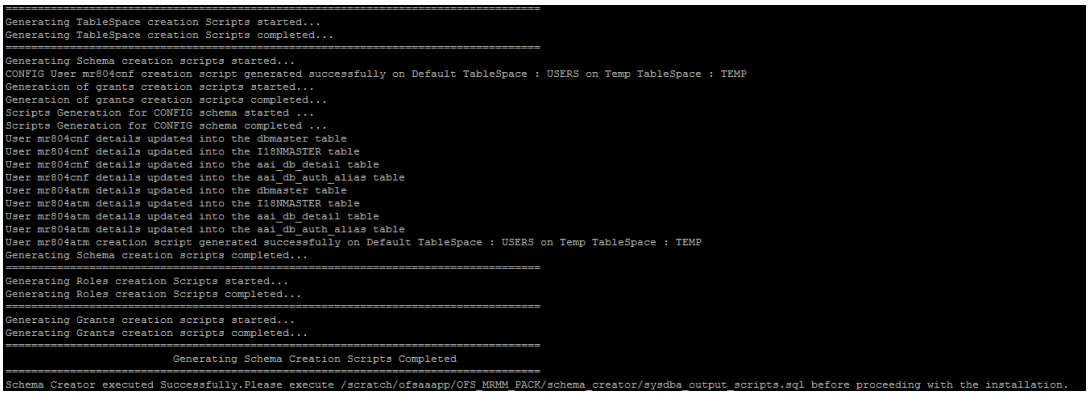
   The following message is displayed.
   You have chosen to install this Application Pack on <Name of the Infodom>. Do you want to proceed? (Y/N).

```
Oracle Client version : 12.1.0.1.0. Status : SUCCESS
Oracle Server version Current value : 12.1.0.2.0. Status : SUCCESS
DB specific Validation Completed. Status : SUCCESS
============================================================
================================================================================
                        Generating Schema Creation Scripts Started
================================================================================
Checking OFSAA installation...
OFSAA installation not found.
Validating the dat file OFS_MRMM_CFG.dat started...
Sucessfully validated OFS_MRMM_CFG.dat file
Validating the input XML file.../scratch/ofsaaapp/OFS_MRMM_PACK/schema_creator/conf/OFS_MRMM_SCHEMA_IN.xml
Input XML file validated successfully.
================================================================================
Validating Connection URL ...jdbc:oracle:thin:@10.184.157.126:1521:mr12c
Successfully connected to User - sys as sysdba URL - jdbc:oracle:thin:@10.184.157.126:1521:mr12c
Connection URL successfully validated...
localhost name - whf00ass IPAddress - 10.184.156.12
You have chosen to install this Application Pack on "mr804atm" ATOMIC schema. Do you want to proceed? (Y/N)
Y
```

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

   Or

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



NOTE: On successful execution of schema creator utility, the console displays the following status message: Schema Creator executed successfully. Please execute `scratch/ofsaaapp/OFS_MRMM_PACK/schema_creator/sysdba_output_scripts.sql` before proceeding with the installation.

10. Navigate to the directory: `OFS_MRMM_PACK/schema_creator.`
11. Login to SQLPLUS with a user having SYSDBA Privileges.
12. Connect to the Oracle DB Server on which the OFS MRMM 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, after providing appropriate execute permissions.

NOTE: Refer log `sysdba_output_scripts.log` file for execution status. In case of any errors, contact Oracle Support. This log would be empty if there are no errors in the execution.

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

4.2.3.3 Executing the Schema Creator Utility with –s option

NOTE: If you want to run the OFSMRMM Application 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_MRMM_PACK/schema_creator/conf/OFS_MRMM_SCHEMA_IN.xml` in text editor.

2. Execute the utility with `-s` option.

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

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

NOTE: If the utility is executed without the `-s` option, it is mandatory to launch the OFS MRMM Application Pack Installer in GUI mode.

NOTE: To execute the utility in OFFLINE mode with SILENT option, type. /`osc.sh -o -s`.

4.2.3.4 Executing the Schema Creator Utility while Installing Subsequent Application Pack

While executing the schema creator utility for subsequent Application Pack, you can choose to install the pack either on the same Information Domain/ Atomic Schema or on a new Information Domain/ Atomic Schema.

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

1. Repeat the steps 1 to 9 from Executing the Schema Creator Utility section.

NOTE: Ensure to use the same config schema user name as the previous Application Pack.

2. The utility identifies the Application Packs that are already installed on the current OFSAA setup and displays the following on console:
   - Atomic schema of the Existing Application Pack,
   - Information Domain Name of the Existing Pack, and the
   - List of Installed Application Packs
3. Enter **Y/y** to start the schema creation.
4. If you enter **N/n**, the list of Atomic Users is displayed.
5. You can select the Atomic User, on which you want to install the Application Pack.
6. Make a TNS entry for the new users created. For details, see Add TNS entries in TNSNAMES.ORA file.

NOTE: On successful execution of schema creator utility, the console displays the following status message: *Success. Please proceed with the installation*.

Refer log file in `OFS_MRMM_PACK/schema_creator/logs` folder for execution status.

Refer log `sysdba_output_scripts.log` file for execution status, if executed in offline mode. This log would be empty if there are no errors in the execution.

In case of any errors, contact Oracle Support.

4.3 Installing the OFS MRMM Application Pack

Follow the instructions in this section, to install the OFS MRMM Application Pack depending on the mode of installation.

This section includes the following topics:

- GUI Mode Installation
- SILENT Mode Installation

4.3.1 GUI Mode Installation

Note: GUI mode of installation is supported only on RDBMS database server. Ensure you have followed the steps as mentioned in the Configuration for GUI Mode Installation section prior to proceeding with the next 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 below:

```
ORACLE_HOME=<oracle_installed_dir>

TNS_ADMIN=$ORACLE_HOME/network/admin
export TNS_ADMIN

FIC_HOME=<ofsaa_install_dir>
```

3. Add entry for Numerix directory path, and license path in .profile. The default values are as follows:

```
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$FIC_HOME/ficdb/bin/Numerix/cas-4.1.0-4305-
linux64/lib/linux64
export LD_LIBRARY_PATH

NX_LICENSE_DIR=$FIC_HOME/ficdb/bin/Numerix/license
export NX_LICENSE_DIR

LIBPARENTDIR=$FIC_HOME/ficdb/bin/Numerix/cas-4.1.0-4305-linux64
export LIBPARENTDIR
```

4. Execute the user `.profile`
5. Navigate to the path OFS_MRMM_PACK
6. Edit the `OFS_MRMM_PACK/schema_creator/conf/OFS_MRMM_SCHEMA_IN.xml` file to set the appropriate attribute values.

   Note: See Configuring OFS_MRMM_SCHEMA_IN.xml File for details on configuring this XML file.

7. Execute the schema creator utility.

Note: Configure and execute the Schema Creator utility. This step is mandatory and should be executed before every OFSAA pack installation. For details, see Configuring and Executing the Schema Creator Utility.

Note: Ensure to make a TNS entry for the new users created. For details, see Add TNS entries in TNSNAMES.ORA file

8. In the console, navigate to the path `OFS_MRMM_PACK/bin`, and execute the following command in the console:

```
./setup.sh GUI
```

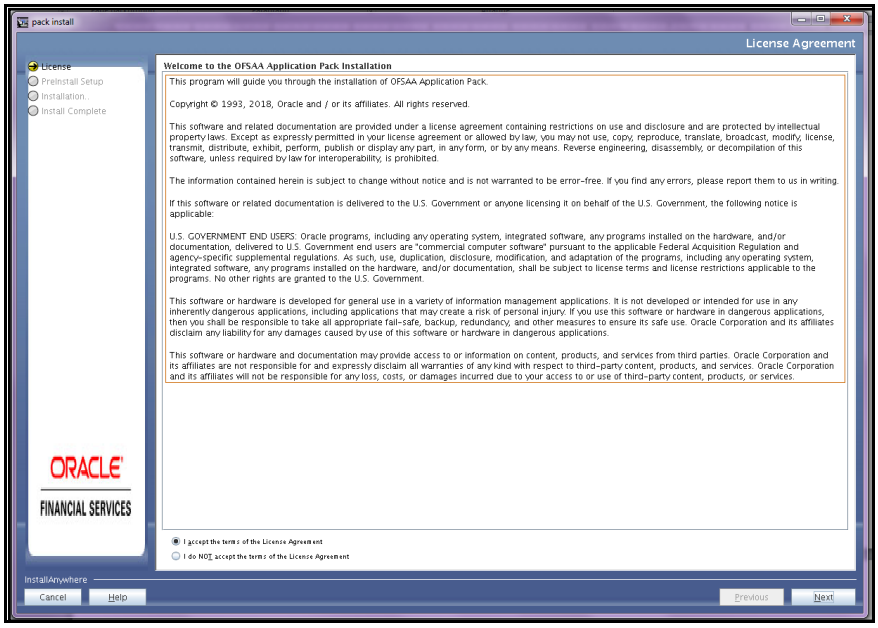
Note: Refer the console for any errors during Pre-install checks.

```
/scratch/ofsaadb/OFS_MRMM_PACK/bin>./setup.sh GUI
 FIC_HOME : /scratch/ofsaadb/OFSAAI806
 DISPLAY : 10.184.203.5:0.0
Environment check utility started...
=============================================================
Java Validation Started ...
 Java found in : /scratch/jdk1.8.0_31/bin
 JAVA Version found : 1.8.0_31
 JAVA Bit Version found : 64-bit
Java Validation Completed. Status : SUCCESS
=============================================================
Environment Variables Validation Started ...
 ORACLE_HOME : /scratch/oracle/app/product/12.1.0/client_1
 TNS_ADMIN : /scratch/ofsaadb
Environment Variables Validation Completed. Status : SUCCESS
=============================================================
OS specific Validation Started ...
 Checking en_US.utf8 locale. Status : SUCCESS
 Unix shell found : /bin/ksh. Status : SUCCESS
 Total file descriptors : 65536. Status : SUCCESS
 Total number of process : 4096. Status : SUCCESS
 OS version : 6. Status : SUCCESS
OS specific Validation Completed. Status : SUCCESS
=============================================================
DB specific Validation Started ...
 Oracle Client version : 12.1.0.1.0. Status : SUCCESS
 Successfully connected to schema mrmm806atom. Status : SUCCESS
 CREATE SESSION has been granted to user. Status : SUCCESS
 CREATE PROCEDURE has been granted to user. Status : SUCCESS
 CREATE VIEW has been granted to user. Status : SUCCESS
 CREATE TRIGGER has been granted to user. Status : SUCCESS
 CREATE MATERIALIZED VIEW has been granted to user. Status : SUCCESS
 CREATE TABLE has been granted to user. Status : SUCCESS
 CREATE SEQUENCE has been granted to user. Status : SUCCESS
 SELECT privilege is granted for NLS_INSTANCE_PARAMETERS view. Current value : SELECT. Status : SUCCESS
 NLS_LENGTH_SEMANTICS : BYTE. Current value : BYTE. Status : SUCCESS
 NLS_CHARACTERSET : AL32UTF8. Current value : AL32UTF8. Status : SUCCESS
 SELECT privilege is granted for V_$parameter view. Current value : SELECT. Status : SUCCESS
 Open cursor value is greater than 1000. Current value : 1000. Status : SUCCESS
 SELECT privilege is granted for USER_TS_QUOTAS view. Current value : SELECT. Status : SUCCESS
 Schema is granted with at least 500 MB table space for user : mrmm806conf. Current value : 10239.6011352539063 MB. Status : SUCCESS
 Oracle Server version Current value : 12.1.0.2.0. Status : SUCCESS
DB specific Validation Completed. Status : SUCCESS
=============================================================
Environment check utility Status : SUCCESS
=============================================================
Starting installation...
Preparing to install...
Extracting the installation resources from the installer archive...
Configuring the installer for this system's environment...

Launching installer...
```

Validating the Installation

Initialization Window



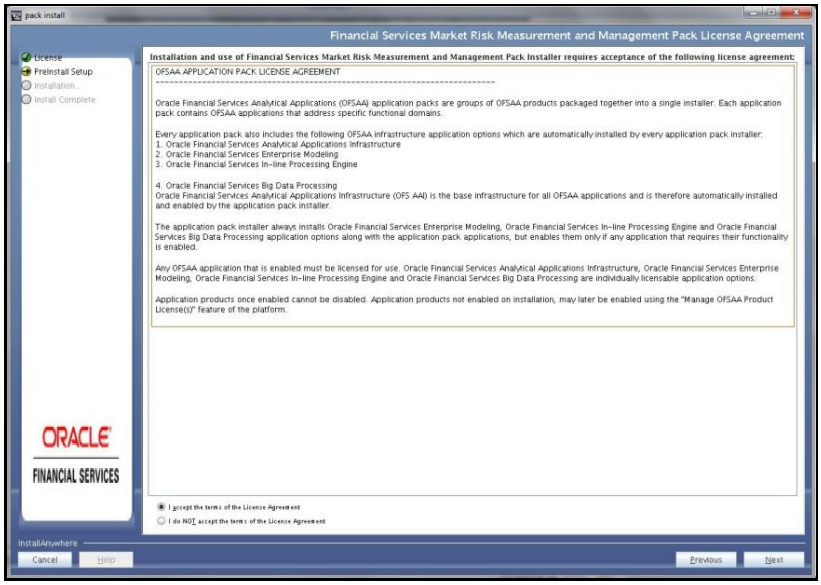
License Agreement

9. Select **I accept the terms of the License Agreement option**.
10. Click **Next**.

The Application Pack details are displayed:

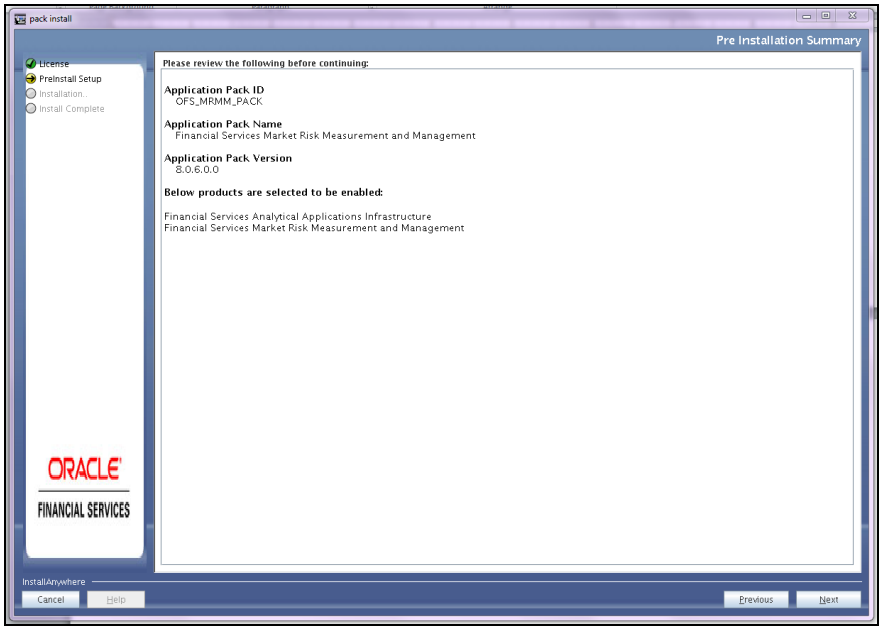
Application Pack Details

11. Select the product to enable for which you have already obtained license.
12. Click **Next**. The License Agreement page is displayed.



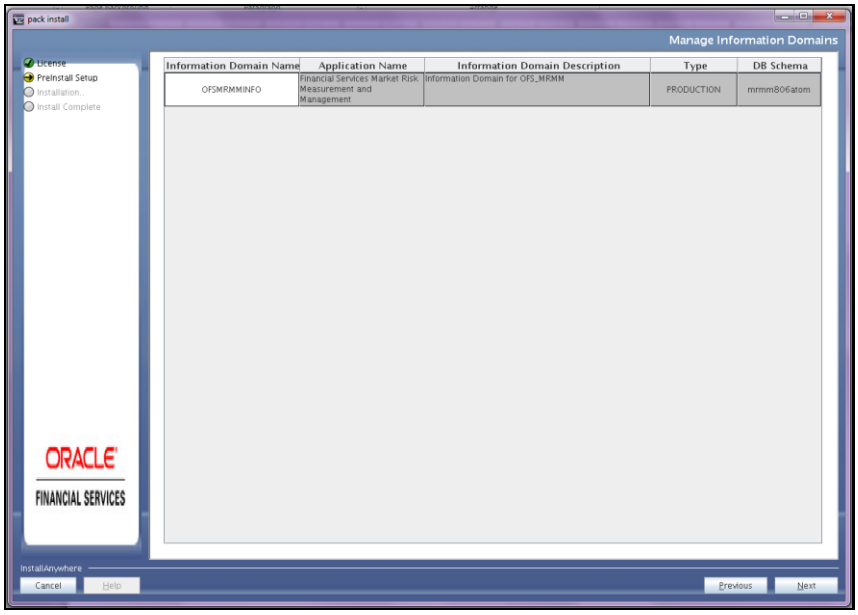
OFSAA App Pack License Agreement

13. Select **I accept the terms of the License Agreement option**.
14. Click **Next**. The Pre Installation Summary is displayed.



Pre Installation Summary Details

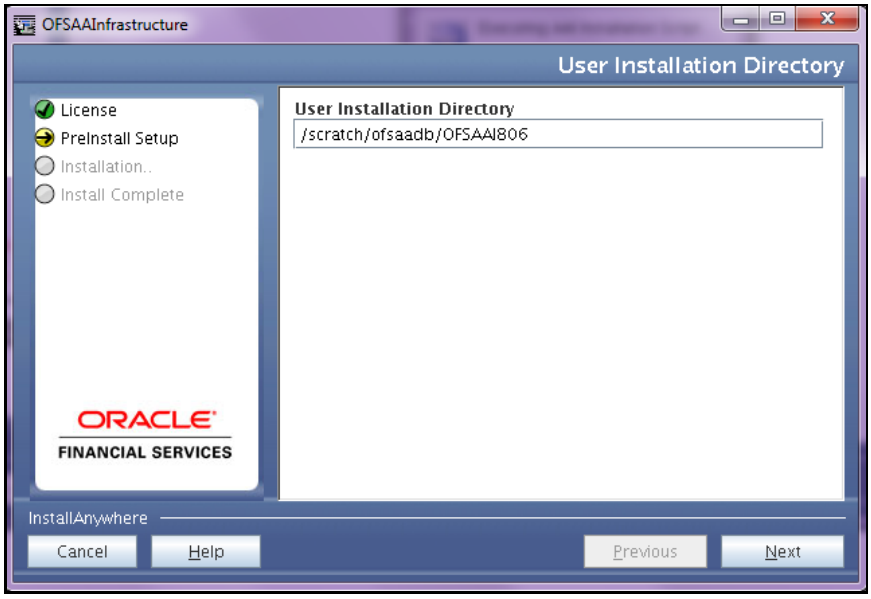
15. Click **Next**. The Manage Information Domain page is displayed.



Information Domain

16. Edit the Information Domain Name if it is a new Information domain and you wish to change the name of the information domain name.

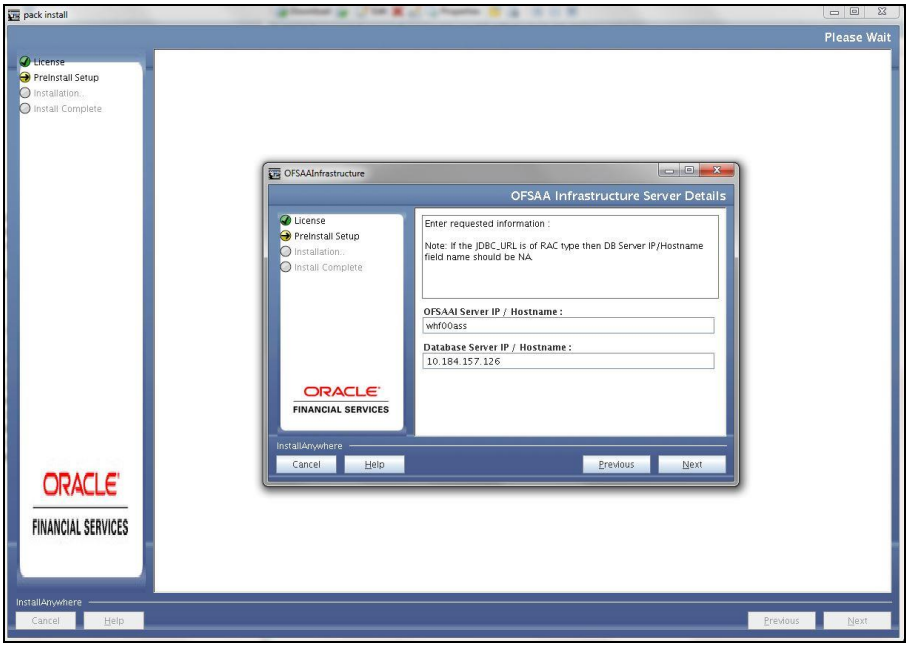
17. Click **Next**. The User Installation Directory window is displayed.



User Installation Directory

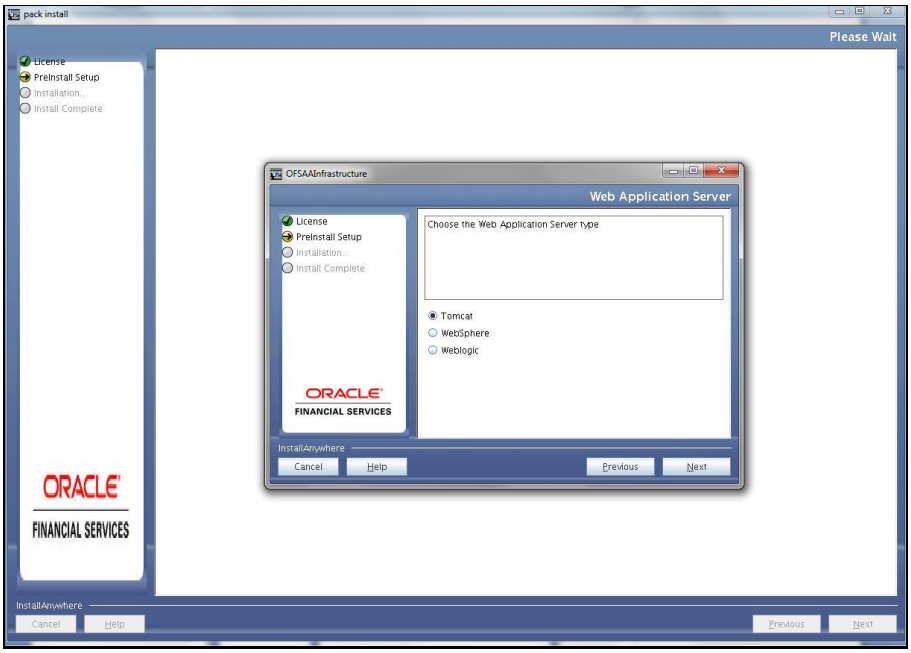
18. Enter the installation directory path. This is the directory you have set in the .profile file in step 2.

19. Click **Next**. OFSAA Infrastructure details are displayed in the following figure.



OFSAA Infrastructure Server Details

20. Enter the IP address or hostname of the OFSAAI server and Database server
21. Click **Next** to view the Web Application Server details.

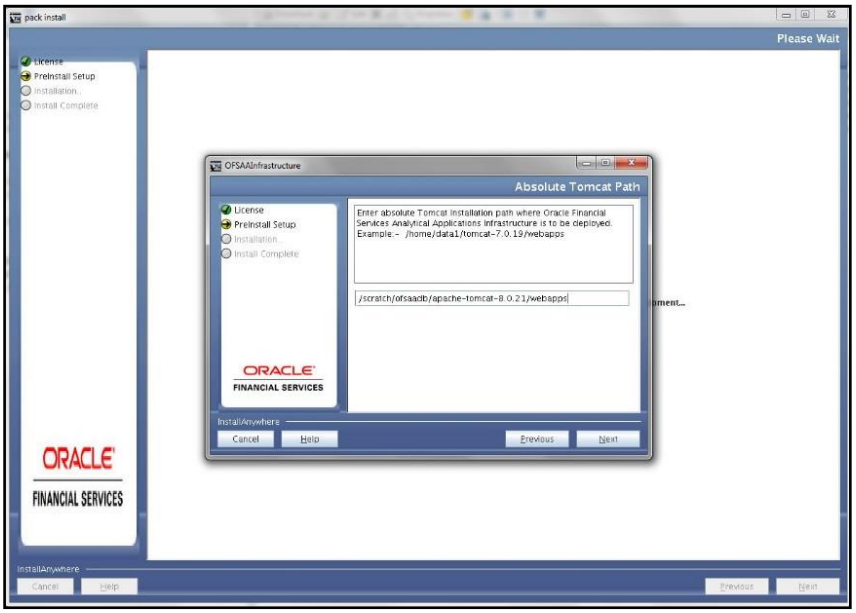


Web Application Server Type

22. Select the appropriate Web Application server type. The options are Tomcat, WebSphere and WebLogic.
23. Click **Next**. Based on the selection, corresponding screens are displayed. For WebSphere: The WebSphere Setup Details window is displayed.

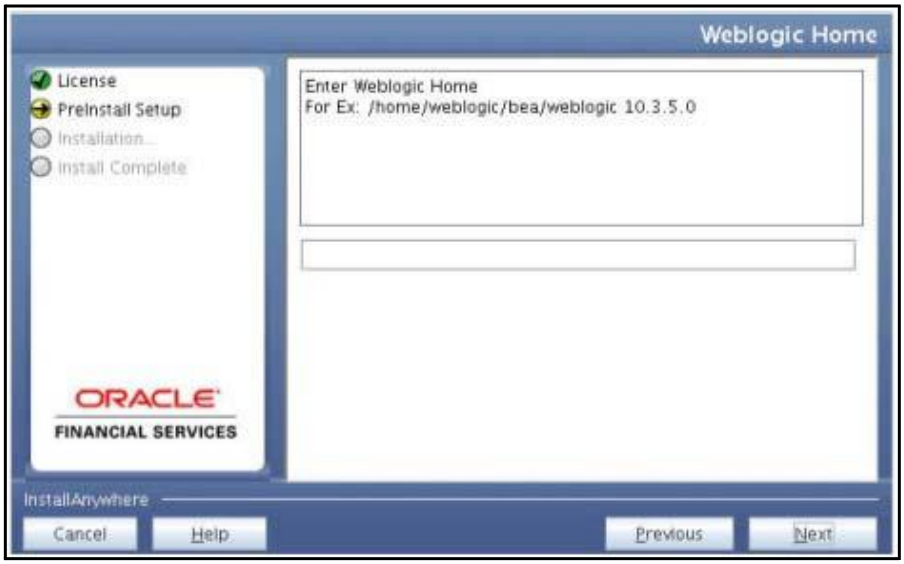
Websphere Setup Details

a) Enter the profile path (up to the Node Cell Name directory) of WebSphere. The format is WebSphere path <WebSphere profile directory>/installedApps/ <NodeCellName>. For Tomcat: The Absolute Tomcat Path window is displayed. For Tomcat: The Absolute Tomcat Path window is displayed.

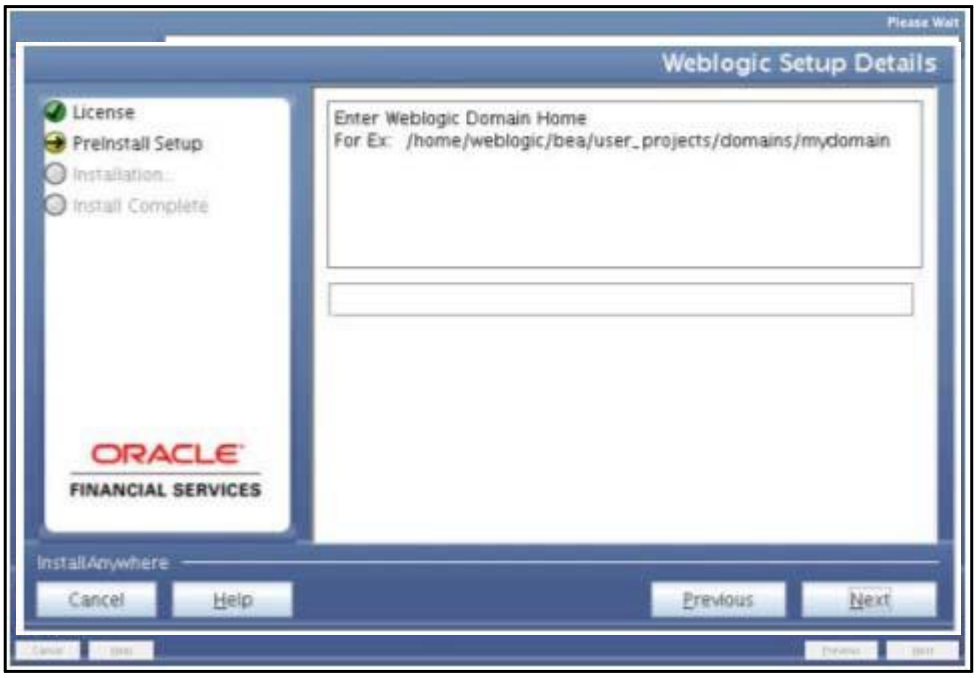


Tomcat Path

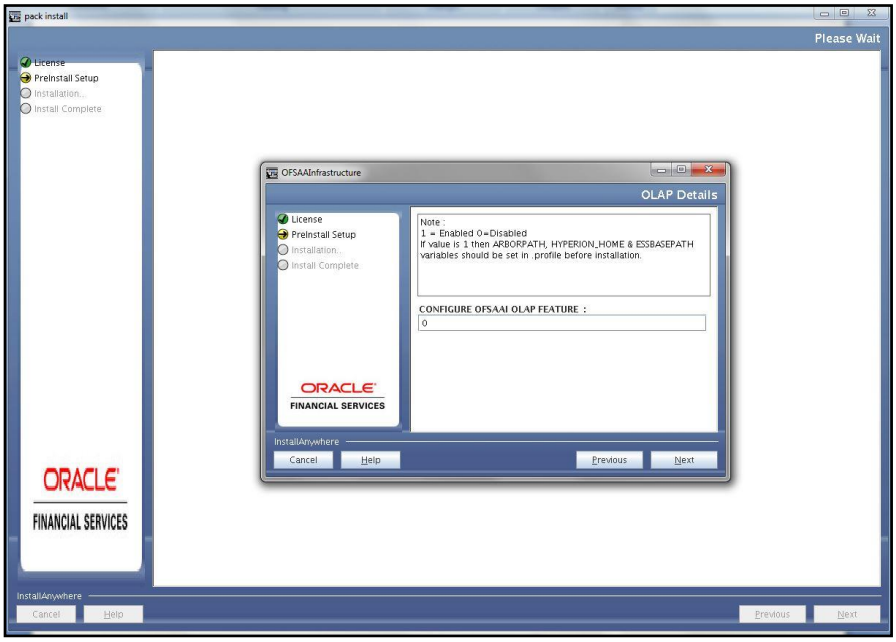
b) Enter the Tomcat deployment path (till /webapps) where application will be deployed. For WebLogic: The WebLogic Home window is displayed.



c) Enter the WebLogic home directory path and enter the path of the WebLogic domain home directory and click **Next**.



24. The OLAP Details window is displayed. Click **Next**.



OLAP Details

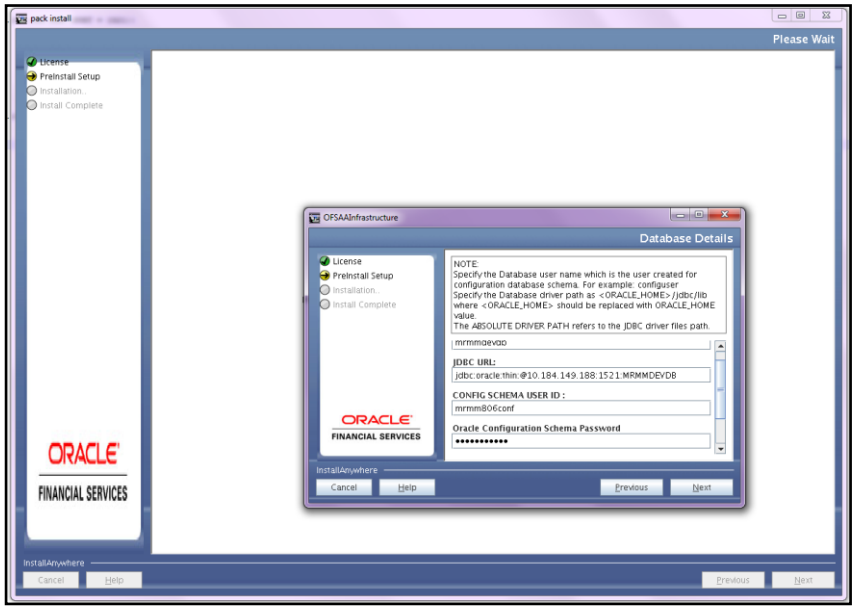
25. Enter 1 if you want to configure OFSAAI OLAP feature. By default, it is set to 0.

26. Click **Next**. The Web Server Details window is displayed.

Web Server Details

27. By default, ENABLE HTTPS is selected. If you want to install without HTTPS enabled, click the checkbox to remove the selection and proceed with the installation. Enter the Web Server (HTTP Server) Port, Context name for deployment, and Local path to any folder on the Web Application Server (Tomcat/Websphere/Weblogic).

28. Click Next. The Database Details window is displayed

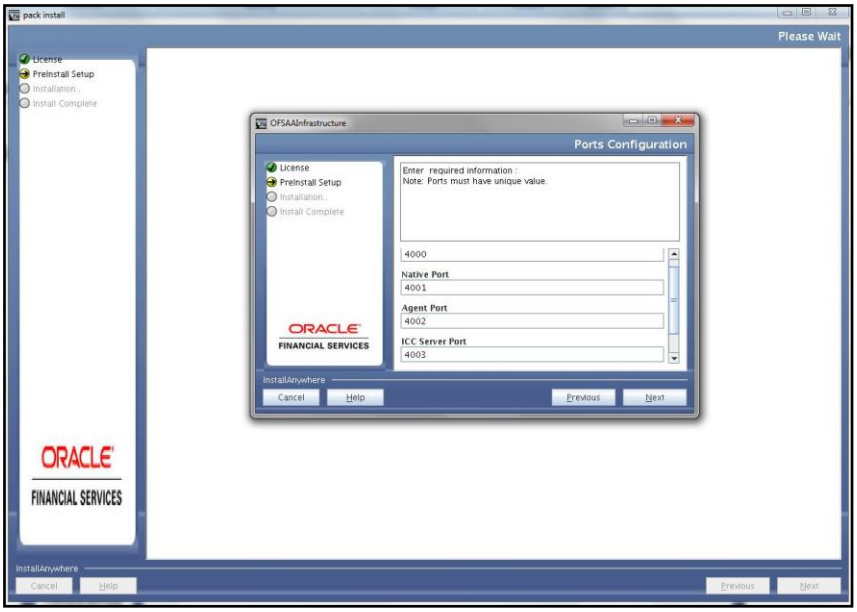


Database Details

29. Enter Oracle SID/Service Name, JDBC URL, Configuration Schema User ID and Password, and Absolute Driver Path.

Note: Absolute Driver Path can be the path where Oracle DB client is installed or JDBC driver is installed. For example,
`/scratch/oracle/app/oracle/product/11.2.0/client_1/jdbc/lib`

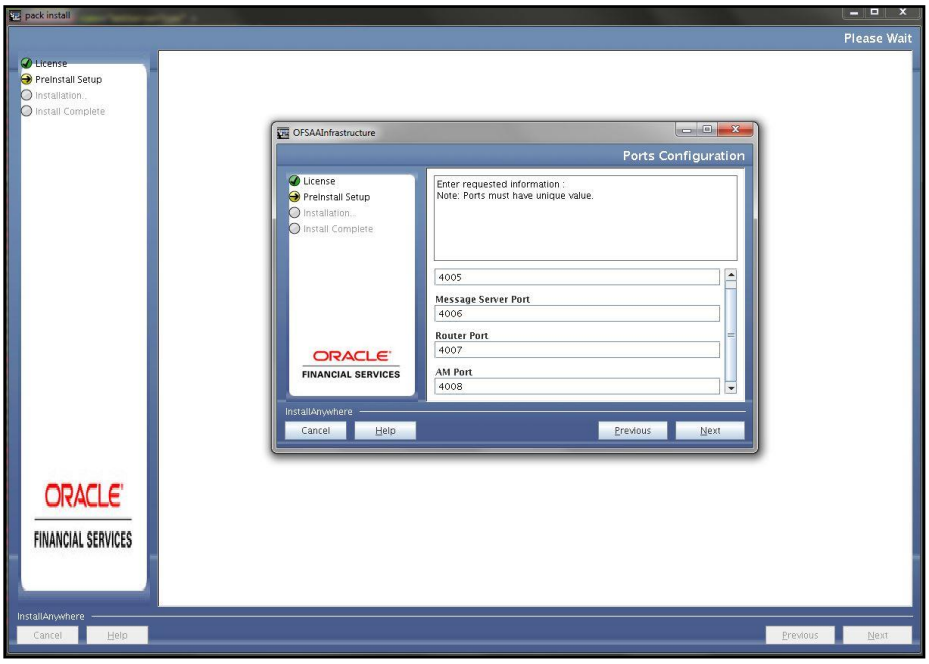
30. Click **Next**. The Ports Configuration window is displayed.



Ports Configuration

31. Enter Java Port, Native Port, Agent Port, ICC Server Port, and ICC Native Port. You can proceed with the default port values configured.

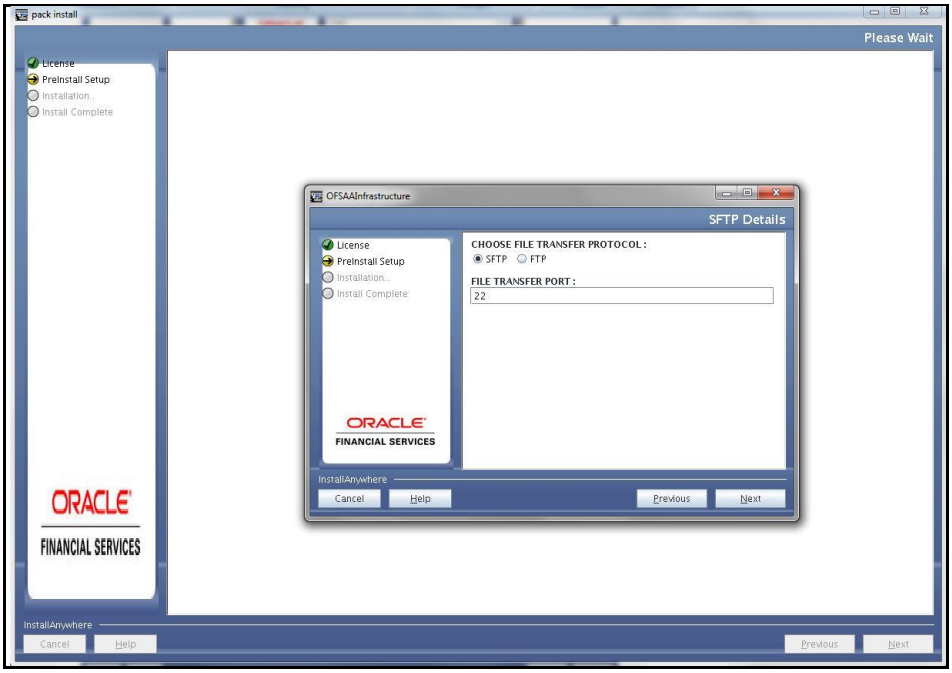
32. Click **Next**. The Ports Configuration window is displayed.



Ports Configuration_1

33. Enter OLAP Port, Message Server Port, Router Port, and AM Port.

34. Click **Next**. The SFTP Details window is displayed.



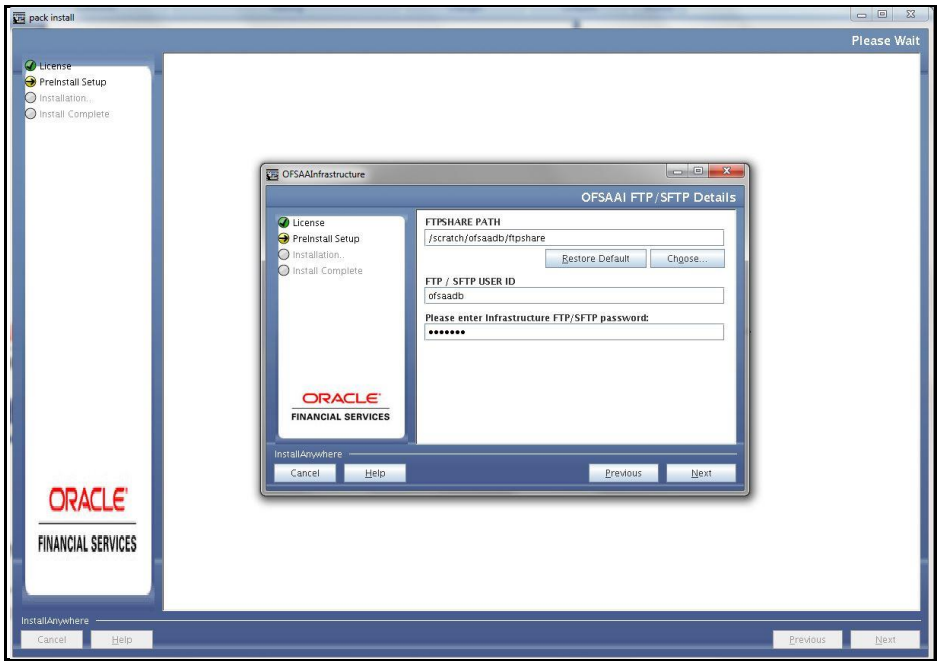
SFTP Details

35. Select SFTP or FTP.

    Note: Ensure the system on which the OFSAA Infrastructure is being installed, has either FTP/ SFTP enabled.

36. Enter the port to be used for file transfer.

37. Click **Next**.

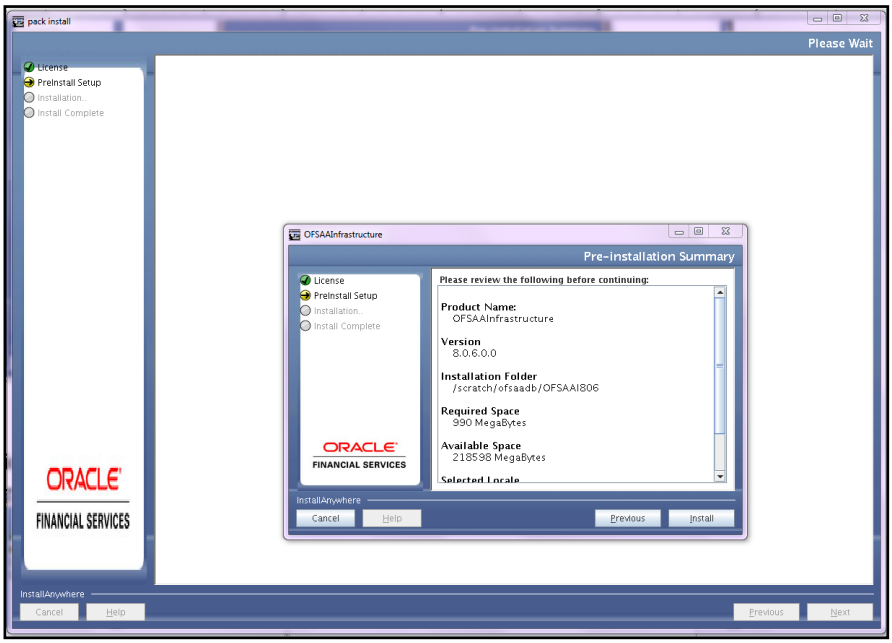


OFSAAI Pre Install Details

38. Enter the path of the ftpshare directory and the User Id and password for OFSAAI Server.

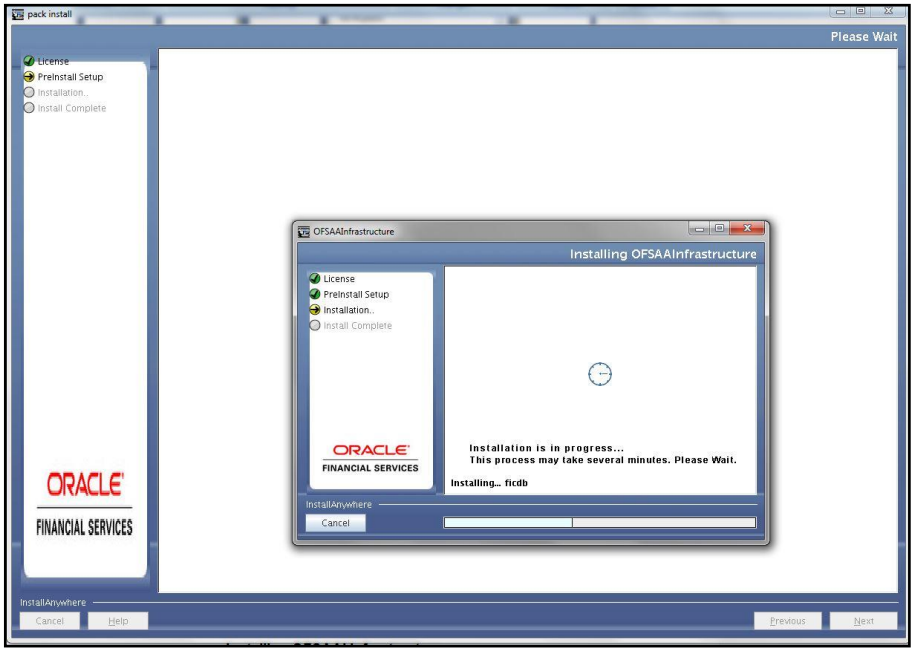
    Note: The transfer of data (files) between the OFSAAI Server and the Web Application Server happens over FTP/ SFTP. Ensure the necessary host configurations are made for a successful handshake.

39. Click **Next**. The Pre Installation Summary window is displayed.



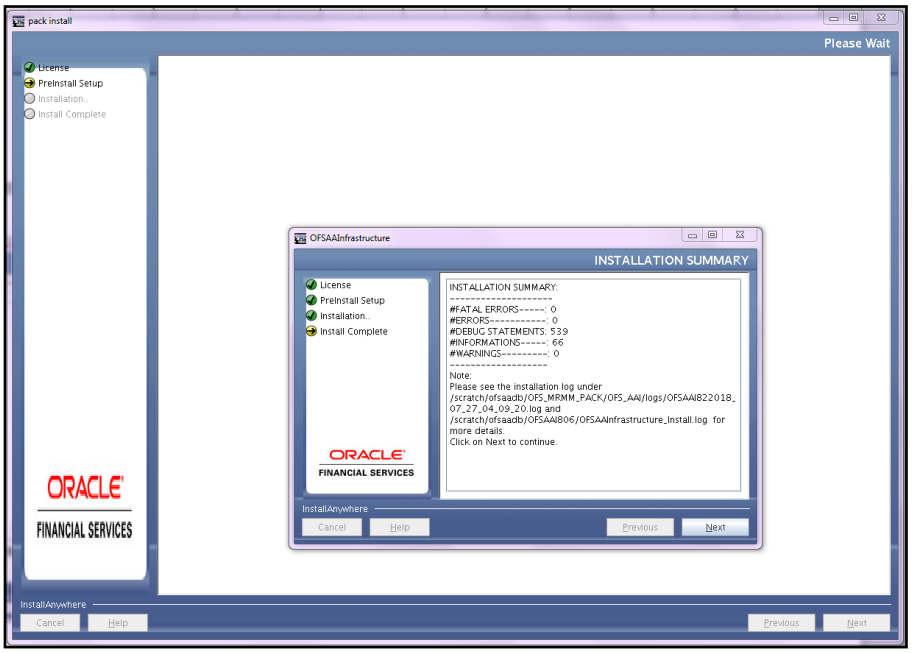
Pre Installation Summary

40. Click **Install**. The Installing OFSAA Infrastructure window is displayed.



Installing OFSAAI Infrastructure

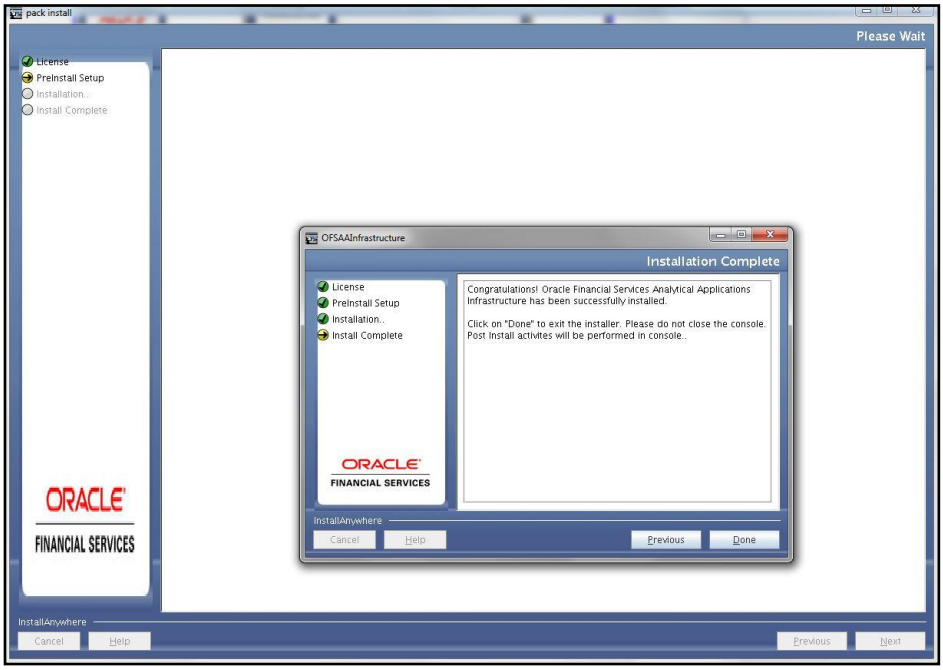
Anytime during the installation you can click **Cancel** to stop the installation. Once completed, the Installation Summary screen is displayed.



Installation Summary

The Summary screen displays the number of Fatal Errors, Errors, Debug Statements, Information, and Warnings along with the location of log files.

41. Click **Next**. The Installation Complete window is displayed.

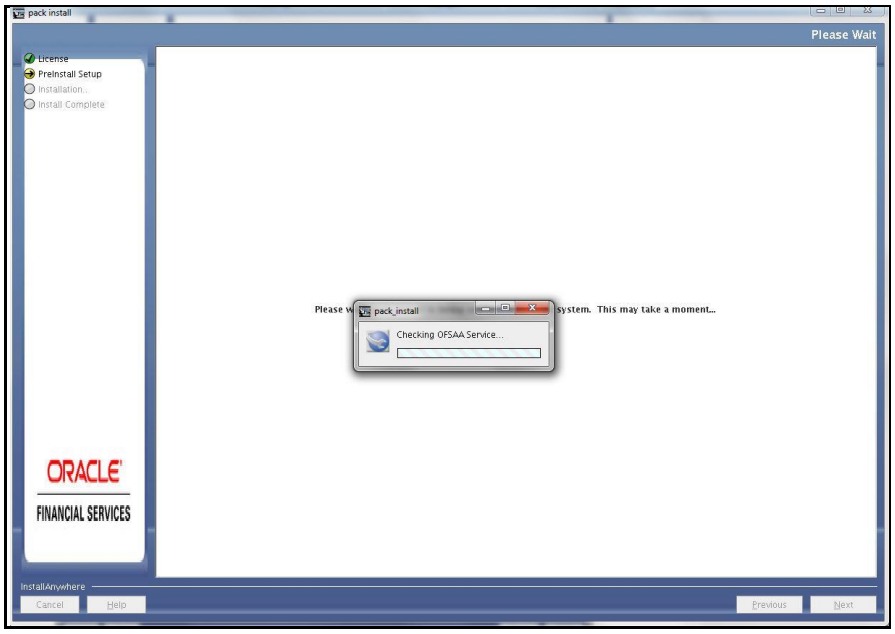


Installation Completed with Warnings

Note: If the installation is successful with some warnings, you can navigate to the installation log for more details and address them.

42. Click **Done**. The following message is displayed: Please wait, pack_install is being configured for your system. This may take a moment.

Note: This step verifies the OFSAA services startup. In case of errors during services check, an appropriate error message is displayed

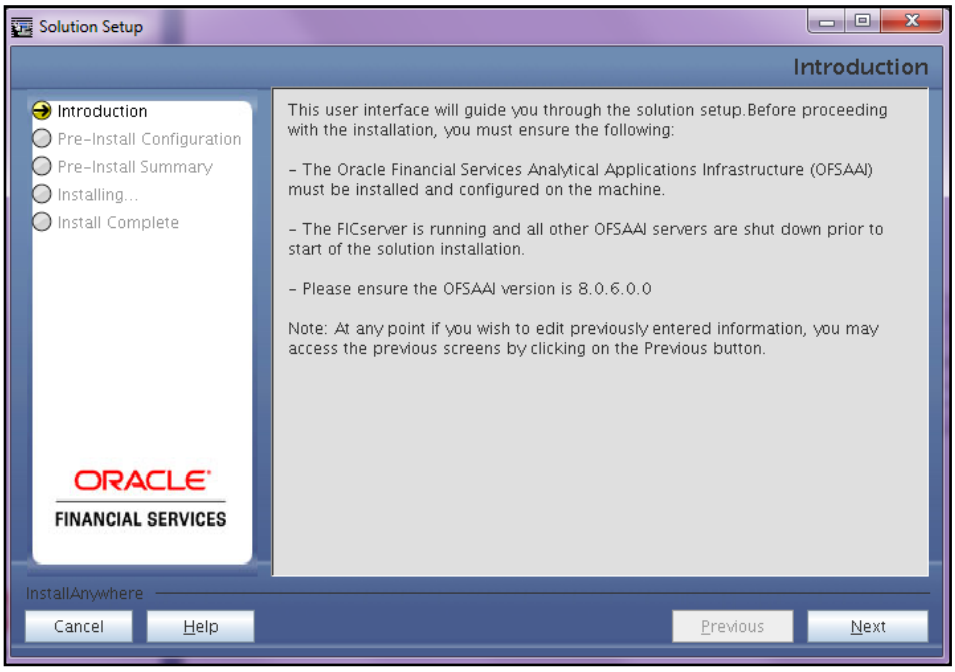


Note: The installation process continues on the console. Do not close the console until the installation process is complete

43. The Installer will prepare to install Oracle Financial Services Market Risk Measurement and Management Application Pack

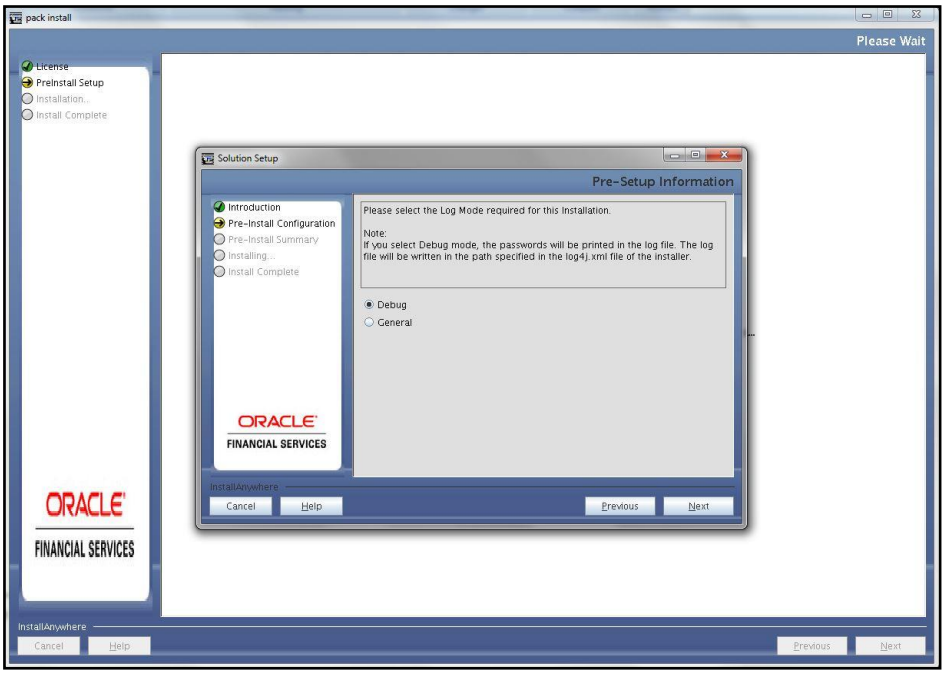
    Installing Oracle Financial Services Market Risk Measurement and Management Application Pack

    Upon invoking the installer, the **Introduction** screen is displayed with the prerequisites for installation. Ensure that all the prerequisites are met before you proceed with the installation.



Solution Setup Introduction

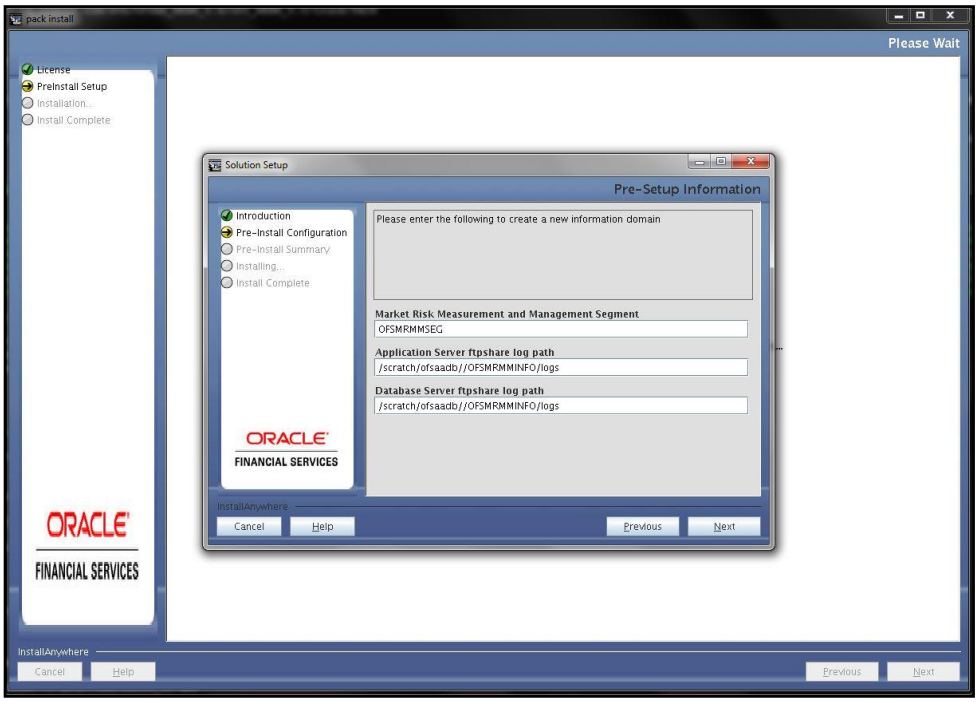
44. Click **Next**. Choose the log mode for this installer. If Debug is selected, the Passwords will be printed in the log file. If General is selected then the general information will get printed in the log file.



Log Mode

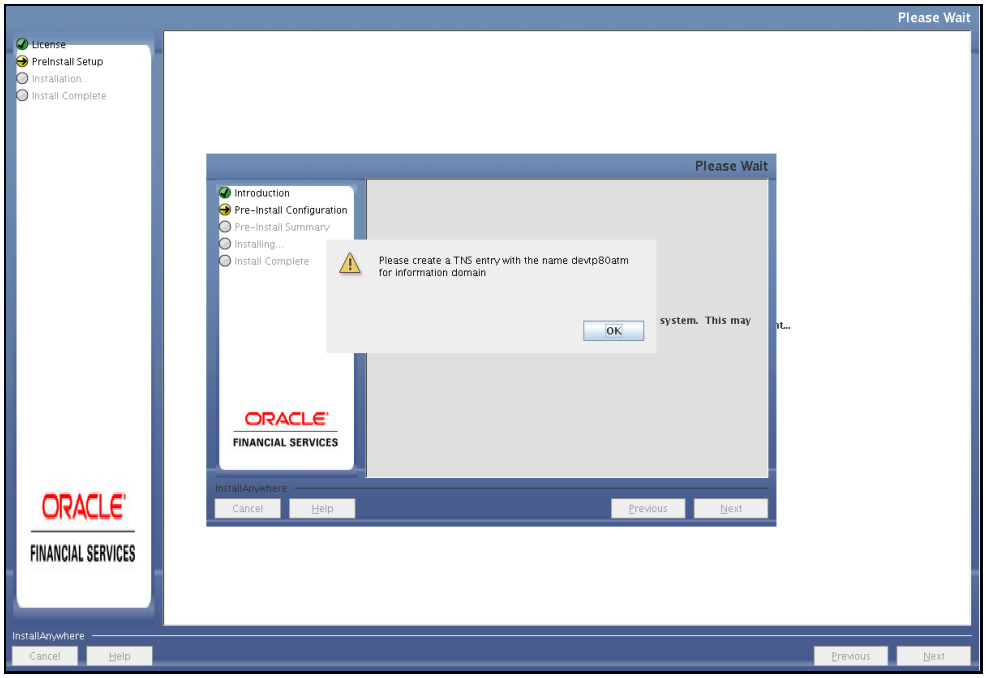
45. Click **Next**. Segment creation window will be displayed. Enter the log paths.

    Note: Enter the **Market Risk Measurement and Management Pack Segment** name field in UPPERCASE.

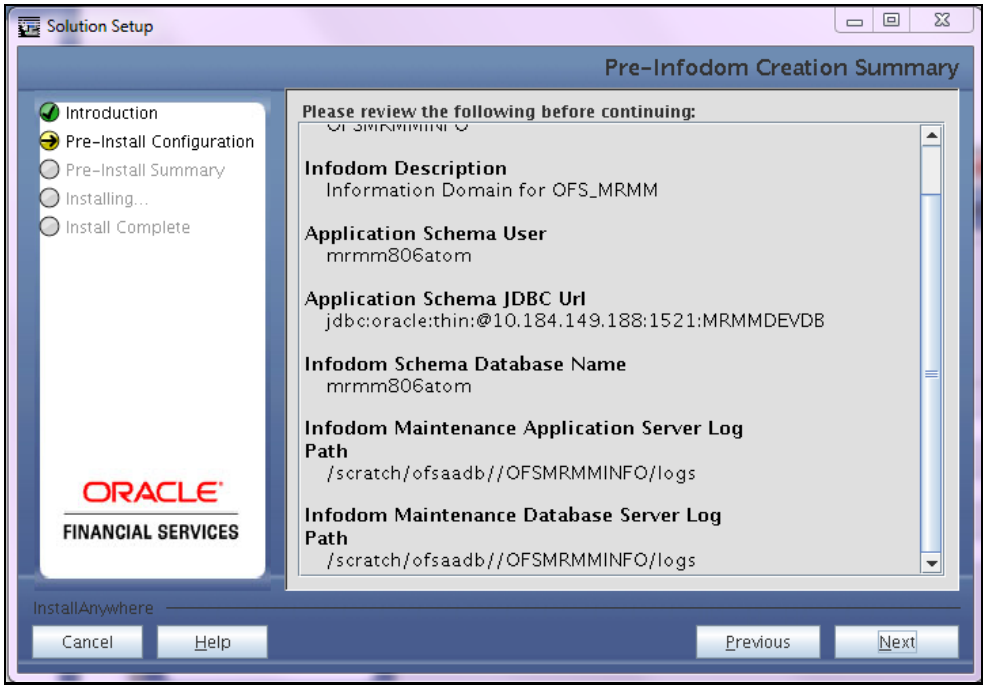


Pre-Setup Information

46. Invalid TNS name message appears as shown below. Click **OK** and you can proceed with the next steps and make TNS entry in tnsnames.ora file later. Refer section Add TNS entries in TNSNAMES.ORA file.

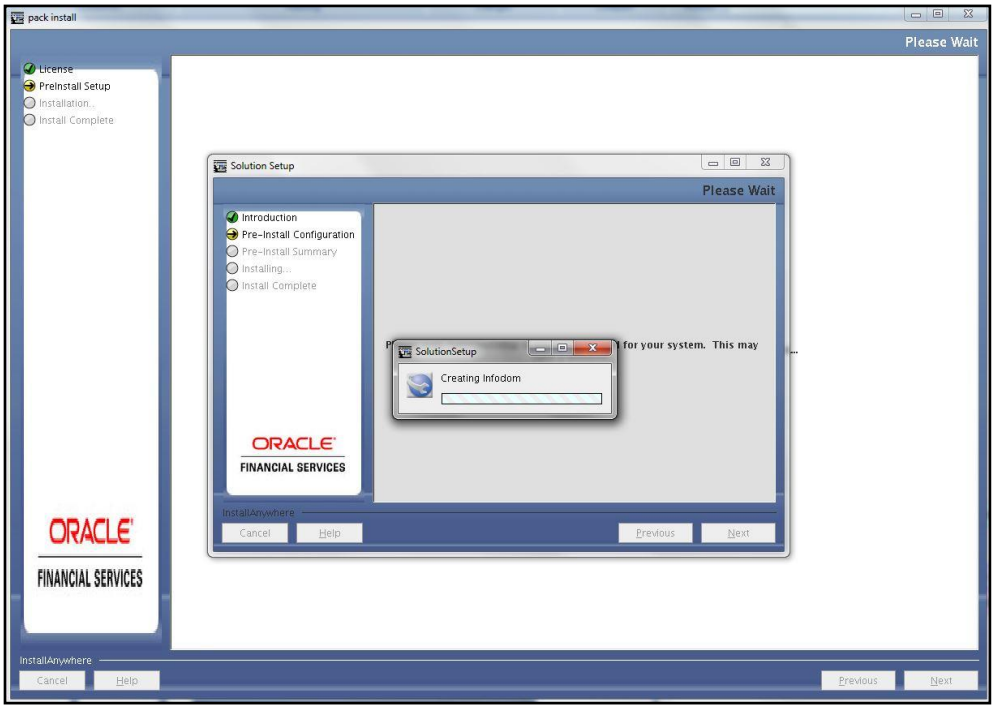


47. Click **Next**. Pre-Infodom Creation Summary window will be displayed.



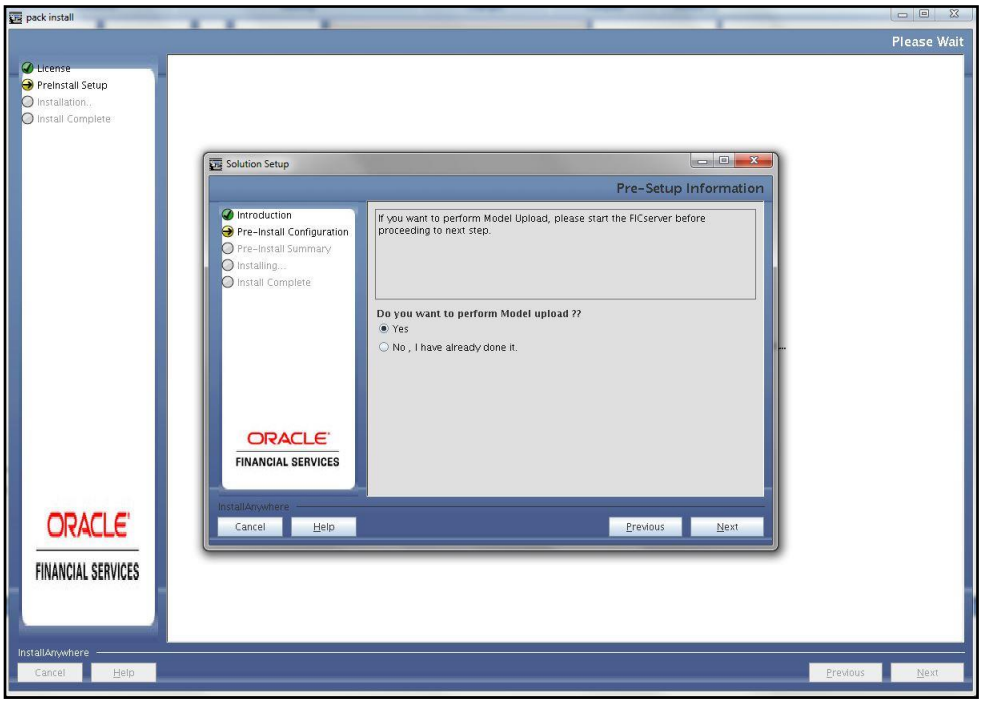
Pre-Infodom Creation Summary

48. Click **Next**. The Infodom creation window will be displayed.



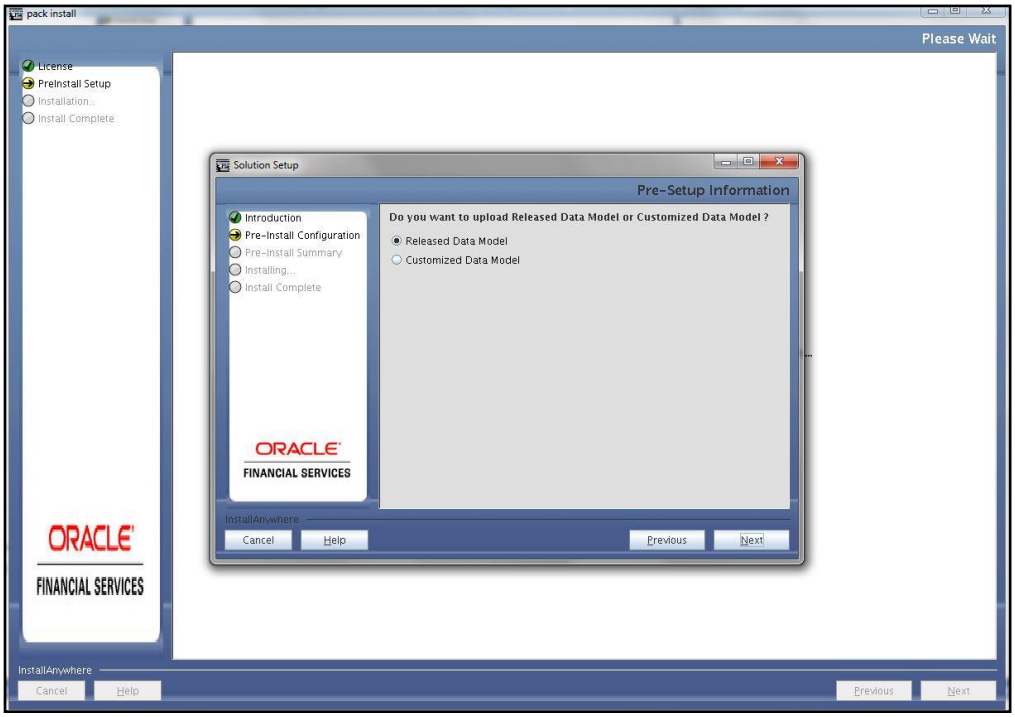
Infodom creation

49. After Infodom creation is complete Model Upload Window will be displayed.



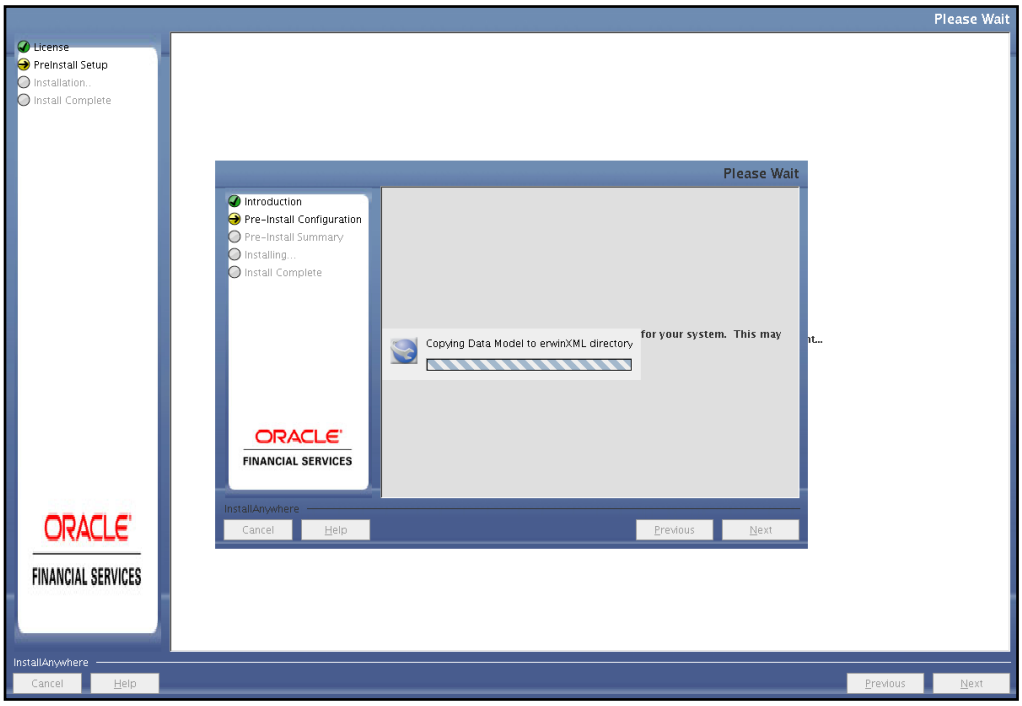
Model Upload

50. Select **Yes** and click **Next**. Data Model Type window will be displayed.



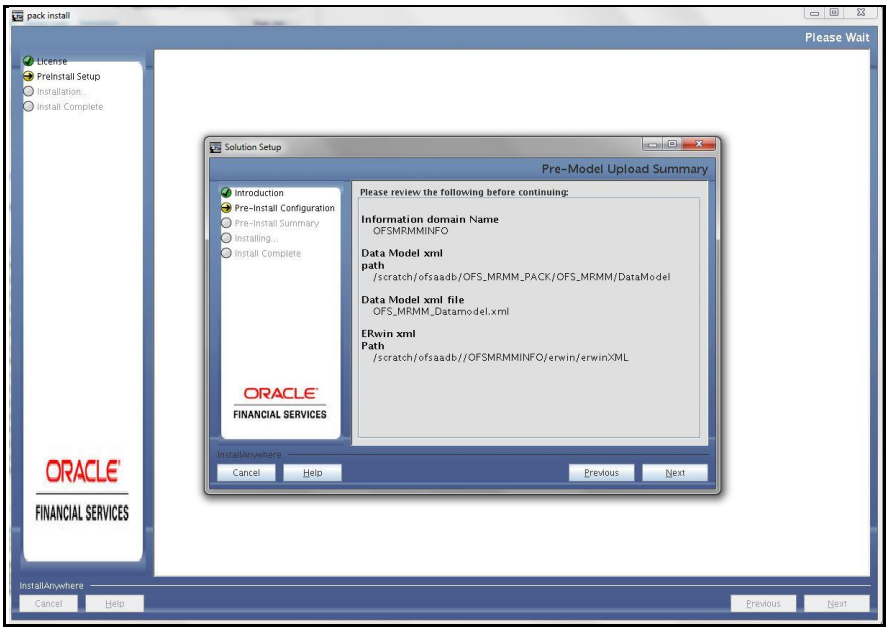
Data Model Type

51. Select **Released Data Model** and click **Next**. Model will get copied into ftpshare



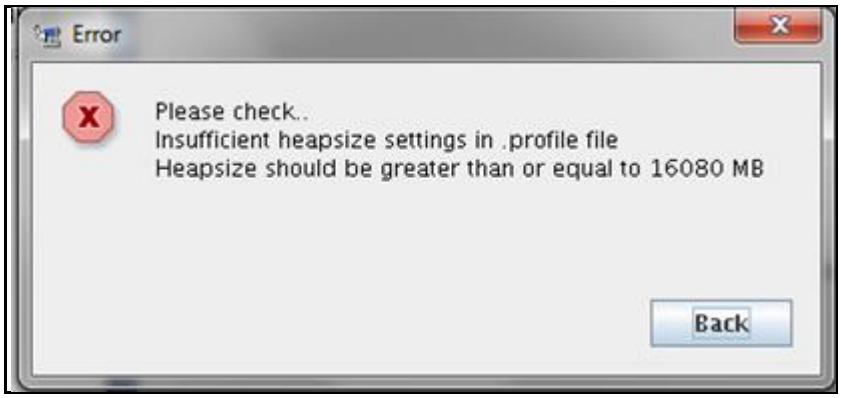
Copying Data Model

52. Model Review Window will be displayed.



Pre-Model Upload Summary

53. Click **Next**, It will check for the Heap Memory Warning.

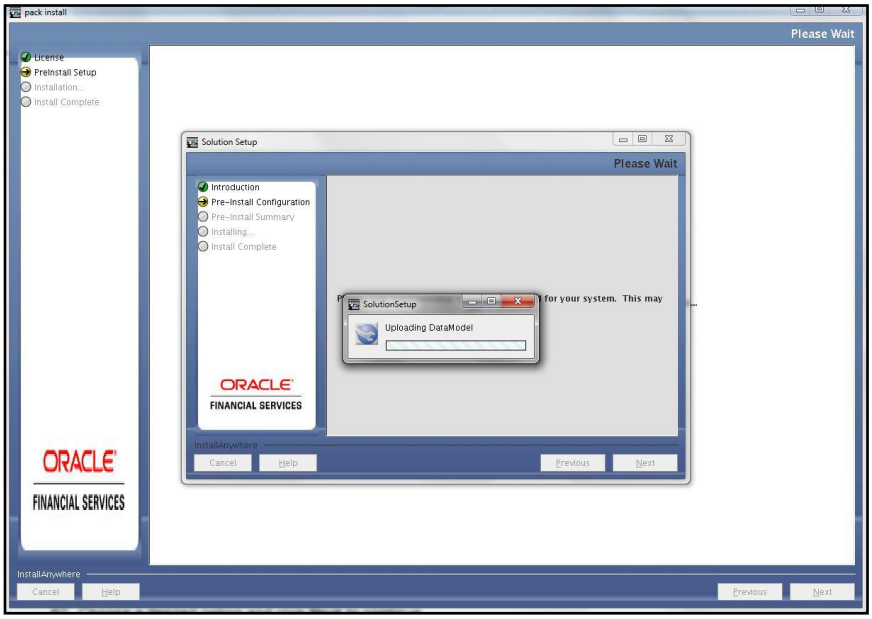


Model Heap Memory Warning

54. Click **Back**, update your .profile entry with required heap memory size.

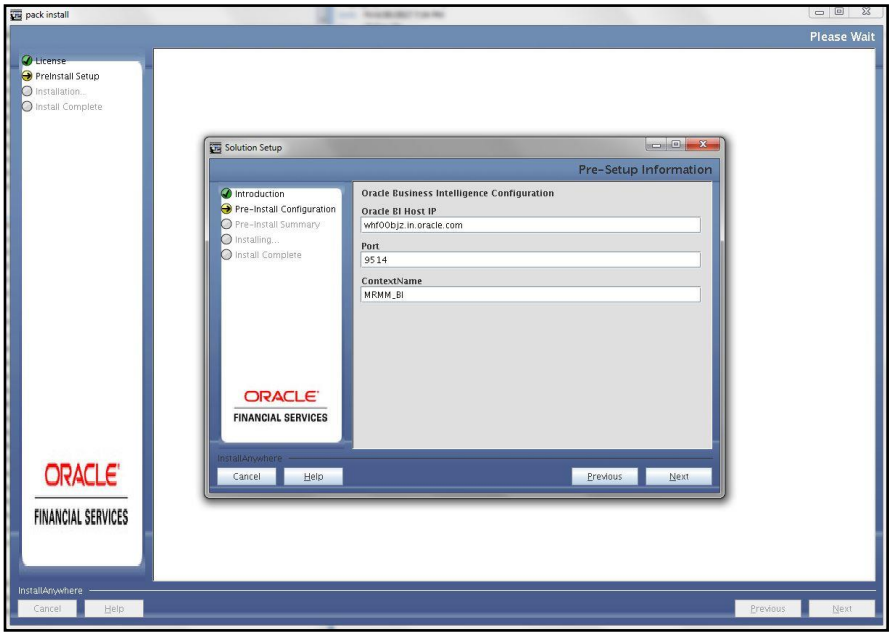
    a. Open a new session in Putty
    b. Shutdown OFSAAI server using `$FIC_HOME/ficapp/common/FICServer/bin/stopofsaai.sh`
    c. Update the X_ARGS_APP entry in .profile following eg.
    `X_ARGS_APP="-Xms2g -Xmx18g -XX:+UseAdaptiveSizePolicy -XX:MaxPermSize=1024M -XX:+UseParallelOldGC -XX:+DisableExplicitGC"`
    d. Run `.profile`
    e. Start Reveleus using `$FIC_HOME/ficapp/common/FICServer/bin/startofsaai.sh`
    f. Proceed for model Upload

55. Click **Next** again. The Data Model Upload starts. This will take approximately 1 hour.



Model Upload

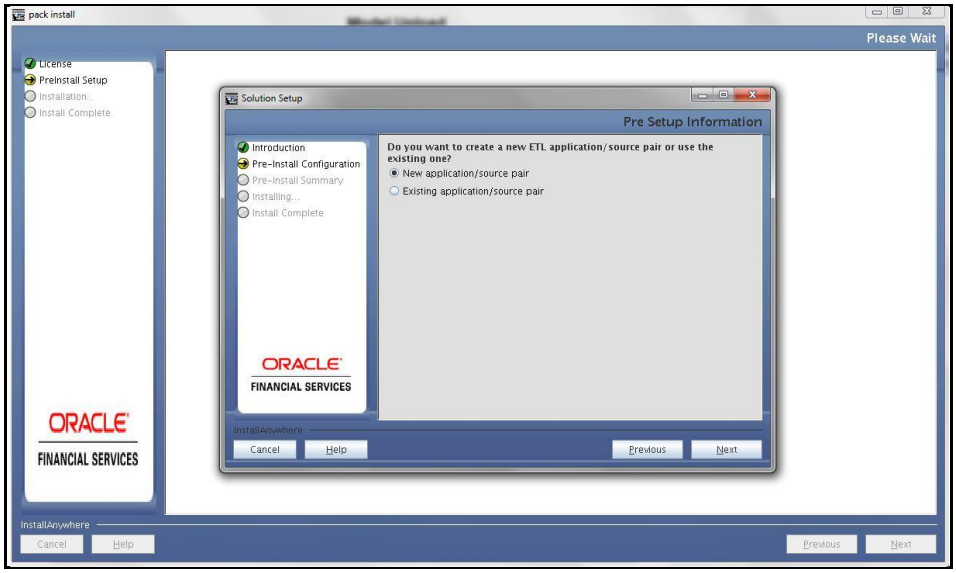
56. After Model Upload completion, Oracle Business Intelligence Configuration screen is displayed.



Oracle Business Intelligence Configuration

57. Click Next, ETL Application/ Source Pair is displayed. The following panel seeks input from the user on whether to create new ETL application/source pair or use an existing one.

58. Choose a desired option and click **Next** to continue.

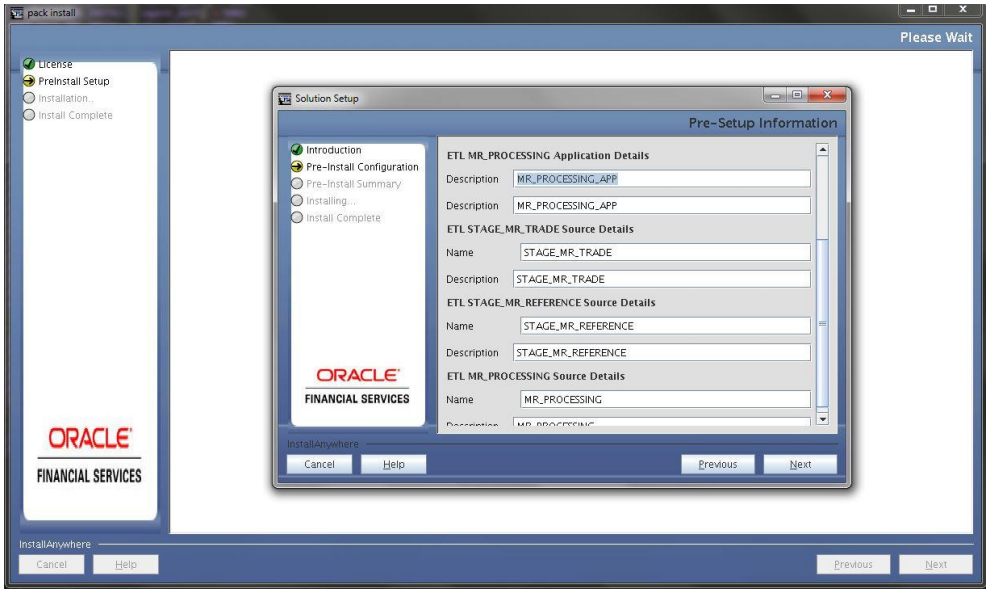


Pre Setup Information

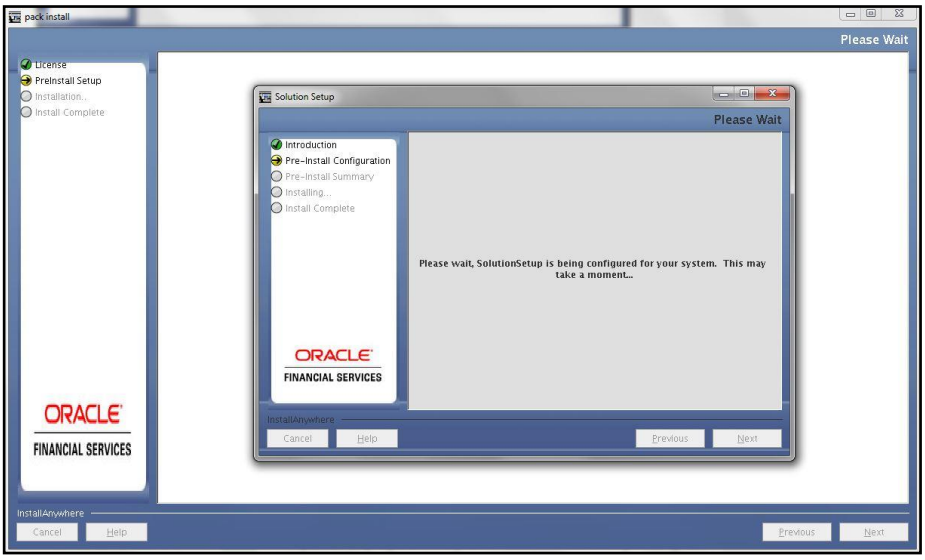
If the option New application/source pair was chosen then the following panel is displayed seeking the application and source name for creation of the same.

Specify all the details required for application and source creation.

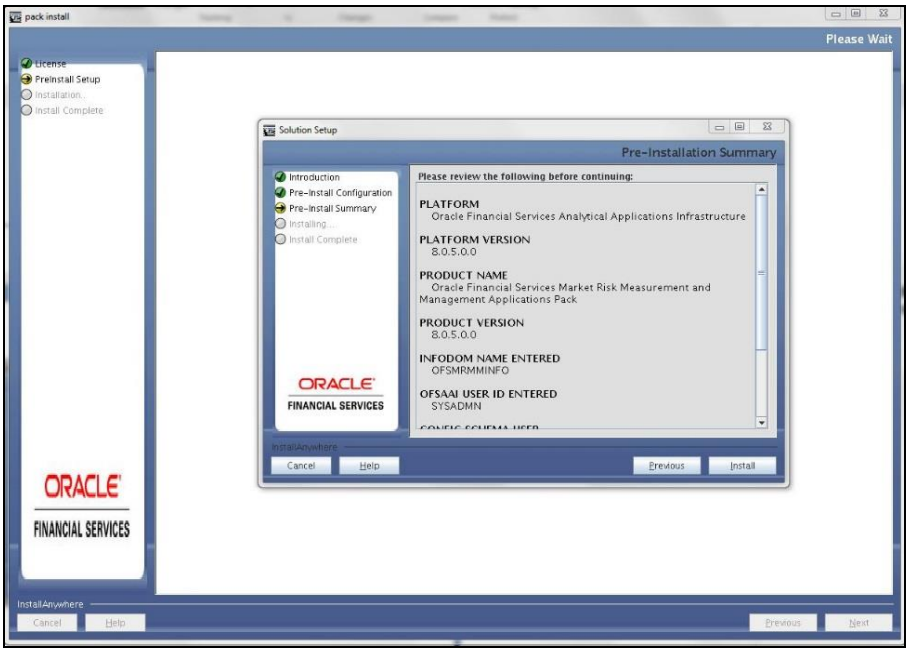
59. Click **Next** to proceed. This will create application and source within OFSAAI. Source model will also be generated. This process will take some time depending on the number of entities / attributes in the atomic schema. This step cannot be rolled back.



60. Click **Next**. This will create the staging source folder.

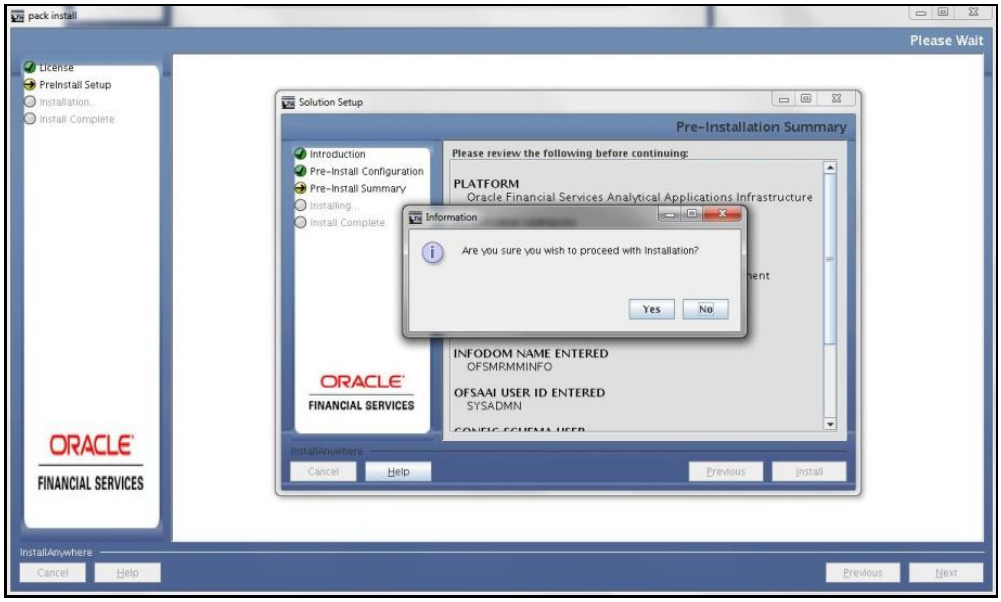


61. After Creation, click **Next**. This panel displays all the pre-installation summary. Verify all details and proceed.

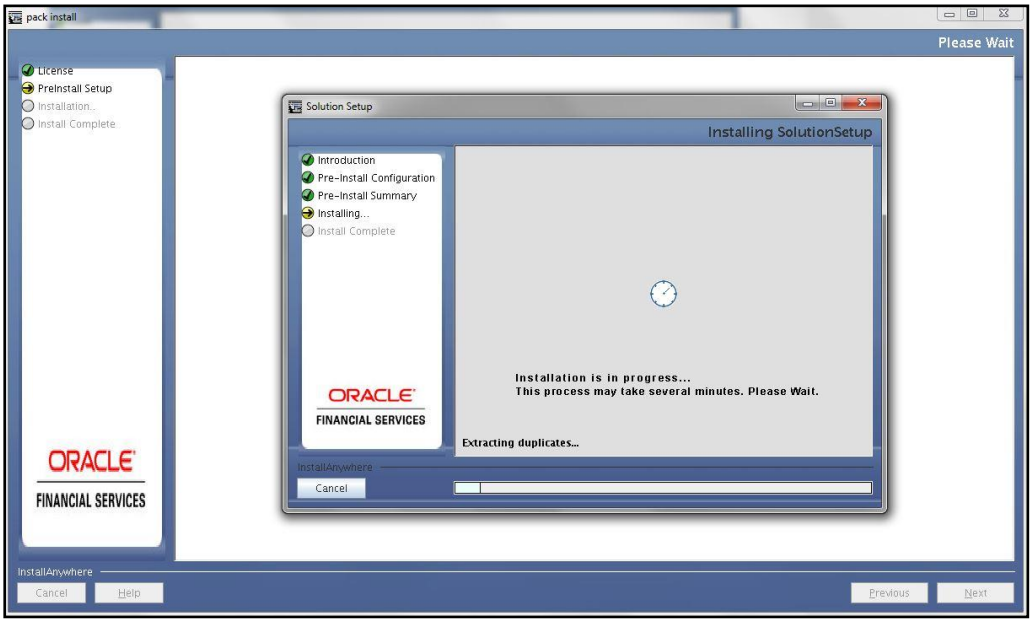


Pre-Install Summary

62. Click **Install** to proceed. A message appears asking for the confirmation.



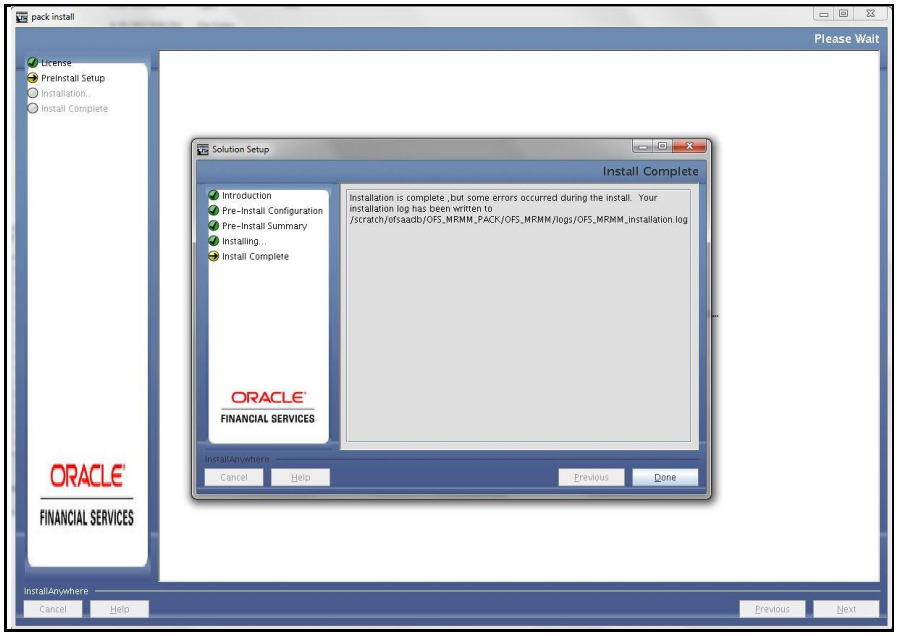
63. Click **Yes**, Installation will begin. The Installation Progress is displayed in Installation Progress window.



Installation in Progress

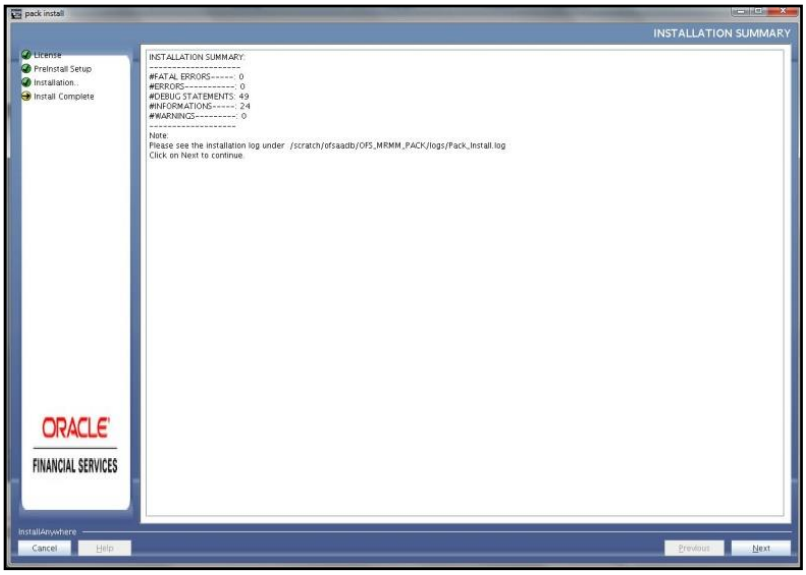
The following screen displays the completion of installation of the Oracle Financial Services Market Risk Measurement and Management Pack Setup.

64. Click **Done** to exit. The Panel will go back to Main Application Pack Installation window.



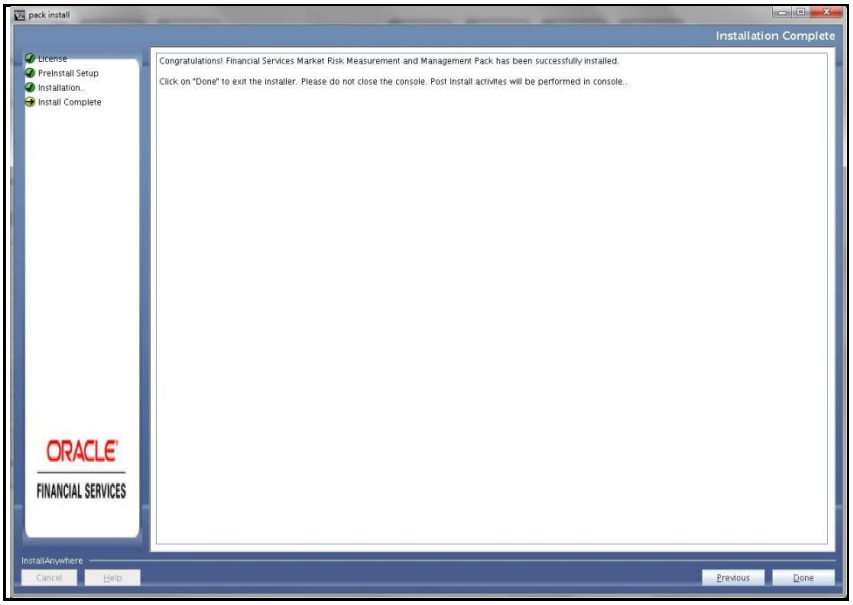
Install Complete

65. Installation Summary window will be displayed. Click **Next**.



Installation Summary

66. Installation Complete Window will be displayed. Click **Done**.



Note: The installation process continues on the console. Do not close the console until the installation process is complete.

Post Install Health checks are displayed. You have successfully installed the OFS MRMM application pack.

```
**************************************************
CTRL characters removal started ...
CTRL characters removal over ...
Windows executable files removal started ...
Windows executable files removal over ...
We are now in /scratch/ofsaadb ...
**************************************************
executing "ant"
Buildfile: /scratch/ofsaadb/OFSAAI806/ficweb/build.xml
Trying to override old definition of datatype resources

existtest:
     [echo] Checking for file /scratch/ofsaadb/OFSAAI806/ficweb/OFSAAI.war existense

createwar:
     [echo] Creating /scratch/ofsaadb/OFSAAI806/ficweb/OFSAAI.war freshly..
      [war] Building war: /scratch/ofsaadb/OFSAAI806/ficweb/OFSAAI.war

BUILD SUCCESSFUL
Total time: 1 minute 45 seconds
OFSAA App Layer Services start-up check started...
Starting startofsaai.sh service...
OFSAA Service - OK
Starting icc service...
ICC service - OK
Shutting down icc service...
Shutting down OFSAA service...
OFSAAI App Layer Services check Status: SUCCESSFUL.
OFSAAI DB Layer Services check started...
Calling agentshutdown.sh to check and kill, if any of the server is running...
OLAP Data Server service is not running.
MESSAGE Server service is not running.
AM service is not running.
ROUTER service is not running.
Starting ROUTER Service
ROUTER service started in background mode.
Starting AM Service
AM service started in background mode.
Starting MESSAGE SERVER Service
MESSAGE SERVER service started in background mode.
Starting OLAP DATA SERVER Service
OLAP DATA SERVER service started in background mode.
OLAP Data Server service is not running.
Stop MESSAGE Server service with Proces ID : 32476
Stop AM service with Proces ID : 32464
Stop ROUTER service with Proces ID : 32456
OFSAAI DB Layer File Services check Status: SUCCESSFUL.
**************************************************
Installation completed...
**************************************************
```

Installation Complete

67. You have successfully installed the OFS MRMM application pack.
68. Install the mandatory consolidated one-off patch **27938294**. Refer to the Readme available with the patch for further instructions on installing the patch.
69. Install the mandatory consolidated one-off patch **28079607**. Refer to the Readme available with the patch for further instructions on installing the patch.
70. Install the mandatory compatibility patch **28033582**. Refer to the Readme available with the patch for further instructions on installing the patch. This patch enables you to upgrade selected packs in your OFSAA instance to 8.0.6.0.0, and makes the existing packs from earlier versions compatible with 8.0.6.0.0. Applying this patch resolves compatibility issues.
71. Install the mandatory consolidated one-off patch **29230516**. Refer to the Readme available with the patch for further instructions on installing the patch.
72. Install the mandatory consolidated one-off patch **29692946**. Refer to the Readme available with the patch for further instructions on installing the patch.
73. Download and install the patch **30661479**, from https://support.oracle.com.
74. DMT migration utility is executed during installation of OFS LRM, 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.

    Note: Execute the DMT Migration Utility to manually migrate the DMT metadata of the Applications which are not upgraded to 8.0.6.0.0.
75. For enabling Right to be Forgotten, see Appendix S.
76. For enabling Data Redaction, see Data Redaction section under Data Security and Data Privacy chapter in OFS Analytical Applications Infrastructure Administration Guide 8.0.6.0.0. Additionally, see Data Redaction section in Appendix R.
77. Execute the file DeleteData.sh present under FIC_HOME directory using the following command:

    ./DeleteData.sh
78. Perform steps mentioned in the Post-installation Configuration section.

4.3.2 SILENT Mode Installation

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

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 below:

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

3. Add entry for Numerix directory path, and license path in .profile. The default values are as follows:

```
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$FIC_HOME/ficdb/bin/Numerix/cas-4.1.0-4305-linux64/lib/linux64
export LD_LIBRARY_PATH

NX_LICENSE_DIR=$FIC_HOME/ficdb/bin/Numerix/license
export NX_LICENSE_DIR

LIBPARENTDIR=$FIC_HOME/ficdb/bin/Numerix/cas-4.1.0-4305-linux64
export LIBPARENTDIR
```

4. Execute the user `.profile`.
5. Navigate to `OFS_MRMM_PACK` folder.
6. Edit the `OFS_MRMM_PACK/conf/OFS_MRMM_PACK.xml` to enable the product licenses.

NOTE: To install MRMM, ensure to enter "Yes" in ENABLE tag for OFS_MRMM/APP_ID and then ensure to enter "Yes" in ENABLE tag for OFS_AAAI/APP_ ID. Refer OFS_MRMM_PACK.XML file for details on configuring this XML file.

7. Edit the `OFS_MRMM_PACK/schema_creator/conf/OFS_MRMM_SCHEMA_IN.xml` file to set the appropriate attribute values. Include INFODOM = "<Infodom Name>" in OFS_MRMM_SCHEMA_IN.xml file

NOTE: Refer Configuring OFS_MRMM_SCHEMA_IN.xml for details on configuring this XML file.

Ensure to make a TNS entry for the new users created. For details, see Add TNS entries in TNSNAMES.ORA file.

8. Edit the `OFS_MRMM_PACK/OFS_AAI/conf/OFSAAI_InstallConfig.xml` file to set the appropriate infrastructure installation attribute values.

NOTE: Refer Configuring Appendix L: OFSAAI_InstallConfig.xml file for details on configuring this XML file.

9. Execute the schema creator utility with `-s` option.

NOTE: This step is mandatory and should be executed before every OFSMRMM Application Pack installation.

Refer Executing the Schema Creator Utility for more details.

10. The installer folder (`OFS_MRMM_PACK/OFS_MRMM/conf`) contains a template file "Silent.template".
11. Create a copy of this file and rename the copy as "Silent.props".
12. Edit the file "Silent.props" and specify the parameters as per the requirements.

SILENT installation is achieved via a properties file [Silent.props] that must be updated with proper values, before attempting to install using the silent mode. The following table lists all the properties that need to be specified

The following table lists all the properties that need to be specified:

Property Name	Description of Property	Permissible values	Comments
LOG_MODE	Specify Log Mode	1 = Debug Mode 0= General Mode	Password will be printed in the log file Password will be printed in the log file. Default is GENERAL
SEGMENT_1_CODE	Specify the MRMM Segment Code	User Input	Enter the Segment name in UPPERCASE.
APPFTP_LOG_PATH	Specify the Infodom Maintenance log path(to be created) for the new Infodom Please ignore if you are doing installation on an existing information domain	User Input	
DBFTP_LOG_PATH	Specify the Infodom Maintenance log path(to be created) for the new Infodom Please ignore if you are doing installation on an existing information domain	User Input	
UPLOAD_MODEL	Specify wheter you want to perform Model Upload	0 = If you have already performed Model Upload and want to skip model upload process 1 = If you want to perform Model Upload	
MODEL_TYPE	Specify whether you want to use the released datamodel or customized datamodel for model upload process	# 0 = If you want to upload the released datamodel # 1 = If you want to upload the customized datamodel	
DATAMODEL DM_DIRECTORY	Specify the path(DM_DIRECTORY) and file(DATAMODEL) name for the cutomized datamodel Mandatory only if you want to upload the customized datamodel i.e you have specified MODEL_TYPE=1	User Input	

Property Name	Description of Property	Permissible values	Comments
ETL_APPSRC_TYPE	Please specify if you want create new ETL App/Src pair or use an existing one.	0 = If you want to create a new ETL app/src pair 1 = If you want to use an existing pair	
ETL_SRC_1_DESC	ETL Market Risk Trade source description	STAGE_MR_TRADE	Please give description for the ETL App/Src pair Mandatory if you want to create new ETL app/src pair i.e you have specified ETL_APPSRC_TYPE=0
ETL_SRC_2_DESC	ETL Market Risk Reference source description	STAGE_MR_REFERENCE	Please give description for the ETL App/Src pair Mandatory if you want to create new ETL app/src pair i.e you have specified ETL_APPSRC_TYPE=0
ETL_SRC_3_DESC	ETL Market Risk Processing source description	MR_PROCESSING	Please give description for the ETL App/Src pair Mandatory if you want to create new ETL app/src pair i.e you have specified ETL_APPSRC_TYPE=0
ETL_SRC_4_DESC	ETL Market Risk Processing source description	STAGING	Please give description for the ETL App/Src pair Mandatory if you want to create new ETL app/src pair i.e you have specified ETL_APPSRC_TYPE=0
ETL_SRC_1_NAME	ETL Market Risk Trade source name	STAGE_MR_TRADE	Specify the ETL Application and Source Name into ETL Area Definitions will be deployed
ETL_SRC_2_NAME	ETL Market Risk Reference source name	STAGE_MR_REFERENCE	Specify the ETL Application and Source Name into ETL Area Definitions will be deployed
ETL_SRC_3_NAME	ETL Market Risk Processing source name	MR_PROCESSING	Specify the ETL Application and Source Name into ETL

Property Name	Description of Property	Permissible values	Comments
			Area Definitions will be deployed
ETL_SRC_4_NAME	ETL Market Risk Processing source name	STAGING	Specify the ETL Application and Source Name into ETL Area Definitions will be deployed

13. Give a path for installation log file in log4j.xml in OFS_MRMM_PACK/OFS_MRMM/conf.
14. On successful execution of the schema creator utility, navigate to OFS_MRMM_PACK/bin and execute the application pack installer with SILENT option, using the below command:

    ```
    ./setup.sh
    ```

15. Enter the OFSAA Processing Tier FTP/SFTP password value, when prompted at the command prompt.

Console Prompts	User Inputs
Please enter OFSAA Processing Tier FTP/SFTP password	Enter the password to access processing tier in the application server. **Note**: In case the prompt reads as below, enter the username/ password for accessing the product Staging/ Metadata Repository FTPSHARE Kerberos username [user] Kerberos password for user:

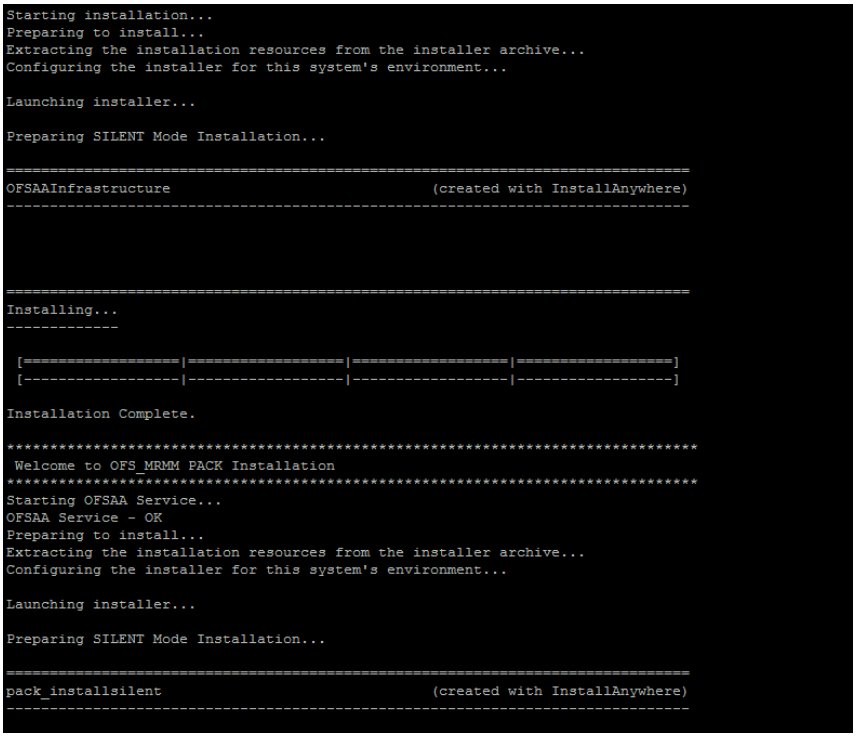
16. Enter **Always** when prompted to add host key fingerprint.
17. The OFS MRMM License Agreement is displayed.

```
/scratch/ofsaaapp/OFS_MRMM_PACK/bin>./setup.sh SILENT
 FIC_HOME : /scratch/ofsaaapp/OFSAAI805
Environment check utility started...
============================================================
Java Validation Started ...
 Java found in : /scratch/jdk1.8.0_31/bin
 JAVA Version found : 1.8.0_31
 JAVA Bit Version found : 64-bit
Java Validation Completed. Status : SUCCESS
============================================================
Environment Variables Validation Started ...
 ORACLE_HOME : /scratch/oracle/app/product/12.1.0/client_1
 TNS_ADMIN : /scratch/ofsaaapp
Environment Variables Validation Completed. Status : SUCCESS
============================================================
OS specific Validation Started ...
 Checking en_US.utf8 locale. Status : SUCCESS
 Unix shell found : /bin/ksh. Status : SUCCESS
 Total file descriptors : 65536. Status : SUCCESS
 Total number of process : 4096. Status : SUCCESS
 OS version : 6. Status : SUCCESS
OS specific Validation Completed. Status : SUCCESS
============================================================
DB specific Validation Started ...
 Oracle Client version : 12.1.0.1.0. Status : SUCCESS
 Successfully connected to schema mr804atm. Status : SUCCESS
 CREATE SESSION has been granted to user. Status : SUCCESS
 CREATE PROCEDURE has been granted to user. Status : SUCCESS
 CREATE VIEW has been granted to user. Status : SUCCESS
 CREATE TRIGGER has been granted to user. Status : SUCCESS
 CREATE MATERIALIZED VIEW has been granted to user. Status : SUCCESS
 CREATE TABLE has been granted to user. Status : SUCCESS
 CREATE SEQUENCE has been granted to user. Status : SUCCESS
 SELECT privilege is granted for NLS_INSTANCE_PARAMETERS view. Current value : SELECT. Status : SUCCESS
 NLS_LENGTH_SEMANTICS : BYTE. Current value : BYTE. Status : SUCCESS
 NLS_CHARACTERSET : AL32UTF8. Current value : AL32UTF8. Status : SUCCESS
 SELECT privilege is granted for V_$parameter view. Current value : SELECT. Status : SUCCESS
 Open cursor value is greater than 1000. Current value : 1000. Status : SUCCESS
 SELECT privilege is granted for USER_TS_QUOTAS view. Current value : SELECT. Status : SUCCESS
 Schema is granted with at least 500 MB table space. Current value : 10239.6011352539063 MB. Status : SUCCESS
 Oracle Server version Current value : 12.1.0.2.0. Status : SUCCESS
DB specific Validation Completed. Status : SUCCESS
============================================================
Environment check utility Status : SUCCESS
============================================================
*****************************************************************************
*  Welcome to Oracle Financial Services Analytical Applications Infrastructure (OFS AAI) Installation  *
*****************************************************************************
 Checking Infrastructure installation status ...
 Infrastructure installation does not exist. Proceeding with Infrastructure installation ...
 Triggering Infrastructure installation ...

 Please enter Infrastructure FTP/SFTP password :
```

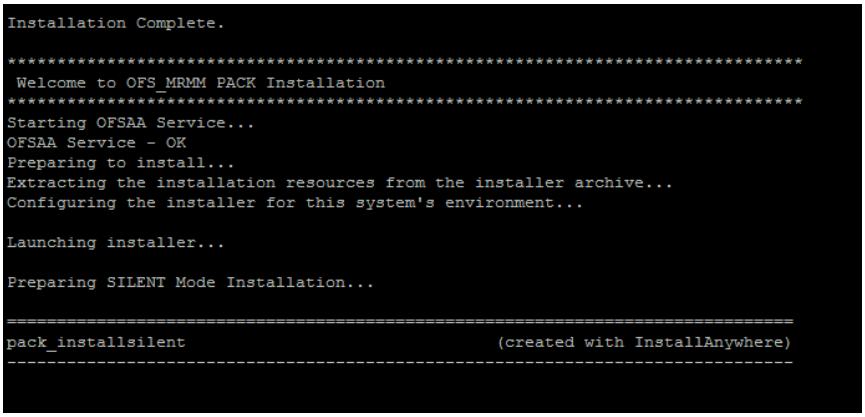
18. To accept the License Agreement, enter Y/y.

```
*****************************************************************************
OFSAA APPLICATION PACK LICENSE AGREEMENT
*****************************************************************************
* Oracle Financial Services Analytical Applications (OFSAA) application packs are groups of OFSAA products packaged together into a single installer. Each application pack contains  OFSAA applications that address specific functional dom
ains.*
* Every application pack also includes the following OFSAA infrastructure application options which are automatically installed by every application pack installer:
 1. Oracle Financial Services Analytical Applications Infrastructure
 2. Oracle Financial Services Enterprise Modeling
 3. Oracle Financial Services In-line Processing Engine
 4. Oracle Financial Services Big Data Processing
* Oracle Financial Services Analytical Applications Infrastructure (OFS AAI)  is the base  infrastructure for all OFSAA applications and is therefore automatically installed and enabled by the application pack installer.*
* The application pack installer always installs Oracle Financial Services Enterprise Modeling,  Oracle Financial Services In-line Processing Engine and  Oracle Financial Services Big Data Processing application options along with the ap
plication pack applications, but  enables them only if any  application that requires their functionality is enabled.*
* Any OFSAA application that is enabled must be licensed for use. Oracle Financial Services Analytical Applications Infrastructure, Oracle Financial Services Enterprise Modeling,  Oracle Financial Services In-line Processing Engine and
Oracle Financial Services Big Data Processing are individually licensable application options.*
* Application products once enabled  cannot be disabled. Application products not enabled on installation, may later be enabled using the  "Manage OFSAA Product License(s)" feature of the platform.*
*****************************************************************************
Are you accepting the terms and conditions mentioned above? [Y/N]:
Y
```



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

19. Once the platform is installed, it proceeds for the MRMM PACK installation.



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

21. The following message is displayed in the console

    Installation completed…

```
Installation Complete.
**************************************************
CTRL characters removal started ...
CTRL characters removal over ...
Windows executable files removal started ...
Windows executable files removal over ...
We are now in /scratch/ofsaaapp ...
**************************************************
executing "ant"
Buildfile: /scratch/ofsaaapp/OFSAAI805/ficweb/build.xml
Trying to override old definition of datatype resources

existtest:
     [echo] Checking for file /scratch/ofsaaapp/OFSAAI805/ficweb/OFSAAI.war existense

createwar:
     [echo] Creating /scratch/ofsaaapp/OFSAAI805/ficweb/OFSAAI.war freshly..
      [war] Building war: /scratch/ofsaaapp/OFSAAI805/ficweb/OFSAAI.war

BUILD SUCCESSFUL
Total time: 46 seconds
OFSAA App Layer Services start-up check started...
Starting startofsaai.sh service...
OFSAA Service - OK
Starting icc service...
ICC service - OK
Shutting down icc service...
Shutting down OFSAA service...
OFSAAI App Layer Services check Status: SUCCESSFUL.
OFSAAI DB Layer Services check started...
Calling agentshutdown.sh to check and kill, if any of the server is running...
OLAP Data Server service is not running.
MESSAGE Server service is not running.
AM service is not running.
ROUTER service is not running.
Starting ROUTER Service
ROUTER service started in background mode.
Starting AM Service
AM service started in background mode.
Starting MESSAGE SERVER Service
MESSAGE SERVER service started in background mode.
Starting OLAP DATA SERVER Service
OLAP DATA SERVER service started in background mode.
OLAP Data Server service is not running.
Stop MESSAGE Server service with Proces ID : 26880
Stop AM service with Proces ID : 26863
Stop ROUTER service with Proces ID : 26849
OFSAAI DB Layer File Services check Status: SUCCESSFUL.
**************************************************
Installation completed...
**************************************************
```

22. On completion of installation, refer the installation log files. For more information, refer Post-installation Configuration section.
23. Verifying the Log File.
24. Install the mandatory consolidated one-off patch **27938294**. Refer to the Readme available with the patch for further instructions on installing the patch.
25. Install the mandatory consolidated one-off patch **28079607**. Refer to the Readme available with the patch for further instructions on installing the patch.
26. Install the mandatory compatibility patch **28033582**. Refer to the Readme available with the patch for further instructions on installing the patch. This patch enables you to upgrade selected packs in your OFSAA instance to 8.0.6.0.0, and makes the existing packs from earlier versions compatible with 8.0.6.0.0. Applying this patch resolves compatibility issues.
27. Install the mandatory consolidated one-off patch **29230516**. Refer to the Readme available with the patch for further instructions on installing the patch.
28. Install the mandatory consolidated one-off patch **29692946**. Refer to the Readme available with the patch for further instructions on installing the patch.
29. Download and install the patch **30661479**, from https://support.oracle.com.
30. DMT migration utility is executed during installation of OFS LRM, 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.

Note: Execute the DMT Migration Utility to manually migrate the DMT metadata of the Applications which are not upgraded to 8.0.6.0.0.

31. For enabling Right to be Forgotten, see Appendix S.
32. For enabling Data Redaction, see Data Redaction section under Data Security and Data Privacy chapter in OFS Analytical Applications Infrastructure Administration Guide 8.0.6.0.0. Additionally, see Data Redaction section in Appendix R.
33. Perform steps mentioned in the Post-installation Configuration section.

4.3.3 Verifying the Log File

Refer the following logs files for more information:

- Refer OFS_MRMM_Installation_Debug.log and OFS_MRMM_Installation.log located at OFS_MRMM_PACK/OFS_MRMM/logs/ folder for OFS MRMM Application Pack installation log file.
- Refer the log file(s) located at OFS_MRMM_PACK/OFS_AAI/logs/ folder for Infrastructure installation log.
- Refer the OFSAAInfrastucture_Install.log located at $FIC_HOME folder for Infrastructure installation log.

5 Upgrading the OFS MRMM Application Pack

NOTE: Release 8.0.6.0.0 of OFS MRMM 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 8.0.6.0.0 version or choose to upgrade only selective application packs to v8.0.6.0.0. In the case of the latter, you must also apply the corresponding compatibility patches so that the remaining application-packs can remain at their pre-8.0.6.0.0 versions.

5.1 Upgrade Installation

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

1. Log in to https://support.oracle.com/ and search for **28548227** under the *Patches & Updates* tab.
2. Download the OFS MRMM Application Pack v8.0.6.0.0 archive file and copy it to your OFSAA server in **Binary** mode.
3. Log in to the OFSAA Server with user credentials that was used to install OFSAA.
4. Shut down all the OFSAAI Services. For more information, refer to the *Start/Stop Infrastructure Services* section in Appendix D
5. Execute the following command:

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

6. If you have Unzip utility, skip to the next step. Download the Unzip utility (OS specific) and copy it in **Binary** mode to the directory that is included in your PATH variable, typically **$HOME** path or directory in which you have copied the 8.0.6.0.0 installer.
   - 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.

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

   ```
   chmod 751 OFS_MRMM_80600_<OperatingSystem>.zip.
   ```

8. Extract the contents of the Oracle Financial Services Market Risk Measurement and Management Application Pack 8.0.6.0.0 in the Download Directory installer archive file using the command:

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

NOTE: The above "**-**a" option is mandatory to unzip the archive file. For example: `unzip_linux -a OFS_AAAI_80600_<OperatingSystem>.zip`

9. Give EXECUTE permission to the archive file. Navigate to the path where the directory *OFS_MRMM_PACK* exists and execute the command:

   ```
   chmod -R 755 OFS_MRMM_PACK
   ```

10. Navigate to the path `/OFS_MRMM_PACK/conf` and modify the OFS_MRMM_PACK.xml by setting the parameter ENABLE as YES for the APP_IDs - OFS_AAI and OFS_MRMM.
11. Navigate to `OFS_MRMM_PACK/OFS_MRMM/conf`, and rename the file Silent.template file to Silent.props.
12. Configure the Silent.props file as mentioned below.
    i. Ensure to set 0 for UPLOAD_MODEL parameter.
    ii. Comment the following parameters:
        - ETL_SRC_1_DESC
        - ETL_SRC_2_DESC
        - ETL_SRC_3_DESC
        - ETL_SRC_4_DESC
        - ETL_SRC_1_NAME
        - ETL_SRC_2_NAME
        - ETL_SRC_3_NAME
        - ETL_SRC_4_NAME
    iii. Uncomment the following parameters in the upgrade section of the silent.props file:
        - ETL_NEW_SRCS_REQUIRED
        - NO_OF_NEW_SRCS
        - ETL_SRC_4_NAME
        - ETL_SRC_4_DESC

The following table lists properties in the Silent.props file that need to be specified:

Property Name	Description of Property	Permissible values	Comments
LOG_MODE	Specify Log Mode	1 = Debug Mode 0= General Mode	Password will be printed in the log file Password will be printed in the log file. Default is GENERAL
UPLOAD_MODEL	Do not perform Model Upload	0 (Parameter value should be 0 for MRMM 806 upgrade installation)	
ETL_APPSRC_TYPE	Specify if you want create new ETL App/Src pair or use an existing one.	0 = If you want to create a new ETL app/src pair 1 = If you want to use an existing pair	

Property Name	Description of Property	Permissible values	Comments
ETL_NEW_SRCS_REQUIRED	Specify the new ETL source required	Y	Specify the ETL and Source Name into ETL Area Definitions will be deployed. This is a Mandatory Field, and the value should be Y.
NO_OF_NEW_SRCS	Specify the number of new ETL source	1	Specify the number of new ETL source. The value should be 1.
ETL_SRC_4_DESC	ETL Market Risk Staging source description	STAGING	Please give description for the ETL App/Src pair Mandatory if you want to create new ETL app/src pair i.e you have specified ETL_APPSRC_TYPE=0
ETL_SRC_4_NAME	ETL Market Risk Staging source name	STAGING	Specify the ETL Application and Source Name into ETL Area Definitions will be deployed

13. Navigate to the path `OFS_MRMM_PACK/bin`, and execute setup.sh file using the following command:

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

14. Verify if the release is applied successfully by checking the log file generated in the installation directory in the installation folder `OFS_MRMM_PACK/OFS_MRMM/logs`. You can ignore ORA-00001, ORA-00955, ORA-02260, ORA-01430 errors in the log file. In case of any other errors, contact Oracle Support. You can ignore ORA-01031 and ORA-00955 error in the log file available in the path `OFS_MRMM_PACK/OFS_AAAI_PACK/logs`.

15. Verify if the Data Model is uploaded successfully by checking the log file generated as per the directory/path mentioned in Silent.props for the

16. Verify the `Update.log` file located at `$FIC_HOME/utility/UpdateConstraints/logs` directory which is created by Update Constraint utility.

    Execution status information of the utility is available against each Information domain. For success, "*Update successful*" message is displayed. If it is successful, verify the following references for new constraint names:

    - ftpshare/<INFODOM>/erwin/fipxml/<INFODOM>_DATABASE.xml
    - Constraint scripts under ftpshare/<INFODOM>/erwin/scripts/table

- Constraint scripts under ftpshare/<INFODOM>/scripts
- Object registration tables for constraints, REV_TAB_CONSTRAINTS, REV_TAB_REF_CONSTRAINTS, REV_TAB_CONSTRAINT_COLUMNS.
- Oracle Data Dictionary in the respective Atomic Schemas for each Infodom.

If you encounter errors in the `Update.log` file, identify and troubleshoot the failed Infodoms. Once you have completed the troubleshooting, execute the standalone utility for the failed Infodoms. For more information on executing the update constraints utility, see the section Update Constraints Utility.

17. Secure your OFSAA Infrastructure. For more information, refer to the Security Guide in the OHC Documentation Library.
18. After successful installation, follow these steps:
    - Clear the application cache. Navigate to the following path depending on the configured web application server and delete the files.
        - **Tomcat**:
          <Tomcat installation directory>/work/Catalina/localhost/<Application name>/org/apache/jsp
        - **WebLogic**:
          <WebLogic installation location>/domains/<Domain name>/servers/<Server name>/tmp/_WL_user/<Application name>/<auto generated directory>/jsp_servlet

          In case of WebLogic version 12.2.x.x, delete the folder named ".WL_internal" present in the path <WebLogic installation location>/user_projects/domains/< Domain name >/applications/<context_name>.ear/META-INF/", if it exists.
        - **WebSphere**:
          <WebSphere installation directory>/AppServer/profiles/<Profile name>/temp/<Node name>/server1/<Application name>/<.war file name>
    - Deploy RPD and webcat file(s)
        - Take a backup of deployed MRMM_BI.rpd and MRMM_BI.catalog files from the OBIEE environment.
        - Navigate to the folder $FIC_HOME/MRMM_BI/RPD/ which contains MRMM_BI.rpd and $FIC_HOME/MRMM_BI/catalog/ which contains MRMM_BI.catalog. Deploy both the files into OBIEE deployment area.
            - Modify the connection pool and set the properties.
            - Any customizations performed on the older rpd and webcatalog files needs to be manually carried over to the newer ones post deployment.
            - Clear OBIEE cache, if enabled.

              For more information on deploying RPD and webcat files, refer *Deploying the application*.

19. Add umask 0027 in the `.profile` of the UNIX account which manages the WEB server to ensure restricted access permissions.
20. Install the mandatory consolidated one-off patch **27938294**. Refer to the Readme available with the patch for further instructions on installing the patch.
21. Install the mandatory consolidated one-off patch **28079607**. Refer to the Readme available with the patch for further instructions on installing the patch.
22. Install the mandatory compatibility patch **28033582**. Refer to the Readme available with the patch for further instructions on installing the patch. This patch enables you to upgrade selected packs in your OFSAA instance to 8.0.6.0.0, and makes the existing packs from earlier versions compatible with 8.0.6.0.0. Applying this patch resolves compatibility issues.
23. Install the mandatory consolidated one-off patch **29230516**. Refer to the Readme available with the patch for further instructions on installing the patch.
24. Install the mandatory consolidated one-off patch **29692946**. Refer to the Readme available with the patch for further instructions on installing the patch.
25. Generate the application EAR/WAR file and redeploy the application onto your configured web application server. For more information on generating and deploying EAR/WAR file, refer to the *Post Installation Configuration* section.
26. Copy the out of the box data model xml file, from the installer to the ERWIN folder, in ftpshare as per the below command.

    ```
    cp $HOME/<UPGRADE INSTALLER FOLDER>/OFS_MRMM_PACK/OFS_MRMM/DataModel/OFS_MRMM_Datamodel.xml $HOME/ftpshare/<INFODOM>/erwin/erwinXML/OFS_MRMM_Datamodel_806.xml
    ```

27. Perform the model upload from **Data Model Maintenance** > **Business Model Upload.** Specify the fields as below:
    - **Upload Options**: Erwin
    - **Upload Mode**: Sliced.
    - In the **Select Erwin XML File** drop-down box, choose the 806 Data model xml file
    - In the **Generate DDL execution logs**, select **Yes**

    See section Upload Business model, in the *OFS Analytical Applications Infrastructure User Guide*, on OHC Documentation Library for details.
28. Navigate to the path `$FIC_HOME/ficweb`, and execute the command

    ```
    ./RunMRMMPostScripts.sh <atomic schema user name> <atomic schema password> <DBservice name>
    ```

29. Execute the below query in atomic schema to check the above script execution status.

    ```
    select * from MRMM_DM_UPGRADE_TABLE_MAP WHERE V_PROCESS_FLAG ='F'
    ```

After execution, if this table displays any data, it indicates that data migration from backup 805 tables to 806 tables, was not successful. Modify the data as per 806 and manually update into the schema.

30. DMT migration utility is executed during installation of OFS MRMM, 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.

    Note: Execute the DMT Migration Utility to manually migrate the DMT metadata of the Applications which are not upgraded to 8.0.6.0.0.

31. For enabling Right to be Forgotten, see Appendix S.

32. For enabling Data Redaction, see Data Redaction section under Data Security and Data Privacy chapter in OFS Analytical Applications Infrastructure Administration Guide 8.0.6.0.0. Additionally, see Data Redaction section in Appendix R.

33. Remove the aai-workflow.jar from the below paths:

    - `$FIC_HOME/ficdb/lib/aai-workflow.jar`
    - `$FIC_HOME/ficapp/common/FICServer/lib/aai-workflow.jar`

34. After the successful installation, restart all the OFSAAI services. For more information, see *Start/Stop Infrastructure Services* section in Appendix D.

35. Verify the Log Files OFS_MRMM_installation.log and OFS_ MRMM _Installation_debug.log located at OFS_ MRMM _PACK/OFS_ MRMM /logs/ folder. You can also verify the OFSAAI log files from OFS_ MRMM _PACK/OFS_AAAI_PACK/logs folder.

36. Perform the following BI Analytics - OBIEE server configuration steps:

    a. Navigate to the path *<Oracle BI Instance Home>/config/OracleBIPresentationServicesComponent/coreapplication_obips1>.*

    b. Edit the file "`instanceconfig.xml`".

    c. Insert the below code within xml tag <`Views`> <`/Views`>.

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

<Pivot>
```

```
<MaxCells>1920000</MaxCells>
<MaxPagesToRollOutInDelivery>10000</MaxPagesToRollOutInDelivery>
<MaxVisibleColumns>50000</MaxVisibleColumns>
<MaxVisiblePages>100000</MaxVisiblePages>
<MaxVisibleRows>10000000</MaxVisibleRows>
<MaxVisibleSections>50000</MaxVisibleSections>
<DefaultRowsDisplayed>100000</DefaultRowsDisplayed>
</Pivot>
```

d. Save the file, and restart opmn services.

NOTE: Take a backup of the file "`instanceconfig.xml`" before editing any changes.

6 Post Installation Configuration

On successful installation of the Oracle Financial Services MRMM Application Pack, follow the post installation steps mentioned below.

NOTE: Install the mandatory OFSAAI patches **30273976** and **30667112**. Refer to the Readme available with the patch for further instructions on installing the patch.

This chapter includes the following sections:

- Configuring Resource Reference
- Start OFSAA Infrastructure Services
- Add TNS entries in TNSNAMES.ORA file
- Updating OBIEE URL
- Data Source Configuration
- Transfer the Ownership of batches to the Required User
- Configurations for Java 8
- Create and Deploy the Application Pack Web Archive
- Access the OFSAA Application
- Perform Post Deployment Configurations
- Installing Numerix
- Starting Numerix Servers

NOTE: Ensure to clear the application cache prior to the deployment of Application Pack Web Archive. This is applicable to all Web Servers (WebSphere, WebLogic, Tomcat). For more information, refer Clearing Application Cache section.

6.1 Configure Resource Reference

Configure the resource reference in the Web Application Server configured for OFSAA Applications. Refer Appendix B for details on configuring the resource reference in WebSphere, WebLogic, and Tomcat Application Servers.

6.2 Start OFSAA Infrastructure Services

Start the OFSAA Infrastructure Services prior to deployment or accessing the OFSAA Applications. Refer Appendix D for details on Start/ Stop OFSAA Services.

6.3 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 the dropdown list for **Name** to get the list of TNS entry names.
5. Alternatively, you can connect to the CONFIG schema and execute the below query:

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

6.4 Updating OBIEE URL

To access the respective Business Intelligence Analytics Application, you need to update the OBIEE url in the table 'AAI_MENU_B', once the OBIEE environment is up and running.

```
UPDATE AAI_MENU_B

SET V_MENU_URL = '&obieeURL'

WHERE V_MENU_ID IN ('OFS_MRMM_BI')

/

COMMIT

/
```

6.5 Data Source Configuration

- Create a connection pool in the Information Domain. For more information refer to the OFSAAI Installation manual.
- JNDI name of the connection pool must be <res-ref-name> as mentioned in the web.xml. For example : "jdbc/OFSMRMMINFO"
- Create and deploy the web components into webserver. For more information on deploying the web components refer to the OFSAAI Installation manual.
- The following tag must be added manually in web.xml if not already present in web.xml.

```
<resource-ref>

<!-- description>DB Connection OFSMRMMINFO</description -->

<res-ref-name>jdbc/OFSMRMMINFO</res-ref-name>

<res-type>javax.sql.DataSource</res-type>

<res-auth>Container</res-auth>

</resource-ref>
```

6.6 Transfer the Ownership of batches to the Required User

To transfer the ownership of batches to the required user, follow these steps:

1. Login to config user.
2. Execute the Following anonymous pl/sql block to execute procedure "AAI_OBJECT_ ADMIN.TRANSFER_BATCH_OWNERSHIP".

```
begin
AAI_OBJECT_ADMIN.TRANSFER_BATCH_OWNERSHIP
('fromUser','toUser','infodom'); end;
OR
begin AAI_OBJECT_ADMIN.TRANSFER_BATCH_OWNERSHIP
('fromuser','touser'); end;
fromUser: - indicates the user who currently owns the batch,
toUser:-indicated the user to which the ownership has to be transferred.
Infodom:- optional parameter , if specified the ownership of batches
pertaining to that Infodom will be changed.
```

NOTE: Henceforth batches are available in the Batch Maintenance window in the MRMM application and the same can be edited.

6.7 Configurations for Java 8

Refer to the following instructions to extract and apply the patch.

1. Copy the downloaded patch file (21160684) to your OFSAA server in Binary mode.
   For more information on downloading the patch files, refer Prerequisite Information section >> Category - Others >> Sub-Category - OFSAA.
2. Follow the instructions given in the Readme to apply the patch.
3. If the Oracle Database version is 12c, 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/`

NOTE: If ojdbc6.jar is already present in any of the aforementioned folders, you need to remove it.

4. If the Oracle Database version is 11g, copy `ojdbc6.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/

6.8 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 Appendix C.

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

6.9 Access the OFSAA Application

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

Refer Appendix E for details on accessing the OFSAA Application on successful deployment of the application web archive.

6.10 Perform Post Deployment Configurations

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

6.11 Installing Numerix

NOTE: Download and install the patch **30661479**, from https://support.oracle.com.

6.11.1 Configuring Numerix directory

The default Numerix directory is $FIC_HOME/ficdb/bin/Numerix/cas-4.1.0-4305-linux64

NOTE: Ensure to grant 777 permission to the Numerix directory.

1. Update the following files in <Numerix_Directory>/conf/

- cas-server.properties
  - Modify the database settings "UseBackingStore=true" to "UseBackingStore=false"
- cas-common.properties
  - Check the port number availability for "*brokeruri*" port. By default, *brokeruri* port is 14900

- To point the numerix to a different broker already running, update the IP and port of "*brokerlocation*" value as brokerlocation=ssl://<broker_machine_ip>:<broker_machine_port>

NOTE: If you move the Numerix files to a new location, update the Numerix path in the .profile file (as mentioned in Step 3 of GUI Mode installation or Silent Mode Installation), and execute the .profile

6.11.2 Configuring CHLS

1. Copy the CHLS directory to the Unix machine which will be hosting CHLS. Default CHLS directory path is `$FIC_HOME/ficdb/bin/Numerix/CHLS/Numerix-CHLS-2.1.0`
2. Update the configurations
   - Update the CATALINA_HOME variable in file `<CHLS_Directory> /bin/catalina.sh to <CHLS_Directory>/Numerix-CHLS-2.1.0`
   - Check the port number availability for Connector port value defined in `<CHLS_Directory>/conf/server.xml`. Default connector port value is 8080. If the port is already being used, update with a free port number.
3. Start CHLS by executing the file startup.sh located at `<CHLS_Directory>/bin/`

The CHLS URL will be as below:

http://<CHLS_IP>:<Port>/nxchls/chlslogin.jsp

eg: `http://localhost:8080/nxchls/chlslogin.jsp`

NOTE:

< *CHLS_IP* > : IP of the Unix machine hosting CHLS

<*Port*> : Connector port mentioned in `<CHLS_Directory>/conf/server.xml`

There are two user logins available:

- sysadmin/sysadmin1

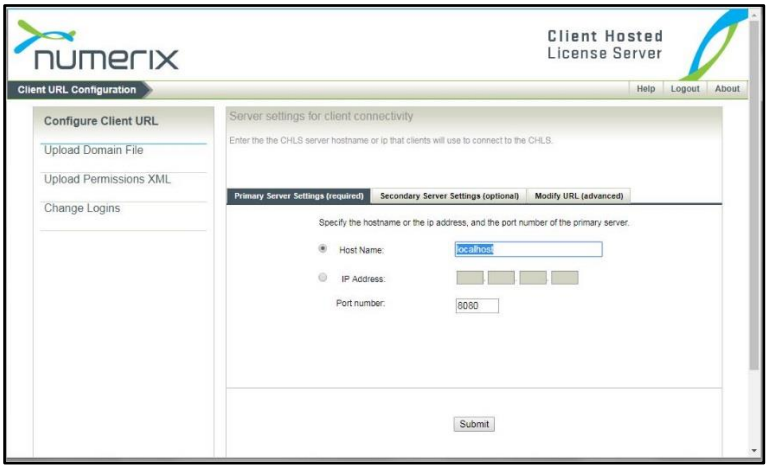
- admin/admin1

4. Login to CHLS URL as sysadmin user

Login Screen

5. Select **Configure Client URL** tab. Update the hostname from 'localhost' to name of the machine hosting CHLS. Alternatively, you can also provide <CHLS_IP>. Also, update the port number to the value provided in server.xml

6. Click **Submit**.



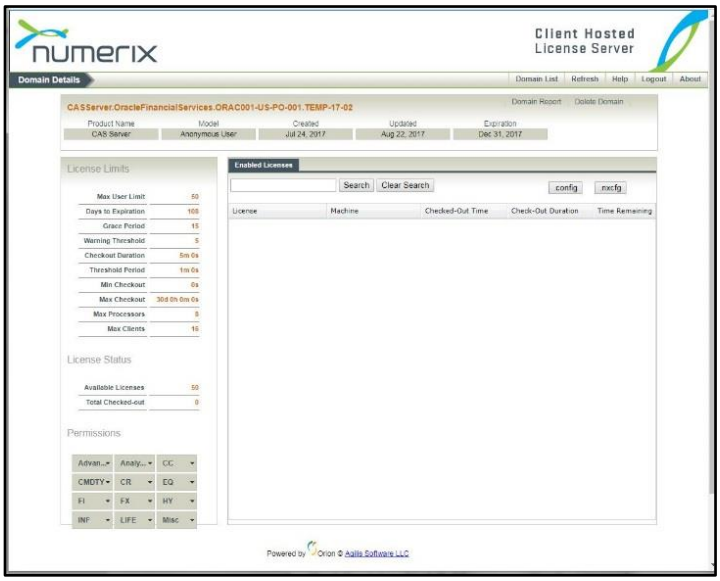
Client URL Configuration

6.11.3 Generating Licenses Using CHLS

1. Login to CHLS URL as admin user. The domain list will be displayed.

Domain List

2. Select the domain from the Domain list. The generated license details and status will be displayed



Domain Details

3. To generate a new license, click the '.**nxcfg**' button. License will be generated and downloaded.

NOTE: Rename the saved license file name to remove blank spaces, if any.

6.11.4 Activating Numerix Trial Licenses

To activate the trial licenses, follow these steps:

1. Copy the license generated using CHLS to the Unix machine where Numerix_Directory is present. By default, '`$FIC_HOME/ficdb/bin/Numerix/license`' folder is provided for copying the generated license

2. Navigate to the Numerix lib directory path in putty: *<Numerix_directory>/lib/linux64*
3. Install the license by executing the following command

   ./nxlm --install <license_path>/<license_file>
4. Check the status of installed license executing the command :

   ./nxlm --list all

   The license status will be shown as inactive.
5. Start the Numerix processes (Broker, Server, Compute). The license status will become active. The same is reflected in CHLS UI also.
6. To uninstall license, execute the command:

   ./nxlm --install <license_name>
   - *<license_name>* is the name of the license displayed when '*./nxlm --list all*' command is executed.

NOTE:

The machine in which CHLS is hosted and the machine where Numerix is installed should be in the same network Before the CHLS License Key expires, contact My Oracle Support for the new CHLS License patch. Details about the license validity period is available in the **Domain Details** section of the CHLS Hosted URL.

If the CHLS is to be re-located to a new location, all the licenses should be uninstalled before the CHLS directory is moved.

6.11.5 Setting up Multiple Compute Nodes

Follow the below steps to set up multiple compute nodes:

1. Copy the Numerix CAS folder from the primary machine to the secondary machine. The CAS folder is located in the below path:

   `$FIC_HOME/ficdb/bin/Numerix`.
2. Configure the CAS licenses in the secondary machines. See section Configuring CHLS for details.
3. Navigate to the location:`$FIC_HOME/ficdb/bin/Numerix/cas-4.1.0-4305-linux64/conf` and open the file "cas-common.properties". Change the broker location setting for each secondary machines to the same broker location that is running the Broker process in the primary machine (including the port number)

   For example, if the primary machine named "Comp1" is in the "domain" listening to port 14900, then modify the broker location in each of the secondary machines as in the primary machine such as: `brokerlocation=ssl://Comp1.domain:14900`

4. Navigate to the location:`$FIC_HOME/ficdb/bin/Numerix/cas-4.1.0-4305-linux64/bin` and Run the `runCompute.sh` on each secondary machine that is designated as a compute node.

NOTE: Ensure that all the Numerix servers are running in the primary machine before configuring multiple compute nodes on secondary machines.

6.12 Starting Numerix Servers

On the machine in which Numerix is installed, navigate to `<Numerix_Directory>/bin` and start the services in the following order:

1. Start Broker by executing the following command

   ```
   ./RunBroker.sh &
   ```

2. Once Broker is started successfully, start Server by executing the following command

   ```
   ./RunServer.sh &
   ```

3. Once Server is started successfully, start Compute node by executing the following command

   ```
   ./RunCompute.sh &
   ```

7 Appendix A: Configuring Web Server

This appendix includes the following sections:

- Configuring Web Server
- Configuring Web Application Server

7.1 Configuring Web Server

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

Refer the product specific Installation Guide/ Configuration Guide to install/ 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 Documentation Library for OFSAAI 8.0.0.0.0 for additional information on securely configuring your Web Server.

Ensure to enable sticky session/ affinity session configuration on the web server. Refer 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).

7.2 Configuring Web Application Server

This step assumes an installation of a web application server exists as per the prerequisites. To configure the Web Application Server for OFSAA Deployment refer the sections below.

This section includes the following topics:

- Configuring WebSphere Application Server for Application Deployment
- Configuring WebLogic for Application Deployment
- Configuring Apache Tomcat Server for Application Deployment

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).

Refer OFSAA Secure Configuration Guide/ Security Guide on OHC Documentation Library for additional information on securely configuring your Web Server.

7.2.1 Configuring WebSphere Application Server for Application Deployment

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

This section includes the following topics:

- Creation of New Profile in WebSphere
- Managing IBM WebSphere SDK Java Technology Edition Versions
- Manage Applications in WebSphere
- Delete WebSphere Profiles
- Configuring WebSphere Shared Library to Support Jersey 2x and Jackson 2.9x Libraries
- WebSphere HTTPS Configuration
- WebSphere Memory Settings
- Configuring WebSphere for REST Services Authorization
- Configuring Application Security in WebSphere

7.2.1.1 Creation of New Profile in WebSphere

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

The command to create a profile **without admin** security through command line is as follows:

```
"manageprofiles.sh -create -profileName <profile> -profilePath
<profile_path> -templatePath <template_path> -nodeName <node_name> -
cellName <cell_name> -hostName <host_name>"
```

Example:

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

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

```
"manageprofiles.sh -create -profileName <profile> -profilePath <profile_path>
-templatePath <template_path> -nodeName <node_name> -cellName <cell_name> -
hostName <host_name> -enableAdminSecurity true -adminUserName <Admin User
Name> -adminPassword < Admin User Password> -samplespassword <sample User
Password>"
```

Example:

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

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

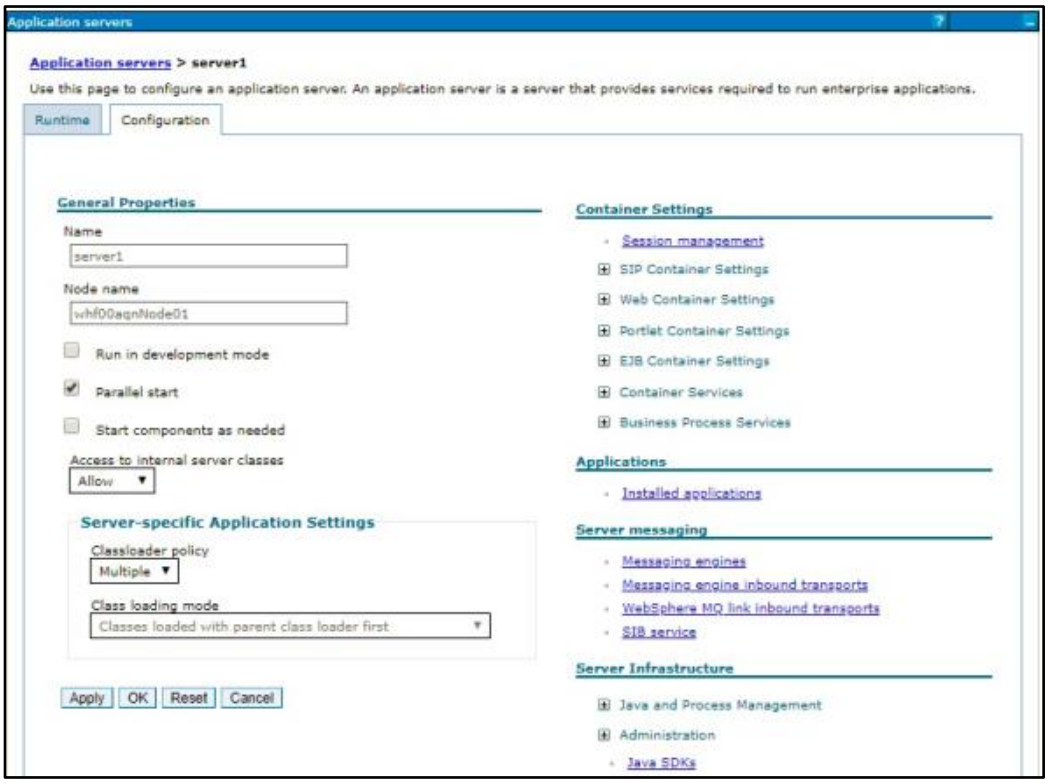
7.2.1.2 Managing IBM WebSphere SDK Java Technology Edition Versions

By default, WebSphere Application Server V8.5.5.X uses the Java 6.0 SDK. You must upgrade to Java 7.X SDK or JAVA 8.X SDK.

Prerequisites: Install the IBM WebSphere SDK Java Technology Edition Versions 1.7.X_64 or 1.8.X_64.

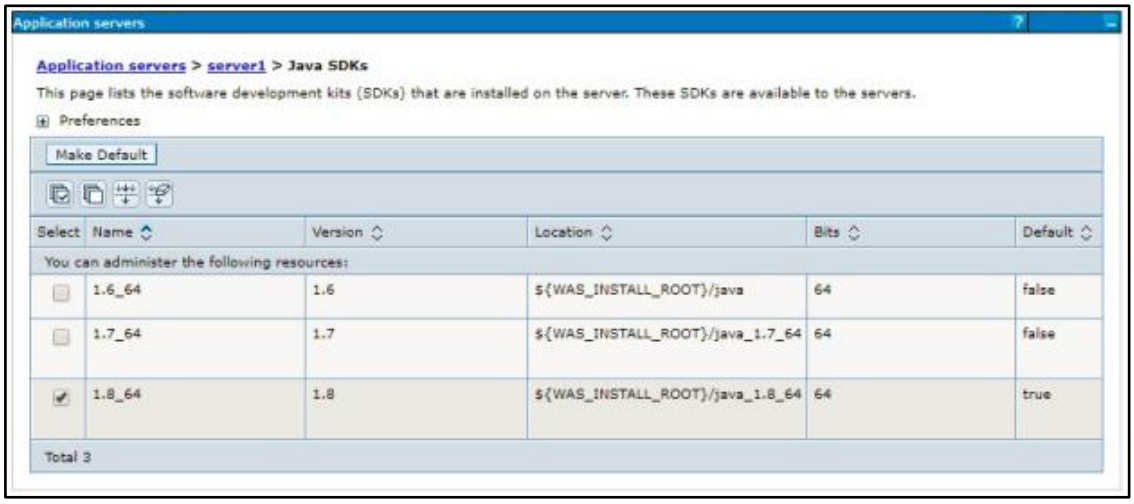
Perform the following steps to upgrade to Java 7.X SDK or JAVA 8.X SDK:

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



Application Server - Java SDKs

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



Application Server - List of Java SDKs

7. Select either 1.7_64 or 1.8_64 based on the JVM version with which you plan to install OFSAA or have installed with.
8. Click Make Default button and save to master repository.
9. Restart the WebSphere Application Server to apply the changes to the IBM application profile.

7.2.1.3 Manage Applications in WebSphere

To manage the installed applications in WebSphere, do the following:

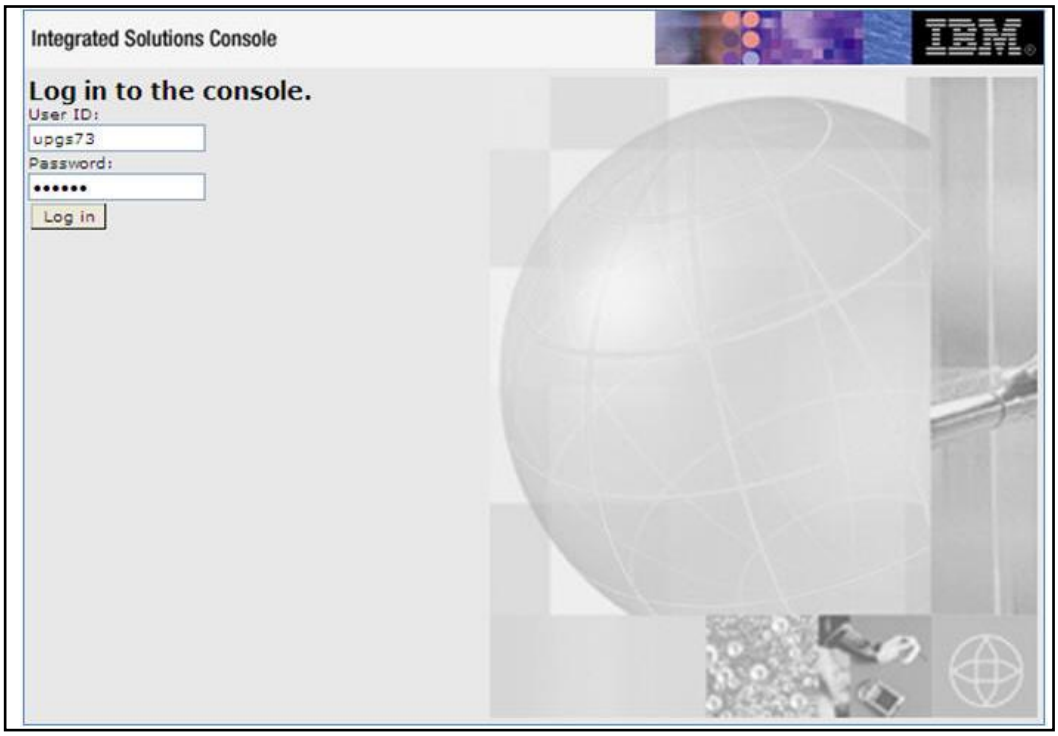
10. Open the administrator console using the following URL:

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

    Example: `http://10.111.222.333:9003/ibm/console` (https if SSL is enabled)

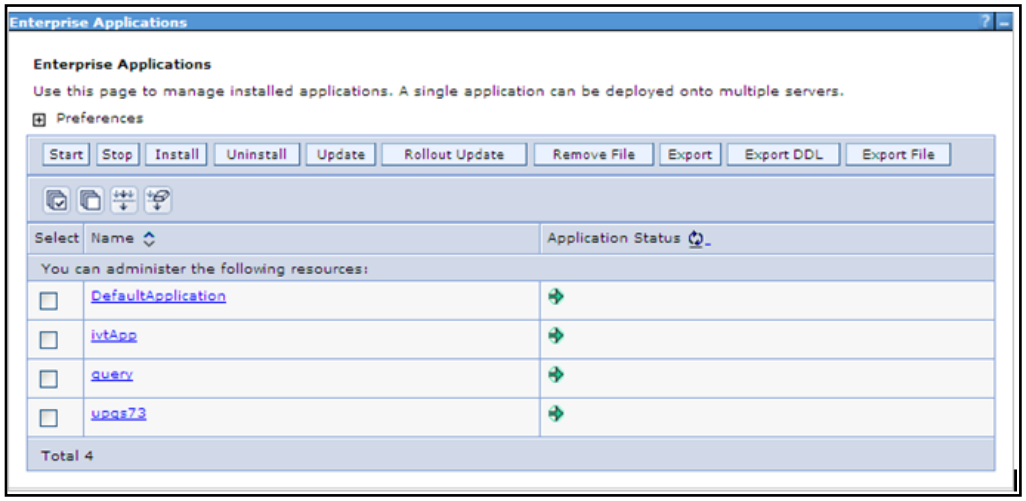
NOTE: Administrative Console Port value is available in serverindex.xml file within <WebSphere Profile Directory>/config/cells/<Node Cell>/nodes/<Node Name> directory.

The Integrated Solutions Console Login window is displayed.



Integrated Solutions Console Login

11. Log on with the **User ID** provided with the admin rights.
12. From the LHS menu, expand the **Applications** > **Application Type**> **WebSphere Enterprise Applications**.
13. The *Enterprise Applications* screen is displayed.



Enterprise Applications

14. This Enterprise Applications screen helps you to:

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

7.2.1.4 Configuring WebSphere Application Server to Use a Load Balancer or Proxy Server

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

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

Application Servers - Load Balancer Proxy Server

6. Click Web Container Settings > Custom Properties.
7. Add the following properties:

- Name: trusthostheaderport

  Value: true

- Name: com.ibm.ws.webcontainer.extractHostHeaderPort

  Value: true

8. Restart the WebSphere Application Server to apply the changes.

7.2.1.5 Delete WebSphere Profiles

To delete a WebSphere profile, do the following:

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

   `<WebSphere_Installation_Directory>/AppServer/bin/`

4. Execute the command:

   `manageprofiles.sh -delete -profileName <profile_name>`

5. Delete profile folder.

   Example: `<WebSphere_Installation_Directory>/AppServer/profiles/<profile_name>`

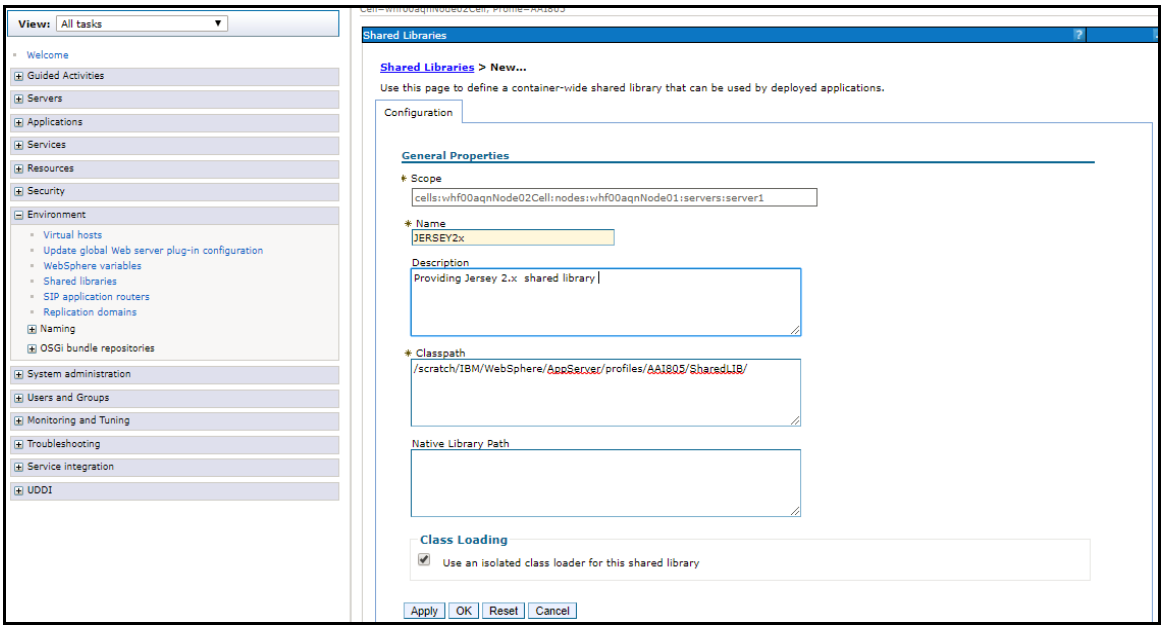
6. Execute the command:

   `manageprofiles.sh -validateAndUpdateRegistry`

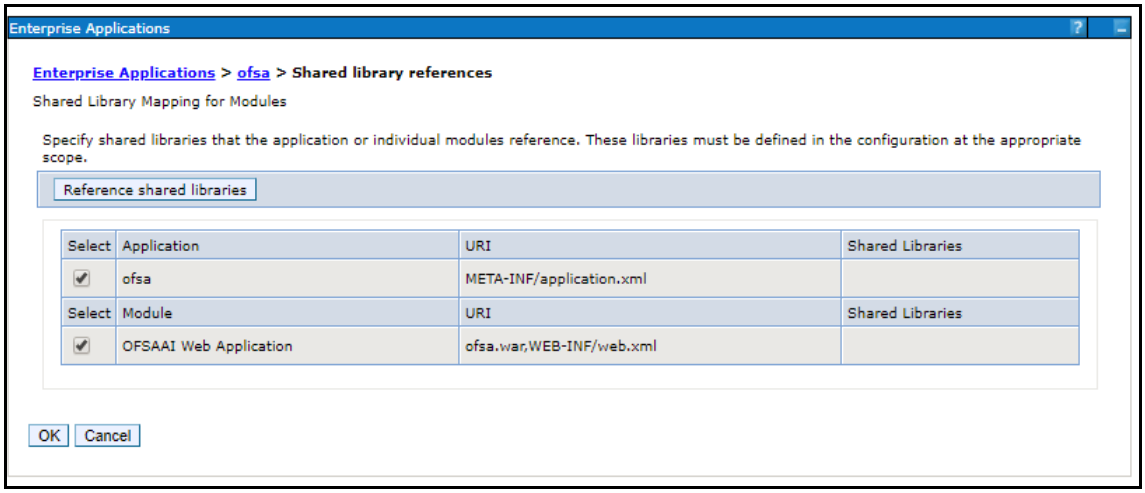
7.2.1.6 Configuring WebSphere Shared Library to Support Jersey 2x and Jackson 2.9x Libraries

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

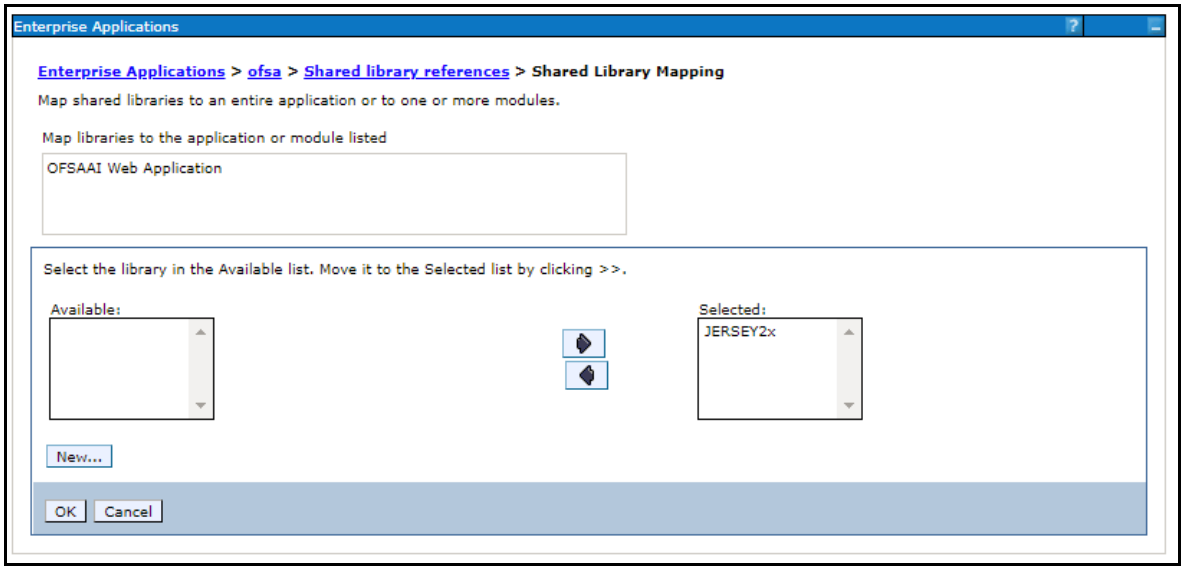
1. Click Environment from the menu on the left to expand and view the list. Click Shared Libraries to open the Shared Libraries window.



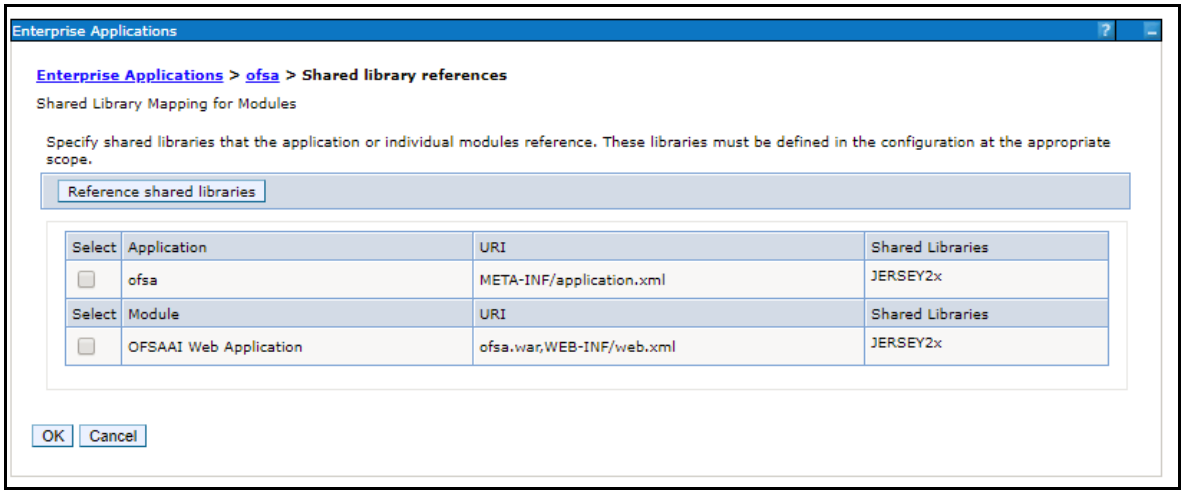
2. Enter details as shown in the following:
   - **Name**: Enter a unique identifiable name.
   - **Description**: Enter a valid description.
   - **Classpath**: Enter the absolute path where the JARs related to Jersey 2.x and Jackson 2.9x are copied. These jars are available in the <OFSAA_HOME>/utility/externallib/WEB-INF/lib 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.
10. Go to WebSphere admin console in **Servers** > **WebSphere Application Servers** > **yourServerName**.
11. In **Server Infrastructure section**, go to **Java and Process Management** > **Process definition** > **Java Virtual Machine** > **Custom properties**.
12. Add the following property:

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

7.2.1.7 WebSphere HTTPS Configuration

Following are the steps for configuring an HTTPS Transport on WebSphere:

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

NOTE: Note down the https port specified during this process and use the same as servlet port or web server port during OFSAAI installation.

2. To enable https configuration on Infrastructure, assign value 1 to "HTTPS_ENABLE" in `OFSAAI_InstallConfig.xml` for Silent mode OFSAAI installation.

7.2.1.8 WebSphere Memory Settings

To configure the WebSphere Memory Settings:

1. Navigate to Websphere applications server > Application servers > server1 > Process definition > Java Virtual Machine.
2. Change the memory setting for Java Heap:

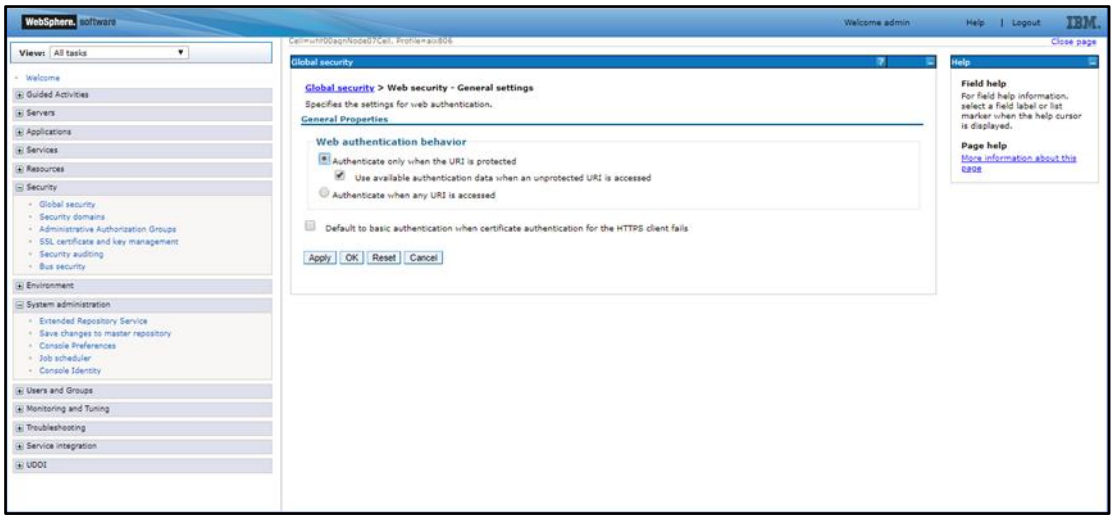
   ```
   Initial heap size = 512

   Maximum heap size = 3072
   ```

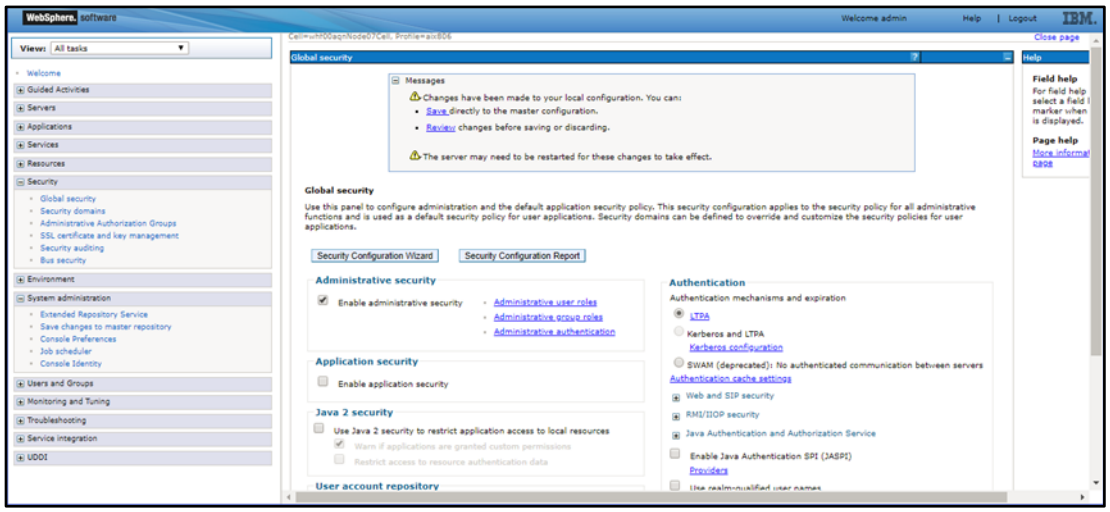
7.2.1.9 Configuring WebSphere for REST Services Authorization

Configure the following in WebSphere to enable REST API authorization by OFSAA:

1. Log on to WebSphere console with the **User ID** provided with the admin rights.
2. Expand Security menu in the LHS and click Global security > Web and SIP security > General settings.



3. De-select the **Use available authentication data when an unprotected URI is accessed** checkbox.
4. Click **OK**.



5. Click Save to save the changes to master configuration.

7.2.1.10 Configuring Application Security in WebSphere

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

7.2.2 Configuring WebLogic for Application Deployment

NOTE: Applicable only if the web container is WebLogic.

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+ (64 bit) with Java 8, download and install patch 18729264, from My Oracle Support.

This section includes the following topics:

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

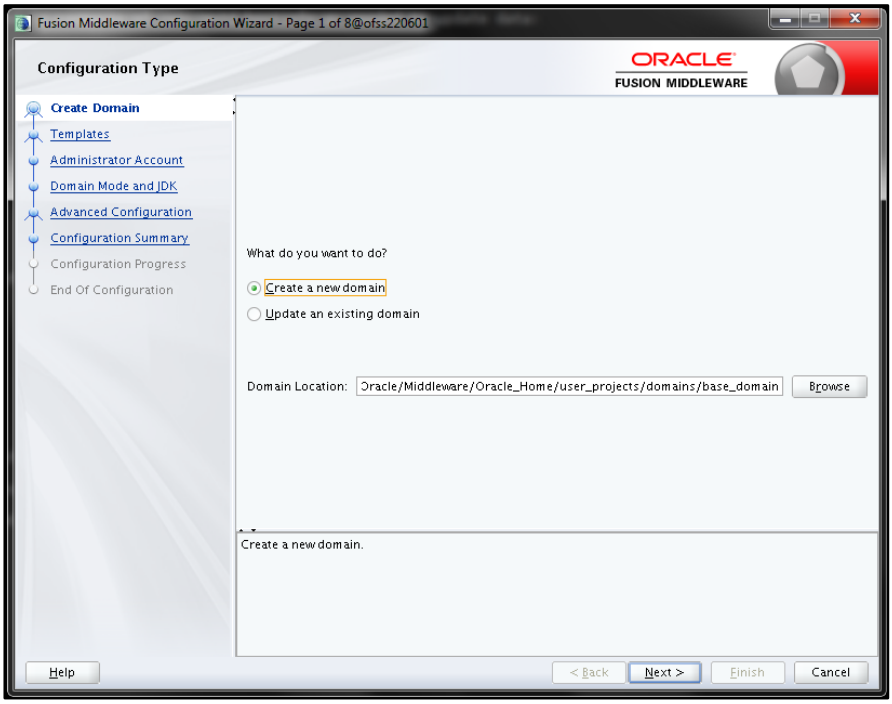
7.2.2.1 Creating Domain in WebLogic Server

To create a new domain using Configuration Wizard in WebLogic, do the following:

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

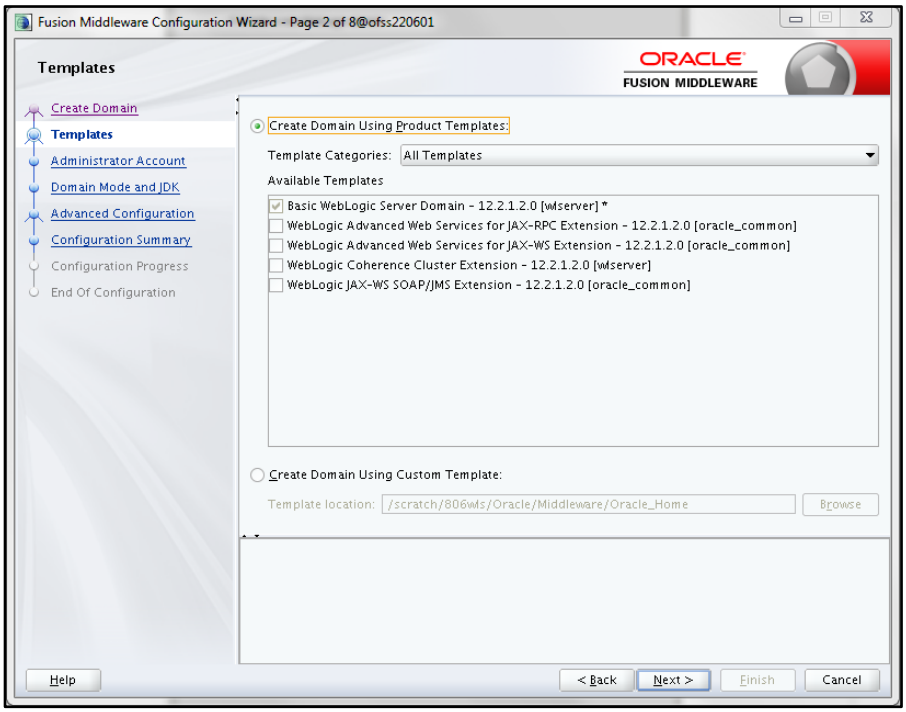
   `./config.sh`

   The Configuration Type window of the Configuration Wizard is displayed.



Configuration Type

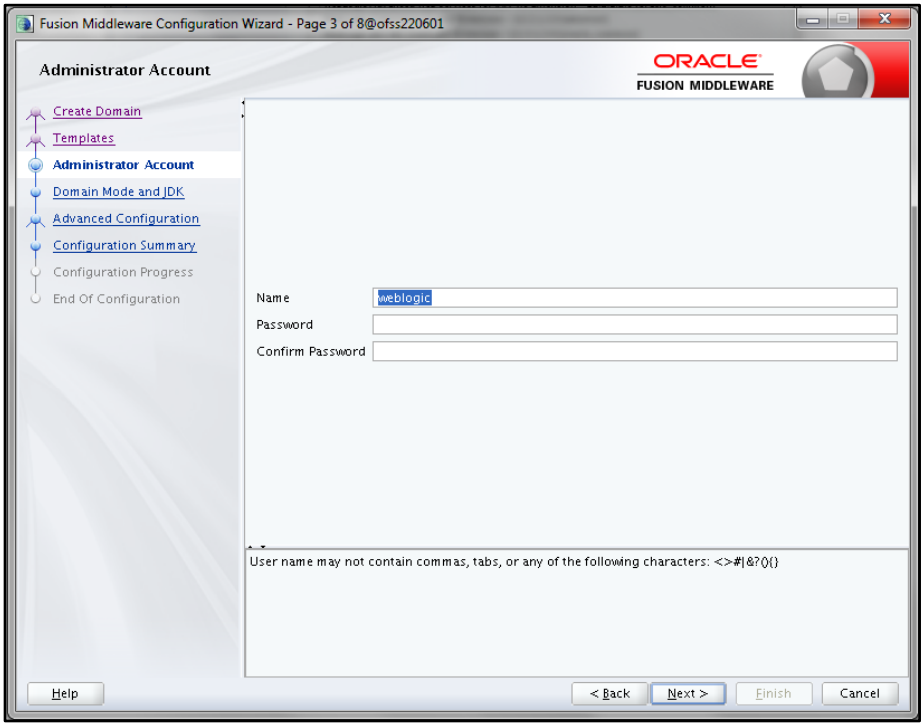
2. Select Create a new domain option and click Next. The Templates window is displayed.



Templates

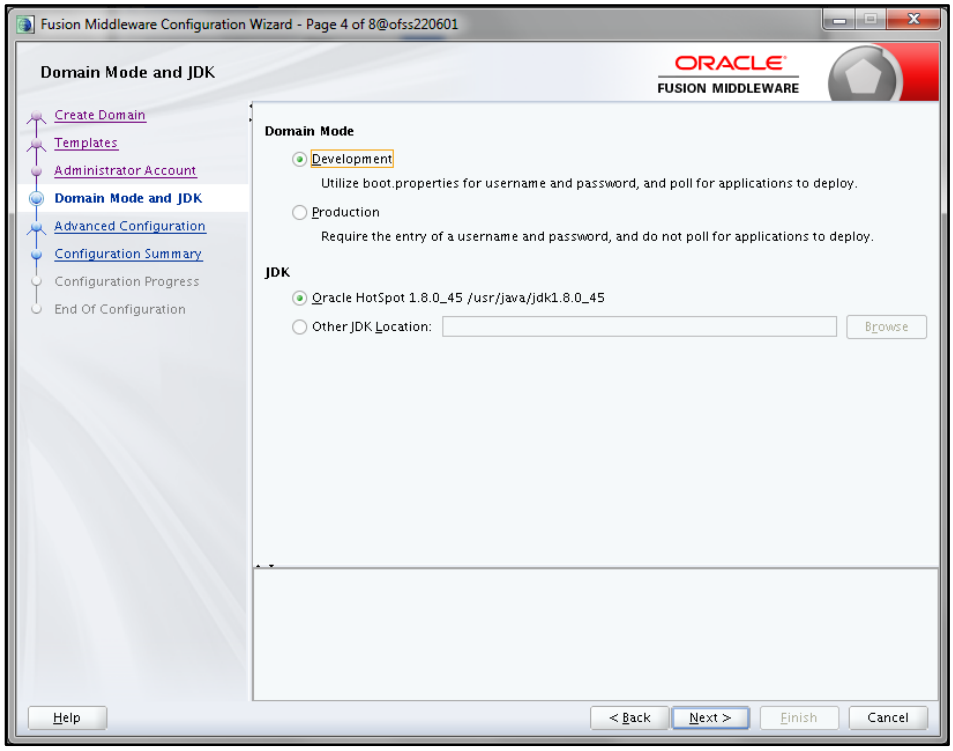
3. Select the Create Domain Using Product Templates option and click Next.

   The Administrator Account window is displayed.



4. Enter the user name to be assigned to the administrator, the password and confirm the password. Click Next.

   The Domain Mode and JDK window is displayed.



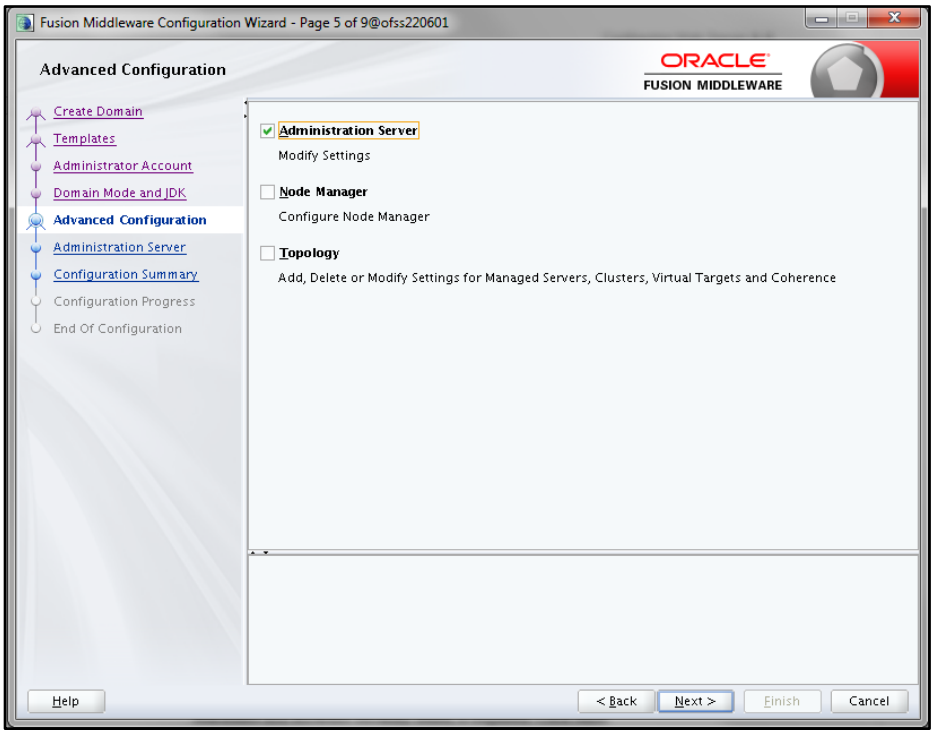
Domain Mode and JDK

5. Select from the following options:

   In the Domain Mode section, select the required mode (Development or Production).

   In the JDK section, select the required option. If you select Other JDK Location, click Browse, navigate to the JDK location, and select. Click Next.

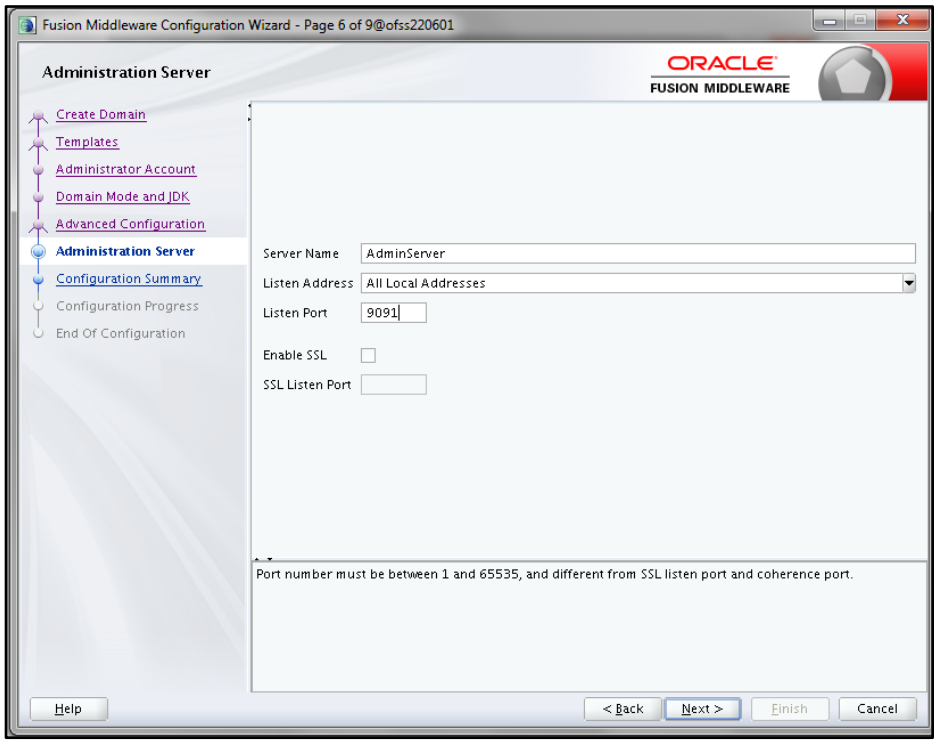
   The Advanced Configuration window is displayed.



Advanced Configuration

6. 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.

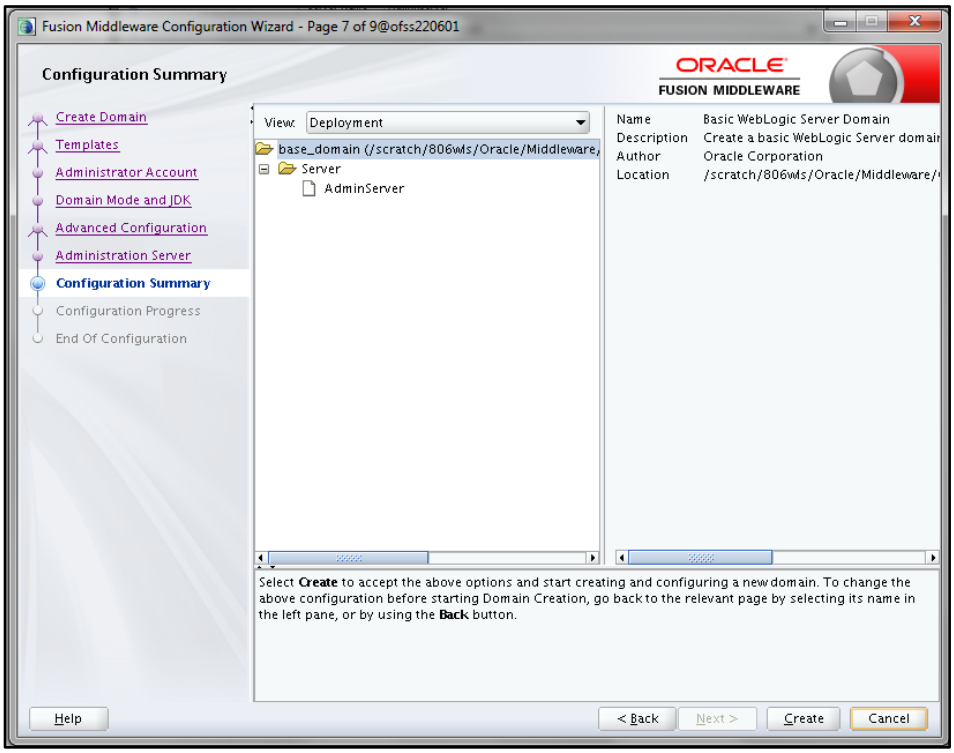


Administration Server

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

   The Configuration Summary window is displayed.

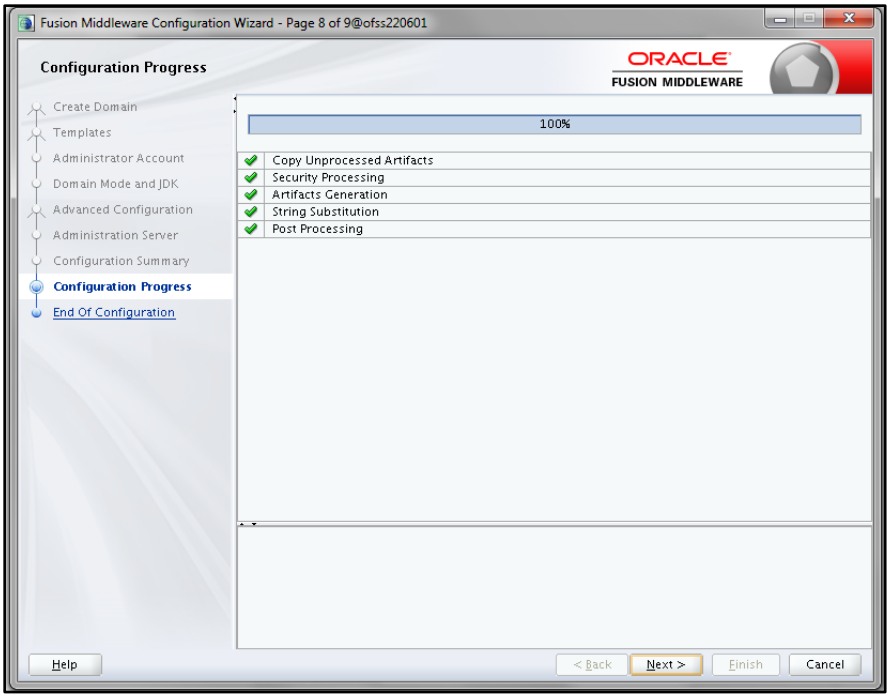
NOTE: Make a note of the Listen Port or SSL Listen Port value (for example: 7007), since the same has to be re-entered in the Servlet port field during Infrastructure installation.



Configuration Summary

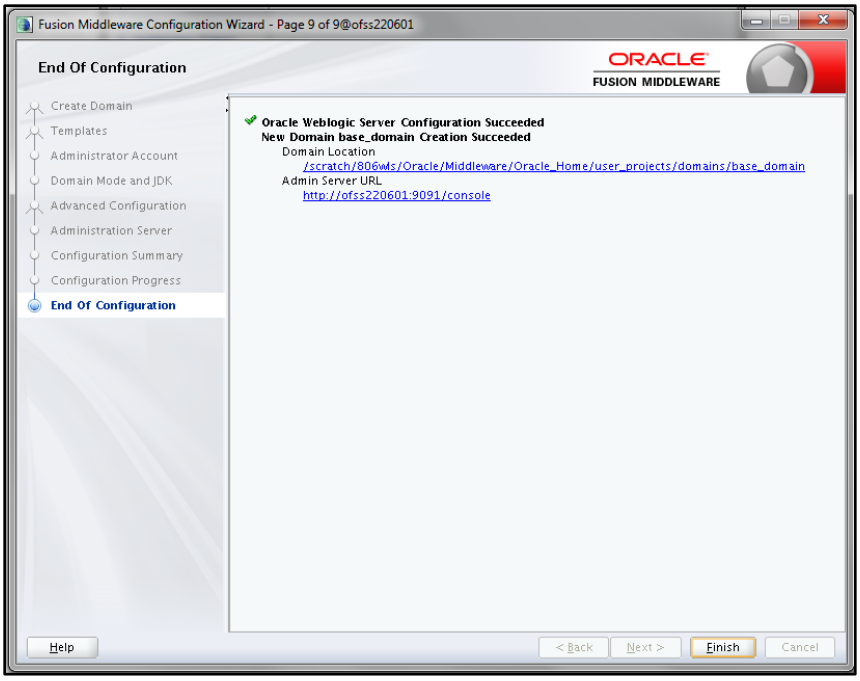
8. Verify the configuration details of the WebLogic domain and click **Create**.

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



Creating Domain

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



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

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

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 OFSAAI_InstallConfig.xml for silent mode OFSAAI installation

7.2.2.2 Delete Domain in WebLogic

1. Navigate to the following directory:

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

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

7.2.2.3 WebLogic Memory Settings

To configure the WebLogic Memory Settings:

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"
```

7.2.2.4 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 in the security-configuration tag:

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

7.2.3 Configuring Apache Tomcat Server for Application Deployment

This section is applicable only when the Web Application Server type is Tomcat.

This section includes the following topics:

- Tomcat User Administration
- Configure Tomcat to use JAVA 64 bit Executables
- Configure Servlet Port
- SSL Port Configuration
- Apache Tomcat Memory Settings
- Uninstalling WAR Files in Tomcat
- Configuration for Axis API

7.2.3.1 Tomcat User Administration

The Tomcat administration and manager application does not provide a default login. You are required to edit "`$CATALINA_HOME/conf/tomcat-users.xml`" as instructed below.

This file contains an XML tag <user> for each individual user, which will display the username and password used by admin to log on to Tomcat, and the role names to which the admin user is associated with. For example, <user name="admin" password="admin" roles="standard,manager"/>

1. Add the manager role to any one of the existing username/password combination as shown in the example above.
2. Use the same username/password to which the manager role has been assigned to access the Tomcat Application Manager.

3. If the Tomcat server is already running, it requires a re-start after the above configuration is done.

7.2.3.2 Configure Tomcat to use JAVA 64 bit Executables

1. Navigate to the "`$CATALINA_HOME/bin`" folder.
2. Edit the setclasspath.sh as explained below:
3. Replace the following block of text:

```
# Set standard commands for invoking Java.

RUNJAVA="$JRE_HOME"/bin/java

if [ "$os400" != "true" ]; then

RUNJDB="$JAVA_HOME"/bin/jdb
```

With:

```
# Set standard commands for invoking Java.

RUNJAVA="$JAVA_BIN"/java

if [ "$os400" != "true" ]; then

RUNJDB="$JAVA_BIN"/jdb
```

4. If the Tomcat server is already running, it requires a re-start after the above configuration is done.

NOTE: In case tomcat is installed under different Unix profile, set JAVA_BIN environment variable in .profile to include the Java Runtime Environment absolute path.

For example:

```
export JAVA_BIN /usr/java6_64/jre/bin

export JAVA_BIN = /usr/java6_64/jre/bin//sparcv9 for Solaris Sparc
```

7.2.3.3 Configure Servlet Port

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

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

1. Navigate to `$CATALINA_HOME/conf`. Open server.xml and locate the tag:

"Define a non-SSL HTTP/1.1 Connector on port 8080 "

2. Against this tag, a parameter is specified 'Connector port = "8080" '. Edit this value to the new port number that will be used during the installation process.
3. Save your changes in "server.xml".

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

7.2.3.4 SSL Port Configuration

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

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

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

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

7.2.3.5 Apache Tomcat Memory Settings

To configure the Apache Tomcat Memory Settings:

1. Locate the file catalina.sh which resides in the folder <CATALINA_HOME>/bin.
2. Edit this file for customizing the memory settings and garbage collector settings depending on the available hardware configuration.
3. Add the memory setting for Java Heap to -Xms512m -Xmx1024m.

   Example:

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

```
else
JAVA_OPTS="$JAVA_OPTS -Xms512m -Xmx1024m $LOGGING_MANAGER"
fi
```

7.2.3.1 Uninstalling WAR Files in Tomcat

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

7.2.3.2 Configuration for Axis API

Copy the `jaxrpc.jar` from the `<OFSAA Installation Directory>/axis-1_4/webapps/axis/WEB-INF/lib` and place it in under `<Tomcat Installation Directory>/lib` and restart the Tomcat Server

8 Appendix B: Configuring Resource Reference in Web Application Servers

8.1 Configuring Resource Reference in Web Application Server

This appendix includes the following topics:

- Configure Resource Reference in WebSphere Application Server
- Configure Resource Reference in WebLogic Application Server
- Configure Resource Reference in Tomcat Application Server

8.1.1 Configure Resource Reference in WebSphere Application Server

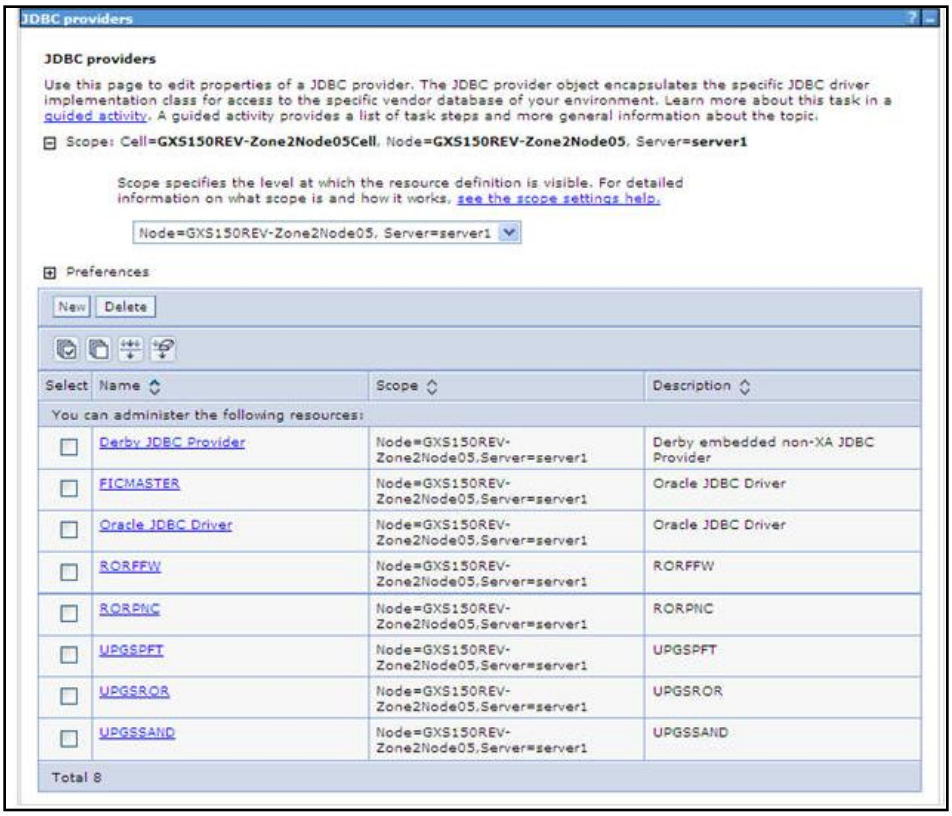
This section is applicable only when the Web Application Server type is WebSphere.

This section includes the following topics:

- Create JDBC Provider
- Create Data Source
- J2C Authentication Details
- JDBC Connection Pooling

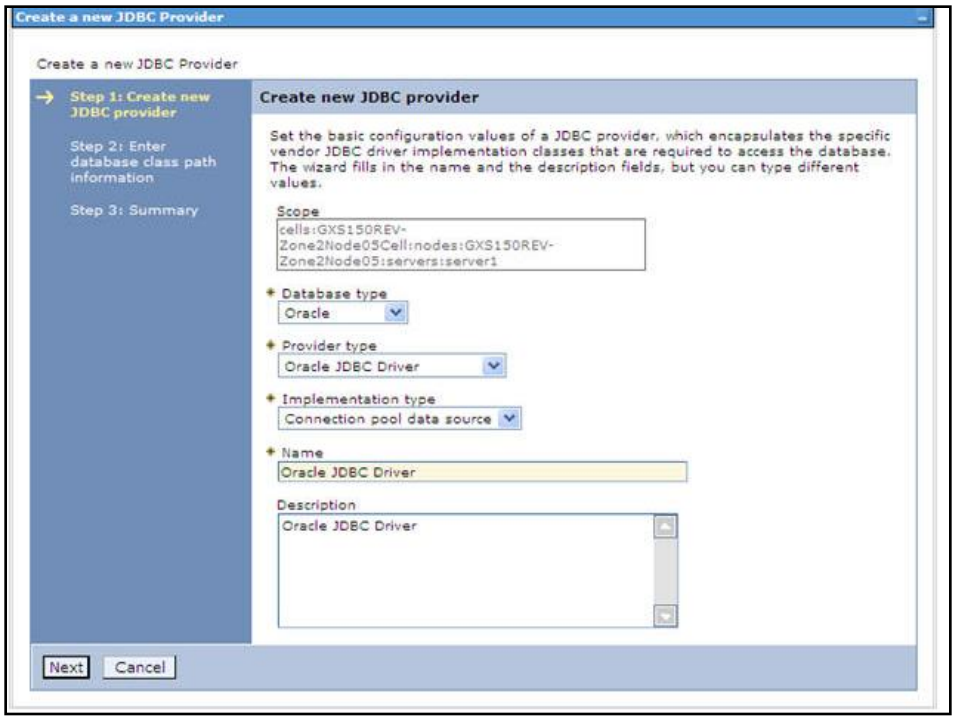
8.1.1.1 Create JDBC Provider

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



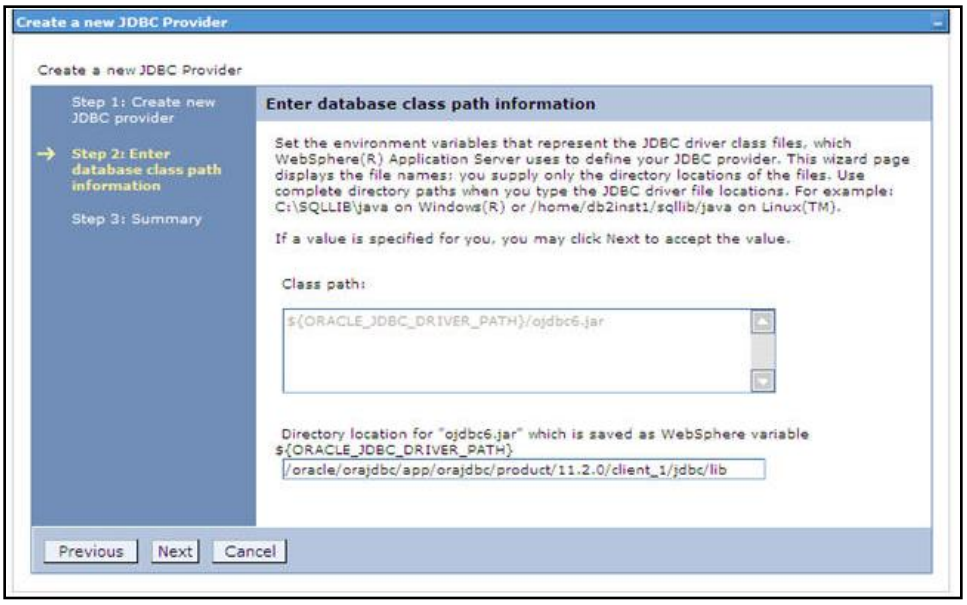
JDBC Providers

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



Create a new JDBC Provider

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



Enter database class path information

8. Specify the directory location for "`ojdbc<version>.jar`" file. Ensure that you do not use the trailing slash file separators.

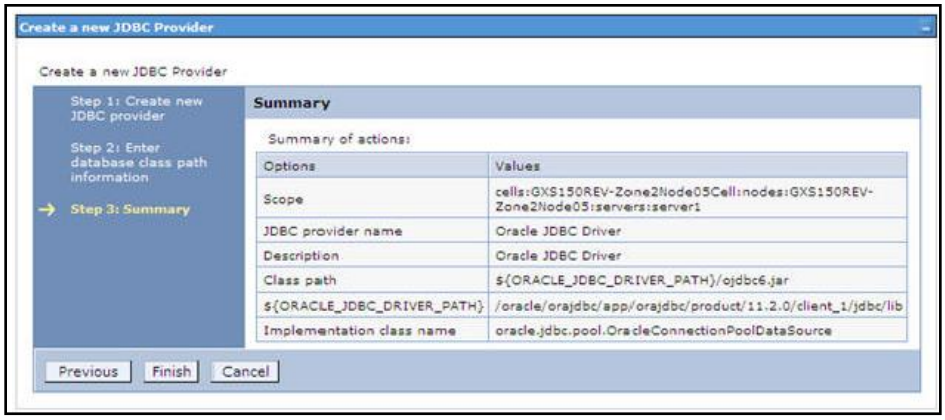
   The Oracle JDBC driver can be downloaded from the following Oracle Download site:

   - Oracle Database 11g Release 2 (11.2.0.4) JDBC Drivers
   - Oracle Database 12c Release 1 (12.1.0.1) JDBC Drivers

   Once downloaded, you need to copy the file in the required folder on the server.

NOTE: Refer Appendix O for identifying the correct "`ojdbc<version>.jar`" version to be copied.

9. Click **Next**. The *Summary* window is displayed.



Summary

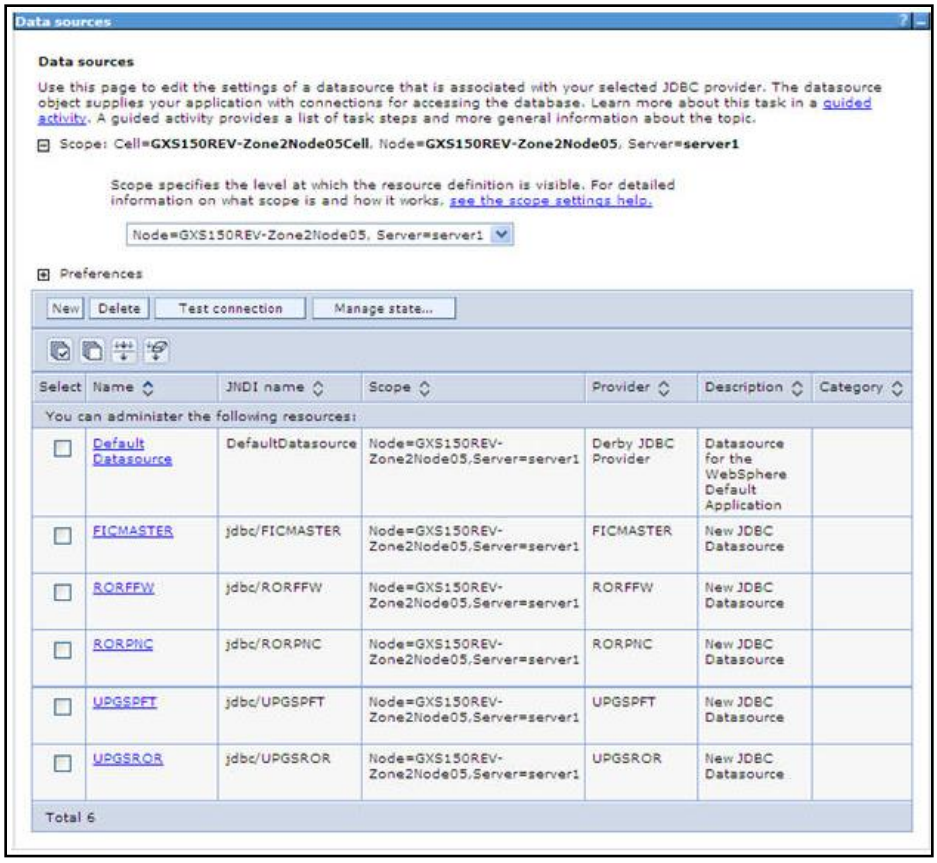
10. Verify the details and click **Finish** to create the JDBC Provider.

11. The options to **Save** and **Review** are displayed. Click **Save**.

8.1.1.2 Create Data Source

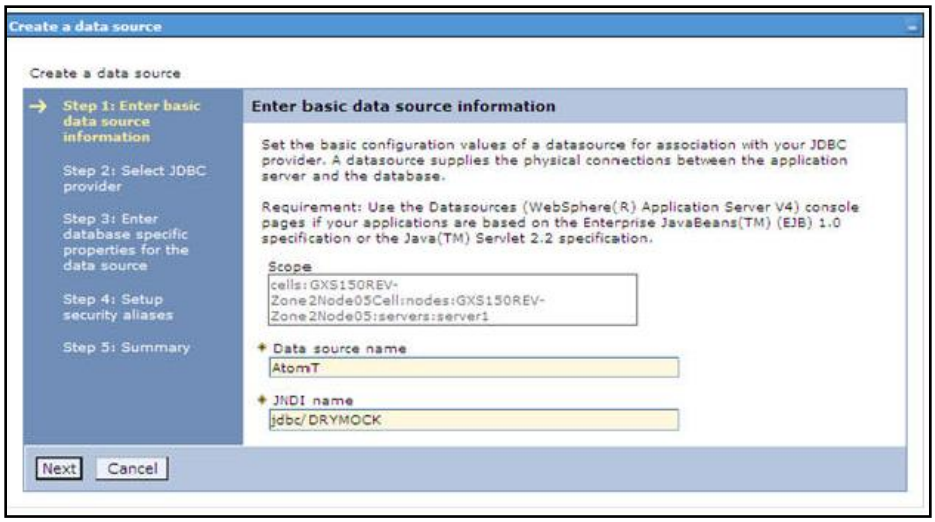
The steps given below are applicable for both CONFIG and ATOMIC data source creation.

1. Open this URL in the browser window: `http://<ipaddress>:<administrative console port>/ibm/console`. (https if SSL is enabled). The Login window is displayed.
2. Login with the user id that has admin rights.
3. Expand the **Resources** option in the LHS menu and click **JDBC > Data sources** option. The *Data sources* page is displayed.



Data Sources

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



Create a data source

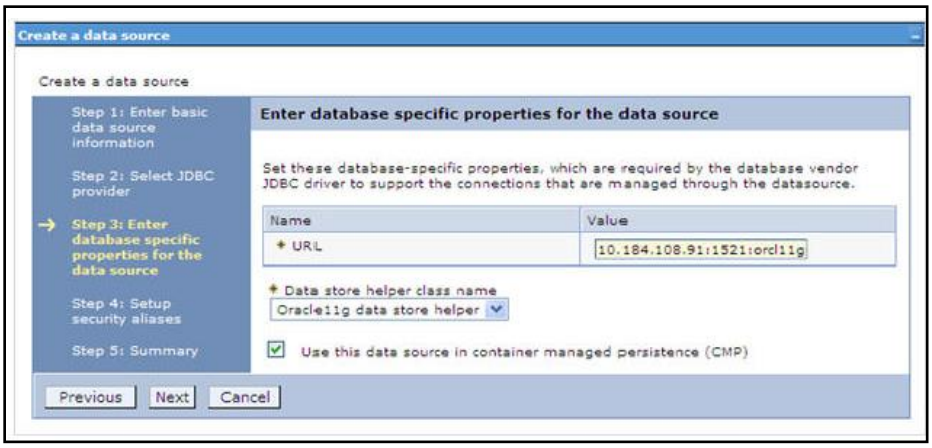
6. Specify **the Data Source name** and **JNDI name** for the new "Data Source".

   The **JNDI** and **Data Source name** are case sensitive. Ensure that JNDI name is same as the "Information Domain" name.

7. Click **Next**. The Select *JDBC provider* window is displayed.

Select JDBC provider

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



Enter database specific properties

9. Specify the database connection URL.

   For Example: `jdbc:oracle:thin:@<DB_SEREVER_IP>:<DB_SERVER_PORT>:<SID>`

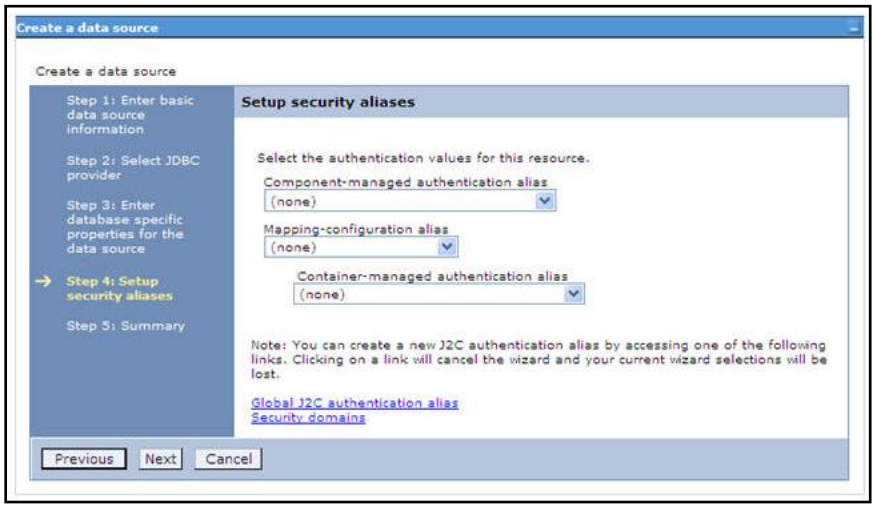
10. Select **Data Store Helper Class Name** from the drop-down list and ensure that the checkbox **Use this data source in container managed persistence (CMP)** is selected.

NOTE: For RAC configuration, provide the RAC URL specified during installation

For Example:

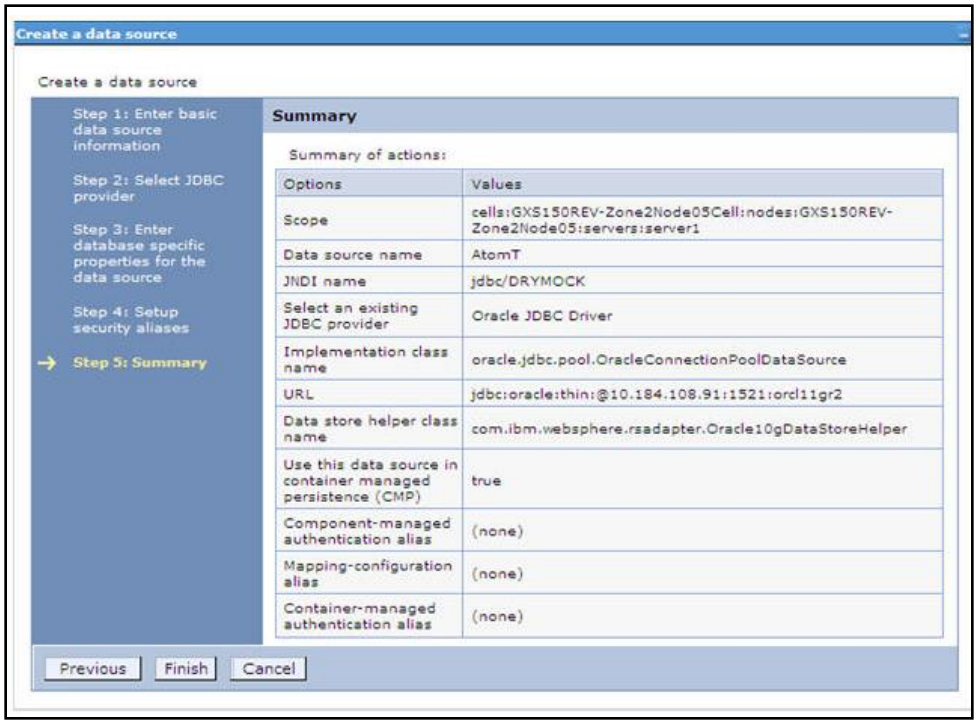
```
jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)(HOST=10
.11.12.13)(port=1521))(ADDRESS=(PROTOCOL=TCP)(HOST=10.11.12.14)(PORT=1521))(
LOAD_BALANCE=no)(FAILOVER=yes))(CONNECT_DATA=(SERVICE_NAME=pqadb)))
```

11. Click **Next**.



Setup security aliases

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



Summary

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

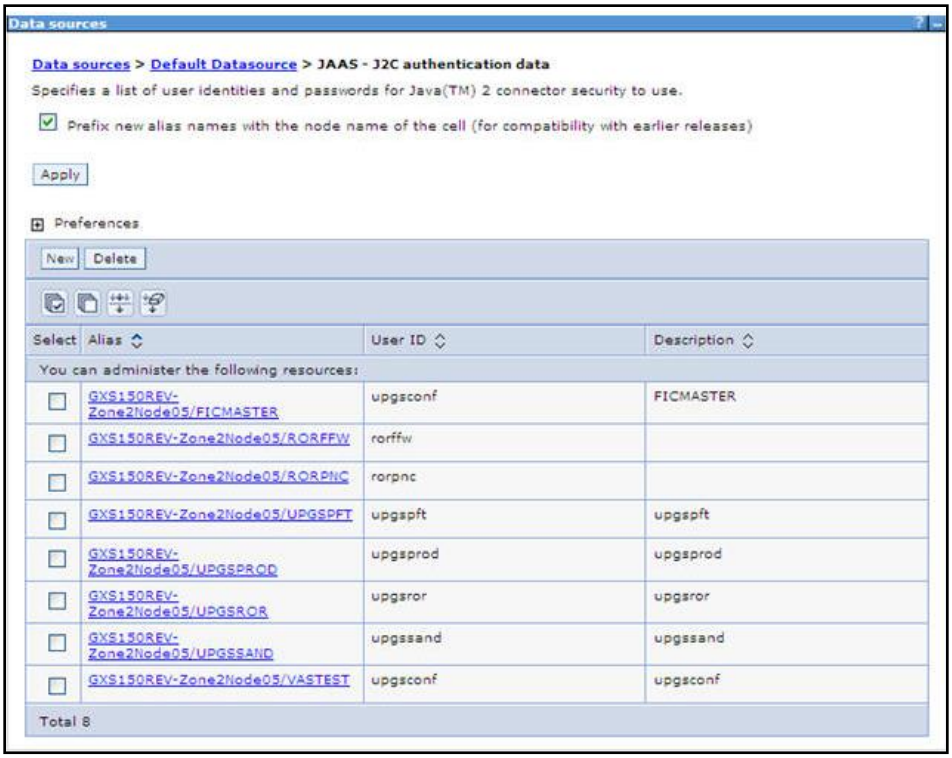
13. You must create another Data source by following the above procedure with jdbc/FICMASTER as JNDI name pointing to the "configuration schema" of Infrastructure.

8.1.1.3 J2C Authentication Details

The following steps are applicable for creating both config and atomic J2C Authentication..

To create J2C Authentication details:

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



JAAS- J2C authentication data

2. Click **New** under the *Preferences* section.

JAAS- J2C authentication data- New

3. Enter the **Alias**, **User ID**, **Password**, and **Description**. Ensure the following:

   - User ID is the Oracle user ID created for the respective CONFIG and ATOMIC Schema for the “Information Domain”.

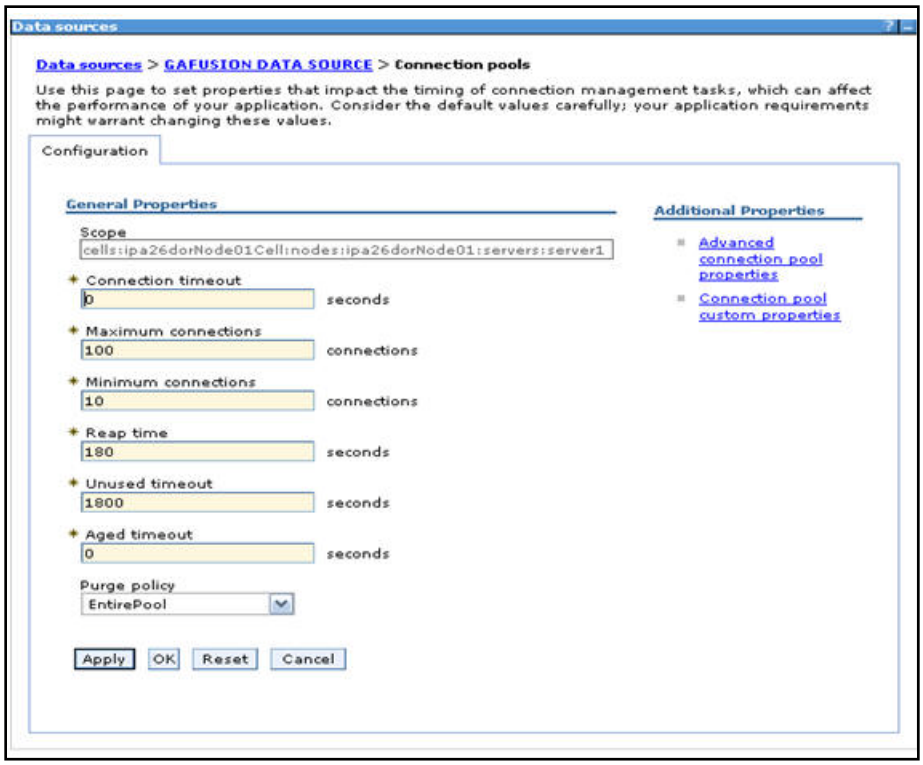
- Specify the CONFIG database user ID and password information for the jdbc/FICMASTER data source, and specify the ATOMIC database user ID and password information for the ATOMIC schema data source that you created earlier.

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

8.1.1.4 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. Expand the **Resources** option in the LHS menu and click **JDBC > Data sources** option. The *Data sources* page is displayed.
2. Click the newly created Data Source `$DATA_SOURCE$` and navigate to the path `Data sources>$DATA_SOURCE$>Connection pools`.



Connection Pools

3. Set the values for **Connection timeout** to 0 seconds, **Maximum connections** to 100 connections, and **Minimum connections** to 10 connections as shown in the above figure. You can also define **Reap Time, Unused Timeout, and Aged Timeout** as required.

8.1.2 Configure Resource Reference in WebLogic Application Server

This section is applicable only when the Web Application Server is WebLogic.

- This section includes the following topics:
  - Create Data Source
  - Create GridLink Data Source
  - Configure Multi Data Sources
  - Advanced Settings for Data Source
  - JDBC Connection Pooling

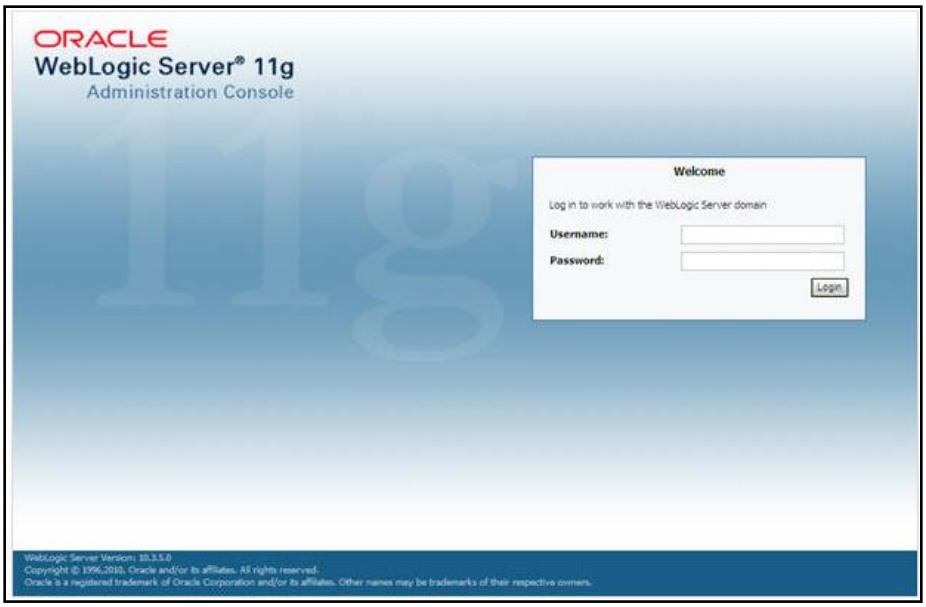
In WebLogic, you can create "Data Source" in the following ways:

- 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.

8.1.2.1 Create Data Source

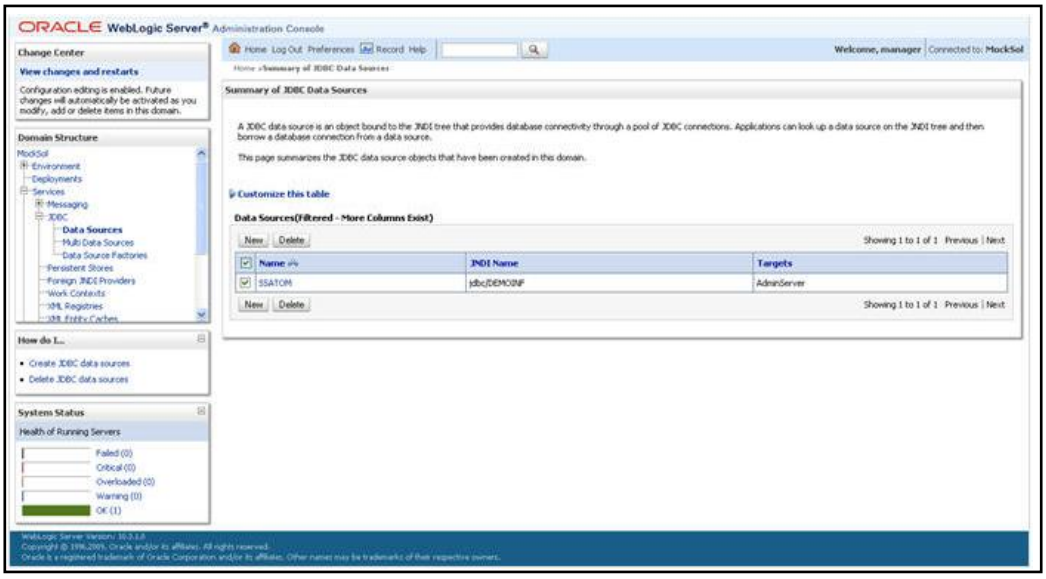
The steps given below are applicable for both config and atomic data source creation.

1. Open WebLogic Admin Console 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**.



Welcome

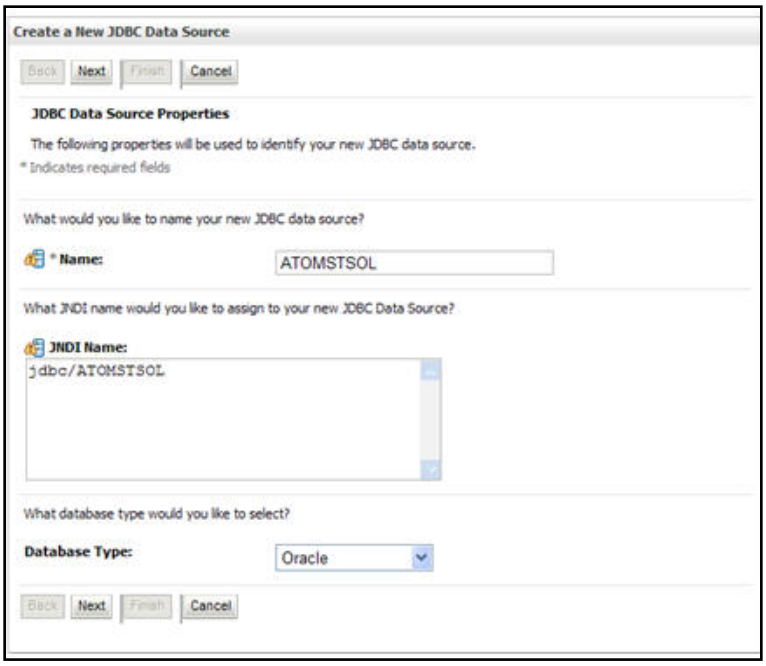
3. From the LHS menu (Domain Structure), click **Services** > **Data Sources**. The *Summary of JDBC Data Sources* window is displayed.



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 GridLink Data Source or Configure Multi Data Sources.

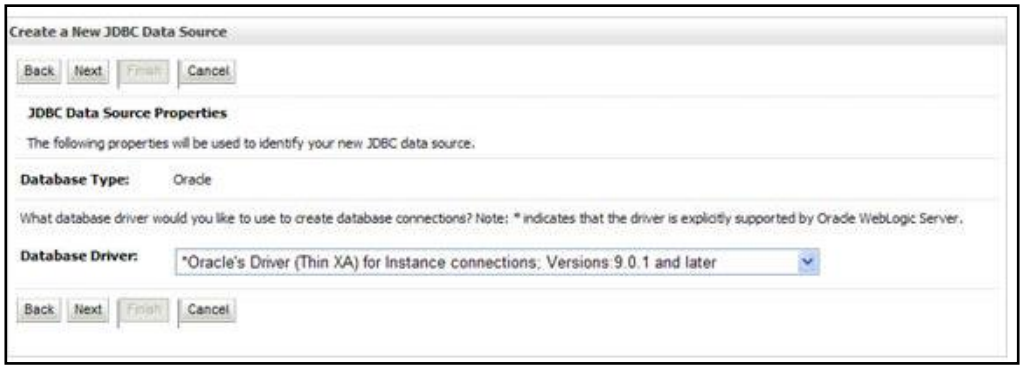


Create a New JDBC Data Source

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.

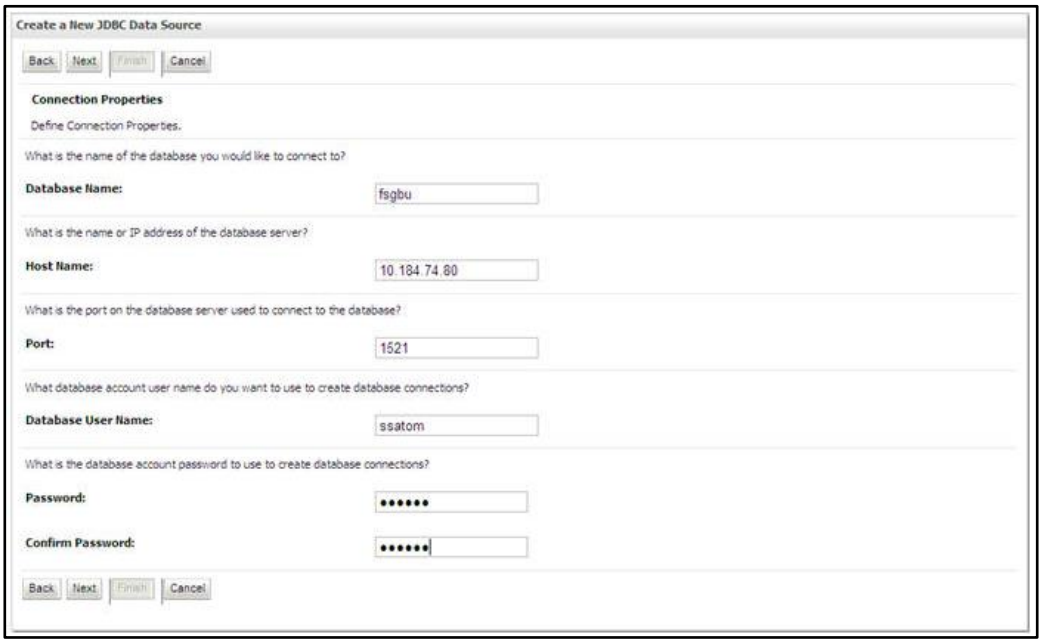


JDBC Data Source Properties

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**.

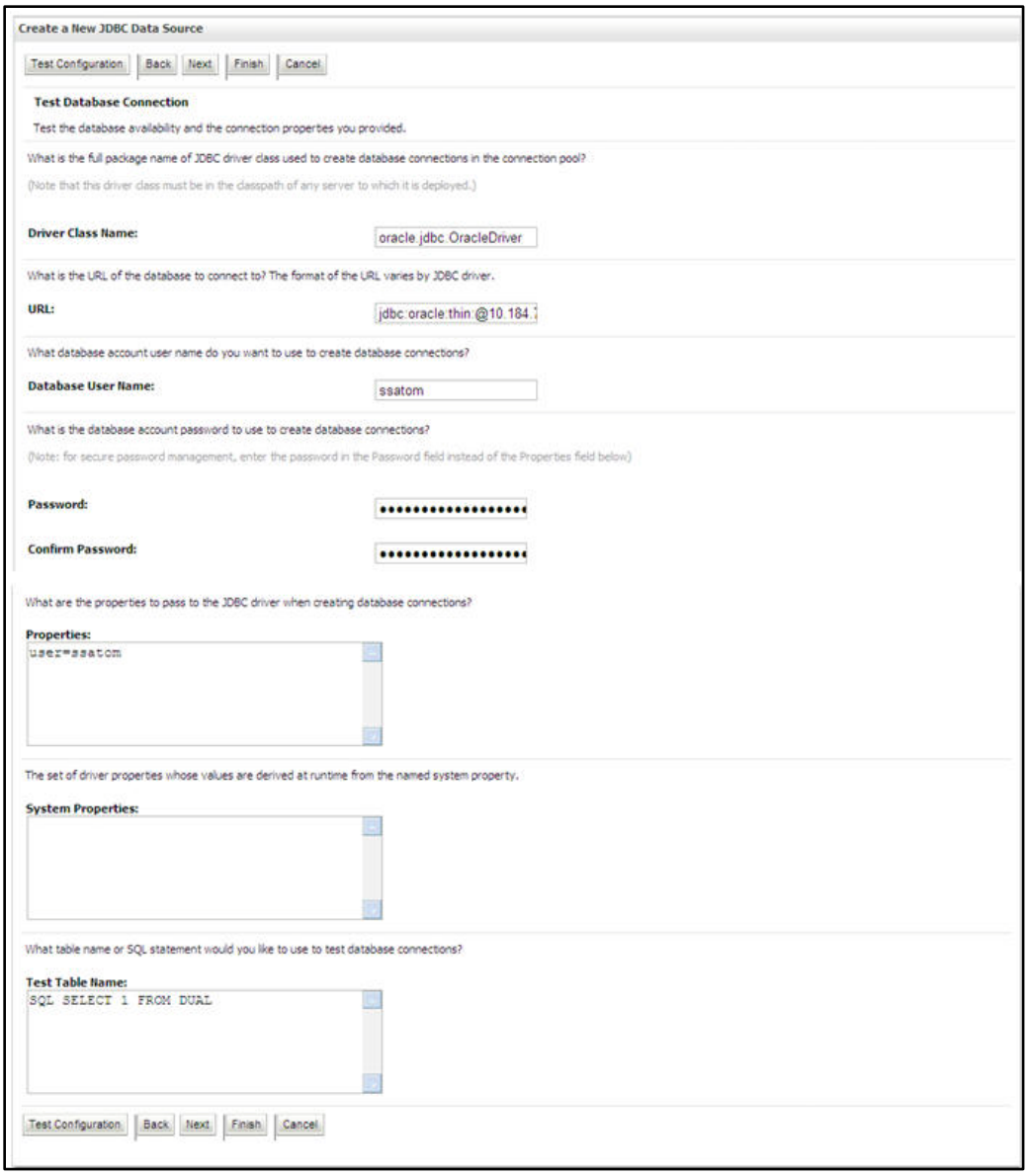
Transaction Options

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



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.



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 CONFIG and ATOMIC schema of 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 CONFIG schema.

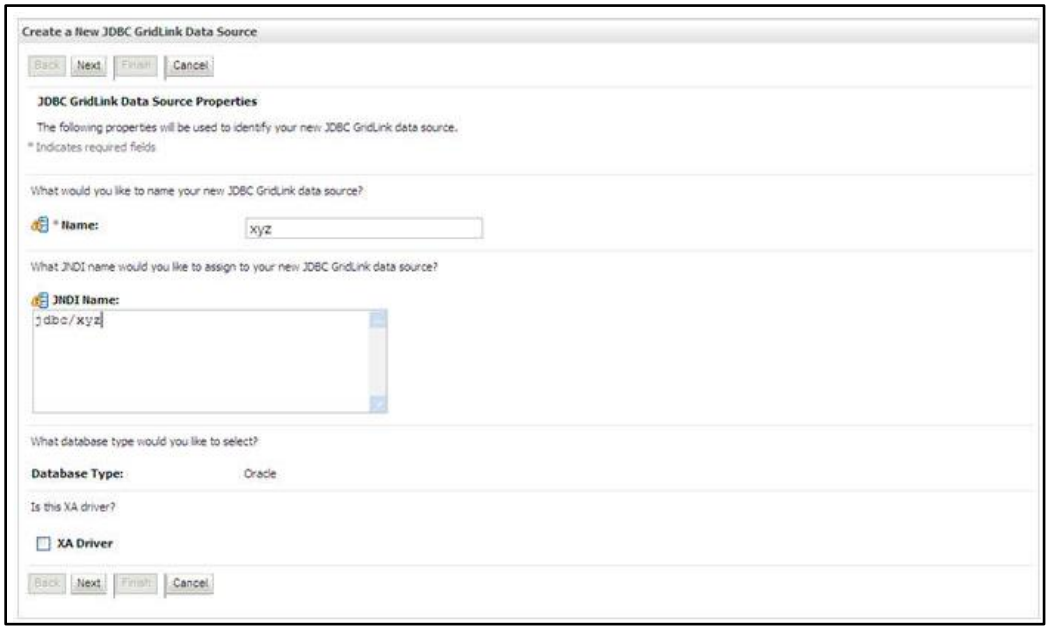
13. Select the new Data Source and click the **Targets** tab.

Select Targets

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

8.1.2.2 Create GridLink Data Source

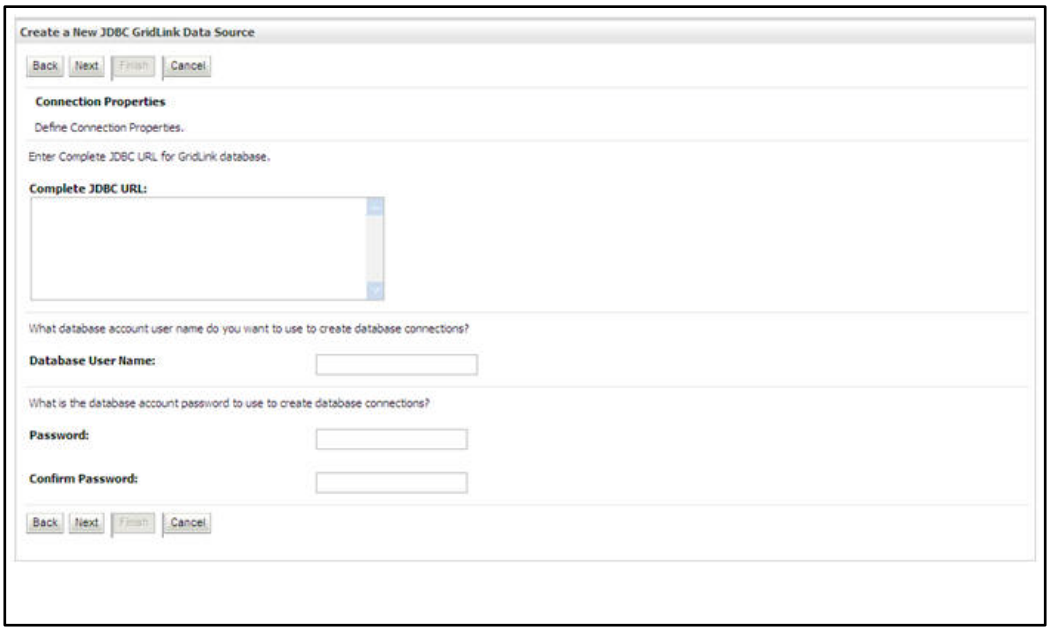
If you have selected the option, **New** > **GridLink Data Source** while creating the "Data Source", you can directly specify the JDBC URL as indicated.



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**.



JDBC GridLinkData Source- Connection Properties

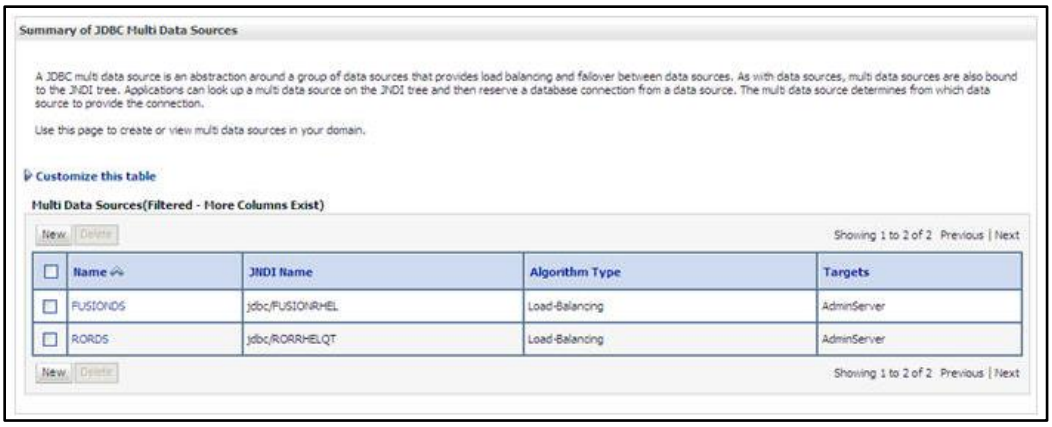
2. Specify **Complete JDBC URL**, **Database User Name**, and **Password**. Click **Finish**. The created "Data Source" is displayed in the list of Data Sources.

8.1.2.3 Configure Multi Data Sources

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

When the database used is **Oracle RAC (Real Application Clusters)** which allows Oracle Database to run across a set of clustered servers, then 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.

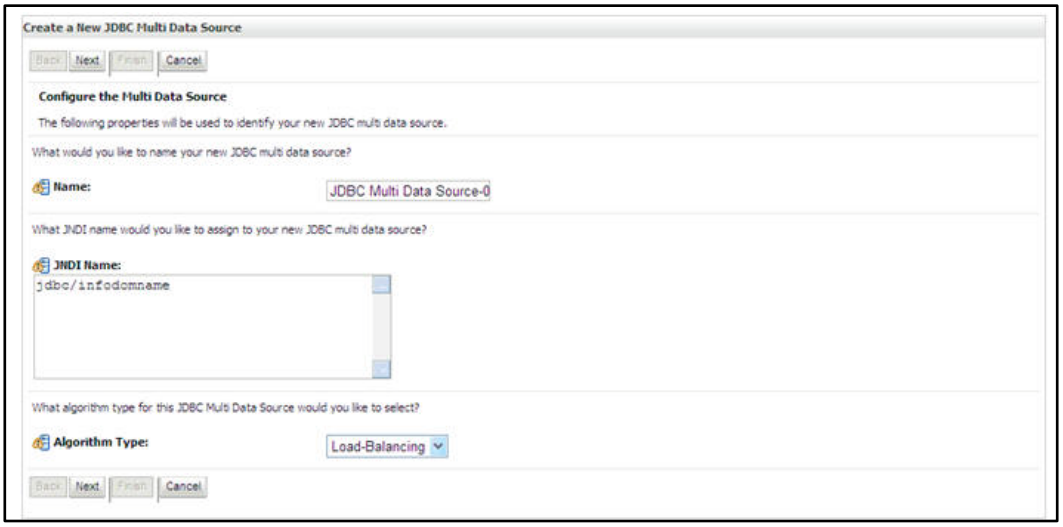
1. Open WebLogic Admin Console in the browser window: `http://<ipaddress>:<administrative console port>/console`. (https if SSL is enabled). The *Login* window is displayed.
2. Login with the "User ID" that has admin rights.
3. In the LHS menu (Domain Structure), select **Services** > **JDBC** > **Multi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



Summary of JDBC Multi Data Sources

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

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



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.

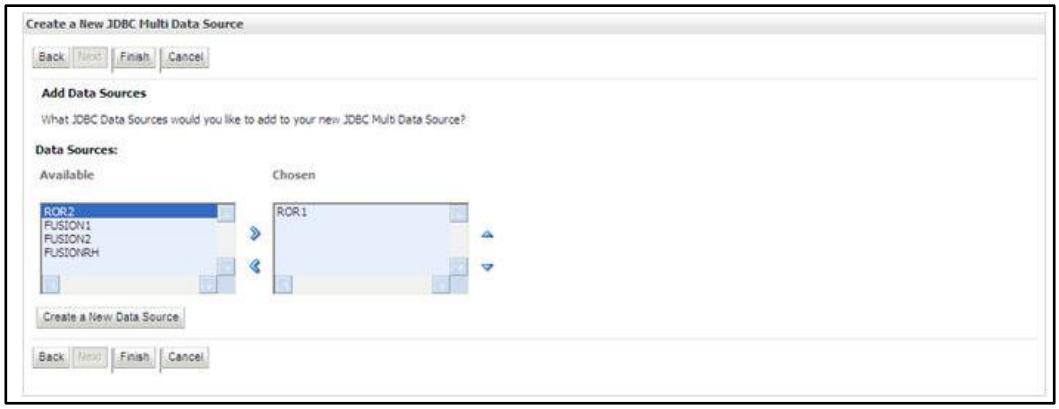
- Same steps needs to be followed to create a mandatory data source pointing to the "configuration schema" of infrastructure with jdbc/FICMASTER as JNDI name for Data Source.
- JNDI Name provided in multi data source should be the same name that will be mentioned in the web.xml file of OFSAAI Application.
- You can select the Algorithm Type as Load-Balancing.

Select Targets

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

Select Data Source Type

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



Add Data Sources

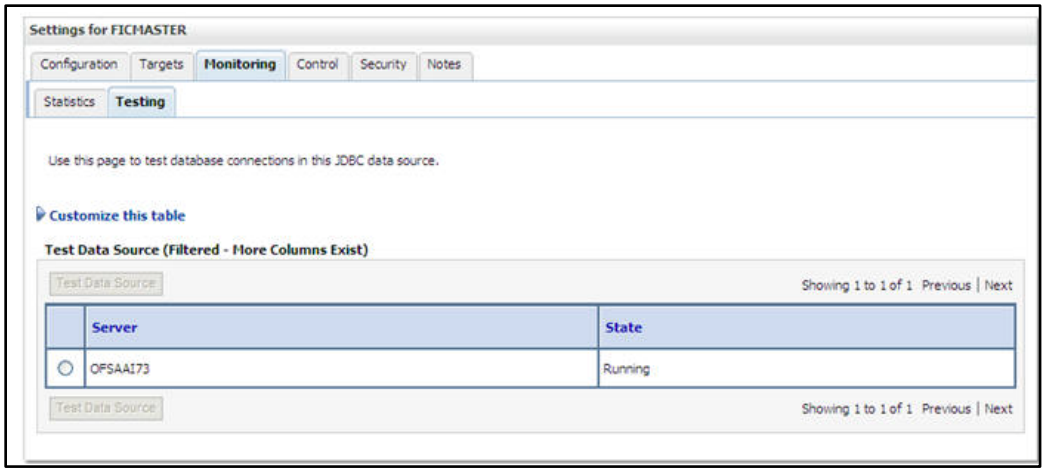
8. Map the required Data Source from the *Available* Data Sources. Click **Finish**.

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

8.1.2.4 Advanced Settings for Data Source

1. Click the new Data Source fromt 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 page, 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.



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 steps given above to recreate the data source.

8.1.2.5 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**.

8.1.3 Configure Resource Reference in Tomcat Application Server

This section is applicable only when the Web Application Server is Tomcat.

This section includes the following topics:

- Create Data Source
- JDBC Connection Pooling
- Class loader configuration for Apache Tomcat

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

NOTE: Refer Appendix O for identifying the correct `ojdbc<version>.jar` version to be copied.

8.1.3.1 Create Data Source

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

NOTE: The User-IDs for configuration/ atomic schemas have the prefix of SETUPINFO NAME depending on the value set for PREFIX_SCHEMA_NAME in <<APP Pack>>_SCHEMA_IN.XML file of Schema Creator Utility. For example: if the value set for SETUPINFO NAME is DEV and PREFIX_SCHEMA_NAME is Y and the schema name was mentioned as ofsaaconf, then the actual schema created in the database would be DEV_ofsaaconf.

```
<Context path ="/<context name>" docBase="<Tomcat Installation
Directory>/webapps/<context name>" debug="0" reloadable="true"
crossContext="true">

<Resource auth="Container"

    name="jdbc/FICMASTER"

    type="javax.sql.DataSource"

    driverClassName="oracle.jdbc.driver.OracleDriver"

    username="<user id for the configuration schema>"

    password="<password for the above user id>"
```

```
    url="jdbc:oracle:thin:@<DB engine IP address>:<DB Port>:<SID>"
    maxTotal="100"
    maxIdle="30"
    maxWaitMillis="10000"/>
<Resource auth="Container"
    name="jdbc/< INFORMATION DOMAIN NAME >"
type="javax.sql.DataSource"
    driverClassName="oracle.jdbc.driver.OracleDriver"
    username="<user id for the atomic schema>"
    password="<password for the above user id>"
    url="jdbc:oracle:thin:@<DB engine IP address>:<DB Port>:<SID>"
    maxActive="100"
    maxIdle="30"
    maxWait="10000"/>
</Context>
```

NOTE: The `<Resource>` tag must be repeated for each Information Domain created. After the above configuration, the "WAR" file has to be created and deployed in Tomcat.

8.1.3.2 JDBC Connection Pooling

To define the JDBC connection pooling, do the following:

1. Copy `$ORACLE_HOME/jdbc/lib/ojdbc<version>.jar` to the path `$TOMCAT_DIRECTORY/lib/.`

NOTE: Refer Appendix O for identifying the correct “ojdbc<version>.jar” version to be copied.

2. Edit the `server.xml` present under the path `$TOMCAT_DIRECTORY/conf/` with the below changes, which is required for connection pooling.

```
<Context path="/ $CONTEXTNAME$" docBase=" $APP_DEPLOYED_PATH$ "
debug="0" reloadable="true" crossContext="true">
    <Resource auth="Container"
    name="jdbc/ $INFODOM_NAME$"
    type="javax.sql.DataSource"
    driverClassName="oracle.jdbc.driver.OracleDriver"
    username=" $ATOMICSCHEMA_USERNAME$"
    password="$ATOMICSCHEMA_PASSWORD$"
    url="$JDBC_CONNECTION_URL"
```

```
maxTotal="100"
maxIdle="30"
maxWaitMillis="10000"/>
removeAbandoned="true" removeAbandonedTimeout="60"
logAbandoned="true"/>
</Context>
```

Note the following:

- $TOMCAT_DIRECTORY$ should be replaced by Tomcat application installed path.
- $CONTEXTNAME$ should be replaced by OFSAAI context name.
- $APP_DEPLOYED_PATH$ should be replaced by OFSAAI application deployed path.
- $INFODOM_NAME$ should be replaced by Infodom Name.
- $ATOMICSCHEMA_USERNAME$ should be replaced by Atomic schema database user name.
- $ATOMICSCHEMA_PASSWORD$ should be replaced by Atomic schema database password.
- $JDBC_CONNECTION_URL should be replaced by JDBC connection string `jdbc:Oracle:thin:<IP>:<PORT>:<SID>`. For example, `jdbc:oracle:thin 10.80.50.53:1521:soluint`
- The User-IDs for configuration/ atomic schemas have the prefix of SETUPINFO NAME depending on the value set for PREFIX_SCHEMA_NAME in <<APP Pack>>_SCHEMA_IN.XML file of Schema Creator Utility.
  - For example: if the value set for PREFIX_SCHEMA_NAME is DEV and the schema name was mentioned as ofsaaconf, then the actual schema created in the database would be DEV_ofsaaconf.

8.1.4 Class loader configuration for Apache Tomcat

1. Edit the `server.xml` available in $`TOMCAT_HOME/conf/ folder`.
2. Add tag `<Loader delegate="true" />` within the `<Context>` tag, above the <Resource> tag in server.xml file. This is applicable only when the web application server is Apache Tomcat 8.

NOTE: This configuration is required if Apache Tomcat version is 8.

9 Appendix C: Creating and Deploying EAR/ WAR File

9.1 Creating and Deploying EAR/WAR File

This appendix includes the following topics:

- Creating EAR/WAR File
- Deploying EAR/WAR File

9.1.1 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.

```
/scratch/ofsaaweb>cd /scratch/ofsaaweb/OFSA80/ficweb
/scratch/ofsaaweb/OFSA80/ficweb>
/scratch/ofsaaweb/OFSA80/ficweb>ls
ant.sh                      ficwebChecksum.sh
apache-ant-1.7.1            ficweb_InstalledChecksum.txt
application.xml             lib
build.xml                   MANIFEST.MF
conf                        mycertificates
ficweb_Build_CheckSum.txt   OFSALMINFO_FusionMenu.xml
ficwebCheckSum.log          unix
ficwebChecksum.properties   webroot
/scratch/ofsaaweb/OFSA80/ficweb>./ant.sh
executing "ant"
Buildfile: build.xml

createwar:
      [war] Building war: /scratch/ofsaaweb/OFSA80/ficweb/AAI80.war

createear:
      [ear] Building ear: /scratch/ofsaaweb/OFSA80/ficweb/AAI80.ear

BUILD SUCCESSFUL
Total time: 2 minutes 8 seconds
/scratch/ofsaaweb/OFSA80/ficweb>
```

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. In case of OFSAA configured onTomcat installation, `<contextname>.war` will be created. ANT warning for `tools.jar` can be ignored while executing `./ant.sh`

9.1.2 Deploying EAR/WAR File

The OFSAA Application EAR/ WAR file is generated at `$FIC_WEB_HOME` on the OFSAA Installed server. Locate the `<contextname>.ear/ .war` file for deployment.

This section includes the following topics:

- Deploying WebSphere EAR/WAR Files
- Deploying WebLogic EAR/WAR Files
- Deploying Tomcat WAR Files

NOTE: Ensure to clear the application cache prior to the deployment of Application Pack Web Archive. This is applicable to all Web Servers (WebSphere, WebLogic, and Tomcat). For more information, refer Clearing Application Cache section.

9.1.2.1 Deploying EAR/WAR Files on WebSphere

To deploy WebSphere EAR/WAR File, follow these steps:

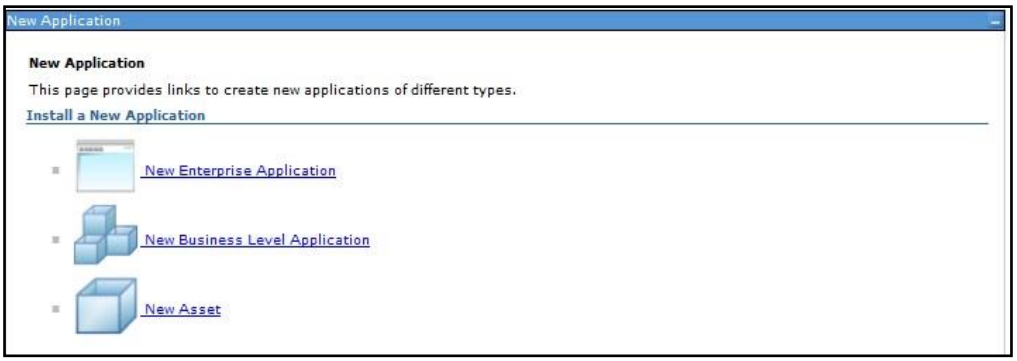
1. Start WebSphere Profile by navigating to the path "`/<Websphere_Installation_Directory>/IBM/WebSphere/AppServer/profiles/<Profile_Name>/bin/`" and execute the command:

   ```
   ./startServer.sh server1
   ```

2. Open the following URL in the browser: `http://<ipaddress>:<Administrative Console Port>/ibm/`console. (https if SSL is enabled). The login screen is displayed.

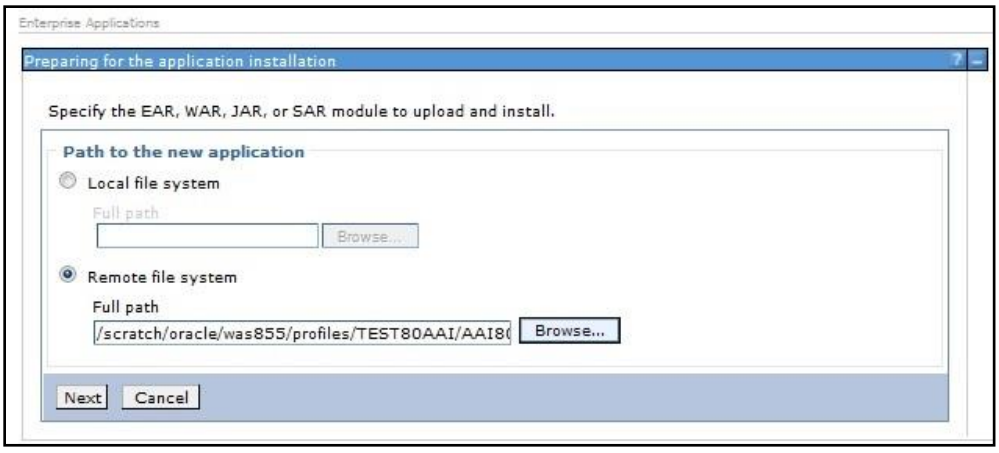
Login Window

3. Enter the user credentials with admin privileges and click **Log In**.
4. From the LHS menu, select **Applications** and click **New Application**. The *New Application* window is displayed.



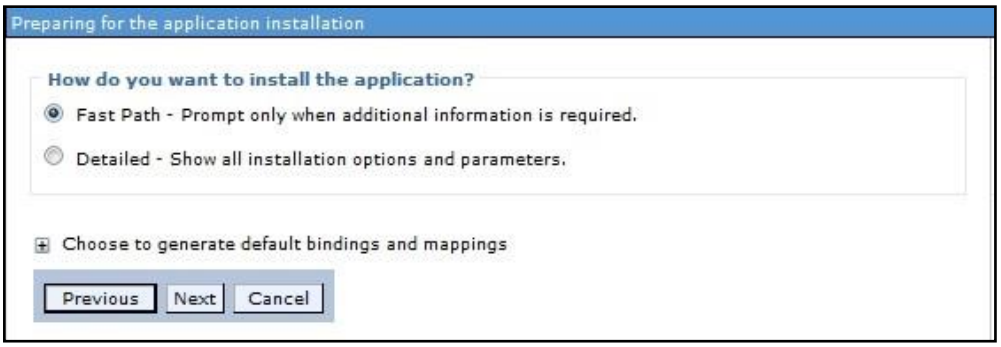
New Application

5. Click **New Enterprise Application**. The *Preparing for the application installation* window is displayed.



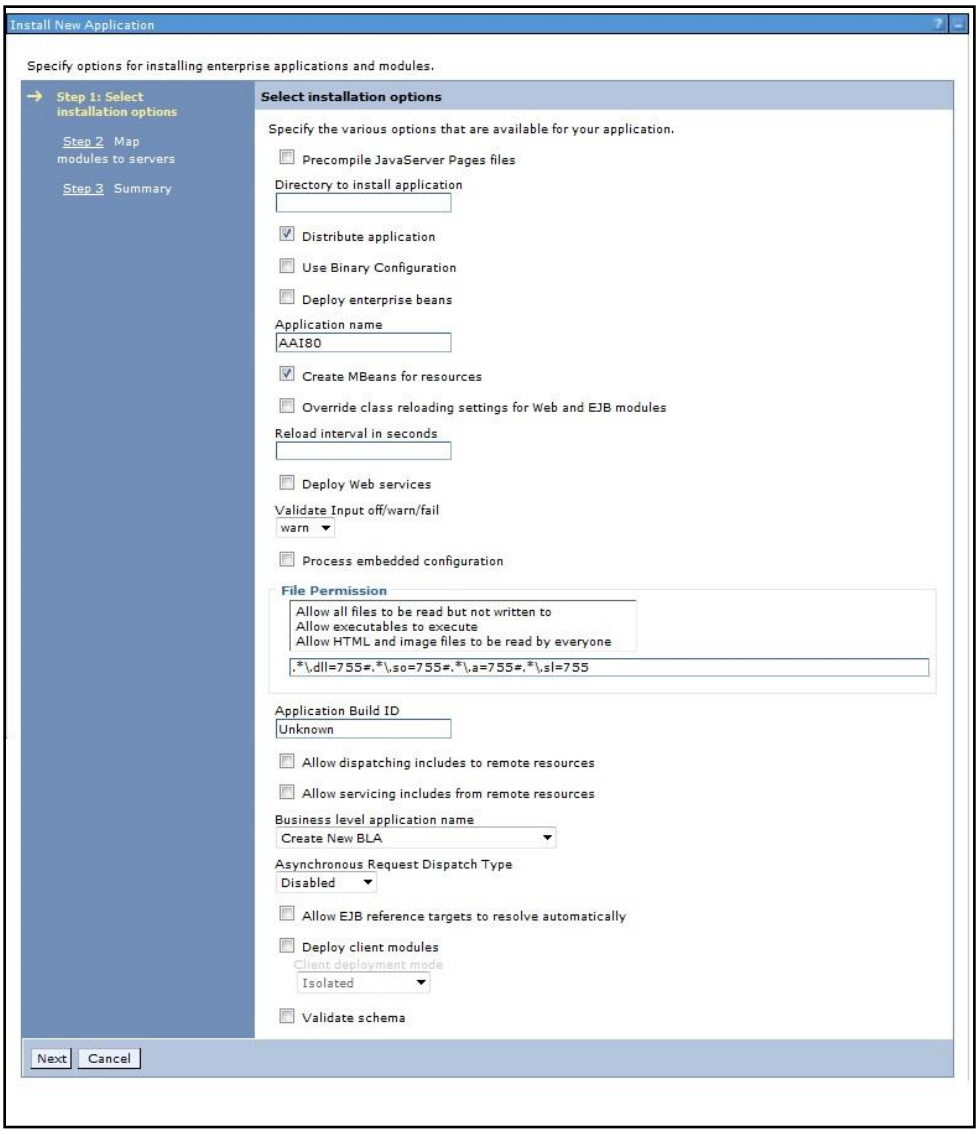
Preparing for the application installation

6. Select **Remote File System** and click **Browse**. Select the EAR file generated for OFSAA to upload and install. Click **Next**.



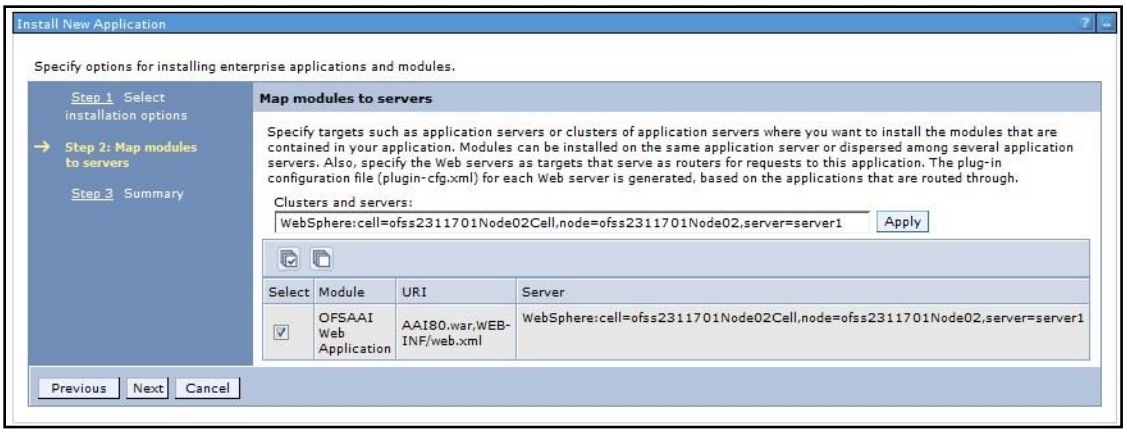
Installation Options

7. Select the **Fast Path** option and click **Next**. The *Install New Application* window is displayed.



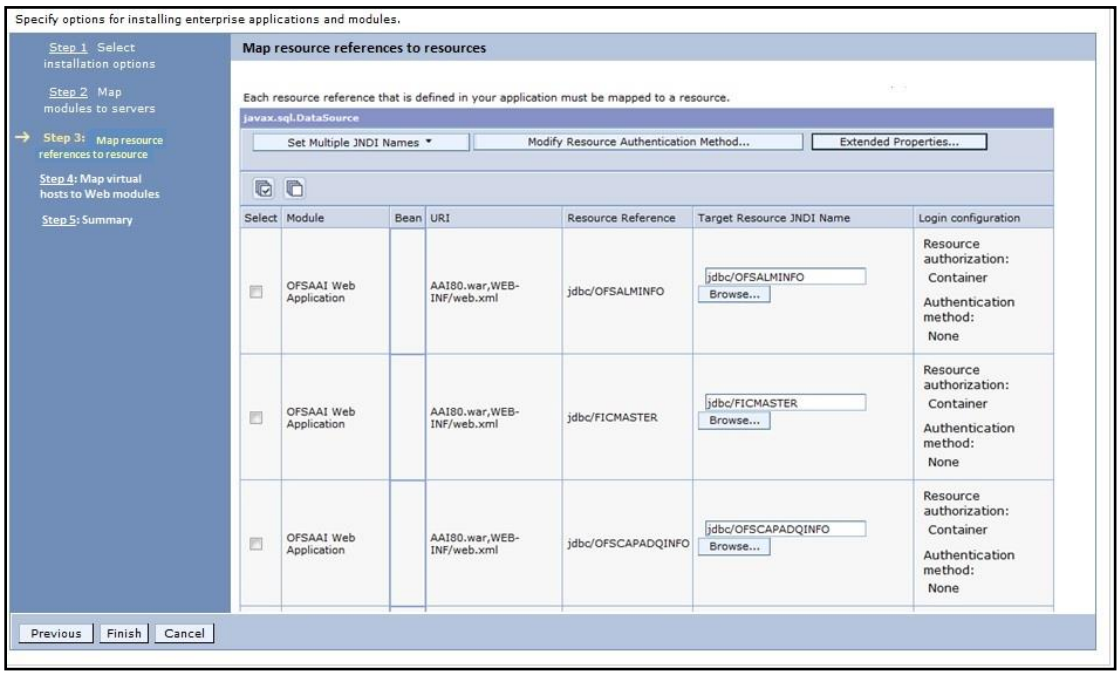
Install New Application

8. Enter the required information and click **Next**. The *Map Modules to Servers* window is displayed.



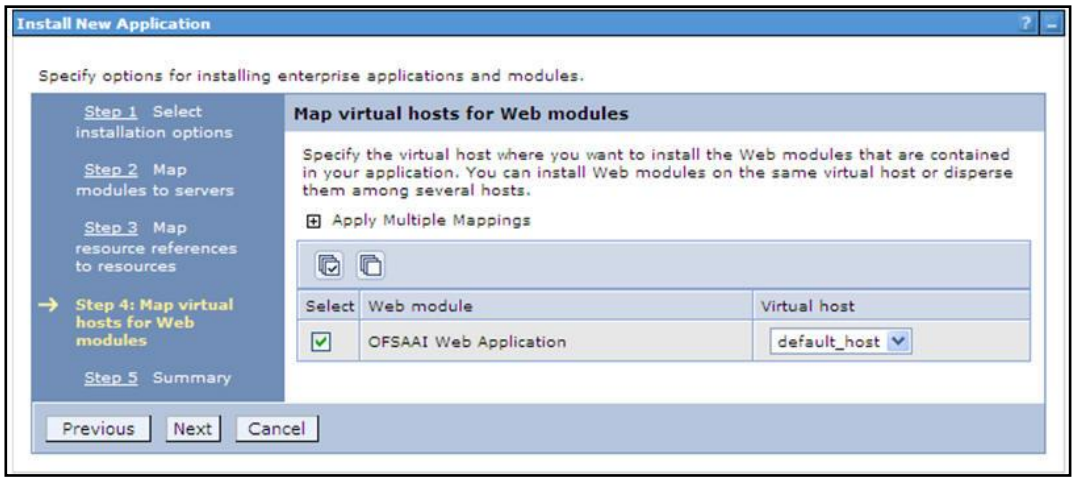
Map Modules to Servers

9. Select the **Web Application** and click **Next**. The *Map Resource References to Resources* window is displayed.



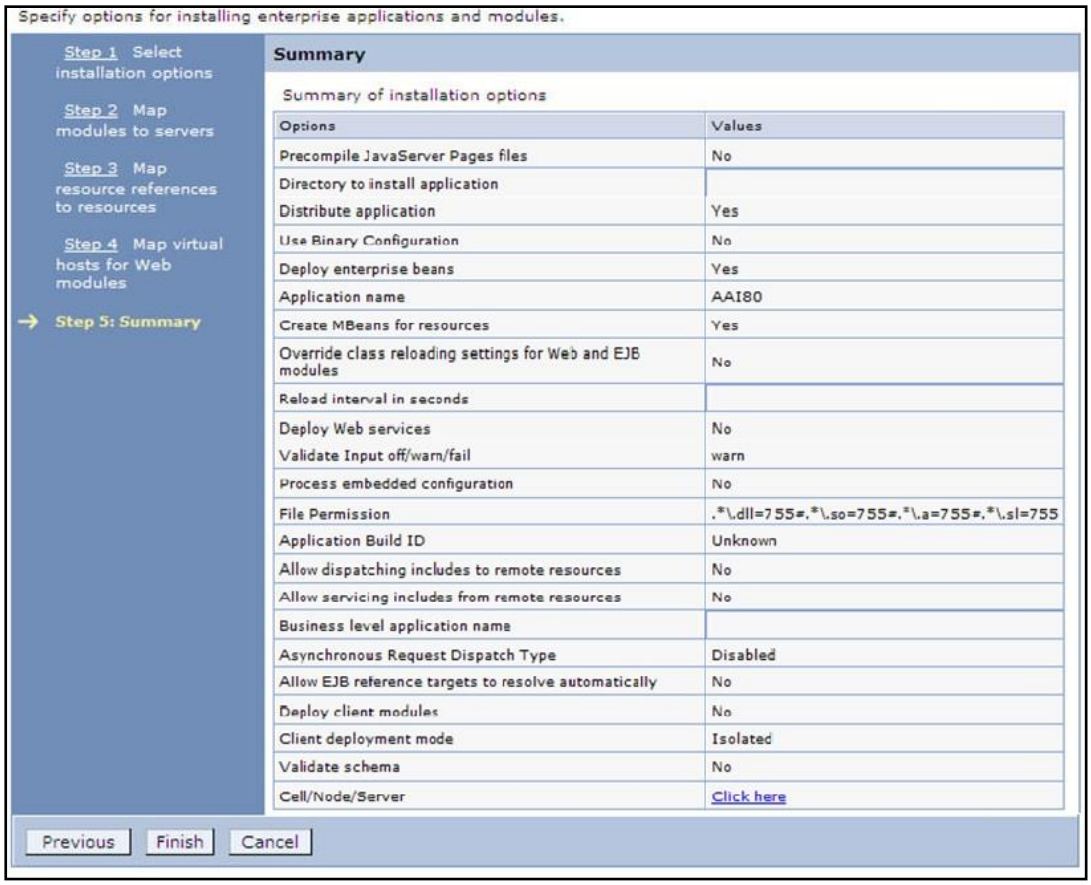
Map Resource References to Resources

10. Map each resource defined in the application to a resource JNDI name defined earlier.
11. Click **Modify Resource Authentication Method** and specify the authentication method created earlier.
12. You can specify "config" for FICMASTER resource or "atomic" for atomic resource as the authentication method.
13. Select the **OFSAAI Web Application** check box and click **Next**. The *Map Virtual hosts for Web Modules* window is displayed.



Map Virtual host for Web Modules

14. Select the **Web Application** check box and click **Next**. The *Summary* page is displayed.



Summary

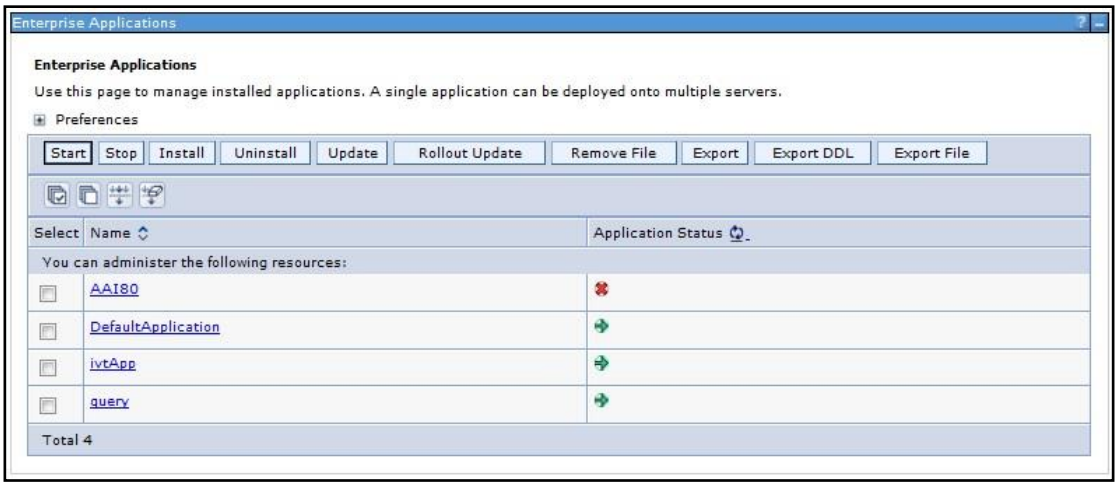
15. Click **Finish** and deploy the Infrastructure Application on WebSphere.

On successful installation, a message is displayed.

16. Click **Save** and save the master file configuration. The details are displayed in the *Master File Configuration* window.

Start the Application

1. Expand **Applications** > **Application Type** > **WebSphere enterprise applications**. The *Enterprise Applications* window is displayed.



Enterprise Applications

2. Select the installed application and click **Start**.

NOTE: <profile name> is the profile name given while creating the WebSphere profile. <cell name > is the cell name given during profile creation <contextname> is the context name given during installation.

Explode EAR

To explode EAR, follow the below 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./<context.war>
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
   ```

9. Deploying EA For Weblogic 12.2.x versions,

   Navigate to the below path and open Weblogic.xml for update.

   <WEBLOGIC_INSTALL_DIR>/Bea/user_projects/domains/<DOMAIN_NAME>/applications/<context_name>.ear./<context.war> / WEB-INF

10. Add a new tag <show-archived-real-path-enabled> as shown below,

    ```
    <container-descriptor>
    <prefer-application-packages>
    <package-name>org.opensaml</package-name>
    <package-name>org.slf4j</package-name>
    <package-name>com.google.common.*</package-name>
    </prefer-application-packages>
    <show-archived-real-path-enabled>true</show-archived-real-path-enabled>
    </container-descriptor>
    ```

9.1.2.2 Deploying EAR/WAR files on WebLogic

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

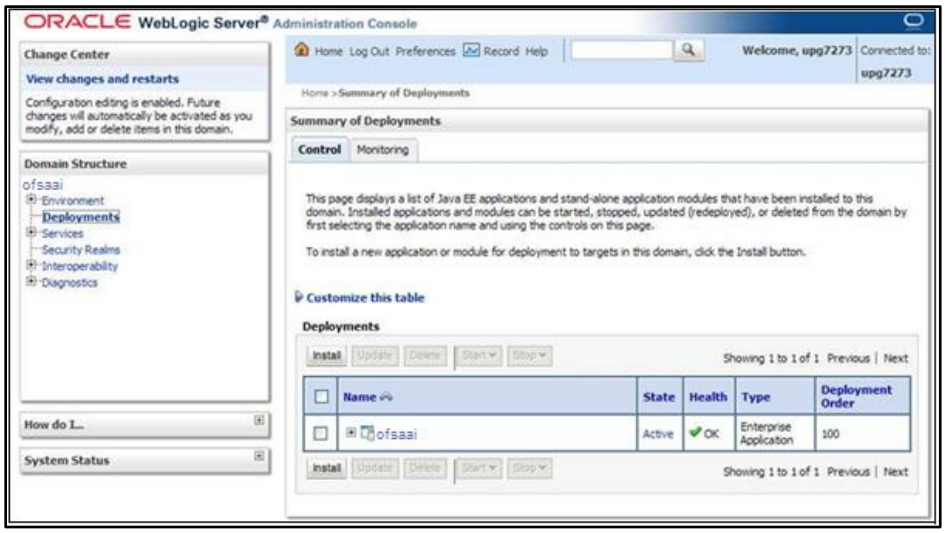
1. Navigate to the path <WebLogic Installation directory>/user_projects/domains/<domain name>/bin in the machine in which WebLogic is installed.
2. Start WebLogic by executing the command:

   ./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 Start Infrastructure 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.



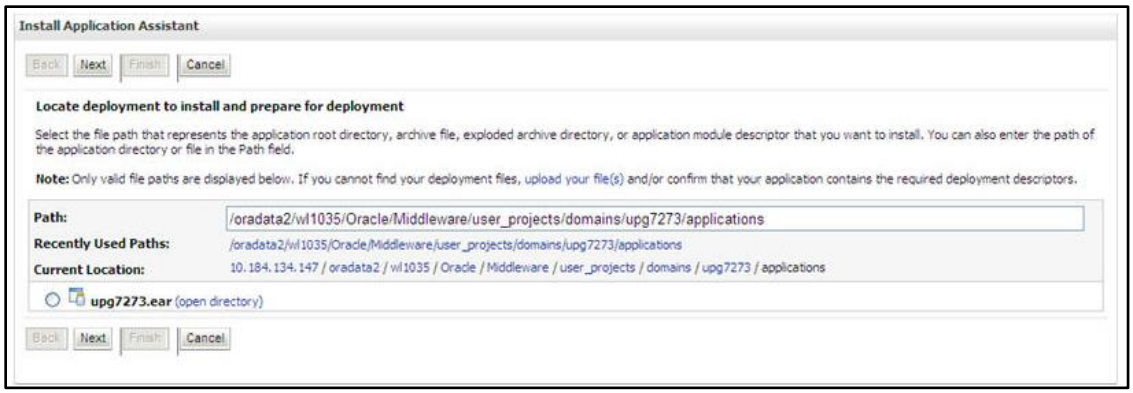
Summary of Deployments

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**.

Install Application

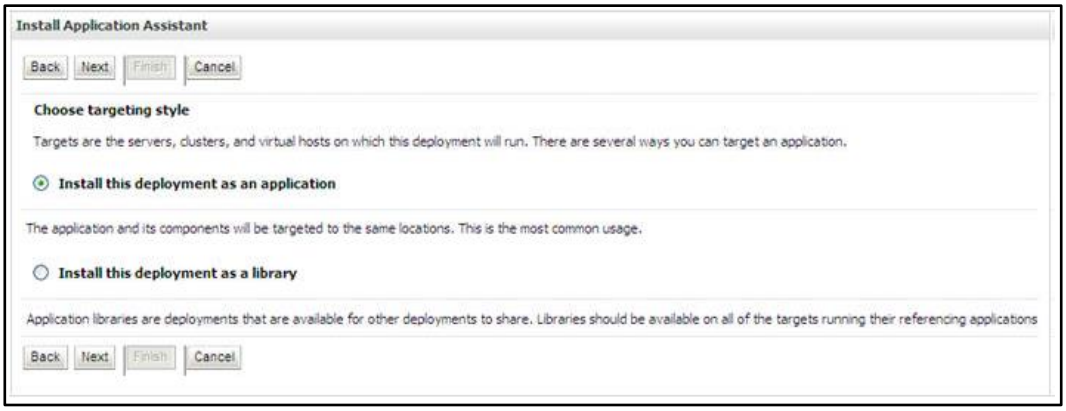
To install Application, follow these steps:

1. Open the Install Application Assistant.



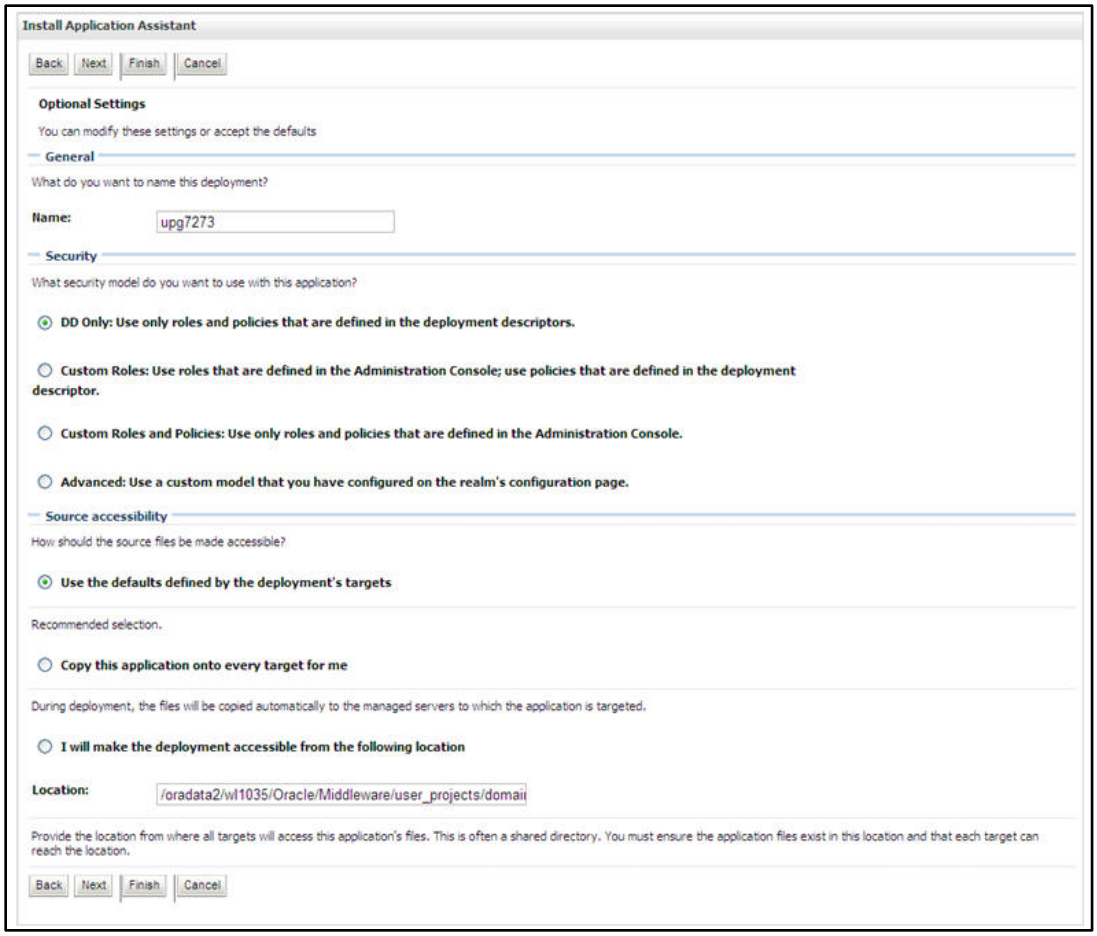
Install Application Assistant

2. Click **Next**.



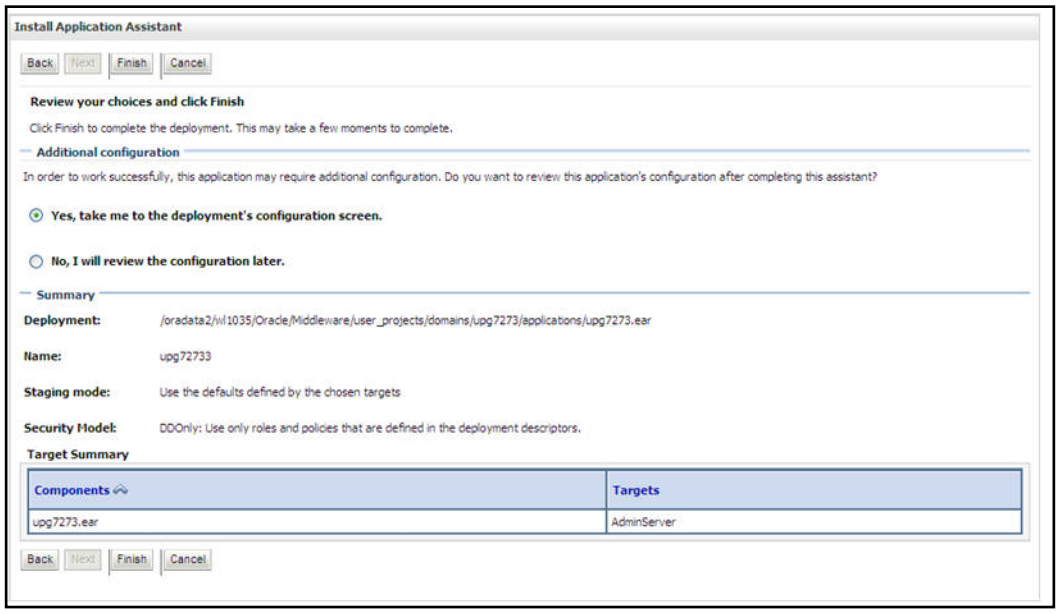
Install Application Assistant

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.



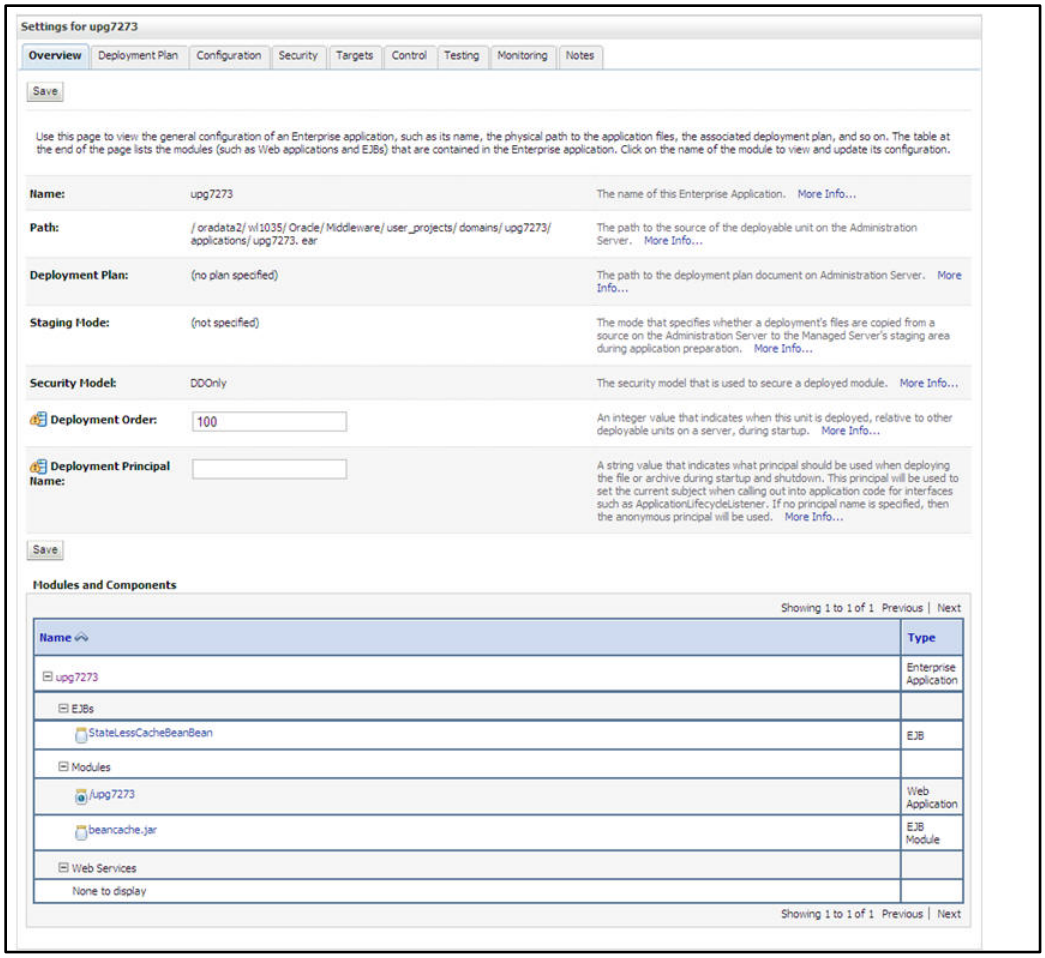
Optional Settings

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.



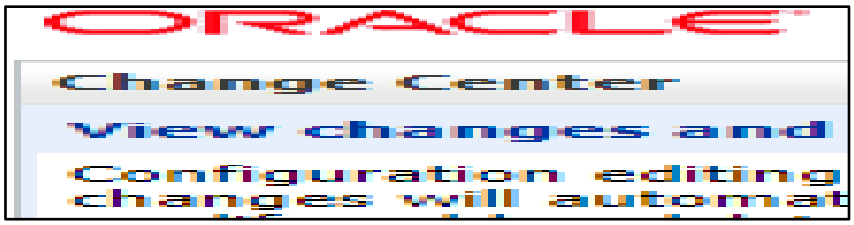
Deployment Summary

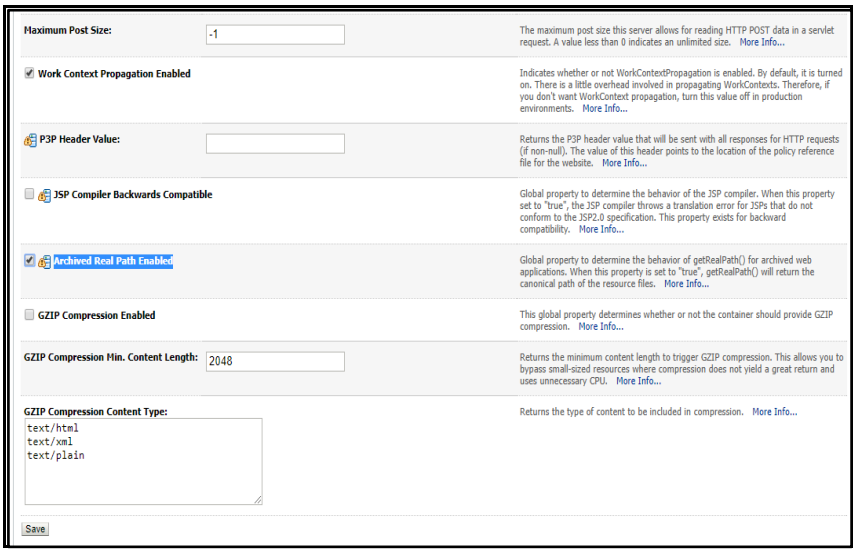
8. Select the **Yes, take me to the deployment's configuration screen** option and click **Finish**. The *Settings for <Deployment Name>* window is displayed.



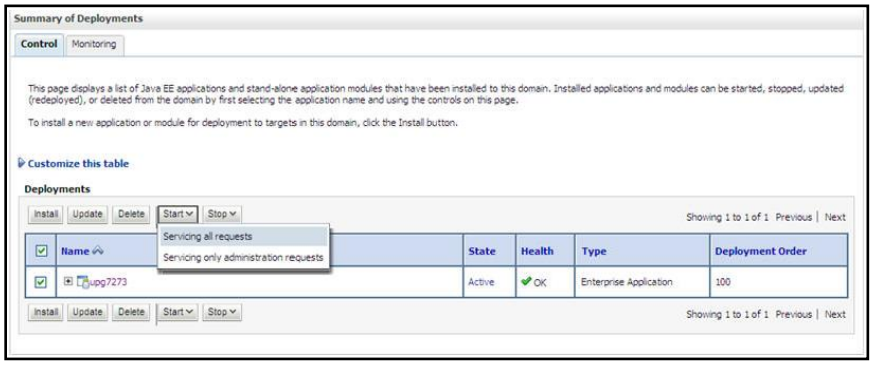
Settings for <Deployment Name>

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. For Weblogic 12.2.x versions, On LHS menu, click **Domain Name**, and navigate to **Web applications** tab to select the checkbox for "**Archived Real Path Enabled**".



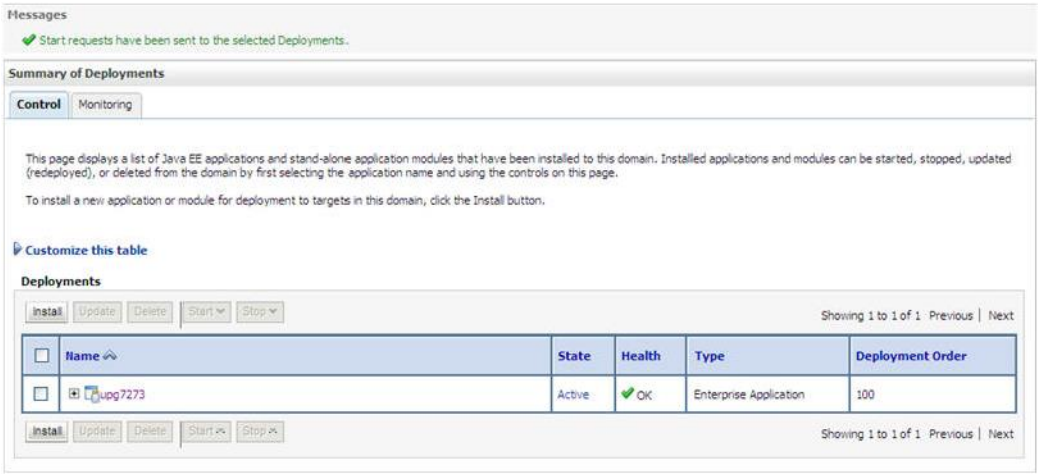


12. From the LHS menu, click **Deployments**. The *Summary of Deployments* window is displayed.



Summary of Deployments

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



Summary of Deployments

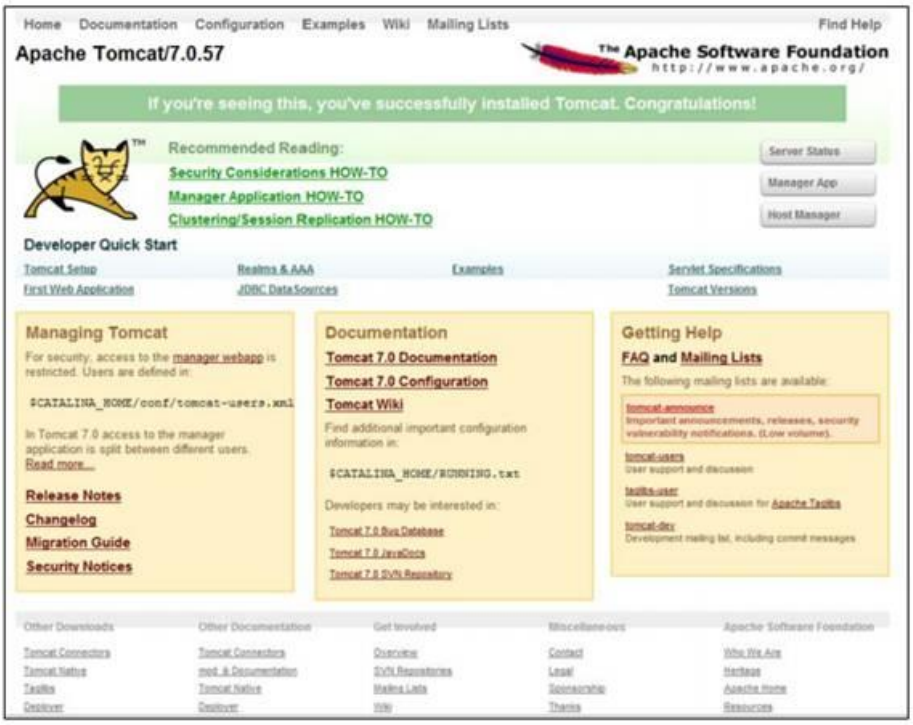
14. The **State** of the deployed application is displayed as **Active** if started successfully.

9.1.2.3 Deploying Tomcat WAR Files on Tomcat

Before deploying the WAR files, ensure that the previously deployed applications of Infrastructure are uninstalled. See *Uninstalling Previously Deployed WAR Files in Tomcat* for the procedure to uninstall the previously deployed Infrastructure war files.

On the machine that hosts Tomcat, follow the below steps outlined to deploy Infrastructure application:

15. Copy the `<context-name>.war` from `$FIC_WEB_HOME/<context-name.war>` to `<Tomcat Installation Directory>/webapps/` directory.



2. Click **Manager App**. The Connect to dialog box is displayed.
3. Enter the **User Id** and **Password** that has admin rights and click **OK**. (For user creation in tomcat, see Tomcat User Administration. The Tomcat Web Application Manager window is displayed with the list of all the applications deployed.

4. In the Deploy section, enter the **Context Path** provided during the installation as "/<context-name>".
5. Enter the path where the <context-name>.war file resides (by default "$FIC_WEB_HOME/<context-name>.war") in the **WAR** or **Directory URL** field and click **Deploy**.

6. On successful application deployment, a confirmation message is displayed. Start the Tomcat server..Refer Starting Web Application Servers for more details.

10 Appendix D: Starting / Stopping Services

10.1 Start/Stop OFSAA Infrastructure Services

This chapter details on how to start and stop OFSAA Infrastructure services. This chapter includes the following sections:

- Starting Infrastructure services
- Starting Web Application Servers
- Stopping Infrastructure Services
- Stopping Web Application Servers

10.1.1 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 below 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.

2. Select the required webserver start up option from the table.

Start up Option	Description
Starting WebSphere profile	On the machine in which Web sphere is installed, navigate to `[Webshpere_Install_Directory] /AppServer/<profiles>/<profile name>/bin` and execute the command: `./startServer.sh server1.`
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.`

Start up Option	Description
	Note: If WebLogic is already running, access the WebLogic Admin Console. Stop and start the application `<context name>.ear`.
Starting Tomcat Application	On the machine in which Tomcat is installed, navigate to `<Tomcat_Install_ Directory>/bin` and execute the command: `./catalina.sh run`

3. Start 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.
    - `./iccserver.sh`

NOTE: Only Infrastructure Default Application Server would hold ICC component.

4. 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.

10.1.2 Starting Web Application Servers

Start the Web Application Server depending on the type from the following table.

Start up Option	Description
Starting WebSphere profile	On the machine in which Web sphere is installed, navigate to `[Webshpere_Install_Directory] /AppServer/<profiles>/<profile name>/bin` and execute the command: `./startServer.sh server1.`
Starting WebLogic Domain	On the machine in which WebLogic is installed navigate to `<WebLogic Installation directory>/user_projects/domains/<domain`

Start up Option	Description
	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.
Starting Tomcat Application	On the machine in which Tomcat is installed, navigate to <Tomcat_Install_ Directory>/bin *and execute the command:* ./catalina.sh run

10.1.3 Stopping Infrastructure Services

To stop Infrastructure services:

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 Infrastructure Default Application Server would hold ICC component.

3. To stop 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
   ```

10.1.4 Stopping Web Application Servers

Stop the Web Application Server depending on the type from the following table.

Stop Option	Description
Stopping WebSphere profile	On the machine in which Web sphere is installed, navigate to [Webshpere_Install_Directory] /AppServer/<profiles>/<profile name>/bin and execute the command: ./stopServer.sh server1.
Stopping WebLogic	On the machine in which WebLogic is installed navigate to <WebLogic Installation directory>/user_projects/domains/<domain

Stop Option	Description
Domain	name>/bin and execute the command: startWebLogic.sh -d64. **Note**: If WebLogic is already running, access the WebLogic Admin Console. Stop the application <context name>.ear.
Stopping Tomcat Application	On the machine in which Tomcat is installed, navigate to <Tomcat_Install_ Directory>/bin and execute the command: ./shutdown.sh

11 Appendix E: Accessing OFSAA Application

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

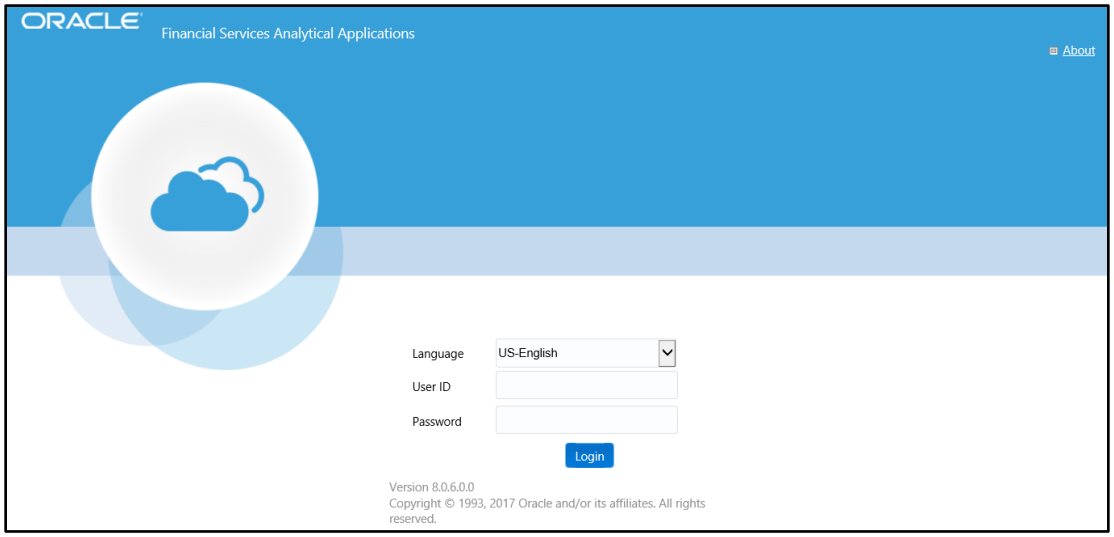
11.1 Accessing OFSAA Infrastructure

1. From your desktop, open the browser and enter the URL in below format:

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

   For example, `https://111.222.333.444:5555/ofsaa/login.jsp`

   The OFSAA login screen is displayed.



2. With installation of every OFSAA Application Pack, there are two seeded user profiles configured in the system:
   - SYSADMN – System Administrator
   - SYSAUTH – System Authorizer
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.

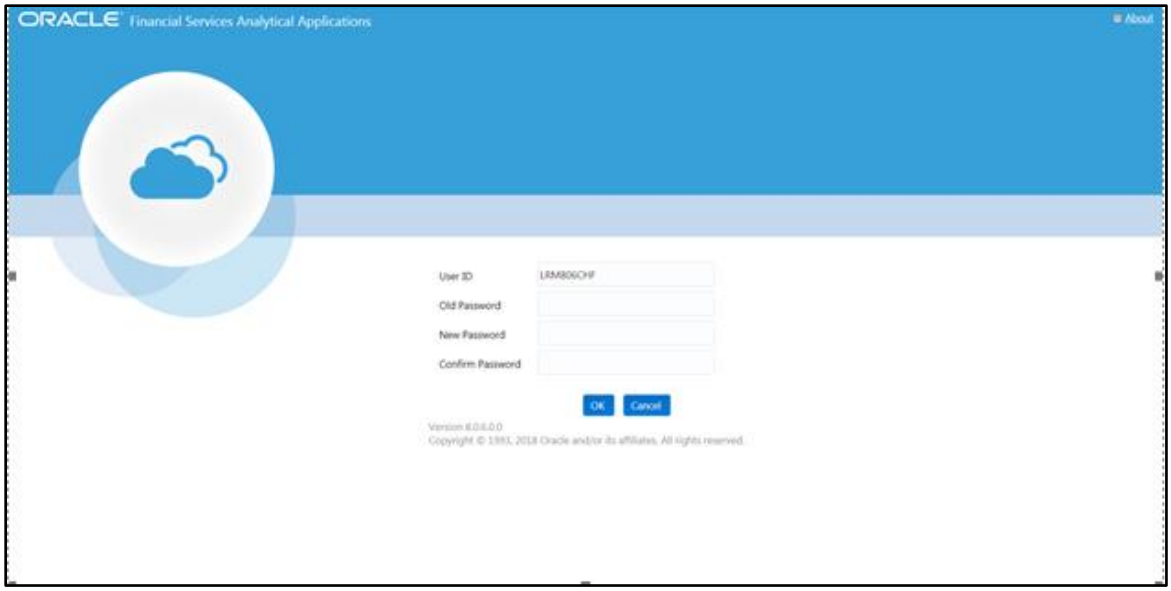
.

11.1.1 OFSAAI Login

While accessing Oracle Financial Services Analytical Applications Infrastructure, the Splash screen is as displayed:

You can select the required language from the Language drop-down list. The language options displayed in the drop down are based on the license. Based on the selection of Language, the appropriate language login screen is displayed.

Enter the User ID and Password provided by the System Administrator and click Login. You will be prompted to change your password on your first login. Alternatively, you can also choose to change your password any time.



In the Change Password screen, enter a new password, confirm it and click OK to view the Splash screen. Refer to the following guidelines for Password Creation:

- Passwords are displayed as asterisks (stars) while you enter. This is to ensure that the password is not revealed to other users.
- Ensure that the entered password is at least six characters long.
- The password must be alphanumeric with a combination of numbers and characters.
- The password should not contain spaces.
- Passwords are case sensitive and ensure that the Caps Lock is not turned ON.
- By default the currently used password is checked for validity if password history is not set.
- New password should be different from previously used passwords based on the password history which can be configured.

- If you encounter any of the following problems, contact the System Administrator:
    - Your user ID and password are not recognized.
    - Your user ID is locked after three consecutive unsuccessful attempts.
    - Your user ID has been disabled.
    - Guest user cannot change the password.

12 Appendix F: Post Deployment Configurations

12.1 Post Deployment Configuration

This chapter covers the following topics:

- Deploying the Application
- Logging as System Administrator
- Creating Application Users
- Mapping Application User(s) to User Group

12.2 Deploying the Application

12.2.1 OBIEE Configuration Steps for D eploying the OFS MRMM application

The OFS MRMM Analytics application release 8.0.6.0.0 is based upon a dedicated reporting mart built from the new Fusion Financial Services Data Model. OFS MRMM Analytics 8.0.6.0.0 leverages several components of Oracle Business Intelligence Enterprise Edition (OBIEE) technology including Dashboards and Answers.

The following are the steps to configure the OFS MRMM Analytics:

1. Make sure Oracle Business Intelligence (Version 12.2.1.2.0) installation is completed and available.
2. Start OBIEE services and login
   i. Log in to Linux server
   ii. Navigate to the below path
   `<OBIEE_HOME>/user_projects/domains/bi/bitools/bin`
   iii. `Run ./start.sh`
3. Deploy RPD and webcat file(s).
   i. Navigate to folder `$FIC_HOME/MRMM_BI/RPD/` which contains MRMM_BI.rpd and `$FIC_HOME/MRMM_BI/catalog/` which contains MRMM_BI.catalog.
   ii. RPD Deployment:
      a. Navigate to folder `$FIC_HOME/MRMM_BI/RPD/` which contains MRMM_BI.rpd and `$FIC_HOME/MRMM_BI/catalog/` which contains MRMM_BI.catalog. then copy into local system
      b. Log in to Linux.
      c. Copy the rpd from local system to the below path
      `<OBIEE_HOME>user_projects/domains/bi/tmp`

d. Navigate to the below path:
`<OBIEE_HOME>/user_projects/domains/bi/bitools/bin`

e. Replace the `<rpdLocationPath>` with the rpd location where the rpd.(for example : `<OBIEE_HOME>/user_projects/domains/bi/tmp/MRMM_BI.rpd`)

f. Provide the analytics username/ password, and execute the below command:
`./datamodel.sh uploadrpd -I <rpdLocationPath> -SI ssi -U username -P password`

g. Enter the RPD Password '*Administrator1*'. The RPD deployment is complete.

iii. Web catalog Deployment:

a. Copy the catalog file from the path $FIC_HOME/MR_BI/catalog/ to your local system.

b. Open the catalog manager, navigate to the File menu and open the catalog online (File->Open catalog) by giving the necessary credentials based on your setup (Type - (online), URL - `(http://<ipaddress>:<port>/analytics-ws)`

c. Once the catalog is opened, it will display a folder structure on left hand side. Select the catalog root folder in the LHS tree structure.

d. Go to **'File'** menu and select '**Un archive**'. It will ask for the path for a file.

e. Browse the path of the archived catalog file saved in your local folder using the 'Browse' button and click **'OK'**.

f. The catalog must be unarchived in the shared folder for the reports to display. A pop up for successful operation is displayed.

g. Restart the presentation services once again.

h. Open the analytics OBIEE URL- (`http://<ipaddress>:<port>/analytics`) Login with credentials based on your setup, and verify that catalog is available.

i. Click on catalog in OBIEE application right top menu list

ii. In LHS Navigate to shared folders and verify all the folders are available

4. Configure **tnsnames.ora**.

i. Open "tnsnames.ora" file under the folder – `<Oracle Home>/network/admin`.

ii. Make sure an entry is made in the tnsnames.ora to connect to atomic schema of OFSAA application.

iii. Save the tnsnames.ora.

5. Configure ODBC data source to connect to Oracle BI Server.
    i. Go To **Control Panel**>**Administrative Tools**>**Data Sources (ODBC)**.
    ii. Select the '**System DSN**' tab and click '**Add'** Button.
    iii. Select a driver specific to (Oracle BI Server 12g) and click '**Finish'** Button.
    iv. Enter '**Name'** and '**Server'** details (Specify the Host Name or IP Address of the BI Server and click 'Next').
    v. Enter Oracle BI Server login id and password (Enter User Name and Password created at the time of OBIEE installation). Click '**Next'**.
    vi. Click '**Finish'**.
6. Modify connection pool and set the properties.
    i. Open the OBI Administration tool.
    ii. Select **Start** > **Programs** > **Oracle Business Intelligence** > **BI Administration**.
    iii. Select **File** > **Open** > **Online** and select '**MRMM_BI.rpd**' file.
    iv. In the Open dialog box, select and open '**MRMM_BI.rpd**' file.
    v. Enter Repository password as '*Administrator1*'.
    vi. In the "Physical" layer, double-click the Connect Pool: "MRMM" to open its properties.
    vii. In the 'General' tab, edit / check the following entries:
        a. Call Interface: (OCI 10g/11g).
        b. Data source name: <tnsnames.ora entry created in the step 8.b connecting to OFSAA atomic schema>.
        c. User name: <enter atomic db user name>.
        d. Password: <enter atomic db user password>.
        e. Confirm password and Click **'OK'** to close the window.
        f. Similarly, configure the connection pools for 'MRMM_IB'.
        g. Click **'Save'** to save the RPD file.
    i. Click **'No'** for the Global Consistency Message.
    ii. Close the RPD file (File / Exit).
7. Login into OFSMRMM Application using the URL: `http://<Host_IP_Address>:<webport>/analytics`.(Replace the port number based on your setup).

12.2.2 Enabling the Auto-Complete Prompt Functionality

1. Log in to Linux
2. Navigate to the path <OBIEE_HOME>/user_projects/domains/bi/config/fmwconfig/biconfig/OBIPS

3. Open instanceconfig.xml file (make a backup of the file prior to making any changes).
4. Add the following code between the <ServerInstance> ... </ServerInstance> tags:

```
<Prompts>
<MaxDropDownValues>256</MaxDropDownValues>
<AutoApplyDashboardPromptValues>true</AutoApplyDashboardPromptVal
ues>
<AutoSearchPromptDialogBox>true</AutoSearchPromptDialogBox>
<AutoCompletePromptDropDowns>
<SupportAutoComplete>true</SupportAutoComplete>
<CaseInsensitive>true</CaseInsensitive>
<MatchingLevel>MatchAll</MatchingLevel>
<ResultsLimit>50</ResultsLimit>
</AutoCompletePromptDropDowns>
</Prompts>
```

5. Restart the OBIEE Services.

12.2.3 Increasing Maximum Visible Rows in the Table

1. Log in to Linux
2. Navigate to the path <OBIEE_HOME>/user_projects/domains/bi/config/fmwconfig/biconfig/OBIPS
3. Open instanceconfig.xml file (make a backup of the file prior to making any changes).
4. Add the following code between the <ServerInstance> ... </ServerInstance> tags:

```
<Table>
    <DefaultRowsDisplayedInDelivery>75</DefaultRowsDisplayedInDeli
    very>
    <DefaultRowsDisplayedInDownload>2500</DefaultRowsDisplayedInDo
    wnload>
    <MaxCells>1000000</MaxCells>
    <MaxVisiblePages>2500</MaxVisiblePages>
    <MaxVisibleRows>500000</MaxVisibleRows>
    <MaxVisibleSections>5000</MaxVisibleSections>
</Table>
```

5. Restart the OBIEE Services.

12.2.4 Increasing Number Formats to Five Decimals

1. Backup and edit the _datatype_format file located at the below location:

   ```
   <OBIEE_HOME>user_projects/domains/bi/bidata/service_instances/ssi
   /metadata/content/catalog/root/system/metadata
   ```

2. Modify the below from

   ```
   <saw:dataFormat minDigits="0" maxDigits="0" commas="true"
   negativeType="minus" xsi:type="saw:number"/>
   ```

   To,

   ```
   <saw:dataFormat minDigits="5" maxDigits="5" commas="true"
   negativeType="minus" xsi:type="saw:number"/>
   ```

3. Save and exit the file
4. Restart the OBIEE Services

12.2.5 Post Installation Changes in instanceconfig.xml File

Perform the following modifications in the `instanceconfig.xml` file as post installation changes:

1. Backup and edit the `instanceconfig.xml` file located at:
   `$ORACLE_HOME/user_projects/domains/bi/config/fmwconfig/biconfig/OBIPS`

Tag to be changed	Changes
<Views>	<Views> <Charts> <DefaultWebImageType>flash</DefaultWebImageType> </Charts> </Views>
<Security>	<Security> <CheckUrlFreshness>false</CheckUrlFreshness> <EnableSavingContentWithHTML>true</ EnableSavingContentWithHTML> </Security>

2. Save and exit the file.
3. Restart the presentation server for the changes to take effect.

12.3 Logging as System Administrator

12.3.1 Role of an Administrator

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

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

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

  The respective roles must be mapped to administrative user SYSADMN:

12.3.2 Function Maintenance

Functions define the privileges to access modules or components in the OFS Market Risk Measurement and Management Application and define or modify associated metadata information. Function maintenance allows you to create functions for users to ensure only those functions are executed which are specific to the user's role.

For details, see the System Administrator section in OFS Analytical Applications Infrastructure User Guide.

12.3.3 Role Maintenance

A role is a collection of functions defined for a set of users to execute a specific task. You can create roles based on the group of functions to which users are mapped.

For details, see the System Administrator section in OFS Analytical Applications Infrastructure User Guide.

See Appendix M for details on the user roles in OFS MRMM.

12.3.4 Function - Role Mapping for MR UI

Function Role Map facilitates you to view and map a set of function(s) to a specific role within the OFS Market Risk application. Functions can only be mapped to a defined set of roles to ensure effective system security. The system administrator can create new roles and assign the functions as required instead of using the default roles.

For details, see the System Administrator section in OFS Analytical Applications Infrastructure User Guide.

12.3.5 User Group Role Map

User Group Role Map facilitates System Administrators to map Role(s) to specific User Group(s). Each role has a defined function and any user(s) mapped to the role has to perform only those functions. For example, the table below lists the user group mapped to a specific role.

For details, see the User Group Role Map section in OFS Analytical Applications Infrastructure User Guide. See Appendix M for details on the user roles in OFS MRMM.

12.4 Creating Application Users

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

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

12.5 Mapping Application User(s) to User Group

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

With the installation of MRMM Application Pack, preconfigured Application user groups are seeded. These user groups are unique to every OFSAA Application Pack and have application roles pre-configured.

For more information on seeded User Groups, see Appendix .

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

13 Appendix G: 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.

14 Appendix H: OFSAA Landing Page

This appendix includes the following topics:

- Installation Checklist
- OFSAA Landing Page
- Enabling a Product within an Application Pack

14.1 Installation Checklist

Before starting on the OFSAAI Installation Kit, ensure that the following pre-installation activities checklist is completed successfully. It is recommended to take a print out of the checklist and follow the checklist step by step.

14.1.1 Table with (General, Pre-Install, Install, and Post Install) Checklist

Step No.	Task	Done
General		
1	Check the OFS Market Risk Measurement and Management Release Notes and Read Me document for any additional steps to be performed on OFS Market Risk Measurement and Management Pack or OFSAAI. Note: For more details, contact Oracle support.	
Market Risk Measurement and Management Pack Pre Installation + During Installation		
1	Prior to installation, ensure that sufficient free temp space (minimum 1 GB free) is available in /tmp directory of unix server hosting OFSAAI.	
Market Risk Measurement and Management Pack Post Installation		
1	Perform post-installation steps. For more information, refer to Post Installation	

14.2 OFSAA Landing Page

On successful authentication, the OFSAA Landing Page is displayed. This is a common landing page for all users until a preferred application landing page is set by the user in the preferences.

The landing page includes multiple tabs and each tab has specific links to OFSAA Infrastructure and/or Application modules. The tabs and links are displayed based on the OFSAA Application accessed and the access roles mapped to the logged in user.

Each tab contains LHS Menu and RHS Menu. The LHS Menu holds link(s) to modules in a tree structure. The RHS Menu holds link(s) to modules in a navigational window format.

The following tabs are available in the Landing Page:

- Applications Tab
- Object Administration Tab
- System Configuration and Identity Management Tab

14.3 Applications Tab

This tab lists the various OFSAA Applications that are installed in the OFSAA setup. The Select Application drop-down list displays the OFSAA Applications, based on the logged in user and mapped OFSAA Application User Group(s). Links to related modules within Applications and Infrastructure are grouped appropriately to maintain a unified experience.

14.4 Object Administration Tab

This tab lists the various OFSAA Information Domains created in the OFSAA setup. The Select Information Domain drop-down list displays the OFSAA Information Domains based on the logged in user and mapped OFSAA Application User Group(s). Links to modules that enable object traceability and migration of objects are grouped in this tab.

14.5 System Configuration and Identity Management Tab

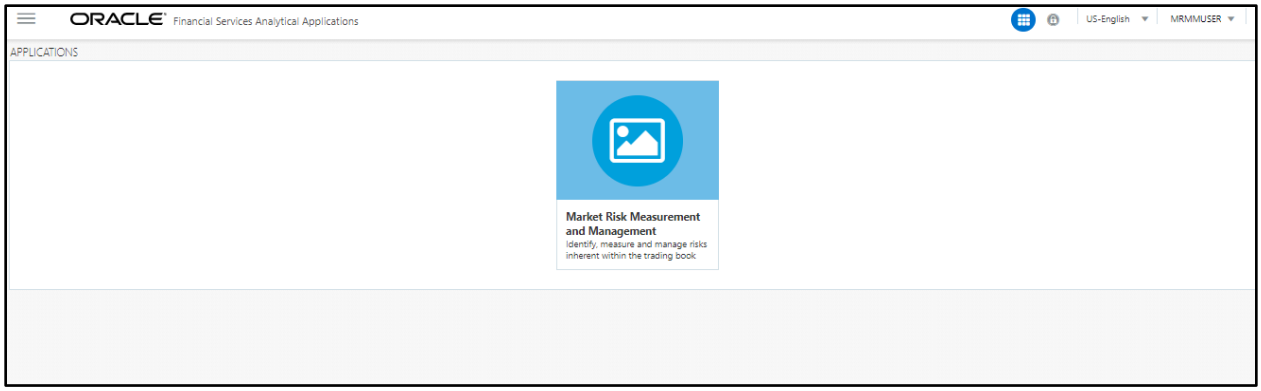
This tab lists the OFSAA Infrastructure System Configuration and Identity Management modules. These modules work across Applications/ Information Domains and hence there are no Application and Information Domain drop-down lists in this tab. Links to modules that allow the maintenance of setup installation and identity management tasks are grouped together in this tab.

NOTE: The navigation path differs from Application to Application. That is, based on the selected Application, the navigation varies.

For more details on how to operate on each tab, see OFSAAI User Guide available in OTN.

14.5.1 OFSAA Landing Page for MRMM Administrator

On successful authentication, the OFSAA Landing Page is displayed. This is a common landing page for all users until a preferred application landing page is set by the user in his preferences.



The landing page includes multiple tabs and each tab has specific links to OFSAA Infrastructure and/or Application modules. The tabs and links are displayed based on the OFSAA Application accessed and the access roles mapped to the logged in user.

Each tab contains LHS Menu and RHS Menu. The LHS Menu holds link(s) to modules in a tree structure. The RHS Menu holds link(s) to modules in a navigational panel format.

The following tabs are available in the Landing Page:

- Applications tab
- Object Administration tab
- System Configuration and Identity Management tab

NOTE: Refer the User Manual for more details on how to operate on each tab.

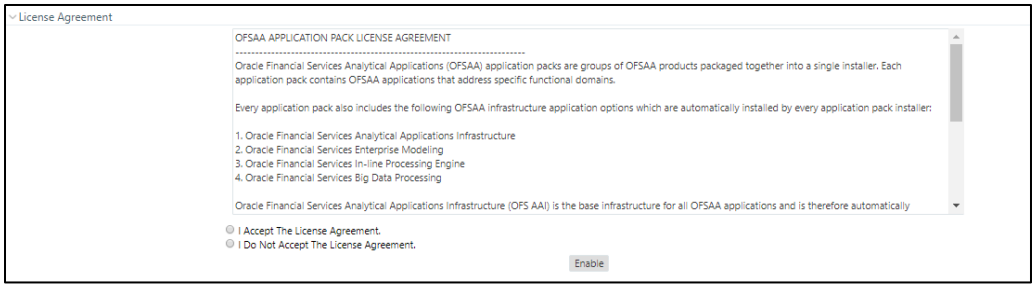
14.6 Enabling a Product within an Application Pack

You can also enable a product/ application within an application pack post installation at any point of time.

To enable a product through the application UI, follow these steps:

1. Login to the application as SYSADMN user or any user with System Administrator privileges.
2. Navigate to **System Configurations & Identity Management** tab, expand **Administration and Configuration** and select **System Configuration**.
3. Click **Manage OFSAA Product License(s)**. The Manage OFSAA Product License(s) window is displayed.

4. Select an Application pack to view the products in it. The products are displayed in the Products in the Application Pack grid.
5. Select the checkbox to enable a product within the Application Pack which is not enabled during installation.
6. Click VIEW LICENSE AGREEMENT to view the license information. The License Agreement section is displayed.



7. Select the option I ACCEPT THE LICENSE AGREEMENT and click ENABLE. A pop-up message confirmation is displayed showing that the product is enabled for the pack.

   Note:

   - To use the newly enabled product, you need to map your application users to the appropriate product specific User_ Group(s) and authorize the actions by logging in as System Authorizer.
   - For more information refer to Mapping/Unmapping Users section in the OFSAAI User Guide available in OHC Documentation Library.
   - To identify the newly enabled product specific UserGroups/ Application Pack specific User_Groups, refer to the respective Application Pack specific Installation and Configuration Guide/ User Manual.

This page includes the following sections:

- INSTALLED APPLICATION PACKS

- PRODUCTS IN THE APPLICATION PACK

8. The following fields are displayed in the INSTALLED APPLICATION PACKS section:

Field	Description
Application Pack ID	Displays a unique Application Pack ID related to the application pack. Select the appropriate Pack id using the radio button. The Products in the application pack will be displayed below in the *PRODUCTS IN THE APPLICATION PACKS* section.
Application Pack Name	Displays the name of the Application Pack.
Description	Displays the description of the Application Pack.
Install Date	Displays the date when the Application Pack was installed.

9. The following fields are displayed in the PRODUCTS IN THE APPLICATION PACK section:

Field	Description
Enable	Select the checkbox to enable a product within an Application Pack.
Product ID	Displays a unique product id for the product.
Product Name	Displays the name of the Product
Description	Displays the description of the product.
Enable Date	Displays the date when the product was enabled.

10. Select an Application Pack by clicking the radio button next to the Application Pack ID field.
11. Selecting an Application Pack will display below the products within the Application Pack.
12. Products which were enabled at the time of installation will have the checkbox “ENABLE” disabled. You can enable any product within the selected Application Pack by clicking the “ENABLE” checkbox against the respective Product ID.
13. Click on RESET button to cancel the operation and refresh the screen.
14. Click VIEW LICENSE AGREEMENT button.
15. The License Agreement section is displayed.
16. Select the option I ACCEPT THE LICENSE AGREEMENT.
17. Click ENABLE.

18. An appropriate pop-up message confirmation is displayed showing that the product is enabled for the pack.

NOTE: To use the newly enabled product, you need to map your application users to the appropriate product specific User_Group(s) and subsequently, authorize the actions by logging in as System Authorizer.

NOTE: For more information see *Mapping/Unmapping Users* section in the *Oracle Financial Services Analytical Applications Infrastructure User Guide 8.0*.6.
To identify the newly enabled product specific UserGroups/ Application Pack specific User_Groups, refer to the respective Application Pack specific Installation and Configuration Guide/ User Manual.

15 Appendix I: Additional Configurations

15.1 Additional Configurations

The following sections provide detailed module specific post installation configurations.

This section includes the following topics:

- FTP/SFTP Configuration for File Transfer
- Configuring Infrastructure Server Memory
- Internet Explorer Settings
- Retrieve 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
- Configure OFSAAI Web Services
- Deploy OFSAAI Web Services
- Configuration to Enable Parallel Execution of DML statements
- Configuring Message Details in Forms Designer
- Clearing Application Cache
- Configuring Password changes
- Configuring Java Virtual Machine
- Configuring Internal Service (Document Upload/ Download)

15.1.1 Configuring FTP/SFTP Configuration for File Transfer

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.

15.1.1.2 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

15.1.2 Configure Infrastructure Server Memory

The memory settings for Infrastructure Application Server, Tomcat, WebSphere, and WebLogic can be edited for customizing memory settings and garbage collector settings depending on the available hardware configuration as explained below. 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.

15.1.2.1 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.
6. This has a default value `X_ARGS_APP ="-Xms200m"`

   `X_ARGS_APP =" "$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"

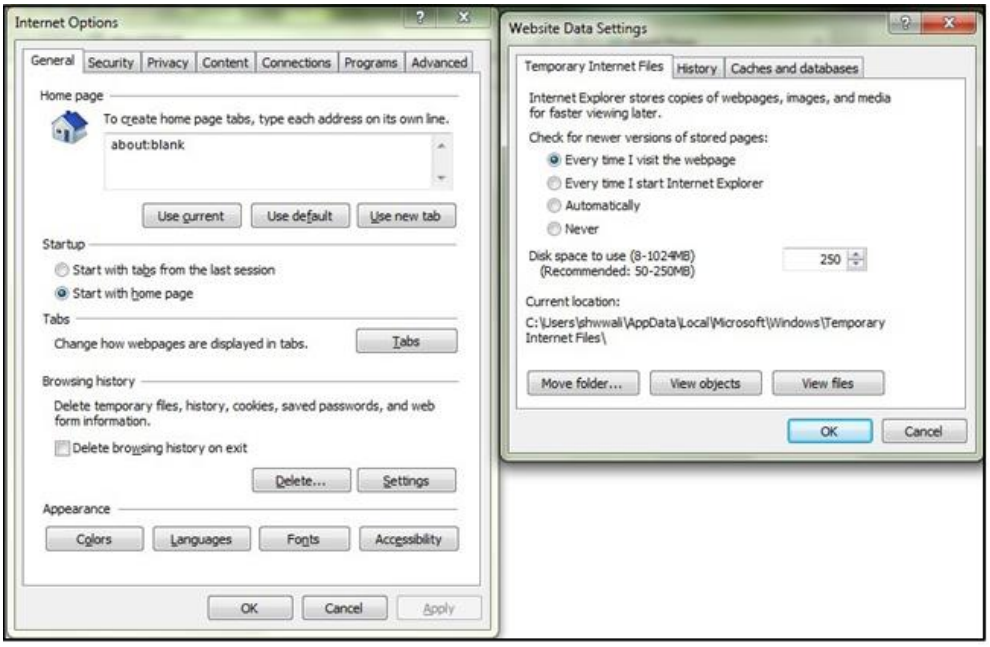
15.1.3 Internet Explorer Settings

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.

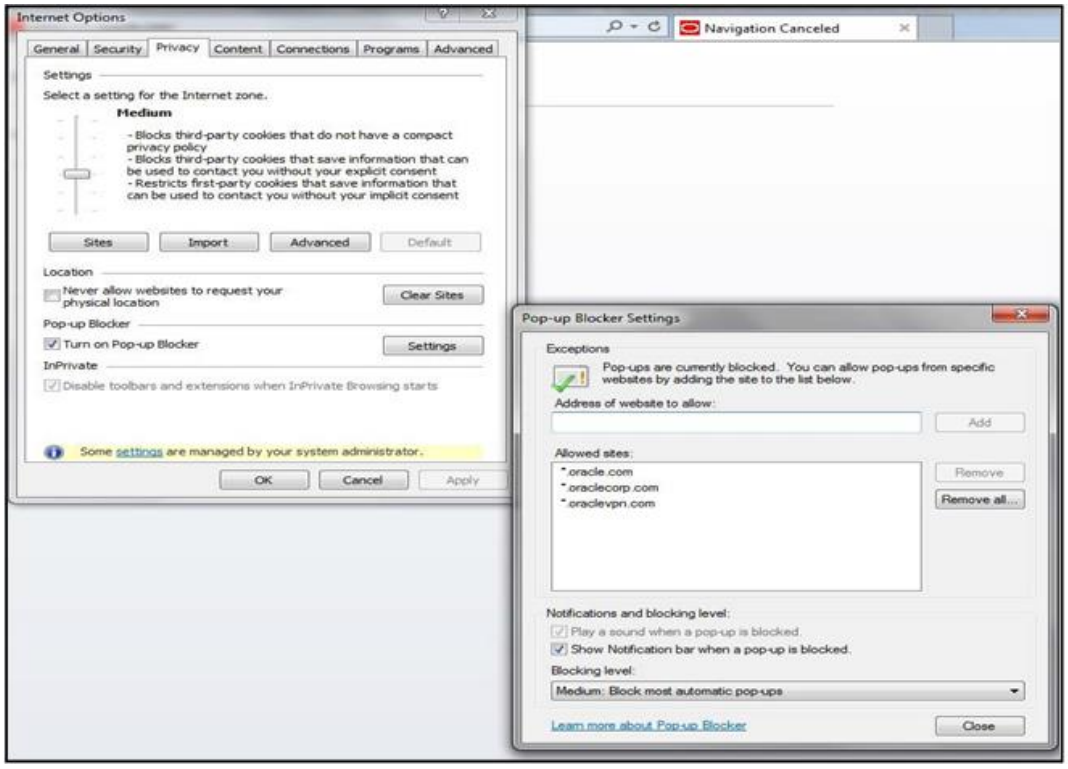
1. Open **Internet Explorer**. Select **Tools** > **Internet Options**. The Internet Options window is displayed.
2. Click the **Settings** button. The Settings window is displayed.

3. Select the option **Every time I Visit the webpage** and click **OK**.



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**.

6. Click **OK** to save.
7. Click **Internet Explorer** >> **Tools** >> **Compatibility View Settings**.
8. Enter the OFSAA setup URL in the **Add this website** field.
9. Click **Add**.
10. Ensure the URL is listed under **Websites you've added to Compatibility View**.
11. In the Internet Options window, select the **Privacy** tab and select the **Turn on Pop-up Blocker** option under **Pop-up Blocker** settings.



12. Click **Settings**. The Pop-up Blocker Settings window is displayed.
13. Enter the URL of the OFSAA Application in **the Address of Website to allow**
14. Click **Add**. The OFSAA URL is displayed in the **Allowed Sites** section.
15. Click **Close**.
16. Click **OK** in the Internet Options window.

15.1.4 Retrieve 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 Admin Advanced 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.

15.1.5 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.

15.1.6 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.

15.1.7 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.

15.1.8 Encryption Changer

For more information on Encryption Changer, see Key Management section in OFSAAI Administration Guide.

15.1.9 Infrastructure LDAP Configuration

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

15.1.9.1 Configure Infrastructure "Configuration Schema"

In the Infrastructure "configuration schema", ensure the following entries in Configuration Table.

Configuration Schema

PARAMNAME	Description	PARAM Value Example
AUTHENTICATIONTYPE	Authentication type	3 - AUTHENTICATIONTYPE value must be 3 for LDAP
ROOTCONTEXT	The Root Context for the LDAP Directory	dc=<OFSAA>, dc=<com>
ROOTDN	The Root dn for LDAP directory	cn=<Manager>, dc=<Reveleus>, dc=<com>
ROOTPASS	Password for the Root	<secret>
LDAPURL	LDAP URL	<ldap://10.11.12.13.1234/>
LDAP_SSL_MODE	LDAP in SSL Mode	N for non - SSL and Y for SSL
HASHPASS	Should the user password be Hashed	FALSE or TRUE. When HASSPASS is set as FALSE, we need to have the ROOTDN value as "uid=ORCLADMIN, ou =Users, dc=OFSAAI, dc=com". ORCLADMIN is a dummy user, it will be replaced dynamically with the logged in user. When HASSPASS is set as TRUE, we need to have the ROOTDN value as "cn=orcladmin, cn=Users, dc=i-flex,dc=com" and proper oracladmin LDAP password as ROOTPASS. First OFSAAI connects to LDAP directory using orcladmin user and fetches the login user details and verifies the entered password.
RETRIEVE_DN	To retrieve Distinguished	TRUE

PARAMNAME	Description	PARAM Value Example
	Name	

NOTE: ROOTCONTEXT, ROOTDN, and ROOTPASS entries should be same as in the slapd.conf file.

15.1.9.2 Configure OpenLDAP Files

1. Copy the reveleusSchema.schema from <Infrastructure Installation Directory>/ficapp/common/FICServer/conf/LDAP_LDIF folder to LDAPServer Schema folder.
2. Copy the Domains.ldif and Reveleus.ldif files from <Infrastructure Installation Directory>/ficapp/common/FICServer/conf/LDAP_LDIF folder to OpenLDAPServer folder.

NOTE: Make sure that the ROOTCONTEXT in the Domains.ldif and Reveleus.ldif files are the same as slapd.conf file.

3. Provide the appropriate entries for ROOTDN, ROOTPASS, and ROOTCONTEXT in slapd.conf file in the OpenLDAPServer folder.
4. Add the text "include schema/reveleusSchema.schema" as the first line of the slapd.conf file

NOTE: The above steps of the configuration are for OpenLDAP Server only. If you need to configure Infrastructure for any other LDAP Server, you will have to make the changes appropriately.

5. In the command prompt, navigate to the LDAP installation directory and execute the command "ldapadd -D"ROOTDN" -w ROOTPASS -f/data/Reveleus.ldif"

   This is for creating the entries for Users, User Groups, Functions, Profiles, Segments, Domains, Roles, and HolidayMaster in the Data information Tree of LDAP.
6. Make an entry in the Domains.ldif file for each Information Domain that is created through the Infrastructure UI.

To add an entry corresponding to the new Information Domain to the Domains.ldif file, add the following block of text with the appropriate values:

NOTE: DSNID refers to Information Domain name.

```
dn: DSNID=<DSN ID>,ou=Domains,@LDAP_DIRECTORY_ROOTCONTEXT@
changetype: add
```

```
mappedsegments: <Mapped segments/~>

dsnid: <DSN ID>

infodomname: < Information Domain Name>

objectClass: Infodom

objectClass: top

infodomdescription: < Information Domain Description>
```

Example:

```
dn: DSNID=FUSIONMOCK, ou=Domains, dc=FTP1,dc=com

mappedsegments: ~

dsnid: FUSIONMOCK

infodomname: FUSIONMOCK

objectClass: Infodom

objectClass: top

infodomdescription: FUSIONMOCK
```

Then, navigate to LDAP installation directory and execute the command `"D"ROOTDN" -w ROOTPASS -f/data/Domains.ldif"`

NOTE: You can add entries for multiple Information Domains at the same time.

15.1.9.3 Migrate Data from CSSMS tables to LDAP server

If you are using LDAP authentication, it is required to migrate all the details from the CSSMS table, which contains the information entered using the Infrastructure Administration module under Security Management to the LDAP Server.

To migrate data from CSSMS tables to LDAP server:

1. Invoke the `LDAP_Migration.sh` file in `$FIC_HOME/MigrationUtilities/Migration_LDAP/ bin` folder. The *Select Source & Destination for Migration* window is displayed with the option to migrate the data from SMS to LDAP or vice versa.

Select Source & Destination for Migration

2. Select the **SMS to LDAP** option and click **OK**. The *Select Entities to Migrate* window is displayed.

Select Entities to Migrate

You can select the data that you wish to migrate such as Users, User Groups, Functions, Roles, Segment, Profiles, Holiday Master, Function Role Maps, User - User Group Maps, User Group Role Map, and User Group- Domain Map.

3. Select the entities that you wish to migrate and click Migrate. The data is migrated and a confirmation dialog is displayed.
4. You can verify the data migrated to LDAP server through the LDAP Browser.

NOTE: You should also enter the passwords for all the users as passwords are not migrated in migration process.

15.1.10 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 which 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.

15.1.11 Configure Message Details in Forms Designer

You can configure the Message Details in Forms Designer under Data Entry Forms and Queries module by updating the details of mail server in the "NotificationConfig.cfg" file which 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:

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.

Parameter	Description
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)

Ensure that the authorized User details are included in *Administration* > *Security Management* > *User Administrator* > *User Maintenance* window.

15.1.12 Clearing Application Cache

This is applicable to all Web Servers (i.e. WebSphere, WebLogic, and Tomcat).

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

- **Tomcat**: `<Tomcat installation folder>/work/Catalina/localhost/<Application name>/org/apache/jsp`
- **WebLogic**: `<Weblogic installation location>/domains/<Domain name>/servers/<Server name>/tmp/_WL_user/<Application name>/qaelce/jsp_servlet`
- **WebSphere**: `<Websphere installation directory>/AppServer/profiles/<Profile name>/temp/<Node name>/server1/<Application name>/<.war file name>`

15.1.13 Configuring Password changes

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

15.1.13.1 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 Apache Tomcat as Web server, update the `<Context> -> Resource` tag details in `Server.xml` file from the `$CATALINA_HOME/conf` directory. For Tomcat, both Config Schema (FICMASTER resource) and Atomic Schema (<INFODOM_NAME> resource) exist.

   If you are using WebSphere as Web server:

   a. Login to the WebSphere Administration Console, from the left side menu.

   b. Navigate to Resources >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 will need to be modified).

   If you are using WebLogic as 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.

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. If you are using Apache Tomcat as Web server, update the <Context> -> Resource tag details in `Server.xml` file from the `$CATALINA_HOME/conf` directory. For Tomcat, both Config Schema (FICMASTER resource) and Atomic Schema (<INFODOM_NAME> resource) exist.

5. If you are using WebSphere as Web server:

   a. Login to the WebSphere Administration Console, from the left side menu.

   b. Navigate to *Resources >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 will need to be modified).

   If you are using WebLogic as 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).

6. Restart the OFSAAI services.

15.1.14 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.

15.1.15 Configure Internal Service (Document Upload/ Download)

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

The Document Upload /Download feature has 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
     ```

16 Appendix J: Grants for Atomic/ Config Schema

This Appendix includes the following sections:

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

16.1 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

```
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 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 below grant on all ATOMIC schema(s):

```
grant olap_user to &database_username
```

16.2 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 select on SYS.V_$PARAMETER to &database_username
/
grant create SYNONYM to &database_username

/
```

16.3 Grants on 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.

17 Appendix K: Configuring MRMM Pack XML Files

17.1 OFS_MRMM_PACK.XML file

The OFS_MRMM_PACK.xml file holds details on the various products that are packaged together in MRMM Application Pack.

This section details the various tags/ parameters available in the file and the values that need to be updated. Prior to installing the MRMM Application Pack in SILENT mode, it is mandatory to update this file.

```
<APP_PACK_CONFIG>
    <APP_PACK_ID>OFS_MRMM_PACK</APP_PACK_ID>
    <APP_PACK_NAME>Financial Services Market Risk Measurement and Management</APP_PACK_NAME>
    <APP_PACK_DESCRIPTION>Pack for Financial Services Market Risk Measurement and Management Applications</APP_PACK_DESCRIPTION>
    <VERSION>8.0.6.0.0</VERSION>
    <APP>
        <APP_ID PREREQ="" DEF_SEL_FLG="YES" ENABLE="YES">OFS_AAI</APP_ID>
        <APP_NAME>Financial Services Analytical Applications Infrastructure</APP_NAME>
        <APP_DESCRIPTION>Base Infrastructure for Analytical Applications</APP_DESCRIPTION>
        <VERSION>8.0.6.0.0</VERSION>
    </APP>
    <APP>
        <APP_ID PREREQ="OFS_AAI" ENABLE="">OFS_MRMM</APP_ID>
        <APP_NAME>Financial Services Market Risk Measurement and Management</APP_NAME>
        <APP_DESCRIPTION>Market Risk Measurement and Management Application</APP_DESCRIPTION>
        <VERSION>8.0.6.0.0</VERSION>
    </APP>
</APP_PACK_CONFIG>
```

17.1.1 Configuring OFS_MRMM_PACK.XML file

The `OFS_MRMM_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.

NOTE: If you are installing in the GUI mode, then this file need not be updated.

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
APP_PACK_ID	Unique Application Pack Identifier	Y	Unique Seeded Value	DO NOT modify this value.
APP_PACK_NAME	Unique Application Pack Name	Y	Unique Seeded Value	DO NOT modify this value.
APP_PACK_DESCRIPTION	Unique Application Pack Description	Y	Unique Seeded Value	DO NOT modify this value.
VERSION	Unique release version	Y	Unique Seeded Value	DO NOT modify this value.

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
APP	Unique Application Entries	Y	Unique Seeded Value	DO NOT remove these tags.
APP_ID	Unique Application Identifier	Y	Unique Seeded Value	DO NOT modify this 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. DO NOT modify this value.
APP_ID/ DEF_SEL_FLAG	Default Selected Flag	Y	Default - YES	In all Application Packs, Infrastructure would have this value set to “YES”. DO NOT modify this value.
APP_ID/ ENABLE	Enable Application/ Product	YES if installing in SILENT mode.	Default – YES for Infrastructure NO for Others Permissible - YES or NO	Set this attribute-value to YES against every APP_ID which is licensed and should be enabled for use. **Note**: Application/ Product once enabled cannot be disabled. However, Application/ Product not enabled during installation can be enabled later through the Administration UI.
APP_NAME	Unique Application/ Product Name	Y	Unique Seeded Value	DO NOT modify this value.

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
APP_DESCRIPTION	Unique Application/ Product Name	Y	Unique Seeded Value	DO NOT modify this value.
VERSION	Unique release version	Y	Unique Seeded Value	DO NOT modify this value.

17.2 OFS_MRMM_SCHEMA_IN.xml

The OFS_MRMM_SCHEMA_IN.XML file contains details on the various application schemas that should be created prior to the MRMM Application Pack installation.

This section details 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.

```
<APPPACKSCHEMA>
    <APP_PACK_ID>OFS_MRMM_PACK</APP_PACK_ID>
    <JDBC_URL></JDBC_URL>
    <JDBC_DRIVER>oracle.jdbc.driver.OracleDriver</JDBC_DRIVER>
    <HOST></HOST>
    <SETUPINFO NAME="DEV" PREFIX_SCHEMA_NAME="N" />
    <PASSWORD APPLYSAMEFORALL="Y" DEFAULT="" />
    <ADV_SEC_OPTIONS>
        <OPTION NAME="TDE" VALUE="FALSE"/>
        <OPTION NAME="DATA_REDACT" VALUE="TRUE" />
    </ADV_SEC_OPTIONS>
    <SCHEMAS>
        <SCHEMA TYPE="CONFIG" NAME="ofsaaconf" PASSWORD="" APP_ID="OFS_AAI" DEFAULTTABLESPACE="USERS" TEMPTABLESPACE="TEMP" QUOTA="10G"  />
        <SCHEMA TYPE="ATOMIC" NAME="ofsaaatm" PASSWORD="" APP_ID="OFS_MRMM" APP_GRP="1" DEFAULTTABLESPACE="USERS" TEMPTABLESPACE="TEMP"
        INFODOM=""  QUOTA=""/>
    </SCHEMAS>
</APPPACKSCHEMA>
```

17.2.1 Configuring OFS_MRMM_SCHEMA_IN.XML file

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

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
<APP_PACK_ID>	Unique Application Pack Identifier	Y	Unique Seeded Value	DO NOT modify this value.
<JDBC_URL>	Enter the JDBC URL. **Note**: You can enter	Y	Example, jdbc:oracle:thin:@< DBSERVER	Ensure to add an entry (with SID/

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
	RAC and NON-RAC enabled database connectivity URL.		IP/HOST>:<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)))	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. DO NOT modify this value.

Tag 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>/ 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.
<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.
<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	Y	Default – N Permissible – Y or N	**Note**: Setting this attribute value is mandatory, If DEFAULT attribute is set.

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
	APPLYSAMEFORALL attribute and also have specified individual passwords for all the schemas, then the specified individual passwords will take precedence.			
<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.	
<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 AAAI Application 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

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
				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).
<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.

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
<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. DO NOT modify this value.
<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.
<SCHEMA>/ INFODOM	Enter the name of the Information Domain to	N (Optional for	Permissible length is 16 characters and only	Enter this field in UPPERCASE.

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
	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.	Atomic and mandatory for sandbox)	alphanumeric characters allowed. No special characters allowed.	
<ADV_SEC_OPTIONS>	Parent tag to hold Advance Security Options.	N		Uncomment the tag and edit if you want to add security options. For example, TDE and Data Redact. For details, see the example following the table.
<ADV_SEC_OPTIONS>/TDE	Tag to enable/disable TDE.	N	Default is FALSE.	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 TRUE. To disable DATA_REDACT, set this to FALSE	Ensure this tag is not commented if you have uncommented <ADV_SEC_OPTIONS>/

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

18 Appendix L: OFSAAI_InstallConfig.xml file

18.1.1 Configuring OFSAAI_InstallConfig.xml file

1. Navigate to `OFS_MRMM_PACK/OFS_AAI/conf/`
2. Open the file `OFSAAI_InstallConfig.xml` in text editor.
3. Configure the `OFSAAI_InstallConfig.xml` as mentioned in the below table:

You need to manually set the InteractionVariable parameter values as mentioned in the table. If a value is not applicable, enter **NA** and ensure that the value is not entered as NULL.

InteractionVariable Name	Significance and Expected Value	Mandatory
<Layer name="GENERAL">		
InteractionGroup name="WebServerType"		
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components would be deployed. The below numeric value should be set depending on the type: ▪ Apache Tomcat = 1 ▪ IBM WebSphere Application Server = 2 ▪ 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"		

InteractionVariable Name	Significance and Expected Value	Mandatory
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**: Refer Appendix O for identifying the correct "ojdbc<version>.jar" version to be copied.	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 below 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: For SFTP, set this field to 1 For FTP, set this field to 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. You can change this selection later by using the OFSAAI administration interface. Set SFTP_ENABLE to -1 to configure ftpshare and weblocal path as local path mounted for OFSAAI server.		

InteractionVariable Name	Significance and Expected Value	Mandatory
FILE_TRANSFER_PORT	Identifies the port used for the file transfer service. The default value specified is 22 (SFTP). Specify default value as 21 (FTP) if SFTP_ENABLE is 0. Alternatively, this value can be any Port configured by System Administrators to support SFTP/FTP. For example, <InteractionVariable name="FILE_TRANSFER_ PORT">21</InteractionVariable>	Yes
InteractionGroup name="Locale Detail"		
LOCALE	Identifies the locale information to be used during the installation. This release of the OFSAA Infrastructure supports only US English. For example, <InteractionVariable name="LOCALE">en_US</InteractionVariable>	Yes
InteractionGroup name="OFSAA Infrastructure Communicating ports" Note: The below ports are used internally by the various OFSAA Infrastructure services. The default values mentioned below 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.		
HTTPS_ENABLE	Identifies if the UI should be accessed using HTTP or HTTPS scheme. The default value set is 0. The below numeric value should be set depending on the choice: YES - 1 NO - 0 For example, <InteractionVariable name="HTTPS_ENABLE">0</InteractionVariable>	Yes

InteractionVariable Name	Significance and Expected Value	Mandatory
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_ENABLEis 1 and as 443, if HTTPS_ENABLEis 0. For example, <InteractionVariable name="WEB_ SERVER_PORT">80</InteractionVariable>	No
CONTEXT_NAME	Identifies the web application context name which will be used to build the URL to access the OFSAA applications. The context name can be identified from a URL as below: <scheme>://<host>:<port>/<context-name>/lo gin.jsp Sample URL: https://myweb:443/ofsaadev/login.jsp For example, <InteractionVariable name="CONTEXT_ NAME">ofsaadev</InteractionVariable>	Yes

InteractionVariable Name	Significance and Expected Value	Mandatory
WEBAPP_CONTEXT_PATH	Identifies the absolute path of the exploded .ear file on the web application server. For Tomcat, specify the Tomcat directory path till /webapps, such as /oradata6/revwb7/tomcat/webapps/. For WebSphere, enter the WebSphere path as <WebSphere profile directory>/installedApps/ <NodeCellName>. For example, /data2/test/WebSphere/AppServer/profiles/ <Profile_ Name>/installedApps/aix-imfNode01Cell. Where aix-imf is Host name. 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)
InteractionGroup name="OFSAAI FTP Details"		

InteractionVariable Name	Significance and Expected Value	Mandatory
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 APP_SFTP_USER_ID parameter below 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 parameter APP_FTPSHARE_PATH above.	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.	No
OFSAAI_SFTP_PASSPHRASE	Identifies the passphrase for the SFTP private key for OFSAAI. For example, InteractionVariable name="OFSAAI_SFTP_PASSPHRASE">enter a pass phrase here</InteractionVariable> By default, the value is NA. If OFSAAI_SFTP_PRIVATE_KEY value is given and this is kept as NA, then it is assumed as empty passphrase.	No
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.	Yes, only for HIVE Configuration

InteractionVariable Name	Significance and Expected Value	Mandatory
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>	Yes, only for HIVE Configuration
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>	Yes, only for HIVE Configuration
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>	Yes, only for HIVE Configuration
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.	Yes, only for HIVE Configuration
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.	Yes, only for HIVE Configuration

19 Appendix M: MRMM Pack User Group Names

User Group names seeded as part of the media pack:

To access the MRMM and MRMM Analytics application, created users can be mapped to the following user groups.

- MRMMADMINGRP - Market Risk Measurement and Management Admin Group
- MRMMANALYSTGRP - Market Risk Measurement and Management Analyst Group
- MRMMAPPROVERGRP - Market Risk Measurement and Management Approver Group

The roles defined in OFS MRMM application are as follows:

19.1 MRMM Group Codes

Group Code	Group Name	Group Description
MRMMADMINGRP	Market Risk Measurement and Management Admin Group	Group for administrator
MRMMAPPROVERGRP	Market Risk Measurement and Management Approver Group	Group for approvers
MRMMANALYSTGRP	Market Risk Measurement and Management Analyst Group	Group for business analysts

19.2 MRMM Role Codes

Role Code	Role Name	Role Description
MRMMADMIN	MRMM Administrator	Administrator role
MRMMVALNAPROVER	MRMM Inst Valn Approver	Instrument Valuation business definition approval role
MRMMVALNANALYST	MRMM Inst Valn Analyst	Instrument Valuation business analyst role
MRMMHISTSMLNAPROVER	MRMM Hist Sim Approver	Historical Simulation business definition approval role
MRMMHISTSMLNANALYST	MRMM Hist Sim Analyst	Historical Simulation business analyst role
MRMMMDLVALDNAPROVER	MRMM Mdl Vldn Approver	Model Validation business definition approval role
MRMMMDLVALDNANALYST	MRMM Mdl Vldn Analyst	Model Validation business analyst role
MRMMMNTCARLOANALYST	MRMM MC Sim Analyst	MRMM Monte Carlo Simulation Analyst roles
MRMMMNTCARLOAPROVER	MRMM MC Sim Approver	MRMM Monte Carlo Simulation Approver roles

19.3 MRMM Function Codes

Function Code	Function Name	Function Description
MRPROCESS	MRMM Business Processes	Function to access the business processes
MRCONFIGR	MRMM Business Configuration	Function to access the business configuration
MRPRE	MRMM Application Preferences	Function to access the application preference
MRIVADD	Add New MRMM Inst Valn	Function to add a new business approach for instrument valuation
MRIVDEL	Delete MRMM Inst Valn	Function to delete a business approach for instrument valuation
MRIVEXP	Export MRMM Inst Valn	Function to export a business approach for instrument valuation
MRIVNEWBD	Add New MRMM Inst Valn Business Definition	Function to add a new business definition for instrument valuation
MRIVSAVE	Save MRMM Inst Valn Business Definition	Function to save an instrument valuation business definition
MRIVSBMT	Submit MRMM Inst Valn Business Definition	Function to submit an instrument valuation business definition for approval
MRIVAPR	Approve MRMM Inst Valn Business Definition	Function to approve an instrument valuation business definition
MRIVRJCT	Reject MRMM Inst Valn Business Definition	Function to reject an instrument valuation business definition
MRIVEXE	Execute MRMM Inst Valn Business Definition	Function to execute an instrument valuation business definition
MRHSADD	Add New MRMM Hist Sim	Function to add a new business approach for historical simulation
MRHSDEL	Delete MRMM Hist Sim	Function to delete a business approach for historical simulation
MRHSEXP	Export MRMM Hist Sim	Function to export a business approach for historical simulation
MRHSNEWBD	Add New MRMM Hist Sim Business Definition	Function to add a new business definition for historical simulation
MRHSSAVE	Save MRMM Hist Sim Business Definition	Function to save a historical simulation business definition

Function Code	Function Name	Function Description
MRHSSBMT	Submit MRMM Hist Sim Business Definition	Function to submit a historical simulation business definition for approval
MRHSAPR	Approve MRMM Hist Sim Business Definition	Function to approve a historical simulation business definition
MRHSRJCT	Reject MRMM Hist Sim Business Definition	Function to reject a historical simulation business definition
MRHSEXE	Execute MRMM Hist Sim Business Definition	Function to execute a historical simulation business definition
MRHSRSFTCH	Fetch MRMM Hist Sim Reduced Set Data	Function to fetch reduced set of risk factor in historical simulation business definition
MRHSRSSAVE	Save MRMM Hist Sim Reduced Set Data	Function to save a reduced set of risk factor in historical simulation business definition
MRHSRSVAL	Validate MRMM Hist Sim Reduced Set Data	Function to validate a reduced set of risk factor in historical simulation business definition
MRHSSPEXE	Execute MRMM Hist Sim Stress Period Identification	Function to execute a stress period identification process in historical simulation business definition
MRMVADD	Add New MRMM Mdl Valdn	Function to add a new business approach for model validation
MRMVDEL	Delete MRMM Mdl Valdn	Function to delete a business approach for model validation
MRMVEXP	Export MRMM Mdl Valdn	Function to export a business approach for model validation
MRMVNEWBD	Add New MRMM Mdl Valdn Business Definition	Function to add a new business definition for model validation
MRMVSAVE	Save MRMM Mdl Valdn Business Definition	Function to save a model validation business definition
MRMVSBMT	Submit MRMM Mdl Valdn Business Definition	Function to submit a model validation business definition for approval
MRMVAPR	Approve MRMM Mdl Valdn Business Definition	Function to approve a model validation business definition
MRMVRJCT	Reject MRMM Mdl Valdn Business Definition	Function to reject a model validation business definition
MRMVEXE	Execute MRMM Mdl Valdn Business Definition	Function to execute a model validation business definition

Function Code	Function Name	Function Description
MRPDNEW	Add New MRMM Portfolio Definition	Function to add a portfolio definition
MRPDDEL	Delete MRMM Portfolio Definition	Function to delete a portfolio definition
MRPDEXP	Export MRMM Portfolio Definition	Function to export a portfolio definition
MRPDEDIT	Edit MRMM Portfolio Definition	Function to edit a portfolio definition
MRPDCOPY	Copy MRMM Portfolio Definition	Function to copy a portfolio definition
MRPDSAVE	Save MRMM Portfolio Definition	Function to save a portfolio definition
MRPDSBMT	Submit MRMM Portfolio Definition	Function to submit a portfolio definition for approval
MRPDAPR	Approve MRMM Portfolio Definition	Function to approve a portfolio definition
MRPDRJCT	Reject MRMM Portfolio Definition	Function to reject a portfolio definition
MRMDLSETRL	Set Rules MRMM Modellable Non-Modellable	Function for setting rules for modellable and non-modellable risk factors
MRMDLSAVE	Save MRMM Modellable Non-Modellable	Function to save a risk factor identified as modellable and non-modellable
MRMDLEXE	Execute MRMM Modellable Non-Modellable	Function to execute modellable and non-modellable risk factor identification process
MRMDLAPLF	Apply Filters MRMM Modellable Non-Modellable	Function allows the user to apply filters to modellable and non-modellable risk factor
MRMDLRSTF	Reset Filters MRMM Modellable Non-Modellable	Function allows user to reset the apply filters to modellable and non-modellable risk factor
MRCONFUPD	Update MRMM Default Configuration	Function to update default configurations
MRMCSADD	Add New MRMM Monte Carlo Simulation	The user group mapped to this function can add new Monte Carlo Simulation
MRMCSDEL	Delete MRMM Monte Carlo Simulation	The user group mapped to this function can delete Monte Carlo Simulation
MRMCSEXP	Export MRMM Monte Carlo Simulation	The user group mapped to this function can export Monte Carlo Simulation
MRMCSNEWBD	Add New MRMM Monte Carlo Sim Business Def	The user group mapped to this function can add new Monte Carlo Sim Business Definition
MRMCSSAVE	Save MRMM Monte Carlo Sim Business Def	The user group mapped to this function can save Monte Carlo Sim Business Definition

Function Code	Function Name	Function Description
MRMCSSBMT	Submit MRMM Monte Carlo Sim Business Def	The user group mapped to this function can submit Monte Carlo Sim Business Definition
MRMCSAPR	Approve MRMM Monte Carlo Sim Business Def	The user group mapped to this function can approve Monte Carlo Sim Business Definition
MRMCSRET	Retire MRMM Monte Carlo Sim Business Def	The user group mapped to this function can retire Monte Carlo Sim Business Definition
MRMCSAPRET	Approve Retire Monte Carlo Sim Business Def	The user group mapped to this function can approve retire Monte Carlo Sim Business Definition
MRMCSRJCT	Reject MRMM Monte Carlo Sim Business Def	The user group mapped to this function can reject Monte Carlo Sim Business Definition
MRMCSEXE	Execute MRMM Monte Carlo Sim Business Def	The user group mapped to this function can execute Monte Carlo Sim Business Definition
MRSSSAVE	Save MRMM Stress Scenario details	The user group mapped to this function can save Stress Scenarios details
MRSSSBMT	Submit MRMM Stress Scenario details	The user group mapped to this function can submit Stress Scenarios details
MRSSAPR	Approve MRMM Stress Scenario details	The user group mapped to this function can approve Stress Scenarios details
MRSSRJCT	Reject MRMM Stress Scenario details	The user group mapped to this function can reject Stress Scenarios details
MRSSDEL	Delete MRMM Stress Scenario details	The user group mapped to this function can delete Stress Scenarios details
MRSSCOPY	Copy MRMM Stress Scenario details	The user group mapped to this function can copy Stress Scenarios details
MRSSEXP	Export MRMM Stress Scenario details	The user group mapped to this function can export Stress Scenarios details
MRSSNEW	Add New MRMM Stress Scenario details	The user group mapped to this function can Add New Stress Scenarios details
MRHMADDMDL	Add New MRMM Hybrid model	The user group mapped to this function can Add New Hybrid Model
MRHMDELMDL	delete MRMM Hybrid model	The user group mapped to this function can delete Hybrid Model

Function Code	Function Name	Function Description
MRHMADDRUL	Add New MRMM Hybrid model Rule	The user group mapped to this function can add new rules to Hybrid Model
MRHMEDTRUL	Edit saved rules in MRMM Hybrid model	The user group mapped to this function can edit the rules which are already saved for Hybrid Model
MRHMDELRUL	Delete MRMM Hybrid model Rules	The user group mapped to this function can delete Hybrid Model Rules
MRHMGENXML	Generate xml in MRMM Hybrid model setup	The user group mapped to this function can genereate xml in MRMM Hybrid model setup
MRTECHADD	Add entries for technical configuration screen	The user group mapped to this function can add entries for technical configuration

19.4 MRMM Group Code – Role Code Mapping

Group Code	Role Code
MRMMADMINGRP	MRMMADMIN
MRMMAPPROVERGRP	MRMMVALNAPROVER
MRMMAPPROVERGRP	MRMMHISTSMLNAPROVER
MRMMAPPROVERGRP	MRMMMDLVALDNAPROVER
MRMMANALYSTGRP	MRMMVALNANALYST
MRMMANALYSTGRP	MRMMHISTSMLNANALYST
MRMMANALYSTGRP	MRMMMDLVALDNANALYST
MRMMANALYSTGRP	MRMMMNTCARLOANALYST
MRMMAPPROVERGRP	MRMMMNTCARLOAPROVER

19.5 MRMM Role Code – Function Code Mapping

Role Code	Function Code
MRMMADMIN	MRPROCESS
MRMMADMIN	MRCONFIGR
MRMMADMIN	MRPRE
MRMMADMIN	MRIVADD

Role Code	Function Code
MRMMADMIN	MRIVDEL
MRMMADMIN	MRIVEXP
MRMMADMIN	MRIVNEWBD
MRMMADMIN	MRIVSAVE
MRMMADMIN	MRIVSBMT
MRMMADMIN	MRIVAPR
MRMMADMIN	MRIVRJCT
MRMMADMIN	MRIVEXE
MRMMADMIN	MRHSADD
MRMMADMIN	MRHSDEL
MRMMADMIN	MRHSEXP
MRMMADMIN	MRHSNEWBD
MRMMADMIN	MRHSSAVE
MRMMADMIN	MRHSSBMT
MRMMADMIN	MRHSAPR
MRMMADMIN	MRHSRJCT
MRMMADMIN	MRHSEXE
MRMMADMIN	MRHSRSFTCH
MRMMADMIN	MRHSRSSAVE
MRMMADMIN	MRHSRSVAL
MRMMADMIN	MRHSSPEXE
MRMMADMIN	MRMVADD
MRMMADMIN	MRMVDEL
MRMMADMIN	MRMVEXP
MRMMADMIN	MRMVNEWBD
MRMMADMIN	MRMVSAVE
MRMMADMIN	MRMVSBMT

Role Code	Function Code
MRMMADMIN	MRMVAPR
MRMMADMIN	MRMVRJCT
MRMMADMIN	MRMVEXE
MRMMADMIN	MRPDNEW
MRMMADMIN	MRPDDEL
MRMMADMIN	MRPDEXP
MRMMADMIN	MRPDSAVE
MRMMADMIN	MRPDEDIT
MRMMADMIN	MRPDCOPY
MRMMADMIN	MRPDSBMT
MRMMADMIN	MRPDAPR
MRMMADMIN	MRPDAPRRET
MRMMADMIN	MRPDRJCT
MRMMADMIN	MRMDLSETRL
MRMMADMIN	MRMDLSAVE
MRMMADMIN	MRMDLEXE
MRMMADMIN	MRMDLAPLF
MRMMADMIN	MRMDLRSTF
MRMMADMIN	MRCONFUPD
MRMMVALNAPROVER	MRPROCESS
MRMMVALNAPROVER	MRCONFIGR
MRMMVALNAPROVER	MRPRE
MRMMVALNAPROVER	MRIVADD
MRMMVALNAPROVER	MRIVDEL
MRMMVALNAPROVER	MRIVEXP
MRMMVALNAPROVER	MRIVNEWBD
MRMMVALNAPROVER	MRIVSAVE

Role Code	Function Code
MRMMVALNAPROVER	MRIVSBMT
MRMMVALNAPROVER	MRIVAPR
MRMMVALNAPROVER	MRIVRJCT
MRMMVALNAPROVER	MRIVEXE
MRMMVALNAPROVER	MRPDNEW
MRMMVALNAPROVER	MRPDDEL
MRMMVALNAPROVER	MRPDEXP
MRMMVALNAPROVER	MRPDSAVE
MRMMVALNAPROVER	MRPDEDIT
MRMMVALNAPROVER	MRPDCOPY
MRMMVALNAPROVER	MRPDSBMT
MRMMVALNAPROVER	MRPDAPR
MRMMVALNAPROVER	MRPDAPRRET
MRMMVALNAPROVER	MRPDRJCT
MRMMVALNAPROVER	MRMDLSETRL
MRMMVALNAPROVER	MRMDLSAVE
MRMMVALNAPROVER	MRMDLEXE
MRMMVALNAPROVER	MRMDLAPLF
MRMMVALNAPROVER	MRMDLRSTF
MRMMVALNANALYST	MRPROCESS
MRMMVALNANALYST	MRIVADD
MRMMVALNANALYST	MRIVDEL
MRMMVALNANALYST	MRIVEXP
MRMMVALNANALYST	MRIVNEWBD
MRMMVALNANALYST	MRIVSAVE
MRMMVALNANALYST	MRIVSBMT
MRMMVALNANALYST	MRIVEXE

Role Code	Function Code
MRMMVALNANALYST	MRPDNEW
MRMMVALNANALYST	MRPDDEL
MRMMVALNANALYST	MRPDEXP
MRMMVALNANALYST	MRPDSAVE
MRMMVALNANALYST	MRPDEDIT
MRMMVALNANALYST	MRPDCOPY
MRMMVALNANALYST	MRPDSBMT
MRMMHISTSMLNAPROVER	MRPROCESS
MRMMHISTSMLNAPROVER	MRCONFIGR
MRMMHISTSMLNAPROVER	MRPRE
MRMMHISTSMLNAPROVER	MRHSADD
MRMMHISTSMLNAPROVER	MRHSDEL
MRMMHISTSMLNAPROVER	MRHSEXP
MRMMHISTSMLNAPROVER	MRHSNEWBD
MRMMHISTSMLNAPROVER	MRHSSAVE
MRMMHISTSMLNAPROVER	MRHSSBMT
MRMMHISTSMLNAPROVER	MRHSAPR
MRMMHISTSMLNAPROVER	MRHSRJCT
MRMMHISTSMLNAPROVER	MRHSEXE
MRMMHISTSMLNAPROVER	MRHSRSFTCH
MRMMHISTSMLNAPROVER	MRHSRSSAVE
MRMMHISTSMLNAPROVER	MRHSRSVAL
MRMMHISTSMLNAPROVER	MRHSSPEXE
MRMMHISTSMLNAPROVER	MRPDNEW
MRMMHISTSMLNAPROVER	MRPDDEL
MRMMHISTSMLNAPROVER	MRPDEXP
MRMMHISTSMLNAPROVER	MRPDSAVE

Role Code	Function Code
MRMMHISTSMLNAPROVER	MRPDEDIT
MRMMHISTSMLNAPROVER	MRPDCOPY
MRMMHISTSMLNAPROVER	MRPDSBMT
MRMMHISTSMLNAPROVER	MRPDAPR
MRMMHISTSMLNAPROVER	MRPDAPRRET
MRMMHISTSMLNAPROVER	MRPDRJCT
MRMMHISTSMLNAPROVER	MRMDLSETRL
MRMMHISTSMLNAPROVER	MRMDLSAVE
MRMMHISTSMLNAPROVER	MRMDLEXE
MRMMHISTSMLNAPROVER	MRMDLAPLF
MRMMHISTSMLNAPROVER	MRMDLRSTF
MRMMHISTSMLNANALYST	MRPROCESS
MRMMHISTSMLNANALYST	MRHSADD
MRMMHISTSMLNANALYST	MRHSDEL
MRMMHISTSMLNANALYST	MRHSEXP
MRMMHISTSMLNANALYST	MRHSNEWBD
MRMMHISTSMLNANALYST	MRHSSAVE
MRMMHISTSMLNANALYST	MRHSSBMT
MRMMHISTSMLNANALYST	MRHSEXE
MRMMHISTSMLNANALYST	MRHSRSFTCH
MRMMHISTSMLNANALYST	MRHSRSSAVE
MRMMHISTSMLNANALYST	MRHSRSVAL
MRMMHISTSMLNANALYST	MRHSSPEXE
MRMMHISTSMLNANALYST	MRPDNEW
MRMMHISTSMLNANALYST	MRPDDEL
MRMMHISTSMLNANALYST	MRPDEXP
MRMMHISTSMLNANALYST	MRPDSAVE

Role Code	Function Code
MRMMHISTSMLNANALYST	MRPDEDIT
MRMMHISTSMLNANALYST	MRPDCOPY
MRMMHISTSMLNANALYST	MRPDSBMT
MRMMMDLVALDNAPROVER	MRPROCESS
MRMMMDLVALDNAPROVER	MRCONFIGR
MRMMMDLVALDNAPROVER	MRPRE
MRMMMDLVALDNAPROVER	MRMVADD
MRMMMDLVALDNAPROVER	MRMVDEL
MRMMMDLVALDNAPROVER	MRMVEXP
MRMMMDLVALDNAPROVER	MRMVNEWBD
MRMMMDLVALDNAPROVER	MRMVSAVE
MRMMMDLVALDNAPROVER	MRMVSBMT
MRMMMDLVALDNAPROVER	MRMVAPR
MRMMMDLVALDNAPROVER	MRMVRJCT
MRMMMDLVALDNAPROVER	MRMVEXE
MRMMMDLVALDNAPROVER	MRPDNEW
MRMMMDLVALDNAPROVER	MRPDDEL
MRMMMDLVALDNAPROVER	MRPDEXP
MRMMMDLVALDNAPROVER	MRPDSAVE
MRMMMDLVALDNAPROVER	MRPDEDIT
MRMMMDLVALDNAPROVER	MRPDCOPY
MRMMMDLVALDNAPROVER	MRPDSBMT
MRMMMDLVALDNAPROVER	MRPDAPR
MRMMMDLVALDNAPROVER	MRPDAPRRET
MRMMMDLVALDNAPROVER	MRPDRJCT
MRMMMDLVALDNAPROVER	MRMDLSETRL
MRMMMDLVALDNAPROVER	MRMDLSAVE

Role Code	Function Code
MRMMMDLVALDNAPROVER	MRMDLEXE
MRMMMDLVALDNAPROVER	MRMDLAPLF
MRMMMDLVALDNAPROVER	MRMDLRSTF
MRMMMDLVALDNANALYST	MRPROCESS
MRMMMDLVALDNANALYST	MRMVADD
MRMMMDLVALDNANALYST	MRMVDEL
MRMMMDLVALDNANALYST	MRMVEXP
MRMMMDLVALDNANALYST	MRMVNEWBD
MRMMMDLVALDNANALYST	MRMVSAVE
MRMMMDLVALDNANALYST	MRMVSBMT
MRMMMDLVALDNANALYST	MRMVEXE
MRMMMDLVALDNANALYST	MRPDNEW
MRMMMDLVALDNANALYST	MRPDDEL
MRMMMDLVALDNANALYST	MRPDEXP
MRMMMDLVALDNANALYST	MRPDSAVE
MRMMMDLVALDNANALYST	MRPDEDIT
MRMMMDLVALDNANALYST	MRPDCOPY
MRMMMDLVALDNANALYST	MRPDSBMT

Role Code	Function Code
MRMMMDLVALDNANALYST	MRSSCOPY
MRMMMDLVALDNANALYST	MRSSDEL
MRMMMDLVALDNANALYST	MRSSEXP
MRMMMDLVALDNANALYST	MRSSNEW
MRMMMDLVALDNANALYST	MRSSSAVE
MRMMMDLVALDNANALYST	MRSSSBMT
MRMMMDLVALDNAPROVER	MRSSAPR
MRMMMDLVALDNAPROVER	MRSSCOPY
MRMMMDLVALDNAPROVER	MRSSDEL
MRMMMDLVALDNAPROVER	MRSSEXP
MRMMMDLVALDNAPROVER	MRSSNEW
MRMMMDLVALDNAPROVER	MRSSRJCT
MRMMMDLVALDNAPROVER	MRSSSAVE
MRMMMDLVALDNAPROVER	MRSSSBMT
MRMMMNTCARLOANALYST	MRHMADDMDL
MRMMMNTCARLOANALYST	MRHMADDRUL
MRMMMNTCARLOANALYST	MRHMDELMDL
MRMMMNTCARLOANALYST	MRHMDELRUL
MRMMMNTCARLOANALYST	MRHMEDTRUL
MRMMMNTCARLOANALYST	MRHMGENXML
MRMMMNTCARLOANALYST	MRMCSADD
MRMMMNTCARLOANALYST	MRMCSDEL
MRMMMNTCARLOANALYST	MRMCSEXE
MRMMMNTCARLOANALYST	MRMCSEXP
MRMMMNTCARLOANALYST	MRMCSNEWBD
MRMMMNTCARLOANALYST	MRMCSRET
MRMMMNTCARLOANALYST	MRMCSSAVE

Role Code	Function Code
MRMMMNTCARLOANALYST	MRMCSSBMT
MRMMMNTCARLOANALYST	MRSSCOPY
MRMMMNTCARLOANALYST	MRSSDEL
MRMMMNTCARLOANALYST	MRSSEXP
MRMMMNTCARLOANALYST	MRSSNEW
MRMMMNTCARLOANALYST	MRSSSAVE
MRMMMNTCARLOANALYST	MRSSSBMT
MRMMMNTCARLOAPROVER	MRMCSADD
MRMMMNTCARLOAPROVER	MRMCSAPR
MRMMMNTCARLOAPROVER	MRMCSAPRET
MRMMMNTCARLOAPROVER	MRMCSDEL
MRMMMNTCARLOAPROVER	MRMCSEXE
MRMMMNTCARLOAPROVER	MRMCSEXP
MRMMMNTCARLOAPROVER	MRMCSNEWBD
MRMMMNTCARLOAPROVER	MRMCSRET
MRMMMNTCARLOAPROVER	MRMCSRJCT
MRMMMNTCARLOAPROVER	MRMCSSAVE
MRMMMNTCARLOAPROVER	MRMCSSBMT
MRMMMNTCARLOAPROVER	MRSSAPR
MRMMMNTCARLOAPROVER	MRSSCOPY
MRMMMNTCARLOAPROVER	MRSSDEL
MRMMMNTCARLOAPROVER	MRSSEXP
MRMMMNTCARLOAPROVER	MRSSNEW
MRMMMNTCARLOAPROVER	MRSSRJCT
MRMMMNTCARLOAPROVER	MRSSSAVE
MRMMMNTCARLOAPROVER	MRSSSBMT
MRMMVALNANALYST	MRSSCOPY

Role Code	Function Code
MRMMVALNANALYST	MRSSDEL
MRMMVALNANALYST	MRSSEXP
MRMMVALNANALYST	MRSSNEW
MRMMVALNANALYST	MRSSSAVE
MRMMVALNANALYST	MRSSSBMT
MRMMVALNAPROVER	MRSSAPR
MRMMVALNAPROVER	MRSSCOPY
MRMMVALNAPROVER	MRSSDEL
MRMMVALNAPROVER	MRSSEXP
MRMMVALNAPROVER	MRSSNEW
MRMMVALNAPROVER	MRSSRJCT
MRMMVALNAPROVER	MRSSSAVE
MRMMVALNAPROVER	MRSSSBMT
MRMMADMIN	MRHMADDMDL
MRMMADMIN	MRHMADDRUL
MRMMADMIN	MRHMDELMDL
MRMMADMIN	MRHMDELRUL
MRMMADMIN	MRHMEDTRUL
MRMMADMIN	MRHMGENXML
MRMMADMIN	MRMCSADD
MRMMADMIN	MRMCSAPR
MRMMADMIN	MRMCSAPRET
MRMMADMIN	MRMCSDEL
MRMMADMIN	MRMCSEXE
MRMMADMIN	MRMCSEXP
MRMMADMIN	MRMCSNEWBD
MRMMADMIN	MRMCSRET

Role Code	Function Code
MRMMADMIN	MRMCSRJCT
MRMMADMIN	MRMCSSAVE
MRMMADMIN	MRMCSSBMT
MRMMADMIN	MRSSAPR
MRMMADMIN	MRSSCOPY
MRMMADMIN	MRSSDEL
MRMMADMIN	MRSSEXP
MRMMADMIN	MRSSNEW
MRMMADMIN	MRSSRJCT
MRMMADMIN	MRSSSAVE
MRMMADMIN	MRSSSBMT
MRMMADMIN	MRTECHADD
MRMMHISTSMLNANALYST	MRSSCOPY
MRMMHISTSMLNANALYST	MRSSDEL
MRMMHISTSMLNANALYST	MRSSEXP
MRMMHISTSMLNANALYST	MRSSNEW
MRMMHISTSMLNANALYST	MRSSSAVE
MRMMHISTSMLNANALYST	MRSSSBMT
MRMMHISTSMLNAPROVER	MRSSAPR
MRMMHISTSMLNAPROVER	MRSSCOPY
MRMMHISTSMLNAPROVER	MRSSDEL
MRMMHISTSMLNAPROVER	MRSSEXP
MRMMHISTSMLNAPROVER	MRSSNEW
MRMMHISTSMLNAPROVER	MRSSRJCT
MRMMHISTSMLNAPROVER	MRSSSAVE
MRMMHISTSMLNAPROVER	MRSSSBMT

20 Appendix N: Migration for Excel Upload

This appendix provides detailed instructions to migrate for excel upload.

20.1.1 Prerequisites

- Data model in ATOMIC schemas should be same on the source and target setups.
- OFS AAI (platform) patch level version should be same on the source and target setups.
- PL/SQL Developer to connect and query the database.
- WinSCP to connect and access server file system.

20.1.2 Migration for Excel Upload

To migrate, follow these steps:

1. Open PL/SQL Developer and logon to the source setup's configuration (CONFIG) schema by entering the appropriate username and password.
2. In a new SQL window query the data of table `EXCEL_MAPPING_MASTER`.
3. Open a new session in PL/SQL developer and logon to the target setup's configuration (CONFIG) schema by entering the appropriate username and password.
4. Insert the records from Step 1 above in to this table.
5. In `V_INFODOM` column of `EXCEL_MAPPING_MASTER` table update the infodom name with the target infodom name.

NOTE: If all the mappings can work out of the single target Infodom, update same Infodom value across all rows. If only few mappings will work out of the target infodom, update the infodom value for selective records. Excel upload mappings will work only if the target infodom has same data model entities as used in the mappings defined on source setup.

6. Update `V_CREATED_BY` column with the name of any user present in the target setup that has appropriate roles to perform Excel Upload tasks.

NOTE: It is mandatory to update values for `V_INFODOM` and `V_CREATED_BY` columns.

7. Open WinSCP and login a new session by entering the host name, port number, user name and password to access the source setup.
8. Navigate to the folder referred as `FTPSHARE`.

9. Copy the excel-entity mapping xml file(s) which are located in this folder according to their folder structure on to your desktop. For example: `/ftpshare /STAGE/ExcelUpload/$SOURCE_INFODOM_NAME/$EXCEL_FILE_NAME.xml`

NOTE: Actual file name of Excel Sheet is mentioned in the `V_EXCEL_NAME` column of `EXCEL_MAPPING_MASTER` table.

10. Copy the excel templates (.xls/ .xlsx) file(s) which are located in this folder according to their folder structure on to your desktop. For example: `/ftpshare/STAGE/ExcelUpload/TEMPLATE/*.xls or *.xlsx`

NOTE: Ignore this step if files are not present at the location.

11. Login a new session in WinSCP by entering the host name, port number, user name and password to access the target setup.
12. Copy the xml file(s) from Step3 to the below location in the target setup. For example: `/ftpshare/STAGE/ExcelUpload/$TARGET_INFODOM_NAME/$EXCEL_FILE_NAME.xml`

NOTE: `$TARGET_INFODOM_NAME` should be target setup infodom in which you have uploaded the appropriate data model and the name should be same as the `V_INFODOM` column value updated in `EXCEL_MAPPING_MASTER` table.

13. Copy the xls/ xlsx file(s) from Step 3 to the below location in target setup. For example: `/ftpshare/STAGE/ExcelUpload/TEMPLATE/*.xls or *.xlsx`

NOTE: Ignore this step if files are not present at the location.

21 Appendix O: JDBC Jar Files

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

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

22 Appendix P: Upgrading an Existing OFSAA 8.0.x Java 7 Instance to Java 8

This section explains the configurations required to upgrade an existing OFSAA 8.0.x Java 7 instance to Java 8. It consists of the following topics:

- Prerequisites
- Steps for upgrading OFSAA 8.0.x Java 7 instance to Java 8
- Web Application Server Configurations
- OFSAA Generic Configurations
- OFSAA Configurations for New Web Application Server Installation

22.1 Prerequisites

The following are the prerequisites for upgrading OFSAA 8.0.x Java 7 instance to Java 8:

- Java 8 should be installed on the OFSAA server and Web Application Server.

22.2 Steps for upgrading OFSAA 8.0.x Java 7 instance to Java 8

To upgrade OFSAA 8.0.x Java 7 instance to Java 8, follow these steps:

1. Configure Web Application Server to Java 8. For more information, refer Web Application Server Configurations.
2. Configure the OFSAA instance to Java 8. For more information, refer OFSAA Generic Configurations. For a newly installed Web Application Server, refer OFSAA Configurations for New Web Application Server Installation.
3. Restart the OFSAA services. For more information, refer the Start/Stop Infrastructure Services section in Appendix D.
4. 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 C.

22.3 Web Application Server Configurations

This section describes the changes to be made in the Web Application Server. Following are the two options to perform Web Application Server Configurations which are listed as follows:

- Upgrade the existing Web Application Server installation to Java 8
- Install a new instance of the Web Application Server with Java 8

This section consists of the following topics:

- Oracle WebLogic Server Updates
- Apache Tomcat Server Updates

22.3.1 Oracle WebLogic Server Updates

Perform the following configurations to upgrade the existing WebLogic server instance to Java 8:

1. Navigate to `<WLS_HOME>/Middleware/Oracle_Home/wlserver`.
2. Edit the `product.properties` file. Set `JAVA_HOME, WLS_JAVA_HOME, JAVAHOME` properties to the new Java path and `java.vm.version` to the new Java version. For example,

   ```
   JAVA_HOME=/usr/java/jre1.8.0_45

   WLS_JAVA_HOME=/usr/java/jre1.8.0_45

   JAVAHOME=/usr/java/jre1.8.0_45

   java.vm.version=1.8.0_45
   ```

3. Navigate to `<WLS_HOME>/Middleware/Oracle_Home/user_projects/domains/<domain>/bin`. Update `SUN_JAVA_HOME, DEFAULT_JAVA_HOME, JAVA_HOME` in the `setDomainEnv.sh` file to point to the new Java path. For example,

   ```
   SUN_JAVA_HOME="/usr/java/jre1.8.0_45"
   DEFAULT_SUN_JAVA_HOME="/usr/java/jre1.8.0_45"

   JAVA_HOME="/usr/java/jre1.8.0_45"
   ```

4. Clear the Application cache. Navigate to the following path and delete the files:

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

If you wish to install a new instance of the Oracle WebLogic Server, follow these steps:

1. Install Oracle WebLogic Server 12.1.3.x on Java 8.
2. Perform the configurations for the newly installed WebLogic server. For more information refer Configure Resource Reference in WebLogic Application Server.

NOTE: While creating WebLogic Domain, the Listen Port should be set same as that of the existing Domain. Note down the new Domain path to perform OFSAA Configurations.

22.3.2 Apache Tomcat Server Updates

Perform the following configurations to upgrade the existing Apache Tomcat Server from Java 7 to Java 8:

1. Login to the Apache Tomcat Server as a non-root user.
2. Edit the user `.profile`. Update the value for `JAVA_HOME` from JRE 1.7 to JRE 1.8.

   For Example,

   ```
   JAVA_HOME=/usr/java/jre1.8.0_45
   ```

3. Clear the Application cache. Navigate to the following path and delete the files:

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

If you wish to install a new instance of the Apache Tomcat Server, follow these steps:

1. Install Apache Tomcat Server 8 with Java 8.
2. Perform the configurations for the newly installed Tomcat server. For more information refer Configure Resource Reference in Tomcat Application Server.

Note:

Update the Connector Port in `/apache-tomcat-8.0.21/conf/server.xml` file to that of the existing Tomcat instance.

Note down the new deployment path to perform OFSAA Configurations.

22.4 OFSAA Generic Configurations

This section consists of the following topics:

- User .profile Settings
- Configurations for Java 8

22.4.1 User .profile Settings

Perform the following configurations:

1. Login to the OFSAA Server as a non-root user.
2. Edit the user `.profile`. Update the value for PATH variable from JRE 1.7 to JRE 1.8. For Example,

   ```
   PATH=/usr/java/jre1.8.0_45/jre
   ```

```
JAVA_BIN=/usr/java/jre1.8.0_45/jre/bin
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/usr/java/jre1.8.0_45/jre/lib/amd64/server
```

22.4.2 Configurations for Java 8

1. If the Oracle Database version is 12c, 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/`

   Note: If ojdbc6.jar is already present in any of the aforementioned folders, you need to remove it.

2. If the Oracle Database version is 11g, copy `ojdbc6.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/`

Perform the configurations explained in the section Configurations for Java 8.

22.5 OFSAA Configurations for New Web Application Server Installation

This configuration is required only if you have freshly installed Oracle WebLogic 12.1.3 or Apache Tomcat Server 8.0. Follow these steps:

1. Modify the following parameters in the Configuration table present in the Config Schema with the new Domain Path in case of WebLogic or with the new deployment path in case of Tomcat:
   - `DeFiHome`
   - `REV_IMG_PATH`
   - `EMBEDDED_JSP_JS_PATH`
2. Login to the OFSAA Server as a non-root user.
3. Navigate to `$FIC_HOME/ficweb/webroot/WEB_INF` and update the following parameters in the `web.xml` file with the new Domain path in case of WebLogic or with the new deployment path in case of Tomcat:
   - `FIC_PHYSICAL_HOME_LOC`
   - `FIC_HOME`
   - `ICC_SERVLET_LOG_FILE`
4. Navigate to `$FIC_HOME/ficweb/webroot/conf` and update the Domain path in case of WebLogic or with the new deployment path in case of Tomcat:
   - `OFSAALogger.xml`
   - `MDBLogger.xml`
   - `RevLog4jConfig.xml`
   - `RFDLogger.xml`
   - `ExportLog4jConfig.xml`
   - `RFDLogger.xml`
   - `PR2Logger.xml`

23 Appendix Q: Removing OFSAA

This chapter includes the following sections:

- Uninstalling OFSAA Installation
- Uninstalling EAR Files in WebSphere
- Uninstalling EAR Files in WebLogic
- Uninstalling WAR Files in Tomcat

23.1 Uninstalling OFSAA Installation

This section will guide you through the necessary steps to uninstall the OFSAA 8.0 installation.

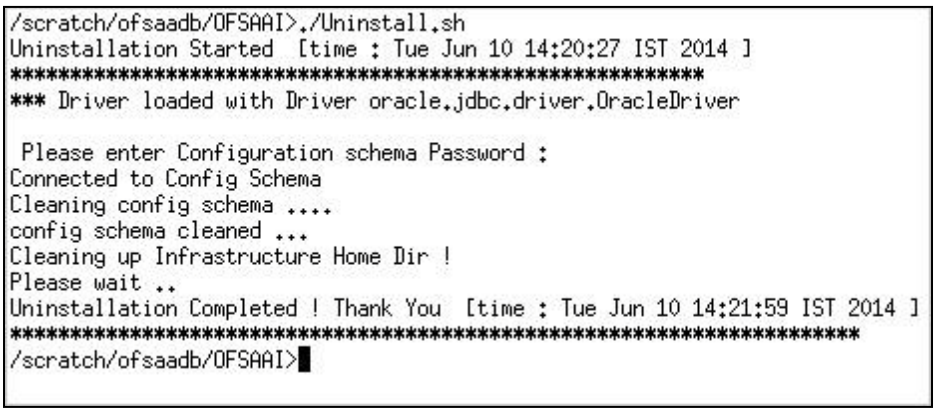
Before you start the uninstall process, ensure that no open connections exist to the OFSAA Config and Atomic Schemas and Infrastructure services are brought down.

To uninstall OFSAA:

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 OFSAA Configuration Schema when prompted as shown in the following figure.



Note:

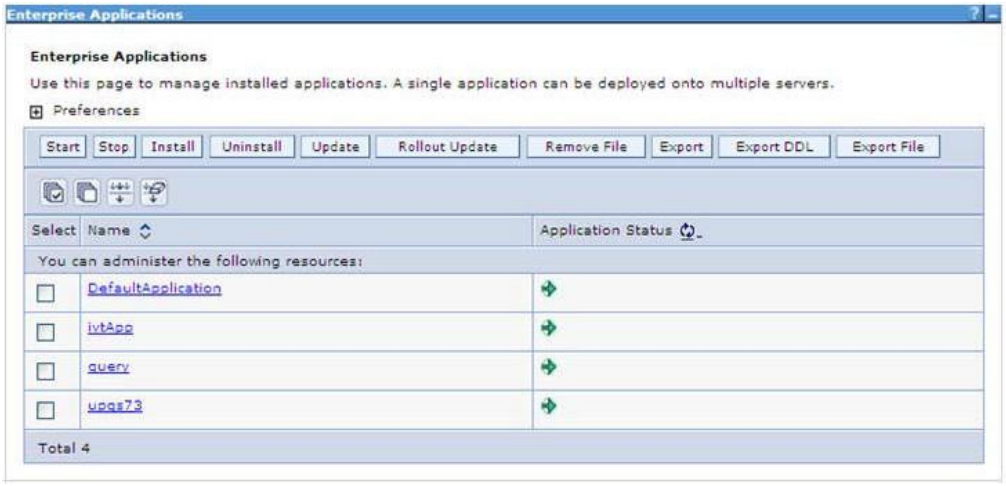
- Uninstallation does not remove the Infrastructure application from the Web Application Server. This has to be done manually.
- The entries in the .profile file will have to be removed manually.
- The files/ folders under the file system staging area (ftpshare) have to be deleted manually.

- All the Database objects from Atomic Schemas have to be dropped manually.

23.2 Uninstalling EAR Files in WebSphere

Following are the steps to uninstall any previously deployed application:

1. Open the URL in the browser window: `http://<ipaddress>:<Administrative Console Port>/ibm/console (https if SSL is enabled)`. The Login window is displayed.
2. Login with the user id that has admin rights.
3. Expand Applications > Application Types > WebSphere enterprise applications from the LHS. The Enterprise Applications window is displayed with all the deployed applications.



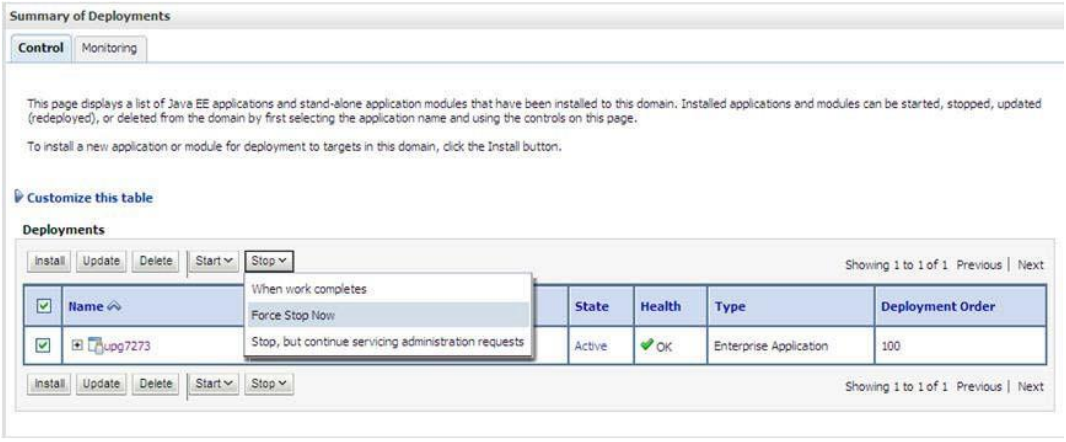
4. Select the checkbox adjacent to the application to be uninstalled and click **Stop**.
5. Click **Uninstall**. The Uninstall Application window is displayed.

6. Click **OK** to confirm.
7. Click **Save** to save the master file configuration.

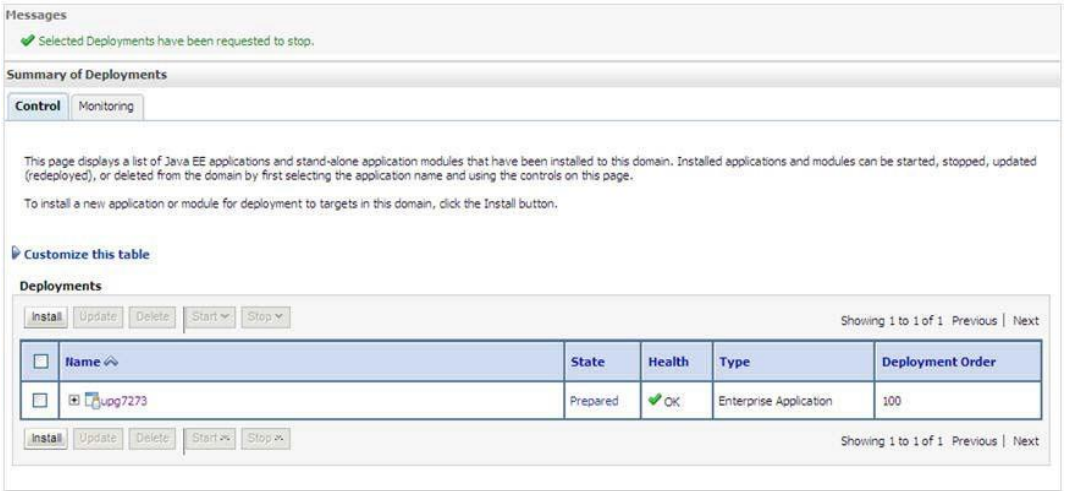
23.3 Uninstalling EAR Files in WebLogic

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 screen is displayed



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.



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.

23.4 Uninstalling WAR Files in Tomcat

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

1. Comment out Context path section from server.xml file in $CATALINA_HOME/conf directory to avoid conflict during undeploy and re-deploy of the WAR file.
2. Place comment <!-- --> in between the context path section. For example:

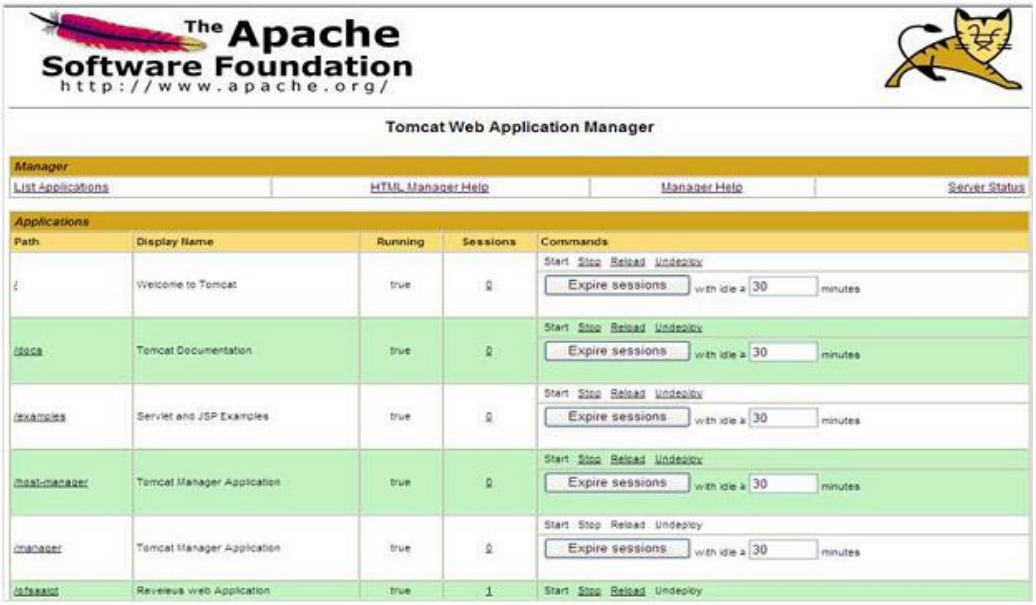
```
<!--
<Context path ="/pr2test" docBase="/home/perfuser/tomcat-
7.0.19/webapps/pr2test" debug="0" reloadable="true"
crossContext="true">
<Resource auth="Container"
name="jdbc/PR2ATM"
type="javax.sql.DataSource"
driverClassName="oracle.jdbc.driver.OracleDriver"
username="pr2atm"
password="pr2atm"
url="jdbc:oracle:thin:@10.184.74.99:1521:PERFTEST"
maxTotal="100"
maxIdle="30"
maxWaitMillis="10000"/>
</Context>
-->
```

Restart the Tomcat service by doing the following:

- Login to the "Unix server" through a terminal emulator.
- Navigate to $catalina_home/bin directory.
- Stop the tomcat services using the command ./shutdown.sh

- Start the tomcat services using the command ./startup.sh

1. Open the URL in a browser window: http://<IP address>:<Tomcat server port>. (https if SSL is enabled). The Tomcat home window is displayed.
2. Click the Manager App. The Connect to window is displayed.
3. Login with the user credentials having admin rights. The Tomcat Web Application Manager window is displayed with the list of all applications deployed in Tomcat.



4. Click the **Undeploy** link against the deployed Infrastructure application. A confirmation message is displayed on the application /Infrastructure being uninstalled.

24 Appendix R: Enabling Data Redaction in OFSAA

This section details about the configurations supported by OFSAAI for enabling the Oracle Advanced Security feature - Data Redaction in OFSAA applications.

24.1 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.

24.1.1 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 8.0.6.0.0 version from a previous version. Additionally, these configurations are required in case you did not enable TDE during OFS LRM 8.0.6.0.0 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:

   ```
   select v_schema_name from aai_db_detail where V_DB_NAME <>
   'CONFIG' AND V_DB_TYPE = 'ORACLE'
   ```
4. Execute the file

   `$FIC_HOME/utility/data_security/scripts/grant_data_sec_roles.sql for all atomic users found in the previous step.`
5. From the Configuration window in the System Configuration module, select the **Allow Data Redaction** checkbox.
6. Run the Data Redaction utility. For more details on how to run the utility, see Data Redaction section under Data Security and Data Privacy chapter in OFS Analytical Applications Infrastructure Administration Guide 8.0.6.0.0.

25 Appendix S: Enable Right to be Forgotten

This section details about the configurations required in case you want to enable Right to be Forgotten in OFSAA applications.

25.1 Right to be Forgotten

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

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

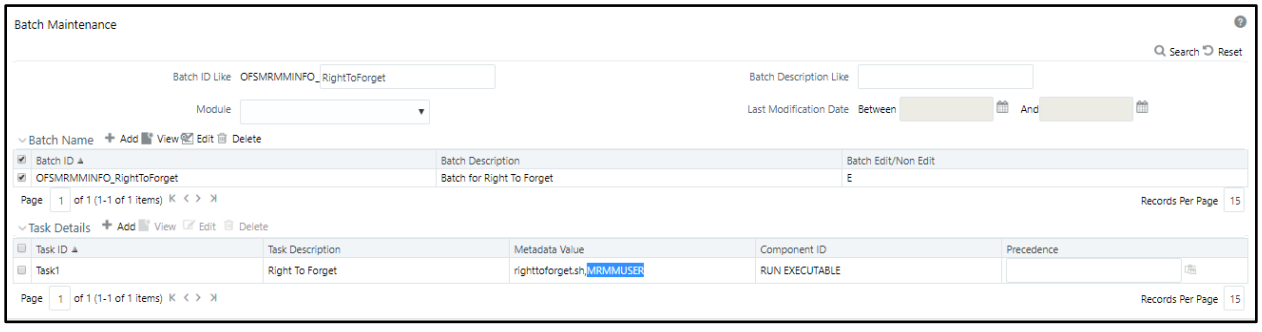
For details see the Right to Be Forgotten section, in Oracle Financial Services Data Foundation User Guide in the OHC Documentation Library.

25.2 Configuring Right To be Forgotten During OFS MRMM Installation

Follow the below steps to configure Right to be Forgotten:

Ensure that you are assigned the role “DATACONTROLLER”.

1. Edit the task of the batch `<Infodom_name>_RightToForget` with the User ID who is assigned the above mentioned role assigned. (By default the parameter will be referenced as SYSADMN)



2. Add the party ID’s entries for right to forget in the table FSI_PARTY_RIGHT_TO_FORGET

3. Execute the batch <Infodom_name>_RightToForget

26 Appendix T: Patching OFSAA 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.

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

27 Appendix U: Configuring Work Manager in Web Application Servers

Process modelling framework requires creation of Work Manager and mapping it to OFSAA instance. This configuration is required for WebSphere and WebLogic Web Application Server types.

This section covers the following topics:

- Configuring Work Manager in WebSphere Application Server
- Configuring Work Manager in WebLogic Application Server

27.1 Configuring Work Manager in WebSphere Application Server

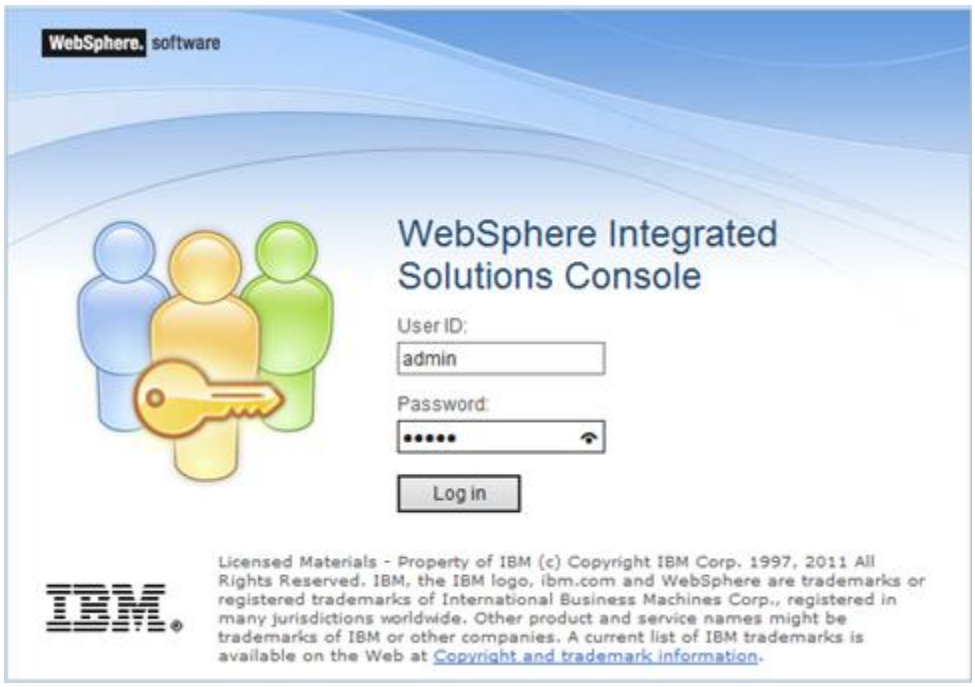
This section is applicable only when the Web Application Server type is WebSphere.

This section covers the following topics:

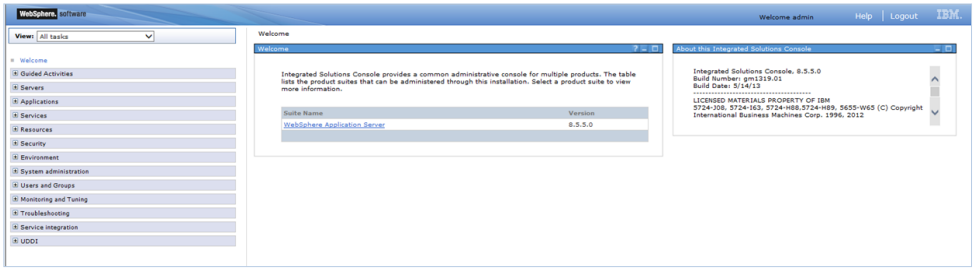
- Creating Work Manager
- Mapping Work Manager to OFSAA WebSphere Instance

27.1.1 Creating Work Manager

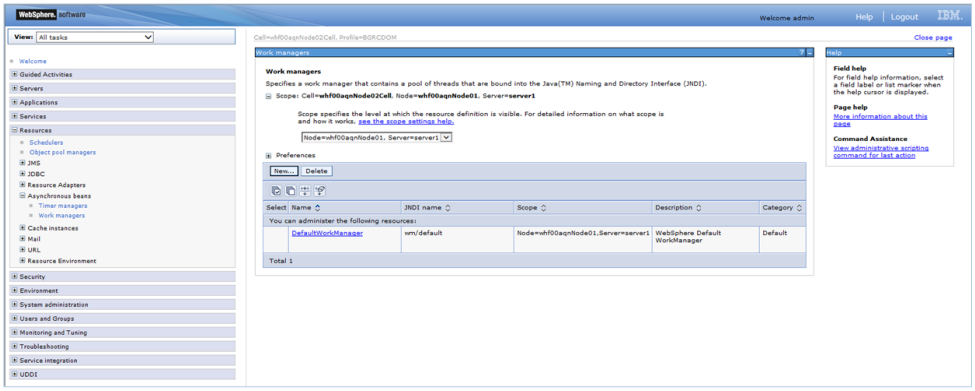
1. Open the WebSphere admin console in the browser window: http://<ipaddress>:<administrative console port>/ibm/console. (https if SSL is enabled). The *Login* window is displayed.



2. Login with the user id that has admin rights.



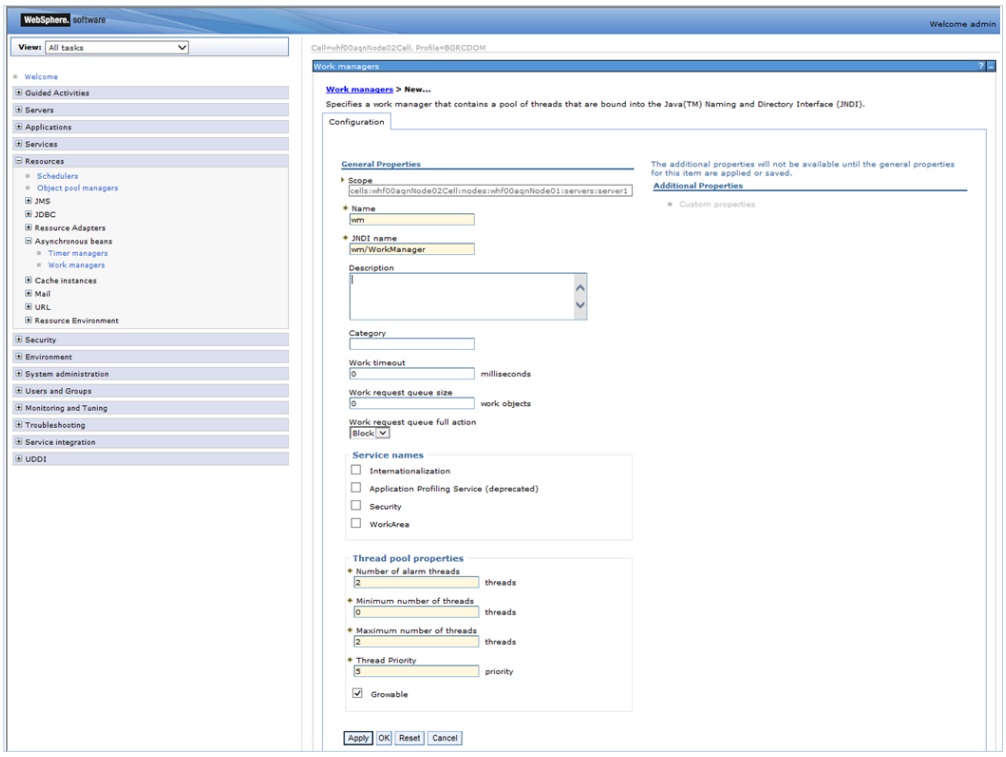
3. From the LHS menu, expand **Resources** > **Asynchronous beans** and select **Work Managers**.



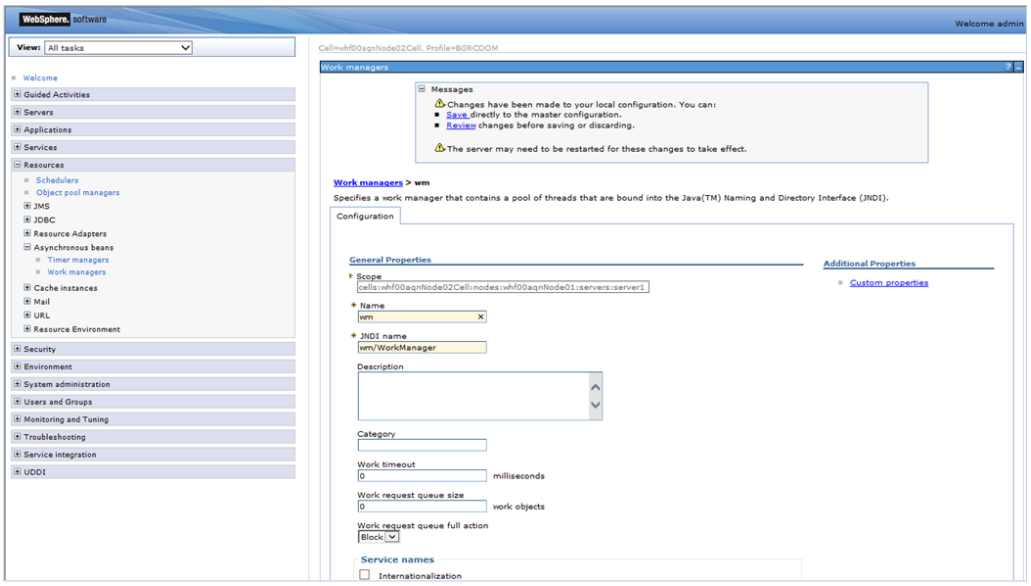
4. Select the required **Scope** from the drop-down list.

For example, Node=whf00aqnNode01, Server=server1.

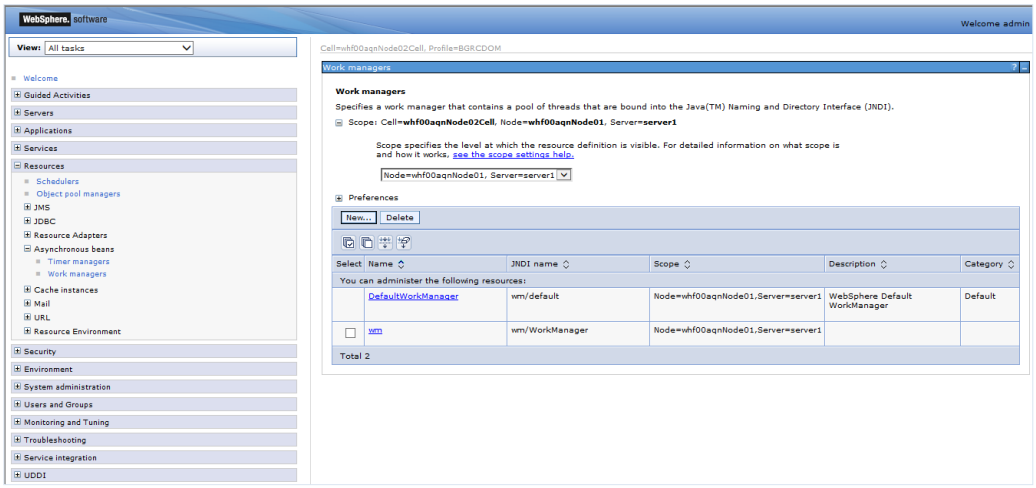
5. Click **New** in the *Preferences* section.



6. Enter the **Name** as ‘wm’ and **JNDI name** as ‘wm/WorkManager ‘ in the respective fields.
7. Enter the **Thread pool properties**.
8. Click **Apply**.



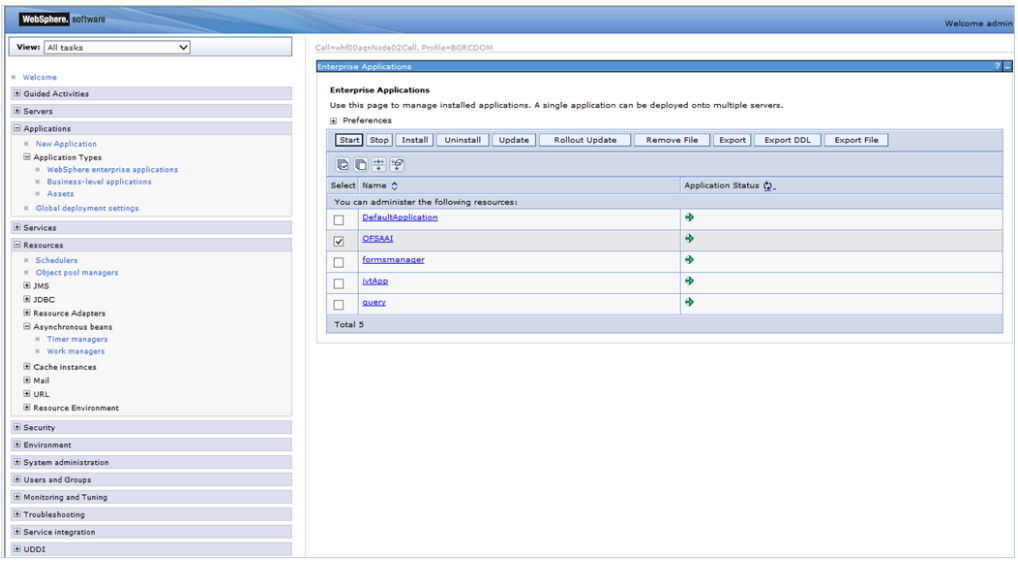
9. Click **Save**.



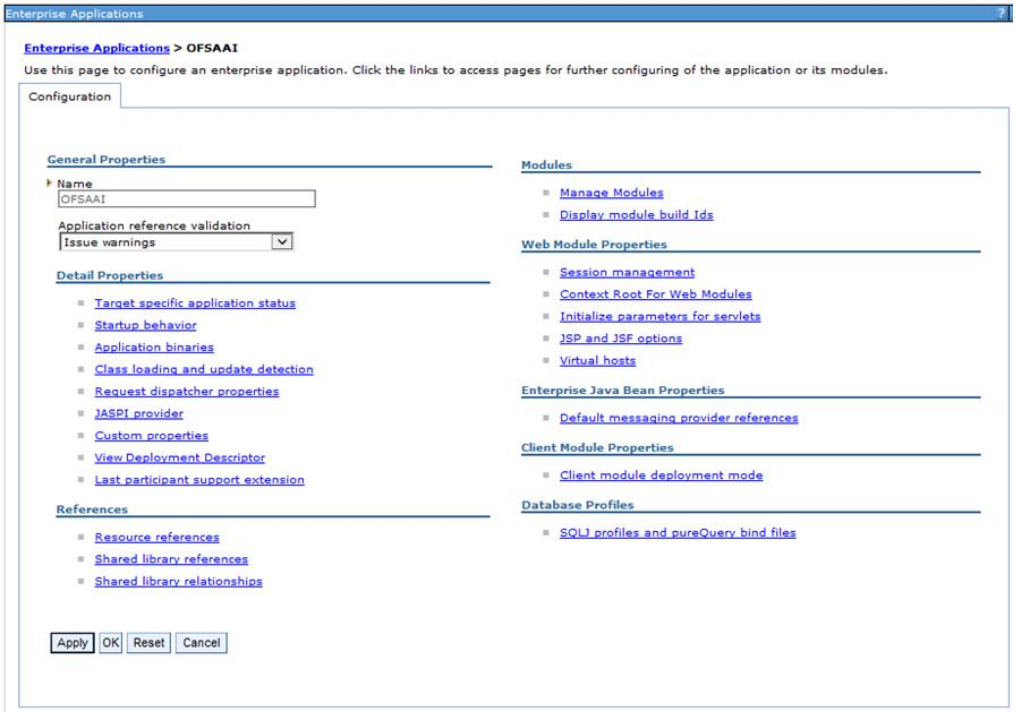
After creating work manager successfully, you have to map it to OFSAA instance.

27.1.2 Mapping Work Manager to OFSAA WebSphere Instance

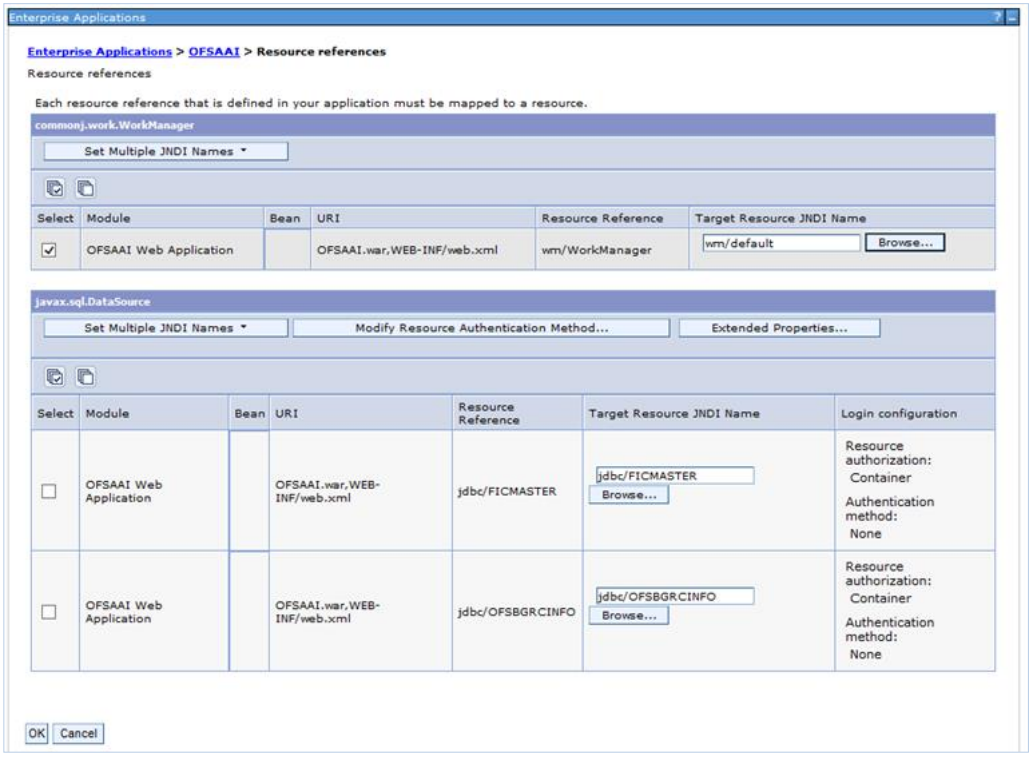
1. From the LHS menu, expand **Applications** > **Application Types** and select **WebSphere enterprise applications**.



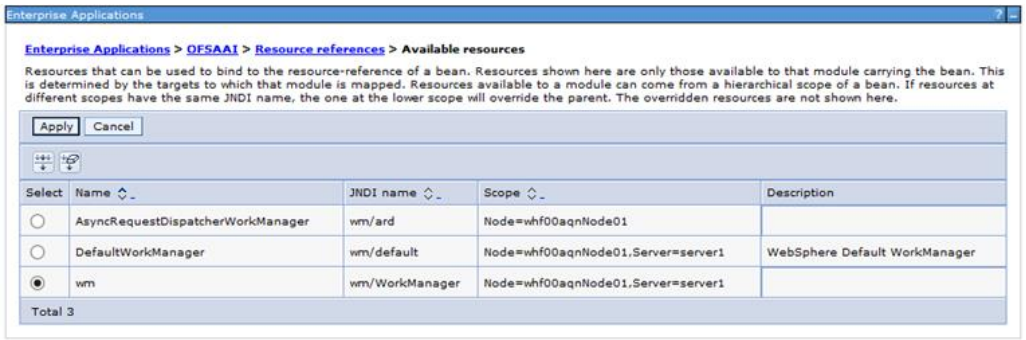
2. Click OFSAAI instance hyperlink.



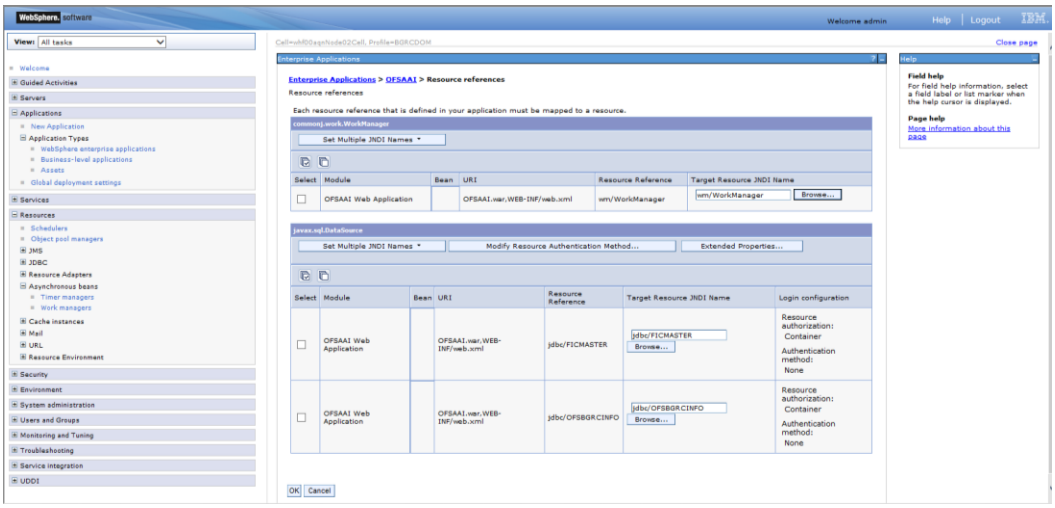
3. Click **Resource references** link under *References* section.



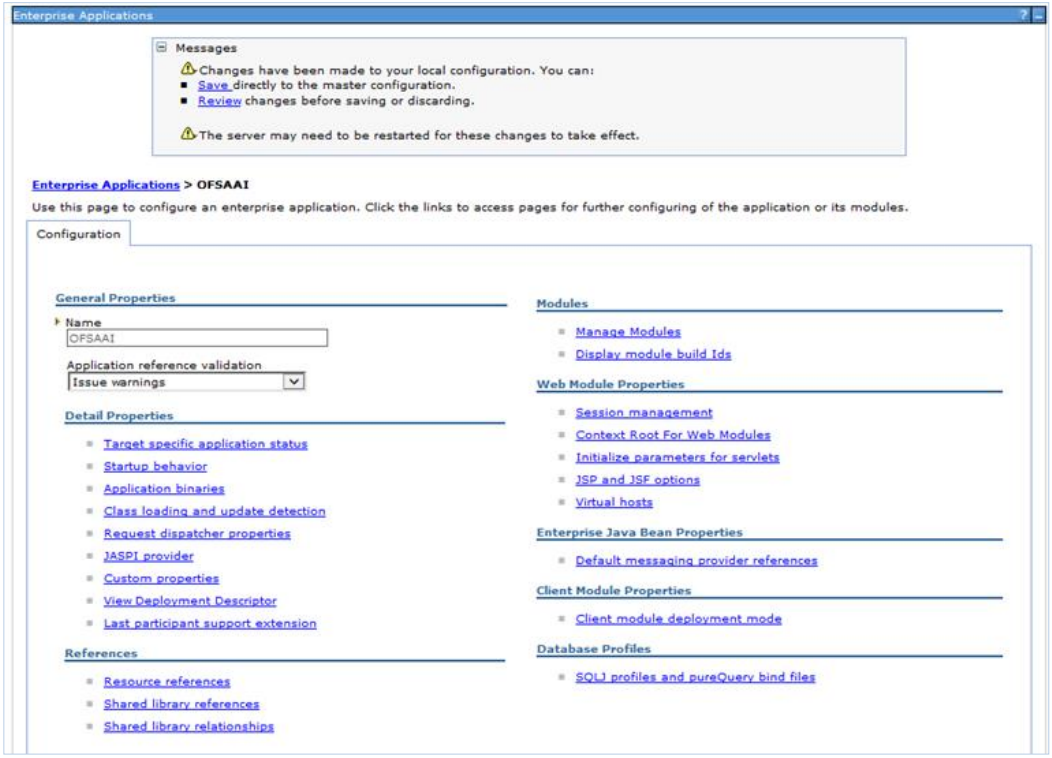
4. Click **Browse** corresponding to the Work Manager Resource Reference. The available resources are displayed.



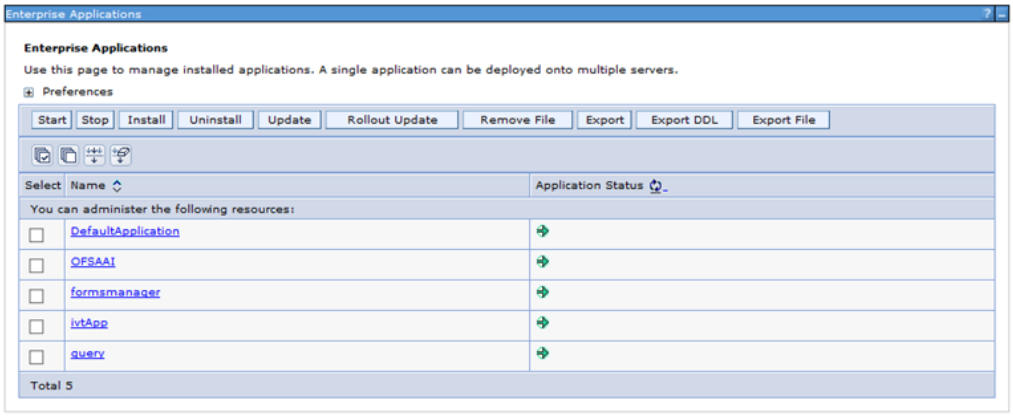
5. Select the newly created Work Manager ('wm') and click **Apply**.



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



7. Click **Save**.



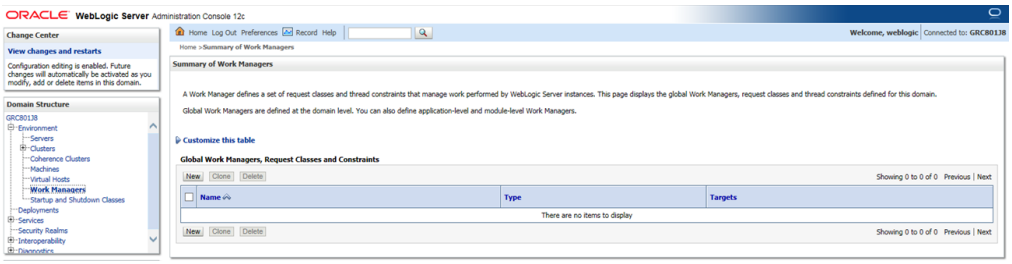
27.2 Configuring Work Manager in WebLogic Application Server

This section is applicable only when the Web Application Server type is WebLogic.

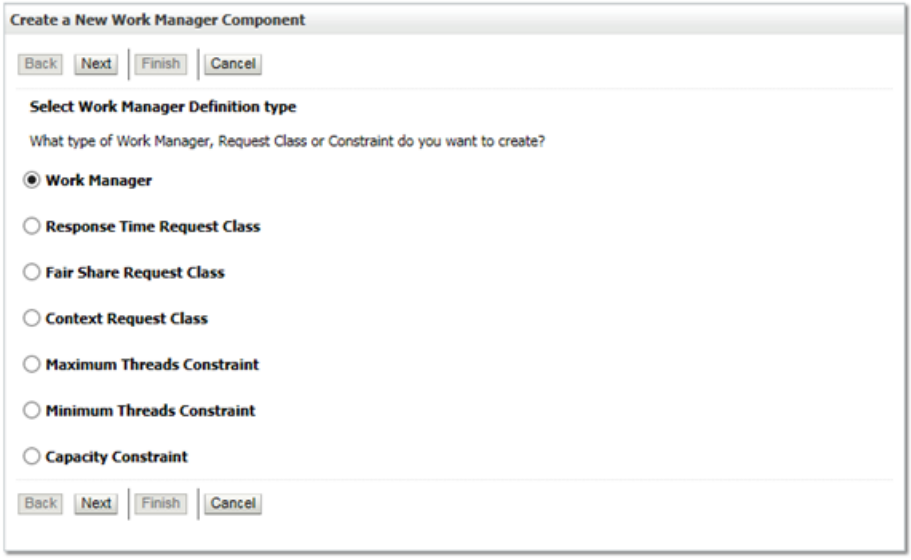
27.2.1 Creating Work Manager

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

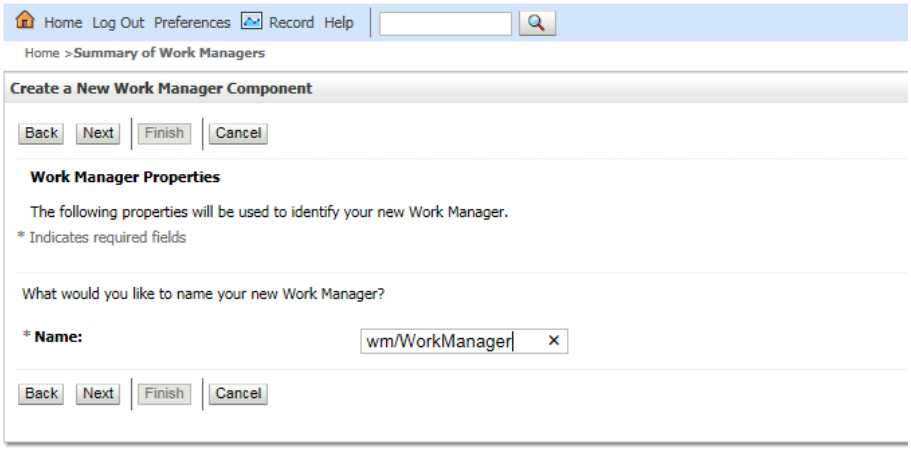
2. Login with the user id that has admin rights.
3. From the *Domain Structure* menu in the LHS, expand **Environment** and select **Work Managers**. The *Summary of Work Managers* window is displayed.



4. Click **New** to create a new work manager component.

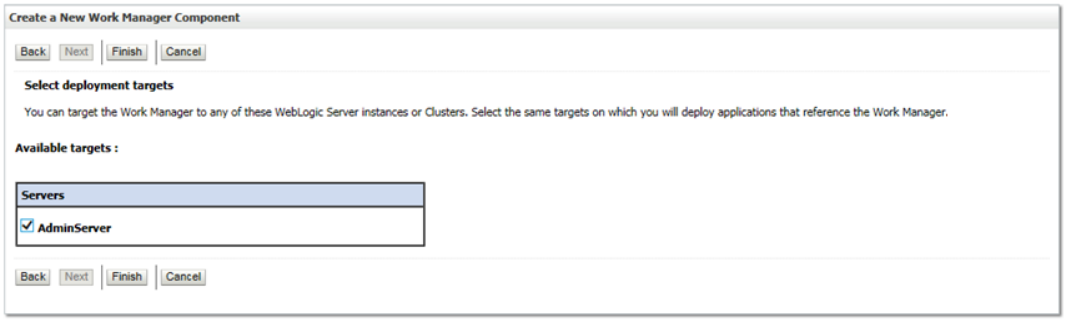


5. Select **Work Manager** and click **Next**.

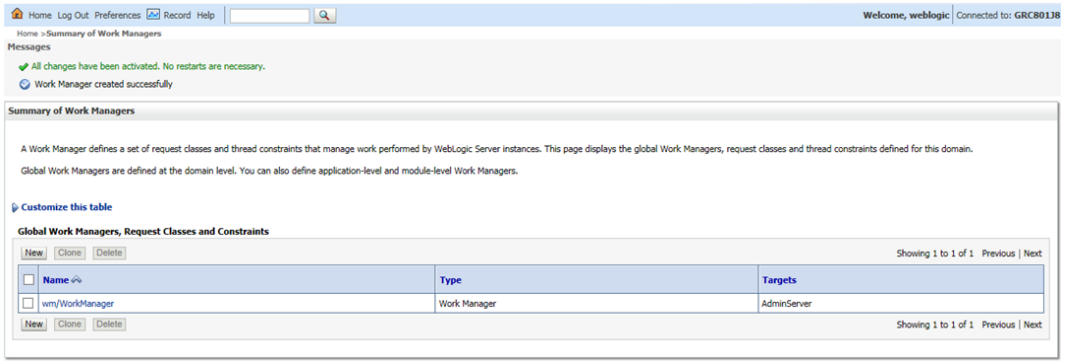


6. Enter the **Name** as ‘wm/WorkManager’.

7. Click **Next**.



8. Select the required deployment target and click **Finish**.



28 Appendix V: 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
- Forms Framework FAQs
- 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.

28.1 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 8.0.0.0.0 FAQs

28.1.1 OFSAAI FAQs

What are the different components that get installed during OFSAAI?

The different components of OFSAAI are illustrated in "Components of OFSAAI".

What are the different modes of OFSAAI installation?

OFSAAI can be installed in two modes, Silent Mode, and GUI 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.

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 is 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

Is OFSAAI license specific to Applications?

No, OFSAAI license is not specific to any application.

During installation, when one gets an error message, "Execute Permission denied", what is to be done?

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

To give execute permissions,

Navigate to the path OFSAAI_80000 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.

Note:

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 "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).

During the installation, what should one do if the error message shows "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.

During installation, what is to be done if the error always reads "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 “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 Chapter 5, "Post Installation Configuration".

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 OFSAAI 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.

On the UNIX System terminal, error message shows "Insert New Media. Please insert Disk1 or type its location" while executing ./setup.sh, what should be done?

1. Login as root user on the Unix machine where OFSAAI is getting installed.
2. Navigate to the path /etc/security/.
3. Edit the file limits.conf to add/edit a row for the unix user installing OFSAA:

   <Unix User> soft nofile 9216

4. 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 does one 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 does one 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:

1. Navigate to the path $FIC_HOME (Product Installation Directory).
2. Execute the command:

./piverify.sh

What should one do if the installation in GUI mode is not invoked?

There are set of configuration steps required to be performed during the installation in GUI mode. Verify whether the steps mentioned under *Configuration for GUI Mode Installation* section are done correctly.

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

1. Please backup the installation logs.
2. Share the backup logs with Oracle Support Services.

On Solaris 11 system, if one gets the following error message during OFSAAI installation, what should be done:

"Error: OFSAAI-1108

ORA-00604: error occurred at recursive SQL level 1

ORA-01882: timezone region not found"

Or

"Time zone cannot be set as null or 'localtime' "

This happens if the time zone is not set, that is NULL or it is set as 'localtime'. Set the environment variable TZ to a valid time zone region in the .profile file. For example,

TZ=Asia/Calcutta

export TZ

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

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

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

2. 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.
3. Delete the OFSAA install directory created by the OFSAAI installer.
4. 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 one do if the database connection from connection pool throws an error "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 above settings, check the MTU(Maximum Transmission Unit) settings on the linux box. For details on MTU settings and updating them, contact your system Administrator.

When I invoke setup.sh file from my install archive, it throws syntax errors/file not found error messages, what should I do?

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:

1. Copy the installer (in BINARY mode) to the system on which the OFSAA Infrastructure components will be installed.
2. Unzip the installer using the command:

   unzip <OFSAAI_Installer>.zip

3. 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 the below steps:
   a. Login to the server where the installer is copied.
   b. Navigate to the directory OFSAAI_80000.
   c. Open the setup.sh file in the **vi** editor using the command: vi setup.sh.
   d. 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.

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` fileis invoked.
- Ensure the .profile where the environment/ path settings are made has been executed successfully.

OFSAAI Login page does not come up, error message "Could not retrieve list of locales" is displayed. What should one do?

This could be due to 2 reasons:

- System is unable to resolve the hostname configured.
- Conflict with the ports configured.

To correct them, follow the below steps:

A. Steps to replace the hostnames with IP address:

1. Stop all the OFSAA services. See *Stopping Infrastructure Services* section on how to stop the services.
2. Replace all the hostnames with the IP address in all the places mentioned in the document (Where to find port, IP address, HTTPS Configuration for OFSAAI 7.2 Installation (DOC ID 1500479.1)).
3. Restart all the OFSAAI services. For more information, refer Starting Infrastructure Services section.

B. Steps to correct the port number conflicts

1. Stop all the OFSAA services.
2. Refer to the port numbers stated in the document (Where to find port, IP address, HTTPS Configuration for OFSAAI 7.2 Installation (DOC ID 1500479.1)) and check on the discrepancy in the port numbers and correct them.
3. Restart all the OFSAAI services.

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". 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 startup parameters options, see *Starting Infrastructure Services* section.

For more details on the issue, refer on 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 completion of 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? Why is it needed 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, see *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.

During Information Domain creation, the message "Please create a database and then create the information domain" appears. What should be done?

Information Domain is mapped to only one Database; and thus before the creation of Information Domain, at least one database details should exist.

The message "ConnectToDatabase: FatalError, could not connect to the DB server" appears during startup of backend engine message server. What does one need to do?

- 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 Application and Database Layers.

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 provides?

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 provides two mechanisms for business data model upload:

- Easy to use GUI based Model upload mechanism to upload the Business Data Model through Data Model Management -->Data Model Maintenance--> Import 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 details, see Configuration for *Model Upload Utility* section of the OFS Analytical Applications Infrastructure User Guide available on OTN.

The Business Data model undergoes changes; how does this incremental change get applied to the existing model?

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 require updating those files. Contact Oracle Support Servies 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 requires updating those files.

To change the Atomic Schema password, follow the steps:

1. Login to OFSAA.
2. Navigate to System Configuration > Database Details window. Select the appropriate connection, provide the modified password and save.
3. Navigate to Unified Metadata Manager > Technical Metadata> Data Integrator > Define Sources window. Update the appropriate Source details.
   a. If you are using Apache as Web server:

      * Update the <Context> -> Resource tag details in `server.xml` file from the `$CATALINA_HOME/conf` folder. (In case of Tomcat only Atomic <Resource> will exist).

   b. If you are using WebSphere as Web server:

      * Login to the WebSphere Administration Console from the left side menu.

      * Navigate to Resources >JDBC >Data Sources. A list of data sources will be populated on the right side.

      * Select the appropriate Data Source and edit the connection details. (In this case, both Config and Atomic data sources need to be modified).

   c. If you are using WebLogic as Web server:

      * Login to the WebLogic Administration Console from the left side menu.

      * 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.

* Select the appropriate Data Source and edit the connection details. (In this case, both Config and Atomic data sources need to be modified).

4. Restart the OFSAAI services

Note: If the modified passwords are not updated, OFSAAI logs displays 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, takes longer time to load?

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 screen 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.

1. Generate the Log report by executing the below 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

2. The above query returns a list of codes with their respective metadata count. You can refer to "metadata_type_master" table to identify the metadata name.
3. 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).

4. Restart Reveleus/OFSAAI servers (Web and APP) and check the issue.

What should I do if I get OutOfMemoryError while deploying EAR file in WebSphere application server?

The Java memory needs to be increased in ejbdeploy.sh file which is present under <WebSphere Install directory>/AppServer/deploytool/itp. For example,

$JAVA_CMD \

-Xbootclasspath/a:$ejbd_bootpath \

Xms256m -Xmx1024m \

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 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 indicated below, 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, see Configuring Web Application Servers. For more information on generating and deploying EAR / WAR file, refer Appendix C.

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.

Please refer Support Note for the workaround.

How do you turn off unused information domains (infodoms) from cache?

Follow the below steps to turn off unused infodoms from cache:

Navigate to $FIC_HOME/conf in the APP layer of your OFSAAI installation.

1. In the DynamicServices.xml file, identify the section for <Service code="20">.
2. Modify the value of parameter CACHE_ON_STARTUP to 0 (default is 1).
3. 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, see Configuring Web Application Servers.

Restart the OFSAAI Services (APP and WEB). For more information, see Appendix D.

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 pasted below:

<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>

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.

When trying to view the model outputs in Model Outputs screen, I get "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 screen. This folder needs to be created under the local path on every node ,in case of web application server clustering.

During OFSAA services startup, I get 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.

Upload Options	Size of Data Model XML File	X_ARGS_APP ENV Variable in OFSAAI APP Layer
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

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*.

I get an error when I try to build an Oracle OLAP cube. What should I do?

Execute the below 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:

1. Navigate to $FIC_HOME/conf in the APP layer of your OFSAAI installation.
2. In the DynamicServices.xml file, identify the section for <Service code="20">.
3. Modify the value of parameter CACHE_ON_STARTUP to 0 (default is 1).
4. 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 Appendix C.

5. Restart the OFSAAI Services (APP and WEB). For more information, refer to the Start OFSAA 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 pasted below:

<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 Web Server (Apache HTTP Server/ Oracle HTTP Server/ IBM HTTP Server) and the Web Application Server (WebSphere/ WebLogic/ Tomcat) 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.

I want to configure OFSAA for High Availability that is weblogic cluster on which OFSAA.ear is deployed and cluster OFSAAI processes (such as Reveleus etc) are running. Is this a supported configuration?

High Availability is available for WebLogic cluster and DB level as active-active, but is not available on the application side. OFSAA can have active-passive high availability. For more details, refer Configuring OFSAA in Clustered Environment 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 8.0.6.0.0 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 SQL Plus.
- 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 the below steps:

1. Delete the $FIC_HOME/conf/Reveleus.SEC file.
2. Shutdown the OFSAAI App service: cd $FIC_APP_ HOME/common/FICServer/bin ./stopofsaai.sh
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 XWindows software using the command: ./startofsaai.sh
5. Enter System Password.
6. 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.
7. 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:

1. Navigate to $FIC_HOME/conf where OFSAA is installed.
2. 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:

```
<appendername="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:

1. Navigate to <EAR/WAR Deploy area>/conf folder.
2. Repeat step 2 from the above section.

Can we modify the Log file path?

Yes, Log file path is configurable, it can be configured in RevLog4jConfig.xm_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?

For more details, see the HTTPS section in the OFSAAI Administration Guide.

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?

1. Navigate to $FIC_HOME directory on Target.
   The file PortsDef.log will be available in the $FIC_ HOME directory. It will contain the ports information.

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:

1. Locate the webserver deployed area `webroot/conf/excludeURLList.cfg` file.
2. Modify the following entries:

- [SQLIA]./dataIntegrator/ to [ALL]./dataIntegrator/
- [SQLIA]./ETLExtractionServlet to [ALL]./ETLExtractionServlet

3. Save the changes and restart the webserver.
4. 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
```

28.2 Application Pack 8.0.6.0.0 FAQs

What is an Application pack?

An Application Pack is a suite of products. For more information, refer section About Oracle Financial Services Analytical Applications (OFSAA) Applications Pack.

Can I get a standalone installer for OFSAAI 8.0?

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

Is my environment compatible with OFSAA 8.0.6.0.0 Application Pack?

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

Does OFSAA 8.0.6 Application pack UPGRADE's automatically existing environments?

No. Refer Point 5. OFSAA 8.0 application pack has to be installed in a new environment and subsequently migration path / migration kit needs to be run to migrate from 7.x to 8.0. Please note we will have migration path only from the previously released version of OFSAA products.

Where can I download OFSAA 8.0 Application Pack?

You can download the OFSAAI 8.0 Application Pack from Oracle Software Delivery Cloud (OSDC).

What are the minimum system and software requirements for OFSAA 8.0 Application Pack?

Refer installation guide sectionHardware and Software Requirements.

Is my environment compatible with OFSAA 8.0 Application Pack?

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

Does OFSAA 8.0.6 Application Pack is supports all Operating systems?

LINUX, AIX, SOLARIS. Refer to Technology Matrix for the technology matrix that OFSAA suite products are/ will be qualified on.

How can I install OFSAA 8.0 Application Pack?

Refer to I&C guide published in OTN for the application pack installers.

Does this installation require any Third party Software's?

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 8.0 Application Pack installation?

US English is the language supported.

What mode of installations OFSAA Application Pack supports? [i.e., Silent , GUI]

OFSAA Application Packs supports both, GUI and Silent Mode.

Does this Application Pack validate all Pre-requisites required for this installation i.e., Memory, Disk Space etc.?

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

What happens if it aborts during installation of any application with in Application pack?

Customer needs to restore the system and retrigger the installation

Does this Application pack 'Rolls Back' if any of application installation fails due to errors?

Rollback of installation is not supported.

Does the Application pack installs all applications bundled?

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

How can I re-install any of the Application Pack?

You can retrigger in case of failure.

Does Application pack allow enabling / disabling any of the applications installed? Yes. You cannot disable once the product is enabled in an environment.

I have installed one application in a Application pack and can I install any of new applications within the Application pack later point of time?

No, installation is not required. Enabling the application is an option to use it later.

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.

Is it possible to Install OFSAA 8.0 Application pack on any one of the existing 'Infodom' where another OFSAA 8.0 application is installed?

Yes. However, the Behavioral Detection Application Pack and Compliance Regulatory Reporting Application pack are the exceptions. They need to be installed in a different INFODOM.

Is there any option in Application pack for the user to select Infodom during installations?

Yes. You can select or change the required infodom.

Can I install all Application Packs in a 'Single Infodom'?

Yes. But Behavioral Detection Application Pack and Compliance Regulatory Reporting Application Pack are the exceptions. They need to be installed in a different INFODOM.

Is it possible to install applications on different Infodom within the Application pack?

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 is Application pack Specific or Specific to 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 OFS Enterprise Modeling is required for all applications?

This product is enabled depending on the applications that use the features of OFS Enterprise Modeling.

Will Application pack creates 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.

Do we have upgrade Kits for individual applications or it's a Application Pack Upgrade?

ML/ IR releases / upgrades will be across Packs.

Can I upgrade AAI only?

Yes, you can upgrade AAI alone.

Can I upgrade one application within the Application Pack?

No. Not possible Upgrade is applied across packs.

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 are installed on top of 8.0 application pack. Releases are planned post the 8.0 availability.

Can I install an Application Pack over another Application Pack (that is same infodom or different infodom)

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

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 8.0 support on WebLogic 10.3.6 with Oracle 12c?

Yes, OFSAA 8.0 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

"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 AAAI Application Pack version 8.0.6.0.0?

OFS AAAI Application Pack supports Java 1.7.x and 1.8.x.

Is this release of the OFS AAAI Application Pack version 8.0.6.0.0 supported on Java 8?

Yes. To install this release of the OFS AAAI Application Pack version 8.0.6.0.0 on Java 8. For more information, refer to specific notes mentioned in the sections Installer and Installation Prerequisites, Configurations supported for Java 8, Configuring the Schema Creator Utility, GUI Mode Installation, SILENT Mode Installation.

What should be done if you encounter the following "FATAL" exception in the installation log because of insufficient DB process value?

[FATAL] - =====Exception====

java.sql.SQLRecoverableException: IO Error: Got minus one from a read call

at oracle.jdbc.driver.T4CConnection.logon(T4CConnection.java:419)

at oracle.jdbc.driver.PhysicalConnection.<init>(PhysicalConnection.java:536)

at oracle.jdbc.driver.T4CConnection.<init>(T4CConnection.java:228)

at oracle.jdbc.driver.T4CDriverExtension.getConnection(T4CDriverExtension.java:32)

at oracle.jdbc.driver.OracleDriver.connect(OracleDriver.java:521)

Contact the DBA team to increase the DB process/sessions value accordingly, which depends on the number of database process running at that particular point of time.

Can I upgrade the Oracle Database version from 11g to 12C on which OFSAA 8.0.2.0.0 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/ficweb/webroot/WEB-INF/lib/`

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.

28.3 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 by Field Chooser option?

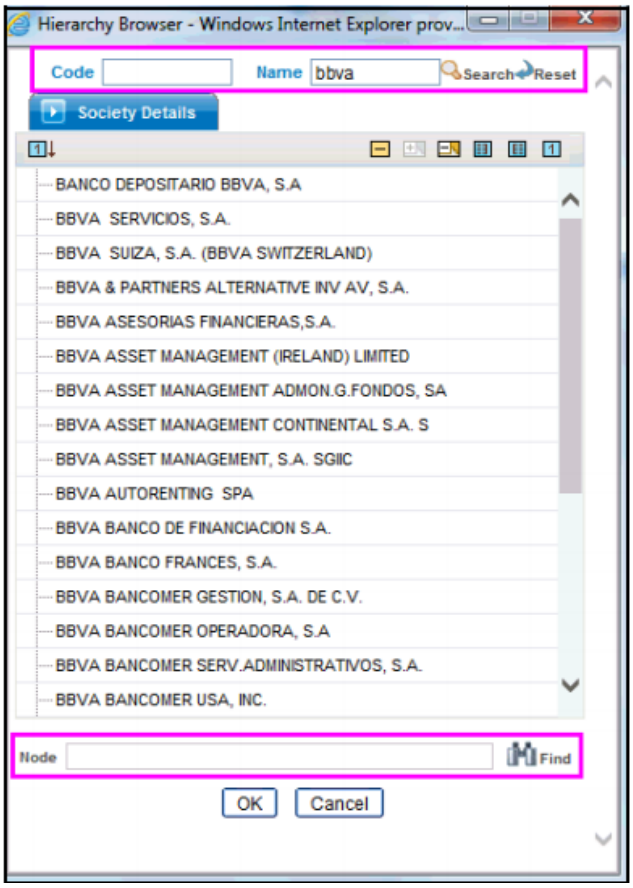
Perform Grid Export operation to export the columns added to the grid by Field Chooser option.

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 as highlighted in the following figure:



- **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.

28.4 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.

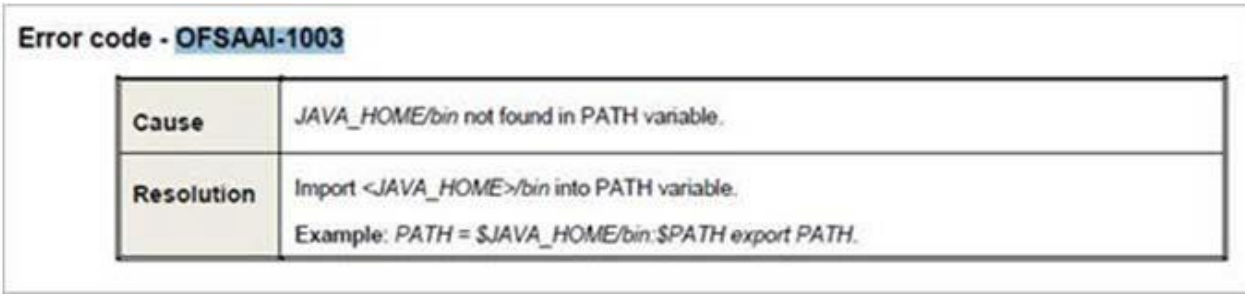
This section includes the following topics:

- Accessing Error Dictionary
- Error Code Dictionary

28.4.1 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 the below 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 indicated below.



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.

28.4.2 Error Code Dictionary

Error code - OFSAAI-1001

Cause	Unix s hell 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. Note: chsh command is not available in Solaris OS.

Error code - OFSAAI-1002

Cause	No proper arguments are available.
Resolution	Provide proper arguments. Invoke Setup.sh using either SILENT or GUI mode. Example: ./Setup.sh SILENT or ./Setup.sh GUI

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

Cause	File OFSAAInfrastructure.bin is not present in current folder.
Resolution	Copy OFSAAInfrastructure.bin into installation kit directory.

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

Cause	File OFSAAI_InstallConfig.xml is not present in current folder.
Resolution	Copy OFSAAI_InstallConfig.xml into installation kit directory.

5 **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

Cause	File log4j.xml is not present in current folder.
Resolution	Copy log4j.xml into installation kit directory.

Error code - OFSAAI-1010

Cause	Unknown error occurred.
Resolution	Make sure to provide proper argument (SILENT or GUI) to the Setup.sh file.

Error code - OFSAAI-1011

Cause	XML validation failed.
Resolution	Check InfrastructurePreValidations.Log for more details.

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

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

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

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

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

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.

OFSAA Financial Services MRMM Application Pack

8.0.6.0.0 Installation Guide

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