Oracle Financial Services Asset Liability Management Application Pack

Installation and Configuration Guide

Release 8.0.0.0.0

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Document Control

This section provides the revision details of the document.

Version Number	Revision Date	Changes Done
1.0	Updated January 2015	Captured installation and configuration steps for 8.0.0.0.0 Release
1.1	March 2015	Added Configurations for Java 7.
1.2	July 2015	Added Configurations for Java 8.
1.3	August 2015	Added 21133780 patch details, if installing on 8.0.1.0.0 version.
1.4	September 2015	Added an Appendix to capture details on upgrading an existing OFSAA 8.0.x Java 7 instance to Java 8
1.5	October 2015	Added a section on Configuring Internal Service (Document Upload/ Download).
1.6	March 2017	Added 2 prerequisites for Schema Creator Utility.
1.7	April 2017	Added details of consolidated one-off patch 25777667.

This document includes the necessary instructions to install the OFS ALM Application Pack 8.0.0.0.0 and perform the required post installation configurations. The latest copy of this guide can be accessed from OTN library.

Preface

This Preface provides supporting information for the Oracle Financial Services ALM Pack Installation Guide and includes the following topics:

- Summary
- Audience
- Documentation Accessibility
- Related Documents
- Conventions

Summary

You can find the latest copy of this document in OTN library which includes all the recent additions/revisions (if any) done till date.

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 ALM pack Installation and Configuration Guide is intended for Administrators, Business User, Strategists, and Data Analyst, who are responsible for installing and maintaining the application pack components.

The document assumes you have experience in installing Enterprise components. Basic knowledge about the OFS ALM pack components, OFSAA Architecture, UNIX commands, Database concepts and Web Server/ Web Application Server is recommended.

Following are the expected preparations from the administrator before starting the actual installation:

- Awareness of the OFSAA Tier Architecture. For more information, see the *Application Tiers* section.
- Decision on the appropriate OFSAA Deployment Option. For more information, refer the *Recommended Deployment Options* section.

Related Documents

This section identifies additional documents related to OFS ALM Infrastructure. You can access Oracle documentation online from Documentation Library (OTN).

- *Oracle Financial Services Asset Liability Management User Guide*
- *Oracle Financial Services Asset Liability Management Analytics User Guide*

Conventions and Acronyms

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
JDK	Java Development Kit
JNDI	Java Naming and Directory Interface
JRE	Java Runtime Environment
JVM	Java Virtual Machine

1 About OFSAA and OFSAA Application Packs

This chapter includes the following topics:

1.1 About Oracle Financial Services Analytical Applications (OFSAA)

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

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

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

1.2 About Oracle Financial Services Analytical Applications (OFSAA) Pack

OFSAA applications are packaged, and released as Application Packs starting from 8.0 release. An Application Pack is a group of OFSAA products packaged together in a single installer and addresses specific functional area via its products that are grouped together. Packaging applications in a group ensures simplified installation, maintenance, development and integration in an integrated deployment.

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

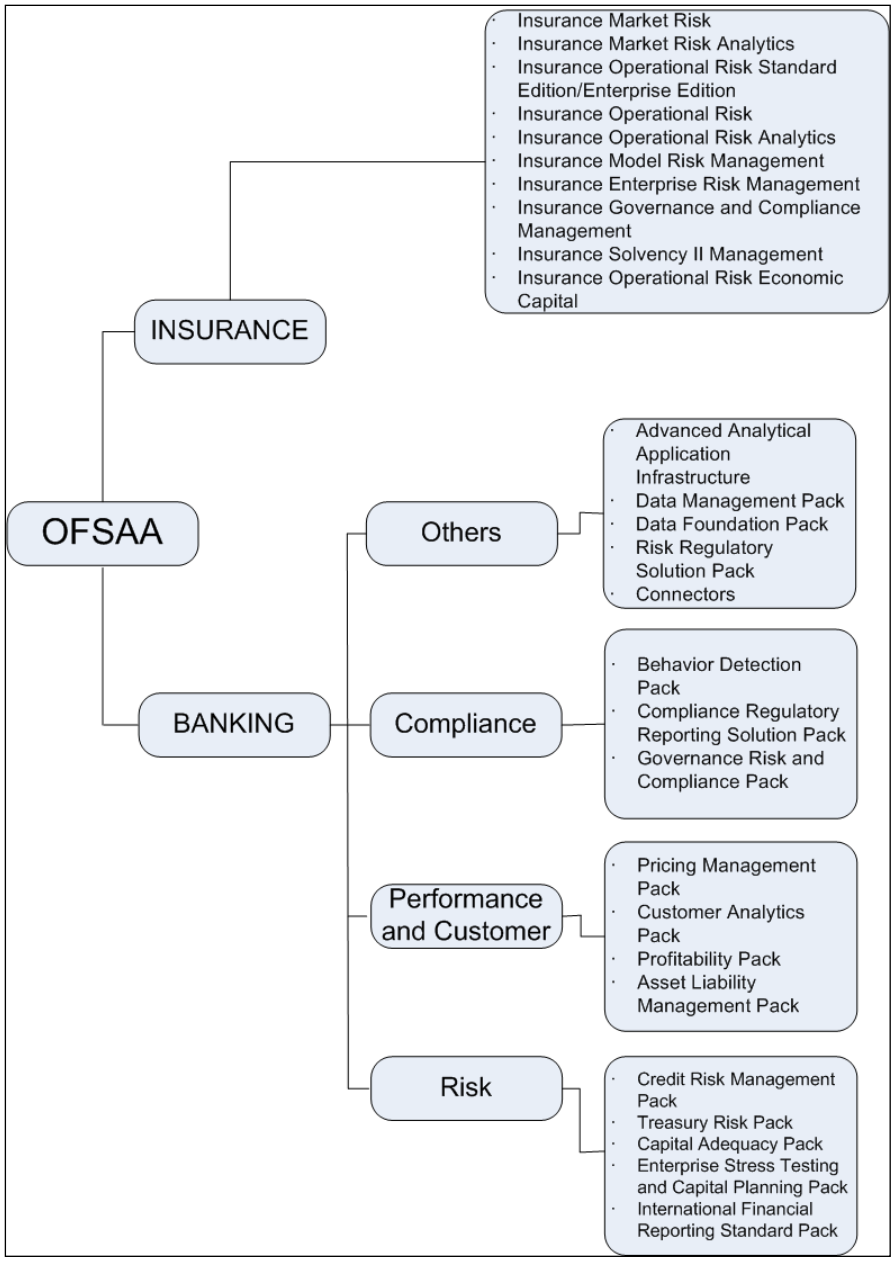


Figure 1: OFSAA Application Pack

1.3 About Oracle Financial Services Asset Liability Management 8.0.0.0.0 Applications Pack

OFS ALM 8.0.0.0.0 Pack includes the following applications:

- **Oracle Financial Services Analytical Applications 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.

- **Oracle Financial Services Asset Liability Management**: Oracle Financial Services Asset Liability Management (OFS ALM) helps financial services institutions measure and monitor interest rate risk, liquidity risk, and foreign currency risk. This solution measures and models every loan, deposit, investment, and portfolio individually, using both deterministic and stochastic methods. Oracle Financial Services ALM is a next-generation solution fully integrated with Oracle's Financial Services Analytical Applications and shares a common account level relational data model.

- **Oracle Financial Services Asset Liability Management Analytics**: This application provides timely and actionable insight for managing interest rate and liquidity risk and provides transparency into critical issues.

1.4 About Oracle Financial Services Analytical Applications Infrastructure (OFS AAI)

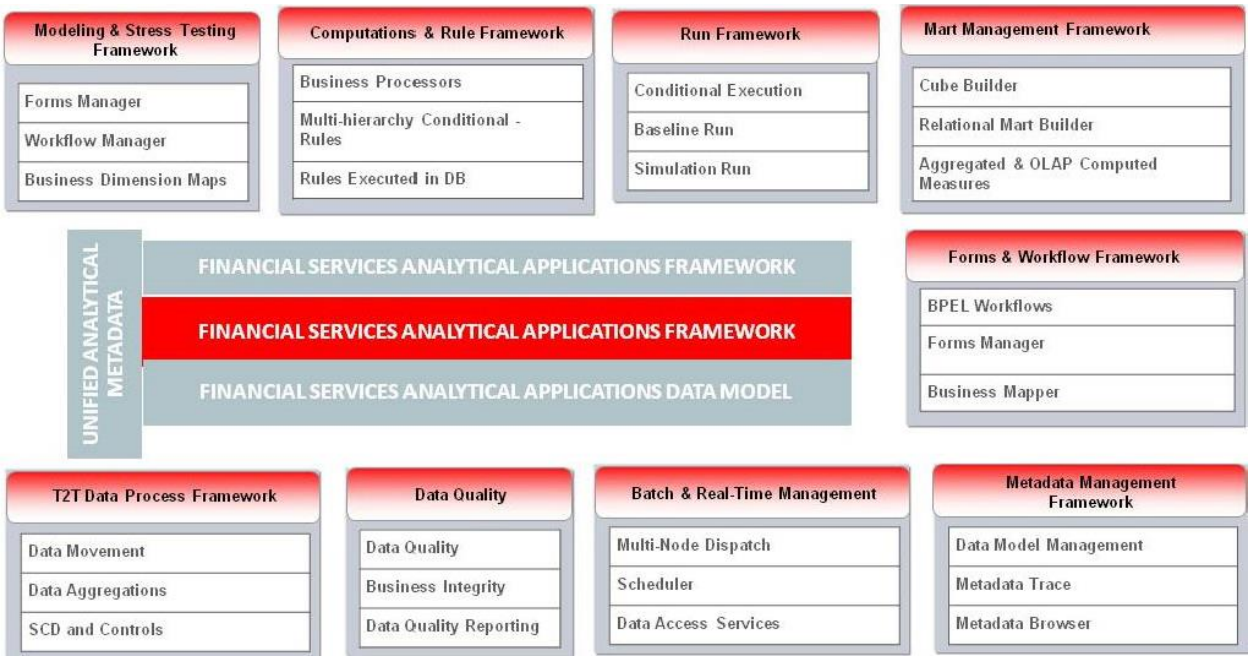
Oracle Financial Services Analytical Applications Infrastructure (OFS AAI) powers the Oracle Financial Services Analytical Applications family of products to perform the processing, categorizing, selection and manipulation of data and information needed to analyze, understand and report on specific performance,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

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:



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.

2 Understanding OFS ALM Applications Pack Installation

This chapter includes the following topics:

2.1 Installation Overview

This section gives an overview of the OFS ALM Applications Pack Installation. Following figure shows the order of procedures you need to follow:

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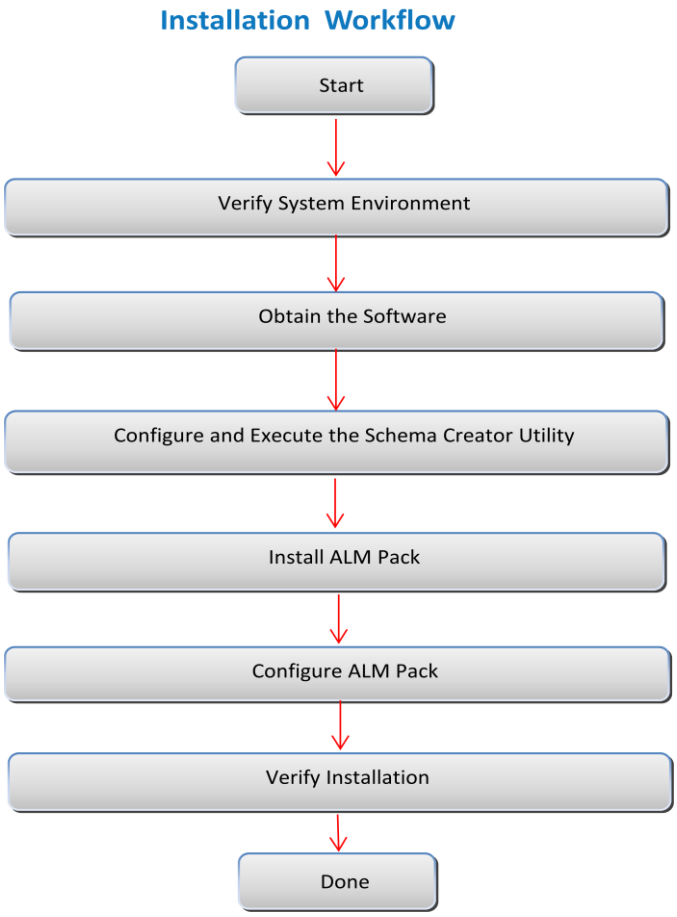


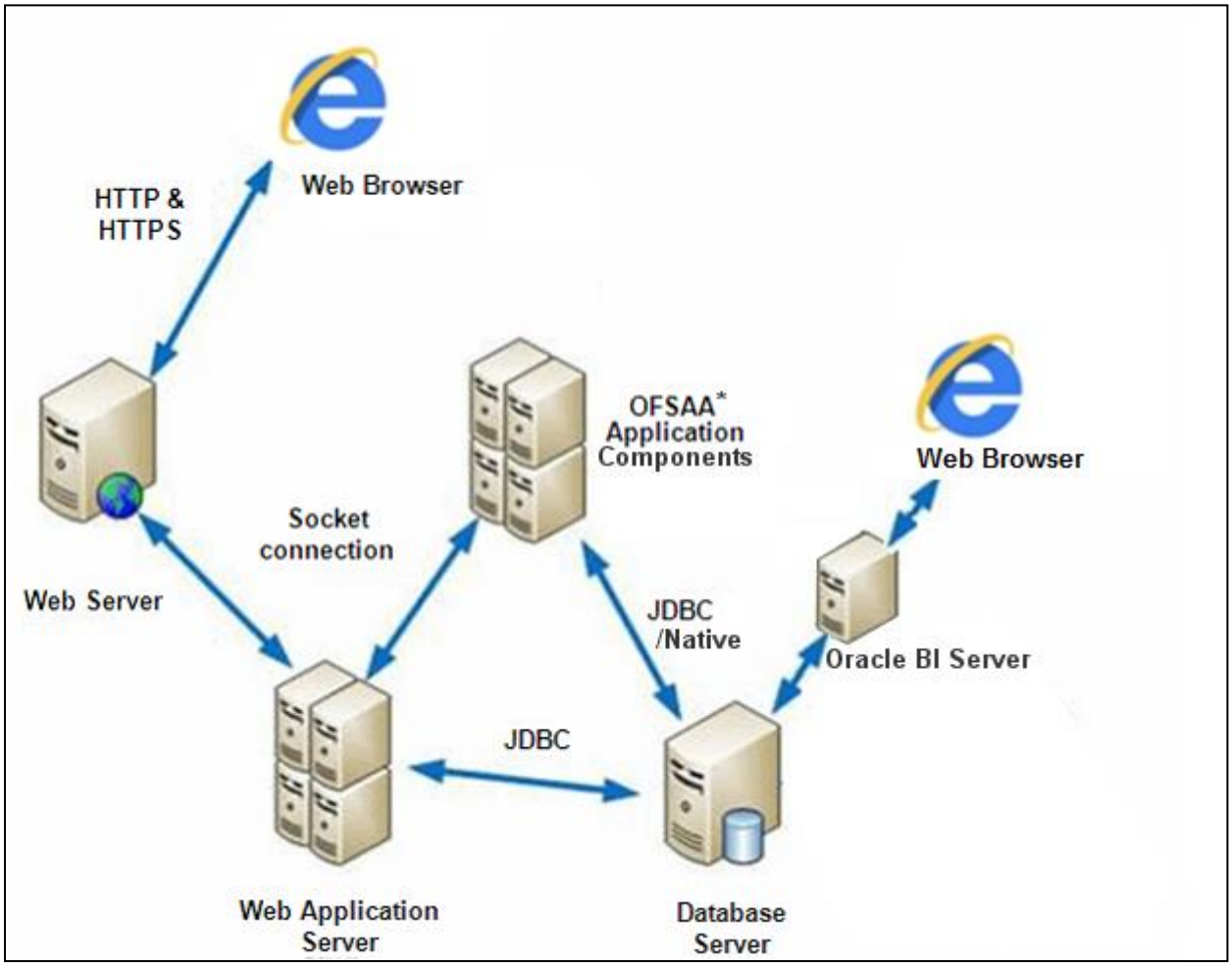
Table 1: OFS ALM Applications Pack Installation Tasks and Descriptions

Tasks	Details and Documentation
Verify Systems Environment	To verify that your system meets the minimum necessary requirements for installing and hosting the OFS ALM Application Pack, see. Verifying System Environment.
Obtain the software	To access and download the OFS ALM Application Pack, See Obtaining the software.
Configure and Execute the Schema Creator Utility	For instructions on creating the database schemas, See Configuring and Executing the Schema Creator Utility .

Tasks	Details and Documentation
Install OFS ALM Application Pack	For instructions on Installing OFS ALM Application Pack, See Installing the OFS ALM Pack Installer.
Configure OFS ALM Setup	See Post Installation Configuration.

2.2 Deployment Topology

The following figure depicts the typical deployment topology implemented for OFSAA Applications.



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 ALM Application Pack has been qualified.

Note: OFS ALM Application Pack installation can be performed on both Virtual and Physical servers.

2.3.1 Configurations supported for Java 7

The following table shows the minimum hardware and software requirements for installing OFS ALM Application Pack (for Java 7).

Table 2: Configurations supported for Java 7

Requirement	Sub-Category	Value
Operating System	Oracle Linux / Red Hat Enterprise Linux (x86-64)	Oracle Linux Server release 5.3 up to 5.10 - 64 bit Oracle Linux Server release 6.0 and above - 64 bit **Note**: Same versions of RHEL is supported
	Oracle Solaris (SPARC)/ Solaris x86	Oracle Solaris v5.10 Update 11 and above - 64 bit Oracle Solaris v5.11 update 1 and above – 64 bit
	IBM AIX (POWERPC)	AIX 6.1 (TL 09 and above) - 64 bit
	Shell	KORN Shell (KSH)

Note:

If the OS is IBM AIX 6.1 and the file size limit for the AIX user on the target server is too small, configure the size parameter setting for "Large File Support". Follow these steps:

Change the file size limit for the user that initiates the transfer on the AIX system. To change the file size limit for a particular user, add or edit the fsize attribute for the user in the /etc/security/limits file on the AIX system. Change the file size limit to unlimited (fsize = -1) or to a size equal to the size of the file being transferred. This may require a restart of the AIX server to pick up the new configuration. For more information refer IBM Support.

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

Requirement	Sub-Category	Value
• yum install redhat-lsb The above is required as during the installation process, the following command is executed to get the OS version and release: `lsb_release -r` Based on the returned information, the installer copies the appropriate binary and library files into the $FIC_DB_HOME/bin and $FIC_DB_HOME/lib folders.		
Java Runtime Environment	Oracle Linux / Red Hat Enterprise Linux Oracle Solaris	Oracle Java Runtime Environment (JRE) 1.7.x - 64 bit
	IBM AIX	IBM AIX Runtime, Java Technology JRE 1.7.x - 64 bit
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 12c Release 1 (12.1.0.1.0 +)- 64 bit RAC/ Non-RAC with/ without partitioning option Oracle Client 11g Release 2 (11.2.0.3.0+) - 64 bit Oracle Client 12c Release 1 (12.1.0.1.0+) - 64 bit Oracle 11g Release 2 (11.2.0.3+) JDBC driver (Oracle thin driver) Oracle 12C Release 1 (12.1.0.1+) JDBC driver (Oracle thin driver) Oracle Distribution of R version 2.15.1, 2.15.2 or 2.15.3.(Optional) Oracle R Enterprise (Server) version 1.4. (Optional)
	Note: Ensure that the following patches are applied: ▪ Oracle Server 12c, v12.1.0.1 – 17082699 ▪ Oracle Server 12c, v12.1.0.2 - 20698050 ▪ 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	

Requirement	Sub-Category	Value
	1937782.1) ▪ Oracle R Enterprise 1.4 requires Oracle Database Enterprise Edition 11.2.0.3/ 11.2.0.4/ 12.1.0.1	
OLAP	Oracle Hyperion Essbase	V 11.1.2.1+ (Server and Client) with Oracle 11g Database V 11.1.2.3+ (Server and Client) with Oracle 12c Database
	Oracle OLAP	V 11.2.0.3+ with Oracle 11g Database V 12.1.0.1+ with Oracle 12c Database
	Note: Oracle Hyperion Essbase and Oracle OLAP is required only if you are using the OLAP feature of OFSAAI. For Oracle OLAP, ensure that you have configured the Oracle Database server with OLAP option.	
Web Server/ Web Application Server	Oracle Linux / Red Hat Enterprise Linux/ IBM AIX Oracle Solaris	Oracle HTTP Server 11.1.1.1/ Apache HTTP Server 2.2.x/ IBM HTTP Server ▪ Oracle WebLogic Server 12.1.2+ (64 bit) ▪ IBM WebSphere Application Server 8.5+ with bundled IBM Java Runtime (64 bit) ▪ Apache Tomcat 8.0.x (64 bit)
	Note: OFSAA Infrastructure web component deployment on Oracle WebLogic Server with Oracle JRockit is not supported.	
Desktop Requirements	Operating System	MS Windows 7/ Windows 8/ Windows 8.1
	Browser	MS Internet Explorer 9 , 10 (Compatibility Mode) and 11 (Compatibility Mode) Oracle Java plug-in 1.7.0+* (64- bit)

Requirement	Sub-Category	Value
		Turn off Pop-up blocker settings. For more information, refer Internet Explorer Settings.
	Office Tools	MS Office 2007/ 2010/2013 Adobe Acrobat Reader 8 and above
	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. Open LDAP needs to be installed on MS Windows Server machine only.	

2.3.2 Configurations supported for Java 8

The following table shows the minimum hardware and software requirements for installing OFS ALM Application Pack (for Java 8).

Table 3: Configurations supported for Java 8

Requirement	Sub-Category	Value
Operating System	Oracle Linux / Red Hat Enterprise Linux (x86-64)	Oracle Linux Server release 5.3 up to 5.10 - 64 bit Oracle Linux Server release 6.0 and above - 64 bit **Note**: Same versions of RHEL is supported
	Oracle Solaris (SPARC)/ Solaris x86	Oracle Solaris v5.10 Update 11 and above - 64 bit Oracle Solaris v5.11 update 1 and above – 64 bit

<table>
<tr><th>Requirement</th><th>Sub-Category</th><th>Value</th></tr>
<tr><td rowspan="2"></td><td>IBM AIX (POWERPC)</td><td>AIX 6.1 (TL 09 and above) - 64 bit</td></tr>
<tr><td>Shell</td><td>KORN Shell (KSH)</td></tr>
<tr><td colspan="3">Note:
If the OS is IBM AIX 6.1 and the file size limit for the AIX user on the target server is too small, configure the size parameter setting for "Large File Support". Follow these steps:
Change the file size limit for the user that initiates the transfer on the AIX system. To change the file size limit for a particular user, add or edit the fsize attribute for the user in the /etc/security/limits file on the AIX system. Change the file size limit to unlimited (fsize = -1) or to a size equal to the size of the file being transferred. This may require a restart of the AIX server to pick up the new configuration. For more information refer IBM Support.

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
The above is required as during the installation process, the following command is executed to get the OS version and release:
<code>lsb_release -r</code>
Based on the returned information, the installer copies the appropriate binary and library files into the $FIC_DB_HOME/bin and $FIC_DB_HOME/lib folders.</td></tr>
<tr><td rowspan="2">Java Runtime Environment</td><td>Oracle Linux / Red Hat Enterprise Linux
Oracle Solaris</td><td>Oracle Java Runtime Environment (JRE) 1.8.x - 64 bit</td></tr>
<tr><td>IBM AIX</td><td>IBM AIX Runtime, Java Technology JRE 1.8.x - 64 bit</td></tr>
<tr><td>Oracle Database Server and Client</td><td></td><td>Oracle Database Server Enterprise Edition 11g Release 2 (11.2.0.3.0 +) - 64 bit RAC/ Non-RAC with/ without partitioning option
Oracle Database Server Enterprise Edition 12c Release 1 (12.1.0.1.0 +)- 64 bit RAC/ Non-RAC with/ without partitioning option</td></tr>
</table>

Requirement	Sub-Category	Value
		Oracle Client 11g Release 2 (11.2.0.3.0+) - 64 bit Oracle Client 12c Release 1 (12.1.0.1.0+) - 64 bit Oracle 11g Release 2 (11.2.0.3+) JDBC driver (Oracle thin driver) Oracle 12C Release 1 (12.1.0.1+) JDBC driver (Oracle thin driver) Oracle Distribution of R version 2.15.1, 2.15.2 or 2.15.3.(Optional) Oracle R Enterprise (Server) version 1.4. (Optional)
	Note: Ensure that the following patches are applied: ▪ Oracle Server 12c, v12.1.0.1 – 17082699 ▪ Oracle Server 12c, v12.1.0.2 - 20698050 ▪ 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) ▪ Oracle R Enterprise 1.4 requires Oracle Database Enterprise Edition 11.2.0.3/ 11.2.0.4/ 12.1.0.1	
OLAP	Oracle Hyperion Essbase	V 11.1.2.1+ (Server and Client) with Oracle 11g Database V 11.1.2.3+ (Server and Client) with Oracle 12c Database
	Oracle OLAP	V 11.2.0.3+ with Oracle 11g Database V 12.1.0.1+ with Oracle 12c Database
	Note: Oracle Hyperion Essbase and Oracle OLAP is required only if you are using the OLAP feature of OFSAAI. For Oracle OLAP, ensure that you have configured the Oracle Database server with OLAP option.	

Requirement	Sub-Category	Value
Web Server/ Web Application Server	Oracle Linux / Red Hat Enterprise Linux /IBM AIX/ Oracle Solaris	Oracle HTTP Server 11.1.1.1/ Apache HTTP Server 2.2.x/ IBM HTTP Server Oracle 11g and 12c Database: ▪ Oracle WebLogic Server 12.1.3+ (64 bit) ▪ Apache Tomcat 8.0.x (64 bit) **Note:** IBM WebSphere 8.5.x (Full Profile) on Java 8 is not available.
	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 8.1
	Browser	MS Internet Explorer 9 , 10 (Compatibility Mode) and 11 (Compatibility Mode) Oracle Java plug-in 1.7.0+* (64- bit) Turn off Pop-up blocker settings. For more information, refer Internet Explorer Settings
	Office Tools	MS Office 2007/ 2010/2013 Adobe Acrobat Reader 8 and above
	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.

Requirement	Sub-Category	Value
	Note: Configuration of Directory services software for OFSAAI installation is optional. For more information on configuration, see Infrastructure LDAP Configuration. Open LDAP needs to be installed on MS Windows Server machine only.	

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

OFS ALM Application Pack recommends the following software combinations for deployment:

Table 4: Recommended software combinations

Operating System	Database	Web Application Server	Web Server
Oracle Linux 5.3 up to 5.8/ 6.0 and above	Oracle Database	Oracle WebLogic Server/ Apache Tomcat Server	Oracle HTTP Server/ Apache HTTP Server
Oracle Solaris 5.10/ 5.11	Oracle Database	Oracle WebLogic Server/ Apache Tomcat Server	Oracle HTTP Server/ Apache HTTP Server
IBM AIX 5.3/ 6.1	Oracle Database	IBM WebSphere Application Server/ Apache Tomcat Server	IBM 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 Install Kit archive file. This utility can also be obtained separately by contacting Oracle Support.

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

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

2.5 Understanding Installation Modes

The following modes of installation are available for the OFS ALM Application Pack.

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.

2.5.2 Silent Mode

This mode mandates updating the installation configuration files with 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 ALM Pack v8.0.0.0.0.

This chapter includes the following topics:

3.1 Installer and Installation Prerequisites

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

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 PATH variable.
	Oracle Database Settings	TNS_ADMIN to be set in `.profile` pointing to appropriate `tnsnames.ora` file ORACLE_HOME to be set in `.profile` pointing to appropriate Oracle Client installation PATH in `.profile` to be set to include appropriate `$ORACLE_HOME/bin` path. Ensure to add an entry (with SID/ SERVICE NAME) in

Requirement	Sub-Category	Expected Value
		the tnsnames.ora file on the OFSAA server.
	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.
	Total Number of Process Settings	Greater than 4096 **Note:** The value specified here is the minimum value to be set for the Installation process to go forward. For other modules, this value may depend on the available resources and the number of processes executed in parallel.
	Port Settings	Default port numbers to be enabled on the system are 6500, 6501, 6505, 6507, 6509, 6510, 6666, 9999, and 10101.
	`.profile` permissions	User to have 755 permission on the `.profile` file.
	Installation Directory	A directory where the product files will be installed/ copied. 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-

Requirement	Sub-Category	Expected Value
		write permissions for the Orac 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 different mount or under a different user profile. Set 777 permission on this directory.
	Download Directory	A directory where the product installer files will be downloaded/ copied. Set 755 permission on this director.
	OS Locale	• Linux: `en_US.utf8` • AIX: `EN_US.UTF-8` • Solaris: `en_US.UTF-8` To check the locale installed, execute the following command: `locale -a | grep -i 'en_US.utf'`
Database Settings	Database Instance Settings	NLS_CHARACTERSET to be AL32UTF8 NLS_LENGTH_SEMANTICS to be BYTE OPEN CURSORS limit to be greater than 1000

Requirement	Sub-Category	Expected Value
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 http://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.
Others	Oracle R/ Oracle R Enterprise	This is an optional requirement. Refer section Installation of Oracle R distribution and Oracle R Enterprise (ORE) for more details.
	OFSAA	• For installation on Java 8, login to http://support.oracle.com/ and search for 21160684 under the Patches & Updates tab. This is applicable only when you have installed 8.0.0.0.0 OFSAAI pack and not required for 8.0.0.1.0. • For installation of this release on an existing OFSAA instance where the underlying OFSAA Infrastructure (OFS AAI) version is upgraded to version 8.0.1.0.0, login to http://support.oracle.com/ and search for 21133780 under the Patches and Updates tab. • For installation of this release on an existing OFSAA instance where the underlying OFSAA Infrastructure (OFS AAI) version is upgraded to version 8.0.2.0.0, login to http://support.oracle.com/ and search for 21657319 under the Patches and Updates tab.
OFSAAI	One-off	Download the consolidated one-off patch 25777667 from https://support.oracle.com/.

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 ALM Application Pack v8.0.0.0.0 can be downloaded from the Oracle Software Delivery Cloud (https://edelivery.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 ALM 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 ALM Application Pack Installer
- Copying and Extracting the Software
- Setting up the Web Server/ Web Application Server
- Installation for Oracle R distribution and Oracle R Enterprise (ORE)

3.3.1 Configuration for GUI Mode Installation

To install OFS ALM Application Pack in GUI mode, you need to ensure the following 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 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 following folders/ directories required to be created.

- **OFSAA Download Directory** (Optional) - Create a download directory and copy the OFSAA Application Pack Installer File (Archive). This is the directory where the downloaded installer/ patches can be copied.
- **OFSAA Installation Directory** (Mandatory) – Create an installation directory. This is the directory where the installer installs or copies the product files. 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 the user permission is set to 755 on the Installation and Download Directory. Ensure the user permission is set to 777 on the Staging Directory.

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

3.3.3 Download and copy the OFS ALM Applications Pack Installer

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

- To download the OFS ALM Application Pack, you need to login to the Oracle Software Delivery Cloud (https://edelivery.oracle.com). You need to have a valid Oracle account in order to download the software.
- Copy the downloaded installer archive to the Download Directory (in Binary Mode) on the setup identified for OFSAA installation.

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 Advanced Analytical Applications Infrastructure Application Pack 8.0.0.0.0 to Download Directory using the following command:

   ```
   unzip OFS_ALM_PACK.zip
   ```

NOTE: DO NOT rename the Application Pack installer folder name on extraction from the archive.

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

   ```
   chmod -R 755 OFS_ALM_PACK
   ```

3.3.5 Setting up the Web Server/ Web Application Server

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

3.3.6 Installation of Oracle R distribution and Oracle R Enterprise (ORE)

This is an optional step and required only if you intend to use Oracle R scripting in the Oracle Financial Services Enterprise Modeling Application. Follow these steps:

Install Oracle R Distribution and Oracle R Enterprise (Server Components) on the Oracle Database server. See Oracle® R Enterprise Installation and Administration Guide for Windows, Linux, Solaris and AIX, Release 1.4 at *Oracle R Enterprise Documentation Library*.

- Oracle R Distribution versions supported- Oracle Distribution of R version 3.0.1.
- ORE version supported- Oracle R Enterprise (Server) version 1.4.

NOTE: Oracle R Enterprise 1.4 requires Oracle Database Enterprise Edition 11.2.0.3/ 11.2.0.4/ 12.1.0.1.

NOTE: If you are using ORE 1.4.1 and Oracle R 3.1.1 with Oracle Financial Services Enterprise Modeling, you need to set the session timezone in 'R_HOME/etc/Rprofile.site' file on the database server, where R_HOME is the home directory of the R instance on which ORE server packages are installed. Alternatively, you may set session timezone in scripts registered within OFS EM by using the 'Sys.env(TZ=<time zone>)' R function.

4 Installing OFS ALM Application Pack

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

This chapter includes the following sections:

4.1 Schema creator utility

Creating database users/ schemas is one of the primary steps in the complete OFSAA 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:

4.1.1 About Schema Creator utility

The schema creator utility should be configured and executed mandatorily every time prior to installation of any OFSAA Application Pack.

The following are the types of schemas that can be configured in the 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.

NOTE: For some application packs **t**here can be multiple ATOMIC schemas per OFSAA Instance, but the ALM Application Pack supports only one atomic schema per OFSAA instance.

- **SANDBOX** – Denotes the schema that contains the data for all Sandbox executions. One SANDBOX schema is attached to one Sandbox Information Domain.

NOTE: This Schema type is not applicable for OFS ALM Application Pack. There can be multiple SANDBOX schemas per OFSAA Instance and a Sandbox Information Domain can have only one SANDBOX schema.

- **ADDON** – Denotes any additional schema used by the OFSAA Applications.

NOTE: This Schema type is not applicable for OFS ALM Application Pack.

4.1.2 Execution Modes in Schema Creator Utility

The Schema Configuration Utility supports the following two 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: To execute the utility in Offline mode, you need to connect as any user with following grants(alternatively, you can also connect as a user with SYSDBA privileges):

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

For more details refer, Executing the Schema Creator Utility in Offline Mode

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

NOTE: Do not modify the `OFS_ALM_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.
- You must have the JDBC Connection URL for RAC/Non RAC database.
- The HOSTNAME/IP of the server on which OFSAA is getting installed.
- For Java 8, navigate to OFS_ALM_PACK/bin/ and modify the value for property JAVA_VERSION to 1.8 in the VerInfo.txt file and save the changes.

Note: If this release of the OFS ALM Application Pack version 8.0.0.0.0 is being installed on an OFSAA setup where the underlying OFSAA Infrastructure (OFS AAI) version is upgraded to version 8.0.1.x.x, download and install the patch for schema creator utility (Bug 21133780) by following the instructions in the Readme.txt packaged in it prior to executing the utility.

If this release of the OFS ALM Application Pack version 8.0.0.0.0 is being installed on an OFSAA setup where the underlying OFSAA Infrastructure (OFS AAI) version is upgraded to version 8.0.2.x.x, download and install the patch for schema creator utility (Bug 21657319) by following the instructions in the Readme.txt packaged in it prior to executing the utility.

- The following configuration is required only if you intend to use Oracle Linux/Red Hat Enterprise Linux v7.x for OFSAAI 8.0.4.0.0 version.

  For Oracle Linux/RHEL 7.x, navigate to OFS_ALM_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

- For IBM AIX 7.1, navigate to OFS_ALM_PACK/bin/ and modify the value for property AIX_VERSION to include 7.1 in the VerInfo.txt file and save the changes.

  For example, AIX_VERSION=6.1,7.1

4.2.2 Configuring the Schema Creator Utility

To configure the Schema Creator Utility, follow these steps:

1. Log in to the system as non-root user.

2. Navigate to the following path: `OFS_ALM_PACK/schema_creator/conf`.
3. Edit the `OFS_ALM_SCHEMA_IN.xml` file in a text editor.
4. Configure the elements as described in the section Configuring OFS_ALM_SCHEMA_IN.XML
5. Save the `OFS_ALM_SCHEMA_IN.xml` file.

4.2.3 Executing the Schema Creator Utility

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

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

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 following folder path: `OFS_ALM_PACK/schema_creator/bin/`
3. Execute the following command.

   ```
   ./osc.sh
   ```

4. 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).*
5. Enter Y/y to proceed.
6. Enter the DB Username with SYSDBA Privileges.
   For example: SYS as SYSDBA.

7. Enter the User Password.

```
$ ./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/y or N/n):
y
============================================================
Java Validation Started ...
Java found in : /scratch/ofsaa/jdk1.6.0_25/jre/bin
JAVA Version found : 1.6.0_25
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 : 11.2.0.3.0. Status : SUCCESS
Oracle Server version Current value : 11.2.0.3.0. Status : SUCCESS
DB specific Validation Completed. Status : SUCCESS
============================================================
```

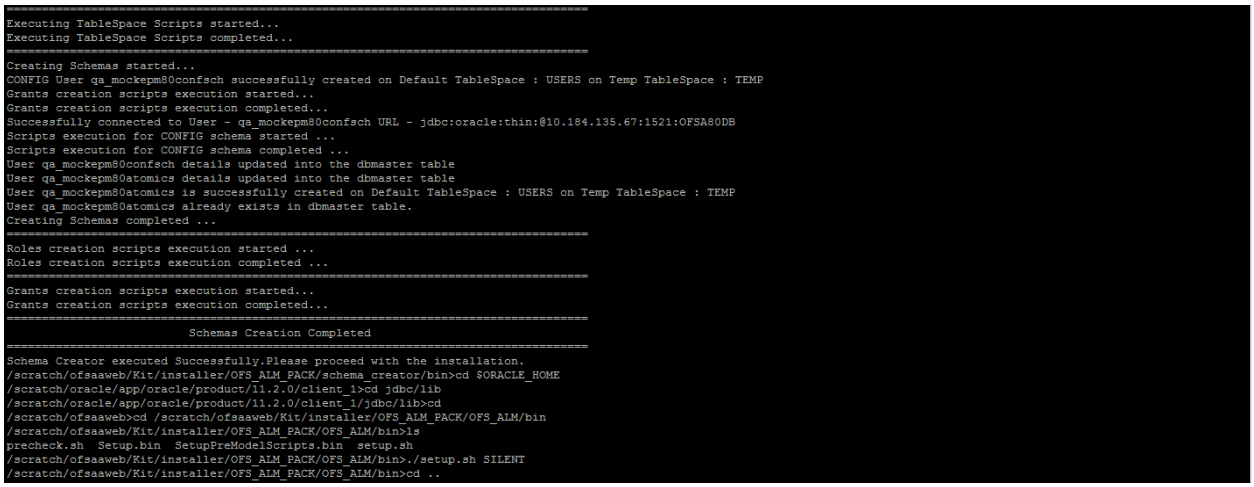
8. The console runs the initial validation checks and then displays the following message:
   You have chosen to install this Application Pack on <Name of the Atomic Schema>ATOMIC schema. Do you want to proceed? (Y/N).
   You have chosen to install this Application Pack on <Name of the Infodom>. Do you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

```
============================================================
================================================================================
                        Schema Creation Started
================================================================================
Checking OFSAA installation...
OFSAA installation not found.
Validating the dat file OFS_ALM_CFG.dat started...
Sucessfully validated OFS_ALM_CFG.dat file
Validating the input XML file.../scratch/ofsaaweb/Kit/installer/OFS_ALM_PACK/schema_creator/conf/OFS_ALM_SCHEMA_IN.xml
Input XML file validated successfully.
================================================================================
Validating Connection URL ...jdbc:oracle:thin:@10.184.135.67:1521:OFSA80DB
Successfully connected to User - packdba as sysdba URL - jdbc:oracle:thin:@10.184.135.67:1521:OFSA80DB
Connection URL successfully validated...
You have chosen to install this Application Pack on "qa_mockepm80atomics" ATOMIC schema. Do you want to proceed? (Y/N)
y
You have chosen to install this Application Pack on INFODOM "mock2alm80". Do you want to proceed? (Y/N)
y
```

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

   Or

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



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_ALM_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:

- Database user with following 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_ALM_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 proceed.
6. Enter the DB Username with `SELECT` privileges.
7. Enter the User Password.

```
osc.sh
$ ./osc.sh -o
.profile executed
===============================================================
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):
y
===============================================================
Java Validation Started ...
Java found in : /scratch/ofsaa/jdk1.6.0_25/bin
JAVA Version found : 1.6.0_25
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:
Oracle Client version : 11.2.0.3.0. Status : SUCCESS
Oracle Server version Current value : 11.2.0.3.0. Status : SUCCESS
DB specific Validation Completed. Status : SUCCESS
===============================================================
```

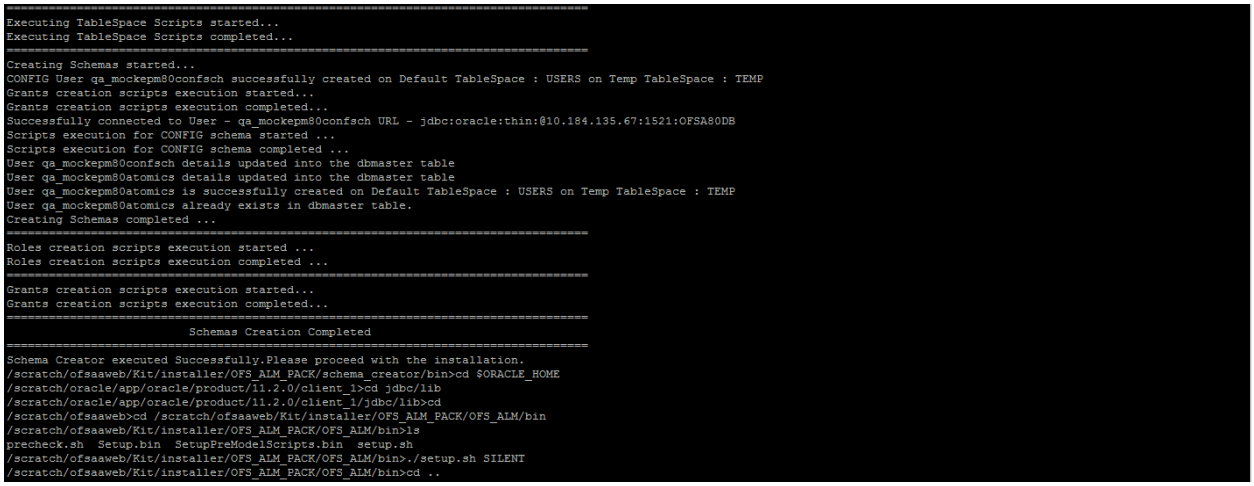
8. The console runs the initial validation checks and displays the following message:
   You have chosen to install this Application Pack on <Name of the Atomic Schema>ATOMIC schema. Do you want to proceed? (Y/N).
   You have chosen to install this Application Pack on <Name of the Infodom>. Do you want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

```
============================================================
==============================================================================
                        Schema Creation Started
==============================================================================
Checking OFSAA installation...
OFSAA installation not found.
Validating the dat file OFS_ALM_CFG.dat started...
Sucessfully validated OFS_ALM_CFG.dat file
Validating the input XML file.../scratch/ofsaaweb/Kit/installer/OFS_ALM_PACK/schema_creator/conf/OFS_ALM_SCHEMA_IN.xml
Input XML file validated successfully.
==============================================================================
Validating Connection URL ...jdbc:oracle:thin:@10.184.135.67:1521:OFSA80DB
Successfully connected to User - packdba as sysdba URL - jdbc:oracle:thin:@10.184.135.67:1521:OFSA80DB
Connection URL successfully validated...
You have chosen to install this Application Pack on "qa_mockepm80atomics" ATOMIC schema. Do you want to proceed? (Y/N)
y
You have chosen to install this Application Pack on INFODOM "mock2alm80". 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_ALM_PACK/schema_creator/sysdba_output_scripts.sql` before proceeding with the installation.

10. Navigate to the directory: `OFS_ALM_PACK/schema_creator.`
11. Login to SQLPLUS with a user having SYSDBA Privileges.
12. 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.

4.2.3.3 Executing the Schema Creator Utility with –s option

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

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

1. Edit the file OFS_ALM_PACK/schema_creator/conf/OFS_ALM_SCHEMA_IN.xml in text editor.
2. Set the value for attribute "INFODOM" of <SCHEMA> tag(s) to specify a specific Information Domain name. By default, the value is empty and the utility will derive the Information Domain name. If the attribute value is set, the utility/ installer will configure the Information Domain against this <SCHEMA>.
3. Execute the utility with -s option.

   For Example: ./osc.sh -s.

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

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

4.3 Installing the OFS ALM Application Pack

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

This section includes the following topics:

- GUI Mode Installation
- SILENT Mode Installation
- Verifying the Log File

4.3.1 GUI Mode Installation

Note: 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. Execute the user .profile.

4. Navigate to path: OFS_ALM_Pack.
5. Edit the OFS_ALM_PACK/schema_creator/conf/OFS_ALM_SCHEMA_IN.xml file to set the appropriate attribute values.

   Note: Refer Configuring <<APP Pack>>_SCHEMA_IN.XML file for details on configuring this XML file.

6. Execute the schema creator utility.

   Note: This step is mandatory and should be executed before every OFSAA Application Pack installation.

   Refer Executing the Schema Creator Utility for more details.

7. Navigate to the path: OFS_ALM_PACK/bin.
8. Execute ./setup.sh GUI in the console.

```
/scratch/ofsaaapp/733_COMPLTE/OFSAAI_73300>ls
envCheck.sh       log4j.xml                  OFSAAI_InstallConfig.xml  OFSAAI_PostInstallConfig.xml  privileges_atomic_user.sql  set
Error Code.xlsx  MyResources_en_US.properties  OFSAAInfrastructure.bin   preinstallcheck.sh            privileges_config_user.sql  vali
/scratch/ofsaaapp/733_COMPLTE/OFSAAI_73300>chmod 750 setup.sh
/scratch/ofsaaapp/733_COMPLTE/OFSAAI_73300>export DISPLAY=10.234.222.10:0.0
/scratch/ofsaaapp/733_COMPLTE/OFSAAI_73300>./setup.sh GUI
Environment check utility started...
============================================================
Java Validation Started ...
 Java found in : /usr/java/jdk1.6.0_25/bin
 JAVA Version found : 1.6.0_25
 JAVA Bit Version found : 64-bit
Java Validation Completed. Status : SUCCESS
============================================================
Environment Variables Validation Started ...
 ORACLE_HOME : /scratch/oracle/oracle11203/app/oracle/product/11.2.0/client_1
 TNS_ADMIN : /scratch/oracle/oracle11203/app/oracle/product/11.2.0/client_1/network/admin
Environment Variables Validation Completed. Status : SUCCESS
============================================================
OS specific Validation Started ...
 Unix shell found : /bin/ksh. Status : SUCCESS
 Total file descriptors : 11000. Status : SUCCESS
 Total number of process : 124064. Status : SUCCESS
 OS version : 5. Status : SUCCESS
OS specific Validation Completed. Status : SUCCESS
============================================================
DB specific Validation Started ...
 Please enter OFSAAI CONFIG schema user name:
test20
 Please enter password:
 Please enter Oracle SID/SERVICE name:
OFSAAI733
 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 V_$nls_parameters view. Current value : SELECT. Status : SUCCESS
 NLS_LENGTH_SEMANTICS : CHAR. Current value : CHAR. Status : SUCCESS
 NLS_CHARACTERSET : AL32UTF8. Current value : AL32UTF8. Status : SUCCESS
 SELECT privilege is granted for V_$parameter view. Current value : SELECT. Status : SUCCESS
 Open cursor value is greater than 1000. Current value : 1000. Status : SUCCESS
 Oracle Database Partitioning feature is enabled. Current value : Partitioned. 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 : Unlimited. Status : SUCCESS
DB specific Validation Completed. Status : SUCCESS
============================================================
Environment check utility Status : SUCCESS
============================================================
 FIC_HOME : /scratch/ofsaaapp/733OFSAAI
```

Figure 2 Validating the Installation

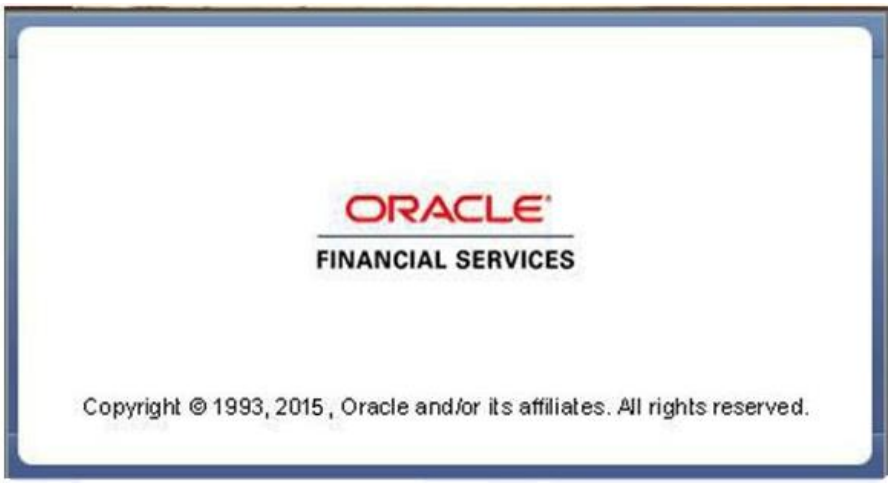


Figure 3 Initialization Window

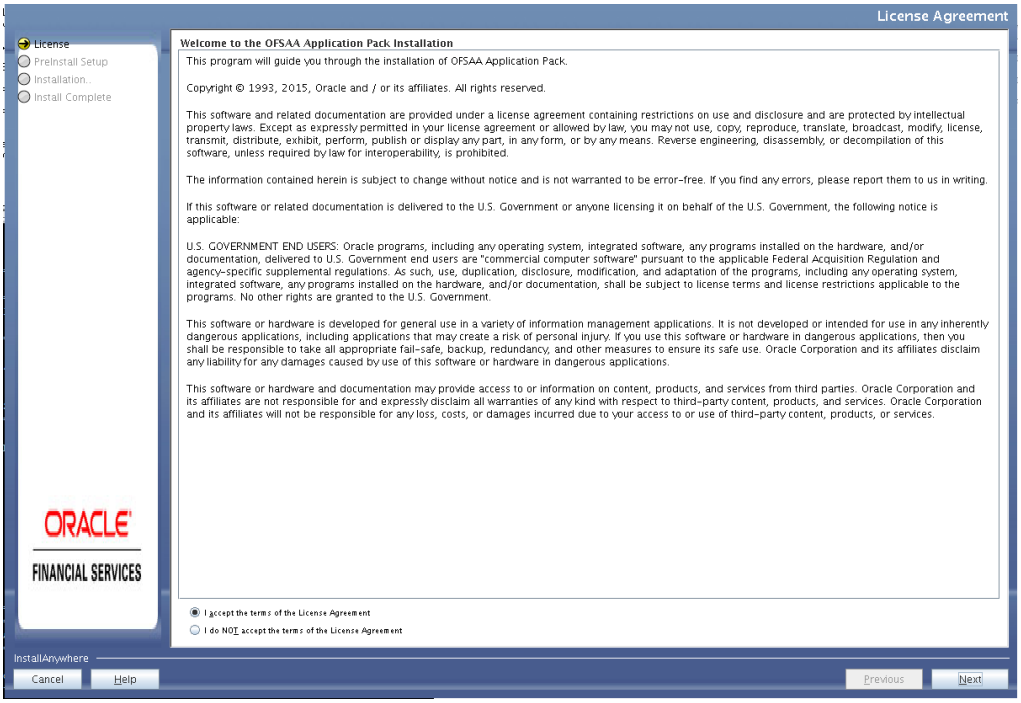


Figure 4 License Agreement

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

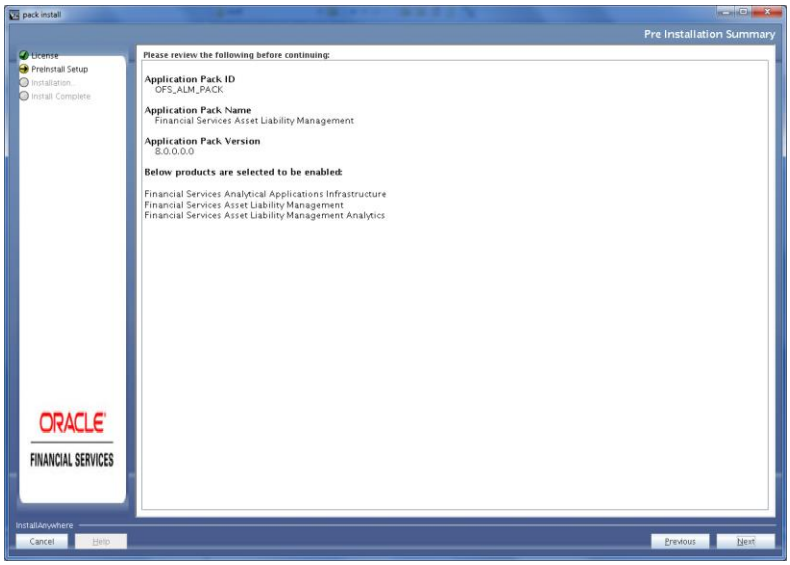
    The Application Pack details are displayed:

Figure 5 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. Select **I accept the terms if the License Agreement option**.

Figure 6 OFSALM License Agreement

13. The Pre Installation Summary window is displayed.



14. Click **Next**.

    The Manage Information Domain page is displayed.

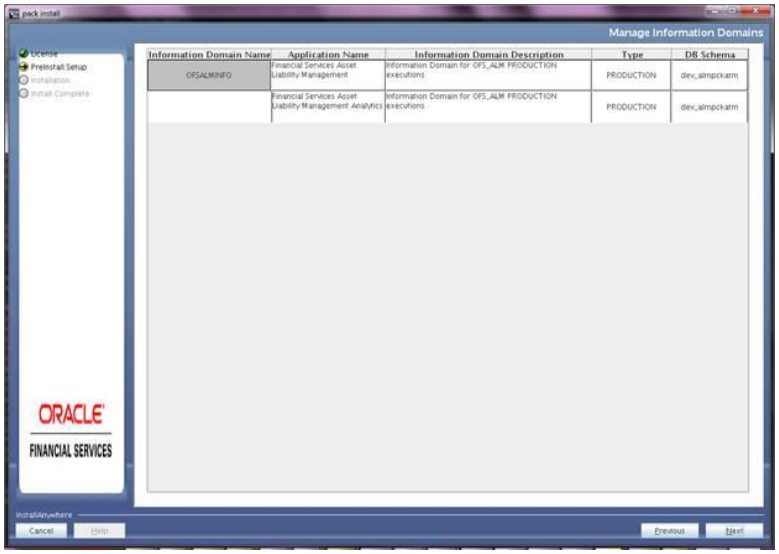


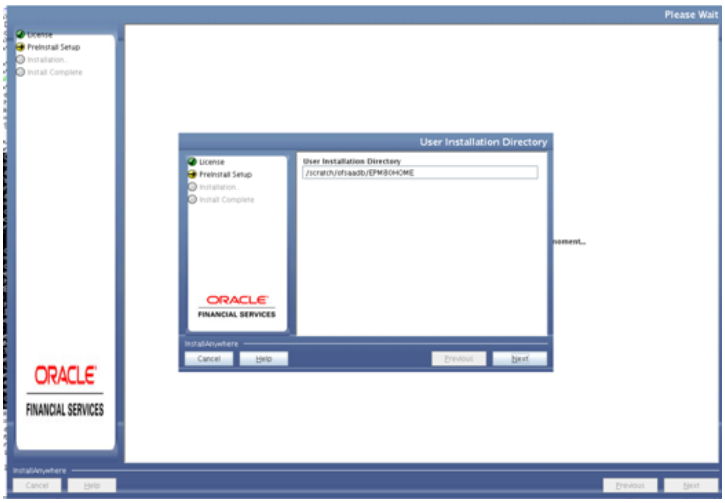
Figure 7 Information Domain

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

    In case of subsequent Application Pack installation on the same Information Domain, the Information Domain Name is not editable.

    Permissible length is 10 characters and only alphanumeric characters allowed. No special characters allowed.

16. Click Next.



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

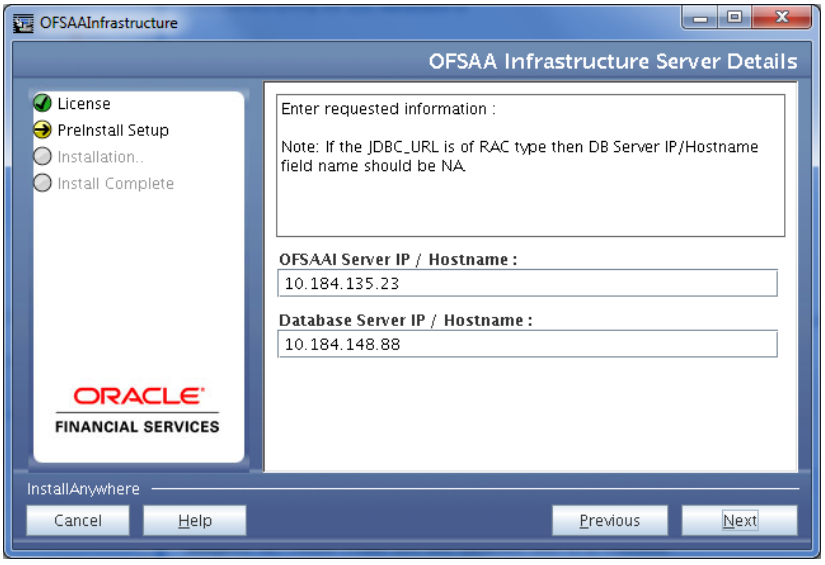


Figure 8 OFSAA Infrastructure Server Details

18. Click **Next** to view the Web Application Server details.

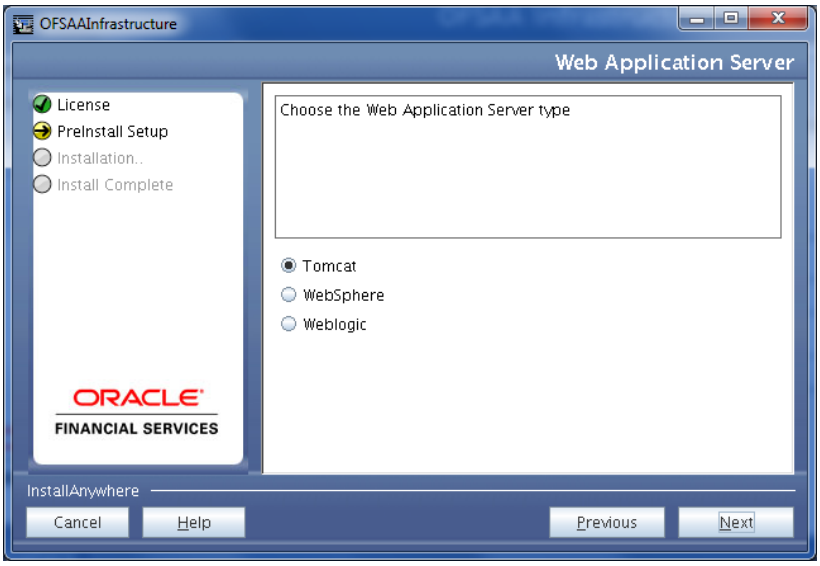


Figure 9 Web Application Server Type

19. Select the web application server type and Click **Next**.

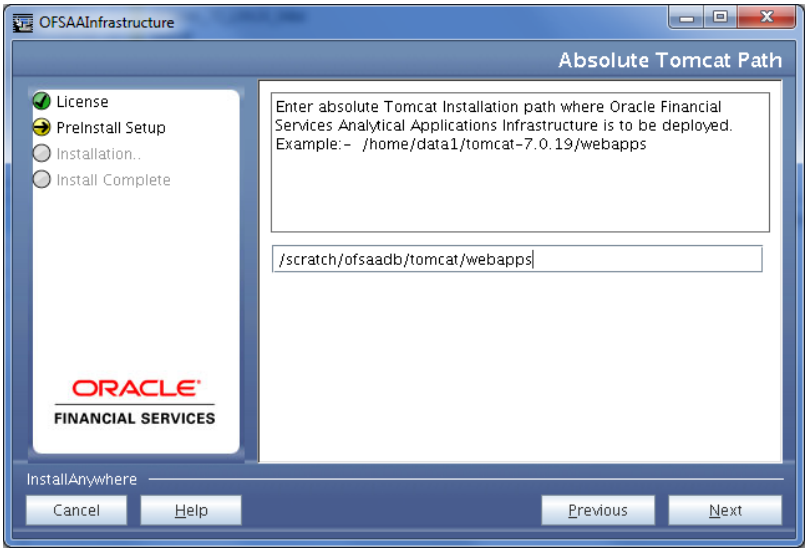


Figure 10 Tomcat Path

20. Enter the Tomcat installation path and Click **Next**.

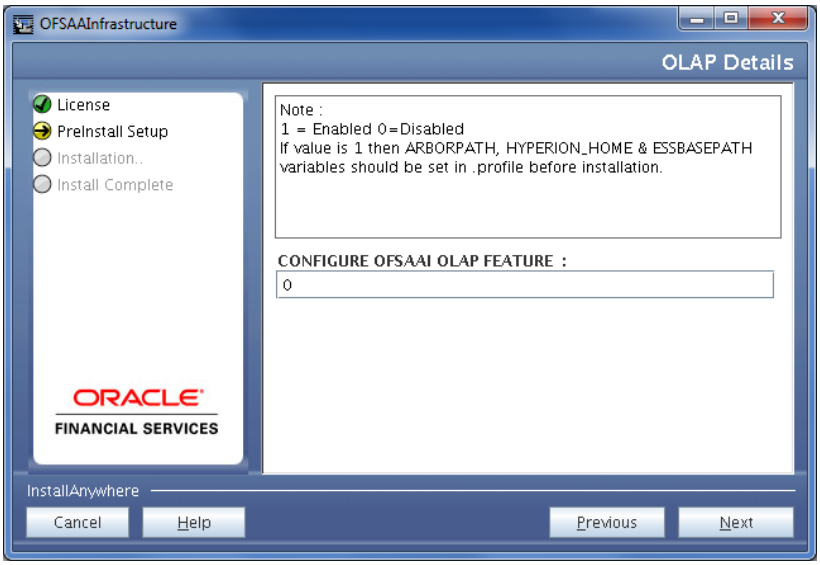


Figure 11 OLAP Details

21. Enter the OLAP details and click **Next**.

Figure 12 Web Server Details

22. 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).

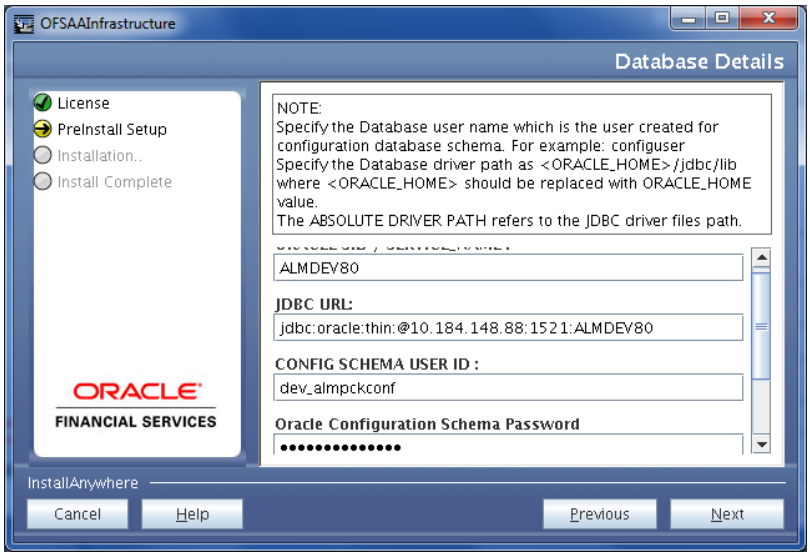


Figure 13 Database Details

23. 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

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

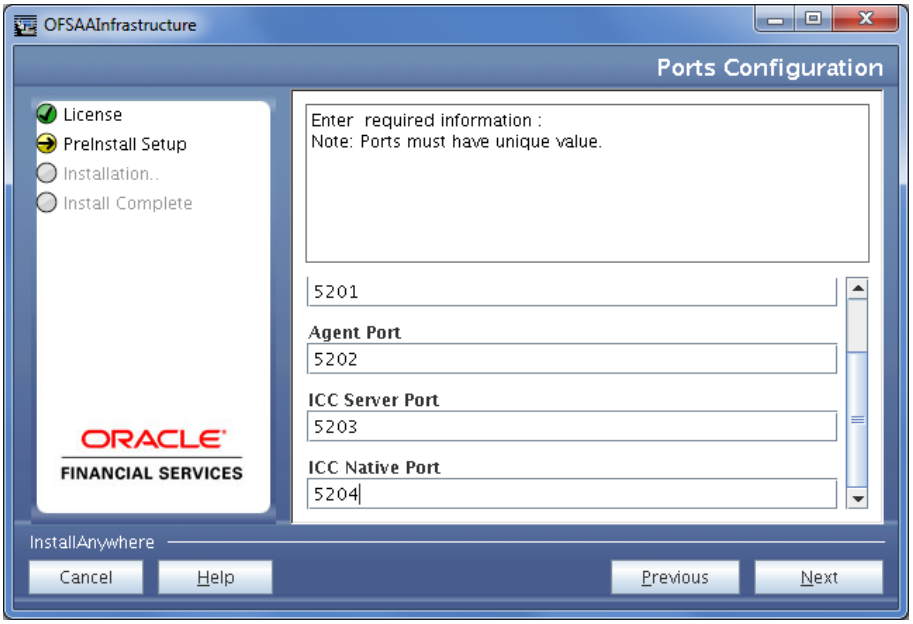


Figure 14 Ports Configuration

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

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

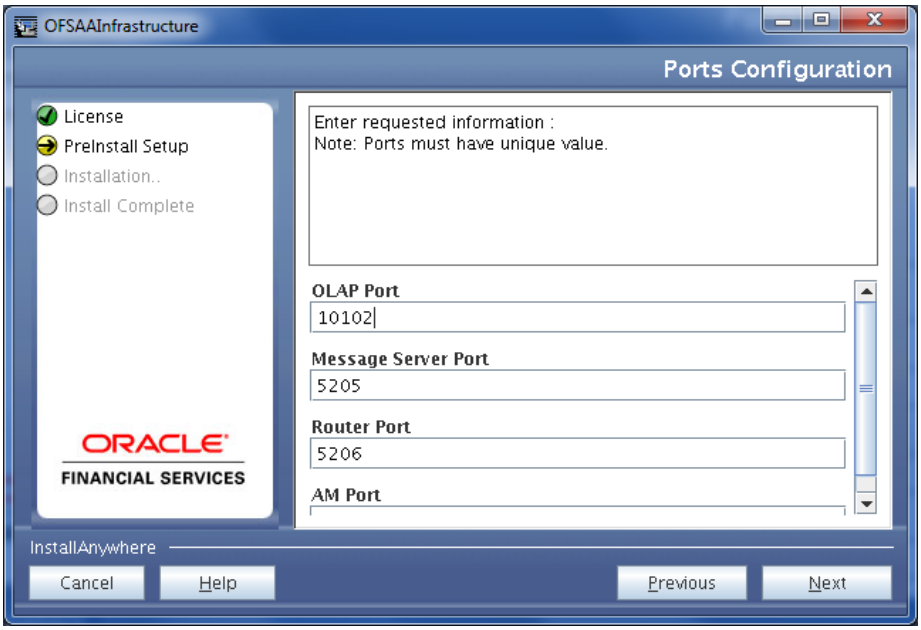


Figure 15 Ports Configuration_1

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

28. Click **Next**. The *Default Infrastructure Administrator and Authorizer User Password* window is displayed.

Figure 16 Administrator and Authorizer User Password

29. Enter the passwords for default System Administrator and System Authorizer users.
30. Click **Next**. The *SFTP Details* window is displayed.

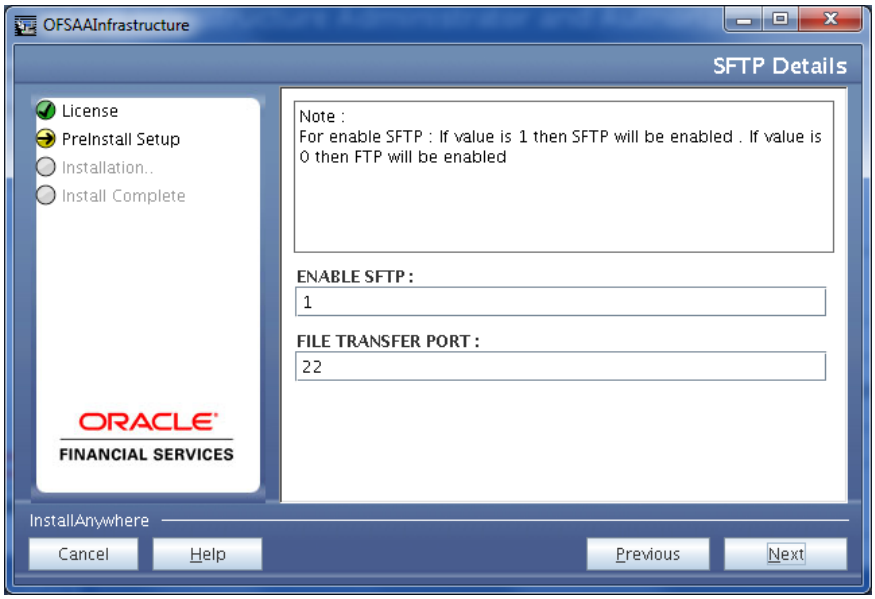


Figure 17 SFTP Details

31. Enter 1 to enable SFTP or 0 to enable FTP.

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

32. Enter the port to be used for file transfer.
33. Click **Next**. The *OFSAAI Post Install Details* window is displayed.

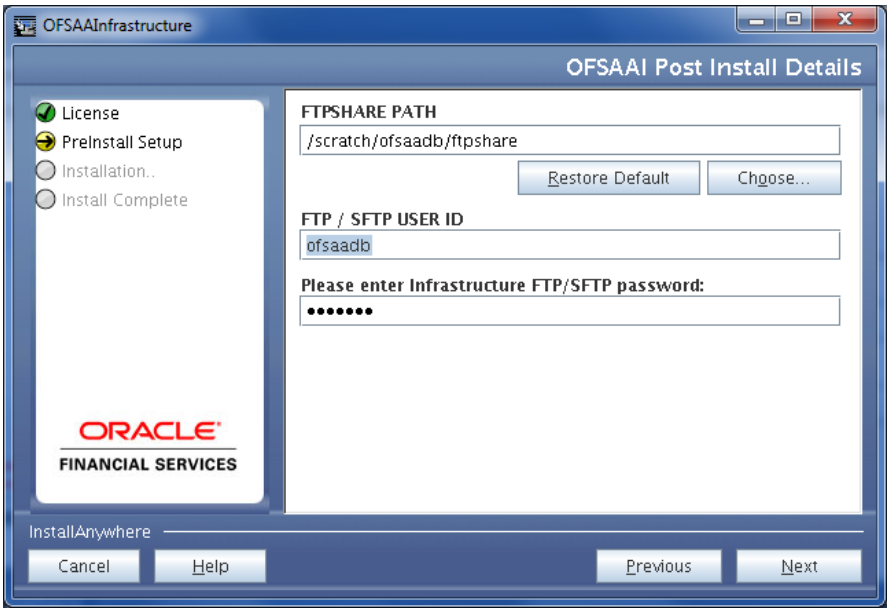


Figure 18 OFSAAI Post Install Details

34. 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.

35. Click **Next**. The *Sam*ple *Application Installation* window is displayed.

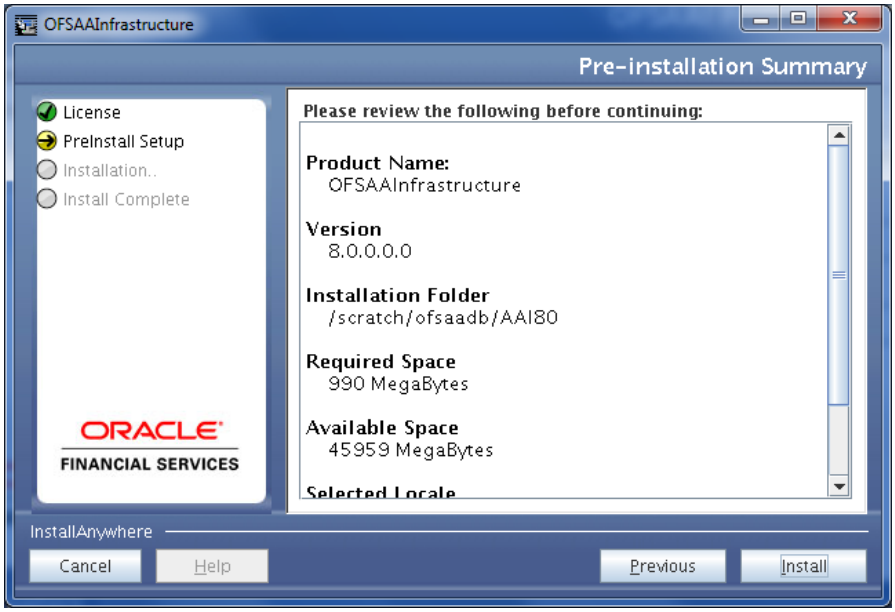


Figure 19 Pre Installation Summary

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

Figure 20 Installing OFSAAI Infrastructure

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

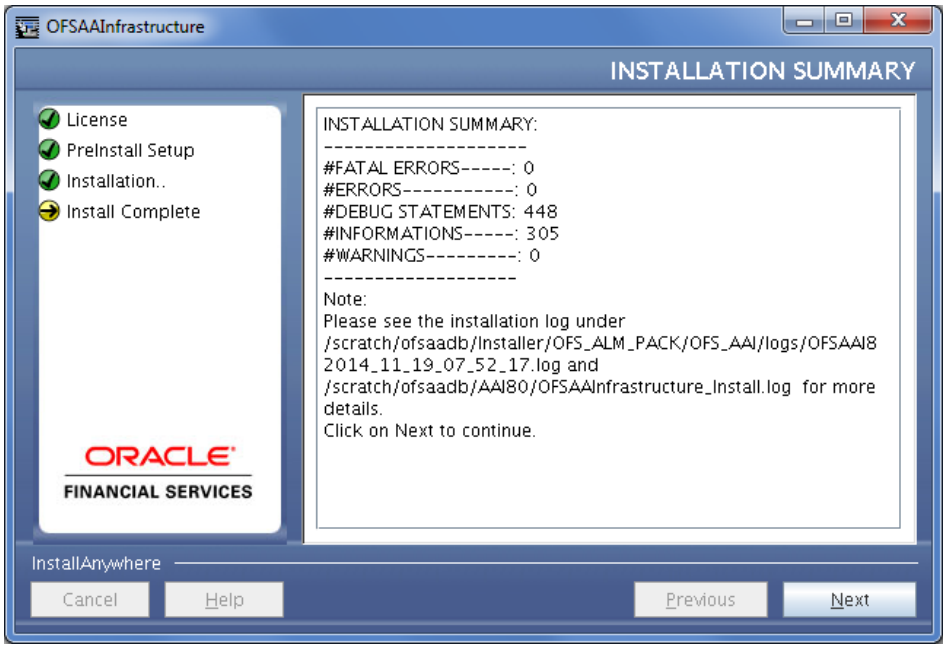


Figure 21 Installation Summary

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

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

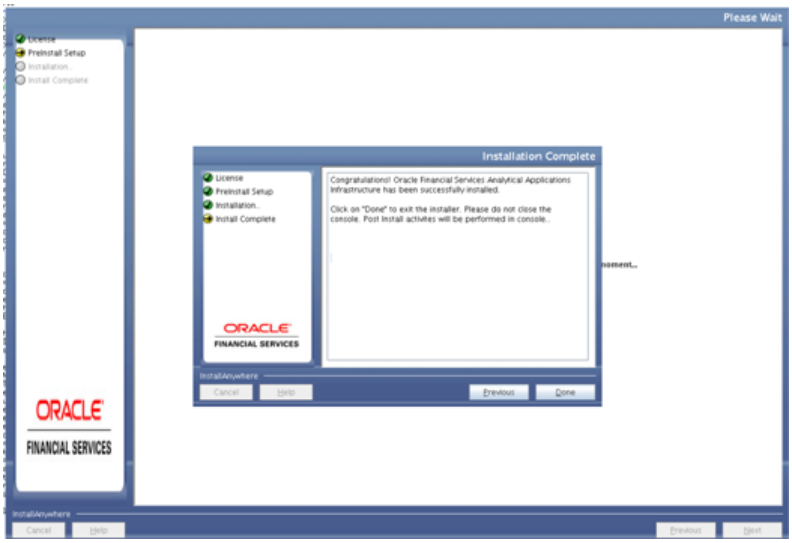
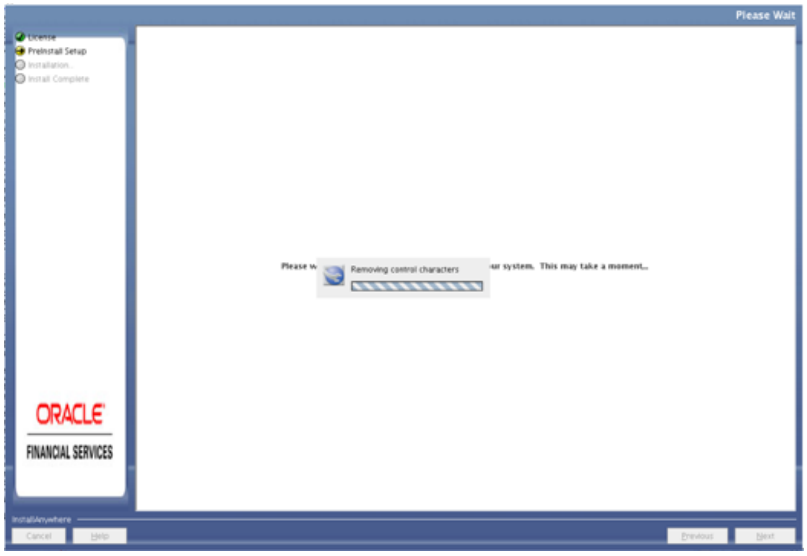


Figure 22 Installation Completed with Warnings

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

38. Click **Done**.



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.

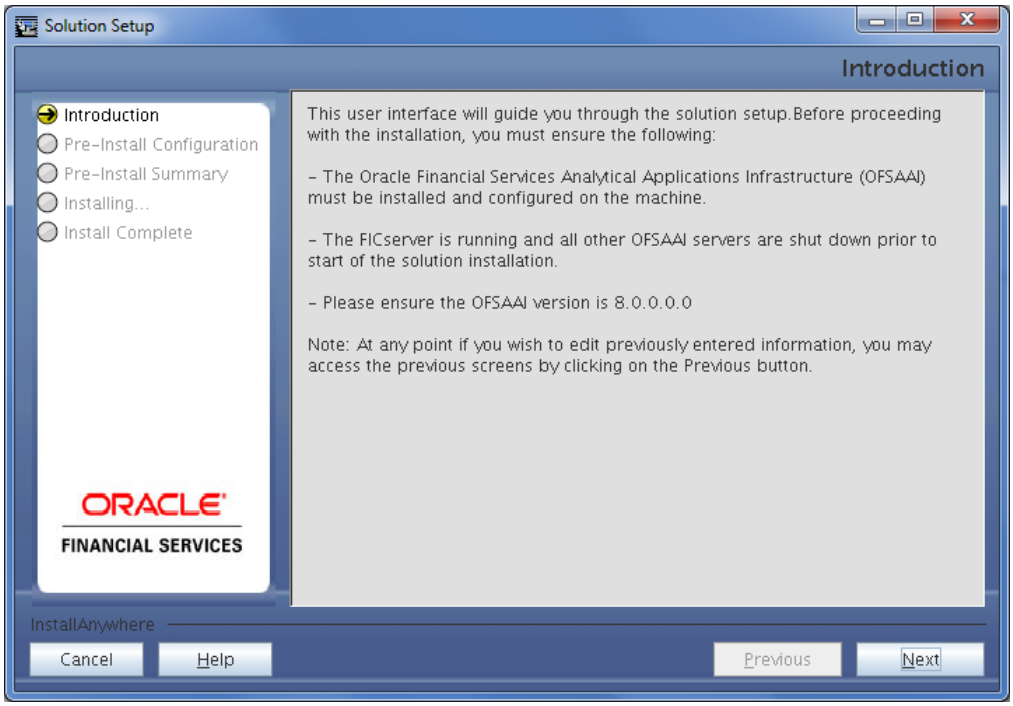


Figure 23 Solution Setup Introduction

39. Click Next

    Choose the log mode for this installer. If **Debug** is selected, the Passwords will be printed in the log file.

40. Click Next to proceed.

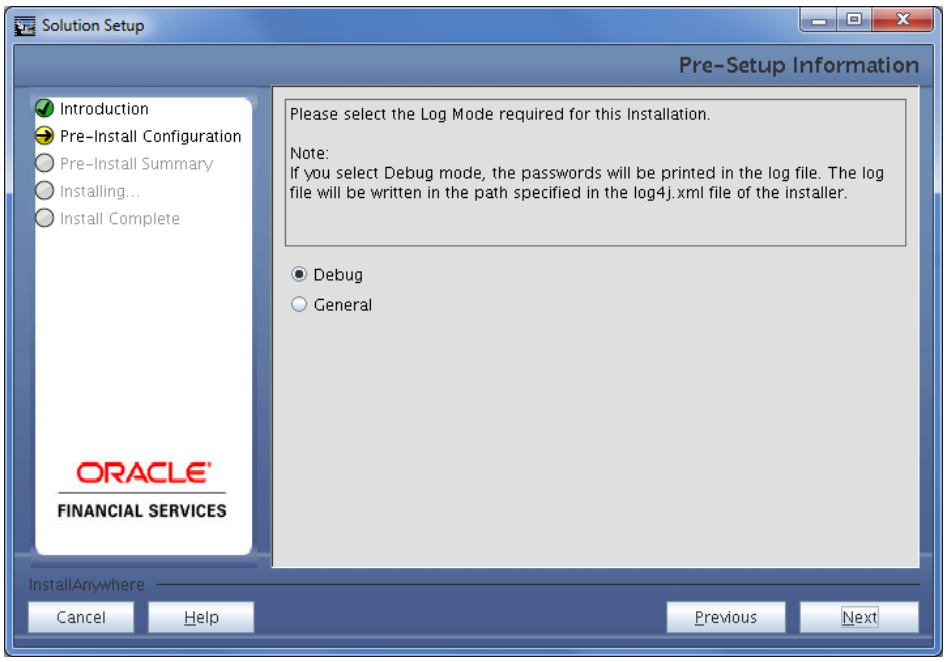


Figure 24 Log Mode

41. Click Next.

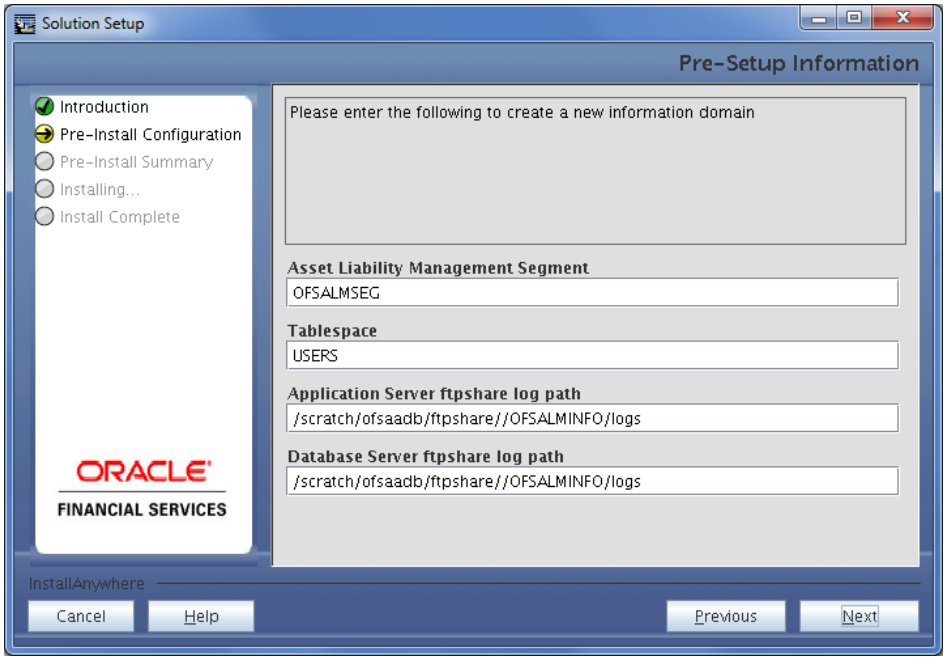


Figure 25 Pre-Setup Information

Create a new information domain by entering the Asset Liability Management Segment, Tablespace, Application Server ftpshare log path and Database server ftpshare log path.

Permissible length for information domain is maximum 10 characters and only alphanumeric characters allowed. No special characters allowed.

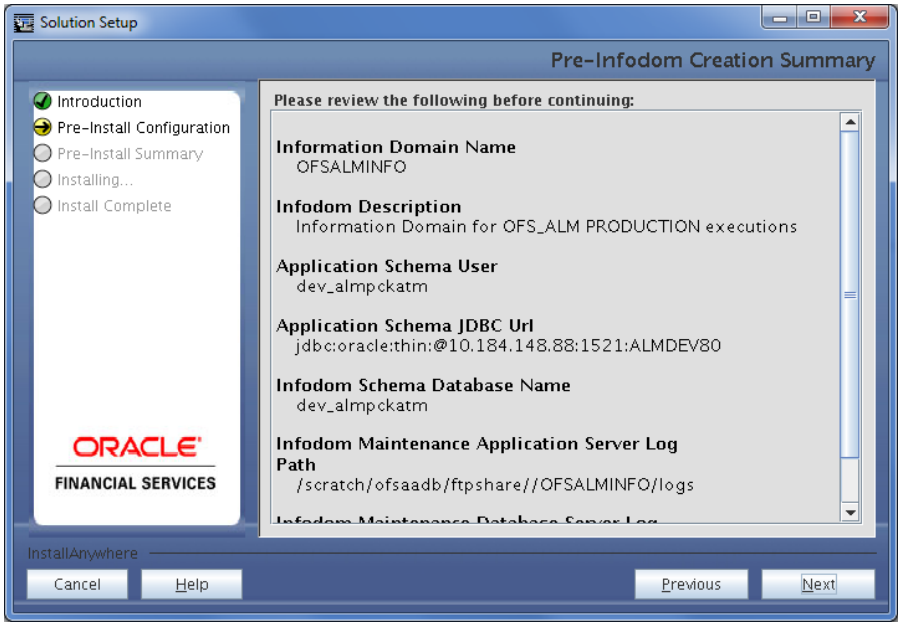


Figure 26 Pre-Infodom Creation Summary

42. Click Next.

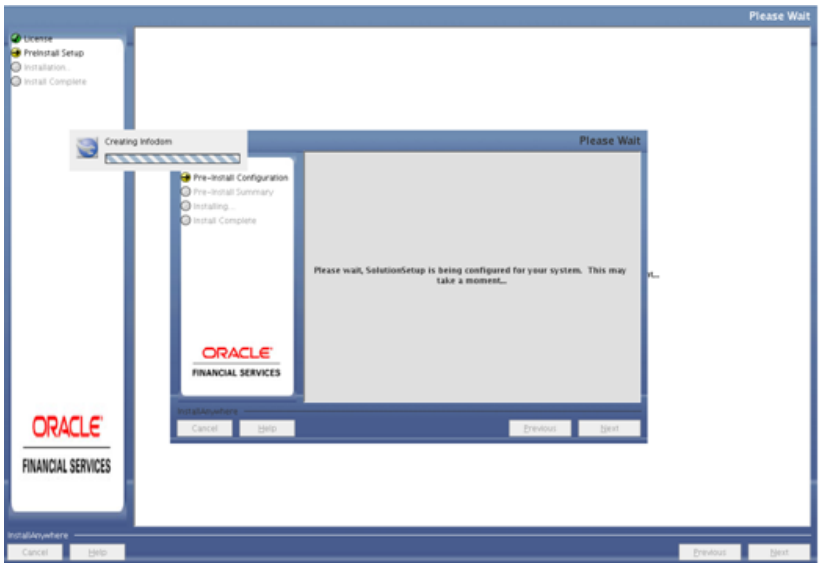


Figure 27 Please Wait

43. Enter the Tablespace name and click Next.

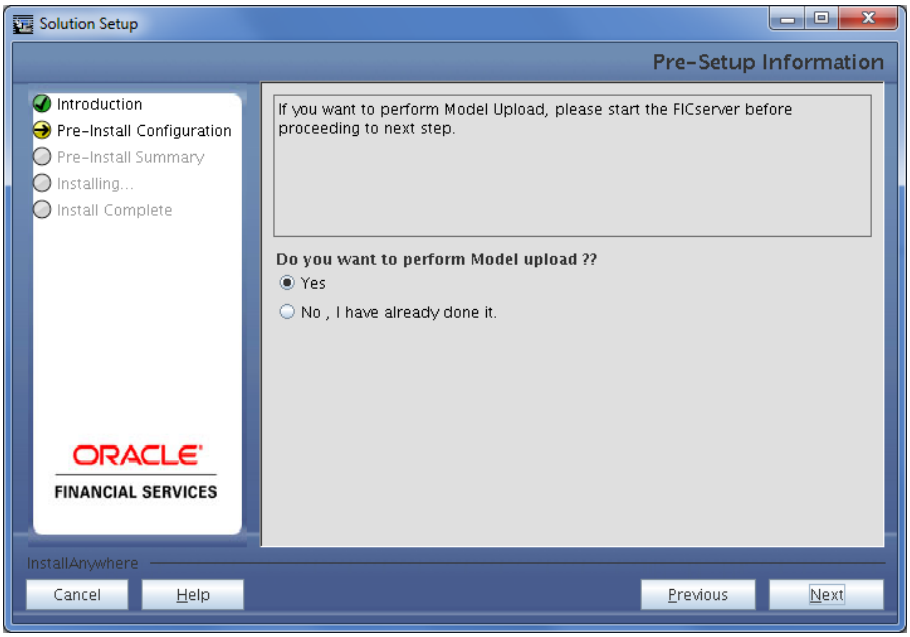


Figure 28 Model Upload Confirmation

Confirm whether you want to perform the Model upload.

44. Click Next.

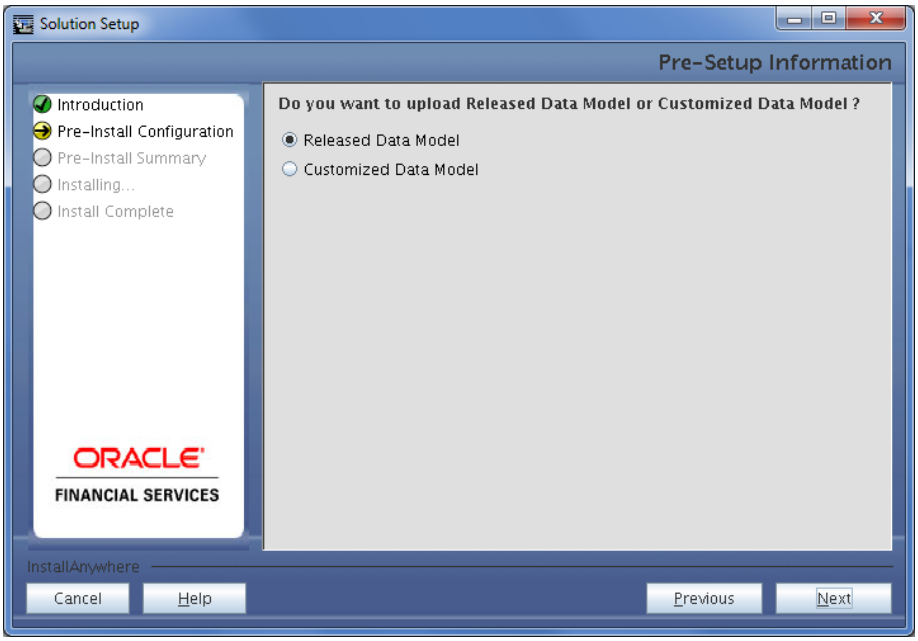


Figure 29 Customizing Data Model

If the option Customized Data Model was chosen, the following panel is displayed prompting the user to select the customized data model located in the machine.Choose the customized data model file from the server.

Note: If you have installed an application pack (for example PFT) and performed the data model customization, then you should merge the data model before installing another application pack (for example ALM).

If the data model merge is not performed before installing second pack, then data model customization changes will be lost.

45. Click Next.

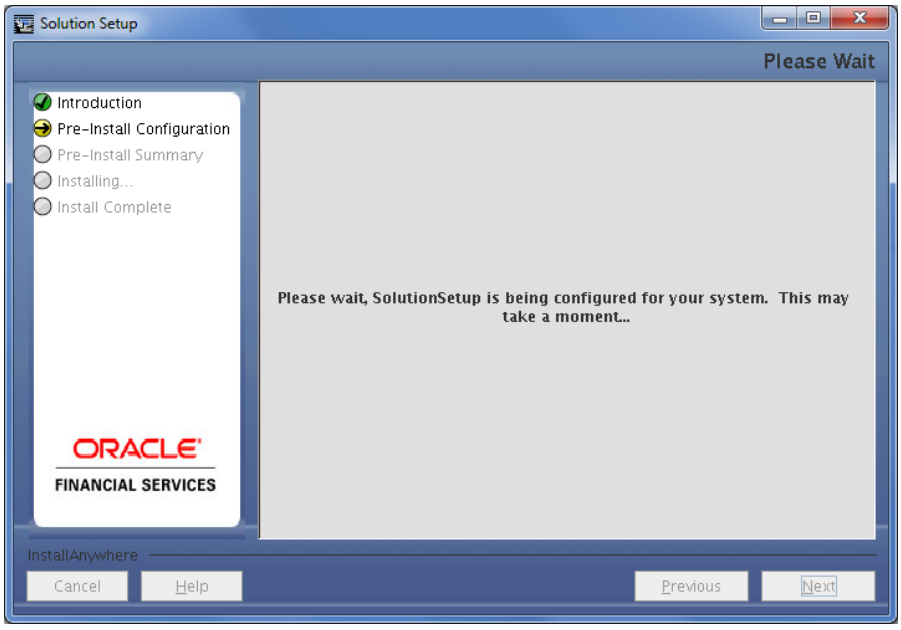


Figure 30 Please Wait

The following panel displays pre-model upload details.

Verify the details before proceeding to the next step.

46. Click Next.

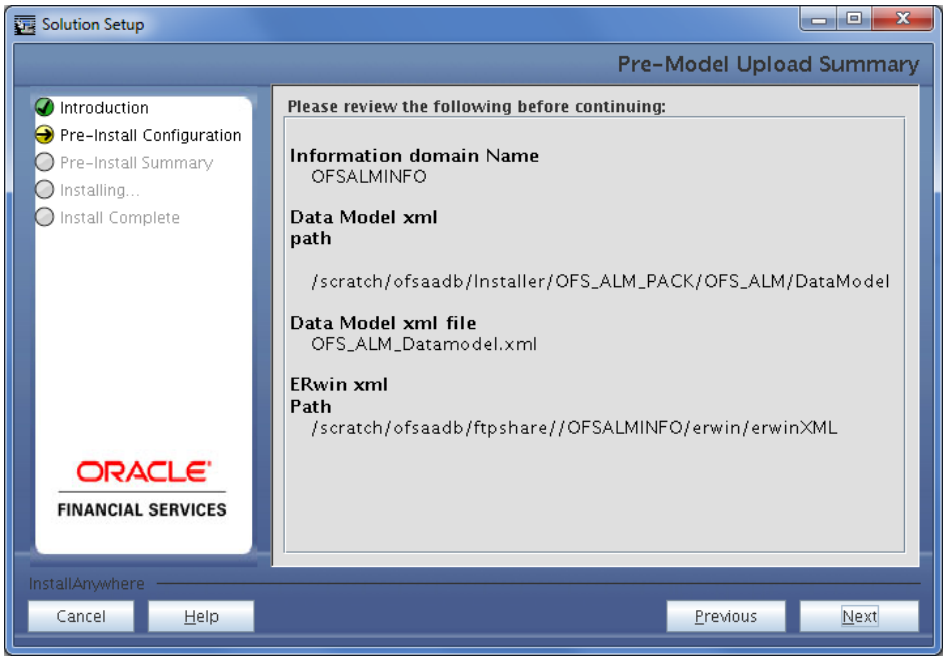


Figure 31 Pre-Model Upload Summary

47. Click Next to proceed for model upload.

    This process will take some time depending on the size of the data model and available physical memory in the environment. You will not be able to take any further action on the screen, until the model upload is complete. Note that this process cannot be rolled back.

    If the model upload fails, then a pop-up message with relevant error and the log file path is displayed.

    Review errors and take relevant action. Continue with this step until the model upload is successful and the installer takes you to next step.

    Few common errors during model upload are:

- Insufficient heap memory on the client machine.
- Possible reason/resolution: The java memory settings in “startofsaai.sh” located in $FIC_APP_HOME/common/FICServer/bin directory should be increased.
- Error while getting the Erwin File path.
- Possible reason/resolution: Restart the FICServer.
- Error in Upload Operation: “FAILED WHILE SUPER CATEGORY - SUB CATEGORY RELATIONS HANDLINGDELETING”.
- Possible reason/resolution: Incorrect Erwin.xsl file version in $FIC_APP_HOME/common/FICServer/conf directory.

Note: Incremental/Sliced model upload might give errors if there are NOT NULL columns being added to a table that already has rows or if the columns that are being dropped have values. Check the data model changes excel file for any such cases. In such a case, take a backup of the table and truncate the table. Insert records back into the table with a default value for the NOT NULL column.

Navigate to the previous screen and proceed with the steps mentioned above.

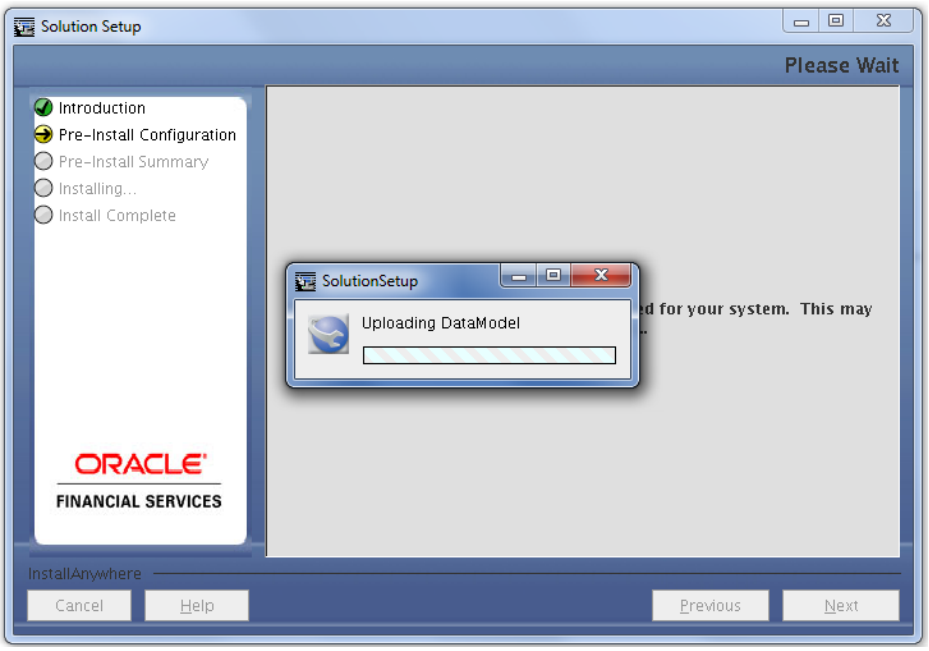


Figure 32 Uploading Data Model

The data model is getting uploaded.

48. Click Next.

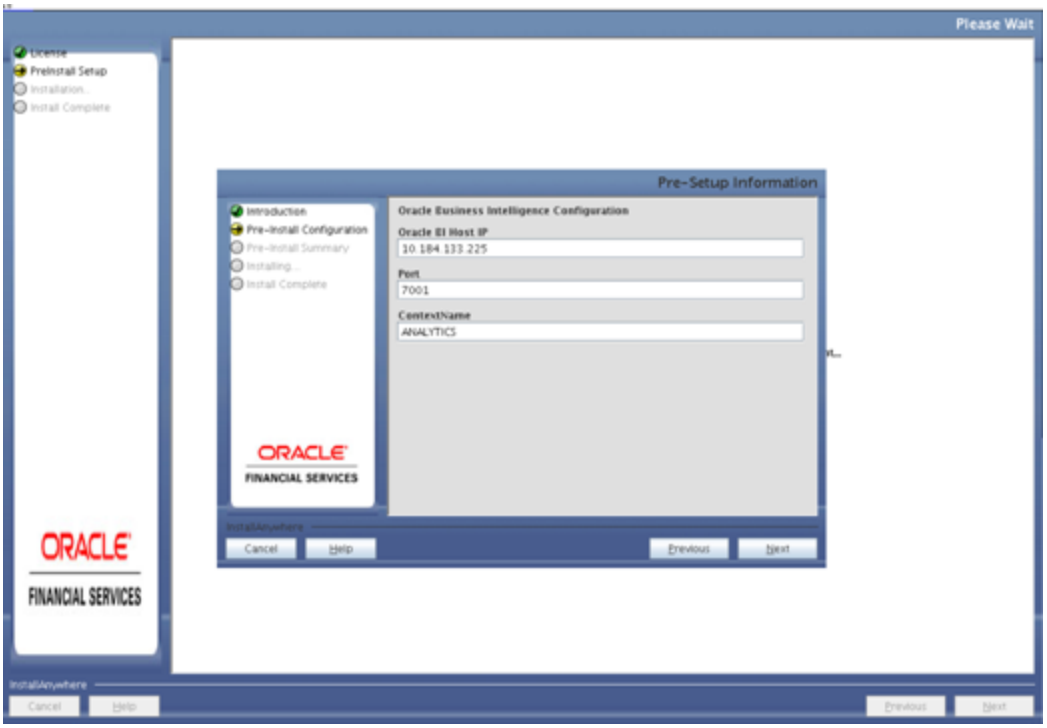


Figure 33 Oracle Business Intelligence Configuration

The **Pre Setup Information** screen requests for setup information.

The following panel seeks input from the user on whether to create new ETL application/source pair or use an existing one.

Choose a desired option.

49. Click Next to continue.

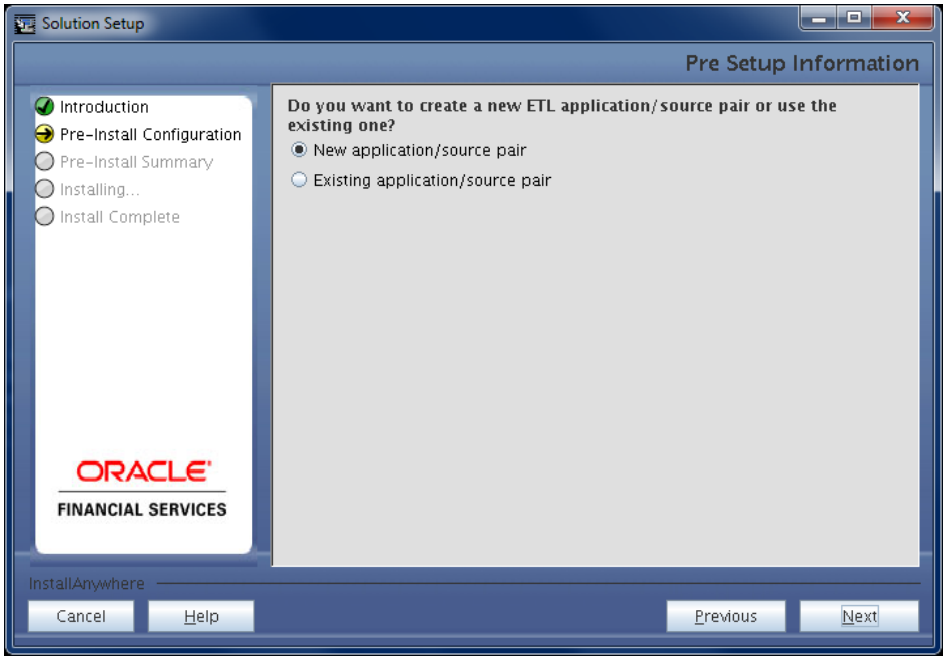


Figure 34 Selecting the Application

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.

50. 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.

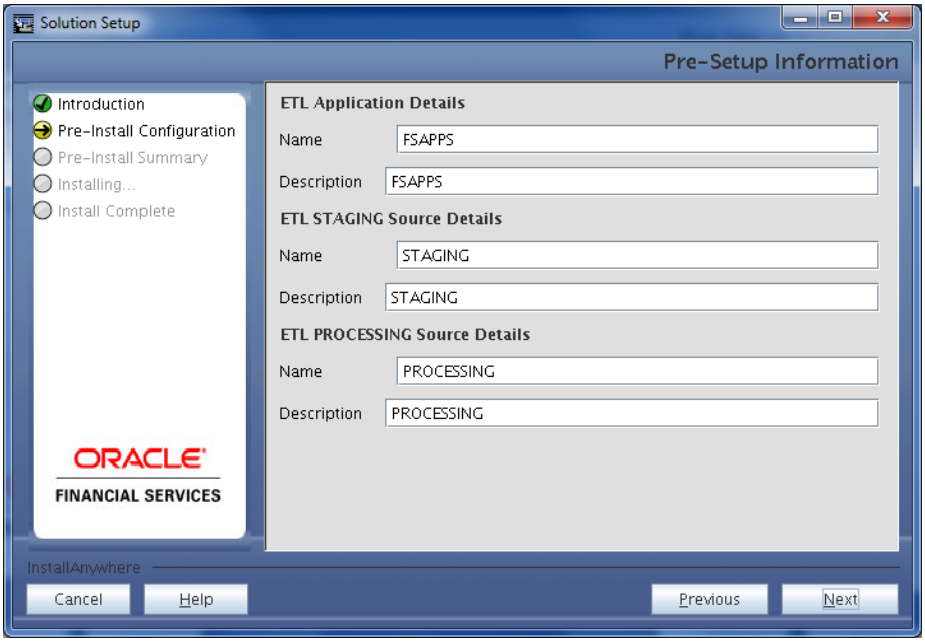


Figure 35 ETL Details

This panel displays all the pre-installation summary. Verify all details and proceed.

51. Click **Install** to proceed. A message-box is displayed. Click yes to continue.

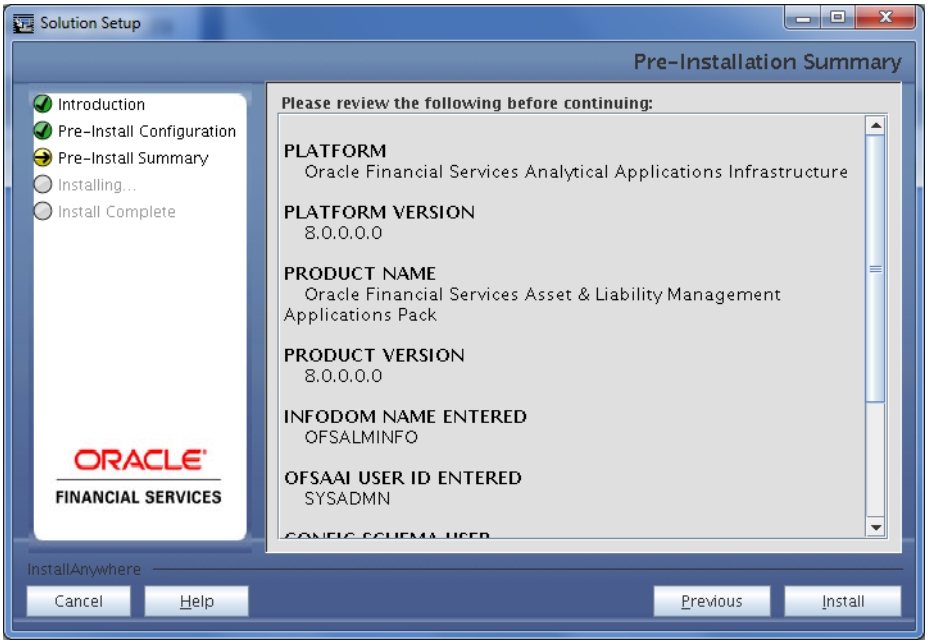


Figure 36 Pre-Install Summary

This panel displays the installation process. Wait until it completes.

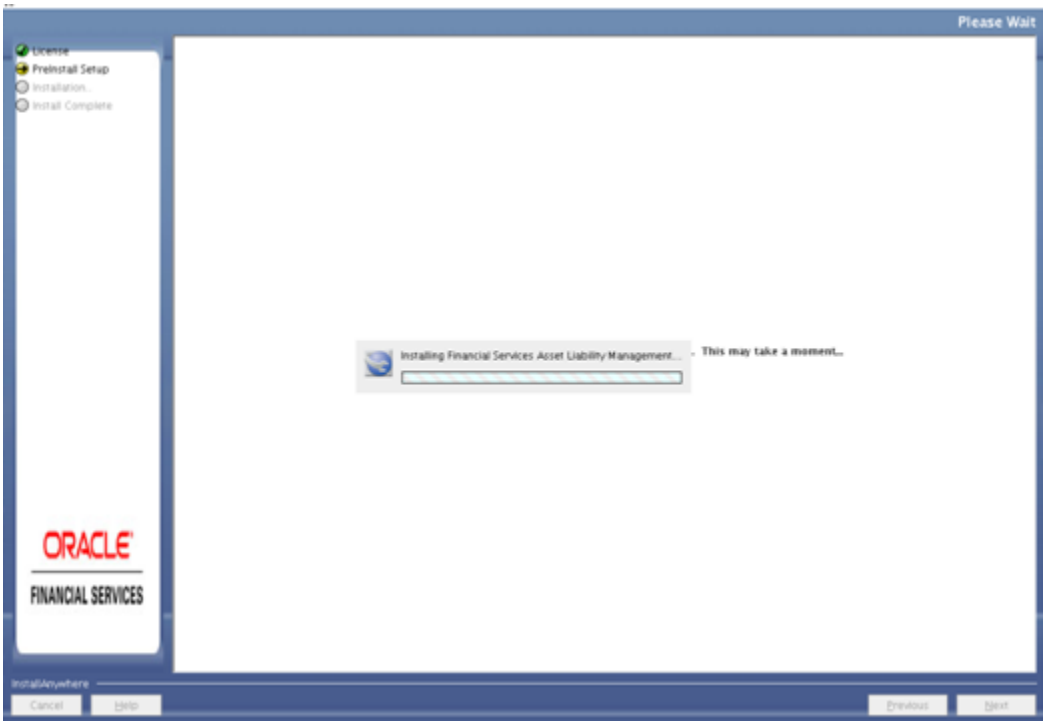


Figure 37 Installation in Progress

The following screen displays the completion of installation of the Oracle Financial Services Asset Liability Management Analytics Product Setup.

52. Click **Done** to exit.

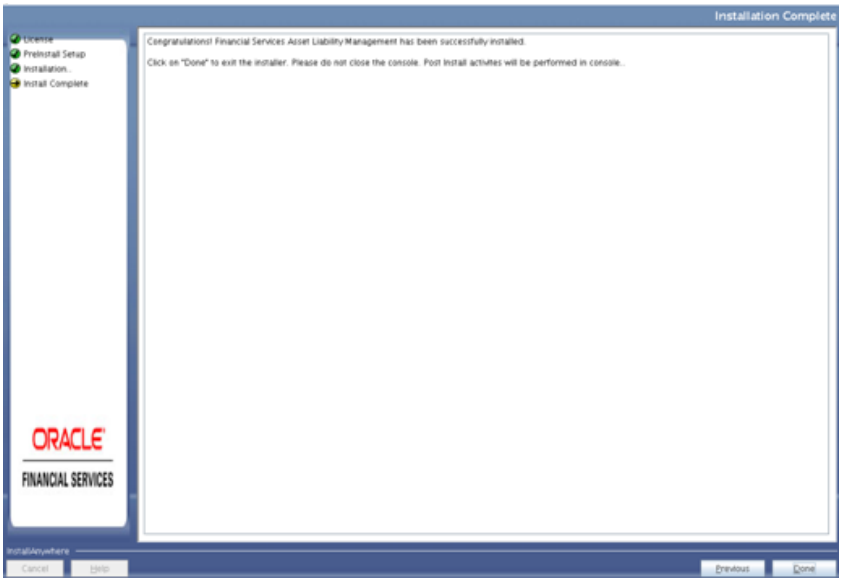


Figure 38 Install Complete

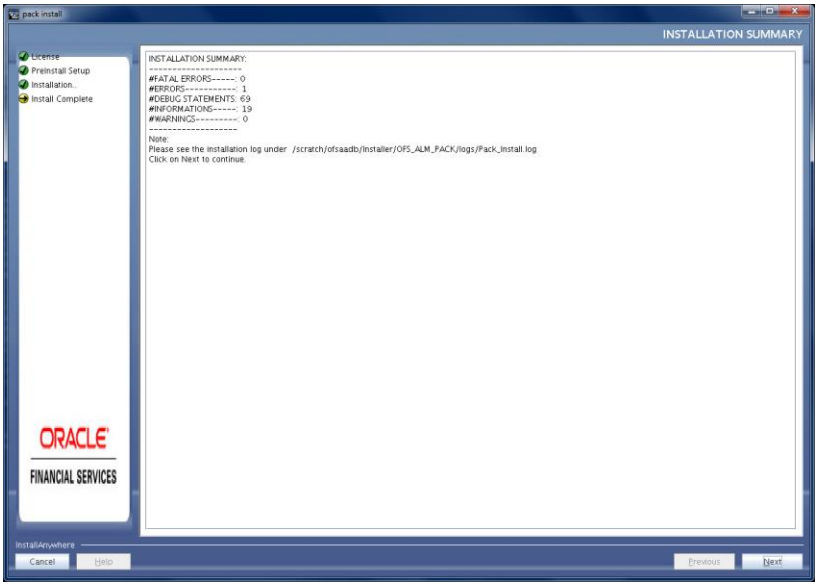


Figure 39 Installation Summary

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:

Figure 40 Installation Complete

Note: Access Manager Component (**am** executable) creates Semaphore on AIX, so whenever `rmipc.sh` script is run as a result, it would remove existing Semaphores and Shared Memory which in turn results killing “am” due to inaccessibility of Semaphores created by “am”. In such case, user should check and re-run “am” post executing `rmipc.sh` script, if it is killed.

`rmipc.sh` is a Semaphore/Shared Memory cleanup memory that checks the existence for Semaphore/Shared Memory and cleaning them, if it is there. It is mandatory NOT to include this script as part of a batch execution.

53. Install the consolidated one-off patch 25777667. Refer to the Readme available with the patch for further instructions on installing the patch.
54. Perform steps mentioned in the Post Installation Configuration section.

Note: Download and install patch for Bug 21160684 if installing this release of the OFS ALM Application Pack version 8.0.0.0.0 on Java 8.

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.

Follow these steps for installing the OFS ALM Pack in SILENT mode.

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. Execute the user `.profile`.
4. Navigate to `OFS_ALM_PACK` folder.
5. Edit the `OFS_ALM_PACK/conf/OFS_ALM_PACK.xml` to enable the product licenses. Update the attribute ENABLE=YES/NO in OFS_ALM_pack.xml for licensing the App in the pack.

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

NOTE: Update OFS_ALM_PACK.XML, set the attribute “ENABLE=YES” of <APP_ID> tag for applications to be enabled during installation. If any application has mentioned OFS_ALM as PREREQ in the <APP_ID> tag, set the attribute “ENABLE=YES” for OFS_ALM.

6. Edit the `OFS_ALM_PACK/schema_creator/conf/OFS_ALM_SCHEMA_IN.xml` file to set the appropriate attribute values. Include INFODOM = “<Infodom Name>” in OFS_ALM_SCHEMA_IN.xml file.

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

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

NOTE: This step can be ignored if an installation of OFSAA 8.0 already exists.
Refer Configuring OFSAAI_InstallConfig.xml for details on configuring this XML file.

8. Execute the schema creator utility.

NOTE: This step is mandatory and should be executed before every additional OFSAA Application Pack installation. Ensure the execute with –s option in Online/Offline mode.
Refer Executing the Schema Creator Utility for more details.

9. On successful execution of the schema creator utility, navigate to `OFS_ALM_PACK/bin/` and execute the application pack installer with **SILENT** option.
10. Execute `./setup.sh SILENT` in the console.
11. Enter the Infrastructure FTP/SFTP password value, when prompted at the command prompt.

Console Prompts	User Inputs
Please enter Infrastructure FTP/SFTP password	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:

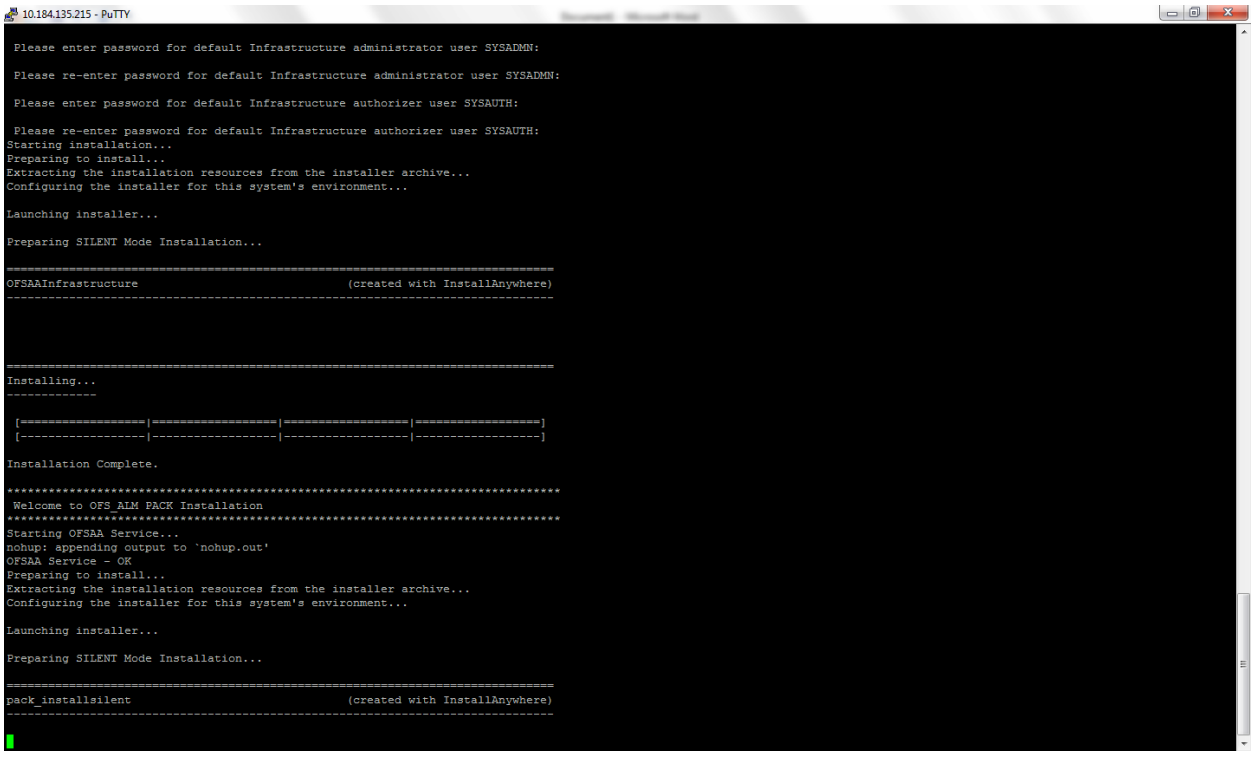
12. Enter **Always,** when prompted to add host key fingerprint.
13. The OFSAAI License Agreement is displayed.

```
********************************************************************************
*  Welcome to Oracle Financial Services Advanced Analytical Applications Infrastructure (OFS AAAI) Applications Pack Installation  *
********************************************************************************
 Checking Infrastructure installation status ...
 Infrastructure installation does not exist. Proceeding with Infrastructure installation ...
 Triggering Infrastructure installation ...

 Please enter Infrastructure FTP/SFTP password :

********************************************************************************
 OFSAA APPLICATION PACK LICENSE AGREEMENT
********************************************************************************
* Warning: This Software System is protected by International copyright laws. Unauthorized reproduction or distribution of this Software System, or any portion of it, may result
 in severe civil and criminal penalties and will be prosecuted to the maximum extent possible under the Law.*
* Oracle Financial Services Analytical Applications (OFSAA) Application Pack is a group of OFSAA products packaged together in a single installer. Each Application Pack addresse
s specific functional domains via its products that are grouped together. The Oracle Financial Services Analytical Applications Infrastructure (OFS AAI) being the base infrastru
cture for deployment of other OFSAA products/Application Packs, is bundled with each Application Pack. With every Application Pack installation, the OFSAA Infrastructure product
 would be checked for and installed if required.*
* Oracle Financial Services Enterprise Modeling (OFS AAAI) and Oracle Financial Services Inline Processing Engine (OFS IPE) products are separately licensable products and shoul
d not be enabled unless it has been licensed. Oracle Financial Services Enterprise Modeling (OFS AAAI) and Oracle Financial Services Inline Processing Engine (OFS IPE) products
are only part of the Oracle Financial Services Advanced Analytics Infrastructure Pack and specific OFSAA Application Packs that require these advanced analytical features of the
 product. Oracle Financial Services Enterprise Modeling (OFS AAAI) or Oracle Financial Services Inline Processing Engine (OFS IPE) product gets pre-selected automatically on sel
ecting any of the OFSAA products within a specific Application Pack that require these products to be enabled and configured.*
* Multiple products being grouped together under a Application Pack, mandate installation and configuration of these products by default. However, during the Application Pack in
stallation, based on the products that are being selected, it would get enabled and should be licensed for. It is important to note that products once selected (enabled) cannot
be disabled at a later stage. However, products can only be enabled at any later stage using the OFSAA Infrastructure 'Manage Application Pack License' feature.*
* Enabling a product within a Application Pack automatically implies you agree with this license agreement and the respective terms and conditions.*
********************************************************************************
Are you accepting the terms and conditions mentioned above? [Y/N]:
y
```

14. To accept the License Agreement, enter Y/y.
15. Enter the passwords for default Infrastructure administrator and authorizer users.

Console Prompts	User Inputs
Please enter password for default Infrastructure administrator user SYSADMN	Enter the password for the System Administrator.
Please re-enter password for default Infrastructure administrator user SYSADMN	Enter the same password again to confirm its validity.
Please enter password for default Infrastructure authorizer user SYSAUTH	Enter the password for the System Authorizer.
Please enter password for default Infrastructure authorizer user SYSAUTH	Enter the same password again to confirm its validity.

NOTE: SYSADMN and SYSAUTH are the two defaults OFSAAI administrative users created.



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

16. The following message is displayed in the console
    Installation completed…
17. On completion of installation, refer the installation log files. For more information, refer Verifying the Log Files.
18. Install the consolidated one-off patch 25777667. Refer to the Readme available with the patch for further instructions on installing the patch.
19. Perform steps mentioned in the Post Installation Configuration section.

Note: Download and install patch for Bug 21160684 if installing this release of the OFS ALM Application Pack version 8.0.0.0.0 on Java 8. For more information, refer Configurations for Java 8. This patch is not required if an OFSAA instance already exists and is configured for Java 8.

Silent.props

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.

NOTE: Do not install the new applications in the same segment if the pre-installed applications use run management.

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

Property Name	Description of Property	Permissible values	Comments
LOG_MODE	Mode for logging	0 = Debug 1= General	Optional; Default : 0
SEGMENT_1_CODE	Segment Code	Not Applicable	MANDATORY **Note:** The Segment Code should be in upper case.
APPFTP_LOG_PATH=	Infodom Maintenance log path(to be created) for the new Infodom for applayer	Not Applicable	# Mandatory if this an App Layer Installation and if you want to create a new infodom # i.e you have specified INSTALL_APP=1 and INFODOM_TYPE=0
DBFTP_LOG_PATH	Infodom Maintenance log path(to be created) for the new Infodom for DBLayer	Not Applicable	# Mandatory if this an App Layer Installation and if you want to create a new infodom # i.e you have specified INSTALL_APP=1 and INFODOM_TYPE=0
OBI_HOST	Host Name of the OBIEE Server	Not Applicable	Applicable if INSTALL_ADMIN_BI=1
OBI_PORT	Port Number of the OBIEE Server	Not Applicable	Applicable if INSTALL_ADMIN_BI=1
OBI_CONTEXT	Context Name of the OBIEE Server	Not Applicable	Applicable if INSTALL_ADMIN_BI=1
UPLOAD_MODEL	whether you want to perform Model Upload	0 = No 1 = yes	Mandatory if INSTALL_APP=1
MODEL_TYPE	Released data model or Customized data model	0 = released 1 = customized	Mandatory if INSTALL_APP=1

DATAMODEL	the path for the customized data model	Not Applicable	# Mandatory only if you want to upload the customized data model # i.e you have specified MODEL_TYPE=1
DM_DIRECTORY	the file name for the customized data model	Not Applicable	# Mandatory only if you want to upload the customized data model # i.e you have specified MODEL_TYPE=1
ETL_APPSRC_TYPE	Create new ETL App/Src pair or use an existing one	0 = New 1 = Existing	# Mandatory if this an App Layer installation # i.e you have specified INSTALL_APP=1 # 0 = If you want to create a new ETL app/src pair # 1 = If you want to use an existing pair
ETL_APP_1_DESC	Please give description for the ETL App	Not Applicable	# Mandatory if you want to create new ETL app/src pair #i.e you have specified ETL_APPSRC_TYPE=0
ETL_SRC_1_1_DESC	Please give description for the ETL Staging source description	Not Applicable	# Mandatory if you want to create new ETL app/src pair #i.e you have specified ETL_APPSRC_TYPE=0
ETL_SRC_1_2_DESC	Please give description for the ETL Processing source description	Not Applicable	# Mandatory if you want to create new ETL app/src pair #i.e you have specified ETL_APPSRC_TYPE=0
ETL_APP_1_NAME	The ETL application name	Not Applicable	This is for App Layer installation

ETL_SRC_1_1_NAME	ETL Staging source name	Not Applicable	This Source must be mapped to the above ETL Application
ETL_SRC_1_2_NAME	ETL Processing source name	Not Applicable	This Source must be mapped to the above ETL Application

4.3.3 Verifying the Log File

Refer the following logs files for more information:

- Refer the `Pack_Install.log` located at `OFS_ALM_PACK/logs/ folder` for OFS ALM Application Pack installation log file.
- Refer the log file(s) located at `OFS_ALM_PACK/OFS_AAI/logs/` folder for Infrastructure installation log.
- Refer the `OFSAAInfrastucture_Install.log` located at `$FIC_HOME` folder for Infrastructure installation log.

Note:
For Pack on Pack installation (if OFS_DM_PACK, OFS_TR_PACK, and OFS_CRM_PACK are installed before OFS_ALM_PACK), then following warnings might be logged in the installation log and these can be ignored as this has no implication on the product.

```
Warning: Table already has a primary key
Warning: Table already has a referential constraint with same name
Warning: Object already exists
```

5 Post Installation Steps

On successful installation of the Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack, follow the post installation steps.

This chapter includes the following sections:

- Configuring Resource Reference
- Start OFSAA Infrastructure Services
- Add TNS entries in TNSNAMES.ORA file
- Configuration for Oracle R distribution and Oracle R Enterprise (ORE)
- Configuration for Java 8
- Create and Deploy the Application Pack Web Archive
- Access the OFSAA Application
- Perform Post Deployment Configurations

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.

5.1 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.

5.2 Start OFSAA Infrastructure Services

Start the OFSAA Infrastructure Services prior to deployment or accessing the OFSAA Applications.

Refer to the Appendix D for details on Start/ Stop OFSAA Services.

5.3 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.

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

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

5.4 Configuration for Oracle R distribution and Oracle R Enterprise (ORE)

This is an optional step. Skip and proceed with the next steps if OFS Enterprise Modeling Application with R scripting is not enabled during installation.

1. Install OFSAAIRunner Package. For more information, refer Installing OFS AAAI Runner Package. If you have already installed OFSAAIRunner package (as part of a previous installation), uninstall it (For more information, refer Uninstalling OFS AAAI Runner Package section), and reinstall the latest available OFSAAIRunner package.
2. Log in to the database with dba privileges and provide the following privilege to Configuration Schema:
   - `RQADMIN` by executing the command:

     ```
     GRANT RQADMIN TO <config_schema>;
     ```
3. Log in to the database with dba privileges and provide the following privileges to Atomic Schema:
   - `CREATE UNLIMITED TABLESPACE` privilege by executing the command:

     ```
     GRANT CREATE UNLIMITED TABLESPACE TO <atomic_schema>;
     ```
   - `CREATE MINING MODEL` privilege (to execute the Data Mining models) by executing the command:

     ```
     GRANT CREATE MINING MODEL TO <atomic_schema>;
     ```

5.4.1 Installing OFS AAAI Runner Package

OFSAAIRunner is an R package built by the OFS Enterprise Modeling Application. It is a prerequisite for executing models developed using R scripts. This package helps in:

- Initializing inputs
- Mapping framework variables to R objects
- Configuring possible outputs of the script
- Storing results back to the Database

OFSAAIRunner package (OFSAAIRunner_1.0.0.tar.gz) is available under `$FIC_DB_HOME/lib`.

5.4.1.1 Prerequisite

- Oracle R & ORE should be installed on the Oracle Database server before installing OFSAAIRunner package.

Refer to the following instructions to install OFSAAIRunner package:

1. Log in to the OFSAA Server. Navigate to the `folder $FIC_DB_HOME/lib.`
2. Copy the file `OFSAAIRunner_1.0.0.tar.gz` in **Binary** mode to the Oracle Database Server.
3. Log in to the Oracle Database Server with the user using which Oracle Database Server installation is done.
4. Navigate to the directory where the file `OFSAAIRunner_1.0.0.tar.gz` is copied.
5. Install the package by executing the command:

   ```
   ORE CMD INSTALL OFSAAIRunner_1.0.0.tar.gz
   ```

   Successful installation is indicated in the installation log as:

   ```
   * DONE (OFSAAIRunner)

   Making packages.html ... done
   ```

NOTE: The OFSAAIRunner package is installed in `/usr/lib64/R/library`.

6. Navigate to the directory `$ORACLE_HOME/R/library` and check whether OFSAAIRunner package is listed there by executing the command:

   >library(OFSAAIRunner)

   `>OFSAAIRunner::` and press TAB twice.

   This lists out all the functions.

5.4.2 Uninstalling OFSAAAI Runner Package

Refer to the following instructions to uninstall the OFSAAIRunner package:

1. Log in to the Oracle Database Server with the same username, using which Oracle Database Server installation is done.
2. Enter ORE in command prompt and execute the command:

   ```
   #ORE

   >remove.packages("OFSAAIRunner")
   ```

3. To save workspace image, enter the command:

   ```
   >q()
   ```

4. Enter y when prompted to save the workspace image.

   Save workspace image? [y/n/c]: y

5. Navigate to the directory $ORACLE_HOME/R/library and verify the package is not listed there by executing the command:

   ```
   ls –l
   ```

5.5 Configuration 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 to 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/`

5.6 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.

5.7 Access the OFSAA Application

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

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

5.8 Perform Post Deployment Configurations

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

6 Appendix A - Configuring Web Server

This appendix includes the following sections:

- Configuring Web Server
- Configuring Web Application Server

6.1 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 the Related Documents section for additional information on securely configuring your Web Server.
Ensure to enable sticky session/ affinity session configuration on the web server. 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).

6.2 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 following sections.

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 mentioned in the Related Documents section for additional information on securely configuring your Web Server.

6.2.1 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 below. 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:

6.2.1.1 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.

6.2.1.2 Manage Applications in WebSphere

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

1. 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.

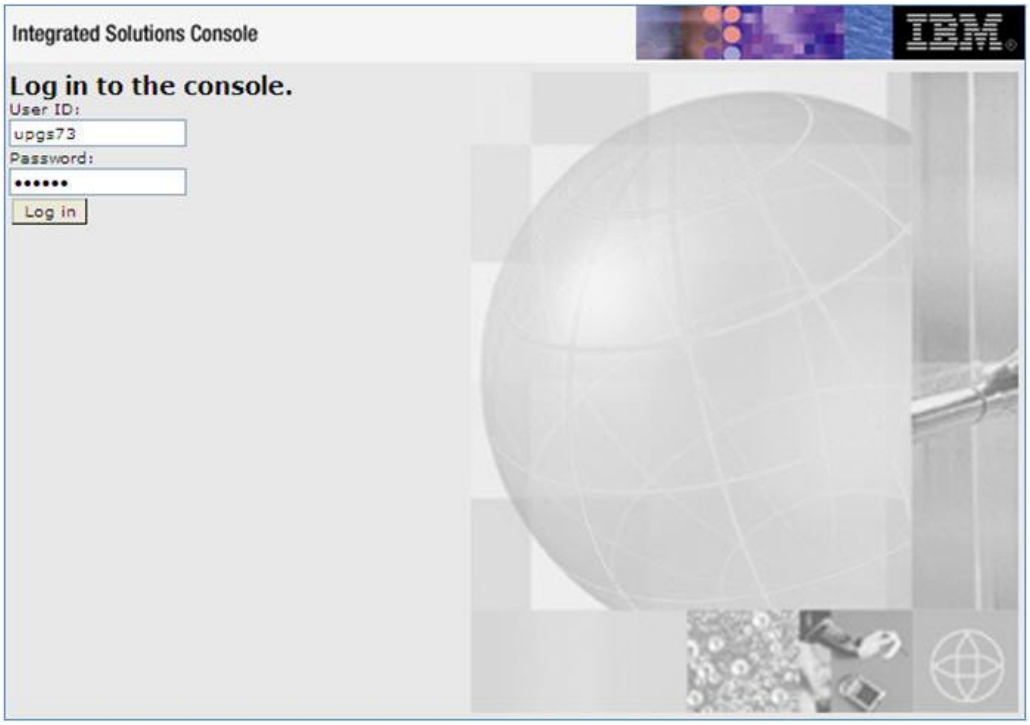


Figure 41: Integrated Solutions Console Login

2. Log on with the **User ID** provided with the admin rights.

3. From the LHS menu, expand the **Applications** > **Application Type**> **WebSphere Enterprise Applications**.
4. The *Enterprise Applications* screen is displayed.

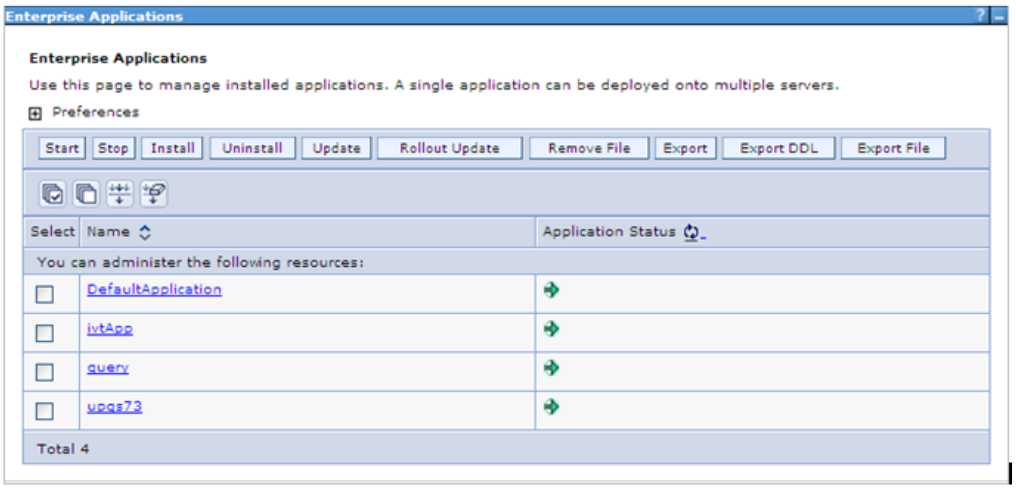


Figure 42: Enterprise Applications

5. This Enterprise Applications screen helps you to:
   - Install new application
   - Uninstall existing applications
   - Start or Stop the installed applications

6.2.1.3 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:
4. `<WebSphere_Installation_Directory>/AppServer/bin/`
5. Execute the command:

   `manageprofiles.sh -delete -profileName <profile_name>`
6. Delete profile folder.
7. Example:
   `<WebSphere_Installation_Directory>/AppServer/profiles/<profile_name>`
8. Execute the command:

   `manageprofiles.sh -validateAndUpdateRegistry`

6.2.1.4 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.
2. 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.

6.2.1.5 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
```

6.2.2 Configuring WebLogic for Application Deployment

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

Note: For deployment on Oracle WebLogic Server 12.1.3+ (64 bit) with Java 8, download and install patch 18729264.

This section includes the following topics:

- Creating Domain in WebLogic Server
- Delete Domain in WebLogic
- WebLogic Memory Settings

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

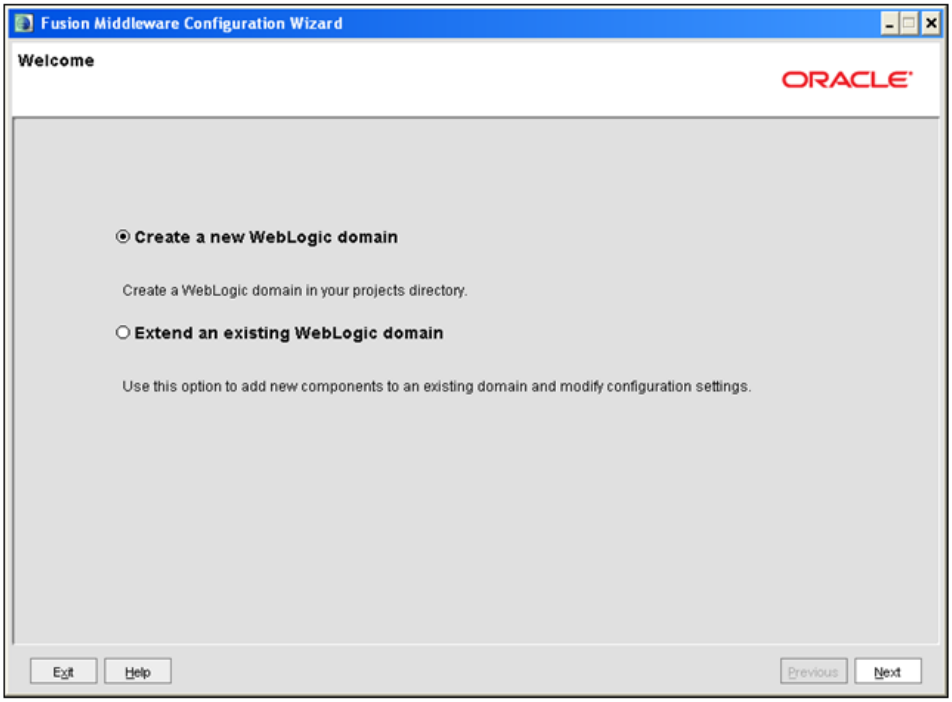


Figure 43: Welcome

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

   The *Select Domain Source* window is displayed.

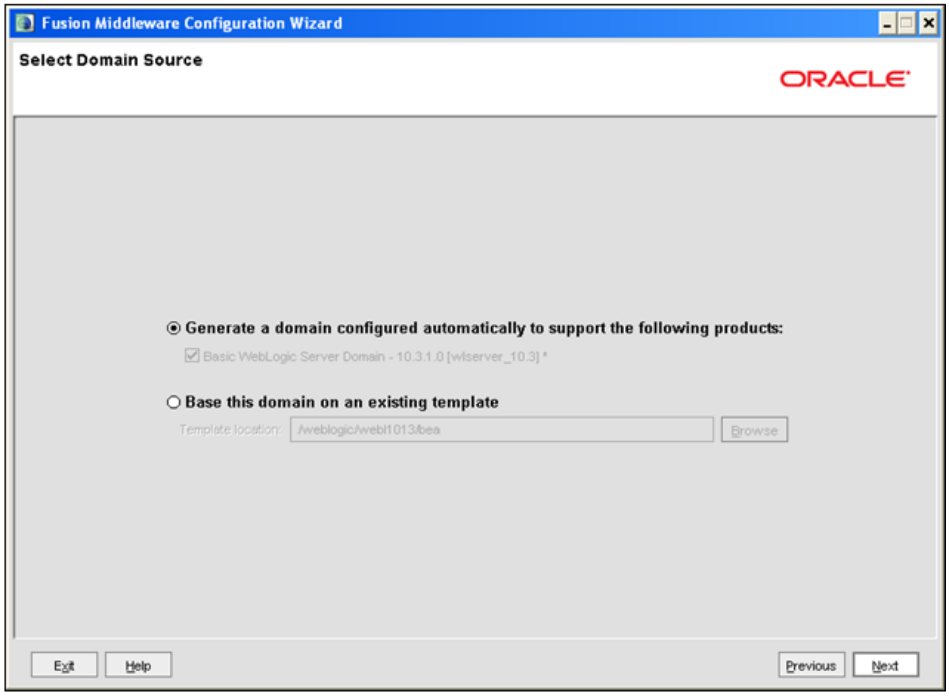


Figure 44: Select Domain Source

3. Select the Generate a domain configured automatically to support the following products option and click Next.

4. The *Specify Domain Name and Location* window is displayed.

Figure 45: Specify Domain Name and Location

5. Enter the **Domain Name** and **Location**. Click **Browse** to navigate and specify the location. Click **Next**.

The *Configure Administrator Username and Password* window is displayed.

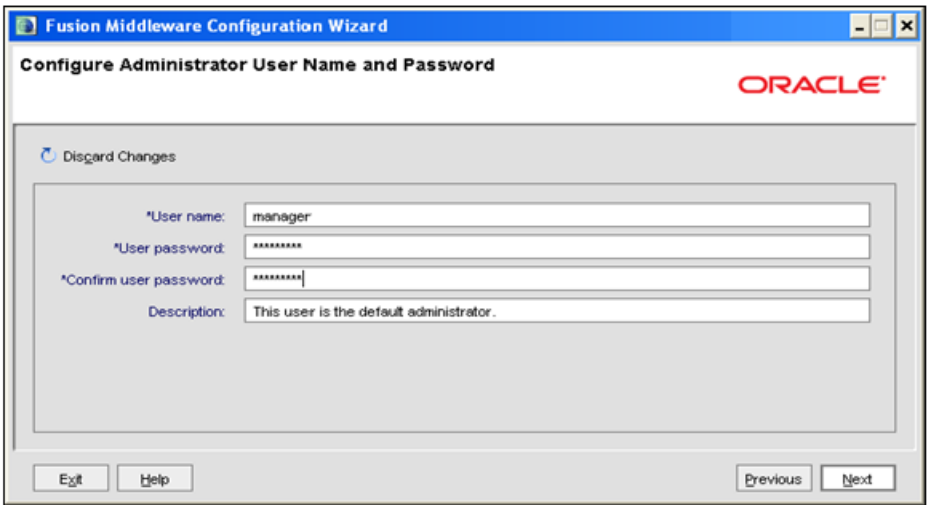


Figure 46: Configure Administrator Username and Password

6. Enter the **User name** and **User password** to be assigned to the Administrator. Ensure that the password is of minimum 8 characters in length.
7. Re-enter the password for confirmation and add a brief **Description**. Click **Next**.

   The *Configure Server Start Mode and JDK* window is displayed.

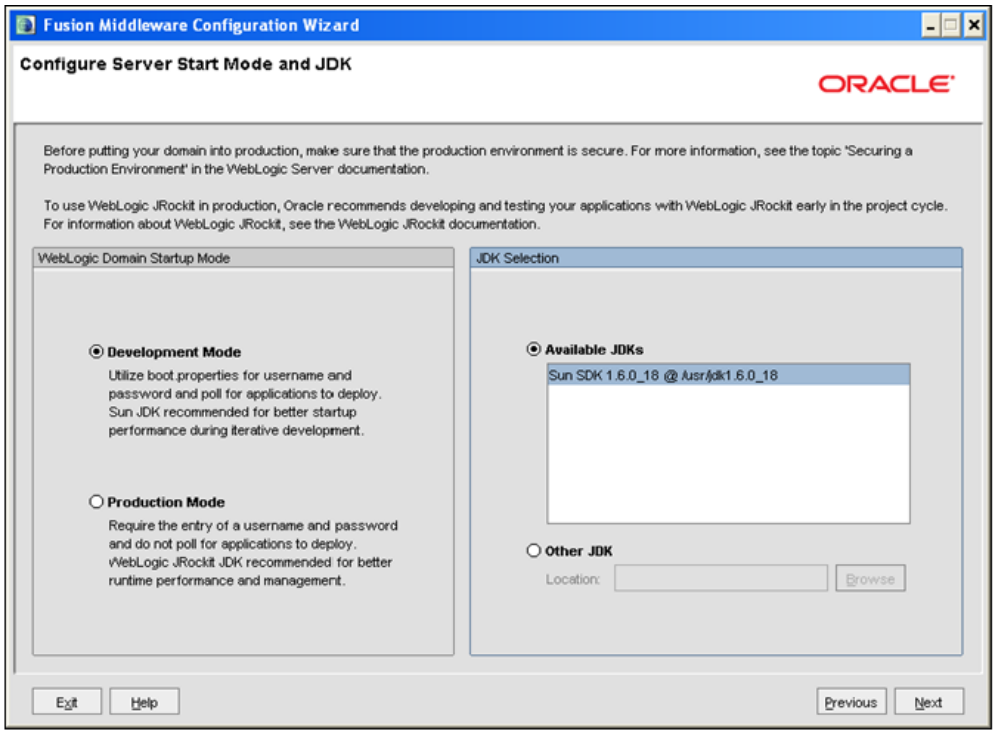


Figure 47: Configure Server Start Mode and JDK

8. Select the following options:

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

In the *JDK Selection* section, select **Other JDK**. Click **Browse** and navigate to the JDK location. Click **Next**.

The *Select Optional Configuration* window is displayed.

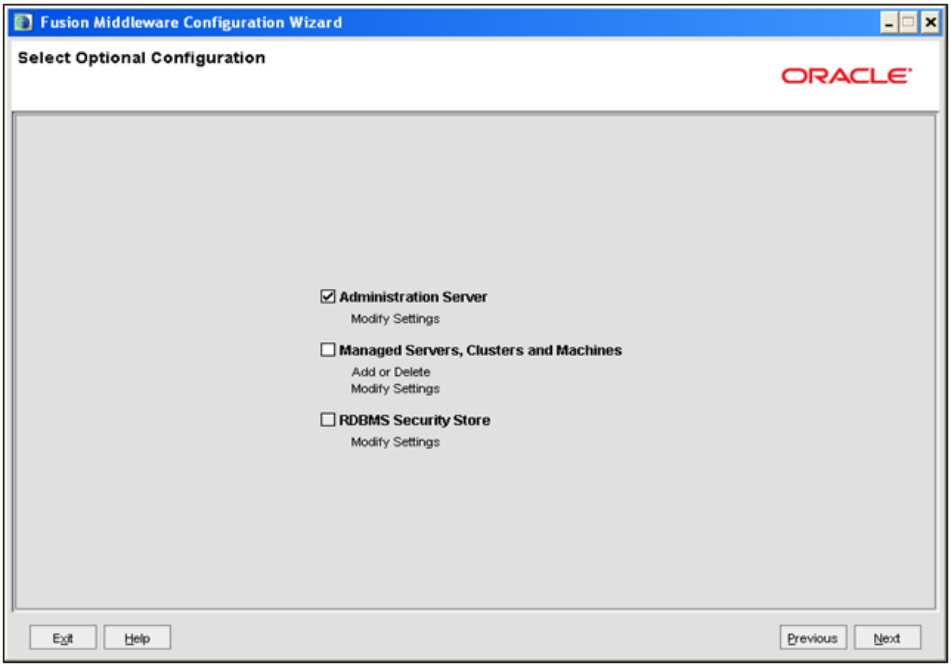


Figure 48: Select Optional Configuration

9. 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 *Configure the Administration Server* window is displayed.

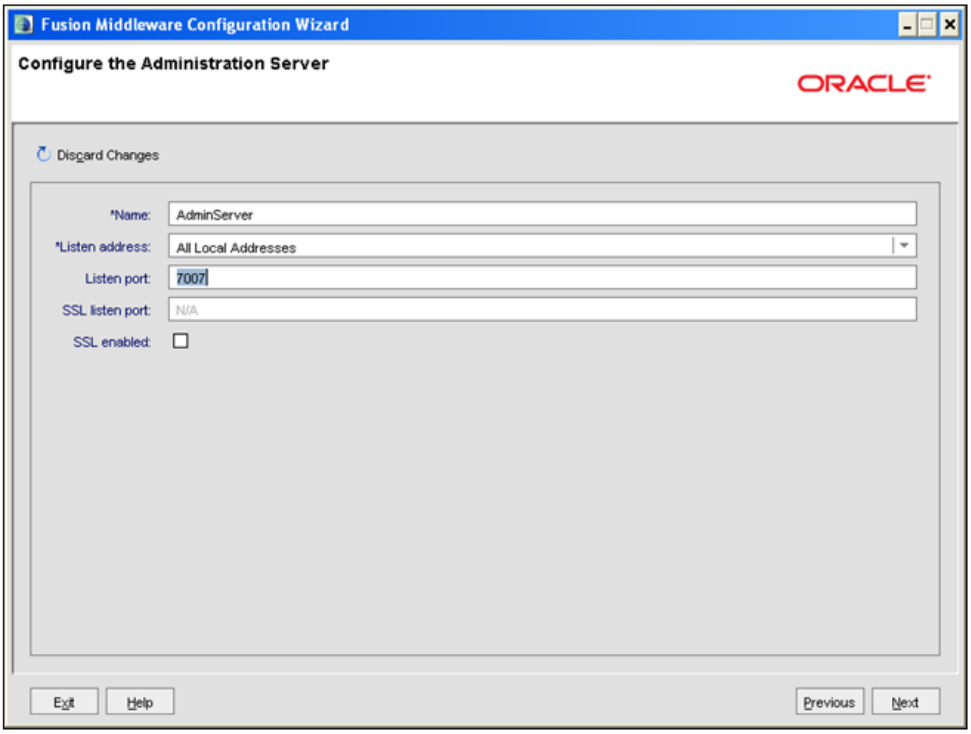


Figure 49Configure the Administration Server

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

    The *Configuration Summary* window is displayed.

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

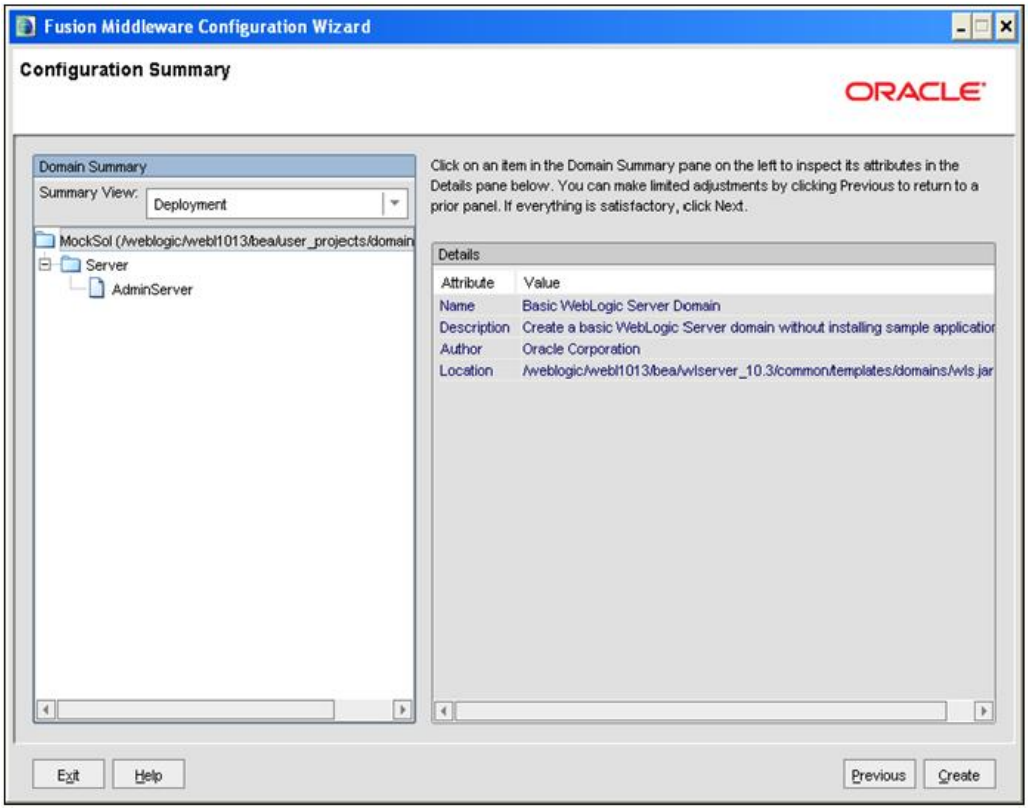


Figure 50: Configure Server Start Mode and JDK

11. Verify the configuration details of the WebLogic domain and click **Create**.
12. The *Creating Domain* window is displayed with the status indication of the domain creation process.

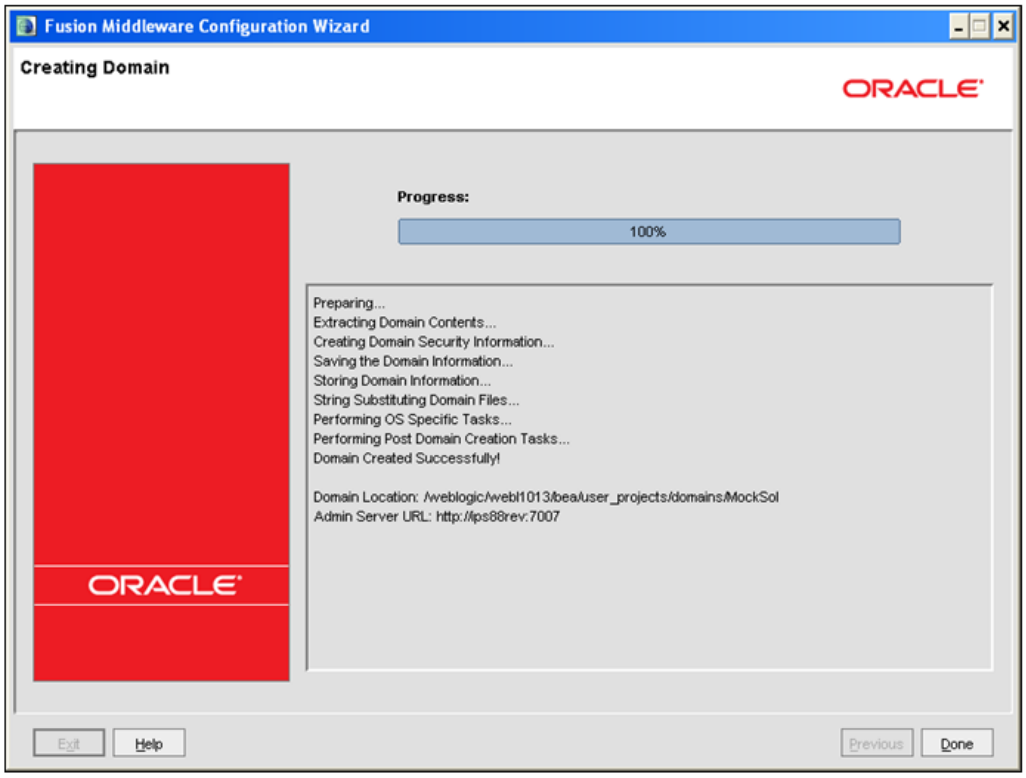


Figure 51: Configure Server Start Mode and JDK

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

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

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

6.2.2.2 Delete Domain in WebLogic

1. Navigate to the following directory:
2. `<WebLogic Installation directory>/user_projects/domains/<domain name>/bin`
3. Execute **stopWebLogic.sh** to stop the Weblogic domain.
4. Delete the Weblogic domain.

6.2.2.3 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.
3. 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"
```

6.2.3 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

6.2.3.1 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.

6.2.3.2 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
```

6.2.3.3 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. The following steps guide you through the configuration process:

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.

6.2.3.4 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 to http://tomcat.apache.org/.

6.2.3.5 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`.
4. 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
```

6.2.3.6 Uninstalling WAR Files in Tomcat

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

6.2.3.7 Configuration for Axis API

This step is optional and required only if the web application server used in Apache Tomcat. If you use any other web application server, skip and proceed to next step.

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

7 Appendix B - Configuring Resource Reference in Web Application Servers

This section covers the following topics:

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

7.1 Configure Resource Reference in WebSphere Application Server

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

This section includes the following topics:

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

7.1.1 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.

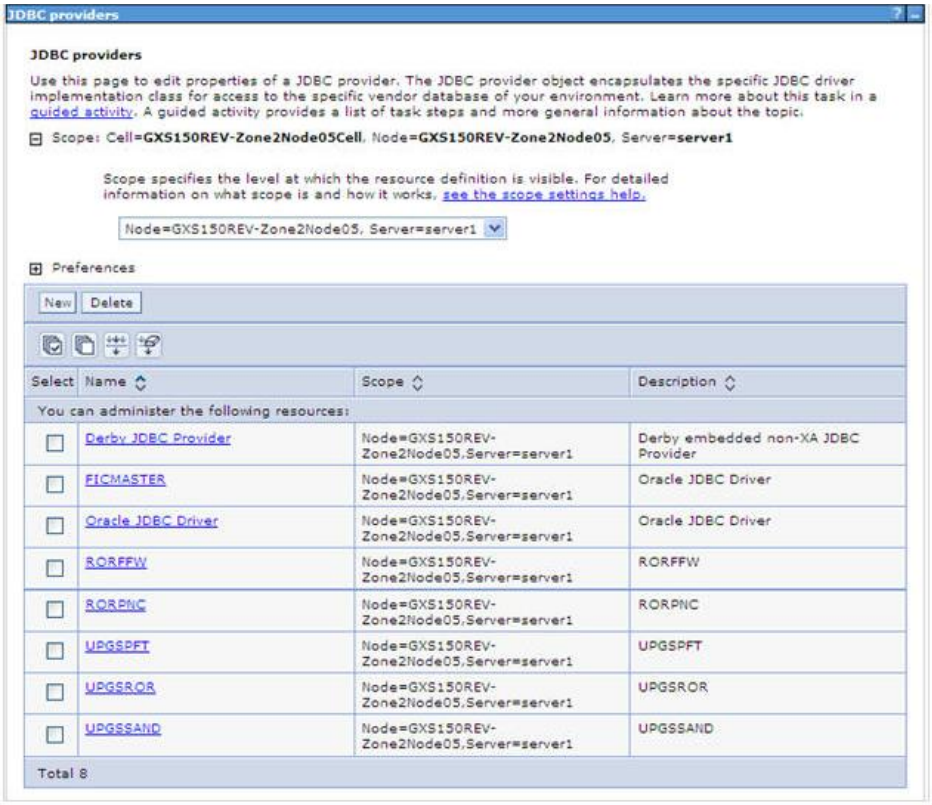


Figure 52: JDBC Providers

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.

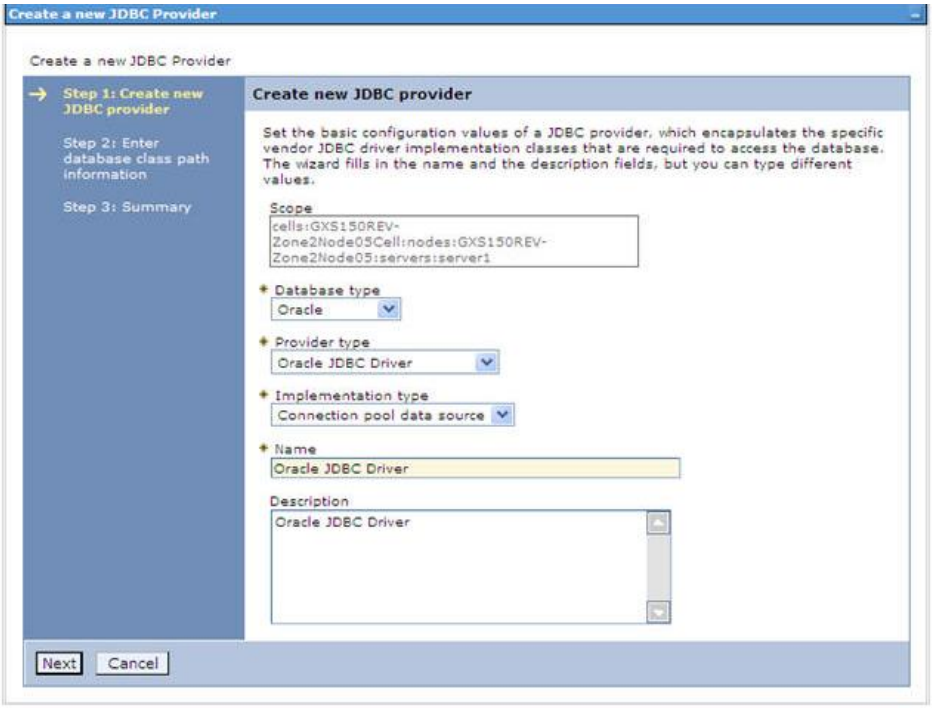


Figure 53: Create a new JDBC Provider

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.**

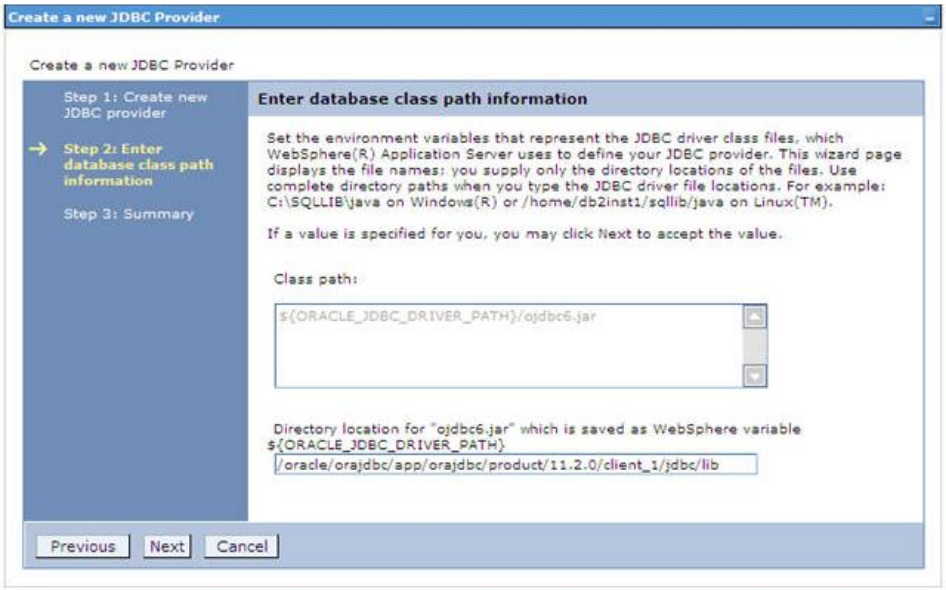


Figure 54: Enter database class path information

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 P for identifying the correct ojdbc<version>.jar version to be copied.

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

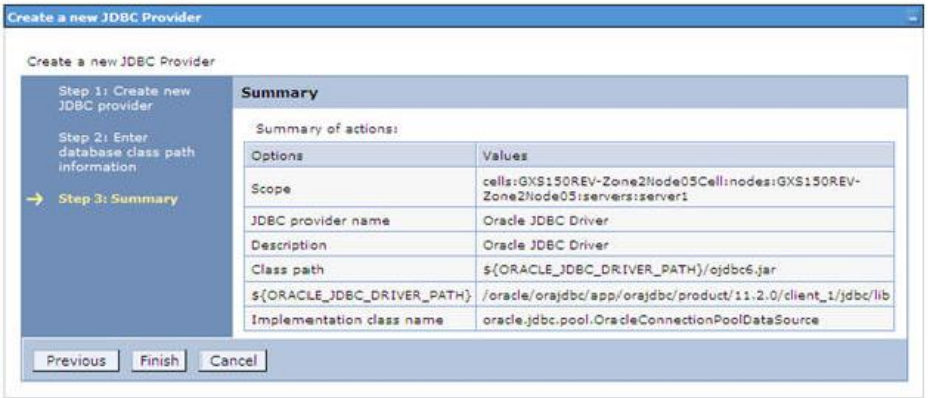


Figure 55: Summary

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

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

7.1.2 Create Data Source

These steps 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.

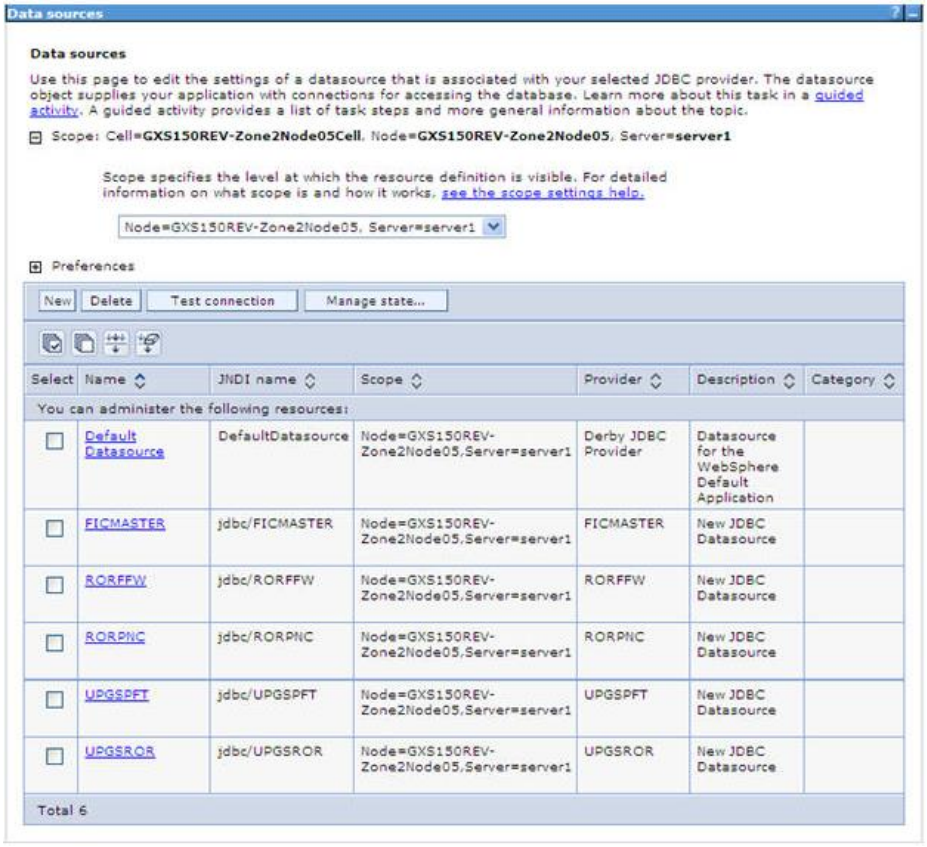


Figure 56: Data Sources

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.

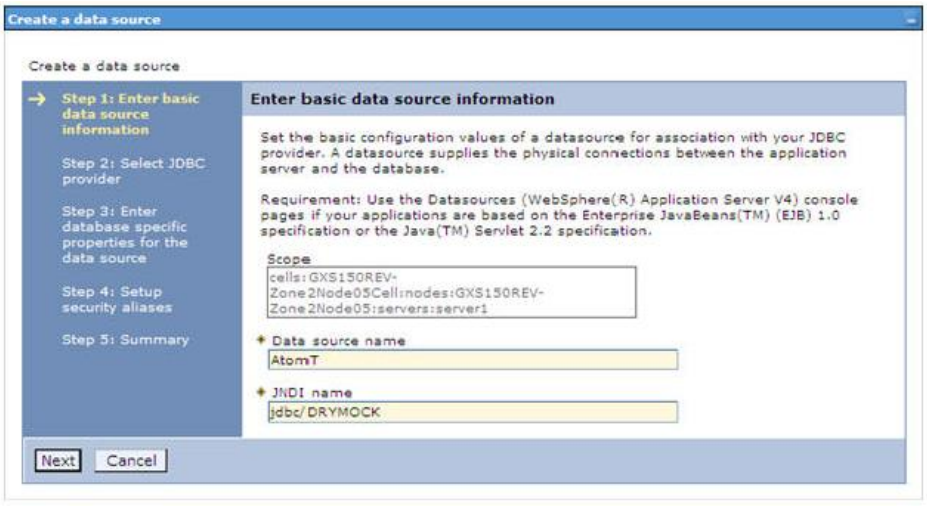


Figure 57: Create a data source

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.

Figure 58: 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**.

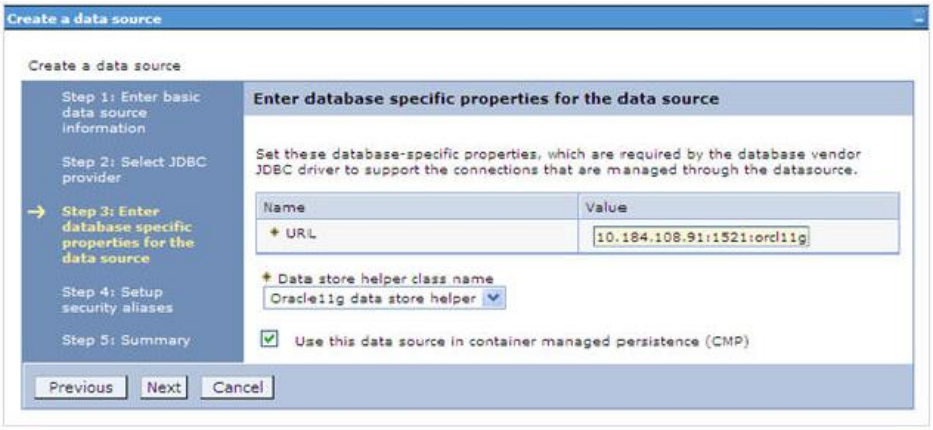


Figure 59: Enter database specific properties

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**.

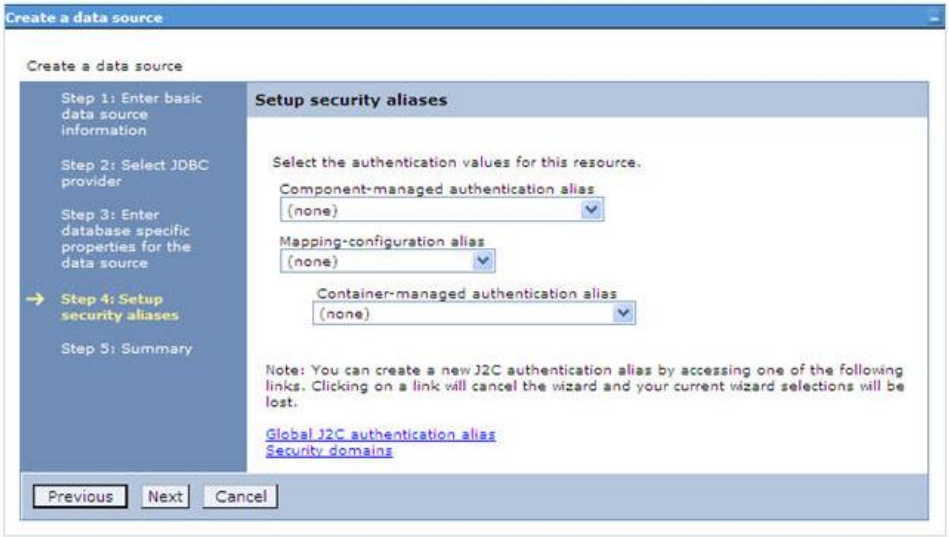


Figure 60: Setup security aliases

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**.

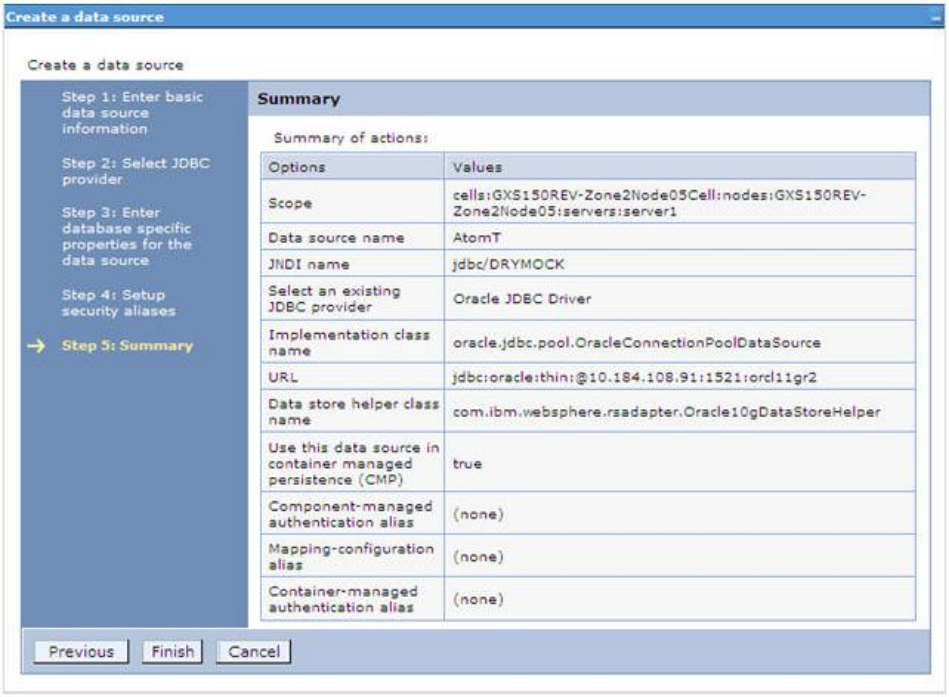


Figure 61: Summary

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.

7.1.3 J2C Authentication Details

These 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.**

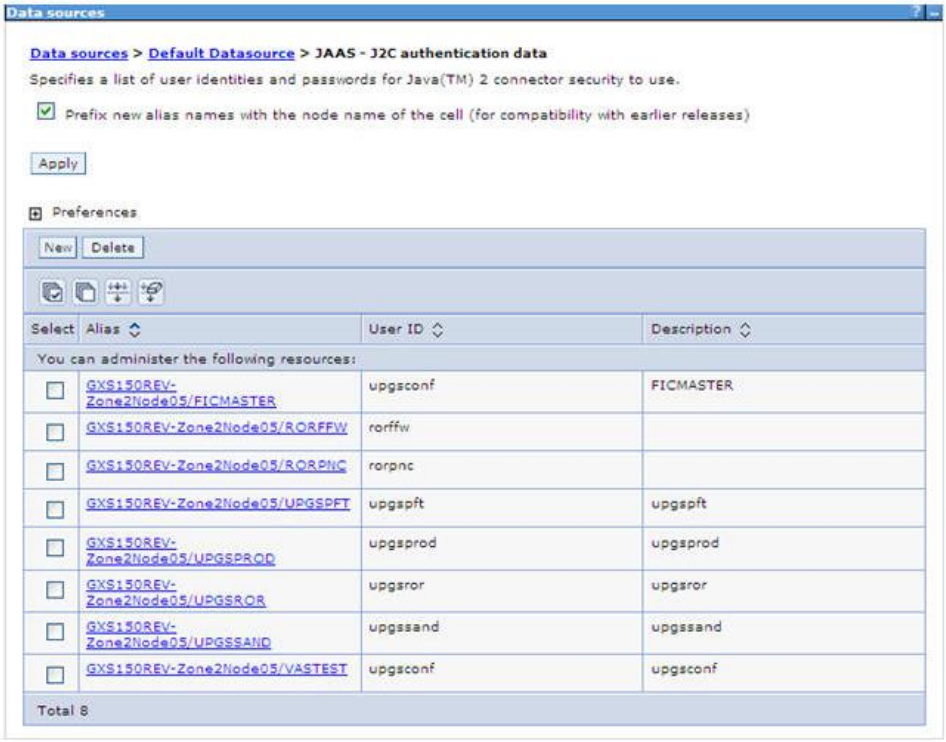


Figure 62: JAAS- J2C authentication data

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

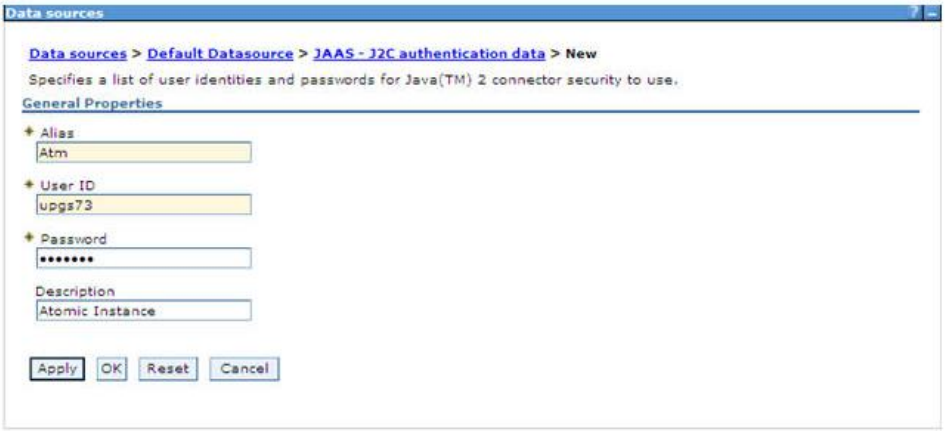


Figure 63: JAAS- J2C authentication data- New

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.

7.1.4 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`.

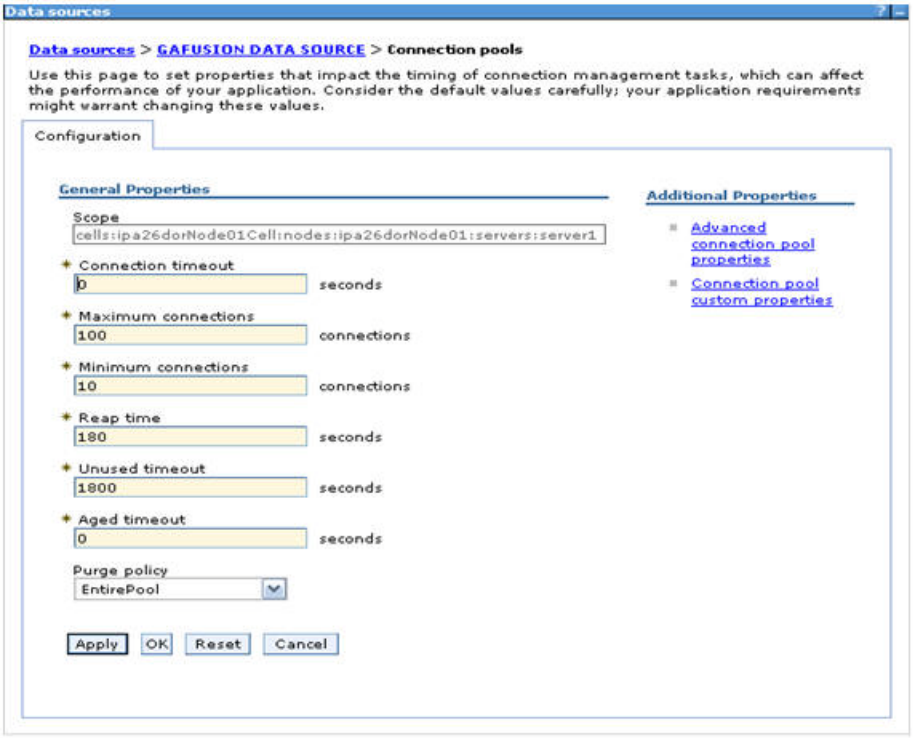


Figure 64: Connection Pools

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.

7.2 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.

7.2.1 Create Data Source

These steps 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**.

Figure 65: Welcome

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

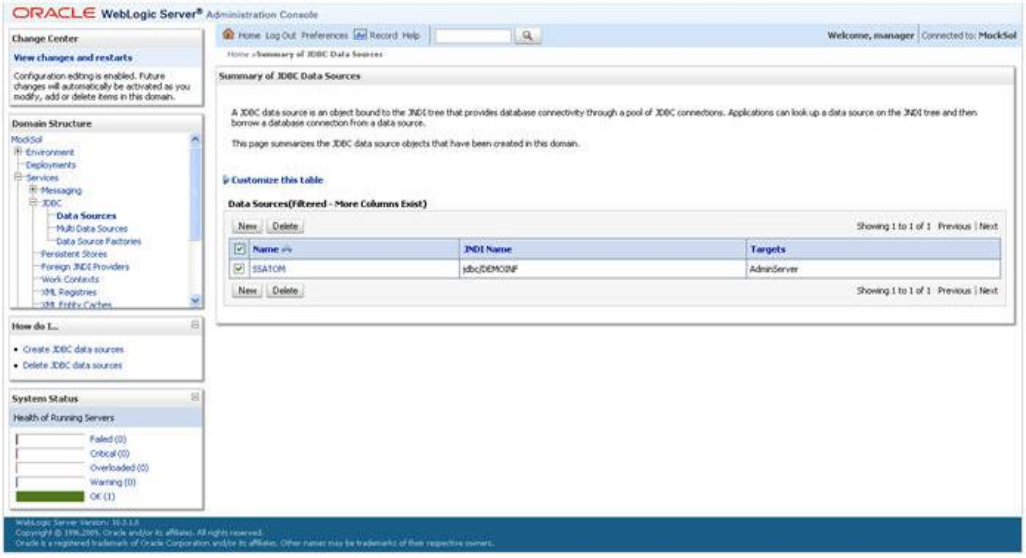


Figure 66: Summary of JDBC Data Sources

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.

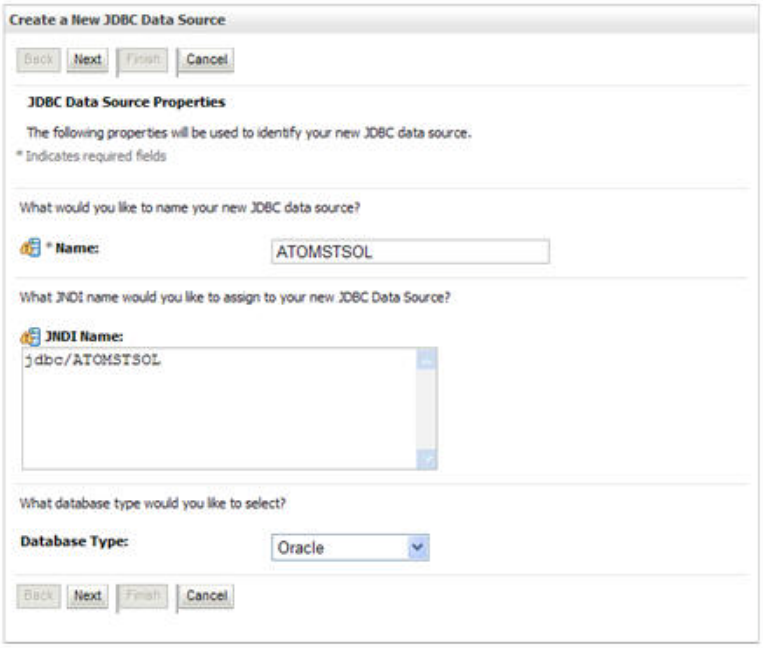


Figure 67: Create a New JDBC Data Source

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.

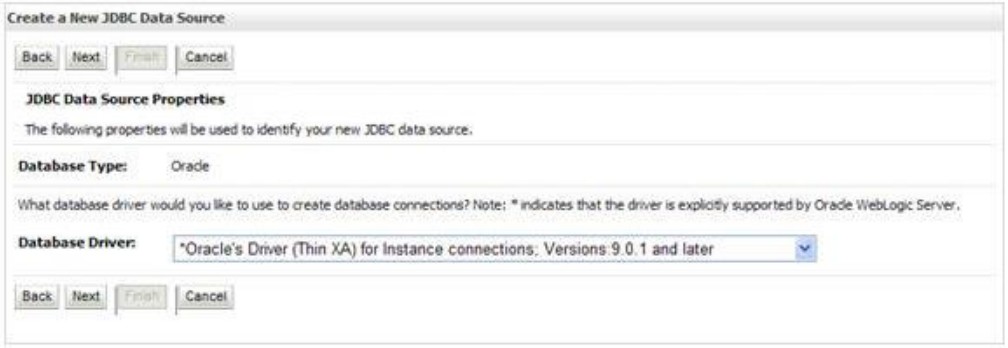


Figure 68: JDBC Data Source Properties

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

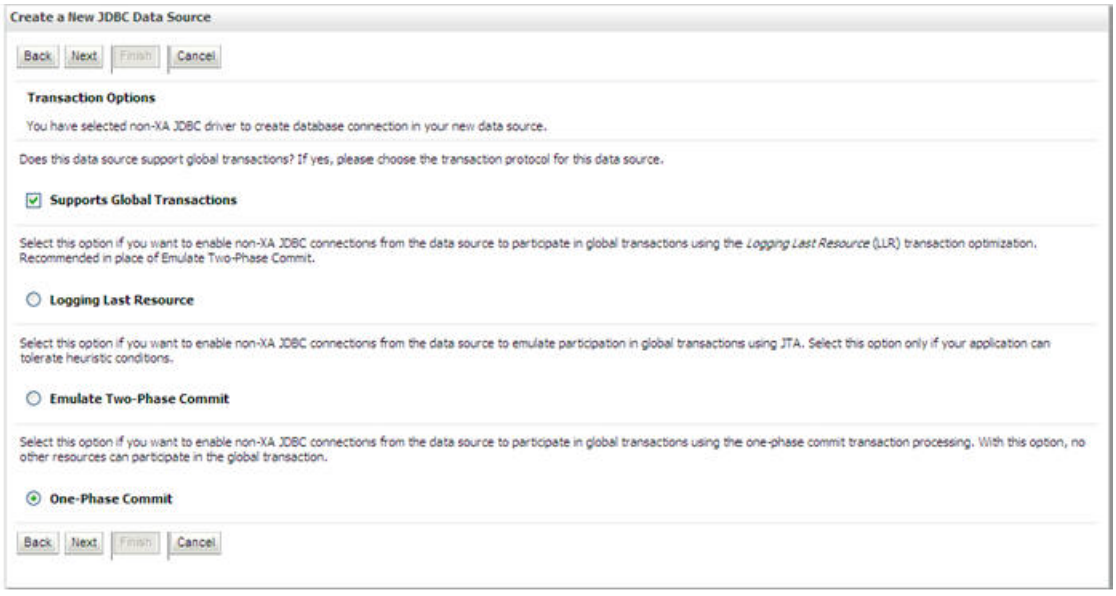


Figure 69: Transaction Options

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

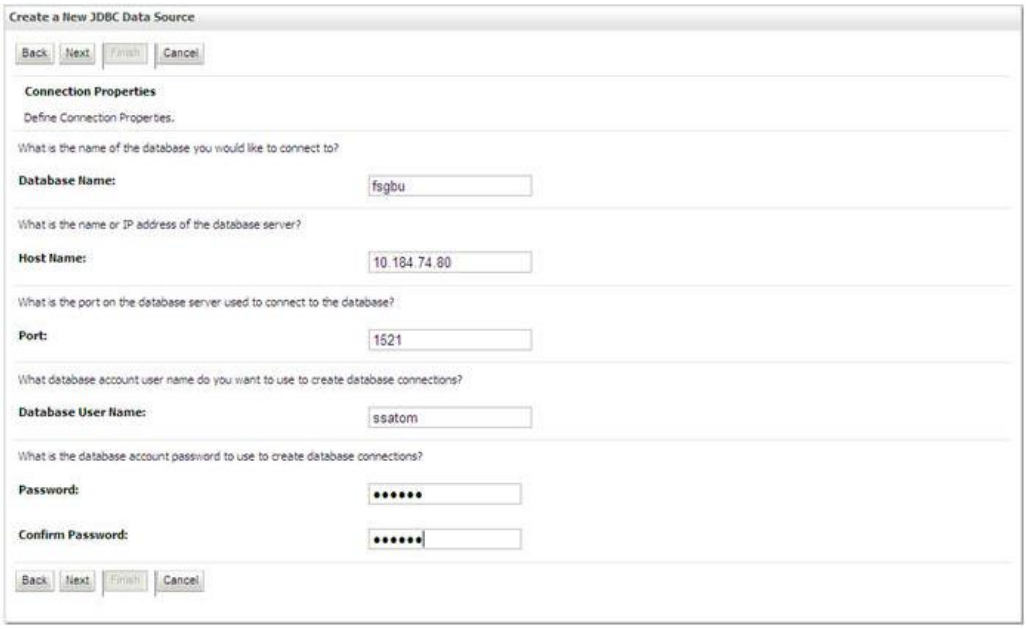


Figure 70: Connection Properties

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

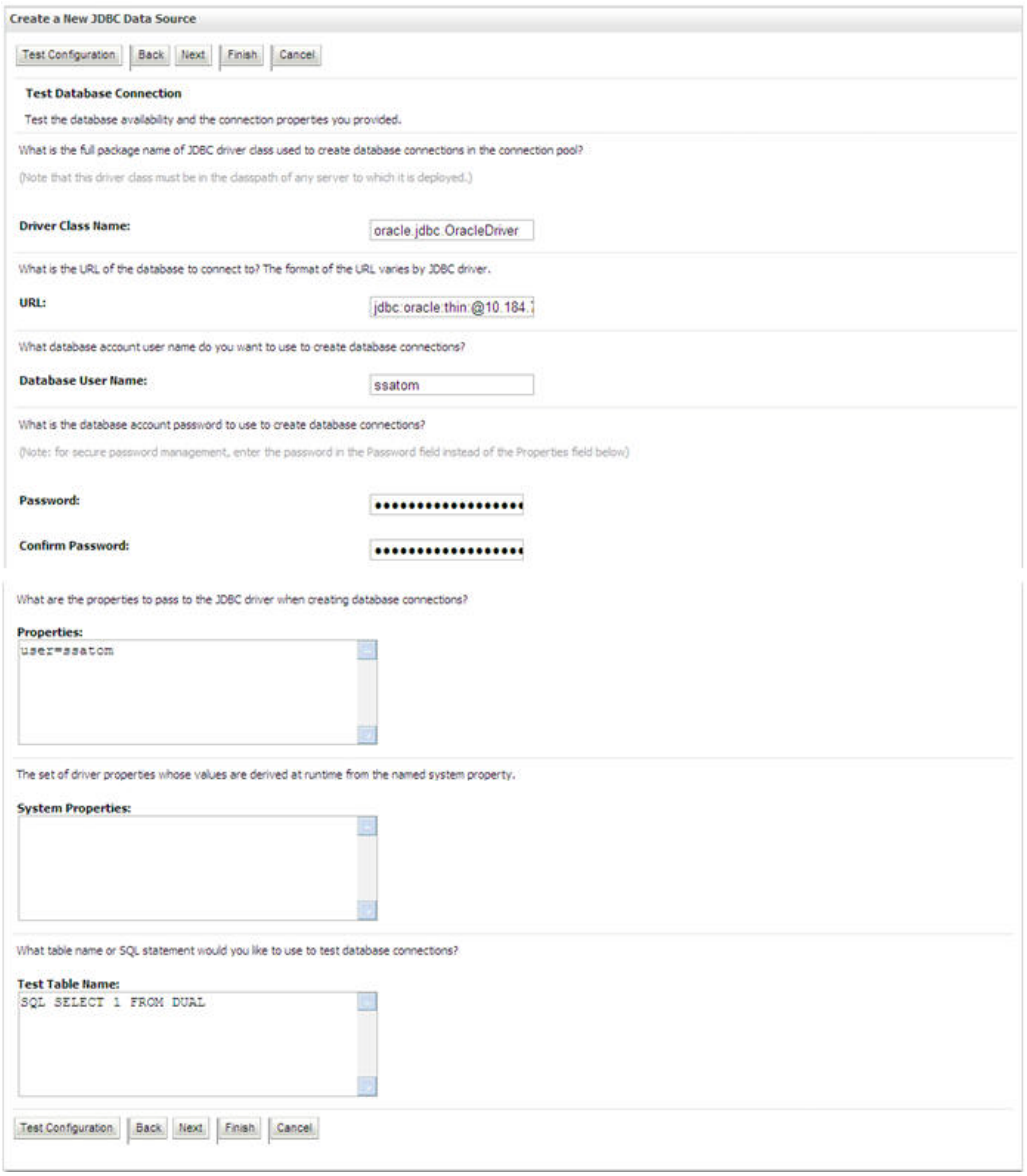


Figure 71: Test Database Connection

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

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

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

NOTE: "User ID" is the Oracle user ID that is created for the respective "Information Domain".

"User ID" to be specified for data source with "FICMASTER" as "JNDI" name should be the Oracle user ID created for the CONFIG schema.

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

Figure 72: Select Targets

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

7.2.2 Create GridLink Data Source

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

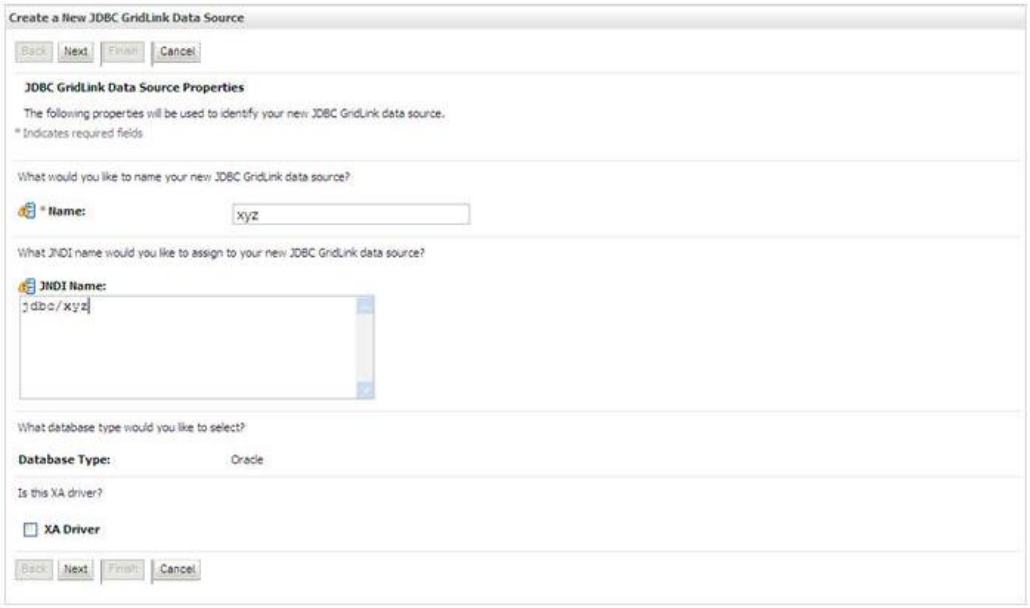


Figure 73: Create a New JDBC GridLinkData Source

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

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

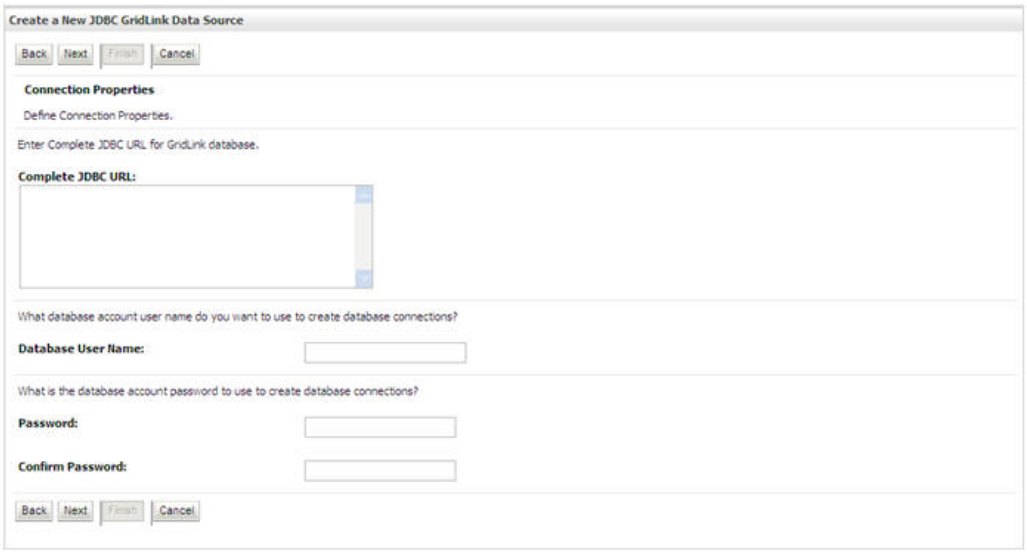


Figure 74: JDBC GridLinkData Source- Connection Properties

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

7.2.3 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.

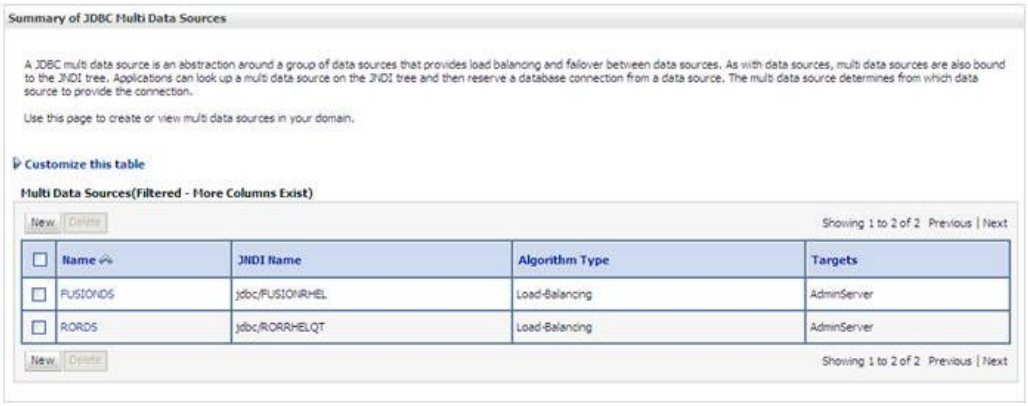


Figure 75: Summary of JDBC Multi Data Sources

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.

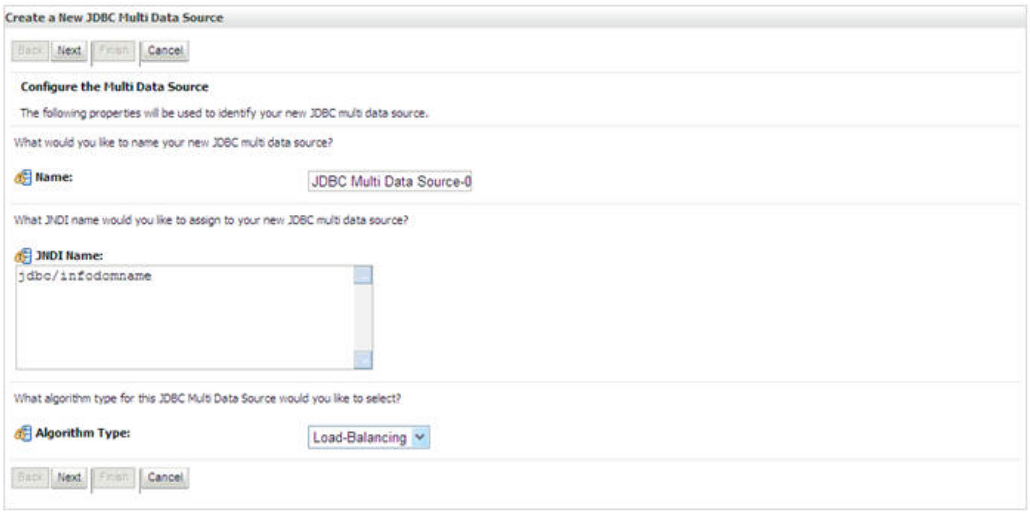


Figure 76: Configure the Multi Data Source

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.

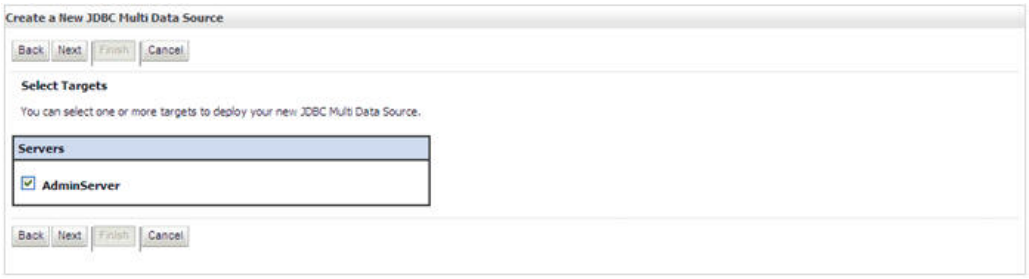


Figure 77: Select Targets

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

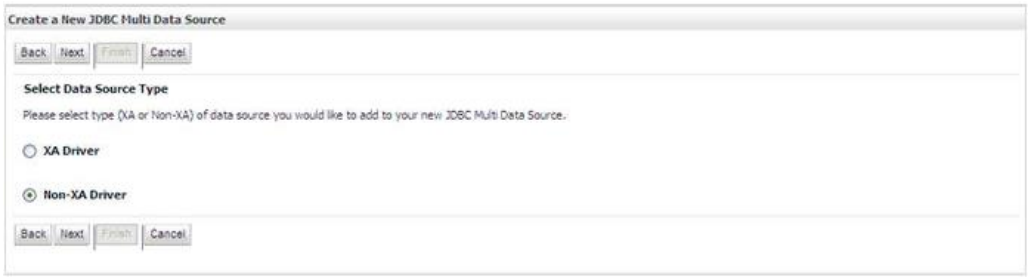


Figure 78: Select Data Source Type

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

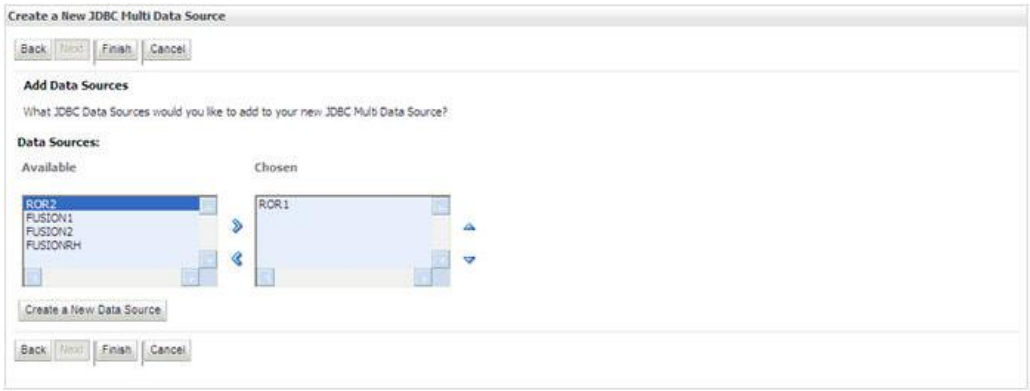


Figure 79: Add Data Sources

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.

7.2.4 Advanced Settings for Data Source

1. Click the new Data Source from the *Summary of JDBC Data Sources* window. The *Settings for <Data Source Name>* window is displayed.
2. Select the **Connection Pooling** tab given under Configuration.
3. Go to the **Advanced** option at the bottom of the page, and check the **Test Connection of Reserve** checkbox (Enables Weblogic Server to test a connection before giving it to a client).
4. To verify if the data source is valid, select "Data Source name". For example, FICMASTER.

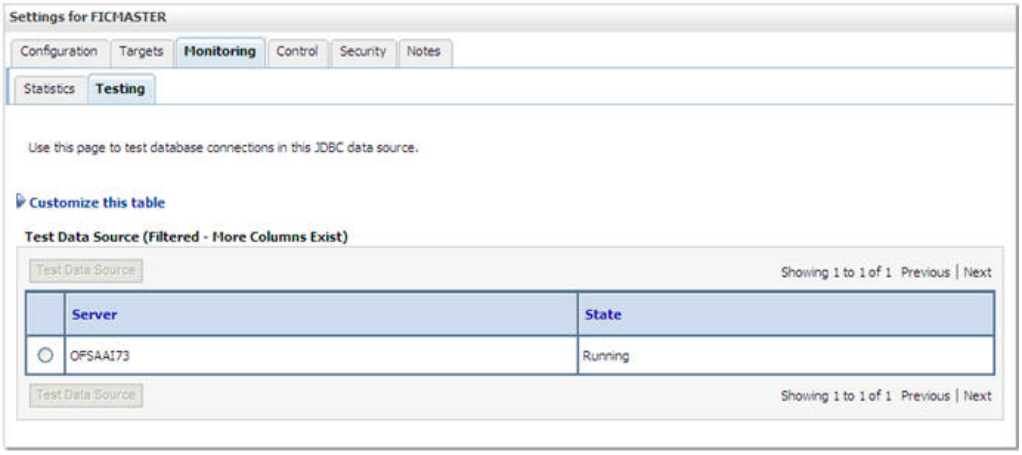


Figure 80: Settings for <Data Source Name>

5. Select the server and click **Test Data Source**.
6. A message is displayed indicating that the test was successful.
7. 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.

7.2.5 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**.

7.3 Configure Resource Reference in Tomcat Application Server

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`.

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

7.3.1 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 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`.

```
<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>"
    maxTotal="100"
    maxIdle="30"
    maxWaitMillis="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.

7.3.2 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/.`

   Refer Appendix P 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 following changes, which is required for connection pooling.

```
<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>"
maxTotal="100"
maxIdle="30"
maxWaitMillis="10000"/>
</Context>
```

Note the following:

- $APP_DEPLOYED_PATH$ 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 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`.

7.3.3 Class loader configuration for Apache Tomcat

Edit the `server.xml` available in $TOMCAT_HOME/conf/ folder .

Add tag <Loader delegate="true" /> within the <Context> tag, above the <Resource> tag. This is applicable only when the web application server is Apache Tomcat 8.

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

8 Appendix C - Creating and Deploying EAR/WAR File

This appendix includes the following topics:

8.1 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>
```

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 on Tomcat installation, `<contextname>.war` will be created.
ANT warning for `tools.jar` can be ignored while executing `./ant.sh`.

8.2 Deploying EAR/WAR File

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.

8.2.1 Deploying EAR/WAR Files for 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.

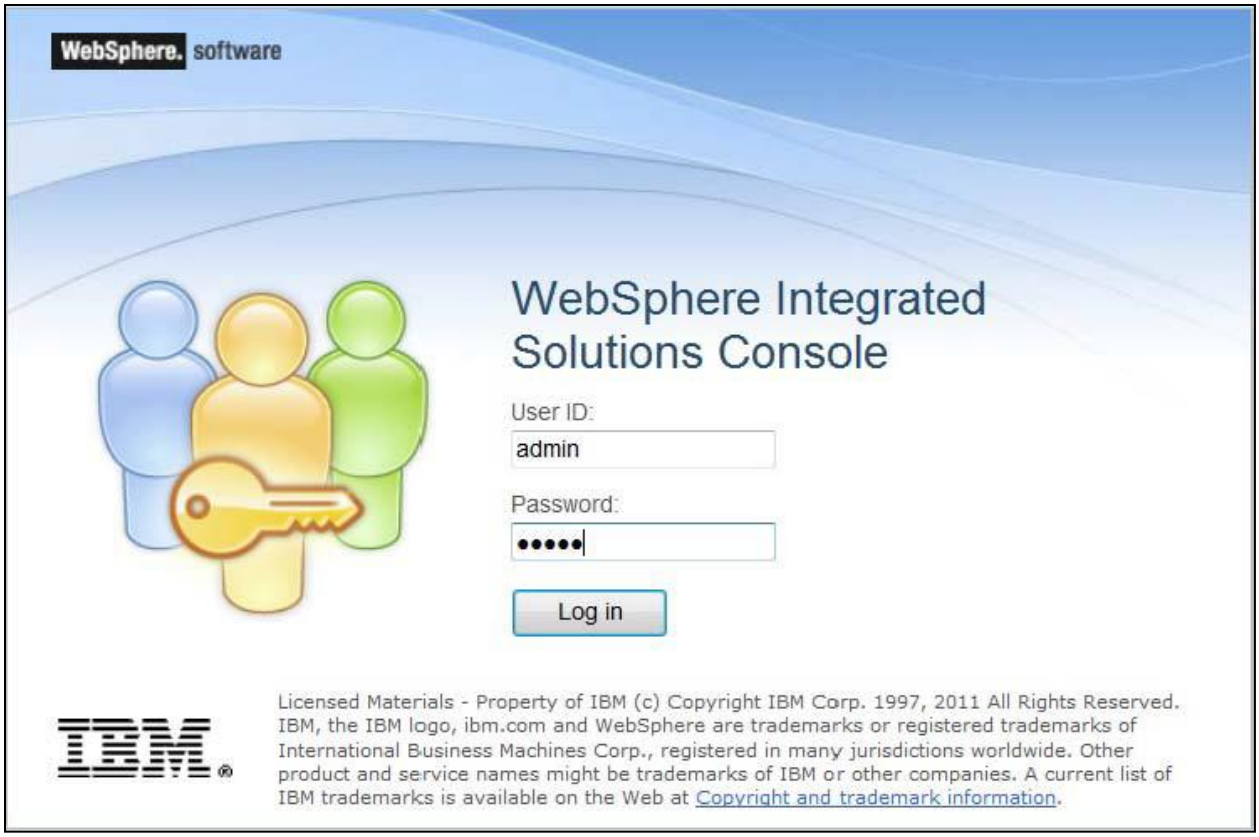


Figure 81: Login Window

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.

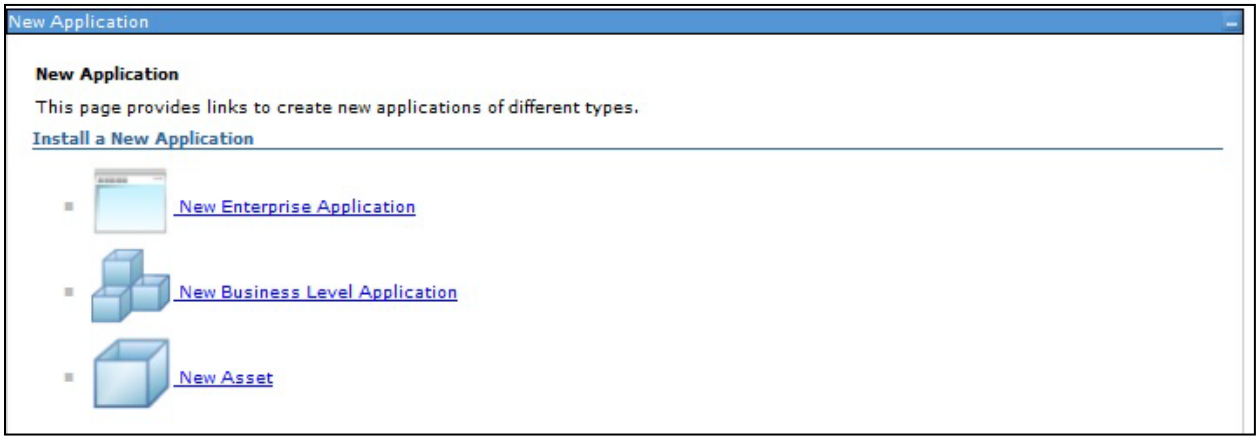


Figure 82: New Application

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

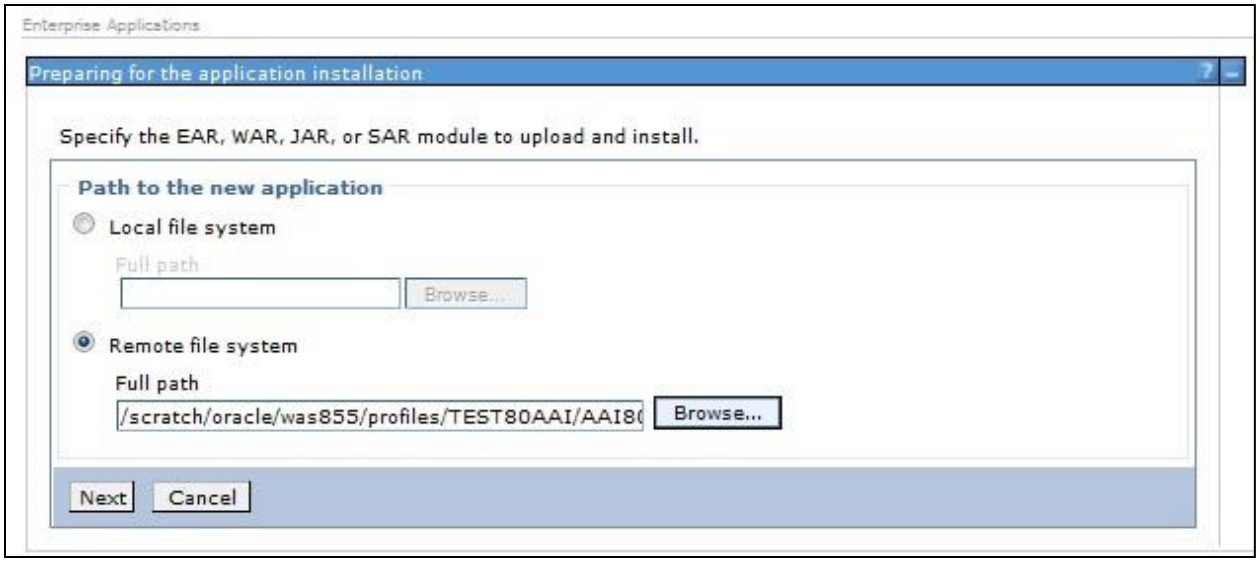


Figure 83: Preparing for the application installation

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

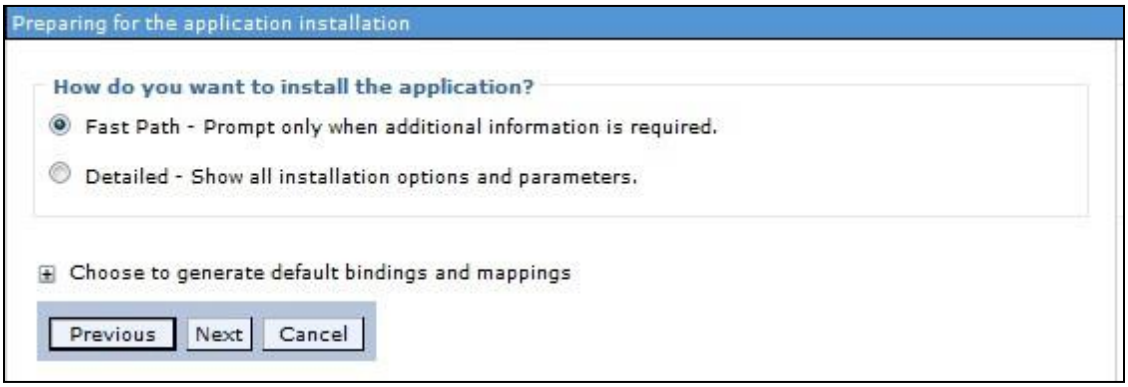


Figure 84: Installation Options

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

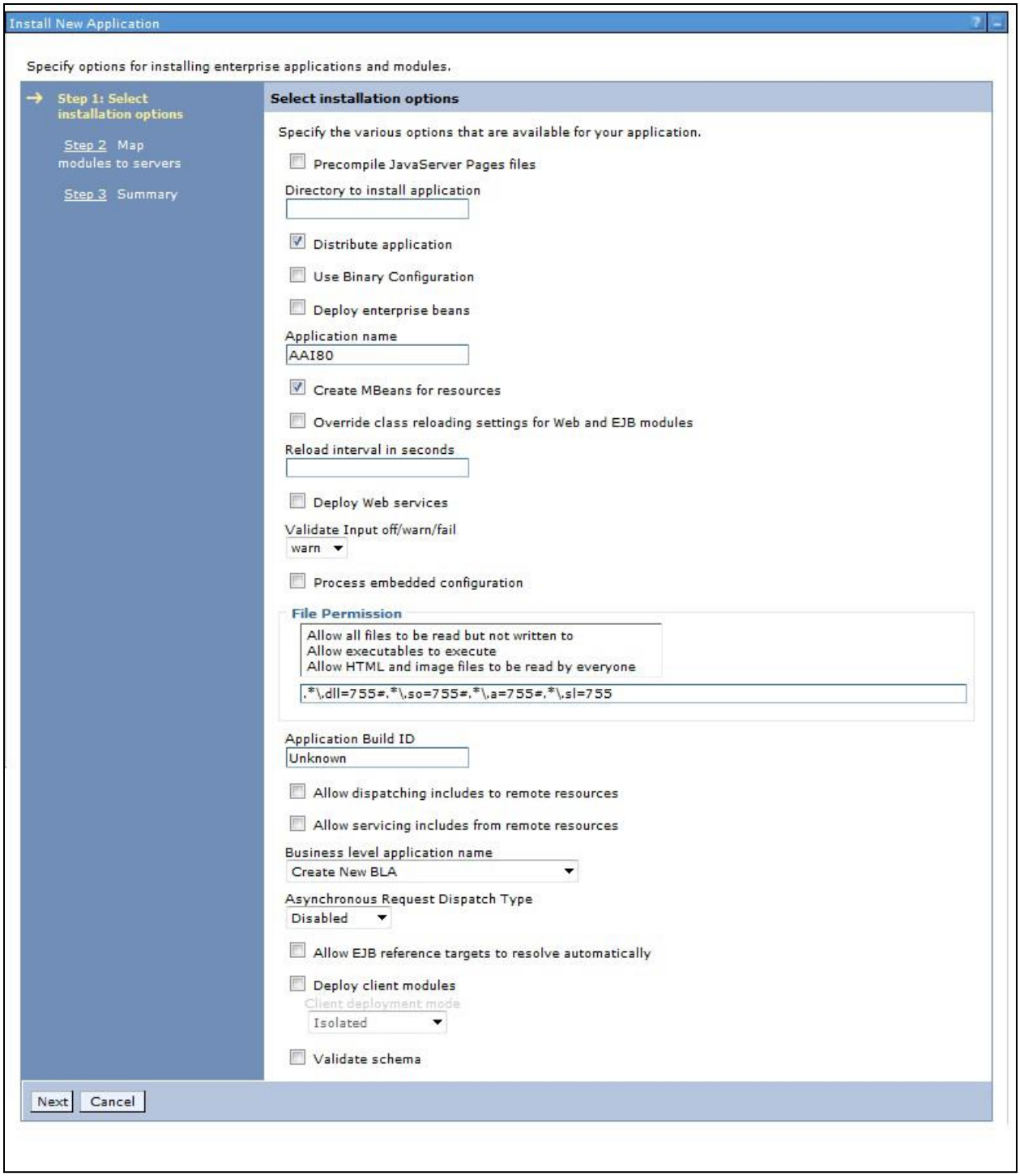


Figure 85: Install New Application

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

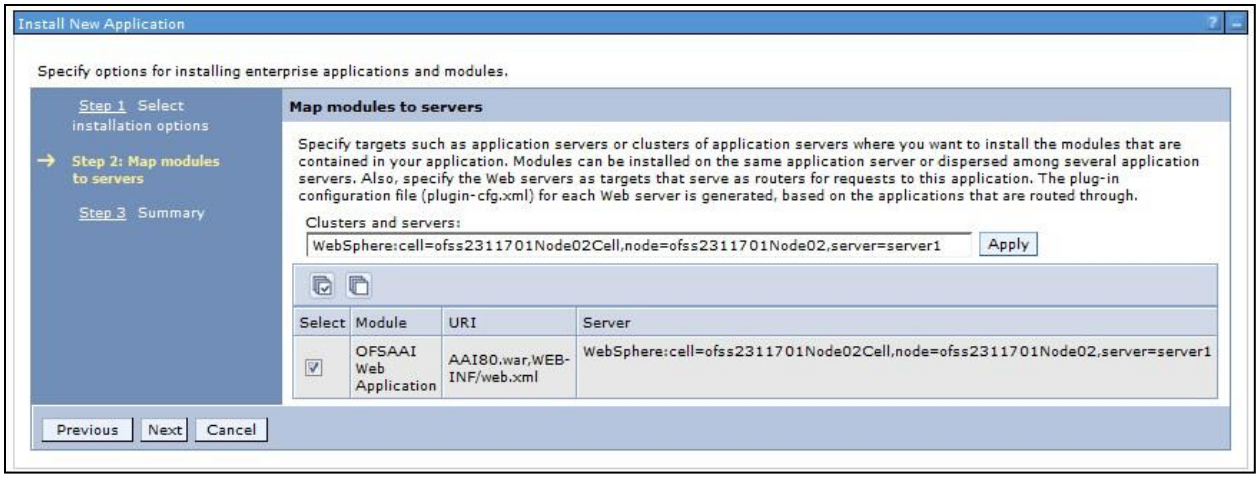


Figure 86: Map Modules to Servers

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

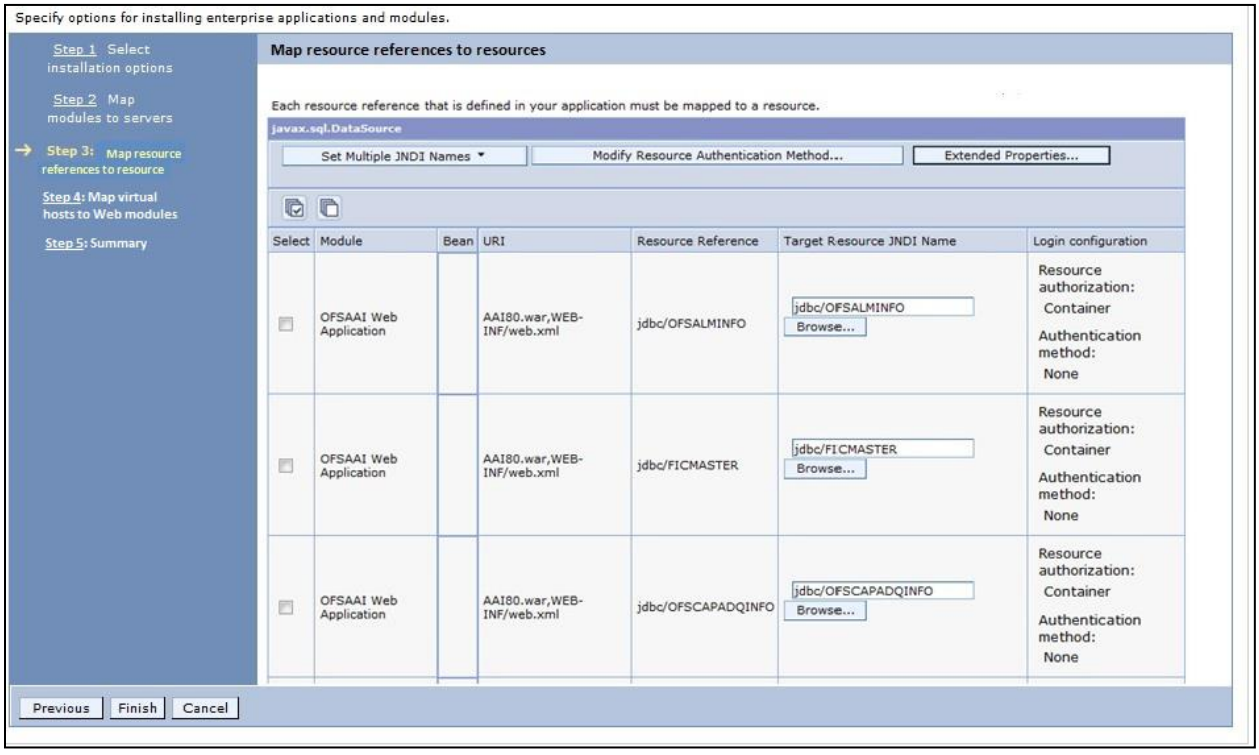


Figure 87: Map Resource References to Resources

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.

You can specify "config" for FICMASTER resource or "atomic" for atomic resource as the authentication method.

12. Select the **OFSAAI Web Application** check box and click **Next**. The *Map Virtual hosts for Web Modules* window is displayed.

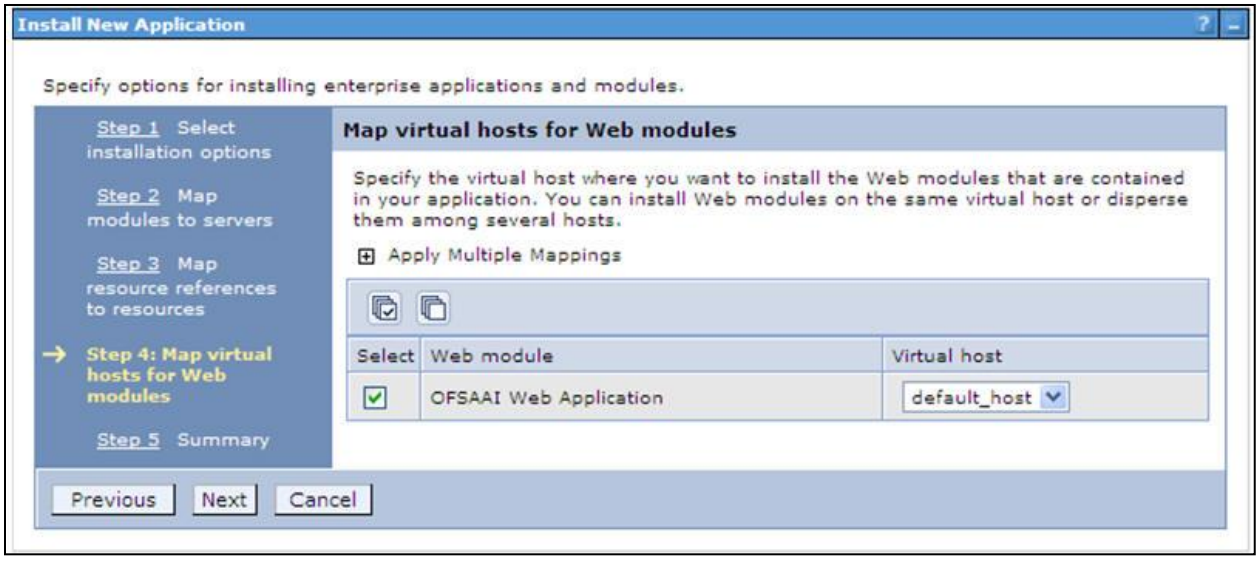


Figure 88: Map Virtual host for Web Modules

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

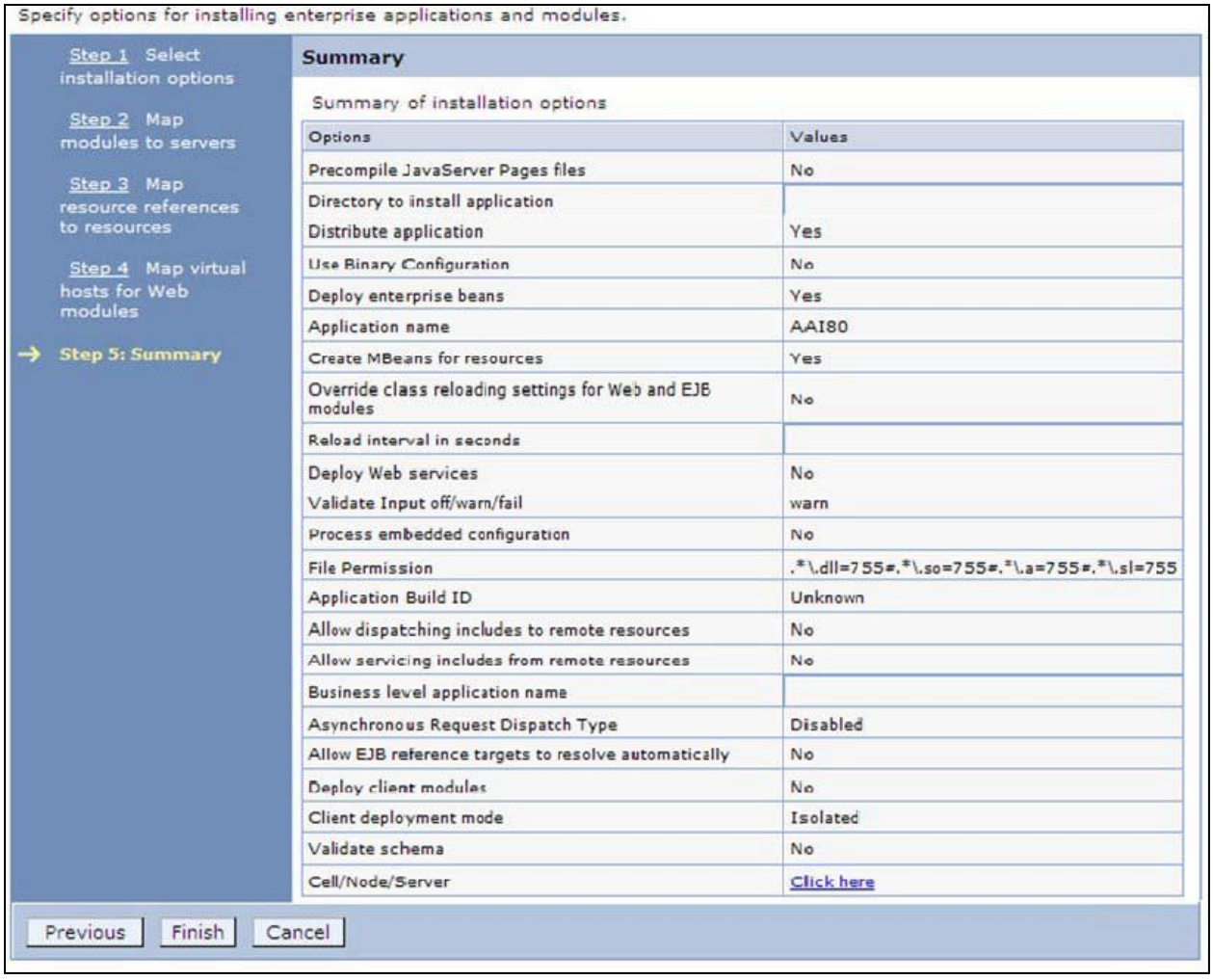


Figure 89: Summary

14. Click **Finish** and deploy the Infrastructure Application on WebSphere.
15. On successful installation, a message is displayed. 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.

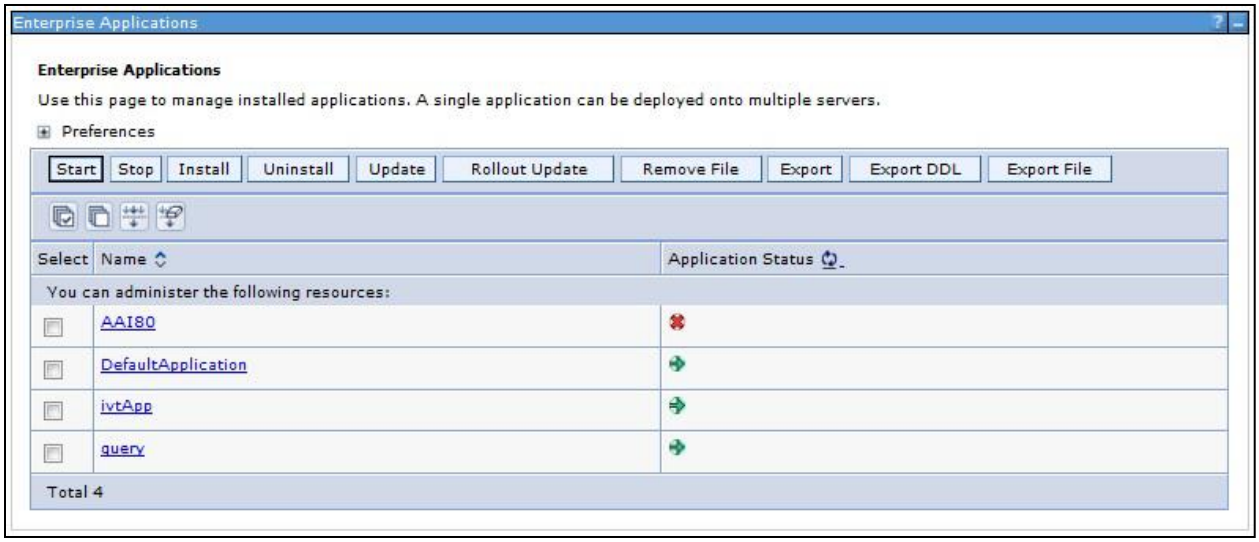


Figure 90: Enterprise Applications

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 File

To explode EAR, follow these steps:

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

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

5. Delete the `<context>.ear` and `<context>.war` files (recently created) `<WEBLOGIC_INSTALL_DIR>/Bea/user_projects/domains/<DOMAIN_NAME>/applications/<context_name>.ear`.
6. Create a directory `<context_name>.war` under `<WEBLOGIC_INSTALL_DIR>/Bea/user_projects/domains/<DOMAIN_NAME>/applications/<context_name>.ear`.

7. Copy <$FIC_WEB_HOME/<context_name>.war file to <WEBLOGIC_INSTALL_DIR>/Bea/user_projects/domains/<DOMAIN_NAME>/applications/<context_name>.ear/<context_name>.war.

8. Explode the <context_name>.war file by executing the following command to get the directory structure:

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

8.2.2 Deploying EAR/WAR File for 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.

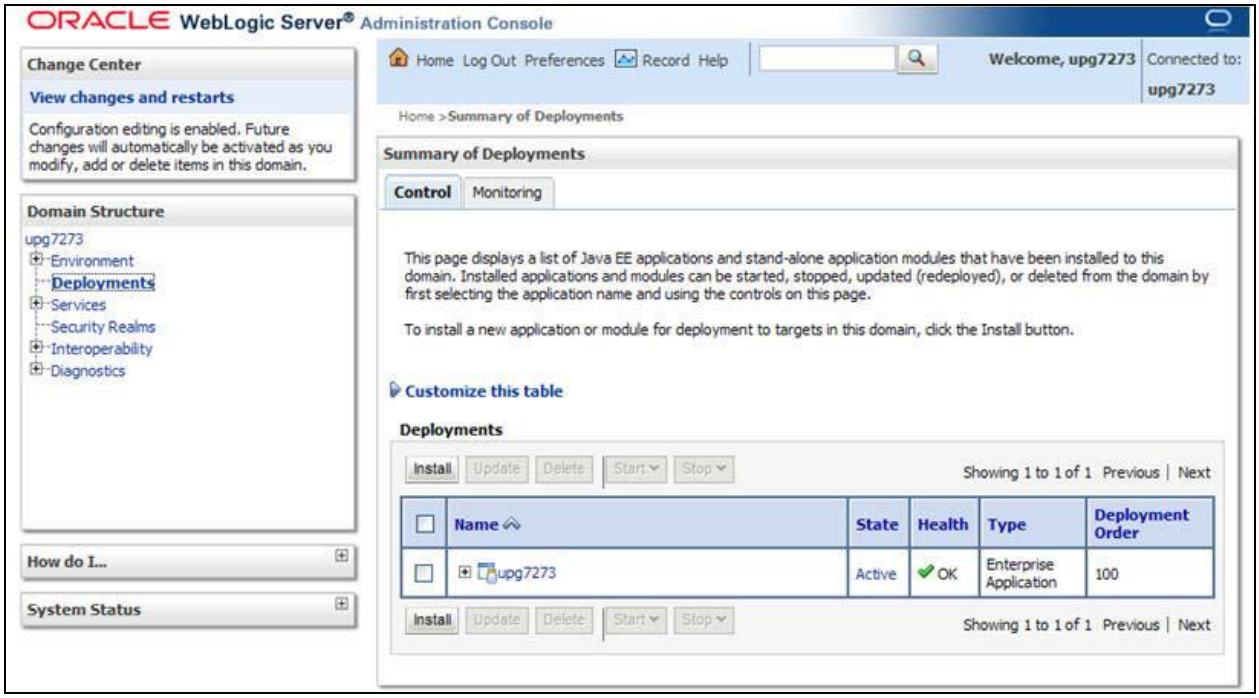


Figure 91: Summary of Deployments

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:

1. Open the Install Application Assistant.

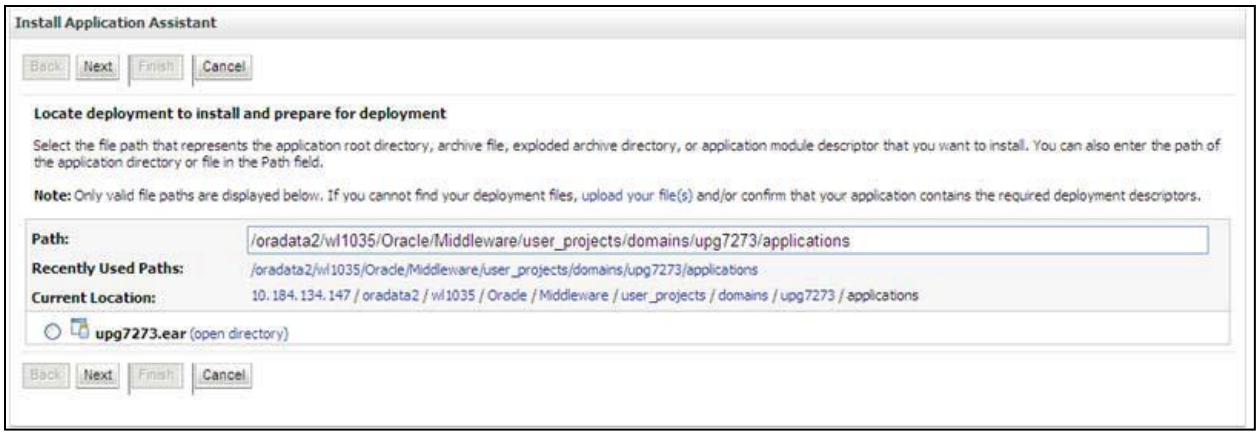


Figure 92: Install Application Assistant

2. Click **Next**.

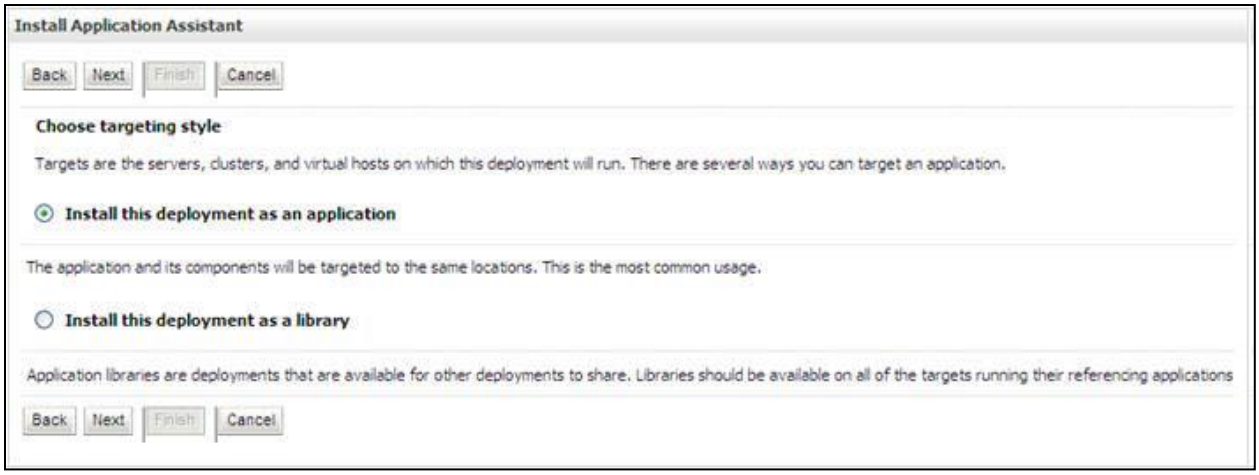


Figure 93: Install Application Assistant

3. From the *Choose targeting style* section, select the **Install this deployment as an application** option and click **Next**. The *Optional Settings* window is displayed.

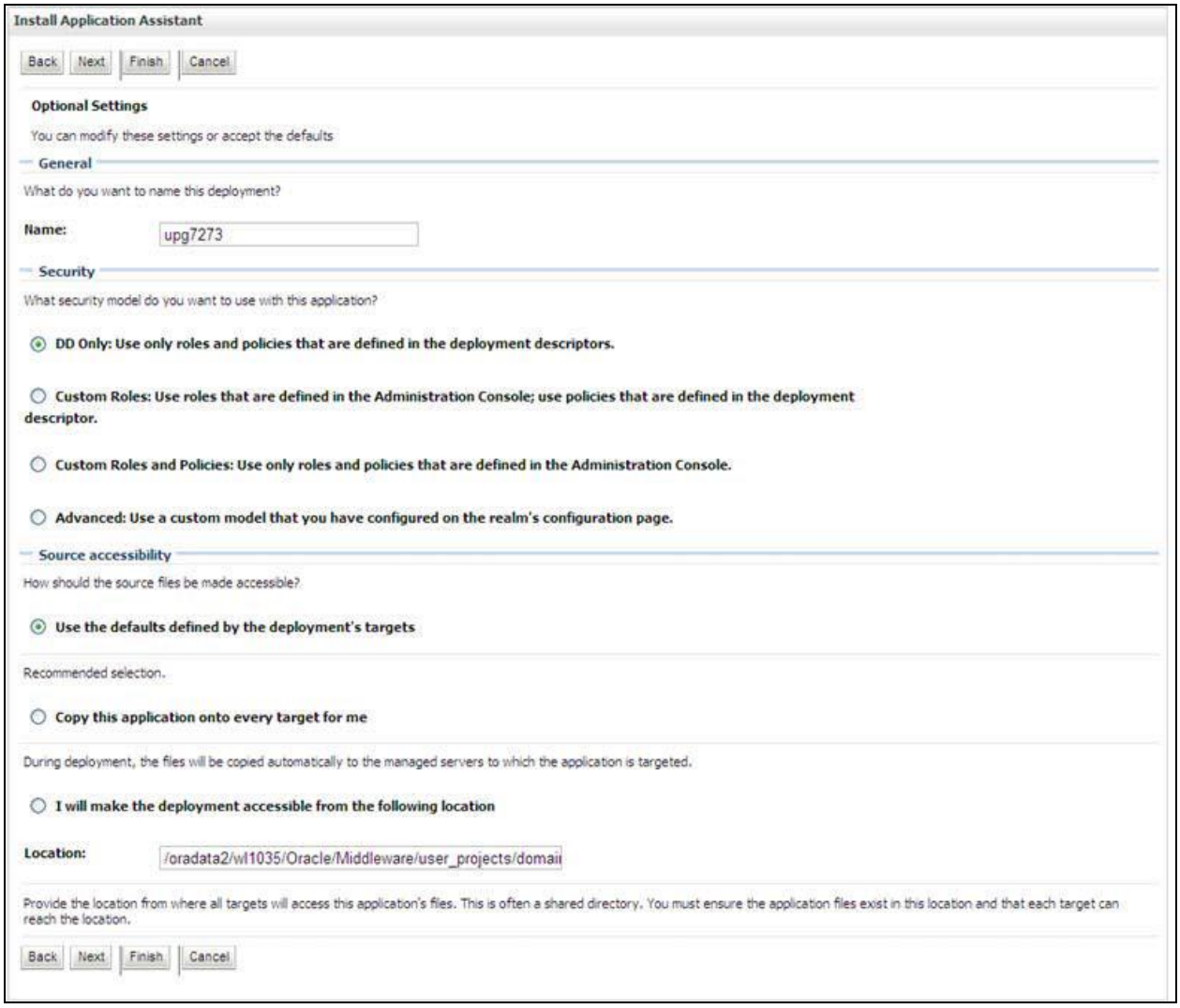


Figure 94: Optional Settings

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

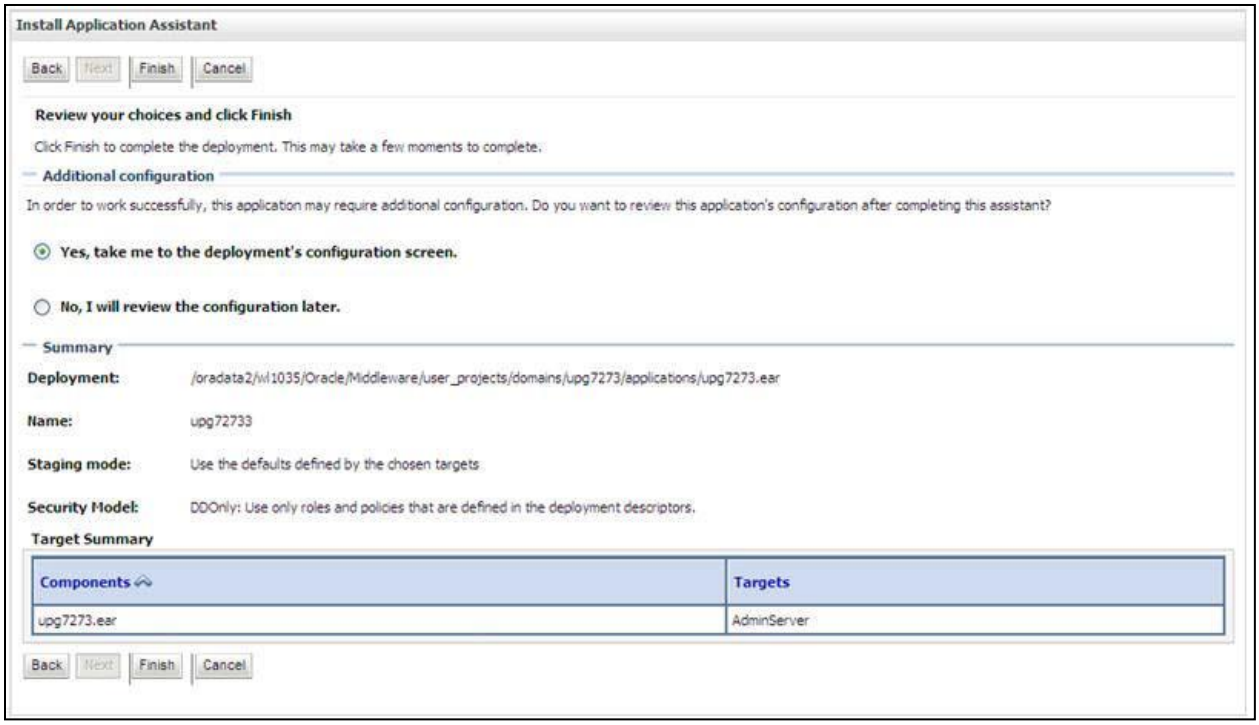


Figure 95: Deployment Summary

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

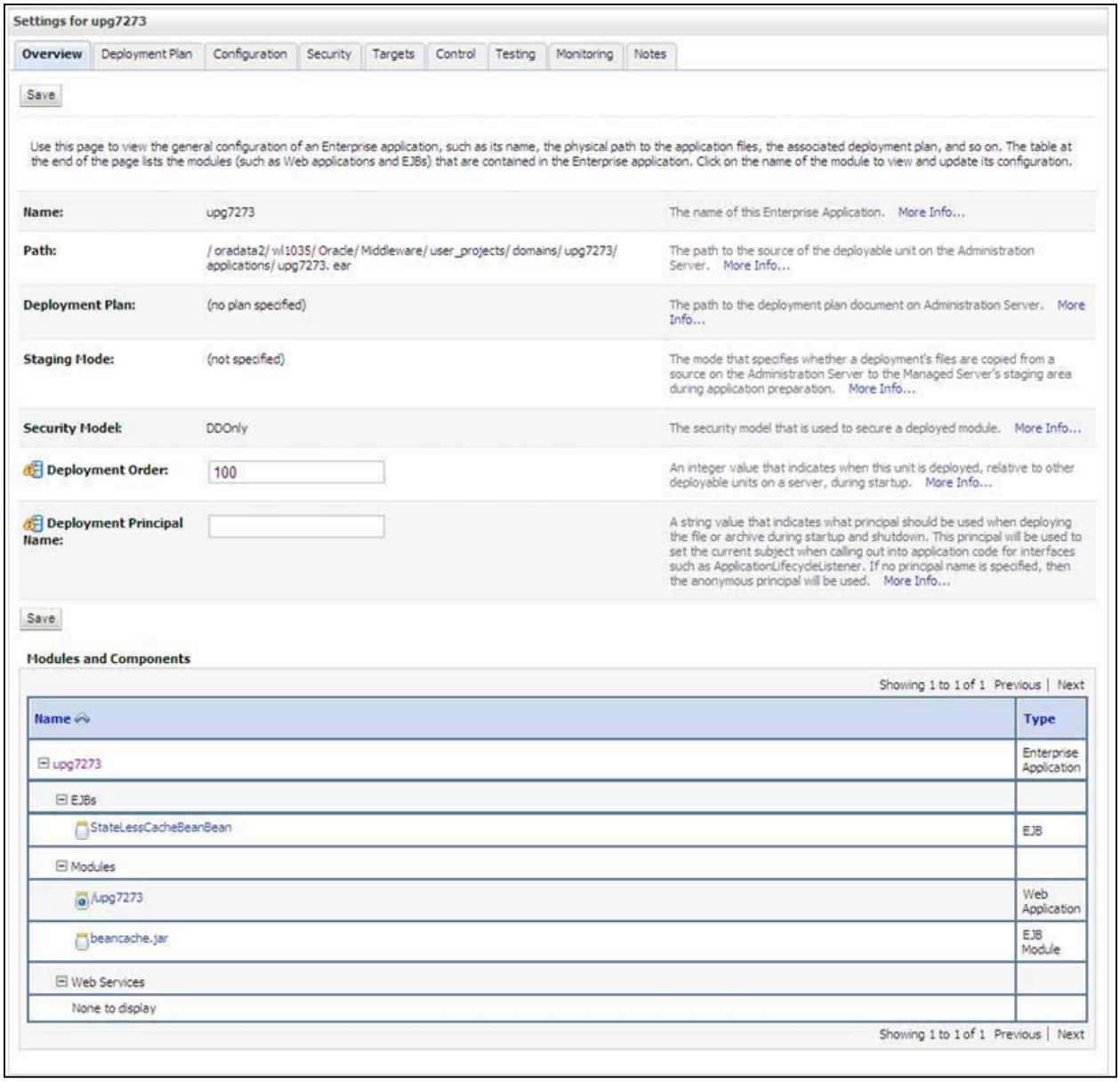


Figure 96: Settings for <Deployment Name>

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

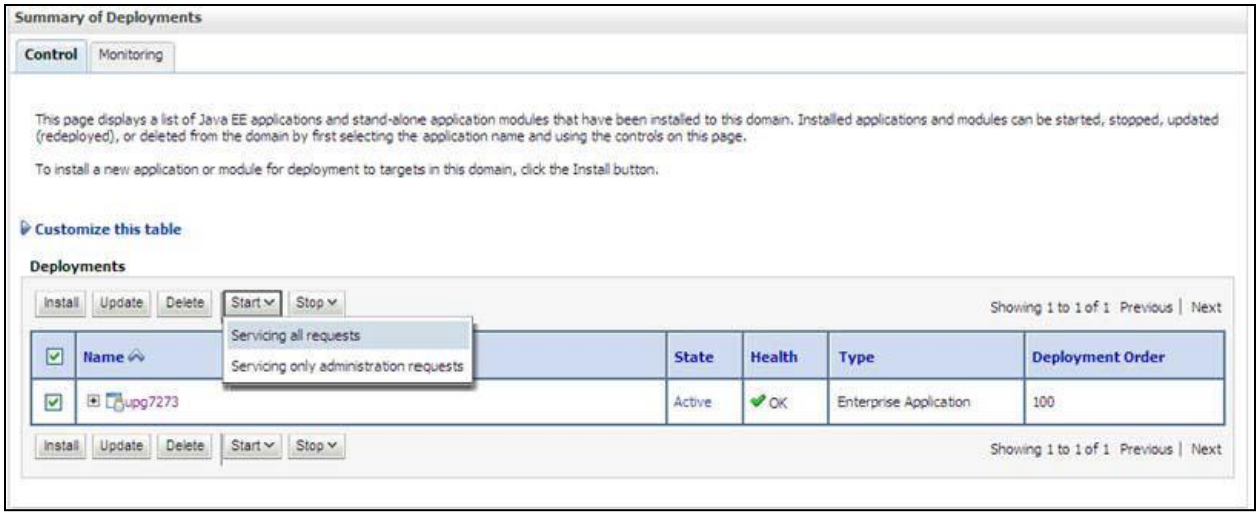


Figure 97: Summary of Deployments

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

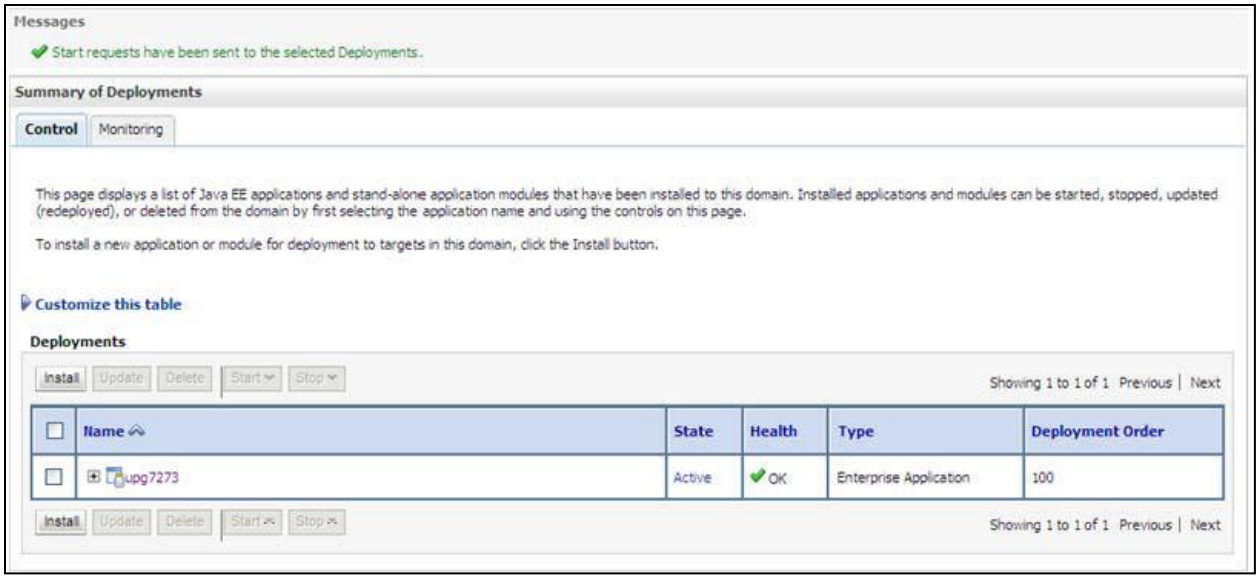


Figure 98: Summary of Deployments

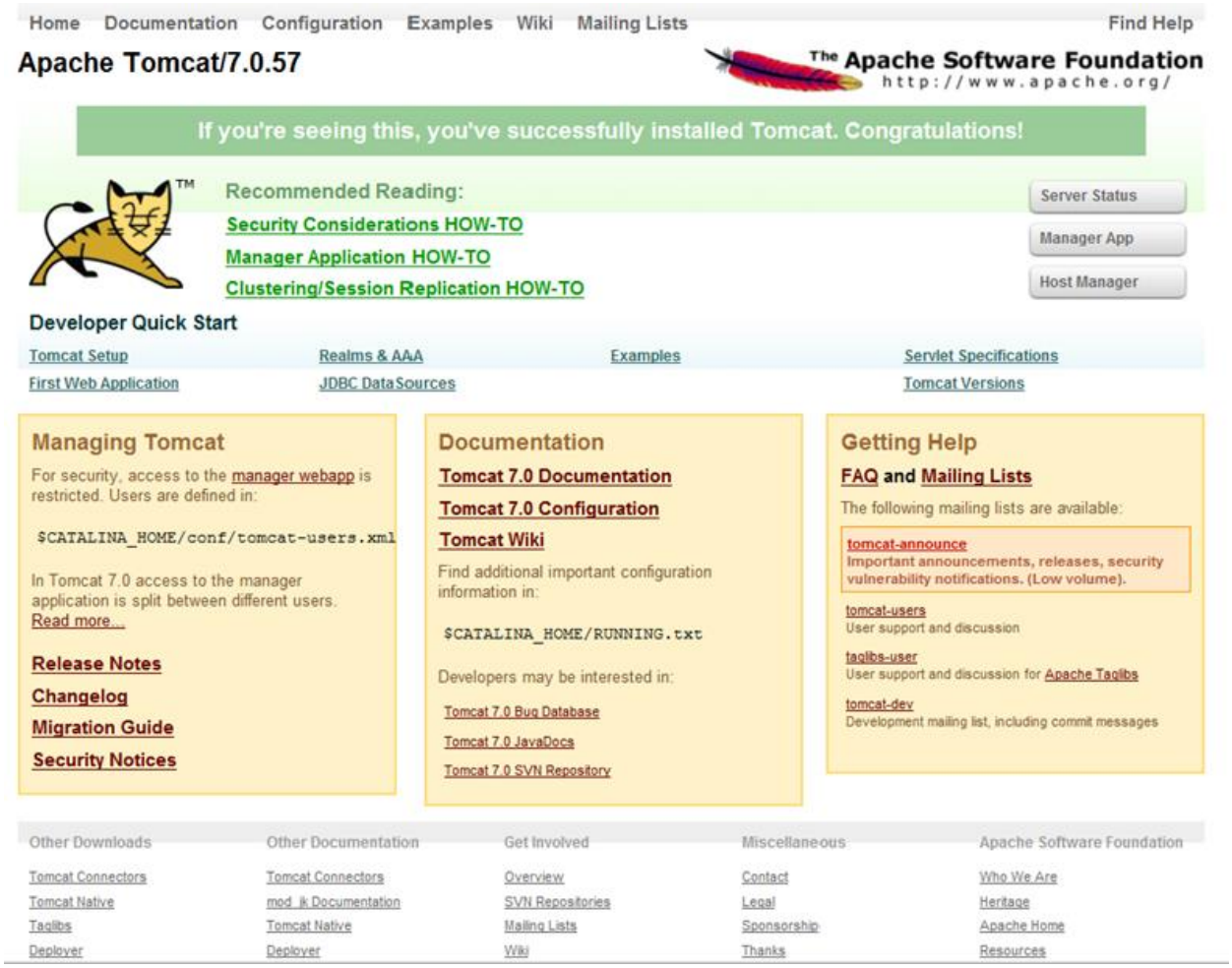
13. The **State** of the deployed application is displayed as **Active** if started successfully.

8.2.3 Deploying WAR Files on Tomcat

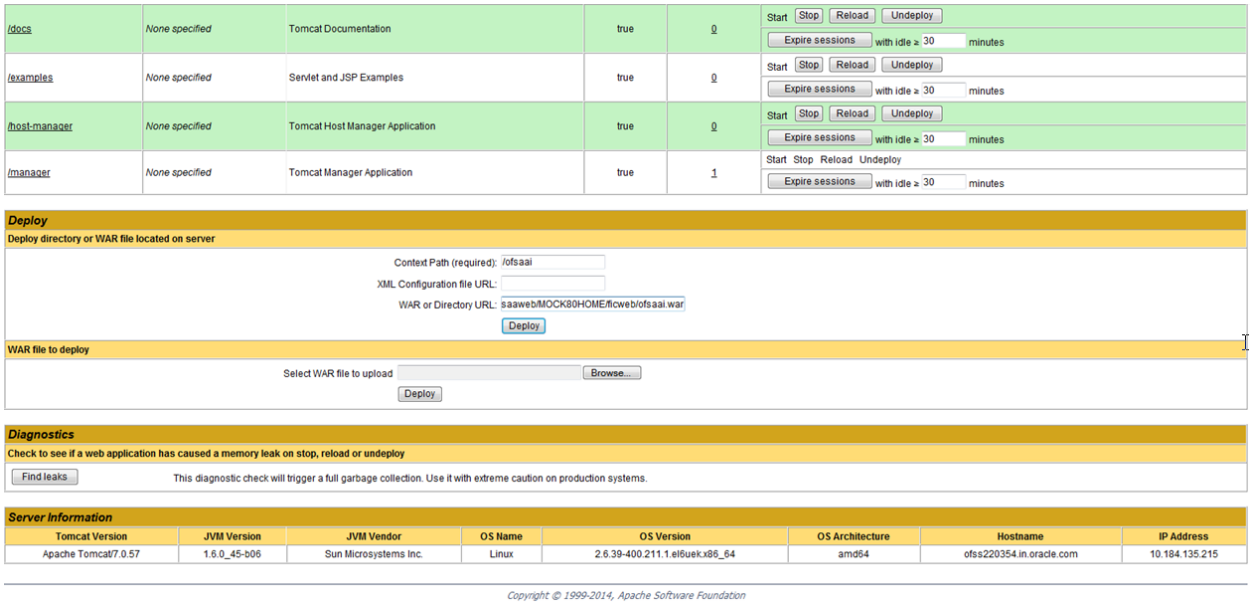
Before deploying the WAR files, ensure that the previously deployed applications of Infrastructure are uninstalled. See *Uninstalling Previously Deployed WAR Files in Tomcat* for the procedure to uninstall the previously deployed Infrastructure war files.

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

1. 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 Infrastructure Services* for more details.

9 Appendix D - Start/Stop OFSAA Infrastructure Services

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

9.1 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. Following servers 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. 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 after changing user password in the Configuration database schema.

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

     ./iccserver.sh

     Note: Only Infrastructure Default Application Server would hold ICC component.
3. Stopping Infrastructure 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.

9.1.1 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 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`

9.1.2 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

9.2 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 Appendix E - Access the OFSAA Application

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

10.1 Access the OFSAA Application

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

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

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

   Following OFSAA login window is displayed:

Figure 99: OFSAA Login window

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

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 Appendix F - 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

11.1 Deploying the Application

11.1.1 To deploy the ALM application, follow the steps:

The Oracle Financial Services Analytical Applications Infrastructure Application Server is started using startofsaai.sh. This file can be edited for setting customized memory settings, garbage collector settings depending on the available hardware configuration. Please raise an SR in **support.Oracle.com** if you have any queries related to EPM applications.

Once the installation of Oracle Financial Services Asset Liability Management Product is completed, you must perform the following steps.

1. Check the Log file.
2. Add the following entries in excludeURLList.cfg file located in the path $FIC_WEB_HOME/webroot/conf/. These entries are required for Asset and Liability Management, Funds Transfer pricing, Profitability Management and Hedge Management / IFRS:

   [SQLIA]./fsapps/common/batchCreate.action

   [SQLIA]./fsapps/common/batchEdit.action

Note: Copy the above information into notepad, and then copy it from notepad into cfg file. Take extra care to avoid copying formatting characters into the cfg file.

3. For Administrative Reports (Admin BI) configuration follow the steps mentioned in *Oracle Financial Services Administrative Reports on OBIEE 11g v8.0.0.0.0 - Configuration Note.docx* under $FIC_HOME/adminbi

Note: You can also find the *Oracle Financial Services Administrative Reports on OBIEE 11g v8.0.0.0.0 - Configuration Note* on OTN.

4. The web.xml under the path $FIC_WB_HOME \webroot\WEB-INF\ should have Resource tag, if not present add the tag and replace ORDEMO with the INFODOM name.

   <resource-ref>

   <description>DB ConnectionORDEMO</description>

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

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

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

</resource-ref>

Note: Copy the above information into notepad, and then copy it from notepad into cfg file. Take extra care to avoid copying formatting characters into the cfg file.

5. Transfer the ownership of batches to the required User.
   - Login to config user.
   - 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;

     Parameter details:
     from User: indicates the user who currently owns the batch,
     to User: 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.
6. If the web application server is hosted on a machine other than where pack is installed, then perform the following step.
   - Generate RSA key for the machine where Web application server is hosted.
   - Add the generated RSA key to the authorized keys list of the machine where Pack s installed

11.1.2 To deploy the ALMBI application, follow the OBIEE configuration steps:

1. Make sure Oracle Business Intelligence (Version 11.1.1.7.0) installation is completed.

NOTE: After Installation, patch 16556157 is recommended for all the customers who are using Oracle Business Intelligence Enterprise Edition 11.1.1.7.0. This patch can be downloaded from Oracle support site.

2. Set the <Oracle BI Instance Home> directory.
   For example, */u01/OBIEE11G/instances/instance1*.
3. Start Weblogic AdminServer.
   a. Set the < BI Domain Home> directory.
      For Example, */u01/OBIEE11G/user_projects/domains/bifoundation_domain*.
   b. Navigate to < *BI Domain Home >/bin* and run **nohup ./startWebLogic.sh &**.
   c. Bringing up this service may take a few minutes depending on your environment. Check the logs using the command **tail –f nohup.out**.
4. Start Node Manager.
   a. Set the < WebLogic Server Home > directory>.
      For example, */u01/OBIEE11G/wlserver_10.3*.
   b. Navigate to <*WebLogic Server Home>/server/bin* and execute the command **nohup ./startNodeManager.sh &**.
5. Start Weblogic Managed Server(bi_server1).
   a. Login onto *http://localhost:7001/console* using your Administrator credentials created during platform install (Replace the hostname based on your setup).
   b. Under Environment, click **Servers** link.

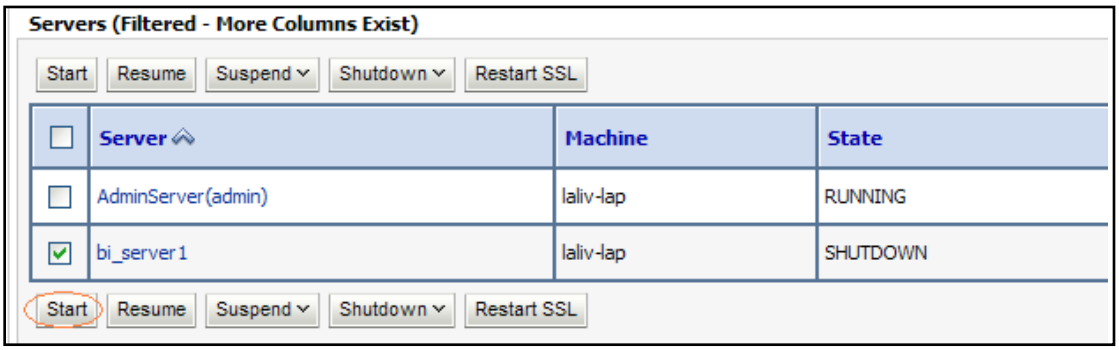
The bi_server1 line should show as shutdown state at this point.

	Server	Machine	State	Status of Last Action
☐	AdminServer(admin)	laliv-lap	RUNNING	None
☐	bi_server1	laliv-lap	SHUTDOWN	TASK COMPLETED

c. Click **Control** tab.

d. Select the **bi_server1** line by clicking on the left tick box.

e. Click **Start** button at the top of the list and confirm starting this service.



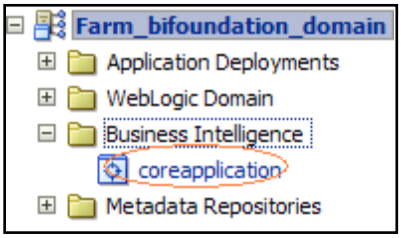
f. State will update to “RUNNING” mode after a few minutes.

6. Start OBIEE services and login

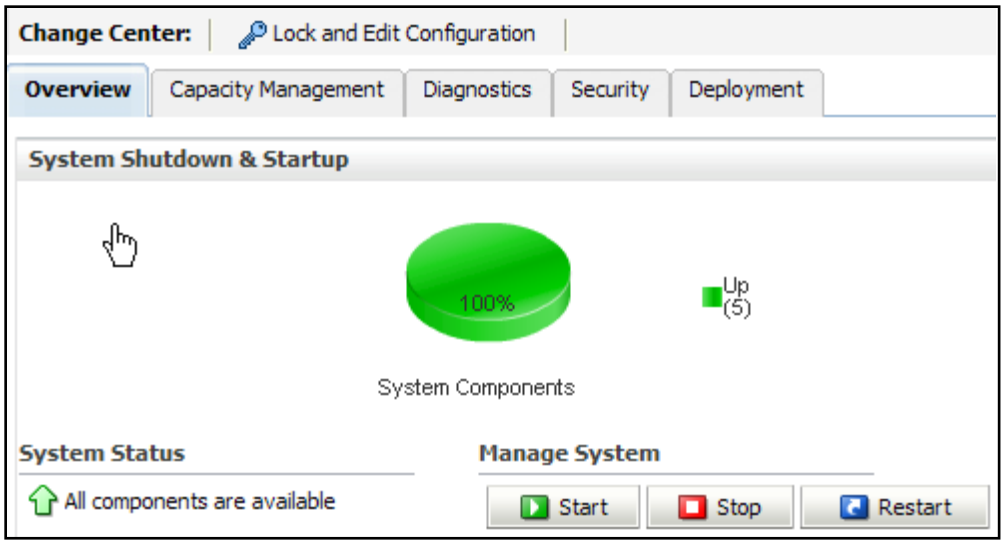
a. Starting services From EM screen

i. Login to the EM administration screen using the URL: *http://localhost:7001/em* (Replace the hostname and port number based on your setup). Use the login you created in BIEE installation to log in.

ii. Expand 'Business Intelligence' node on the left and choose **Coreapplication**.



iii. Click **Overview** Tab.



iv. Click **Restart** (or **Start**) under the Manage System section.

v. Click **Yes** on dialog box to confirm the move. Wait for message that confirms successful restart.

b. If starting using EM is not successful and complaining about OPMNCTL not up, follow starting process with OPMNCTL.

i. Open a command prompt, navigate to <Oracle BI Instance Home>/bin.

ii. Run **./opmnctl status**, this will show you status of all the OBIEE core services

iii. run **./opmnctl startall** or **./opmnctl stopall** depending on your need.

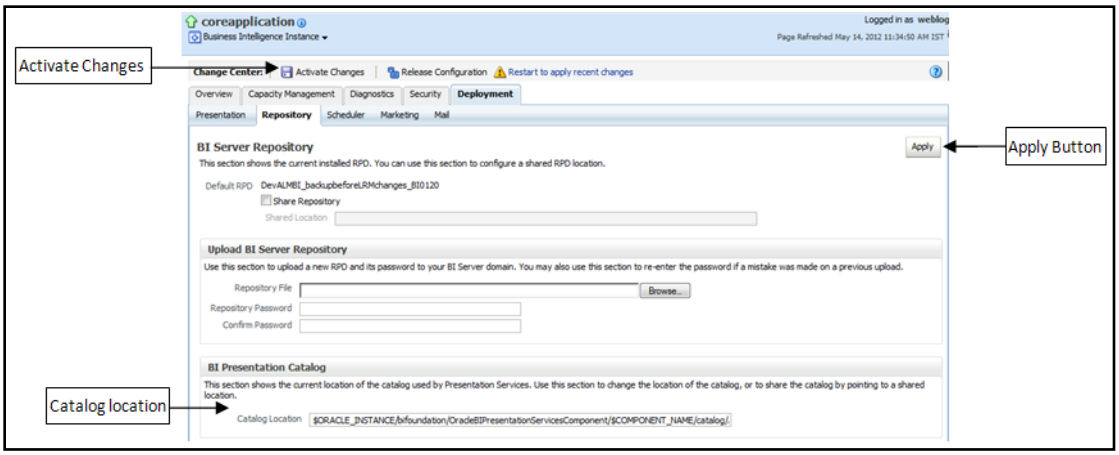
7. Deploy RPD and webcat file(s).

1. Navigate to folder *$FIC_HOME/ALMBI/RPD_WEBCATALOG/* which contains both **ALMBI.rpd** and archived **ALMBI.catalog**.Copy both the files to a local folder.
2. Login to

I. OBIEE – Enterprise Manager URL (*http://<ip address>:<port>/em*).

II. Click on **coreapplication** from 'Business Intelligence' tab on left hand side.

III. Under 'coreapplication', select the tab 'Deployment' and click 'Lock and Edit Configuration' button located below title 'coreapplication'.

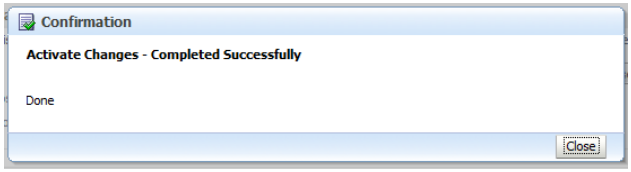


IV. RPD Deployment:

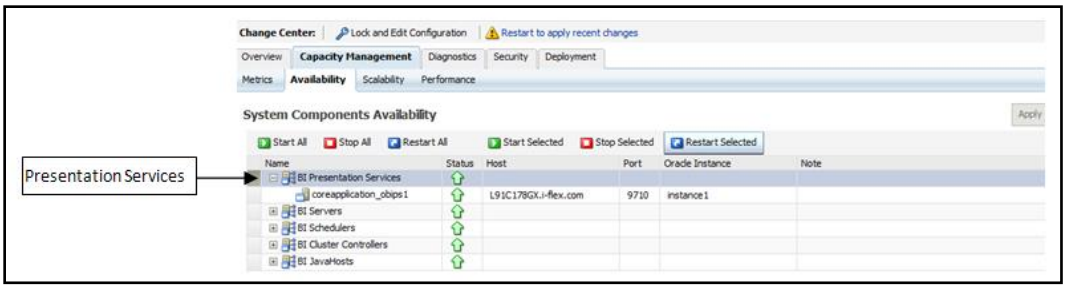
1. Select **Browse** button available under **Upload BI Server Repository** section and select **ALMBI.rpd** file from the local folder. Enter Repository password 'Administrator1'.

V. Web catalog Deployment:

1. Create a new webcatalog folder for ALM BI application through Enterprise Manager of OBIEE.
2. Set the Catalog Location available under 'BI Presentation Catalog' like: "$ORACLE_INSTANCE/bifoundation/OracleBIPresentationServicesComponent/$COMPONENT_NAME/catalog/ALMBI".
3. Click **Apply** and then click **Activate changes**. A pop up will be shown after successful activation.



4. Click **Close** and switch to Capacity management tab.
5. Restart the presentation services. Under the **System Components Availability**, select **Presentation Services** and click on **Restart Selected** option.



VI. Once the Presentation Service is restarted, it will give the pop up for successful restart. Click **Close**.

VII. Verify that new folder structure is created in the system. It can be found under path :

<Oracle BI Instance Home>

\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\catalog\ALMBI

VIII. This 'ALMBI' folder will be having a root folder which in turn contains three folders named 'shared', 'system' and 'users'.

3. Open the Catalog Manager
   a. Navigate to 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/saw.dll*).
   b. Once the catalog is opened, it will display a folder structure on left hand side. Select the shared folder in the LHS tree structure.
   c. Go to 'File' menu and select 'Unarchive'. It will ask for the path for a file.
   d. Browse the path of the archived catalog file saved in your local folder using the 'Browse' button in the pop up. Click 'OK'.
   e. The catalog will be unarchived in specified location. A pop up for successful operation will be shown. Restart the presentation services once again.
4. Open the analytics OBIEE URL- (*http://<ipaddress>:<port>/analytics*) Login with credentials based on your setup, and verify that catalog is available.

8. Configure **tnsnames.ora**.

a. Open "tnsnames.ora" file under the folder - <Oracle Home>/network/admin.
b. Make sure an entry is made in the tnsnames.ora to connect to atomic schema of OFSAA application.
c. Save the tnsnames.ora.

9. Configure ODBC data source to connect to Oracle BI Server.
   a. Go To Control Panel>Administrative Tools>Data Sources (ODBC).
   b. Select the 'System DSN' tab and click 'Add' Button.
   c. Select a driver specific to (Oracle BI Server 11g) and click 'Finish' Button.
   d. Enter 'Name' and 'Server' details (Specify the Host Name or IP Address of the BI Server and click 'Next').
   e. Enter Oracle BI Server login id and password (Enter User Name and Password created at the time of OBIEE installation). Click 'Next'.
   f. Click 'Finish'.
10. Modify connection pool and set the properties.
   a. Open the OBI Administration tool.
   b. Select Start > Programs > Oracle Business Intelligence > BI Administration.
   c. Select File > Open > Online and select 'ALMBI.rpd' file.
   d. In the Open dialog box, select and open 'ALMBI.rpd' file.
   e. Enter Repository password as 'Administrator1'.
   f. <u>RPD changes:</u>
      1) Go to Manage -> Variables edit the Session variable 'TNS'
         For Ex: Change the Default Initializer from 'TNS ENTRY' to 'actual TNS entry' like '(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)(HOST=<Database IP address>)(PORT=1521)))(CONNECT_DATA=(SERVICE_NAME=<Database Name>)))'
      2) Edit the Initialization Block 'TNS Init Block' ->Click Edit Data Source
         For Ex: Change the Default Initialization string from "select 'TNS ENTRY' from dual " to select (DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)(HOST=<Database IP address>)(PORT=1521)))(CONNECT_DATA=(SERVICE_NAME=<Database Name>)))' from dual
      3) Edit the Session variable 'DBUSER'
         Change the Default Initializer from "USERNAME" to actual Database schema name.
      4) Edit the Initialization Block 'DBUSER Init Block' ->Click Edit Data Source

Replace 'USERNAME' with the actual atomic schema name.

5) Edit the Session variable ‘DBUSERPWD’

   Change the Default Initializer from ‘'PASSWORD'’ to actual Database atomic schema password.

6) Edit the Initialization Block DBUSERPWD Init Block’ ->Click Edit Data Source

   Replace 'PASSWORD' with the actual atomic schema password.

   Check in the changes and give yes for global consistency check. Make sure No errors and warnings. Click Save.

7) Close the RPD file (File / Exit).

g. <u>WEBCATALOG changes:</u>

1) Click Open->shared Folders->Change Database Connection-> Prompt For Sources_TNS
2) Select the Prompt TNS and click on edit.
3) Change the sql statement in default selection.
4) For example: select case when '@{DBNAME}' ='ALMDB' THEN '(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)(HOST=<IP ADDRESS>)(PORT=1521)))(CONNECT_DATA=(SERVICE_NAME=<DATBASE NAME>)))' end from "ALM BI" and Click Save.

11. Login into OFSALMA Application using the URL: http://localhost:9704/analytics.(Replace the port number based on your setup).

- Navigate to FICWEBHOME .
- Run ant.sh

12. Once the OBIEE Environment is up and running, the OBIEE URL needs to be updated in the table 'AAI_MENU_B' for an end user to access the respective Business Intelligence Analytics Application.

Following update statement needs to be executed in the config schema:

```
UPDATE AAI_MENU_B
SET V_MENU_URL = '<URL>'
WHERE V_MENU_ID IN (‘<List of enabled BI Analytical Links for a particular Media Pack >’)
/
COMMIT
/
```

For ALM Media Pack as an example:

```
UPDATE AAI_MENU_B
SET V_MENU_URL = 'http://10.1.2.3:9704/analytics'
WHERE V_MENU_ID IN ('OFS_ALM_ABI','OFS_ALMBI_LINK')
/
COMMIT
/
```

(Replace the IP address and port number based on your setup.)

11.2 Logging as System Administrator

Post installation, the first login into Infrastructure is possible only for a System Administrator through user id "**sysadmn**". This ID is created at the time of installation with the password provided during installation. Enter login id "**sysadmn**" and password that was provided during installation. Click **Login**.

11.2.1 System Administrator

System Administration refers to a process of managing, configuring, and maintaining confidential data in a multi-user computing environment. System Administration in Security Management involves creating functions, roles, and mapping functions to specific roles. System Administration also involves maintaining segment information, holiday list, and restricted passwords to ensure security within the Infrastructure system.

You can access System Administrator in LHS menu of Security Management. The options available under System Administrator are:

- Function Maintenance
- Role Maintenance
- Function - Role Map
- Segment Maintenance
- Holiday Maintenance
- Restricted Passwords

11.2.1.1 Function Maintenance

A function in the Infrastructure system defines the privileges to access modules or components and to define or modify metadata information associated. Function Maintenance allows you to create functions for users to ensure only those functions are executed which are specific to the user's role.

You can access Function Maintenance by expanding System Administrator section within the tree structure of LHS menu. The Function Maintenance window displays the function details such as Function Code, Function Name, Description, and the number of Roles Mapped to the function. The Function Maintenance window also facilitates you to view, create, modify, and delete functions within the system.

You can also make use of Search and Pagination options to search for a specific function or view the list of existing functions within the system.

11.2.1.2 Role Maintenance

A role in the Infrastructure system 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.

You can access Role Maintenance by expanding **System Administrator** section within the tree structure of LHS menu. The *Role Maintenance* window displays the role details such as Role Code, Role Name, Role Description, and the number of Users Mapped to the role. The *Role Maintenance* window also facilitates you to view, create, modify, and delete roles within the system.

You can also make use of Search and Pagination options to search for a specific role or view the list of existing roles within the system.

11.2.1.3 Segment Maintenance

Segment is used to control access rights on a defined list of objects. It is mapped to an information domain.

Segment Maintenance in the Infrastructure system facilitates you to create segments and assign access rights. You can have different segments for different Information Domains or same segments for different Information Domains.

User scope is controlled by segment/ folder types with which the object is associated.

- Objects contained in a public folder will be displayed irrespective of any user.
- Objects contained in a shared folder will be displayed if user belongs to a user group which is mapped to an access type role with the corresponding folder.
- Objects contained in a private folder will be displayed only to the associated owner.

You can access Segment Maintenance by expanding System Administrator section within the tree structure of LHS menu. The *Segment Maintenance* window displays a list of available

segments with details such Domain, Segment Code, Segment Name, Segment Description, Segment/Folder Type, Owner Code, and the number of Users Mapped to the segment. You can view, create, modify, and delete segments within the *Segment Maintenance* window.

You can also make use of Search and Pagination options to search for a specific role or view the list of existing roles within the system.

11.2.1.4 Holiday Maintenance

Note: As part of OFSAAI 7.3.3.0.0 release, this feature will not be available if Authentication is configured to SSO Authentication and SMS Authorization.

Holiday Maintenance facilitates you to create and maintain a schedule of holidays or non-working days within the Infrastructure system. On a holiday, you can provide access to the required users and restrict all others from accessing the system from the *User Maintenance* window..

You can access Holiday Maintenance by expanding **System Administrator** section within the tree structure of LHS menu. The *Holiday Maintenance* window displays a list of holidays in ascending order. In the *Holiday Maintenance* window you can create and delete holidays.

11.2.1.5 Restricted Passwords

NOTE: As part of OFSAAI 7.3.3.0.0 release, this feature will not be available if Authentication Type is selected as SSO Authentication and SMS Authorization from System Configuration> Configuration.

Restricted Passwords facilitates you to add and store a list of passwords using which users are not permitted to access the Infrastructure system.

You can access Restricted Passwords by expanding **System Administrator** section within the tree structure of LHS menu. The *Restricted Passwords* window displays a list of restricted passwords and allows you to add and delete passwords from the list.

You can also make use of Search and Pagination options to search for a specific password or view the list of existing passwords within the system. For more information, refer Pagination and Search & Filter.

NOTE: While searching for any pre defined restricted password, you have to key in the entire password

11.3 Creating Application Users

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

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

11.4 Mapping Application User(s) to User Group

Starting the OFSAA 8.0 release, with installation of ALM Application Pack, pre-configured application user groups are seeded. These user groups are unique to every OFSAA Application Pack and have application roles pre-configured.

For more information on seeded User Groups, refer to *Appendix M*.

11.5 Change ICC Batch Ownership

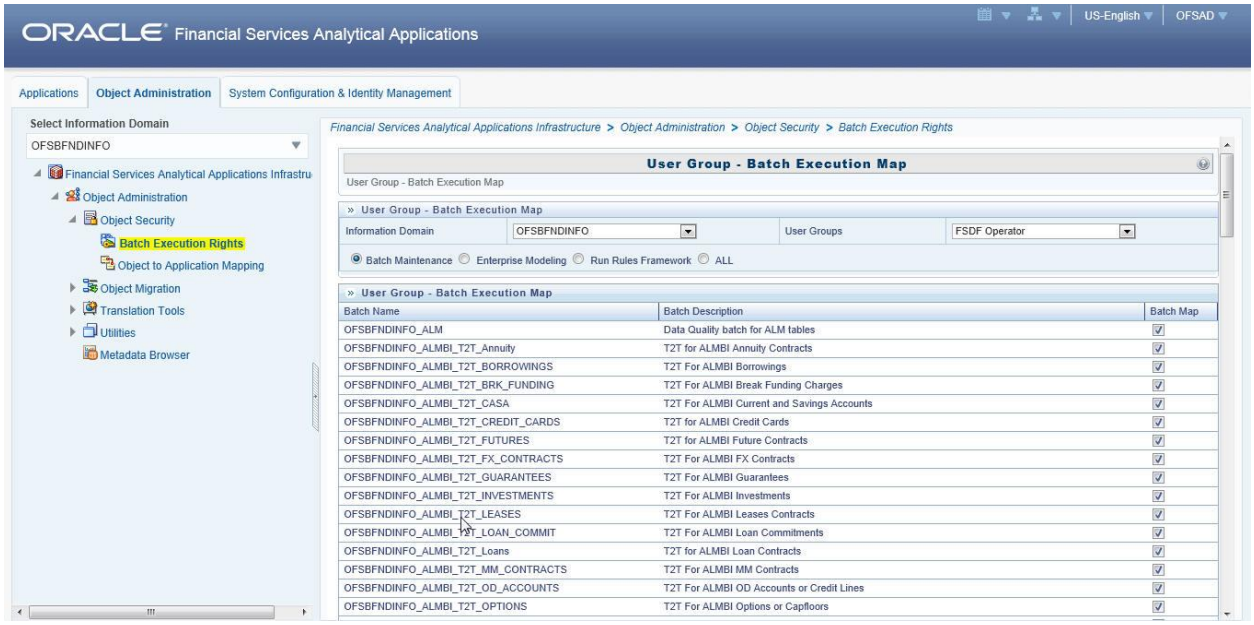
All the seeded Batches in OFSDF Applications Pack will be automatically assigned to SYSADMN user during Installation. If one user who wants to see the Batches in *Batch Maintenance* Menu, He needs to execute the following Queries in Config Schema of the Database.
Syntax:
begin
AAI_OBJECT_ADMIN.TRANSFER_BATCH_OWNERSHIP ('fromUser','toUser','infodom');
end;
OR
begin
AAI_OBJECT_ADMIN.TRANSFER_BATCH_OWNERSHIP ('fromuser','touser');
end;
Where from User indicates the user who currently owns the batch, to User indicated the user to which the ownership has to be transferred. Infodom is optional parameter, if specified the ownership of batches pertaining to that Infodom will be changed.
Eg.
begin
AAI_OBJECT_ADMIN.TRANSFER_BATCH_OWNERSHIP
('SYSADMN','FSDFOP','OFSBFNDINFO');

end;

11.6 Mapping ICC Batch Execution Rights to User

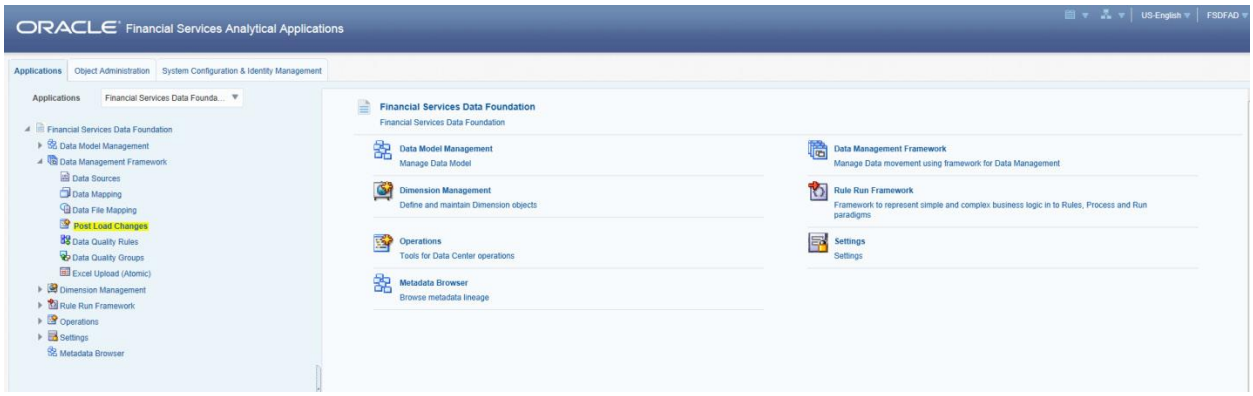
By default all users who are mapped to FSDF Admin and FSDF Operator will have the permission to execute the seeded Batches in FSDF Application Pack. However if any other user-defined batches or any other application pack batches created during the respective installation application packs, the user need to map the Batch execution rights for each user/batch in the Batch Execution Rights menu under Object Administration >> Object Security.

Note: Only SYSADMN user or any user who is mapped under FSDF Admin User Group will have the access to map the Batch execution rights menu access.

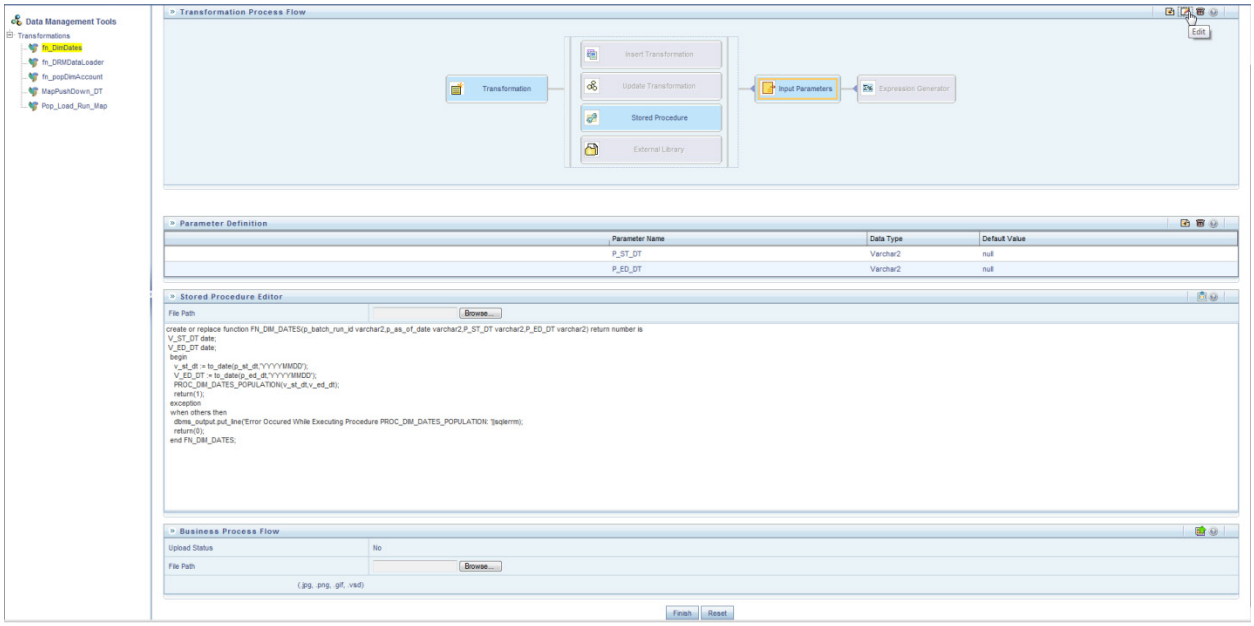


11.7 Saving Post- Load Change Transformations

After creating users, Login to Infrastructure as any user who is mapped to FSDF Admin or FSDF Analyst group. Navigate to **Data Management Framework** >> **Post Load Changes.**



A New window will be displayed. Click on Each Transformation from Transformations List and Click on Stored Procedure in the Right Panel, Click on Edit in the Top Right Menu and Click on Finish Button in Bottom.



Note: All the Transformation Stored Procedures are required to be edited and saved (Finish Button) once for getting it is available.

12 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 to OFSAA Cloning Reference Guide.

13 Appendix H - OFSAA Landing Page

This appendix includes the following topics:

13.1 OFSAA Landing Page for ALM 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:

13.1.1 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.

13.1.2 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.

13.1.3 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.

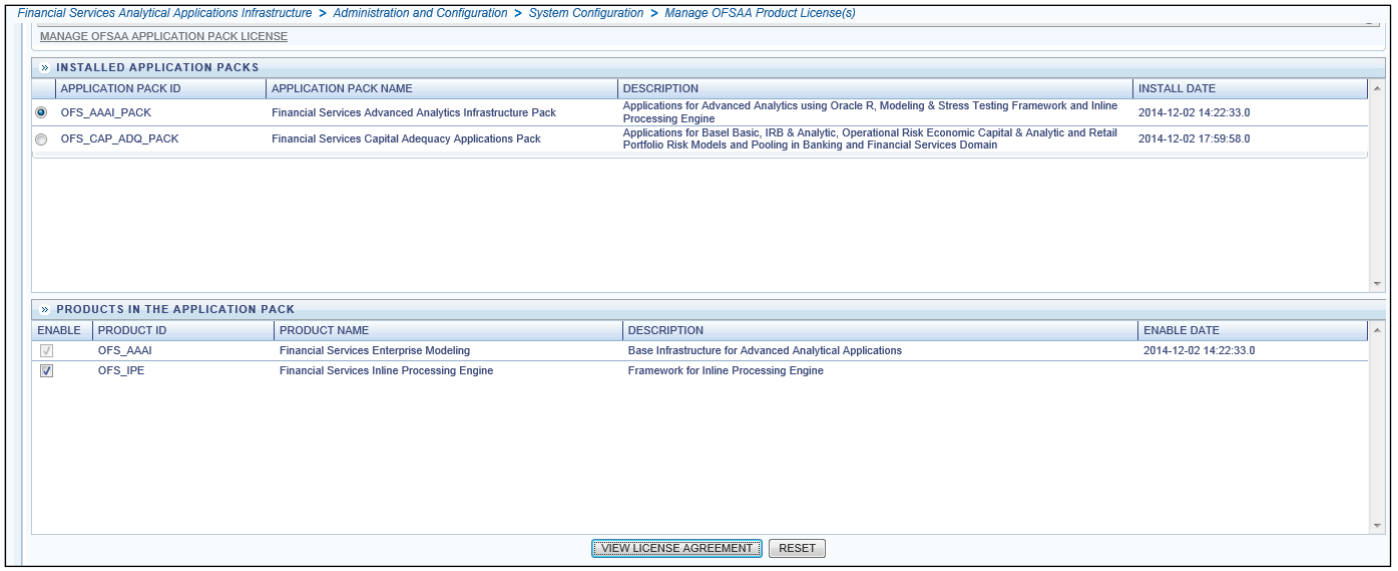
For more details on how to operate on each tab, see OFSAAI User Guide available in OTN.

13.2 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 and expand** *Financial Services Analytical Applications Infrastructure >> Administration and Configuration >> System Configuration.*
3. Click **Manage OFSAA Product License(s)**
4. The **Manage OFSAA Product License(s)** page is displayed.



This page includes the following sections:

- INSTALLED APPLICATION PACKS
- PRODUCTS IN THE APPLICATION PACK

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

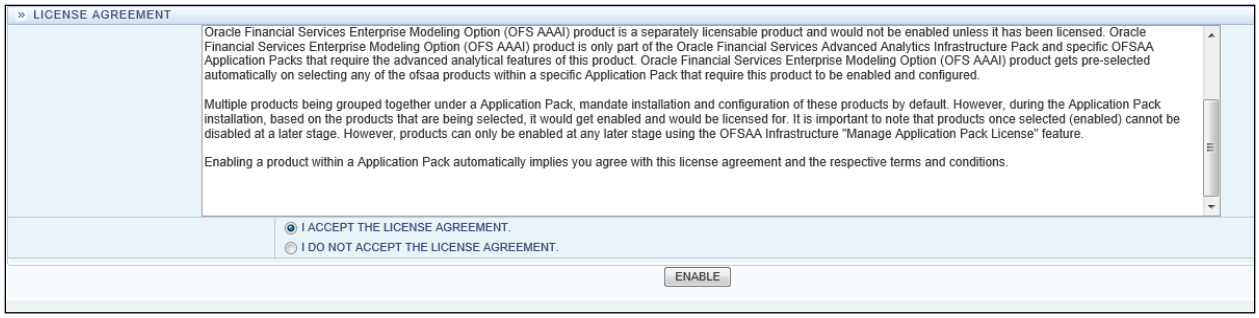
Field	Description

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 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.

6. 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.

7. Select an Application Pack by clicking the radio button next to the Application Pack ID field.
8. Selecting an Application Pack will display below the products within the Application Pack.
9. 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.
10. Click on RESET button to cancel the operation and refresh the screen.
11. Click VIEW LICENSE AGREEMENT button.
12. The License Agreement section is displayed.



13. Select the option I ACCEPT THE LICENSE AGREEMENT.
14. Click ENABLE.
15. 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.

For more information refer to *Mapping/Unmapping Users* section in the *Oracle Financial Services Analytical Applications Infrastructure User Guide 8.0*.

To identify the newly enabled product specific User Groups/ Application Pack specific User_Groups, refer to the respective Application Pack specific Installation and Configuration Guide/ User Manual.

14 Appendix I - Additional Configurations

The following sections provide detailed module specific post installation configurations.

This section includes the following topics:

14.1 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.

14.2 Configuration for Dimension and Hierarchy Management

These configuration changes are applicable when Dimension Management features provided in OFSAAI are used. You can open `AMHMConfig.properties` file present in the `$FIC_WEB_HOME/webroot/conf` directory to set the properties for the following:

This section includes the following topics:

- Member Deletion
- Attribute Default Date Format
- Members Reverse Population
- Hierarchy Reverse Population
- Maximum levels allowed in Hierarchies
- Node Limit for a Hierarchy Tree

Configuration for Dimension and Hierarchy Management has to be done only after the application/solution installation is done. The properties specific to Information Domain are:

- `$INFODOM$`=<Name of the Information Domain>
- `$DIMENSION_ID$`=<Dimension ID for which the property to be set>

14.2.1 Configure Member Deletion

This property should be set to allow the user to delete the Members for the Dimension.

Value	Code	Example
# Member Deletion Configuration - VALUE-Y/N	MEMBER_DEL-$INFODOM$-$DIMENSION_ID$=$VALUE$	MEMBER_DEL-ORAFUSION-1=Y

14.2.2 Configure Attribute Default Date Format

This property should be set to display the Default Date Format for Date type Attribute in *Attributes* window.

Value	Code	Example
# Attribute Default Date Format - DB_DATE_FORMAT:DD-MON-YYYY	ATTR_DEF_DATE_FORMAT-$INFODOM$=DB_DATE_FORMAT	ATTR_DEF_DATE_FORMAT-ORAFUSION=DD/MON/YYYY

14.2.3 Configure Members Reverse Population

This property should be set for reverse population of Members for the Dimensions in required Information Domains.

Value	Code	Example
# Members Reverse population - VALUE-Y/N	MEMBER_REVERSE_POP-$INFODOM$-$DIMENSION_ID$=$VALUE$	MEMBER_REVERSE_POP-ORAFUSION-1=Y

14.2.4 Configure Hierarchy Reverse Population

This property should be set for reverse population of Hierarchies for the Dimensions in required Information Domains.

Value	Code	Example
#Hierarchy Reverse population - VALUE-Y/N	HIERARCHY_REVERSE_POP-$INFODOM$-$DIMENSION_ID$=$VALUE$	HIERARCHY_REVERSE_POP-ORAFUSION-1=Y

14.2.5 Configure Maximum Levels allowed in Hierarchies

This property is required to set the maximum levels allowed to build the Hierarchies tree structure.

Value	Code	Example
#Hierarchy Maximum level allowed for the hierarchy in particular Information Domain - VALUE - Integer number	MAX_DEPTH-$INFODOM$=$VALUE$	MAX_DEPTH-FUSION=15

Hierarchies greater than 15 levels are not supported within OFSAA EPM applications (ALM, FTP, PFT, and HM). If the hierarchy data contains more than 15 levels, OFSA_IDT_ROLLUP will not be populated. The number of hierarchy levels allowed for OFSAA EPM key dimensions must be less than or equal to 15.

- If the Hierarchy Reverse Population setting is set to "Y" and more than 15 levels exist in the data, then following alert is displayed "*The number of levels exceeds the limit*".
- If the maximum level allowed setting is set greater than 15 and Hierarchy Reverse Population is set to "Y", then following error is displayed "*Error occurred in Reverse Populating the hierarchy*".

14.2.6 Configure Node Limit for a Hierarchy Tree

This property is required to display the Hierarchy as a small or a large hierarchy. If the tree node limit exceeds the set limit, the Hierarchies are treated as large Hierarchy.

Table 5: Hierarchy Tree node limit

Value	Code	Example
#Tree node limit for the hierarchy - Values is Integer number	TREE_NODE_LIMIT=$VALUE$	TREE_NODE_LIMIT=30

14.3 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.

14.3.1 Infrastructure Application Server Memory Settings

You can configure the Infrastructure Application Memory settings as follows:

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

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

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

NOTE: You need to 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"

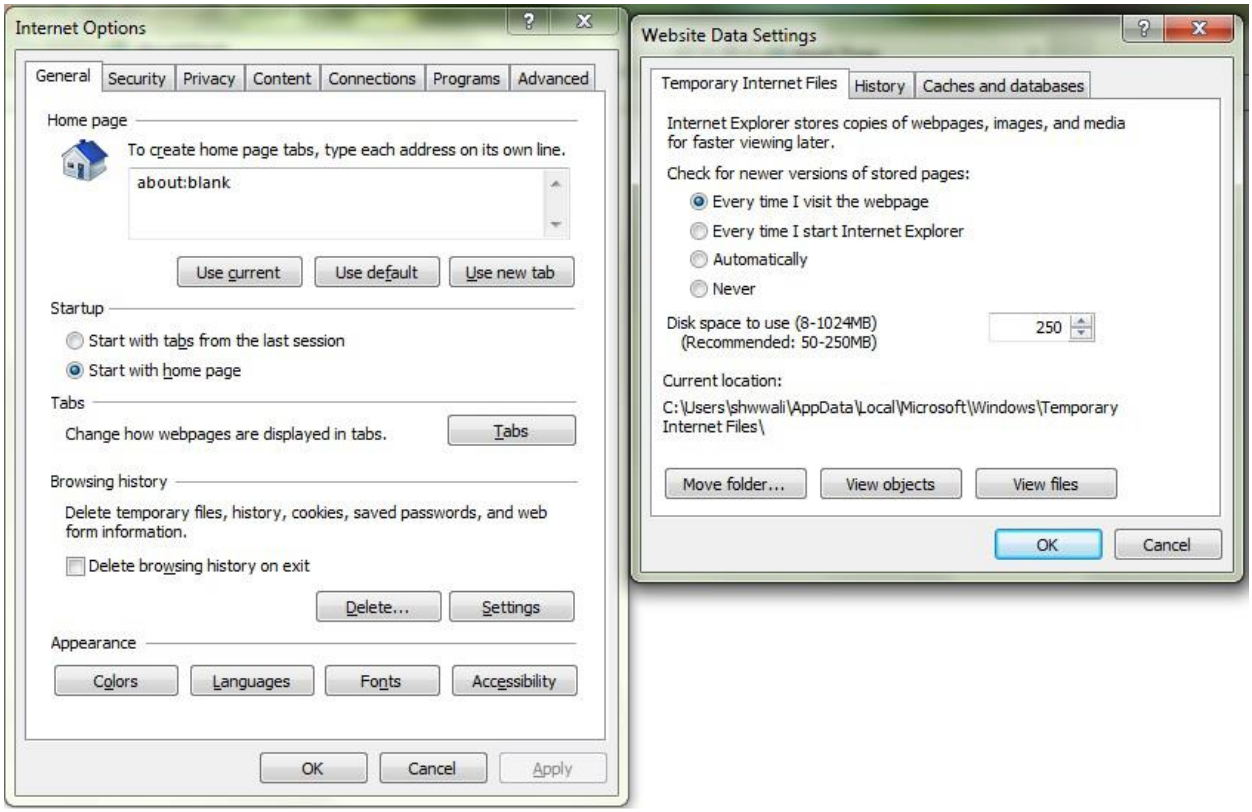
X_ARGS_RLEXE="-Xms1g -Xmx1g -XX:+UseAdaptiveSizePolicy -XX:MaxPermSize=512M -XX:+UseParallelOldGC -XX:+DisableExplicitGC"

14.4 Internet Explorer Settings

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

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

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



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

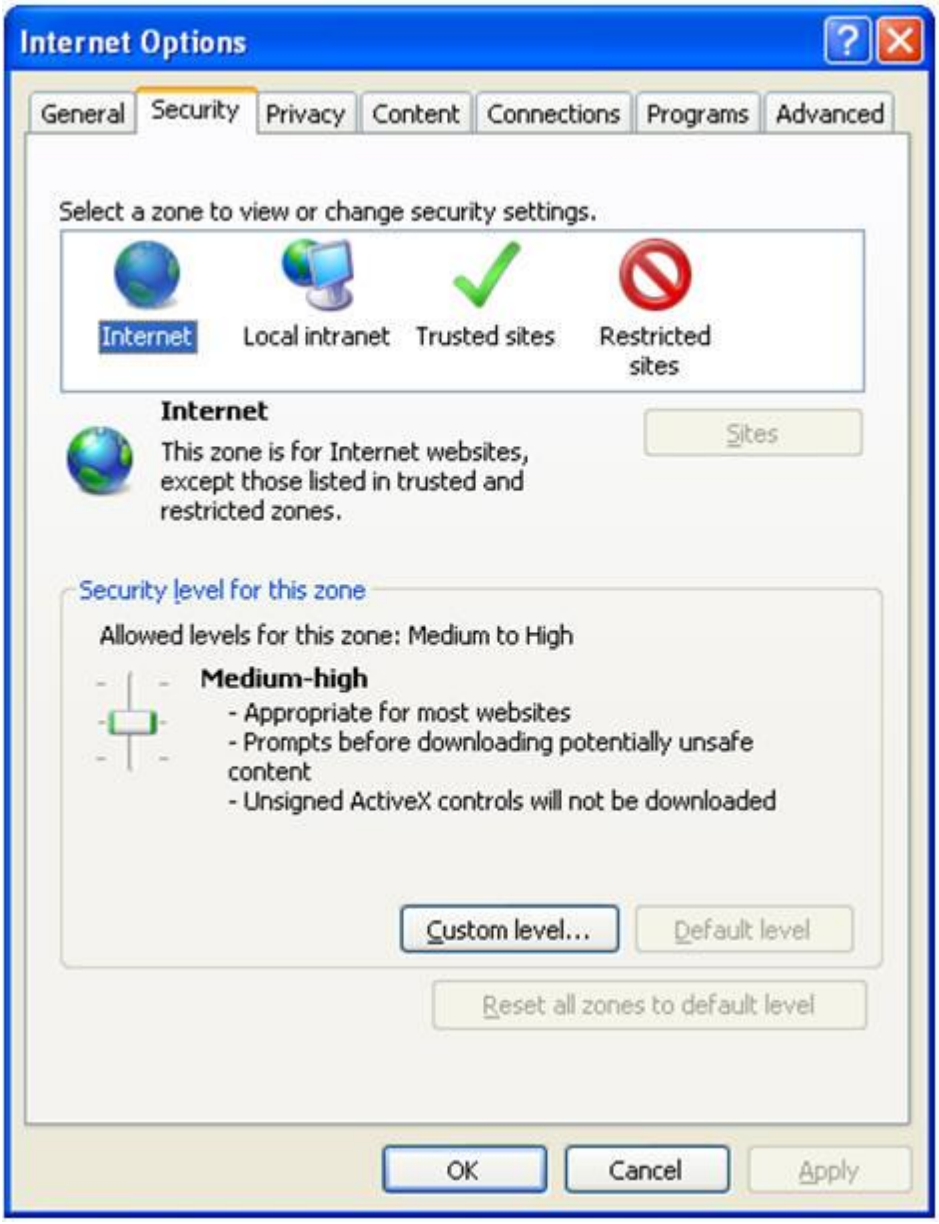
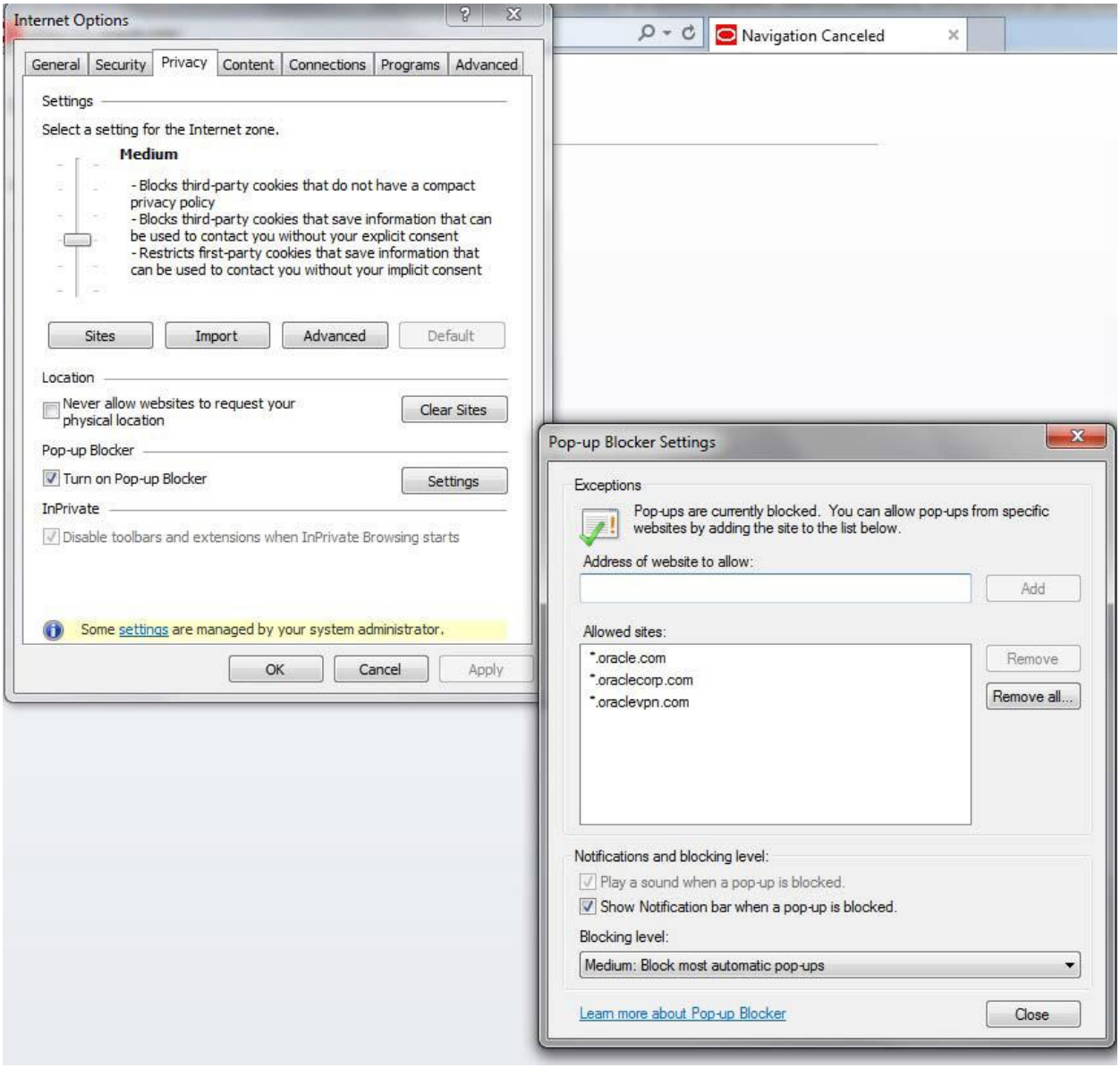


Figure 100; Internet Options

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.



Internet Options- Popup 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: field.
14. Click Add. The OFSAA URL is displayed in the Allowed Sites section.
15. Click Close.
16. Click OK in the Internet Options window.

14.5 Retrieving Patch Information

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

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

14.6 OLAP Data Server Configuration

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

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

Example:

Process Memory Limit

Max Thread Stack Size

Max Number of Threads per Process

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

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

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

14.8 OFSAAI Setup Information Fetching Tool

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

To execute `SetupInfo.jar` in console:

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

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

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

14.9 Encryption Changer

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

To execute `EncryptC.jar` in console:

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

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

   A confirmation message is displayed after execution.

Once executed, you need to create and deploy the EAR / WAR file depending on the configured Web Application Server. For more information, see Create and Deploy EAR/ WAR files.

14.10 Infrastructure LDAP Configuration

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

14.11 Configure OFSAAI Web Services

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

14.11.1 Configure DynamicWSConfig.xml File

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

The variable `<WebServer>` denotes any one of the application server, i.e. WebSphere, WebLogic, or Tomcat.

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

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

Following is template:

```
<XML>

<WEBSERVICES>

<WEBSERVICE CODE="$CODE"
```

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

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

14.11.2 Attributes for WEBSERVICE tag

Table 6: WEBSERVICE tag

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

14.11.3 Attributes for OPERATION tag

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

Table 7: OPERSTION tag

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

14.11.4 Attributes for INPUT tag

Table 8: INPUT tag

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

14.11.5 Attributes for OUTPUT tag

Table 9: **OUTPUT tag**

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

14.11.6 web.xml Entries

1. This step is optional and required only if the web application server used is Tomcat. In case of any other application server, skip and proceed with next step.

   Navigate to $FIC_HOME/webroot/WEB-INF/ and edit the web.xml file. Set parameter value DOCSERVICEAPP to EXEWebServiceAXIS.

2. Navigate to `<OFSAAI Installation Directory>/EXEWebService/<WebServer>/ROOT/WEB-INF/` and edit following web.xml file.

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

```
<?xml version='1.0' encoding='UTF-8'?>
<web-app id="WebApp_ID" version="3.0"
xmlns="http://java.sun.com/xml/ns/javaee"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-app_3_0.xsd" metadata-
complete="true">
```

with

```
<?xml version='1.0' encoding='UTF-8'?>
<web-app xmlns="http://java.sun.com/xml/ns/j2ee"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
```

Entry for WSConfig File

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

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

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

14.11.7 Proxy Settings

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

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

```
<context-param>
<description>http Proxy Host</description>
<param-name>http.proxyHost</param-name>
<param-value>$PROXYHOST$</param-value>
<!-- Specify the IP address or hostname of the http proxy server-->
</context-param>
<context-param>
<description>http Proxy Port</description>
<param-name>http.proxyPort</param-name>
<param-value>$PROXYPORT$</param-value>
<!--Port Number for the Proxy Server-->
</context-param>
<context-param>
<description>http proxy UserName</description>
```

```
<param-name>http.proxyUserName</param-name>
<param-value>$PROXYUSERNAME$</param-value>
<!-- User ID To get authenticated by proxy server-->
</context-param>
<context-param>
<description>http proxy Password</description>
<param-name>http.proxyPassword</param-name>
<param-value>$PROXYPASSWORD$</param-value>
<!-- User Password To get authenticated by proxy server-->
</context-param>
<context-param>
<description>http non-ProxyHosts</description>
<param-name>http.nonProxyHosts</param-name>
<param-value>$NONPROXYHOST$</param-value>
<!--Hosts for which the proxy settings should get by-passed (Note: Separate them by "|" symbol) -->
</context-param>
```

14.11.8 OFSAAI Home Entry

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

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

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

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

14.11.9 DynamicWSConfig.xml

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

14.12 Deploy OFSAAI Web Services

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

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

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

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

14.13 Configuration to Enable Parallel Execution of DML statements

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

14.14 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:

Table 10: NotificationConfig.cfg File

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

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

14.15 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>`

14.16 Configuring Password changes

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

14.16.1 OFSAA Infrastructure Config Schema password modification

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

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

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

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

   ```
   ./startofsaai.sh
   ```

   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.

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

14.16.2 OFSAA Infrastructure Atomic Schema password modification

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

1. Change the Atomic schema User Password in the database.
2. Login to the application from the browser using SYSADMN account or any user id, which has System Administrator role mapped.
3. Navigate to System Configuration > Database Details window. Select the appropriate connection and edit the password.
4. Navigate to Data Management Tools >Data Sources> Source Designer window. Update the password of the appropriate Source.
5. If you are using Apache Tomcat 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).
6. 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. Restart the OFSAAI services.

14.17 Configuring Java Virtual Machine

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

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

14.18 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
     ```

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

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

15 Appendix J - Patching Your OFS ALM Pack Installation

15.1 Patching Your OFS ALM Pack Installation

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

Refer http://support.oracle.com for more information on latest releases.

16 Appendix K - Grants for Atomic/ Config Schema

This Appendix includes the following sections:

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

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

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 olap_user 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.

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

```
grant select on CSSMS_USR_PROFILE to &database_username
/
grant select on CSSMS_ROLE_MAST to &database_username
/
grant select on CSSMS_GROUP_MAST to &database_username
/
grant select on CSSMS_FUNCTION_MAST to &database_username
/
grant select on CSSMS_USR_GROUP_MAP to &database_username
/
grant select on CSSMS_USR_GROUP_DSN_SEG_MAP to &database_username
/
grant select on CSSMS_ROLE_FUNCTION_MAP to &database_username
/
grant select on CSSMS_GROUP_ROLE_MAP to &database_username
/
grant select on CSSMS_SEGMENT_MAST to &database_username
/
grant select on BATCH_TASK to &database_username
/
grant select on CSSMS_USR_DSN_SEG_MAP to &database_username
/
grant select on CSSMS_USR_ROLE_MAP to &database_username
/
grant select on CSSMS_METADATA_SEGMENT_MAP to &database_username
/
grant select on BATCH_RUN to &database_username
/
grant select on PR2_FILTERS to &database_username
/
grant select on PR2_TASK_FILTER to &database_username
```

```
/
grant select on PR2_TASK_FILTER_DETAIL to &database_username
/
grant select on ST_STRESS_MASTER to &database_username
/
grant select on ST_SCENARIO_MASTER to &database_username
/
grant select on ST_SHOCK_MASTER to &database_username
/
grant select on BATCH_MASTER to &database_username
/
grant select on ICC_MESSAGELOG to &database_username
/
grant select on PR2_MASTER to &database_username
/
grant select on PR2_RUN_REQUEST to &database_username
/
grant select on MF_MODEL_SCRIPT_MASTER to &database_username
/
grant select on MF_INPUT_VALUES to &database_username
/
grant select on MF_MODEL_OUTPUT_VALUES to &database_username
/
grant select on DB_MASTER to &database_username
/
grant select on DSNMASTER to &database_username
/
grant select on pr2_rule_map to &database_username
/
grant delete on pr2_rule_map_pr to &database_username
/
grant insert on pr2_rule_map_pr to &database_username
/
grant update on pr2_rule_map_pr to &database_username
/
grant select on pr2_rule_map_pr to &database_username
/
grant delete on pr2_rule_map_pr_tmp to &database_username
/
grant insert on pr2_rule_map_pr_tmp to &database_username
/
grant update on pr2_rule_map_pr_tmp to &database_username
/
grant select on pr2_rule_map_pr_tmp to &database_username
/
grant select on pr2_rule_map_exclude to &database_username
/
grant delete on pr2_rule_map_exclude_pr to &database_username
/
grant insert on pr2_rule_map_exclude_pr to &database_username
/
grant update on pr2_rule_map_exclude_pr to &database_username
/
grant select on pr2_rule_map_exclude_pr to &database_username
/
```

```
grant delete on pr2_rule_map_exclude_pr_tmp to &database_username
/
grant insert on pr2_rule_map_exclude_pr_tmp to &database_username
/
grant update on pr2_rule_map_exclude_pr_tmp to &database_username
/
grant select on pr2_rule_map_exclude_pr_tmp to &database_username
/
grant select on pr2_run_object to &database_username
/
grant select on pr2_run_object_member to &database_username
/
grant select on pr2_run_map to &database_username
/
grant select on pr2_run_execution_b to &database_username
/
grant select on pr2_run_execution_filter to &database_username
/
grant select on pr2_firerun_filter to &database_username
/
grant select on pr2_filters to &database_username
/
grant select on configuration to &database_username
/
grant select on batch_parameter to &database_username
/
grant select on component_master to &database_username
/
grant select on MDB_OBJECT_TYPE_ATT_LAYOUT to &database_username
/
grant select on REV_OBJECT_ATTRIBUTE_DTL to &database_username
/
grant select on FORMS_LOCALE_MASTER to &database_username
/
grant select on mdb_object_dependencies to &database_username
/
grant select on mdb_execution_details to &database_username
/
grant select on REV_STAT_DATA to &database_username
/
grant select on REV_OBJECT_REPOSITORY_B to &database_username
/
grant select on REV_OBJECT_REPOSITORY_TL to &database_username
/
grant select on REV_OBJECT_ATTRIBUTE_DTL_MLS to &database_username
/
grant select on REV_OBJECT_APPLICATION_MAP to &database_username
/
grant select on MDB_OBJ_EXPR_DETAILS to &database_username
/
grant select on MDB_EXECUTION_DETAILS to &database_username
/
grant select on REV_OBJECT_TYPES_CD to &database_username
/
grant select on REV_OBJECT_TYPES_MLS to &database_username
```

```
/
grant select on REV_APPLICATIONS_CD to &database_username
/
grant select on REV_APPLICATIONS_MLS to &database_username
/
grant select on METADATA_BROWSER_LOCALE to &database_username
/
grant select on MDB_STAT_DATA to &database_username
/
grant select on MDB_OBJECT_TYPE_LAYOUT to &database_username
/
grant select on ofsa_md_id_ref to &database_username
/
grant select on MDB_ETL_MAPPING to &database_username
/
grant select on setupinfo to &database_username
/
grant select on LOCALEREPOSITORY to &database_username
/
grant select on MF_MODEL_MASTER to &database_username
/
grant select on MF_SANDBOX_MASTER to &database_username
/
grant select on MF_VARIABLE_MASTER to &database_username
/
grant select on MF_TECHNIQUE_MASTER to &database_username
/
grant select on MDB_RULE_SOURCE_HEADER to &database_username
/
grant select on MDB_RULE_TARGET_HEADER to &database_username
/
grant select on MDB_RULE_TARGET_MEMBER_HEADER to &database_username
/
grant select on MDB_RULE_GRID_DATA to &database_username
/
grant select on MDB_MODEL_MAPPING to &database_username
/
grant delete on AAI_MAP_MAPPER to &database_username
/
grant insert on AAI_MAP_MAPPER to &database_username
/
grant update on AAI_MAP_MAPPER to &database_username
/
grant select on AAI_MAP_MAPPER to &database_username
/
grant select on RTI_UI_EXCLUDE_PDM_LIST  to &database_username
/
grant select on RTI_VIR_PHY_TBL_NAME  to &database_username
/
grant select on infodom_patches to &database_username
/
```

17 Appendix L - Configuring Application Pack XML Files

17.1 OFS_ALM_PACK.xml

The OFS_ALM_PACK.xml file holds details on the various products that are packaged together in ALM 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 ALM 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.

```
<APP_PACK_CONFIG>
	<APP_PACK_ID>OFS_ALM_PACK</APP_PACK_ID>
	<APP_PACK_NAME>Financial Services Asset Liability Management</APP_PACK_NAME>
	<APP_PACK_DESCRIPTION>Applications for Asset Liability Management</APP_PACK_DESCRIPTION>
	<VERSION>8.0.0.0.0</VERSION>
	<APP>
		<APP_ID PREREQ="" DEF_SEL_FLG="YES" ENABLE="YES">OFS_AAI</APP_ID>
		<APP_NAME>Financial Services Analytical Applications Infrastructure</APP_NAME>
		<APP_DESCRIPTION>Base Infrastructure for Analytical Applications</APP_DESCRIPTION>
		<VERSION>8.0.0.0.0</VERSION>
	</APP>
	<APP>
		<APP_ID PREREQ="OFS_AAI" ENABLE="YES">OFS_ALM</APP_ID>
		<APP_NAME>Financial Services Asset Liability Management</APP_NAME>
		<APP_DESCRIPTION>Application for Asset Liability Management</APP_DESCRIPTION>
		<VERSION>8.0.0.0.0</VERSION>
	</APP>
	<APP>
		<APP_ID PREREQ="OFS_AAI" ENABLE="">OFS_ALMBI</APP_ID>
		<APP_NAME>Financial Services Asset Liability Management Analytics</APP_NAME>
		<APP_DESCRIPTION>Application for Asset Liability Management Analytics</APP_DESCRIPTION>
		<VERSION>8.0.0.0.0</VERSION>
	</APP>
</APP_PACK_CONFIG>
```

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.

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

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
				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.
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 Configuring OFS_ALM_SCHEMA_IN.xml

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

```
<APPPACKSCHEMA>
            <APP_PACK_ID>OFS_ALM_PACK</APP_PACK_ID>
            <JDBC_URL>jdbc:oracle:thin:@10.184.148.88:1521:ALMDEV80</JDBC_URL>
      <JDBC_DRIVER>oracle.jdbc.driver.OracleDriver</JDBC_DRIVER>
      <HOST>10.184.148.195</HOST>
            <SETUPINFO NAME="DEV" />
            <PASSWORD APPLYSAMEFORALL="Y" DEFAULT="" />
            <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_ALM" APP_GRP="1" DEFAULTTABLESPACE="USERS" TEMPTABLESPACE="TEMP" INFODOM="ALMDEVINFODOM" QUOTA="10G" />
                        <SCHEMA TYPE="ATOMIC" NAME="ofsaaatm" PASSWORD="" APP_ID="OFS_ALMBI" APP_GRP="1" DEFAULTTABLESPACE="USERS" TEMPTABLESPACE="TEMP" INFODOM="ALMDEVINFODOM" QUOTA="10G" />
            </SCHEMAS>
</APPPACKSCHEMA>
```

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/ Optional	Default Value/ Permissible Value	Comments
<APP_PACK_ID>	Seeded unique ID for the OFSAA Application Pack	Y	Seeded	DO NOT modify this value.
<JDBC_URL>	Enter the JDBC URL. **Note**: You can enter RAC and NON-RAC enabled database connectivity URL.	Y	Example, jdbc:oracle:thin:@<HOST/IP>:<PORT>:<SID> or jdbc:oracle:thin:@//[HOST][:PORT]/SERVICE or jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)(HOST=[HOST])(port=[PORT]))(ADDRESS=(PROTOCOL=TCP)(HOST=[HOST])(PORT=[PORT]))(LOAD_BALANCE=yes)(FAILOVER=yes))(CONNECT_DATA=(SERVICE_NAME=[SERVICE]))) For example, jdbc:oracle:thin:@//dbho	Ensure to add an entry (with SID/ SERVICE NAME) in the tnsnames.ora file on the OFSAA server. The entry should match with the SID/ SERVICE NAME used in the JDBC URL.

Tag Name/ Attribute Name	Description	Mandatory/ Optional	Default Value/ Permissible Value	Comments
			st.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)))	
<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.
<HOST>	Enter the Hostname/ IP Address of the system on which you are installing the OFSAA components.	Y	Host Name/ IP Address	
<SETUPINFO>/ PREFIX_SCHEMA_NAME	Identifies if the value specified in <SETUPINFO>/	N	YES or NO	Default value is YES

Tag Name/ Attribute Name	Description	Mandatory/ Optional	Default Value/ Permissible Value	Comments
	NAME attribute should be prefixed to the schema name.			
<SETUPINFO>/ NAME	Enter the acronym for the type of implementation. This information will be displayed in the OFSAA Home Page. **Note**: On executing the schema creator utility, this value will be prefixed with each schema name. For example: dev_ofsaaconf, uat_ofsaaatm.	Y	Accepts strings with a minimum length of two and maximum of four. Example, DEV, SIT, PROD	This name would appear in the OFSAA Landing Page as "Connected To: xxxx" The schemas being created would get this prefix. For E.g. dev_ofsaaconf, uat_ofsaaconf etc.
<PASSWORD>/ DEFAULT*	Enter the password if you want to set a default password for all schemas. **Note**: You also need to set APPLYSAMEFORALL attribute as Y to apply the default password for all the schemas.	N	The maximum length allowed is 30 characters. Special characters are not allowed.	
<PASSWORD>/ APPLYSAMEFORALL	Enter as Y if you want to apply the password	Y	Default – N Permissible – Y or N	**Note**: Setting this attribute value is

Tag Name/ Attribute Name	Description	Mandatory/ Optional	Default Value/ Permissible Value	Comments
	specified in DEFAULT attribute for all the schemas. If you enter as N, you need to provide individual passwords for all schemas. **Note**: In case you have entered Y in APPLYSAMEFORALL attribute and also have specified individual passwords for all the schemas, then the specified individual passwords will take precedence.			mandatory, If DEFAULT attribute is set.
<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.	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

Tag Name/ Attribute Name	Description	Mandatory/ Optional	Default Value/ Permissible Value	Comments
	Note: Do not edit this attribute value.			ATOMIC/ SANDBOX/ ADDON schemas can exist in the file. ATOMIC schema refers to the Information Domain schema. SANDBOX schema refers to the SANDBOX schema. ADDON schema refers to other miscellaneous schema (not applicable for this Application Pack). **Note:** The ALM application Pack supports only one Atomic Schema.
<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	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

Tag Name/ Attribute Name	Description	Mandatory/ Optional	Default Value/ Permissible Value	Comments
	SETUPINFO/ NAME attribute. SCHEMA NAME must be same for all the ATOMIC Schemas of applications within an Application Pack.			'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.
<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	N	Default - USERS Permissible - Any existing valid tablespace	Modify this value to associate any valid tablespace

Tag Name/ Attribute Name	Description	Mandatory/ Optional	Default Value/ Permissible Value	Comments
	User. Note: If this attribute is left blank, then USERS is set as the default tablespace.		name.	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 associate this schema.	N	Permissible length is 16 characters and only alphanumeric characters allowed. No special characters allowed.	

Tag Name/ Attribute Name	Description	Mandatory/ Optional	Default Value/ Permissible Value	Comments
	The schema creator utility automatically derives an Information Domain Name based on the Application Pack if no value is specified for this attribute.			

18 Appendix M - Configuring OFSAAI_InstallConfig.xml File

18.1 Configuring OFSAAI_InstallConfig.xml file

1. Navigate to `OFS_ALM_PACK/OFS_AAI/conf/`
2. Open the file `OFSAAI_InstallConfig.xml` in text editor.
3. Configure the `OFSAAI_InstallConfig.xml`:
4. 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		
<Layer name="GENERAL">		
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components would be deployed. Following numeric value should be set depending on the type: Apache Tomcat = 1 IBM WebSphere Application Server = 2 Oracle WebLogic Server = 3 For example, <InteractionVariable	Yes
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
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

InteractionVariable		
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 P for identifying the correct "ojdbc<version>.jar" version to be copied.	Yes
OLAP_SERVER_ IMPLEMENTATION	Identifies if the OFSAA Infrastructure OLAP component needs to be configured depending on whether you intend to use the OLAP feature. Following numeric value should be set depending on the choice: YES - 1 NO - 0	No
Note: If value for OLAP_SERVER_IMPLEMENTATIONis set to 1, it checks for following environment variables are set in .profile:		
SFTP_ENABLE	Identifies if the SFTP (Secure File Transfer Protocol) feature is to be enabled. Following numeric value should be set depending on the choice: SFTP - 1 FTP - 0	Yes
Note: The default value for SFTP_ENABLE is 1, which signifies that SFTP will be used. Oracle recommends using SFTP instead of FTP because SFTP is considered more secure. However, a client may choose to ignore this recommendation and to use FTP by setting SFTP_ENABLE to 0. This selection may be changed later by using the OFSAAI administration interface.		
FILE_TRANSFER_P ORT	Identifies the port used for the file transfer service. The default value specified is 22 (SFTP). Specify value as 21 or any other PORT value if value for SFTP_ENABLE is 0. For example, <InteractionVariable name="FILE_TRANSFER_ PORT">21</InteractionVariable>	Yes

InteractionVariable		
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
Note: Following ports are used internally by the various OFSAA Infrastructure services. Following default values 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 65535and 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
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. For more details on configuring your setup for HTTPS.		
HTTPS_ENABLE	Identifies if the UI should be accessed using HTTP or HTTPS scheme. The default value set is 0. Following numeric value should be set depending on the choice: YES - 1 NO - 0 For example, <InteractionVariable name="HTTPS_ENABLE">0</InteractionVariable>	Yes

InteractionVariable		
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 built the URL to access the OFSAA applications. Following context name can be identified from a URL: <scheme>://<host>:<port>/<context-name>/login.jsp Sample URL: https://myweb:443/ofsaadev/login.jsp For example, <InteractionVariable name="CONTEXT_NAME">ofsaadev</InteractionVariable>	Yes

InteractionVariable		
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
WEBLOGIC_DOMAIN_HOME	Identifies the WebLogic Domain Home. Specify the value only if WEBSERVERTYPE is set as 3 (WebLogic). 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)

InteractionVariable		
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

19 Appendix N – User Group Mapping

Application specific User Group mappings:

ALM:

- ALM Administrator
- ALMBI BI Analyst
- ALMBI Data Analyst

ALM Administrator: The ALM Admin has following access to following screens and modules:

- ADCO Prepayments for ALM
- ALM Access code for AAI
- **Application Preference:** ALM Application Preference Admin, ALM Application Preference View
- **Rate Management:** Add Currency, Add Currency Rate, Add Economic Indicator, Add Interest Rate Copy Economic Indicator, Copy Interest Rate, Delete Currency, Delete Currency Rate, Delete Economic Indicator, Delete Interest Rate, Edit Currency, Edit Currency Rate, Edit Economic Indicator, Edit Interest Rate, Execute Economic Indicator Loader, Launch Currency Rate Validation, Launch Interest Rate Loader, View Currency, View Currency Rate, View Economic Indicator , View Interest Rate
- **Process Tuning:** Add, Delete, Edit, View
- **Adjustment Rules:** Add, Delete, Edit, SaveAs/Copy, View
- Admin BI
- **Batch Maintenance:** Add, Copy, Delete, Edit, Run, View, Batch Processing, Execute Batch
- **Behavior Pattern:** Add, Delete, Edit, SaveAs/Copy, View
- **Migration Execution:** Execute/Run, Cancel
- **Cash Flow:** Add, Delete, Edit, Run, SaveAs/Copy, View
- Authorize Map(s), Create Map, Delete Map, Modify Map
- Defi Administrator
- **Detail Cash Flows:** Add All Records/Products
- **Discount Methods:** Add, Delete, Edit, SaveAs/Copy, View
- **Dynamic Deterministic :** Add, Delete, Edit, Run, SaveAs/Copy, View
- **Dynamic Stochastic Process:** Add, Delete, Edit, Run, SaveAs/Copy, View

- FSAPPS Home Page Link
- **Forecast Balances:** Add, Delete, Edit, SaveAs/Copy, View
- **Forecast Rates:** Add, Delete, Edit, SaveAs/Copy, Seeded Loader, View
- **Formula Results:** Add, Delete, Edit, SaveAs/Copy, View
- **Fusion Attributes:** Add, Delete, Edit, View, View Dependent Data
- **Fusion Expressions:** Add, Delete, Edit, View, View Dependent Data
- **Fusion Filters:** Add, Delete, Edit, View, View Dependent Data
- **Fusion Hierarchies:** Add, Delete, Edit, View, View Dependent Data
- **Fusion Members:** Add, Delete, Edit, View, View Dependent Data
- **Global Preferences:** View
- **Holiday Maintenance Screen:** Add, Delete, Edit, Run, Save As, View
- MDB Screen, Metadata Publish
- **Maturity Mix:** Add, Delete, Edit, SaveAs/Copy, View
- Moody Integration for ALM
- **Object Migration:** Copy Migration Ruleset, Create Migration Ruleset, Delete Migration Ruleset, Edit Migration Ruleset, Home Page, Source Configuration, View Migration Ruleset
- Operator Console
- **Payment Pattern:** Add, Delete, Edit, SaveAs/Copy, Seeded Loader, View
- **Prepayment Models:** Add, Delete, Edit, SaveAs/Copy, Seeded Loader, View
- **Prepayments:** Add, Delete, Edit, SaveAs/Copy, Seeded Loader, View
- **Pricing Margin:** Add, Delete, Edit, SaveAs/Copy, View
- **Product Characteristics:** Add, Delete, Edit, SaveAs/Copy, View
- **Product Profiles:** Add, Delete, Edit, SaveAs/Copy, View
- **Rate Dependency Patterns:** Add, Delete, Edit, SaveAs/Copy, View
- **Repricing Pattern:** Add, Delete, Edit, SaveAs/Copy, View
- **Static Deterministic Process:** Add, Delete, Edit, Run, SaveAs/Copy, View
- **Static Stochastic Process:** Add, Delete, Edit, Run, SaveAs/Copy, View

- **Stochastic Rate Index:** Add, Delete, Edit, SaveAs/Copy, View
- System Administrator
- **Time Buckets**: Add, Delete, Edit, SaveAs/Copy, View
- **Transaction Strategy:** Add, Delete, Edit, Run, SaveAs/Copy, View
- **Transfer Pricing:** Add, Delete, Edit, Run, SaveAs/Copy, View
- View ALM Tasks

ALM Analyst: The ALM Analyst has following access to following screens and modules:

- ALM Access code for AAI
- **ALM Application Preference:** View
- **Adjustments:** Add, Delete, Edit, SaveAs/Copy, View
- **Batch Maintenance:** Add, Copy, Delete, Edit, Run, View
- **Behavior Pattern:** View
- **Cash Flow Edits:** Add, Delete, Edit, SaveAs/Copy, View
- Defi Administrator
- **Discount Methods:** Add, Delete, Edit, SaveAs/Copy, View
- **Dynamic Deterministic Process:** Add, Delete, Edit, Run, SaveAs/Copy, View
- **Dynamic Stochastic Process:** Add, Delete, Edit, Run, SaveAs/Copy, View
- FSAPPS Home Page Link
- **Forecast Balances:** Add, Delete, Edit, SaveAs/Copy, View
- **Forecast Rates:** Add, Delete, Edit, SaveAs/Copy, Seeded Loader, View
- **Formula Results:** Add, Delete, Edit, SaveAs/Copy, View
- **Fusion Attributes:** View Dependent Data, View Attributes
- **Fusion Filters:** View Dependent Data, View Filters
- **Fusion Hierarchies:** View Dependent Data, View Hierarchies
- **Fusion Members:** View Dependent Data, Fusion View Members
- **Fusion Expressions:** View Dependency Expressions, View Expressions
- **Global Preferences:** View

- **Maturity Mix:** Add, Delete, Edit, SaveAs/Copy, View
- Moody Integration for ALM
- **Payment Pattern**: View
- **Prepayment Models:** Add, Delete, Edit, SaveAs/Copy, Seeded Loader, View
- **Prepayments:** Add, Delete, Edit, SaveAs/Copy, Seeded Loader, View
- **Prepayments:** Add, Delete, Edit, SaveAs/Copy, View
- **Pricing Margin:** Add, Delete, Edit, SaveAs/Copy, View
- **Product Characteristics:** Add, Delete, Edit, SaveAs/Copy, View
- **Product Profiles**: View
- **Rate Dependency Patterns:** Add, Delete, Edit, SaveAs/Copy, View
- **Repricing Pattern:** View
- **Static Deterministic Process:** Add, Delete, Edit, Run, SaveAs/Copy, View
- **Static Stochastic Process:** Add, Delete, Edit, Run, SaveAs/Copy, View
- **Stochastic Rate Index**: Add, Delete, Edit, SaveAs/Copy, View
- System Administrator
- **Time Buckets:** Edit , View
- **Transaction Strategy:** Add, Delete, Edit, SaveAs/Copy, View
- **Transfer Pricing:** Add, Delete, Edit, SaveAs/Copy, View
- View ALM Tasks
- View CFE Tasks
- **Rate Management:** View Currency, View Currency Rate, View Economic Indicator, View Interest Rate
- **Process Tuning:** View

ALM Auditor: The ALM Auditor has following access to following screens and modules:

- ALM Access code for AAI
- ALM Application Preference View
- **Adjustments**: View

- **Batch Maintenance:** Copy, View
- **Behavior Pattern:** View
- **Cash Flow Edits:** View
- Defi Administrator
- **Discount Methods:** View
- **Dynamic Deterministic Process:** View
- **Dynamic Stochastic Process:** View
- FSAPPS Home Page Link
- **Forecast Balances:** View
- **Forecast Rates:** View
- **Formula Results:** View
- **Fusion Attributes:** View Dependent Data, View Attributes
- **Fusion Filters:** View Dependent Data, View Filters
- **Fusion Hierarchies:** View Dependent Data, View Hierarchies
- **Fusion Members:** View Dependent Data, View Members
- **Fusion Expressions:** View Dependency Expressions, View Expressions
- **Global Preferences:** View
- **Maturity Mix:** View
- **Object Migration:** View Migration Ruleset
- **Payment Pattern:** View
- **Prepayment Models:** View
- **Prepayments:** View
- **Pricing Margin:** View
- **Product Characteristics:** View
- **Product Profiles:** View
- **Rate Dependency Patterns:** View

- **Static Deterministic Process:** View
- **Static Stochastic Process:** View
- **Stochastic Rate Index:** View
- System Administrator
- **Time Buckets:** Edit, view
- **Transaction Strategy**: View
- **Transfer Pricing:** View
- View ALM Tasks
- **Rate Management:** View Currency, View Currency Rate, View Economic Indicator, View Interest Rate
- **Process Tuning:** View

Note: For more information on user group mapping, refer to Security Management section of *OFAAI User Guide.*

ALMBI:

- ALMBI Administrator
- ALMBI BI Analyst
- ALMBI Data Analyst

20 Appendix O - Migration for Excel Upload

This appendix provides detailed instructions to migrate for excel upload.

20.1.1 Prerequisites

The following are the prerequisites for migration:

- 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: .xls/.xlsx files should be copied to the path as per the local path given in your webserverinfo table of config schema. 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 following 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 following 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 P - 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	JDBC Jar files specific to the release
12.1 or 12cR1	JDK 8, JDK 7 and JDK 8	ojdbc7.jar for JDK 7/JDK 8
11.2 or 11gR2	JDK 7 supported in 11.2.0.3 and 11.2.0.4	ojdbc6.jar for JDK 7

22 Appendix Q - 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:

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.
- Oracle WebLogic Server should be 12.1.3.0 or above. Download and install patch 18729264 from http://support.oracle.com/

Note: IBM WebSphere 8.5.x (Full Profile) on Java 8 is not available.

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/jrel1.8.0_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 Configuring 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 Configuring 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

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 R - Removing OFSAA

This chapter includes the following sections:

23.1 Uninstalling OFSAA Infrastructure

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

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

To uninstall OFSAA Infrastructure:

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

   ```
   ./Uninstall.sh
   ```

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

```
/scratch/ofsaadb/OFSAAI>./Uninstall.sh
Uninstallation Started  [time : Tue Jun 10 14:20:27 IST 2014 ]
**********************************************************
*** Driver loaded with Driver oracle.jdbc.driver.OracleDriver

 Please enter Configuration schema Password :
Connected to Config Schema
Cleaning config schema ....
config schema cleaned ...
Cleaning up Infrastructure Home Dir !
Please wait ..
Uninstallation Completed ! Thank You  [time : Tue Jun 10 14:21:59 IST 2014 ]
**************************************************************************
/scratch/ofsaadb/OFSAAI>
```

Figure 101: Uninstalling OFSAA Infrastructure

Note:

- Uninstallation does not remove the Infrastructure application from the Web Application Server. This has to be done manually.

- The entries in the `.profile` file will have to be removed manually.
- The files/ folders under the file system staging area (ftpshare) have to be deleted manually.
- All the Database objects from Atomic Schemas have to be dropped manually.

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.

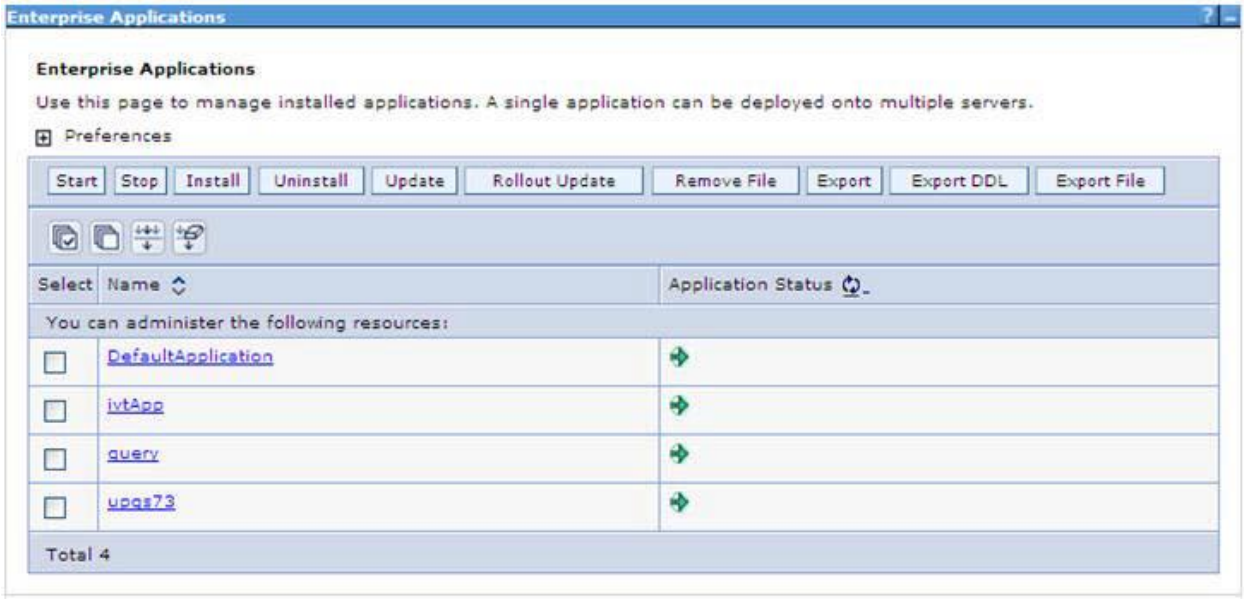


Figure 102: Enterprise Applications

4. Select the checkbox adjacent to the application to be uninstalled and click **Stop**.
5. Click **Uninstall**. The Uninstall Application window is displayed.

Figure 103: Uninstall Application

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.

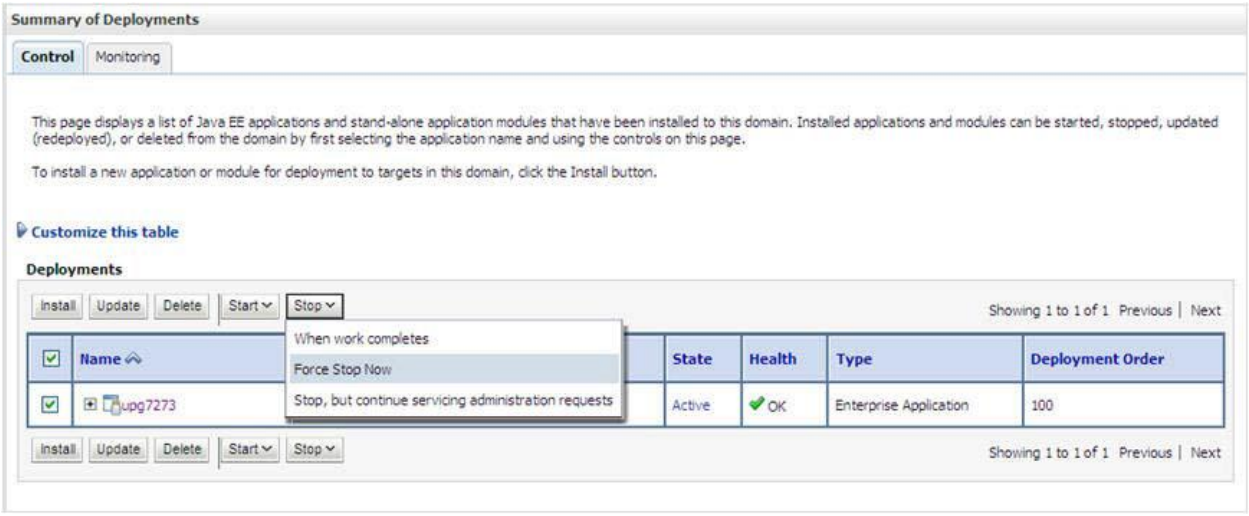


Figure 104: Summary of Deployments

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

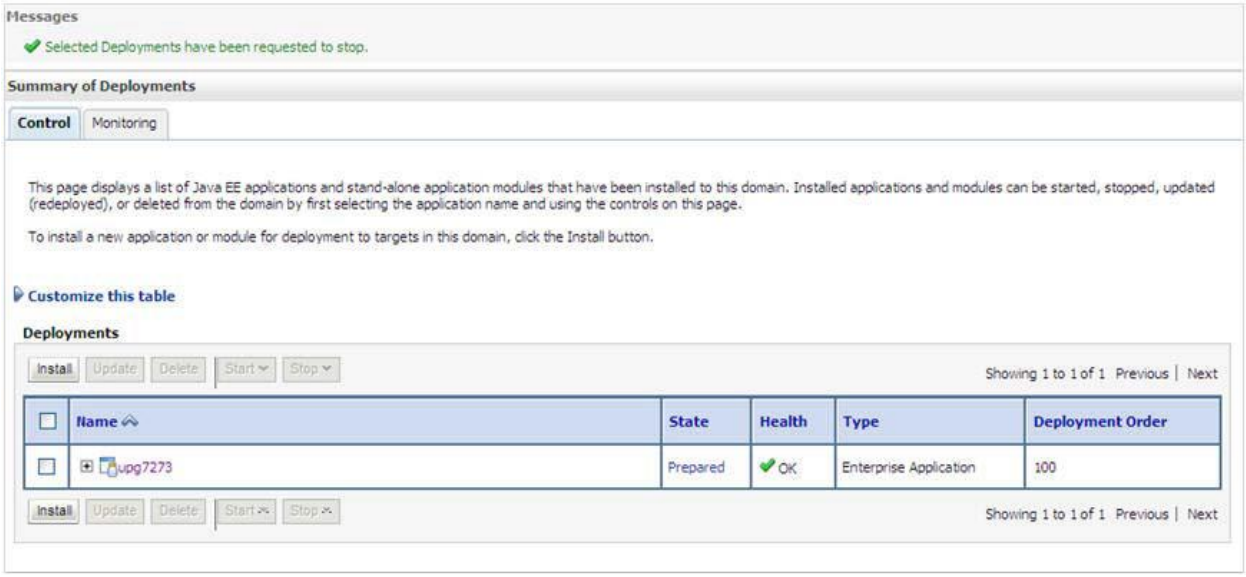


Figure 105: Summary of Deployments- Messages

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

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.

   Place comment `<!-- -->` in between the context path section. For example:

   ```
   <!--
   <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>"
maxTotal="100"
maxIdle="30"
maxWaitMillis="10000"/>
</Context>
-->
```

Restart the Tomcat service by doing the following:

a. Login to the "Unix server" through a terminal emulator.
b. Navigate to $catalina_home/bin directory.
c. Stop the tomcat services using the command ./shutdown.sh
d. Start the tomcat services using the command ./startup.sh

2. Open the URL in a browser window: `http://<IP address>:<Tomcat server port>`. (https if SSL is enabled). The Tomcat home window is displayed.
3. Click the **Manager App**. The Connect to window is displayed.
4. 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.

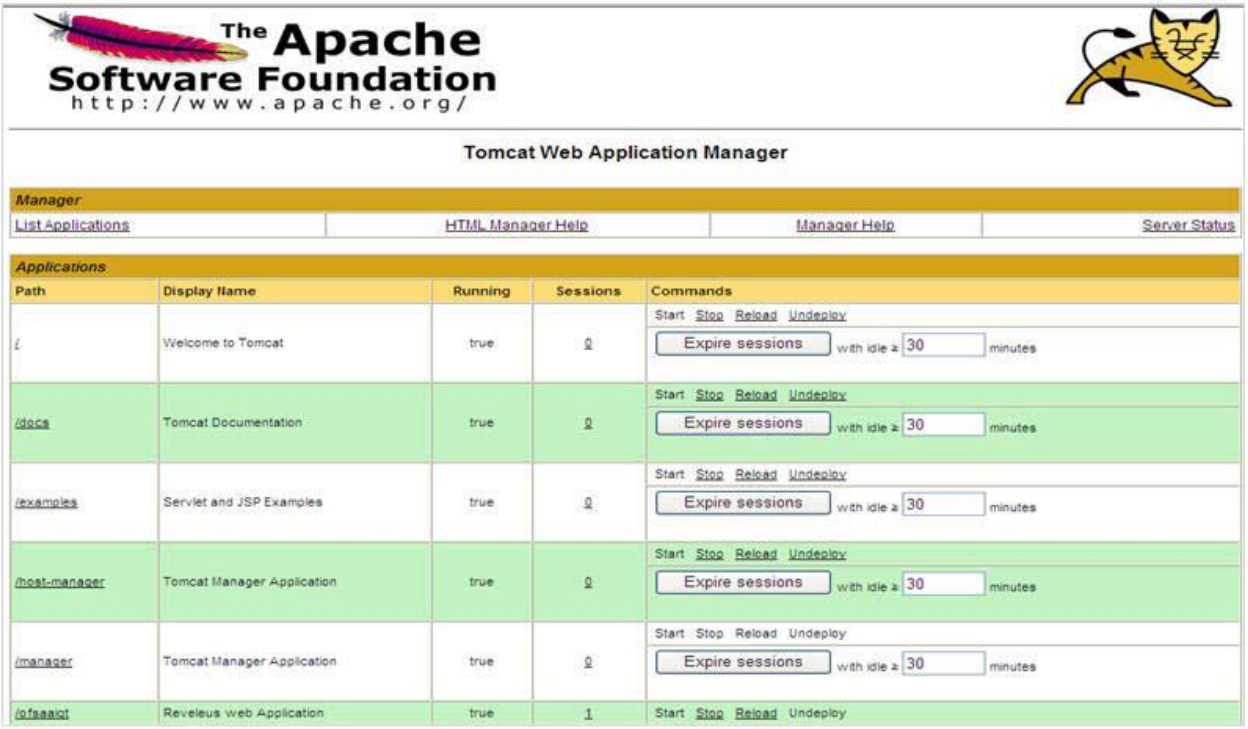


Figure 106: Tomcat Web Application Manager

5. Click the **Undeploy** link against the deployed Infrastructure application. A confirmation message is displayed on the application /Infrastructure being uninstalled.

24 Appendix S - 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 prerequisite 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.

24.1 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

24.1.1 OFSAAI FAQs

What are the different components that get installed during OFSAAI?

The different components of OFSAAI are illustrated in Figure 1–2, "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, refer to Hardware and Software Requirements, Java Runtime Environment section.

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

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

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

Refer to OFSAA Technology Stack Matrices.

What are the different files required to install OFSAAI?

The following files are required:

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

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

"Execute Permission denied"?

Check whether all the files provided for OFSAAI installation have 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 Table 3–1, "Prerequisite Information" section in this document.
- Check whether sufficient temporary space is available.
- Ensure that the movement of OFSAAI Installer text files to the target system is done in the Text mode so that `setup.sh` file does not contain control line feed characters (^M).

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

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

What should I do if I get the following error message during installation, "User must have CREATE TABLE, CREATE VIEW, CREATE TRIGGER, CREATE INDEX, CREATE SEQUENCE,

CREATE PROCEDURE" even though the oracle schema user created has the mentioned privileges?

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

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

See the Table 3–1, " Prerequisite Information" section in this document.

Installation of OFSAAI was completed successfully! What next?

Post the successful completion of OFSAAI installation, one has to perform the Post Installation steps. See 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 Installation* section in this guide.

Can OFSAAI config and atomic schemas be on different databases?

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

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

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

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

When should I run the MLS utility?

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

Does OFSAAI support Oracle Linux versions other than 5.5?

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

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

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 do I know if the installation is completed successfully?

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

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.

What should I do if I get the following error message during OFSAAI installation on Solaris 11 system?:

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

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

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.

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

This could mostly happen:

When installer was not unzipped rightly or corrupted during unzip.

`setup.sh` file which resides within the install archive was not transferred in ASCII or text mode, which could have corrupted the file.

To correct this, follow the steps:

A. Copy the installer (in BINARY mode) to the system on which the OFSAA Infrastructure components will be installed.
B. Unzip the installer using the command:

   unzip <OFSAAI_Installer>.zip

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

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

Does OFSAA support Oracle DB 11g Standard edition?

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

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

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

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

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

Ensure that the System Password provided when prompted should match with the "Oracle Configuration password" provided during installation. Also check whether the connection to the "configuration schema" can be established through sqlplus.

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

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

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

Is it necessary to provide the specified grants to the Oracle schema user before installation? If yes, can it be revoked after 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 can 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, we can have FTPSHARE on another machine other than the machines where OFSAAI is installed.

Is it mandatory to provide the FTP/SFTP password?

Yes, OFSAAI needs credentials of the user who has complete permissions on ftpshare directory, and the user should be able to independently login to the unix server.

What are the permissions required for FTPSHARE and when should I give them?

It is recommended to provide permissions on FTPSHARE in case of installations done across different machines or VMs (multitier installation).

In case of single tier installation, 770 permissions can be provided if the Unix users of OFSAAI and web server belong to the same Unix group.

Additionally any new file that is created in the FTPSHARE folder of any installation layer should be granted specific/explicit permission.

Port Change utility can be used to have the Port number modified, which are currently being used by the Infrastructure application. For more information, refer to *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 prerequisite step towards using the OFSAAI.

OFSAAI Configuration: Unable to save the server details?

Ensure the input User ID, Password, and Share Name are correct.

- Ensure FTP/SFTP services are enabled.
- Have a test FTP/SFTP connection made and confirm if they are successful.

What should I do if I get the following message message while creating Information Domain, "Please create a database and then create the information domain"?

Information Domain is mapped to only one Database; and thus before the creation of Information Domain, at least one database details should exist.

What should I do if I get the following message during startup of backend engine message server, "ConnectToDatabase: FatalError, could not connect to the DB server"?

- Verify whether connection to the "Configuration Schema" can be established through SQL*Plus.
- Verify "Configuration Schema" password is modified post installation.
- Ensure Oracle Database Alias Name created for oracle instance and Oracle Service Name are same.
- On a multi tier Installation mode, ensure TNSNAME and SID are same in both the Application and Database Layers.

What should I do if I get the following message during the startup of backend engine message server, "Fatal Error, failed to get user ID from LibSmsConnect"?

Ensure Reveleus.sec file exist under the $FIC_HOME/conf directory where the Database components are installed.

Does OFSAAI Application support LDAP authentication?

OFSAAI supports LDAP configuration and authentication.

Does OFSAAI support multiple languages?

Yes, OFSAAI supports multiple languages.

Does OFSAAI provide any data back-up features?

OFSAAI does not have built-in back up facility. External Storage Infrastructure is recommended for back-up.

What kind of security features does the OFSAAI 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 more details, refer to Configuration for *Model Upload Utility section* of the *Oracle Financial Services Analytical Applications Infrastructure User Guide on OTN*.

How do I apply incremental change to the existing model when the Business Data model undergoes a change?

Modified data model can be uploaded into the system and OFSAAI has the ability to compare the changes within the data model with respect to the one already present in the system and enables propagation of incremental changes in a consistent manner.

What are the different types of uploading a business data Model?

OFSAAI supports uploading of business data model from client desktop and also by picking up the data model from the server location.

Can the OFSAAI "Configuration Schema" password be modified post installation?

The OFSAAI "Configuration Schema" password can be modified post installation. OFSAAI application stores the password in the database and few configuration files, thus any changes to the "Configuration Schema" password will require updating in those files. Contact Oracle Support Services for more details.

Can the OFSAAI Atomic Schema password be modified?

The OFSAAI Atomic Schema password can be modified. OFSAAI application stores the atomic schema password in the database and few configuration files, thus any change to the atomic schema password will require updating those files.

To change the Atomic Schema password, follow the steps:

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.
4. Based on the Web Server installed, follow the steps:

If you are using Apache Tomcat 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).

*****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).

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).

Restart the OFSAAI services

> **Note**: If the modified passwords are not updated, OFSAAI logs display the message ORA-28000: the account is locked.

Does the upload of Business Data model depend on Java Memory?

Business data model upload through OFSAAI depends on the Java memory settings on the client and server machines. Java memory setting varies with the data model size and the available RAM. Contact Oracle Support Services for more details.

Why do the Business Metadata Management screens (Business Processors screen) in User Interface, takes longer time to load than other screens?

The Log file in DynamicServices.xml which resides in $FIC_HOME/conf is continuously being updated/refreshed to cache metadata. This can be observed when you are starting `startofsaai.sh`

and if any of the log file (Ex: 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 following query in config schema.

   ```
   select count(1), t.metadata_name, m.dsn_id
   from metadata_master m, metadata_type_master t
   where m.metadata_type = t.metadata_type
   group by t.metadata_name, m.dsn_id
   ```

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 in OFSAAI Data Model Management -> Data Model Maintenance-> Import Model, you need to configure the required model size in struts.xml file available in the path $FIC_WEB_HOME/webroot/WEB-INF/classes.

Note:

The size requirements have to be always specified in bytes.

For example, if you need to configure for model size of 2.5GB, then you can approximately set the max size to 3GB (3221225472 bytes) as 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, 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.

Refer to Support Note for the workaround.

How do you turn off unused information domains (infodoms) from cache?

Follow these 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.
4. 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 follows:

```
<SERVICE CODE="20"
CLASS="com.iflex.fic.metadata.services.MetadataServiceProvider" NAME="BMD"
SERVERID="DEFAULT" PATH=" " LOGGERNAME="UMMLOGGER" LOGGERLEVEL="10">
<PARAMETERS>
<PARAMETER NAME="CACHE_ON_STARTUP" VALUE="0" />
<PARAMETER NAME="BACKUP_XML" VALUE="1" />
<PARAMETER NAME="MAX_BACKUP_XML" VALUE="2" />
<PARAMETER NAME="PC_NONBI_BI_SWITCH" VALUE="2048" />
<PARAMETER NAME="HIERARCHY_NODE_LIMIT" VALUE="2000" />
<PARAMETER NAME="ALIAS_CACHE_SIZE" VALUE="1000" />
<PARAMETER NAME="DATASET_CACHE_SIZE" VALUE="2000" />
<PARAMETER NAME="MEASURE_CACHE_SIZE" VALUE="2000" />
<PARAMETER NAME="HIERARCHY_CACHE_SIZE" VALUE="2000" />
<PARAMETER NAME="DIMENSION_CACHE_SIZE" VALUE="2000" />
<PARAMETER NAME="HIERARCHYATTRIBUTE_CACHE_SIZE" VALUE="1000" />
<PARAMETER NAME="CUBE_CACHE_SIZE" VALUE="1000" />
<PARAMETER NAME="RDM_CACHE_SIZE" VALUE="1000" />
<PARAMETER NAME="BUSINESSPROCESSOR_CACHE_SIZE" VALUE="2000" />
<PARAMETER NAME="DERIVEDENTITY_CACHE_SIZE" VALUE="1000" />
```

```
<PARAMETER NAME="LOG_GET_METADATA" VALUE="false" />
<PARAMETER NAME="METADATA_PARALLEL_CACHING" VALUE="0" />
</PARAMETERS>
</SERVICE>
```

Can I install an Application Pack on an existing Atomic schema/ Information Domain created manually?

No, you cannot install an Application Pack on existing Atomic schema/Information Domain created manually. Application Packs can be installed only on Atomic Schemas/Information Domain created using schema creator utility and/ or the Application Pack installer.

What should I do if I get the following exception while trying to view the model outputs in Model Outputs screen, "Exception ->Local Path/STAGE/Output file name (No such file or directory)"?

Ensure you have created a folder "STAGE" under the path mentioned as "Local Path" in the web server details screen. This folder needs to be created under the local path on every node ,in case of web application server clustering.

What should I do if I get the following exception during OFSAA services startup, "Exception in thread "main" java.lang.UnsatisfiedLinkError: net (Not a directory)"?

Ensure the JRE referred in .profile is not a symbolic link. Correct the path reference to point to a physical JRE installed.

What is the optimized memory settings required for "New" model upload?

The following table lists the optimized memory settings required for "New" model upload.

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

What is the resolution if I get the error - ORA 01792 maximum number of columns in a table or view is 1000 during T2T execution?

You should apply the following patch set from Oracle. Applicable only for 12c.

https://support.oracle.com/epmos/faces/DocumentDisplay?id=1937782.1

I did not enable OFS Inline Processing Engine Application license during the installation. However, I have enabled it post installation, using the Manage OFSAA Product License(s) in the Admin UI. Are there any other additional configurations that I need to do?

Yes. Follow the instructions explained in the *OFS Inline Processing Engine Configuration Guide available on OTN*.

I get an error when I try to build an Oracle OLAP cube. What should I do?

Execute the following grant on the appropriate ATOMIC schema

```
grant olap_user to &database_username
```

How do you turn off unused Information Domains (Infodoms) from caching?

Follow these steps to turn off unused infodoms from caching:

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 follows:

```
<SERVICE CODE="20"
CLASS="com.iflex.fic.metadata.services.MetadataServiceProvider" NAME="BMD"
```

```
SERVERID="DEFAULT" PATH=" " LOGGERNAME="UMMLOGGER" LOGGERLEVEL="10">
<PARAMETERS>
<PARAMETER NAME="CACHE_ON_STARTUP" VALUE="0" />
<PARAMETER NAME="BACKUP_XML" VALUE="1" />
<PARAMETER NAME="MAX_BACKUP_XML" VALUE="2" />
<PARAMETER NAME="PC_NONBI_BI_SWITCH" VALUE="2048" />
<PARAMETER NAME="HIERARCHY_NODE_LIMIT" VALUE="2000" />
<PARAMETER NAME="ALIAS_CACHE_SIZE" VALUE="1000" />
<PARAMETER NAME="DATASET_CACHE_SIZE" VALUE="2000" />
<PARAMETER NAME="MEASURE_CACHE_SIZE" VALUE="2000" />
<PARAMETER NAME="HIERARCHY_CACHE_SIZE" VALUE="2000" />
<PARAMETER NAME="DIMENSION_CACHE_SIZE" VALUE="2000" />
<PARAMETER NAME="HIERARCHYATTRIBUTE_CACHE_SIZE" VALUE="1000" />
<PARAMETER NAME="CUBE_CACHE_SIZE" VALUE="1000" />
<PARAMETER NAME="RDM_CACHE_SIZE" VALUE="1000" />
<PARAMETER NAME="BUSINESSPROCESSOR_CACHE_SIZE" VALUE="2000" />
<PARAMETER NAME="DERIVEDENTITY_CACHE_SIZE" VALUE="1000" />
<PARAMETER NAME="LOG_GET_METADATA" VALUE="false" />
<PARAMETER NAME="METADATA_PARALLEL_CACHING" VALUE="0" />
</PARAMETERS>
</SERVICE>
```

"While creating an Excel Mapping, after specifying the excel worksheet, the target table, and mapping each column in the worksheet to a target table, I click Save and nothing happens. But when I click Cancel, a message pops up informing me that all changes will be discarded", what is to be done?

Check if the version of Internet Explorer 8 with JRE 1.4 Plug-in is enabled on machine. If so, upgrade the JRE plug in to 1.7+.

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 8.0.0.0.0 and higher versions?

No, ReveleusAdminConsoleAgent is not applicable starting OFSAAI 7.3.3.0.0. There is a change in the way agentservers are managed through AGENTSTARTUP.SH & AGENTSHUTDOWN.SH.

What should I do when the message server process does not open and I get the following error message, "CI18NProvider::CI18NProvider, Error, unable to connect to the config database"?

This error is displayed due to the following reasons:

- The Config Schema password is already expired.
- If the Config Schema password is going to expire soon and the message like "ORA-28002: the password will expire within 6 days" displays while connecting to config schema through SQLPlus.
- The Config Schema password is modified.

To resolve the error, re-set the Config Schema password to the old password. Else, if the Config Schema password is modified to something else then follow these steps:

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 max 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:

```
<appender name="REVSERVERAPPENDER"
class="org.apache.log4j.RollingFileAppender">
<param name="file"
value="$FIC_HOME/ficapp/common/FICServer/logs/RevAppserver.log"/>
<param name="Append" value="true" />
<param name="MaxFileSize" value="5000kb" />
<param name="MaxBackupIndex" value="5" />
<layout class="org.apache.log4j.PatternLayout">
<param name="ConversionPattern" value="[REVELEUSLOG] %m%n"/>
</layout>
</appender>
```

To configure the Deployed area logs file, follow these steps:

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.xml file. The default log file path (file) is set by the installer . This can be configured to another path.

Can I point the environment with HTTP enabled to HTTPS after installation and vice versa?

Follow these steps:

1. Create SSL related certificates and import to respective servers.
2. Enable SSL on a desired Port (example 9443) on your existing and already deployed web application servers.
3. Replace the protocol as https and new ssl port (FIC_SERVLET_PORT) configured and in all the URLs specified on following files:
   - $FIC_HOME/ficapp/common/FICServer/conf/FICWeb.cfg and $FIC_HOME/ficweb/webroot/conf/FICWeb.cfg
   - $FIC_HOME/ficapp/icc/conf/WSMREService.properties
   - $FIC_HOME/ficweb/webroot/conf/ModelExecution.properties
   - $FIC_HOME/ficdb/conf/MDBPublishExecution.properties
   - $FIC_HOME/ficdb/conf/ObjAppMap.properties
   - $FIC_HOME/utility/Migration/conf/WSMigration.properties
   - $FIC_HOME/utility/WSExecution/conf/WSExecution.properties
   - $FIC_HOME/EXEWebService/WebSphere/ROOT/WEB-INF/wsdl/EXEWebServiceImpl.wsdl
   - $FIC_HOME/EXEWebService/Tomcat/ROOT/WEB-INF/wsdl/EXEWebServiceImpl.wsdl
   - $FIC_HOME/EXEWebService/weblogic/ROOT/WEB-INF/wsdl/EXEWebServiceImpl.wsdl
4. Replace XML attribute/Node values as specified on following files:
   - $FIC_HOME/ficweb/webroot/WEB-INF/web.xml
   - FIC_WEBSERVER_PORT=9443
   - FIC_WEBPROTOCOL=https

   $FIC_HOME/conf/LookUpServices.xml and $FIC_HOME/ficweb/webroot/conf/LookUpServices.xml

   PORT="9443" PROTOCOL="https:"
5. Login to config schema and execute following SQL command to replace protocol and SSL port.

```
SQL> update configuration cn set cn.paramvalue='9443' where
cn.paramname='SERVLET_ENGINE_PORT';

SQL> update configuration cn set
cn.paramvalue=replace(cn.paramvalue,'http:','https:') where
cn.paramname='FormsManagerCacheReload';

SQL> update web_server_info ws set
ws.servletport='9443',ws.servletprotocol='https';
```

6. Create EAR/WAR file and Re-Deploy.

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 folder on Target.
2. Run the PortC.jar utility using the command:

```
java –jarPortC.jar DMP
```

A file with the name DefaultPorts.properties will be created under $FIC_HOME directory which will contain the ports. For more information, refer Changing IP/ Hostname, Ports, Deployed Paths of the OFSAA Instance section in the OFSAAI Admin Guide available on OTN.

Note: This feature is available only after applying 7.3.5.2.0 Minor Release patch.

What should I do if I get the following error message, "Error while fetching open cursor value Status : FAIL"?

This error occurs while executing envCheck.sh because the user does not have access to V$parameter. This error does not occur due to sysdba or non sysdba privileges provided they have access/grants to V$parameter.

What should I do 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.

24.1.2 Application Pack 8.0.0.0.0 FAQs

What is an Application pack?

An Application Pack is suite of products. For more information, refer *About Oracle Financial Services Advanced Analytical Applications (OFSAA) Application Packs*.

Can I get a standalone installer for OFSAAI 8.0?

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

How does OFSAA 8.0 Application pack relate to OFSAA 7.x series?

8.0 is a new major release consolidating all products from OFSAA product suite.

Can existing OFSAA 7.x customers upgrade to OFSAA 8.0 Application Pack?

There is no upgrade path available. However, we will have migration kit / path for every product to 8.0 application pack. Further details will be available with Oracle Support.

Does OFSAA 8.0 Application pack UPGRADE automatically to existing environments?

No. OFSAA 8.0 application pack has to be installed in an 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 section *Hardware and Software Requirements* section.

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 Application Pack is support all Operating systems?

LINUX, AIX, SOLARIS 10, 11. 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 Oracle Financial Services Advanced Analytical Infrastructure Installation and Configuration Guide published in OTN for the application pack installers.

Does this installation require any Third party 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? [that is, Silent or GUI]

OFSAA Application Packs supports both, GUI and Silent Mode.

Does OFSAA 8.0 Application Pack support Multi tier Installations?

OFSAA 8.0 does single tier installation. For more information refer to *OFSAAI FAQs* section.

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

Yes. The prerequisite checks are done by the respective application pack installer.

What happens if it aborts during installation of any application/product with-in an Application pack?

You must 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 file 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 can enable; but 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 of additional applications is not required. If you wish to add an application later, you can enable the application at that time.

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

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

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.

Can I select an Infodom for Application pack during installation?

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? (That is if you want to install LRM & MR in two infodoms)

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

How many Infodoms can be created over a single OFSAA Infrastructure of 8.0.1.0.0?

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

Does '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 in later point of time?

OFS Enterprise Modeling is a separate product and can be enabled as an option later from any application pack that bundles Enterprise Modeling.

Does Application pack create sandbox automatically for the required applications?

Yes, Sandbox creation is part of application install process.

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

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

Can I upgrade AAI only?

Yes, you can upgrade AAI alone.

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

No. 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.

Can I uninstall entire Application Pack?

No, you cannot uninstall the Application Pack.

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

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

Does Application Pack contain all Language Packs supported?

Language Packs need to be installed on 8.0 application packs.

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 Behavioral 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.

What should I do if I get the following error message while running the schema creator utility, "HostName in input xml is not matching with the local hostname"?

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

What are the Java versions supported in OFS ALM Application Pack version 8.0.0.0.0?
OFS ALM Application Pack supports 1.7.x and 1.8.x.

What is the required disk space for ALM Application Pack installation?

The required free disk space for ALM installation is **Current disk space of $FIC_HOME + Installer size.**

Is this release of the OFS ALM Application Pack version 8.0.0.0.0 supported on Java 8?
Yes. To install this release of the OFS ALM Application Pack version 8.0.0.0.0 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 I do if I get following error during schema creation in ALM 8.0.0.0.0 installation on OEL7.
UPPER(TABLE_NAME) = 'DBA_USERS' and UPPER(PRIVILEGE) = 'SELECT'
[SCHEMAUTILITY] [INFO] - Connection URL successfully validated...
[SCHEMAUTILITY] [DEBUG] - Executing ...SELECT VALUE FROM v$option WHERE parameter = 'Partitioning'
[SCHEMAUTILITY] [ERROR] - Error while validating host name 10.184.157.139
[SCHEMAUTILITY] [ERROR] -
java.net.UnknownHostException: online: Name or service not known

Modify the following line from osc.sh

machineIP=`/sbin/ifconfig | grep "inet addr"|head -1|tr -s '\t' ' '|cut -d ' ' -f3|cut -d ':' -f2`

to

machineIP=`/sbin/ifconfig | grep "inet"|head -1|tr -s '\t' ' '|cut -d ' ' -f3|cut -d ':' -f2`

24.2 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?

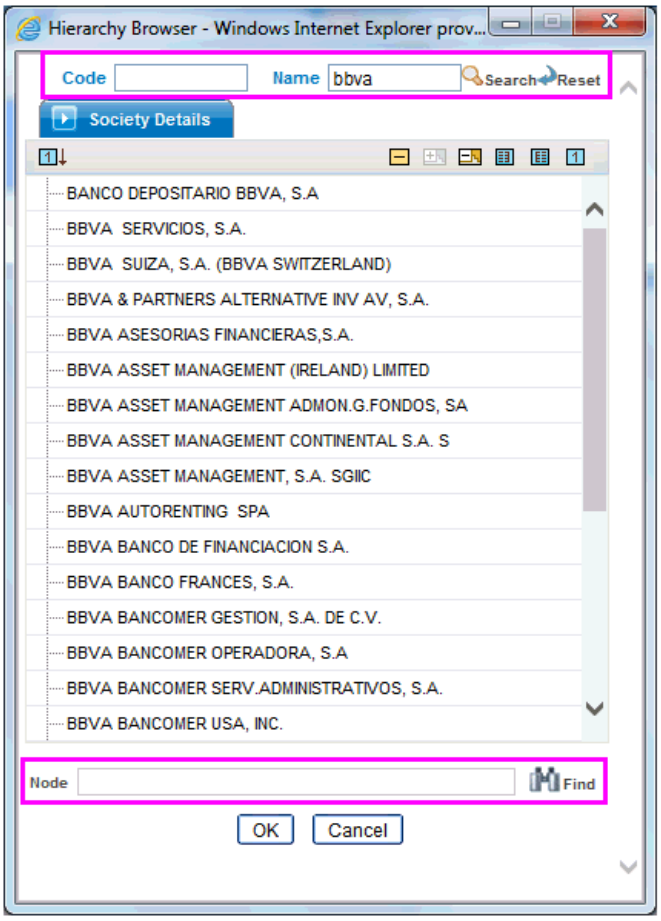
Perform Grid Export operation to export the columns added to the grid by Field Chooser option.

'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.

24.3 Error Dictionary

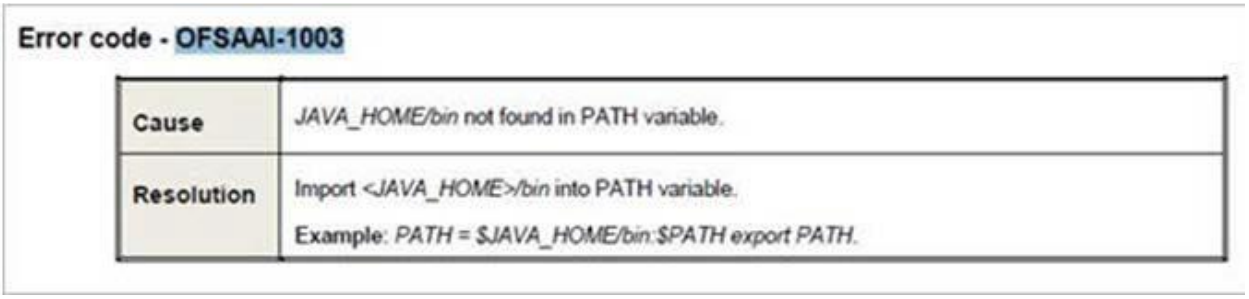
This contents of this section has been created with the interest to help you resolve the installation issues if any. There is a compilation of all the possible errors that might arise during the installation process with the possible cause and the resolution to quickly fix the issue and proceed further with the installation.

This section includes the following topics:

24.3.1 Accessing Error Dictionary

Instead of scrolling through the document to find the error code, you can use the pdf search functionality. In the "Find" dialog available in any of the Adobe Acrobat version that you are using to view the pdf document, follow these instructions to quickly find the error resolution.

1. With the Installation pdf open, press **Ctrl**+**F** or select **Edit** > **Find**.
2. The *Find* dialog is displayed as indicated.
3. Enter the error code that is displayed on screen during Infrastructure installation.
4. Press **Enter**. The search results are displayed and highlighted as 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.

24.3.2 Error Code Dictionary

Error code - OFSAAI-1001

Cause	Unix shell is not "korn" shell.
Resolution	Change the shell type to "korn". Use chsh unix command to change SHELL type. Shell type can also be changed by specifying shell path for the Unix user in /etc/passwd file. 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 ALM Application Pack

8.0.0.0.0 Installation Guide

Oracle Corporation
World Headquarters
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.

Worldwide Inquiries:

Phone: +1.650.506.7000

Fax: +1.650.506.7200

www.oracle.com/us/industries/financial-services/