

**Oracle® Financial Services Financial  
Accounting and Reporting Standards  
(IFRS and CECL) Application Pack**

Installation and Configuration Guide

Release 8.0.8.0.0

**F17968-01**

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Oracle Financial Services Financial Accounting and Reporting Standards (IFRS and CECL) Application Pack  
Installation and Configuration Guide, Release 8.0.8.0.0

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# Document Control

This section provides the revision details of the document.

Version Number	Revision Date	Changes Done
1.0	Created: September 2019	Captured installation and configuration steps for 8.0.8.0.0 Release.

This document includes the necessary instructions to install the OFS Financial Accounting and Reporting Standards (IFRS and CECL) Application Pack 8.0.8.0.0 and perform the required post installation configurations. The latest copy of this guide can be accessed from OHC Documentation Library.



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# Preface

This section provides supporting information for the Oracle Financial Services International Financial Reporting Standards Application Pack (OFS IFRS) Installation and Configuration Guide and includes the following topics:

- [Summary](#)
- [Audience](#)
- [Related Documents](#)
- [Conventions](#)
- [Abbreviations](#)

## Summary

You can find the latest copy of this document in [OHC Documentation Library](#) which includes all the recent additions/revisions (if any) done till date.

Before you begin the installation, ensure that you have 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

Oracle Financial Services International Financial Reporting Standards Application Pack Installation and Configuration Guide is intended for administrators, and implementation consultants who are responsible for installing and maintaining the application pack components.

### Prerequisites for the Audience

Following are the prerequisites for administrators installing OFS IFRS:

This document assumes that you have experience in installing Enterprise components and basic knowledge about the following are recommended:

- OFS IFRS components
- OFSAA Architecture
- UNIX Commands
- Database Concepts
- Web Server/ Web Application Server

## Related Documents

For more information, see the following documents in the Oracle Financial Services International Financial Reporting Standards Application Pack 8.x documentation set:

- *Oracle Financial Services Loan Loss Forecasting and Provisioning User Guide*
- *Oracle Financial Services Hedge Management User Guide*

## Conventions

The following text conventions are used in this document:

<b>Convention</b>	<b>Meaning</b>
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the window, or text that you enter.

## Abbreviations

The following table lists the abbreviations used in this document:

<b>Abbreviation</b>	<b>Meaning</b>
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
Infodom	Information Domain
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
LDAP	Lightweight Directory Access Protocol
LHS	Left Hand Side

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<b>Abbreviation</b>	<b>Meaning</b>
MFA	Multi-Factor Authentication
MOS	My Oracle Support
OFSAAI	Oracle Financial Services Analytical Application Infrastructure
OHC	Oracle Help Center
OLAP	On-Line Analytical Processing
OS	Operating System
RAM	Random Access Memory
RDMS	Relational Database Management System
SFTP	Secure File Transfer Protocol
SID	System Identifier
SSL	Secure Sockets Layer
TDE	Transparent Data Encryption
TNS	Transparent Network Substrate
URL	Uniform Resource Locator
VM	Virtual Machine
Web Archive	WAR
XML	Extensible Markup Language

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# About OFSAA and OFSAA Application Packs

This chapter includes the following topics:

- [About Oracle Financial Services Analytical Applications \(OFSAA\)](#)
- [About Oracle Financial Services Analytical Applications \(OFSAA\) Application Packs](#)
- [About Oracle Financial Services Financial Accounting and Reporting Standards \(IFRS and CECL\) Application Pack](#)
- [About Oracle Financial Services Analytical Applications Infrastructure \(OFS AAI\)](#)

## 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.

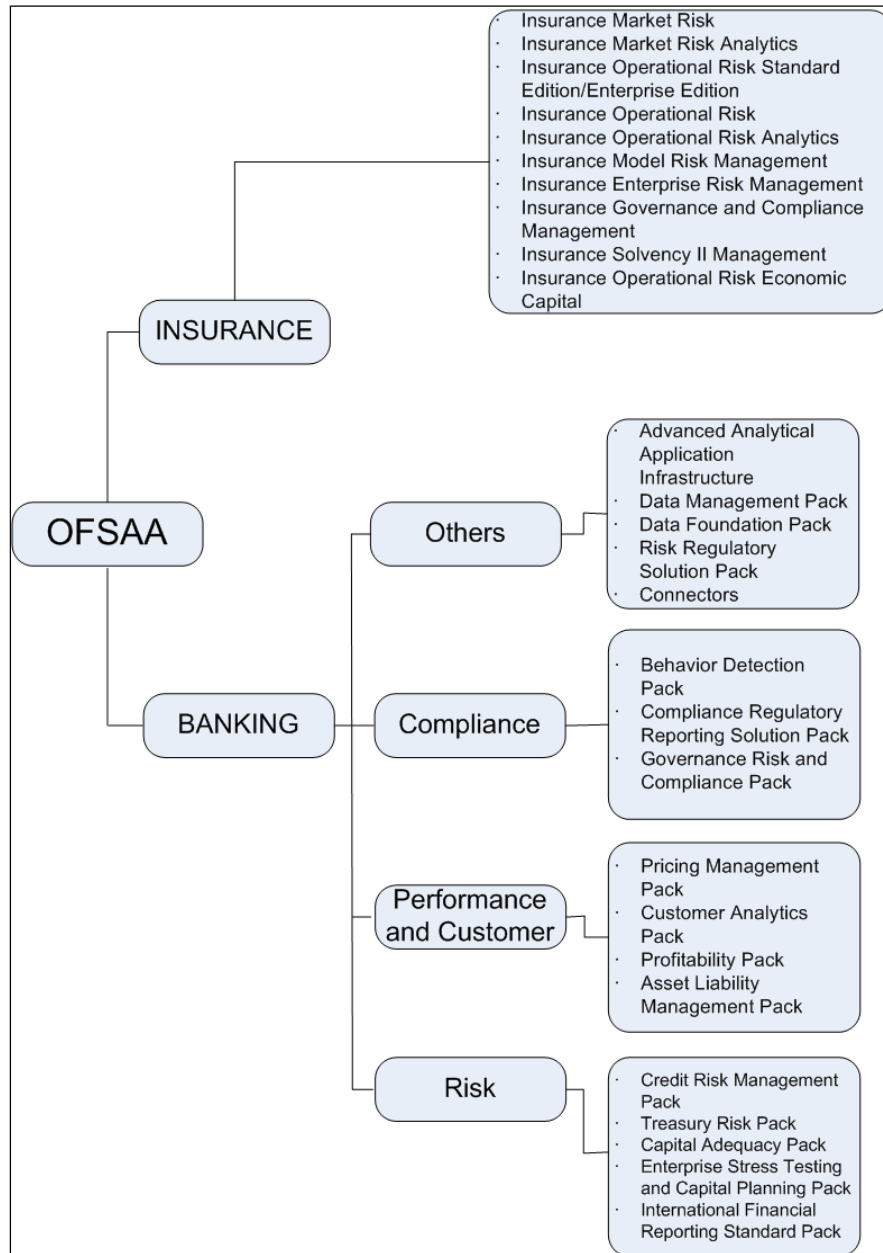
OFSAA uses industry-leading analytical methods, shared data model and applications architecture to enable integrated risk management, performance management, customer insight, and compliance management. OFSAA actively incorporates risk into decision making, enables to achieve a consistent view of performance,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

## About Oracle Financial Services Analytical Applications (OFSAA) Application Packs

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

**Figure 1–1 OFSAA Application Packs**



## About Oracle Financial Services Financial Accounting and Reporting Standards (IFRS and CECL) Application Pack

OFS IFRS Pack includes the following applications:

- Oracle Financial Services Loan Loss Forecasting and Provisioning:** International Financial Reporting Standards (IFRS) guidelines have set out new requirements on classification and measurement of financial assets and liabilities. It specifies two approaches for the measurement of assets namely Amortized Cost and Fair Value approach. The scope of Oracle Financial Services Loan Loss Forecasting and Provisioning is to focus only on the amortized cost approach.

- Oracle Financial Services Hedge Management:** To help financial institutions grow, manage risk, and optimize shareholder value, Oracle delivers a comprehensive, integrated suite of financial services analytical applications for enterprise performance management (EPM).

More than ever, financial institutions, their regulators as well as their shareholders are focused on the need to measure and meet risk-adjusted performance objectives, price products to reflect their true risk, and better understand how their institution is impacted by threats to liquidity, capital adequacy, and exposure to market rate volatility.

## 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 required to analyze, understand and report on specific performance, risk, compliance and customer insight issues by providing a strong foundation for the entire family of Oracle Financial Services Analytical Applications across the domains of Risk, Performance, Compliance and Customer Insight.

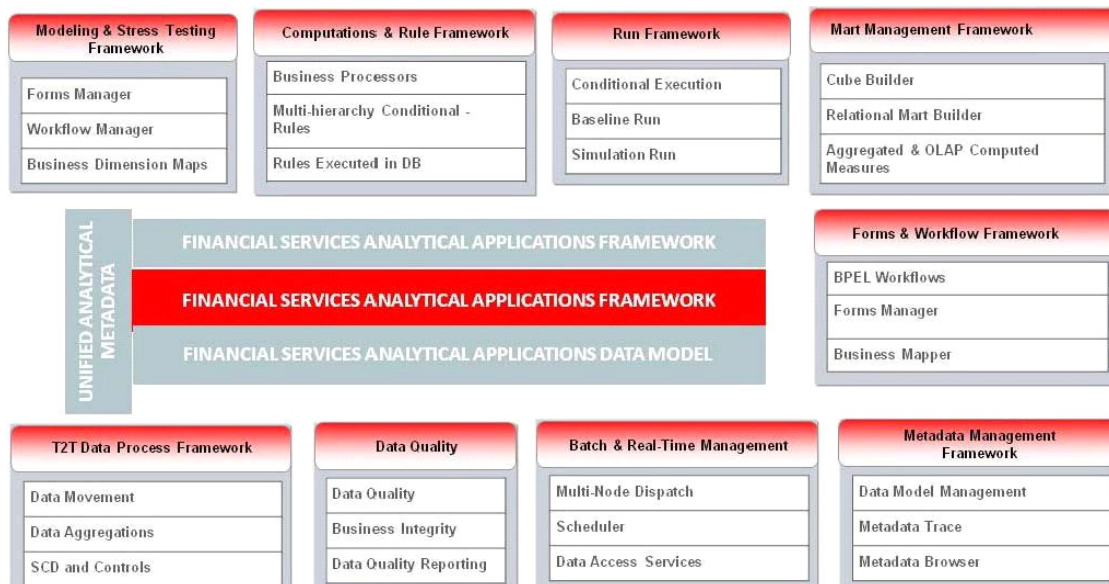
### Components of OFSAAI

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

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

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

**Figure 1–2 Components of OFSAAI**



## 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, see Configuration for High Availability- Best Practices Guide.

## About Data Security Configurations

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

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

For more details on the features in the previous list, see the relevant topics in this guide and the **Data Security and Data Privacy** section in the Administration and Configuration Guide.

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# Understanding OFS Financial Accounting and Reporting Standards (IFRS and CECL) Pack Installation

This chapter includes the following topics:

- [Installation Overview](#)
- [Deployment Topology](#)
- [Hardware and Software Requirements](#)
- [Verifying System Environment](#)
- [Understanding the Installation Modes](#)

## Installation Overview

This release (8.0.8.0.0) of the OFS Financial Accounting and Reporting Standards (IFRS and CECL) Application Pack (**also referred as IFRS in this document**) bundles the upgrade patch set along with the base installer. Users/Administrators who wish to install a new OFS Financial Accounting and Reporting Standards (IFRS and CECL) Application Pack 8.0.8.0.0 instance or upgrade an existing OFS IFRS Application Pack 8.0.x instance to 8.0.8.0.0 should download this installer. The following figure depicts the order of procedures required to follow to install a new OFS IFRS Pack 8.0.8.0.0 instance. To upgrade an existing OFS IFRS Application Pack 8.0.x.x.x instance to 8.0.8.0.0 release, refer to [Upgrading the OFS Financial Accounting and Reporting Standards \(IFRS and CECL\) Application Pack](#) Chapter.

**Figure 2–1** Installation Overview

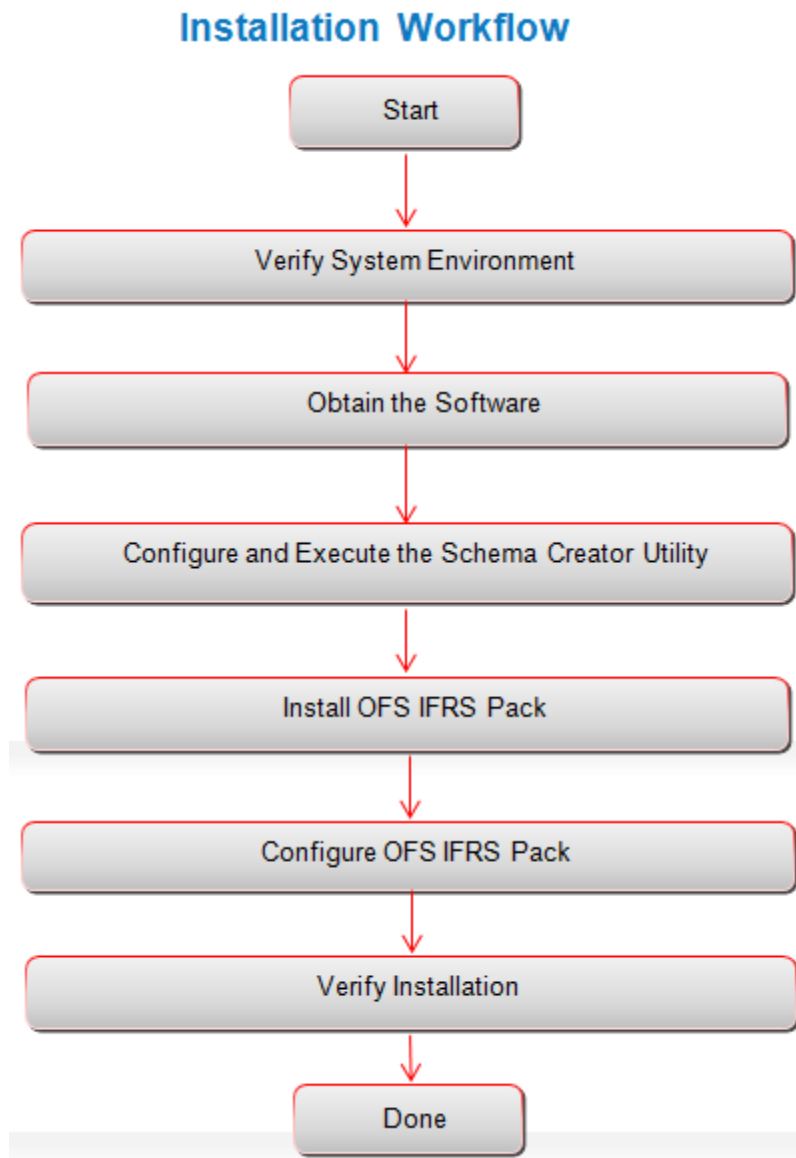


Table 2–1 provides additional information and links to specific documentation for each task in the flowchart.

**Table 2–1** *OFSAA Application Pack Installation Tasks and Descriptions*

Tasks	Details and Documentation
Verify Systems Environment	To verify that your system meets the minimum necessary requirements for installing and hosting the OFSAA Application Pack, see <a href="#">Verifying System Environment</a> .
Obtain the software	To access and download the OFSAA Application Pack, see <a href="#">Obtaining the Software</a> .
Configure and Execute the Schema Creator Utility	To create the database schemas, see <a href="#">Configuring and Executing the Schema Creator Utility</a> .

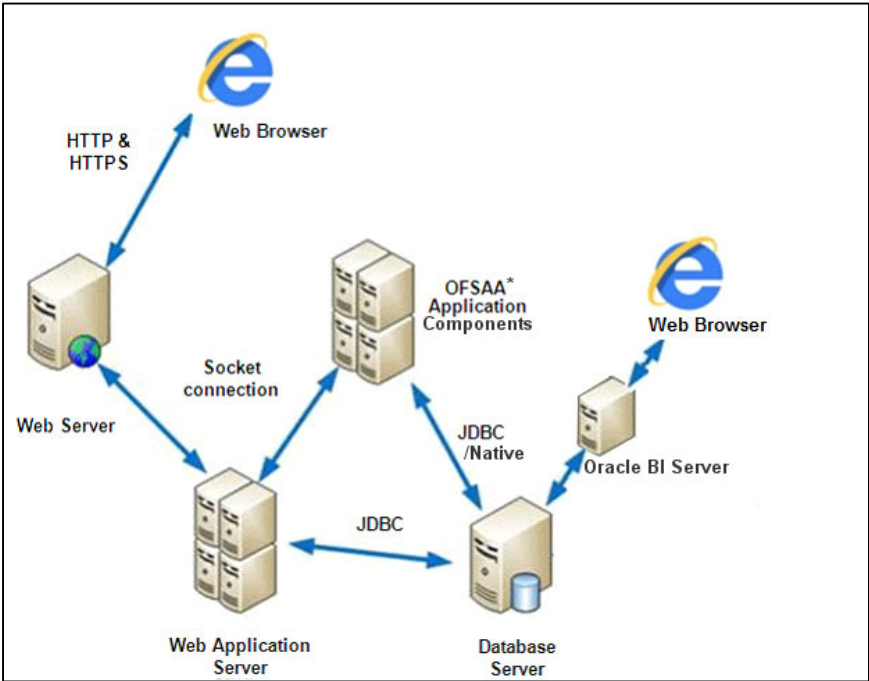
**Table 2-1 OFSAA Application Pack Installation Tasks and Descriptions**

Tasks	Details and Documentation
Install OFS IFRS Pack	To install the OFS IFRS Application Pack, see <a href="#">Installing the OFS IFRS Application Pack</a> .
Configure OFS IFRS Pack	To configure the OFS IFRS Application Pack post installation, see <a href="#">Post Installation Configuration</a> .

## Deployment Topology

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

**Figure 2-2 Deployment Topology**



## Hardware and Software Requirements

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

**Note:**

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

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

## Configurations supported for Java 7

**Table 2–2 Configurations Supported for Java 7**

<b>Operating System</b>	
Oracle Linux / Red Hat Enterprise Linux (x86-64 bit)	<ul style="list-style-type: none"> <li>Red Hat Enterprise Linux or Oracle Linux Server release 6 update 6 and above</li> <li>Red Hat Enterprise Linux or Oracle Linux Server release 7 update 1 and above</li> </ul> <p><b>Note:</b> Same version of RHEL is supported.</p> <p><b>Note:</b> Oracle Enterprise Linux and Red Hat Enterprise Linux 5.x releases and AIX 5.3 are not supported in this release</p>
Oracle Solaris (SPARC)/ Solaris x86-64 bit	<ul style="list-style-type: none"> <li>Oracle Solaris 5.10 update 11 with OS patches supporting Oracle Devstudio 12.5</li> <li>Oracle Solaris 5.11 update 3 with SRU9 or Higher</li> </ul>
IBM AIX - PowerPC_POWER7 (64 bit) and PowerPC_POWER8 (64 bit)	<ul style="list-style-type: none"> <li>AIX 6.1 (TL 09 and above) - 64 bitx</li> <li>AIX 7.1 (TL 03 and above) - 64 bit</li> </ul>
Shell	<ul style="list-style-type: none"> <li>KORN Shell (KSH)</li> </ul>
<p><b>Note:</b></p> <ul style="list-style-type: none"> <li>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.</li> <li>If the operating system is RHEL, install the package <b>lsb_release</b> with one of the following commands by logging in as root user: <ul style="list-style-type: none"> <li>yum install redhat-lsb-core</li> <li>yum install redhat-lsb</li> </ul> </li> </ul>	
<b>Java Runtime Environment</b>	
Oracle Linux / Red Hat Enterprise Linux Oracle Solaris	<ul style="list-style-type: none"> <li>Oracle Java Runtime Environment (JRE) 1.7.x - 64 bit</li> </ul>
IBM AIX	<ul style="list-style-type: none"> <li>IBM AIX Runtime, Java Technology JRE 1.7.x - 64 bit</li> </ul>
<b>Oracle Database Server and Client</b>	



**Table 2–2 (Cont.) Configurations Supported for Java 7**

<ul style="list-style-type: none"> <li>• Oracle Database Server Enterprise Edition 11g Release 2 (11.2.0.3.0 +) - 64 bit RAC/ Non-RAC with/ without partitioning option</li> <li>• Oracle Database Server Enterprise Edition 11g Release 2 (11.2.0.4.0 +) - 64 bit RAC/Non-RAC with/ without partitioning option, Advanced Security Option**.</li> <li>• Oracle Database Server Enterprise Edition 12c Release 1 (12.1.0.1.0 +) - 64 bit RAC/ Non-RAC with/ without partitioning option, Advanced Security Option**</li> </ul> <p><b>** Note:</b> See the “Additional Notes” section in the Tech Matrix 8.0.8.0.0 for details.</p> <ul style="list-style-type: none"> <li>• Oracle Database Server Enterprise Edition 12c Release 1 (12.1.0.1.0 +)- 64 bit RAC/ Non-RAC with/ without partitioning option</li> <li>• Oracle Database Server Enterprise Edition 12c Release 2 (12.2.0.1+)</li> <li>• Oracle Client 11g Release 2 (11.2.0.3.0+) - 64 bit</li> <li>• Oracle Client 12c Release 1 (12.1.0.1.0+) - 64 bit</li> <li>• Oracle Client 12c Release 2 (12.2.0.1.0+) - 64 bit</li> <li>• Oracle 11g Release 2 (11.2.0.3+) JDBC driver (Oracle thin driver)</li> <li>• Oracle 12C Release 1 (12.1.0.1+) JDBC driver (Oracle thin driver)</li> <li>• Oracle 12C Release 2 (12.2.0.1+) JDBC driver (Oracle thin driver)</li> <li>• Oracle R Distribution version 3.2.0/3.3.0 (Optional)</li> <li>• Oracle R Enterprise (Server) version 1.5 with ORD 3.2.0 and version 1.5.1 with ORD 3.3.0 (Optional).</li> </ul>	
<p><b>Note:</b></p> <p>Ensure that the following patches are applied:</p> <ul style="list-style-type: none"> <li>• For Oracle DB Server 12.1.0.1 and 12.1.0.2, download the patches 27010930 and 22205607 from My Oracle Support and apply them.</li> <li>• For Oracle DB Server 11.2.0.4, download the patch 22205607 from My Oracle Support and apply.</li> <li>• Also for latest information, refer <a href="http://support.oracle.com/">http://support.oracle.com/</a>, 12.1.0.2 Bundle Patches for Engineered Systems and DB In-Memory - List of Fixes in each Bundle (Doc ID 1937782.1).</li> </ul>	
<p><b>OLAP</b></p>	
<p>Oracle Hyperion Essbase</p>	<ul style="list-style-type: none"> <li>• V 11.1.2.1+ (Server and Client) with Oracle 11g Database</li> <li>• V 11.1.2.3+ (Server and Client) with Oracle 12c Database</li> </ul>
<p><b>Note:</b> Oracle Hyperion Essbase is required only if you are using the OLAP feature of OFSAAL.</p>	
<p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• Oracle Hyperion Essbase and Oracle OLAP is required only if you are using the OLAP feature of OFSAAL. For Oracle OLAP, ensure that you have configured the Oracle Database server with OLAP option.</li> </ul>	
<p><b>Web Server/ Web Application Server</b></p>	
<p>Oracle Linux / Red Hat Enterprise Linux/ IBM AIX  Oracle Solaris</p>	<p>Oracle HTTP Server 11.1.1.7.1/ Apache HTTP Server 2.2.x/ IBM HTTP Server 8.5.5</p> <ul style="list-style-type: none"> <li>• Oracle Weblogic Server 12.2.x with jersey 2.25 (64 bit). OFS IFRS is compatible with WebLogic 12.2.x and does not support WebLogic 12.1.3. If the WebLogic version is 12.1.3, upgrade to WebLogic 12.2.x.</li> <li>• IBM WebSphere Application Server 8.5.5.9+ (Full Profile) with IBM Java Runtime - 64 bit</li> <li>• Apache Tomcat 8.0.21+ till 8.0.38 (64 bit)</li> </ul>

**Table 2–2 (Cont.) Configurations Supported for Java 7**

<b>Note:</b>	
<ul style="list-style-type: none"> <li>OFSAA Infrastructure web component deployment on Oracle WebLogic Server with Oracle JRockit is not supported.</li> </ul>	
<b>Desktop Requirements</b>	
Operating System	Microsoft Windows 7/Windows 8 /Windows 10
Browser	<ul style="list-style-type: none"> <li>Microsoft Internet Browser 11.x</li> <li>Chrome 57.x</li> <li>FireFox 52.x</li> </ul> Turn on Pop-up blocker settings. For more information, see <a href="#">Configuring Internet Explorer Settings</a> .
Office Tools	<ul style="list-style-type: none"> <li>MS Office 2007/2010/2013</li> <li>Adobe Acrobat Reader 8 or above</li> </ul>
Screen Resolution	1024*768 or 1280*1024
<b>Other Software</b>	
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 such as MS Active Directory.
<b>Note:</b>	
<ul style="list-style-type: none"> <li>Configuration of Directory services software for OFSAAI installation is optional. For more information on configuration, see <a href="#">Setting Infrastructure LDAP Configuration</a>.</li> <li>Open LDAP must be installed on MS Windows Server machine.</li> </ul>	

## Configurations supported for Java 8

**Table 2–3 Configurations Supported for Java 8**

<b>Operating System</b>	
Oracle Linux / Red Hat Enterprise Linux (x86-64 bit)	<ul style="list-style-type: none"> <li>Red Hat Enterprise Linux or Oracle Linux Server release 6 update 6 and above</li> <li>Red Hat Enterprise Linux or Oracle Linux Server release 7 update 1 and above</li> </ul> <p><b>Note:</b> Same version of RHEL is supported.</p> <p><b>Note:</b> Oracle Enterprise Linux and Red Hat Enterprise Linux 5.x releases and AIX 5.3 are not supported in this release</p>
Oracle Solaris (SPARC)/ Solaris x86-64 bit	<ul style="list-style-type: none"> <li>Oracle Solaris 5.10 update 11 with OS patches supporting Oracle Devstudio 12.5</li> <li>Oracle Solaris 5.11 update 3 with SRU9 or Higher</li> </ul>
IBM AIX - PowerPC_POWER7 (64 bit) and PowerPC_POWER8 (64 bit)	<ul style="list-style-type: none"> <li>AIX 6.1 (TL 09 and above) - 64 bitx</li> <li>AIX 7.1 (TL 03 and above) - 64 bit</li> </ul>
Shell	<ul style="list-style-type: none"> <li>KORN Shell (KSH)</li> </ul>

**Table 2–3 (Cont.) Configurations Supported for Java 8**

<p><b>Note:</b></p> <ul style="list-style-type: none"> <li>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.</li> <li>If the operating system is RHEL, install the package lsb_release using one of the following commands by logging in as root user:                         <ul style="list-style-type: none"> <li>yum install redhat-lsb-core</li> </ul> <pre>yum install redhat-lsb</pre> </li> </ul>	
<p><b>Java Runtime Environment</b></p>	
<p>Oracle Linux / Red Hat Enterprise Linux Oracle Solaris</p>	<ul style="list-style-type: none"> <li>Oracle Java Runtime Environment (JRE) 1.8.x - 64 bit</li> </ul>
<p>IBM AIX</p>	<ul style="list-style-type: none"> <li>IBM AIX Runtime, Java Technology JRE 1.8.x - 64 bit</li> </ul>
<p><b>Oracle Database Server and Client</b></p>	
<ul style="list-style-type: none"> <li>Oracle Database Server Enterprise Edition 11g Release 2 (11.2.0.3.0+) - 64 bit RAC/ Non-RAC with/ without partitioning option</li> <li>Oracle Database Server Enterprise Edition 11g Release 2 (11.2.0.4.0+) - 64 bit RAC/Non-RAC with/ without partitioning option, Advanced Security Option**.</li> <li>Oracle Database Server Enterprise Edition 12c Release 1 (12.1.0.1.0+) - 64 bit RAC/ Non-RAC with/ without partitioning option, Advanced Security Option**.                      ** <b>Note:</b> See the “Additional Notes” section in the <a href="#">Tech Matrix 8.0.8.0.0</a> for details.</li> <li>Oracle Client 11g Release 2 (11.2.0.3.0+) - 64 bit</li> <li>Oracle Client 12c Release 1 (12.1.0.1.0+) - 64 bit</li> <li>Oracle 11g Release 2 (11.2.0.3+) JDBC driver (Oracle thin driver)</li> <li>Oracle 12C Release 1 (12.1.0.1+) JDBC driver (Oracle thin driver)</li> <li>Oracle R Distribution version 3.2.0/3.3.0 (Optional)</li> <li>Oracle R Enterprise (Server) version 1.5 with ORD 3.2.0 and version 1.5.1 with ORD 3.3.0 (Optional).</li> </ul>	
<p><b>Note:</b></p> <p>Ensure that the following patches are applied:</p> <ul style="list-style-type: none"> <li>Oracle Server 12c, v12.1.0.1 - 17082699</li> <li>Oracle Server 12c, v12.1.0.2 - 20698050</li> <li>For Oracle DB Server 12.1.0.1 and 12.1.0.2, download the patches 27010930 and 22205607 from My Oracle Support and apply them.</li> <li>For Oracle DB Server 11.2.0.4, download the patch 22205607 from My Oracle Support and apply.</li> <li>Also for latest information, refer <a href="http://support.oracle.com/">http://support.oracle.com/</a>, 12.1.0.2 Bundle Patches for Engineered Systems and DB In-Memory - List of Fixes in each Bundle (Doc ID 1937782.1).</li> <li>Oracle R Enterprise 1.5 and 1.5.1 requires Oracle Database Enterprise Edition 11.2.0.3/ 11.2.0.4/ 12.1.0.1/12.1.0.2/12.2.0.1.</li> </ul>	
<p><b>OLAP</b></p>	
<p><b>Note:</b> Oracle Hyperion Essbase is required only if you are using the OLAP feature of OFSAAI.</p>	
<p><b>Web Server/ Web Application Server</b></p>	

**Table 2–3 (Cont.) Configurations Supported for Java 8**

Oracle Linux / Red Hat Enterprise Linux / IBM AIX	Oracle HTTP Server 11.1.1.7.1/ Apache HTTP Server 2.2.x/ IBM HTTP Server 8.5.5
Oracle Solaris	<ul style="list-style-type: none"> <li>• IBM WebSphere Application Server 8.5.5.9+ with bundled IBM Java Runtime - 64 bit</li> <li>• Oracle Weblogic Server 12.2.x with jersey 2.25 (64 bit)</li> <li>• Apache Tomcat 8.0.21+ till 8.0.38 (64 bit)</li> </ul>
<b>Note:</b>	
<ul style="list-style-type: none"> <li>• OFSAA Infrastructure web component deployment on Oracle WebLogic Server with Oracle JRockit is not supported.</li> <li>• For deployment on Oracle WebLogic Server 12.2.x (64 bit) with Java 8, download and install patch 18729264 from <a href="http://support.oracle.com/">http://support.oracle.com/</a>.</li> </ul>	
<b>Desktop Requirements</b>	
Operating System	Microsoft Windows 7/Windows 8 /Windows 10
Browser	<ul style="list-style-type: none"> <li>• Microsoft Internet Browser 11.x</li> <li>• Chrome 57.x</li> <li>• FireFox 52.x</li> </ul> <p>Turn on Pop-up blocker settings. For more information, see <a href="#">Configuring Internet Explorer Settings</a>.</p>
Office Tools	<ul style="list-style-type: none"> <li>• MS Office 2007/2010/2013</li> <li>• Adobe Acrobat Reader 8 or above</li> </ul>
Screen Resolution	1024*768 or 1280*1024
<b>Other Software</b>	
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 such as MS Active Directory.
<b>Note:</b>	
<ul style="list-style-type: none"> <li>• Configuration of Directory services software for OFSAAI installation is optional. For more information on configuration, see <a href="#">Setting Infrastructure LDAP Configuration</a>.</li> <li>• Open LDAP must be installed on MS Windows Server machine.</li> </ul>	

Following are the ORD and ORE versions compatible along with Oracle DB version:

**Table 2–4**

SLI No.	Oracle R Enterprise	Oracle R Advanced Analytics for Hadoop	Open source R or Oracle R Distribution	Oracle Database Enterprise Edition
1	1.5.1	2.7.1	3.3.0	11.2.0.4, 12.1.0.1, 12.1.0.2, 12.2.0.1
2	1.5.0	2.5.1, 2.6.0, 2.7.0	3.2.0	11.2.0.4, 12.1.0.1, 12.1.0.2

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**Note:** To upgrade an existing OFSAA 8.0.x Java 7 instance to Java 8, refer [Appendix P](#).

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

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Following table provides the recommended software combinations for OFS IFRS Applications Pack deployment

**Table 2–5 Recommended Software Combinations**

Operating System	Database	Web Application Server	Web Server
Oracle Linux 5.3 up to 5.10/ 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 6.1	Oracle Database	IBM WebSphere Application Server /Apache Tomcat Server	IBM HTTP Server/ Apache HTTP Server

## Verifying System Environment

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

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

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**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.

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## Understanding the Installation Modes

The following modes of installation are available for the OFS IFRS Applications Pack.

- [Installing in SILENT Mode](#)

### Installing in SILENT Mode

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



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## Preparing for Installation

This chapter provides necessary information to review before installing the OFS IFRS v8.0.8.0.0. This chapter includes the following topics:

- [Installer and Installation Prerequisites](#)
- [Obtaining the Software](#)
- [Performing Common Installation Tasks](#)

### Installer and Installation Prerequisites

[Table 3–1](#) provides the list of prerequisites required before beginning the installation for OFS IFRS application. The Installer/ Environment Check Utility notifies you if any requirements are not met.

**Table 3–1 Prerequisite Information**

Category	Sub-Category	Expected Value
Environment Settings	Java Settings	<ul style="list-style-type: none"> <li>PATH variable in <b>.profile</b> file must be set to include the Java Runtime Environment absolute path. The path should include Java version (7 or 8) based on the configuration.</li> </ul> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>Ensure that the absolute path to JRE/bin is set at the beginning of PATH variable. For example, <code>PATH=/usr/java/jre1.7/bin:\$ORACLE_HOME/bin:\$PATH</code></li> <li>JAVA_HOME variable must be set in <b>.profile</b> file, pointing to the appropriate Java Runtime Environment Path. For example, <code>export JAVA_HOME=/usr/jdk/instances/jdk1.6.0</code></li> <li>Ensure that SYMBOLIC links to JAVA installation are not set in the PATH variable.</li> <li>Ensure that you set the Heap Size in <b>.profile</b> file, using following command: <code>export _JAVA_OPTIONS="-Xms512m -Xmx1024m"</code> Heap size is a validation to get the memory size for Model Upload. If the Heap size is less than the ten times as of the Model, then it returns an error.</li> </ul>
	Enable unlimited cryptographic policy for Java	For more information, see the section <i>Enabling Unlimited Cryptographic Policy</i> from the <a href="#">OFS Analytical Applications Infrastructure Administration Guide</a> .
	Oracle Database Settings	<p><b>Oracle Database Server</b></p> <ul style="list-style-type: none"> <li>TNS_ADMIN variable must be set in <b>.profile</b> file pointing to appropriate tnsnames.ora file.</li> <li>Enable Transparent Data Encryption (TDE) and/ or Data Redaction**.</li> </ul> <p><b>** Note:</b> For more information, see <a href="#">Configuring Transparent Data Encryption (TDE) and Data Redaction in OFSAA</a>.</p>
		<p><b>Oracle Processing Server</b></p> <ul style="list-style-type: none"> <li>ORACLE_HOME must be set in <b>.profile</b> file pointing to appropriate Oracle DB Client installation.</li> <li>PATH in <b>.profile</b> must be set to include appropriate \$ORACLE_HOME/bin path.</li> <li>Ensure that an entry (with SID/SERVICE NAME) is added in the tnsnames.ora file.</li> </ul>
Oracle Essbase Settings	<ul style="list-style-type: none"> <li>ARBORPATH, ESSBASEPATH, and HYPERION_HOME variables must be set in the <b>.profile</b> file, pointing to an appropriate Oracle Essbase Client installation.</li> </ul> <p><b>Note:</b></p> <p>These settings are required only if you want to use Oracle Hyperion Essbase OLAP features.</p>	



**Table 3–1 (Cont.) Prerequisite Information**

Category	Sub-Category	Expected Value
OS/ File System Settings	File Descriptor Settings	<ul style="list-style-type: none"> <li>Greater than 15000</li> </ul> <p><b>Note:</b> 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.</p>
	Total Number of Process Settings	<ul style="list-style-type: none"> <li>Greater than 4096</li> </ul> <p><b>Note:</b> 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.</p>
	Port Settings	<ul style="list-style-type: none"> <li>Default port numbers to be enabled on the system are 6500, 6501, 6505, 6507, 6509, 6510, 6666, 9999, and 10101.</li> </ul>
	.profile permissions	<ul style="list-style-type: none"> <li>User to have 755 permission on the .profile file.</li> </ul>
	Installation Directory	<ul style="list-style-type: none"> <li>A directory where the product files will be installed.</li> <li>Assign 755 permission to this directory.</li> <li>This directory needs to be set as FIC_HOME.</li> </ul>
	Staging Area/ Metadata Repository	<ul style="list-style-type: none"> <li>A directory to hold the application metadata artifacts and additionally act as staging area for flat files.</li> <li>The directory should exist on the same system as the OFSAA Installation. This directory can be configured on a different mount or under a different user profile. However, the owner of the installation directory that is mentioned in the previous row, must have RWX permissions on this folder.</li> <li>Assign 777 permission to this directory.</li> </ul> <p><b>Note:</b> This directory is also referred to as FTPSHARE folder.</p>
	Download Directory	<ul style="list-style-type: none"> <li>A directory where the product installer files will be downloaded/ copied.</li> <li>Set 755 permission on this directory.</li> </ul>
	OS Locale	<ul style="list-style-type: none"> <li>Linux: en_US.utf8</li> <li>AIX: EN_US.UTF-8</li> <li>Solaris: en_US.UTF-8</li> </ul> <p>To check the locale installed, execute the following command:</p> <pre>locale -a   grep -i 'en_US.utf'</pre>
Database Settings	Database Instance Settings	<ul style="list-style-type: none"> <li>NLS_CHARACTERSET to be AL32UTF8</li> <li>NLS_LENGTH_SEMANTICS to be BYTE</li> </ul> <p>OPEN CURSORS limit to be greater than 1000</p>

**Table 3–1 (Cont.) Prerequisite Information**

Category	Sub-Category	Expected Value
Web Application Server	WebSphere/ WebLogic/ Tomcat	<ul style="list-style-type: none"> <li>Web Application Server should be installed and profile/domain created.</li> <li>You will be prompted to enter the WebSphere Profile path or WebLogic Domain path or Tomcat Deployment path during OFSAAI installation.</li> </ul> <p><b>Note:</b> See <a href="#">Configuring Web Server</a> section for WebSphere Profile and WebLogic Domain Creation.</p>
Web Server	Apache HTTP Server/ Oracle HTTP Server/ IBM HTTP Server	<p>This is an optional requirement. HTTP Server Installation to be present. You are prompted to enter the Web Server IP/Hostname and Port details during installation.</p> <p><b>Note:</b> See <a href="#">Configuring Web Server</a> section for Web Server installation.</p>
Others	Oracle R/ Oracle R Enterprise	<ul style="list-style-type: none"> <li>This is an optional requirement.</li> <li>See section <a href="#">Installing Oracle R distribution and Oracle R Enterprise (ORE)</a> for more details.</li> </ul>

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

Login to Configuration Schema and execute the following SQL statements:

```
alter table AAI_AOM_APP_COMP_ATTR_MAPPING drop constraint AOM_
APP_COMP_ATTR_PK drop index
/

alter table AAI_AOM_APP_COMP_ATTR_MAPPING add constraint AOM_
APP_COMP_ATTR_PK primary key (APP_COMP_ATTR_MAP_ID)
/
```

---

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

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OFS IFRS Application pack v8.0.8.0.0 installer download contains only the ERwin XML file that is required for uploading the model. This file is sufficient to install the v8.0.8.0.0 Application pack. However, this XML file cannot be opened in the ERwin Data modeler tool and hence cannot be used for any data model customization. ERwin file is delivered as a patch and need to be downloaded separately. This ERwin file should be used for any customization of the data model. To download the Data Model Erwin file, Login to <https://support.oracle.com/> and search for **30428637** under the *Patches & Updates* tab. If customization to the data model has been done in environment being upgraded, then before uploading the same, customizations need to be applied again in merged data model.

## Obtaining the Software

The 8.0.8.0.0 release of OFS IFRS Application Pack can be downloaded from My Oracle Support (<https://support.oracle.com/>). You must have a valid Oracle account to download the software.

## Performing Common Installation Tasks

The common pre-installation activities that you must carry out before installing the OFS IFRS application pack are the following:

- [Configuration for GUI Mode Installation](#)
- [Identifying the Installation, Download, and Metadata Repository Directories](#)
- [Downloading and Copying the OFS IFRS Applications Pack Installer](#)
- [Extracting the Software](#)
- [Setting Up the Web Application Server](#)
- [Installing Oracle R distribution and Oracle R Enterprise \(ORE\)](#)

### Configuration for GUI Mode Installation

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

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

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

### Identifying the Installation, Download, and Metadata Repository Directories

To install OFSAA Application Packs, create the following directories.

- **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 where the product binaries will be installed. Set the variable FIC\_HOME in the .profile file to point to the OFSAA Installation Directory.
- **OFSAA Staging/Metadata Directory (Mandatory):** Create a Staging/Metadata Repository Directory to copy data files, save data extracts, and so on. Additionally, this directory also maintains the OFSAA metadata artifacts. This directory is also referred to as "FTPSHARE". This directory must be created on the same host as the OFSAA Installation Directory mentioned in the previous point in this list.

---

---

**Note:**

- 7 Assign 755 user permission to the Installation Directory.
  - Assign 775 user permission to 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.
- 
- 

## Downloading and Copying the OFS IFRS Applications Pack Installer

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

- To download the OFS IFRS Applications Pack, login to My Oracle Support (<https://support.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 OFS IFRS installation.
- If you have OFS IFRS Application pack version 8.0.4.0.0 onwards, then you can upgrade it to version 8.0.8.0.0.
- Download the mandatory one-off patch **30010232** from My Oracle Support (<https://support.oracle.com/>).

## 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 this step.
2. Uncompress the unzip installer file using the command:

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

---

---

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

---

---

3. Assign EXECUTE (751) permission to the file using the command:

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

For example, `chmod 751 unzip_sparc`

4. Extract the contents of the OFS IFRS Application Pack 8.0.8.0.0 installer archive file in the download directory with the following command:

```
unzip OFS_IFRS_PACK.zip
```

5. Extract and apply the patches **28398331** and **30010232**. Refer to the Readme.txt file packaged with the patch for details on how to apply the patch.
6. Navigate to the download directory and assign execute (750) permission to the installer folder with the following command:

```
chmod -R 755 OFS_IFRS_PACK
```

## Setting Up the Web Application Server

For setting up the environment based on your selected Web Application Server, see [Configuring Web Server](#) section.

## Installing 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 or if the OFSAA Application that you have licensed uses this feature. For information on applications that use this feature, see the [Tech Matrix](#).

The following is the instruction to install ORD and ORE:

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 1.5 at [Oracle R Enterprise Documentation Library](#).

ORD and ORE versions compatible along with Oracle DB version

**Table 3–2**

SI No.	Oracle R Enterprise	Oracle R Advanced Analytics for Hadoop	Open source R or Oracle R Distribution	Oracle Database Enterprise Edition
1	1.5.0	2.5.1, 2.6.0, 2.7.0	3.2.0	11.2.0.4, 12.1.0.1, 12.1.0.2
2	1.5.1	2.5.1, 2.6.0, 2.7.0	3.3.0	2.5.1, 2.6.0, 2.7.0

- Oracle R Distribution versions supported- Oracle Distribution of R version 3.3.0 and 3.3.1.
- ORE version supported- Oracle R Enterprise (Server) version 1.5 with ORD 3.2.0.

---

**Note:** Oracle R Enterprise 1.5 requires Oracle Database Enterprise Edition 11.2.0.4/ 12.1.0.1/12.1.0.2/12.2.0.1.

---



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**Note:** If you use ORE 1.5 for Oracle Financial Services Enterprise Modeling, you must set the session time zone 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 can set session time zone in scripts registered within OFS EM by using the 'Sys.env(TZ=<time zone>)' R function.

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## Installing the OFS IFRS Application Pack

This chapter provides instructions to install the OFS IFRS pack.

This chapter includes the following sections:

- [About Schema Creator Utility](#)
- [Configuring and Executing the Schema Creator Utility](#)
- [Installing the OFS IFRS Application Pack](#)

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---

**Note:** The Schema Creator job needs to be run first, if you are doing OFS IFRS 8.0.8.0.0 fresh installation on an existing pack. This will append the new artifacts in the existing instance.

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

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### About Schema Creator Utility

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

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

This section includes the following topics:

- [About Schema Creator Utility](#)
- [Selecting Execution Modes in Schema Creator Utility](#)
- [Selecting Execution Options in Schema Creator Utility](#)

### 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.

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

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

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---

**Note:** There can be multiple ATOMIC schemas per OFSAA Instance, if you have multiple application packs being installed.

---

---

## Selecting Execution Modes in Schema Creator Utility

Schema creator utility supports the following two modes of execution:

- **Online Mode:** In this mode, the utility connects to the database and executes the Data Definition Language (DDL) for User, Objects, and Grants. If you have the SYSDBA privileges you can execute the Schema Creator Utility in Online mode and create Users, Objects, and Grants during the execution process.

---

---

**Note:** To execute the utility in Online mode, you must connect as “<User> AS SYSDBA”

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- **Offline Mode:** In this mode, the utility generates a SQL script with all the required DDLs for User, Objects and GRANTS. This script must be executed by the DBA on the appropriate database identified for OFSAA usage. If you do not have 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 must execute the script file manually.

---

---

**Note :**

1. To execute the utility in Offline mode, you need to connect as any user with the following grants (alternatively, you can also connect as a user with SYSDBA privileges):
    - SELECT ON DBA\_ROLES
    - SELECT ON DBA\_USERS
    - SELECT ON DBA\_DIRECTORIES
    - SELECT ON DBA\_TABLESPACES
    - CREATE SESSION
  2. If there are any errors during the script execution, reconfigure the OFS\_IFRS\_SCHEMA\_IN.XML file and execute the utility. This regenerates the scripts with corrected information.

For more information, see [Configuring OFS\\_IFRS\\_SCHEMA\\_IN.XML File](#).
  3. Do not modify the OFS\_IFRS\_SCHEMA\_OUT.XML file generated after the execution of this utility.
- 
-



## Selecting Execution Options in Schema Creator Utility

Depending on the option selected to run the OFSAA Application Pack Installer, you must select the appropriate 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.

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## Configuring and Executing the Schema Creator Utility

This section includes the following topics:

- [Prerequisites](#)
- [Configuring the Schema Creator Utility](#)
- [Executing the Schema Creator Utility](#)

### Prerequisites

The prerequisites you must have before configuring the Schema Creator Utility are the following:

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

### Configuring the Schema Creator Utility

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

To configure the Schema Creator Utility, follow these steps:

1. Log in to the system as non-root user.
2. Navigate to the following path: `OFS_IFRS_PACK/schema_creator/conf` directory.
3. Edit the `OFS_IFRS_SCHEMA_IN.xml` file in a text editor.
4. Configure the elements as described in the section [Configuring OFS\\_IFRS\\_SCHEMA\\_IN.XML File](#).
5. Save the `OFS_IFRS_SCHEMA_IN.xml` file.

---

---

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

---

---

### Executing the Schema Creator Utility

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

- [Executing the Schema Creator Utility in Online Mode](#)

- [Executing the Schema Creator Utility in Offline Mode](#)
- [Executing the Schema Creator Utility with -s Option](#)
- [Executing the Schema Creator Utility while Installing Subsequent Applications Pack](#)

## Executing the Schema Creator Utility in Online Mode

In Online mode, the Schema Creator Utility creates 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 path: `OFS_IFRS_PACK/schema_creator/bin/`
3. Execute the `osc.sh` file using the following command:

```
./osc.sh
```

The following message is displayed:

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

4. Enter Y/ y to proceed with the script generation.
5. Enter the DB user name with SYSDBA Privileges. For example: SYS as SYSDBA.
6. Enter the User Password.

7. 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).*

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

The following message is displayed.

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

**Figure 4–1 Schema Creation - Online Mode**

```
DB specific Validation Completed. Status : SUCCESS
=====
====
                          Schema Creation Started
=====
====
Checking OFSAA installation...
OFSAA installation not found.
Validating the dat file OFS_IFRS_CFG.dat started...
Sucessfully validated OFS_IFRS_CFG.dat file
Validating the input XML file../scratch/ifrstest/KITS/OFS_IFRS_PACK/schema_crea
tor/conf/OFS_IFRS_SCHEMA_IN.xml
Input XML file validated successfully.
=====
Validating Connection URL ...jdbc:oracle:thin:@ofss2311698.in.oracle.com:1521:DE
V12C
Successfully connected to User - PACKDBA AS SYSDBA URL - jdbc:oracle:thin:@ofss2
311698.in.oracle.com:1521:DEV12C
Connection URL successfully validated...
You have chosen to install this Application Pack on "ifrs_ofsaaatm" ATOMIC schem
a. Do you want to proceed? (Y/N)
Y
```

9. Enter Y/y to start 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.*
  - See log file in `OFS_IFRS_PACK/schema_creator/logs` directory for execution status. If there are any errors, contact Oracle Support.
- 
- 

### Executing the Schema Creator Utility in Offline Mode

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

#### Prerequisites:

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

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

---



---

Note: Explicit Grants to the user are required. Grants assigned through Roles are not supported.

---



---

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

1. Log in to the system as non-root user.
2. Navigate to the `OFS_IFRS_PACK/schema_creator/bin` directory.
3. Execute the `osc.sh` file using the following command:  

```
./osc.sh -o -s
```
4. The following message is displayed:  
*You have chosen OFFLINE mode. Triggering the utility in OFFLINE mode will generate the script. Do you wish to proceed? (Y/y or N/n).*
5. Enter Y /y to generate the script.
6. Enter the DB user name with `SELECT` privileges.
7. Enter the User Password.

**Figure 4–2 Schema Creation - Offline Mode**

```

$ ls -lrt
total 16
-rwxrwxrwx 1 ofsaaapp dba 12894 Feb  6 12:56 osc.sh
$ ./osc.sh -o
YOU ARE EXECUTING profile...
=====
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/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:

```

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

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

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

The following message is displayed.

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

**Figure 4–3 Schema Creation - Offline Mode**

```

=====
Generating Schema Creation Scripts Started
=====
Checking OFSAA installation...
OFSAA installed not found.
Validating the dat file OFS_AAAI_CFG.dat started...
Sucessfully validated OFS_AAAI_CFG.dat file
Validating the input XML file.../scratch/ofsaaapp/OFS_AAAI_PACK/schema_
XSD validation completed successfully.
=====
Prechecks Execution started on ...OFS_AAAI_SCHEMA_IN.xml
Validating Connection URL ...jdbc:oracle:thin:@ofss220623:1521:MEDIADB

```

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

Figure 4–4 Schema Creator Utility - Offline

```

All the prechecks execution completed successfully.
=====
Generating TableSpace creation Scripts started...
Generating TableSpace creation Scripts completed...
=====
Generating Schema creation scripts started...
CONFIG User dev_conf14 creation script generated su
Generation of grants creation scripts started...
Generation of grants creation scripts completed...
Scripts Generation for CONFIG schema started ...
Scripts Generation for CONFIG schema completed ...
User dev_conf14 details updated into the dbmaster t
User dev_atm14 details updated into the dbmaster ta
User dev_atm14 creation script generated successful
User dev_atm14 creation is skipping as the user is
Generating Schema creation scripts completed...
=====
Generating Roles creation Scripts started...
Generating Roles creation Scripts completed...
=====

```

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

*Schema Creator executed successfully. Please execute scratch/ofsaapp/OFS\_IFRS\_PACK/schema\_creator/sysdba\_output\_scripts.sql before proceeding with the installation.*

11. Navigate to the directory:

```
OFS_IFRS_PACK/schema_creator
```

12. Log in to SQLPLUS with a user having SYSDBA Privileges.

13. Connect to the Oracle DB Server on which the Application Pack installation is to be performed and execute the **sysdba\_output\_scripts.sql** file using the following command:

```
SQL>@sysdba_output_scripts.sql
```

Alternatively, you can copy the **sysdba\_output\_scripts.sql** file and **SQLScripts** directory to a remote server and execute the **sysdba\_output\_scripts.sql** file.

---

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

---

## Executing the Schema Creator Utility with -s Option

If you intend to run the OFS IFRS 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_IFRS_PACK/schema_creator/conf/OFS_IFRS_SCHEMA_IN.xml` in text editor.
2. Execute the utility with `-s` option.

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

**Figure 4–5 Schema Creator Utility with -s Option**

```

$ ./osc.sh -s
=====
You have chosen ONLINE mode
=====
Triggering the utility in ONLINE mode will execute the DDLs directly on the Database. Do you wish to proceed? (Y/y or N/n):
Y
=====
Java Validation Started ...
Java found in : /scratch/jdk1.6.0_45/bin
JAVA Version found : 1.6.0_45
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
    
```

**Note:**

- If the utility is executed without the `-s` option, it is mandatory to launch the OFSAA Applications Pack Installer in GUI mode.
- To execute the utility in OFFLINE mode with SILENT option, enter the following command  
`./osc.sh -o -s`

3. Make a TNS entry for the new users created. For details, see [Adding TNS entries in the TNSNAMES.ORA File](#) section.

**Figure 4–6 Schema Creator Utility with -s Option**

```

Creating Schemas completed ...
=====
Roles creation scripts execution started ...
Roles creation scripts execution completed ...
=====
Grants creation scripts execution started...
Grants creation scripts execution completed...
    
```

## Executing the Schema Creator Utility while Installing Subsequent Applications Pack

While executing the schema creator utility for subsequent Applications Pack, you can choose to install the pack either on the same Information Domain/Atomic Schema or on a new Information Domain/Atomic Schema. You can execute the Schema Creator Utility either in Online or Offline Mode.

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

1. Repeat the steps 1 to 9 from the [Executing the Schema Creator Utility](#) section.

---



---

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

---



---

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

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

*Success. Please proceed with the installation.*

---



---

**Note:**

- Refer log file in OFS\_IFRS\_PACK/schema\_creator/logs folder for execution status.
  - Refer log sysdba\_output\_scripts.log file for execution status, if executed in offline mode. This log would be empty if there are no errors in the execution.
  - In case of any errors, contact Oracle Support.
- 
- 

## Installing the OFS IFRS Application Pack

This section provides instructions to install the OFS IFRS Application Pack depending on the mode of installation.

This section includes the following topics:

- [Installing in SILENT Mode](#)
- [Verifying the Log File](#)

### Installing in SILENT Mode

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

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

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

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

3. Execute the user **.profile**.
4. Navigate to `OFS_IFRS_PACK` directory.
5. Edit the `OFS_IFRS_PACK/conf/OFS_IFRS_PACK.xml` to enable the product licenses.

---

Note: •Ensure to enter **Yes** in **ENABLE** tag for `OFS_AAI/APP_ID` to install IFRS applications.

- See [Configuring OFS\\_IFRS\\_PACK.xml File](#) for details on configuring this XML file.
- 

6. Edit the `OFS_IFRS_PACK/schema_creator/conf/OFS_IFRS_SCHEMA_IN.xml` file to set the appropriate attribute values.

Include `INFODOM = "<Infodom Name>"` in `OFS_IFRS_SCHEMA_IN.xml` file

---

Note: •Refer [Configuring OFS\\_IFRS\\_SCHEMA\\_IN.XML File](#) for details on configuring this XML file.

- Ensure to make a TNS entry for the new users created. For details, see [Adding TNS entries in the TNSNAMES.ORA File](#) section.
- 

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

---

Note: See [Configuring OFSAAI\\_InstallConfig.xml file](#) for details on configuring this XML file.

---

8. Execute the schema creator utility.

---

Note:

- This step is mandatory and should be executed before every OFSAA Application Pack installation.
  - Ensure to execute with `-s` option in Online/Offline Mode.
  - For more information, see [Executing the Schema Creator Utility](#).
- 

9. Create a copy of the **Silent.template** file present in the installer folder `OFS_IFRS_PACK/OFS_IFRS/conf` and rename it as **Silent.props**.

10. Edit the file **Silent.props** and specify the parameters as per the requirements.

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

---

Note:

- The values of Application and sources (`ETL_APP_1_NAME`, `ETL_SRC_1_1_NAME`, and `ETL_SRC_1_2_NAME`) in **silent.props** file should be the same in both OFS ALM (if installed) and OFS IFRS.
-



## Elements in Silent.props file

Table 4-1

Property Name	Description of Property	Permissible Values	Comments
LOG_MODE	Specify Log Mode	1 = Debug Mode 0= General Mode	Password will be printed in the log file Default is GENERAL
SEGMENT_1_CODE	Specify the Common Segment for IFRS.	User Input	
SEGMENT_2_CODE	Specify the Transitional Matrix Segment Code	User Input	
APPFTP_LOG_PATH	Specify the Infodom Maintenance log path (existing or new) for the Infodom. If new Infodom, log path will be created accordingly.	User Input	Do not ignore this property if the installation is being performed on an existing information domain.
DBFTP_LOG_PATH	Specify the Infodom Maintenance log path (existing or new) for the Infodom. If new Infodom, log path will be created accordingly.	User Input	Do not ignore this property if the installation is being performed on an existing information domain.
UPLOAD_MODEL	Specify whether you want to perform Model Upload.	0 = If you have already performed Model Upload and want to skip model upload process. 1 = If you want to perform Model Upload.	
MODEL_TYPE	Specify whether you want to use the released data model or customized data model for model upload process	# 0 = If you want to upload the released data model. # 1 = If you want to upload the customized data model.	
DATAMODEL_DM_DIRECTORY	Specify the path (DM_DIRECTORY) and file (DATAMODEL) name for the customized data model. Mandatory only if you want to upload the customized data model, that is you have specified MODEL_TYPE=1.	User Input	

**Table 4-1**

<b>Property Name</b>	<b>Description of Property</b>	<b>Permissible Values</b>	<b>Comments</b>
OBI_HOST	Specify the Host Name of the OBIEE Server	User Input	This field should NOT be left blank. If OBIEE is not configured at the moment, ensure that you provide dummy value in this field.
OBI_PORT	Specify the Port Number of the OBIEE Server	User Input	This field should NOT be left blank. If OBIEE is not configured at the moment, ensure that you provide dummy value in this field.
OBI_CONTEXT	Specify the Context Name of the OBIEE Server	User Input	This field should NOT be left blank. If OBIEE is not configured at the moment, ensure that you provide dummy value in this field.
ETL_APPSRC_TYPE	Specify if you want create new ETL App/Src pair or use an existing one.	0 = If you want to create a new ETL app/src pair. 1 = If you want to use an existing pair	
ETL_APP_1_DESC	ETL IFRS Application description	User Input	Provide description for the ETL App/Src pair.  Mandatory if you want to create new ETL app/src pair. That is, you have specified ETL_APPSRC_TYPE=0.
ETL_SRC_1_1_DESC	ETL Processing source description	User Input	Give description for the ETL App/Src pair.  Mandatory if you want to create new ETL app/src pair. That is, if you have specified ETL_APPSRC_TYPE=0.
ETL_SRC_1_2_DESC	ETL Processing source description	User Input	Provide description for the ETL App/Src pair.  Mandatory if you want to create new ETL app/src pair. i.e you have specified ETL_APPSRC_TYPE=0
ETL_APP_1_NAME	ETL FSAPPS Application name	User Input	Specify the ETL Application and Source Name into ETL Area Definitions will be deployed.  The value of this element in <b>silent.props</b> file should be the same in both OFS ALM (if installed) and OFS IFRS.

**Table 4–1**

<b>Property Name</b>	<b>Description of Property</b>	<b>Permissible Values</b>	<b>Comments</b>
ETL_SRC_1_1_NAME	ETL Staging source name	User Input	Specify the ETL Application and Source Name into ETL Area Definitions will be deployed.  The value of this element in <b>silent.props</b> file should be the same in both OFS ALM (if installed) and OFS IFRS.
ETL_SRC_1_2_NAME	ETL Processing source name	User Input	Specify the ETL Application and Source Name into ETL Area Definitions will be deployed.  The value of this element in <b>silent.props</b> file should be the same in both OFS ALM (if installed) and OFS IFRS.
FV_SEGMENT	Specify name of the Segment for Fair Value sandbox infodomain	User Input	
FV_APPSERVER_FTP_LOGPATH	Specify the sandbox Maintenance log path (to be created) for the Fair Value sandbox.	User Input	
FV_DBSERVER_FTP_LOGPATH	Specify the sandbox Maintenance log path (to be created) for the Fair Value sandbox	User Input	
HISTIRC_SEGMENT	Specify name of the Segment for Historical Interest Rates sandbox infodomain	User Input	
HISTIRC_APPSERVER_FTP_LOGPATH	Specify the sandbox Maintenance log path (to be created) for the Historical Interest Rates sandbox.	User Input	
HISTIRC_DBSERVER_FTP_LOGPATH	Specify the sandbox Maintenance log path (to be created) for the Historical Interest Rates sandbox.	User Input	
FCSTIRC_SEGMENT	Specify name of the Segment for Forecast Interest Rates sandbox infodomain	User Input	
FCSTIRC_APPSERVER_FTP_LOGPATH	Specify the sandbox Maintenance log path (to be created) for the Forecast Interest Rates sandbox.	User Input	
FCSTIRC_DBSERVER_FTP_LOGPATH	Specify the sandbox Maintenance log path (to be created) for the Forecast Interest Rates sandbox.	User Input	

11. Give a path for installation log file in log4j.xml in *OFS\_IFRS\_PACK/OFS\_IFRS/conf* location.

12. Navigate to `OFS_IFRS_PACK/bin/` directory, on successful execution of the schema creator utility.
13. Enter the following command in the console to execute the application pack installer with Silent option.

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

**Figure 4–7 Silent Mode Installation**

```

/scratch/ofsaabas/OFS_CAP_ADQ_PACK/bin/b1
fichome.sh install.jar OFSAAI.jar pack_install.bin pack_installsilent.bin setup.sh
/scratch/ofsaabas/OFS_CAP_ADQ_PACK/bin/./setup.sh SILENT
Executing profile
Executing profile
.profile executed
FIC_HOME : /scratch/ofsaabas/OFSAA80
Environment check utility started...
-----
Java Validation Started ...
Java found in : /scratch/oracle/jdk1.6.0_45/bin
JAVA Version found : 1.6.0_45
JAVA Bit Version found : 64-bit
Java Validation Completed. Status : SUCCESS
-----
Environment Variables Validation Started ...
ORACLE_HOME : /scratch/oracle/app/product/11.2.0/client_1
TNS_ADMIN : /scratch/oracle/app/product/11.2.0/client_1/network/admin/samples
Environment Variables Validation Completed. Status : SUCCESS
-----
OS specific Validation Started ...
Unix shell found : /bin/ksh. Status : SUCCESS
Total file descriptors : 15000. Status : SUCCESS
Total number of processes : 4096. Status : SUCCESS
OS version : 6. Status : SUCCESS
OS specific Validation Completed. Status : SUCCESS
-----
DB specific Validation Started ...
Oracle Client version : 11.2.0.3.0. Status : SUCCESS
CREATE SESSION has been granted to user. Status : SUCCESS
CREATE PROCEDURE has been granted to user. Status : SUCCESS
CREATE VIEW has been granted to user. Status : SUCCESS
CREATE TRIGGER has been granted to user. Status : SUCCESS
CREATE MATERIALIZED VIEW has been granted to user. Status : SUCCESS
CREATE TABLE has been granted to user. Status : SUCCESS
CREATE SEQUENCE has been granted to user. Status : SUCCESS
SELECT privilege is granted for V_sqls_parameters view. Current value : SELECT. Status : SUCCESS
NLS_LENGTH_SEMANTICS : BYTE. Current value : BYTE. Status : SUCCESS
NLS_CHARACTERSET : AL32UTF8. Current value : AL32UTF8. Status : SUCCESS
SELECT privilege is granted for V_$parameter view. Current value : SELECT. Status : SUCCESS
Open cursor value is greater than 1000. Current value : 3000. Status : SUCCESS
SELECT privilege is granted for USER_TS_QUotas view. Current value : SELECT. Status : SUCCESS
Schema is granted with at least 500 MB table space. Current value : 500 MB. Status : SUCCESS
Oracle Server version Current value : 11.2.0.2.0. Status : SUCCESS
DB specific Validation Completed. Status : SUCCESS
-----
Environment check utility Status : SUCCESS
-----
* Welcome to Oracle Financial Services Advanced Analytical Applications Infrastructure (OFS AAI) Applications Pack Installation
-----
Checking Infrastructure installation status ...
NLS_CHARACTERSET : AL32UTF8. Current value : AL32UTF8. Status : SUCCESS
SELECT privilege is granted for V_$parameter view. Current value : SELECT. Status : SUCCESS
Open cursor value is greater than 1000. Current value : 3000. 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 : 500 MB. Status : SUCCESS
Oracle Server version Current value : 11.2.0.2.0. Status : SUCCESS
DB specific Validation Completed. Status : SUCCESS
-----
Environment check utility Status : SUCCESS
-----
* Welcome to Oracle Financial Services Advanced Analytical Applications Infrastructure (OFS AAI) 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 :

```

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

**Figure 4–8 Silent Mode Installation**

```

-----
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 addresses specific functions
domains via its products that are grouped together. The Oracle Financial Services Analytical Applications Infrastructure (OFS AAI) being the base infrastructure for deployment of other OFSAA prod
ucts/Application Packs, is bundled with each Application Pack. With every Application Pack installation, the OFSAA Infrastructure products would be checked for and installed if required.
Oracle Financial Services Enterprise Modeling (OFS AAI) and Oracle Financial Services Inline Processing Engine (OFS IPE) products are separately licensable products and should not be enabled unil
ess it has been licensed. Oracle Financial Services Enterprise Modeling (OFS AAI) and Oracle Financial Services Inline Processing Engine (OFS IPE) products are only part of the Oracle Financial Ser
vices Advanced Analytical Infrastructure Pack and specific OFSAA Application Packs that require these advanced analytical features of the product. Oracle Financial Services Enterprise Modeling (OFS
AAI) or Oracle Financial Services Inline Processing Engine (OFS IPE) product gets pre-installed automatically on selecting 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 installation, 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, p
roducts can only be enabled at any later stage using the OFSAA Infrastructure "Manage Application Pack Licenses" feature.
Enabling a product within a Application Pack automatically implies you agree with this license agreement and the respective terms and conditions.*
-----
Do you accept the terms and conditions mentioned above? (Y/N):
-----
Please enter password for default Infrastructure administrator user SYSADMIN:
Please re-enter password for default Infrastructure administrator user SYSADMIN:
Please enter password for default Infrastructure authorizer user SYSAUTH:
Please re-enter password for default Infrastructure authorizer user SYSAUTH:

```

**Table 4–2 Console Prompts - Silent Mode installation**

Console Prompts	User Inputs
Please enter OFSAA Processing Tier FTP/SFTP password	Enter the password to access processing tier directory in the application server. <b>Note:</b> In case the prompt reads as follows, enter the username/ password for accessing the product Staging/ Metadata Repository FTPSHARE. <ul style="list-style-type: none"> <li>• Kerberos username [user]</li> <li>• Kerberos password for user</li> </ul>

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

The OFSAAI License Agreement is displayed.

```

.....
* Welcome to Oracle Financial Services Advanced Analytical Applications Infrastructure (OFS AAI) 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 address
a 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 ARAI) 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 ARAI) 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 ARAI) 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

```

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

---

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

---

Once the platform is installed, it proceeds for the IFRS PACK installation. After successful IFRS pack installation, WAR file is generated and all the servers are verified.

17. The following message is displayed in the console:

*Installation completed...*

```

IFRS mock 80 installation .profile executed
IFRS mock 80 installation .profile executed
executing "ant"
Buildfile: /scratch/ifrstest/IFRS/ficweb/build.xml

createwar:
  [war] Building war: /scratch/ifrstest/IFRS/ficweb/IFRSMOCK.war

createear:
  [ear] Building ear: /scratch/ifrstest/IFRS/ficweb/IFRSMOCK.ear

BUILD SUCCESSFUL
Total time: 1 minute 14 seconds
OFSAA App Layer Services start-up check started...
Starting startofsaai.sh service...
nohup: appending output to `nohup.out'
OFSAA Service - OK
Starting icc service...
nohup: appending output to `nohup.out'
ICC service - OK
Shutting down icc service...
nohup: appending output to `nohup.out'
Shutting down OFSAA service...
nohup: appending output to `nohup.out'
OFSAAI App Layer Services check Status: SUCCESSFUL.
OFSAAI DB Layer Services check started...
checking Router service...
Router Service - OK
checking AM service...
AM Service - OK
Checking MessageServer service...
DEBUG: main started.
DEBUG: TraceFileName = /scratch/ifrstest/IFRS/ficdb/log/msg_trace_file.log
DEBUG: OpenFiles done.
MessageServer Service - OK
OFSAAI DB Layer File Services check Status: SUCCESSFUL.
*****
Installation completed..
*****
$

```

18. On completion of installation, see the installation log files.  
For more information, see [Verifying the Log File](#).
19. Download and install the mandatory one-off patch **29887635** from *Patches & Updates* tab of [My Oracle Support](#) portal.
20. Perform the steps mentioned in [Post Installation Configuration](#) section.
21. For enabling Transparent Data Encryption (TDE), see [Configuring Transparent Data Encryption \(TDE\) and Data Redaction in OFSAA](#) section.
22. For enabling Data Redaction, see Data Redaction section under Data Security and Data Privacy chapter in [OFS Analytical Applications Infrastructure Administration Guide](#).

## Verifying the Log File

Verify the following logs files for more information:

- See the `Pack_Install.log` file located at `OFS_IFRS_PACK/logs/` directory for OFS IFRS Application Pack installation logs.
- See the log file(s) located in the `OFS_IFRS_PACK/OFS_AAI/logs/` directory for Infrastructure installation logs.

- See the `OFSAAInfrastructure_Install.log` file located at `$FIC_HOME` directory for Infrastructure installation logs.
- See the `OFS_IFRS_installation.log` and `OFS_IFRS_Installation_debug.log` log files located at `<OFS_IFRS_PACK>/OFS_IFRS/logs` directory.





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# Upgrading the OFS Financial Accounting and Reporting Standards (IFRS and CECL) Application Pack

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**Note:** Data expectation for Instrument Type Codes has a minor update. Therefore, if you are upgrading to v8.0.8.0.0 from a previous version, it is advised to review the Instrument Type Codes used against the Instruments in Product Processor tables.

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This chapter includes the following topics:

- [Upgrading the OFS Financial Accounting and Reporting Standards \(IFRS and CECL\) Application Pack](#)

## Upgrading the OFS Financial Accounting and Reporting Standards (IFRS and CECL) Application Pack

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

1. Download the OFS IFRS Application Pack v8.0.8.0.0 archive file and copy it to your OFSAA server in Binary mode. For more information, see [Downloading and Copying the OFS IFRS Applications Pack Installer](#) section.

---

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**Note:** The archive files are different for every operating system like AIX, Solaris, and RHEL/Oracle Linux.

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2. Log in to the OFSAA Server with user credentials that was used to install OFSAA.
3. Shut down all the OFSAAI Services. For more information, refer to the *Start/Stop Infrastructure Services* section in [Appendix D](#).
4. Execute the following command:  

```
chmod -R 750 $FIC_HOME
```
5. If you have Unzip utility, skip to the next step. Download the Unzip utility (OS specific) and copy it in **Binary** mode to the directory that is included in your PATH variable, typically \$HOME path or directory in which you have copied the 8.0.8.0.0 installer.

- Uncompress the unzip installer file using the command:

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

---



---

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

---



---

- Give EXECUTE permission to the file using the command:

```
chmod 751 OFS_IFRS_80800_<OperatingSystem>.zip
```

6. Extract the contents of the Oracle Financial Services International Financial Reporting Standards Pack 8.0.8.0.0 in Download Directory installer archive file using the following command:

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

7. Give EXECUTE permission to the archive file. Navigate to the path *OFS\_IFRS\_80800\_<OperatingSystem>.zip* and execute the command:

```
chmod -R 750 OFS_IFRS_80800_<OperatingSystem>
```

8. Ensure that required values for **UPLOAD\_MODEL** and **MODEL\_TYPE** parameters are set in **Silent.props** file present in *OFS\_IFRS\_PACK/OFS\_IFRS/conf* location.

9. Execute **setup.sh** file using the following command:

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

Verify if the release is applied successfully by checking the log file generated in the installation folder. You can ignore ORA-00001, ORA-00955, ORA-02260, and ORA-01430 errors in the log file. In case of any other errors, contact Oracle Support.

You can also ignore “**object already exists**” error in the upgrade install log.

10. Download and install the mandatory one-off patch **29887635** from *Patches & Updates* tab of [My Oracle Support](#) portal.
11. For more information on securing your OFSAA Infrastructure, refer to the Security Guide in [OHC Documentation Library](#).
12. Restart all the OFSAAI services. For more information, refer to the *Start/Stop Infrastructure Services* section in [Appendix D](#).
13. 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](#) section.
14. After successful installation, follow these steps:

Log in to the web application server and clear the application cache. Navigate to the following path depending on the configured web application server and delete the files.

- **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>/<auto generated folder>/jsp_servlet
```

In case of WebLogic version 12.2.x.x, delete the folder named “.WL\_internal” present in the path *<WebLogic installation location>/user\_projects/domains/< Domain name >/applications/<context\_name>.ear/META-INF*”, if it exists.

- **Websphere**

*<Websphere installation directory>/AppServer/profiles/<Profile name>/temp/<Node name>/server1/<Application name>/<.war file name>*

15. Add umask 0027 in the **.profile** of the UNIX account which manages the WEB server to ensure restricted access permissions.
16. Verify the Log Files **OFS\_IFRS\_installation.log** and **OFS\_IFRS\_Installation\_debug.log** located at *OFS\_IFRS\_PACK/OFS\_IFRS/logs/* folder. You can also verify the OFSAAI log files from *OFS\_IFRS\_PACK/OFS\_AAAI\_PACK/logs* folder.
17. If OFS Enterprise Modeling is licensed and enabled in your OFSAA instance, uninstall OFSAAIRunner package and reinstall the latest available OFSAAIRunner package. For more details, see [Configuring Oracle R distribution and Oracle R Enterprise \(ORE\)](#).
18. For enabling TDE, see Configuring TDE in case of Upgrade section in [Transparent Data Encryption \(TDE\)](#) section.
19. For enabling Data Redaction, see [Enabling Data Redaction in case of Upgrade](#) section.
20. If you are upgrading from version 8.0.5.0.0 or 8.0.5.1.0 and have already executed Runs and have data present in Fact LLFP Account Summary table, you can migrate this data to the LLFP Aggregate Summary table by executing the following procedure, for the required Run Skeys:

```
ifrs9_aggregate_utilities.aggr_flas(p_v_batch_id,
p_v_mis_date,
p_v_run_id,
p_v_process_id,
p_v_run_execution_id,
p_n_run_skey);
```

---

**Note:** All parameters are of **varchar2** type.

---

**Table 5–1**

Parameter	Mandatory/Optional	Format
p_v_batch_id	Mandatory	
p_v_mis_date	Mandatory	YYYYMMDD
p_v_run_id	Optional	
p_v_process_id	Optional	
p_v_run_execution_id	Optional	
p_n_run_skey	Mandatory	000000<<Run_skey>> For example, <b>00000021</b>

If OFS Enterprise Modeling is licensed and enabled in your OFSAA instance, uninstall OFSAAIRunner package and reinstall the latest available OFSAAIRunner package. For more details, see [Configuring Oracle R distribution and Oracle R Enterprise \(ORE\)](#).

21. The FV\_QUOTE\_TYPE column of FSI\_HM\_INSTR\_FV\_QUOTE\_TYPE table includes the symbolic representation (W- Weighted and UW - Unweighted) to perform the Fair Value calculation of an Instrument Type (for both Level 1 and Level 2) for both weighted to unweighted. These Fair Values are populated at FCT\_ACCOUNT\_FAIR\_VALUE.

To update the Weighted Fair Values of already executed Fair Value Runs in an upgraded system, execute the **hm\_populate\_weighted\_fv.sql** file present in *atomic\insert\* location.

22. If you have upgraded from version 8.0.7 to 8.0.8, where the sandbox is already present in the UI, then you must refresh the sandbox. Perform the following steps

1. In the LLFP Menu navigate to **Sandbox Creation**.
2. In the **Sandbox Maintenance** page, click the **Incremental Data Model** button to refresh the upgraded sandbox.

The the value in the **Incremental Upload Required** column is updated from *Y* to *N*.

23. Additionally, if you have upgraded from version 8.0.7 to 8.0.8, edit the sandbox definition by mapping the Survival Model CRE Input Dataset to the existing sandbox definition.
24. Save your changes.

## Anonymization of Account Number in Upgrade Environment

In an upgrade environment, when you populate data in V\_ACCOUNT\_NUMBER and V\_ORIGINAL\_ACCOUNT\_NUMBER OR V\_CONTRACT\_CODE and V\_ORIGINAL\_ACCOUNT\_NUMBER of the Stage tables, ensure that you perform one-to-one mapping between the Account Number and the Original Account Number.

There should be a one-to-one mapping between the Account Number and the Original Account Number in all the Stage (STG\_\*), Product Processor (FSI\_D\_\*), Metadata (FSI\_M\_HM\_HEDGED\_INST\_MAP, FSI\_M\_HEDGE\_EFF\_TEST\_SUMMARY, FSI\_M\_HEDGED\_INST\_MAP\_SNP, and FSI\_M\_HM\_EFF\_TEST\_SUMMARY\_SNP) tables.

---



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**Note:** Account number should be an anonymized number.

---



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Example of this mapping is provided in the following table:

**Table 5–2**

Table Name	Sample Update Statement	Description
DIM_ACCOUNT	update DIM_ACCOUNT set V_ORIGINAL_ACCOUNT_NUMBER = V_ACCOUNT_NUMBER;	Updates the value in V_ORIGINAL_ACCOUNT_NUMBER column as in the V_ACCOUNT_NUMBER column.
	update DIM_ACCOUNT set V_ACCOUNT_NUMBER = <anonymized value>;	Updates the anonymized value in Account Number.

**Table 5-2**

<b>Table Name</b>	<b>Sample Update Statement</b>	<b>Description</b>
STG_INVESTMENTS	update STG_INVESTMENTS set V_ORIGINAL_ACCOUNT_ NUMBER = V_ACCOUNT_ NUMBER;	Updates the value in V_ORIGINAL_ACCOUNT_NUMBER column as in the V_ACCOUNT_NUMBER column.
	update STG_INVESTMENTS set V_ACCOUNT_NUMBER = <anonymized value>;	Updates the anonymized value in Account Number.
STG_OPTION_CONTRACTS	update STG_OPTION_ CONTRACTS set V_ ORIGINAL_ACCOUNT_ NUMBER = V_CONTRACT_ CODE;	Updates the value in V_ORIGINAL_ACCOUNT_NUMBER column as in the V_CONTRACT_CODE column.
	update STG_OPTION_ CONTRACTS set V_ CONTRACT_CODE = <anonymized value>;	Updates the anonymized value in Account Number.
FSI_M_HM_HEDGED_INST_MAP	update FSI_M_HM_HEDGED_ INST_MAP set V_ACCOUNT_ NUMBER= <anonymized value>;	Updates the anonymized value in Account Number.
FSI_M_HEDGE_EFF_TEST_SUMMARY	update FSI_M_HEDGE_EFF_ TEST_SUMMARY set V_ ACCOUNT_NUMBER= <anonymized value>;	Updates the anonymized value in Account Number.
FSI_M_HEDGED_INST_MAP_SNP	update FSI_M_HEDGED_ INST_MAP_SNP set V_ ACCOUNT_NUMBER= <anonymized value>;	Updates the anonymized value in Account Number.
FSI_M_HM_EFF_TEST_SUMMARY_SNP	update FSI_M_HM_EFF_TEST_ SUMMARY_SNP set V_ ACCOUNT_NUMBER= <anonymized value>;	Updates the anonymized value in Account Number.



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## Post Installation Configuration

On successful installation of the OFS IFRS Application Pack, follow the post installation steps mentioned below.

This chapter includes the following sections:

- [Patches](#)
- [Configuring Work Manager in Web Application Server](#)
- [Configuring Resource Reference](#)
- [Starting OFSAA Infrastructure Services](#)
- [Adding TNS entries in the TNSNAMES.ORA File](#)
- [Configurations for Sandbox Model Creation](#)
- [Configuring Oracle R distribution and Oracle R Enterprise \(ORE\)](#)
- [Configuring Oracle Financial Services Inline Processing Engine \(OFS IPE\)](#)
- [Updating OBIEE URL](#)
- [Creating and Deploying the Application Pack Web Archive](#)
- [Accessing the OFSAA Application](#)
- [Performing Post Deployment Configurations](#)
- [Settings to Support Jersey 2.x on IBM WebSphere 8.5.5.9+](#)
- [Configurations for Multiple Rating Feature](#)
- [Update the Properties of ifrs-eir.ini File](#)
- [Creating Global Variables for OBIEE](#)
- [Deploying of Image file for HM Reports](#)

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**Note:** Install the AAI mandatory patch from the MOS Document 29952285.

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**Note:** Download and install the mandatory patch **30273976**, from My Oracle Support. See the Readme available with the patch for instructions on installing the patch.

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**Note:** Install the mandatory patch for OFS IFRS from the MOS Document [2308427.1](#).

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**Note:** Ensure to clear the application cache prior to the deployment of Applications Pack Web Archive. This is applicable to all Web Servers (WebSphere, WebLogic, and Tomcat). For more information, see [Clearing Application Cache](#) section.

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---

**Note:** While executing data loading batches for dimension tables, ensure that there are no duplicate codes inserted into the tables with the latest record indicator as "Y" for a given MIS Date.

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## Patches

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

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### Mandatory Patch

You must download and install the mandatory patch 33663417. Ensure that whenever any installation or upgrade or an incremental patch is applied, the mandatory patch 33663417 for Log4J must be reapplied. For more information, see the MOS Doc ID 2827801.1.

Download and apply the AAI mandatory One-off Patch 33995556.

### Hedge Management (HM)

If you have installed the OFS Hedge Management and IFRS Valuations application, then:

- Download and install the mandatory patch **31964317**.

### Loan Loss Forecasting and Provisioning (LLFP)

If you have installed the OFS Loan Loss Forecasting and Provisioning application then download the following mandatory LLFP one-off patches:

- OFS LLFP 8.0.8.0.1 - **31115197**
- OFS LLFP 8.0.8.0.2 - **31600705**
- OFS LLFP 8.0.8.0.3 - **31933381**
- OFS LLFP 8.0.8.0.4 - **31719682**
- OFS LLFP 8.0.8.0.5 - **32374760**
- OFS LLFP 8.0.8.0.6 - **32568529**



## Configuring Tomcat for User Group Authorization, Data Mapping, and Disabling WADL for the Web Service

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

1. Navigate to the \$FIC\_WEB\_HOME/webroot/WEB-INF/ folder and open web.xml file.
2. Enter the following in the web.xml file.

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

3. To disable the WADL for the Web Service, navigate to the following snippet in the web.xml file.

```
<servlet>
<servlet-name>CommonRETServlet</servlet-name>
<servlet-class>org.glassfish.jersey.servlet.ServletContainer</servlet-class>
<init-param>
<param-name>javax.ws.rs.Application</param-name>
<param-value>com.ofs.fsapps.commonapps.util.ApplicationResourceConfig</param-value>
>
</init-param>
<load-on-startup>1</load-on-startup>
</servlet>
```

4. Add the following snippet before the <load-on-startup>1</load-on-startup> attribute.

```
<init-param>
<param-name>jersey.config.server.wadl.disableWadl</param-name>
<param-value>>true</param-value>
</init-param>
```

5. Save and close the file.

## Configuring Resource Reference

Configure the resource reference in the Web Application Server configured for the OFSAA Applications. See [Configuring Resource Reference in Web Application Servers](#) section for details on configuring the resource reference in WebSphere, WebLogic, and Tomcat Application Servers.

## Configuring Work Manager in Web Application Server

Process Modelling framework requires creation of Work Manager and mapping it to the OFSAA instance. This configuration is required for WebSphere and WebLogic Web Application Server types.

This section covers the following topics:

- [Configuring Work Manager in WebSphere Application Server](#)
- [Configuring Work Manager in Weblogic Application Server](#)

## Configuring Work Manager in WebSphere Application Server

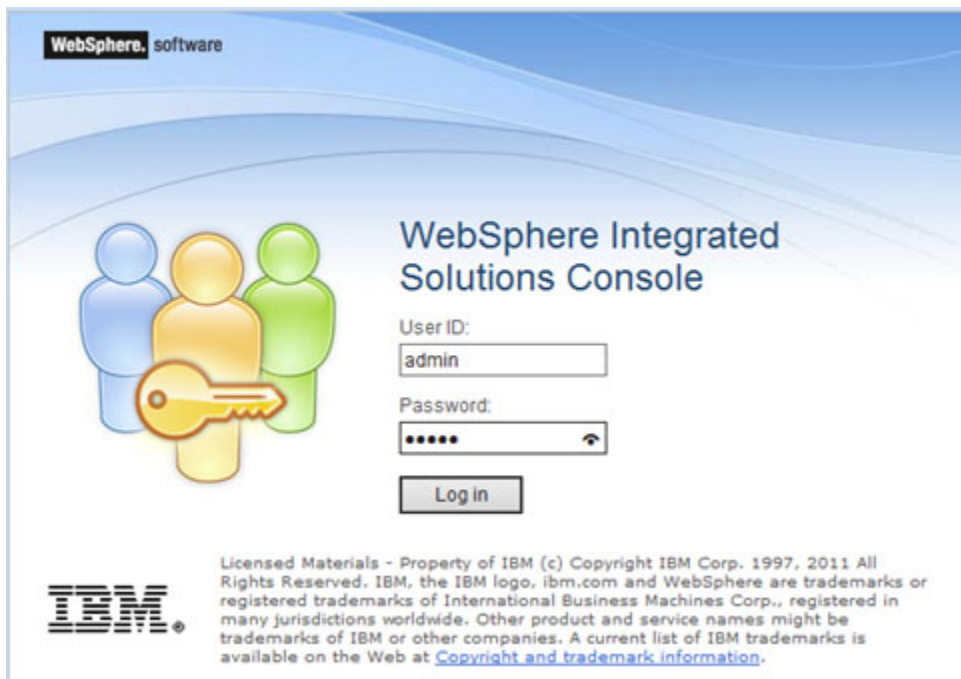
This section is applicable only when the Web Application Server type is WebSphere.

This section covers the following topics:

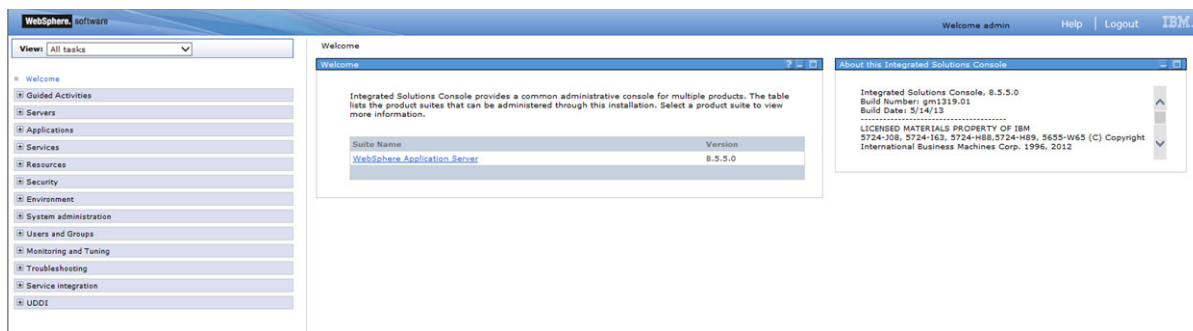
- [Creating Work Manager](#)
- [Mapping Work Manager to the OFSAA WebSphere Instance](#)

### Creating Work Manager

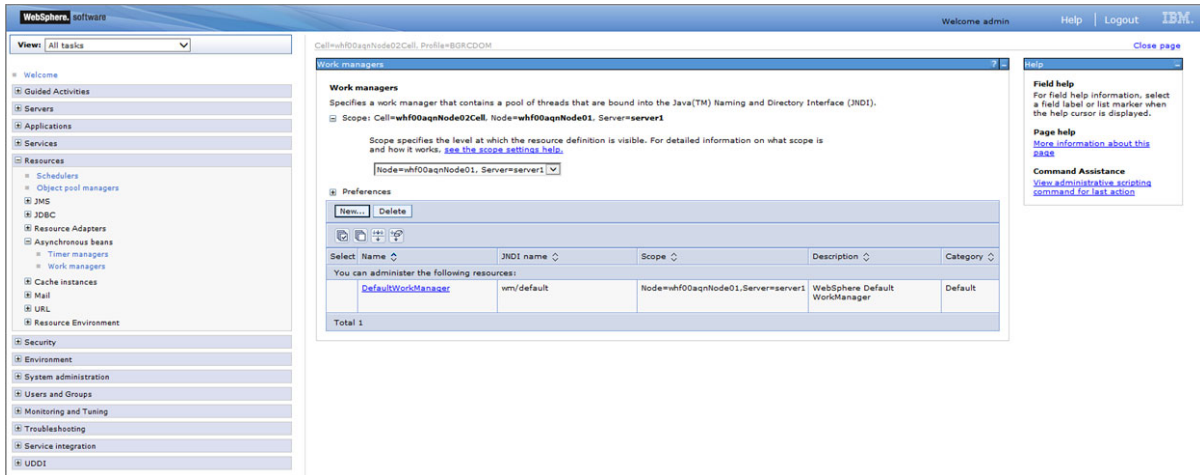
1. Open the WebSphere admin console in the browser window:  
*http://<ipaddress>:<administrative console port>/ibm/console.* (https if SSL is enabled).  
The log in window is displayed.



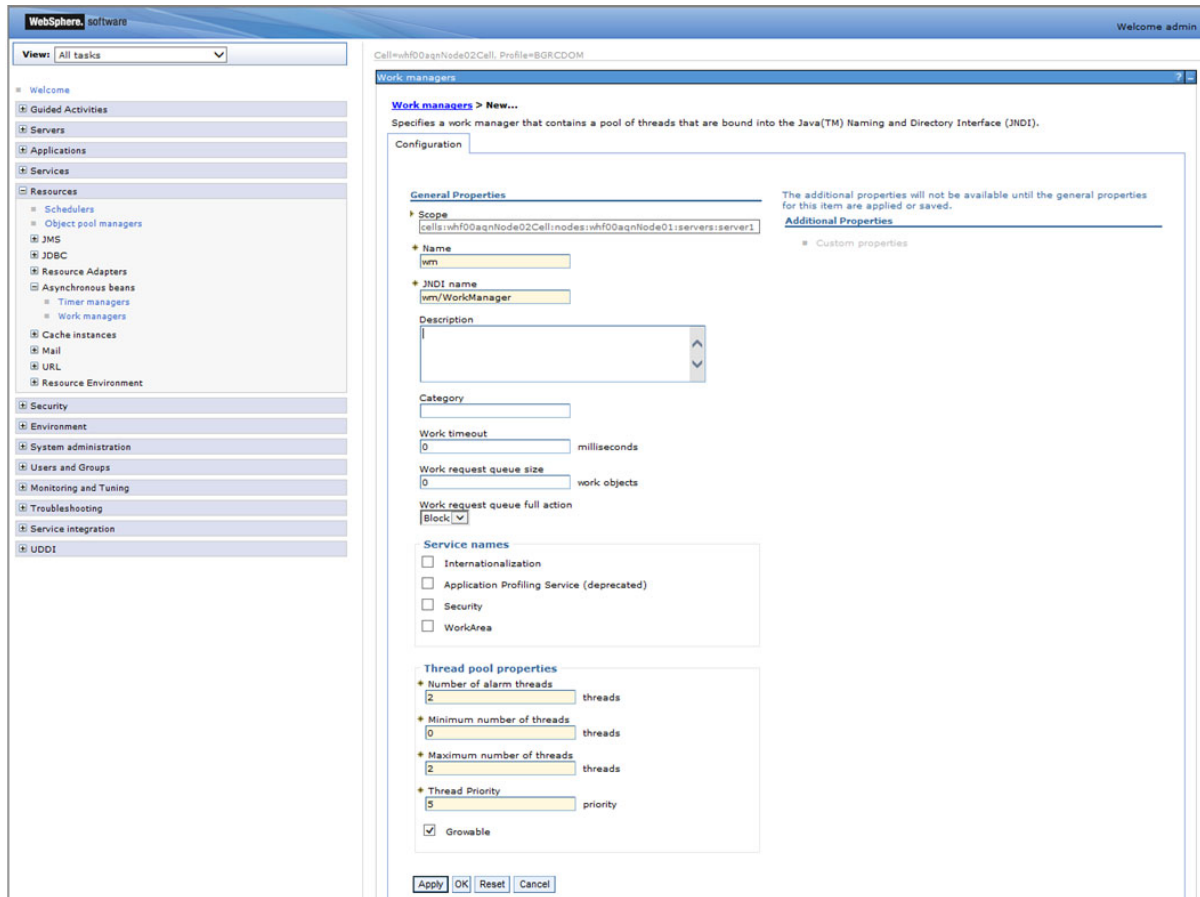
2. log in with the user ID that has admin rights.



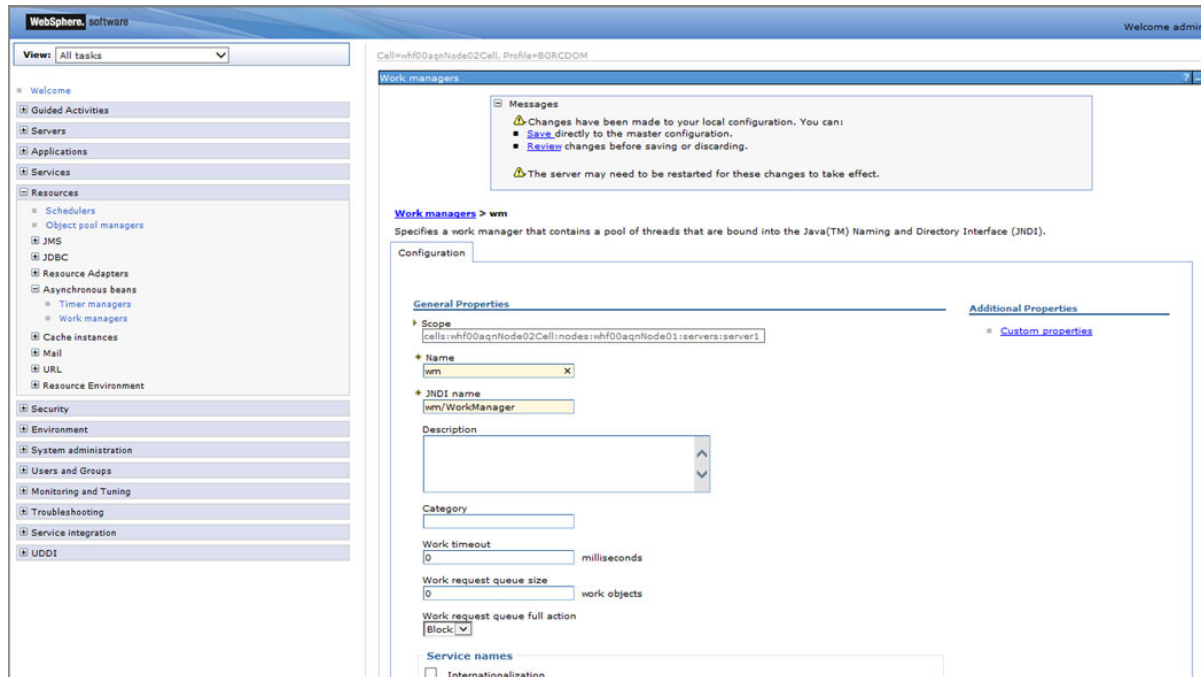
- From the LHS menu, expand **Resources > Asynchronous beans** and select **Work Managers**.



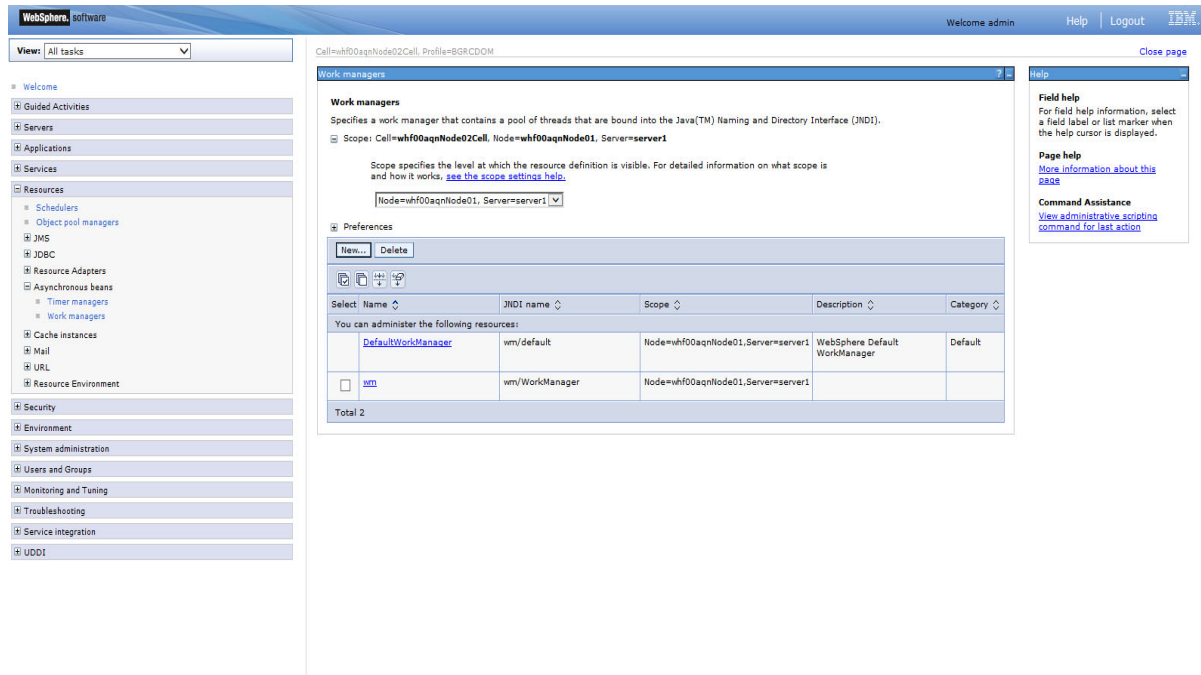
- Select the required Scope from the drop-down list.  
For example, Node=whf00aqnNode01, Server=server1.
- Click **New** in the **Preferences** section.



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



9. Click **Save**.



After creating work manager successfully, you have to map it to the OFSAA instance.

## Mapping Work Manager to the OFSAA WebSphere Instance

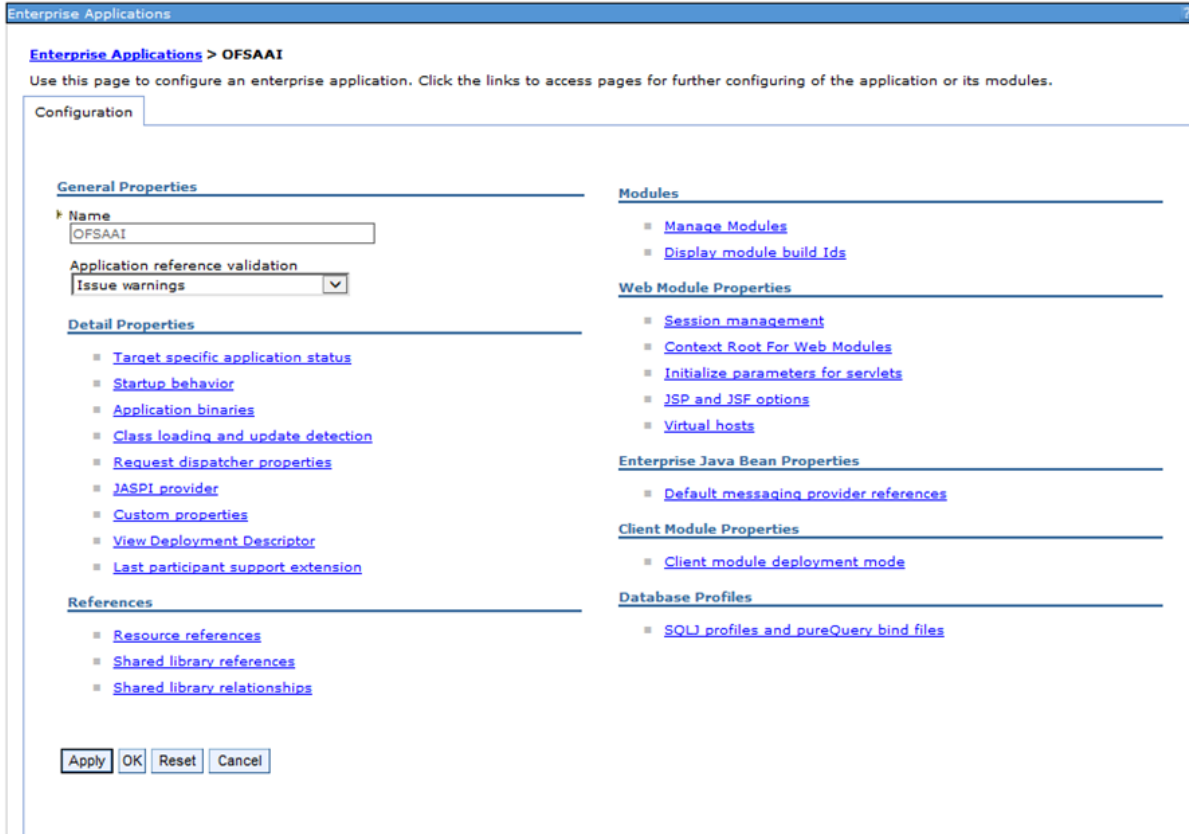
1. From the LHS menu, expand **Applications > Application Types** and select **WebSphere enterprise applications**.

The screenshot shows the WebSphere Administration Console interface. On the left, the navigation tree is expanded to 'Applications > Application Types > WebSphere enterprise applications'. The main content area is titled 'Enterprise Applications' and contains a table of installed applications. The 'OFSAAI' instance is selected, and its status is shown as 'Running' (indicated by a green arrow).

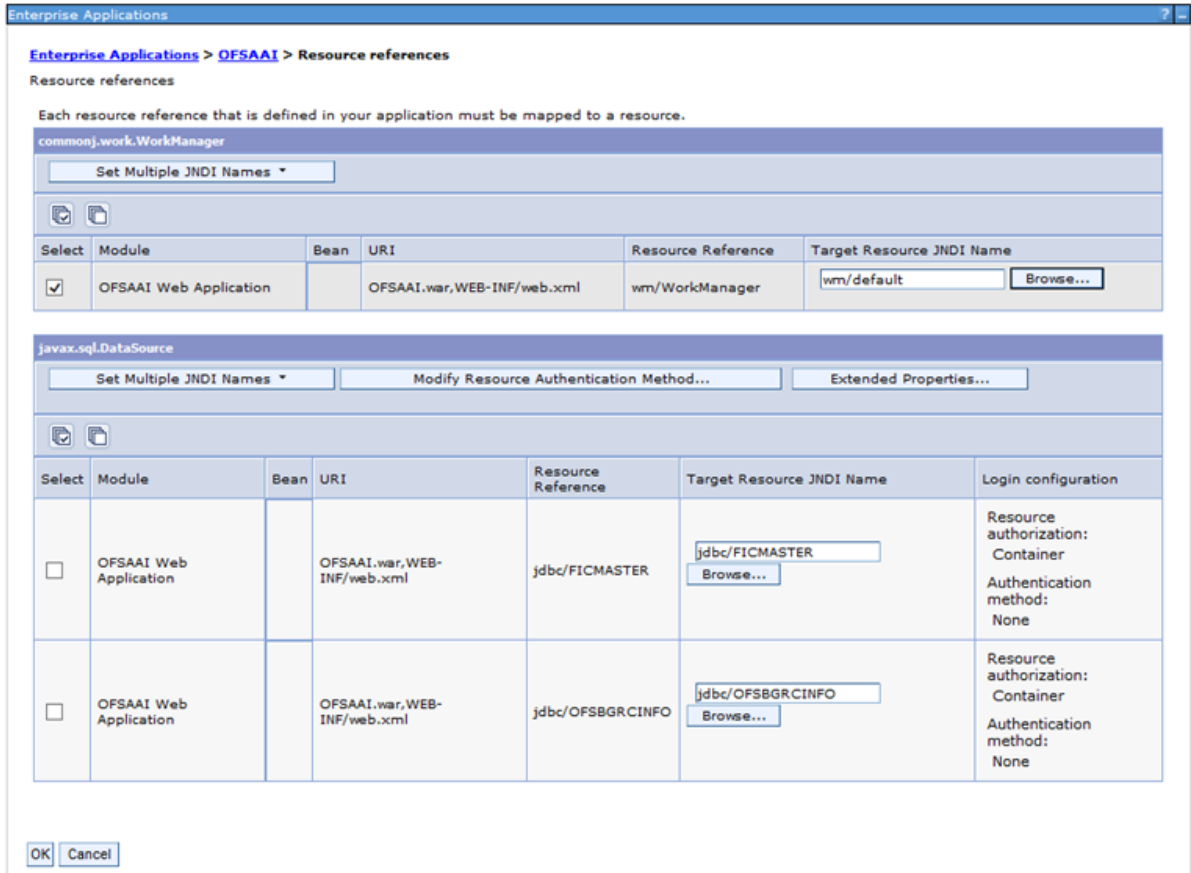
Select	Name	Application Status
<input type="checkbox"/>	DefaultApplication	→
<input checked="" type="checkbox"/>	OFSAAI	→
<input type="checkbox"/>	formsmanager	→
<input type="checkbox"/>	ivtapp	→
<input type="checkbox"/>	questv	→

Total 5

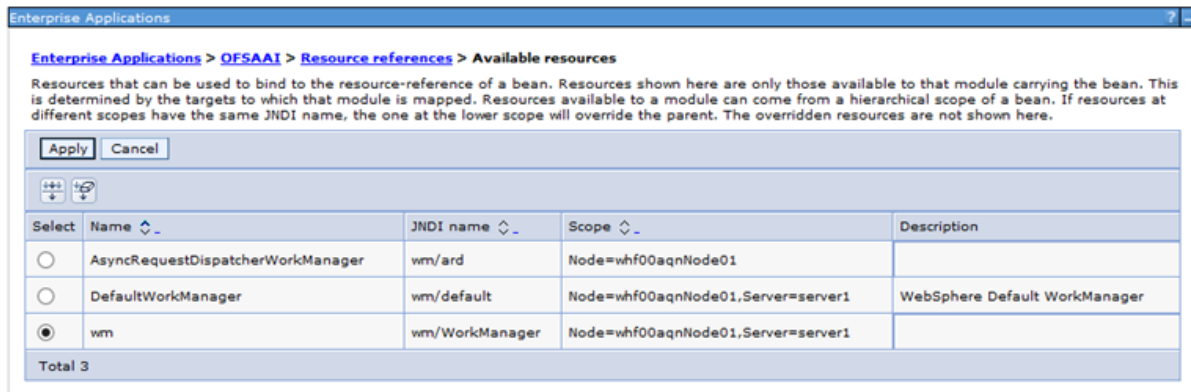
2. Click the **OFSAAI instance** hyperlink.



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



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



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

The screenshot shows the 'Enterprise Applications' configuration page for 'OFSAAI' under 'Resource references'. A table lists resource references for 'commonj.work.WorkManager' and 'javax.sql.DataSource'. The 'WorkManager' resource is selected, and its 'Target Resource JNDI Name' is 'wm/WorkManager'. The 'DataSource' resources are 'jdbc/FICMASTER' and 'jdbc/OFSBGRINFO', both with 'None' authentication methods.

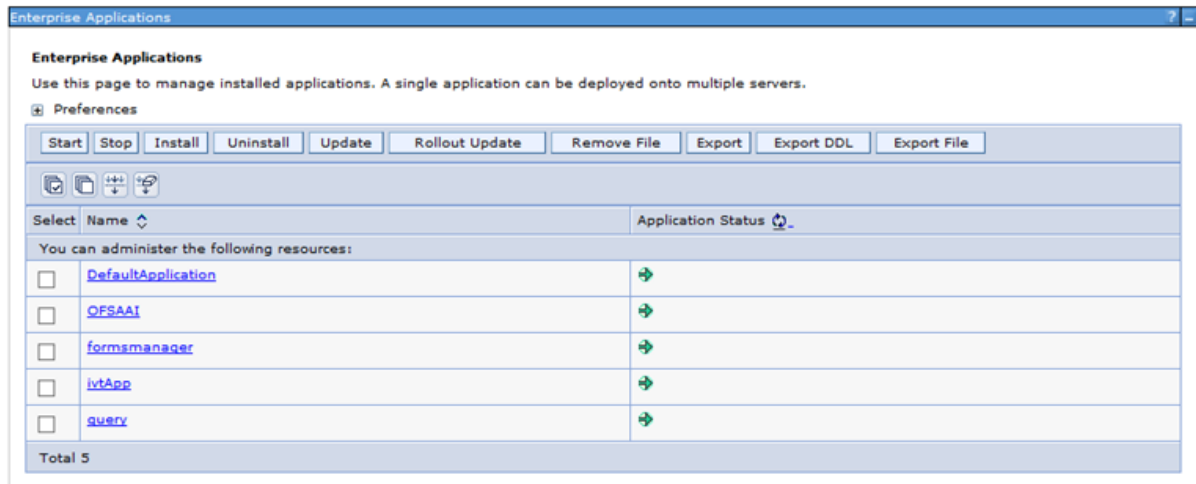
Select	Module	Bean	URI	Resource Reference	Target Resource JNDI Name
<input type="checkbox"/>	OFSAAI Web Application		OFSAAI.war;WEB-INF/web.xml	vm/WorkManager	wm/WorkManager
<input type="checkbox"/>	OFSAAI Web Application		OFSAAI.war;WEB-INF/web.xml	jdbc/FICMASTER	jdbc/FICMASTER
<input type="checkbox"/>	OFSAAI Web Application		OFSAAI.war;WEB-INF/web.xml	jdbc/OFSBGRINFO	jdbc/OFSBGRINFO

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

The screenshot shows the 'Configuration' page for the 'OFSAAI' application. It includes sections for 'General Properties', 'Detail Properties', 'References', 'Modules', 'Web Module Properties', 'Enterprise Java Bean Properties', 'Client Module Properties', and 'Database Profiles'. The 'Name' field is set to 'OFSAAI' and 'Application reference validation' is set to 'Issue warnings'.

7. Click **Save**.





## Configuring Work Manager in Weblogic Application Server

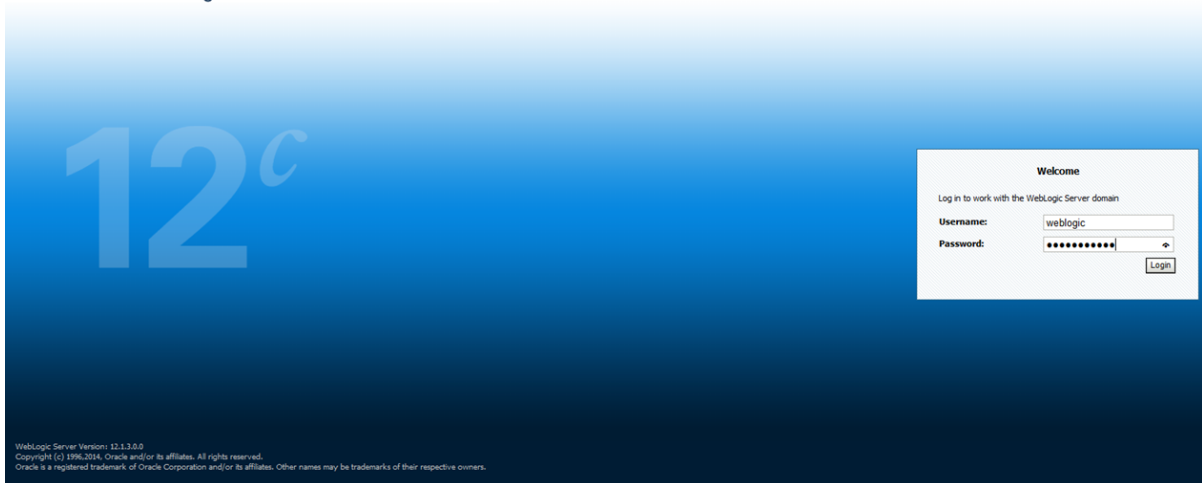
This section is applicable only when the Web Application Server type is WebLogic.

### Creating Work Manager

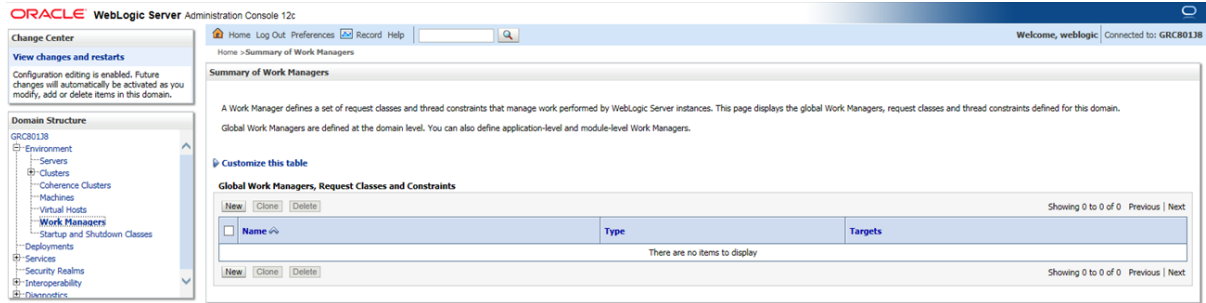
1. Open the WebLogic admin console in the browser window:  
`http://<ipaddress>:<administrative console port>/console.` (https if SSL is enabled).

The Welcome window is displayed.

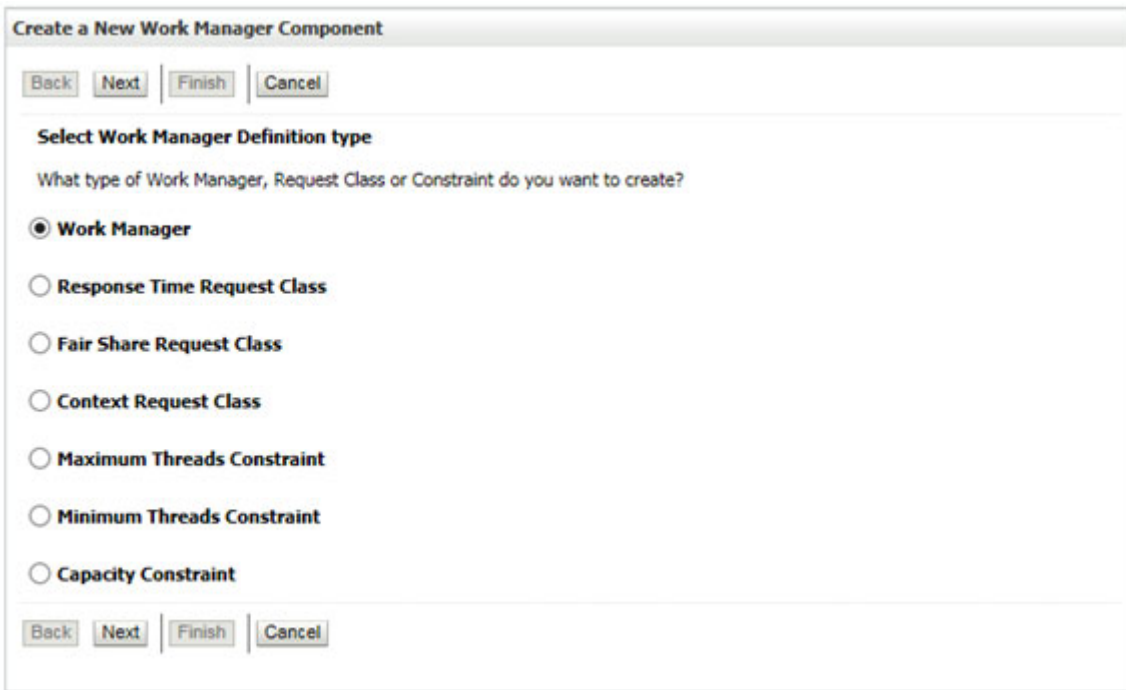
ORACLE WebLogic Server Administration Console 12c



2. Log in with the user ID that has admin rights.
3. From the Domain Structure menu in the LHS, expand Environment and select Work Managers. The *Summary of Work Managers* window is displayed.



4. Click **New** to create a new work manager component.



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

Home > Summary of Work Managers

### Create a New Work Manager Component

Back Next Finish Cancel

#### Work Manager Properties

The following properties will be used to identify your new Work Manager.

\* Indicates required fields

What would you like to name your new Work Manager?

\* Name:

Back Next Finish Cancel

6. Enter the Name as 'wm/WorkManager'.
7. Click **Next**.

### Create a New Work Manager Component

Back Next Finish Cancel

#### Select deployment targets

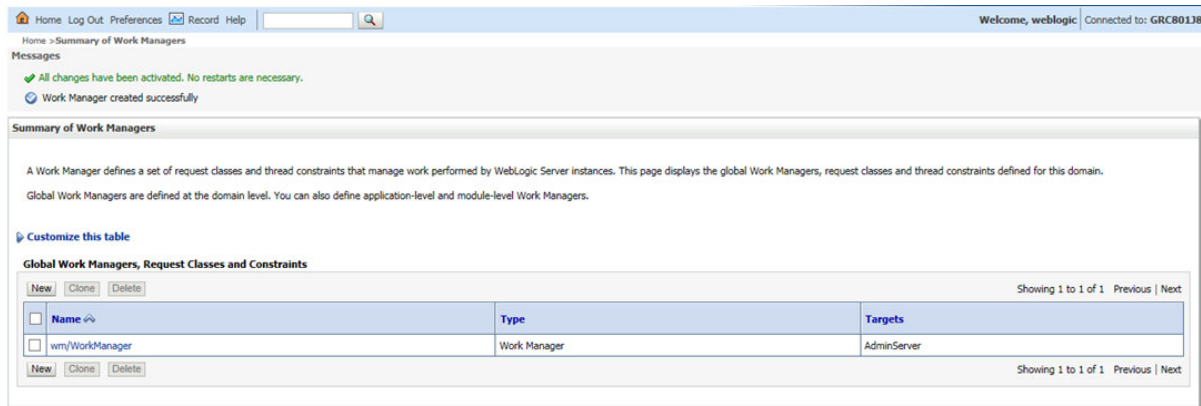
You can target the Work Manager to any of these WebLogic Server instances or Clusters. Select the same targets on which you will deploy applications that reference the Work Manager.

Available targets :

Servers
<input checked="" type="checkbox"/> AdminServer

Back Next Finish Cancel

8. Select the required deployment target and click **Finish**.



## Starting OFSAA Infrastructure Services

Start the OFSAA Infrastructure Services prior to deployment or accessing the OFSAA Applications. See to the [Starting/ Stopping Infrastructure Services](#) section for details on Start/ Stop OFSAA Services.

## Adding TNS entries in the TNSNAMES.ORA File

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

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

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

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

## Configurations for Sandbox Model Creation

This configuration procedure is specific to OFS LLFP and is required only if you have licensed OFSAAI Enterprise Modelling Framework.

---

**Important Note for Upgrade:** If you are upgrading from any version other than 8.0.4.1.0, execute the following scripts present in `$FIC_HOME/scripts/config/insert` directory, in Config schema, in the following order:

- `delete_PD_model.sql`
  - `LLFP_MF_Variable_Definitions.sql`
  - `IFRS9_model_definition.sql`
-

Once you license OFS AAI, the following configurations must be made to use the Modelling features in OFS LLFP application. These steps are required to verify and execute the models that are packaged with LLFP application.

---



---

**Note:** Ensure that Oracle R Enterprise Server version 1.5.1 is installed on the database server and AAI Runner Package is installed on the DB server, before you perform these configurations. Also, you must access the application with required privileges.

---



---

1. Create a new schema with the following grants:

```
grant create SESSION to <<schema_user>>;
grant create PROCEDURE to <<schema_user>>;
grant create SEQUENCE to <<schema_user>>;
grant create TABLE to <<schema_user>>;
grant create TRIGGER to <<schema_user>>;
grant create VIEW to <<schema_user>>;
grant create MATERIALIZED VIEW to <<schema_user>>;
grant create SYNONYM to <<schema_user>>;
grant unlimited TABLESPACE to <<schema_user>>;
```

2. Grant **RQADMIN** role to the Config schema user:

```
grant RQADMIN to <<config_schema>>;
grant RQADMIN to <<atomic_schema>>;
grant RQADMIN to <<pmodel_schema>>;
```

3. If Data Redaction is enabled, execute the following query:

```
alter user <<pmodel_schema>> default role RQADMIN;
grant OFS_SEC_DATA to <<schema_user>>;
grant OFS_NOSEC_DATA to <<schema_user>>;
```

4. Create a new database from **System Configuration** menu.
5. Add the TNS entry for the newly created database.
6. Create a new Information Domain for Sandbox and create a new Segment.
7. Map the Sandbox Information Domain to the group **LLFP Admin Group**.
8. Map the EMF groups to the LLFP admin user.
9. Log in to Config schema and execute the file `ofs_llfp_aai_model_menu.sql`. This file is present in the folder `$FIC_HOME/scripts_OFS_IFRS/config/insert`.

## Configurations for Verifying and Executing PD Model

Perform the following configurations to verify and execute the PD Model.

1. Log in as LLFP Admin user and create a Sandbox from the OFSAAI menu. Use the dataset IFRS ECL Consolidated for creating this Sandbox.

2. Disable the FK constraint (FK\_MF\_MODEL\_DS\_QUERY\_1) defined in the table MF\_MODEL\_DS\_QUERY, in Config schema.
3. Replace the place holders ##LLFPSBXINFODOM## and ##LLFPSANDBOX\_ID## with Sandbox Information Domain name and Sandbox ID respectively, in the following tables of Config schema:
  - MF\_MODEL\_MASTER
  - MF\_MODEL\_SCRIPT\_MASTER
  - MF\_MODEL\_DS\_QUERY
4. Enable the FK constraint FK\_MF\_MODEL\_DS\_QUERY\_1, in Config schema.
5. Update all the occurrences of the term "Timestamp" to "Date Time" in the following files, present in the folder ftpshare/⟨⟨SANDBOX\_INFODOM⟩⟩/erwin/scripts/sandbox:
  - FSI\_TRANSITION\_MATRIX\_MST.xml
  - FSI\_PERIOD\_TM\_MAP\_MST.xml
  - FSI\_IFRS\_ECON\_SCENARIO\_MST.xml

## Configurations for Verifying and Executing Survival Model

Perform the following configurations to verify and execute the Survival Model.

1. Log in as LLFP Admin user and create a Sandbox from the OFSAAI menu. Use the following datasets for creating this Sandbox:
  - Survival Model Input Dataset
  - Survival Model CRE Input Dataset
  - Survival Model Output Dataset
  - Survival Rate Model Dataset
  - Survival Model UI Data Dataset
2. Replace the place holders ##SURVIVALSBX## and ##SANDBOXID## with Sandbox Information Domain name and Sandbox ID respectively, in the following tables of Config schema:
  - MF\_MODEL\_MASTER
  - MF\_MODEL\_SCRIPT\_MASTER
3. Execute VW\_SURVIVAL\_MODEL.sql and vw\_survival\_model\_derived\_entity.sql, after the Sandbox is created in the sandbox schema. These files are present in the folder \$FIC\_HOME/scripts\_OFS\_IFRS/atomic/create.

---

---

**Note:** Whenever an upgrade from 8.0.x to 8.0.8 is performed, where the sandbox is already present in the UI, then you must refresh the sandbox. In the **LLFP Menu > Sandbox Creation > Sandbox Maintenance** page, you must click the **Incremental Data Model** button to refresh the upgraded sandbox. Then the value in the **Incremental Upload Required** column will change from 'Y' to 'N'.

---

---

## Configurations for Verifying and Executing Vintage Model

Perform the following configurations to verify and execute the Vintage Model.

1. Log in as LLFP Admin user and create a Sandbox from the OFSAAI menu. Use the following datasets for creating this Sandbox:
  - IFRS - Vintage Model Historic Dataset
  - IFRS - Vintage Model Prediction Dataset
  - IFRS - Vintage Model Average Loss Rate
2. Replace the place holders `##VINTAGESBXINFO##` and `##VINSANDBOXID##` with Sandbox Information Domain name and Sandbox ID respectively, in the following tables of Config schema:
  - MF\_MODEL\_MASTER
  - MF\_MODEL\_SCRIPT\_MASTER

Once these configurations are set, you can follow the OFSAAI Installation Guide to view, execute, and deploy the model from Sandbox. For more information, see *Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide* available in [Oracle Help Centre Documentation Library](#).

## Configuring Oracle R distribution and Oracle R Enterprise (ORE)

This is an optional step and is required only if you use PD Model feature of OFS LLFP. Skip and proceed with the next steps if the OFS Enterprise Modeling Application with R scripting is not enabled during installation.

1. Install the OFSAAIRunner Package. For more information, see [Installing OFS AAI Runner Package](#). If you have already installed the OFSAAIRunner package (as part of a previous installation), uninstall it. (For more information, see [Uninstalling OFSAAIRunner Package](#) section), and reinstall the latest available the 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 MINING MODEL privilege (to execute the Data Mining models) by executing the command:
 

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

### Installing OFS AAI 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`.

## Prerequisite

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

Refer to the following instructions to install the 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 the OFSAAIRunner package is listed there by executing the command:

```
>library(OFSAAIRunner)
```

```
>OFSAAIRunner::
```

Press **TAB** twice.

This lists out all the functions.

## Uninstalling OFSAAIRunner Package

---

---

**Note:** This procedure is required only if you are uninstalling the OFSAAIRunner Package.

---

---

Perform the following instructions to uninstall the OFSAAIRunner package:

1. Log in to the Oracle Database Server with the same user name, 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.

```
[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
```

## Configuring ORE Execution

Perform the following step to configure ORE execution:

1. Add a TNS entry in **tnsnames.ora** file with tns name same as that of value set for ORACLE\_SID in database server.

---

**Note:** For RAC database, follow the preceding configuration in all machines.

---

## Configuring Tomcat

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

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

1. Navigate to tomcat/conf directory.
2. Edit **web.xml** file as explained below:

Set the mapped file parameter to False in the servlet tag mentioned with

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

## Configuring Oracle Financial Services Inline Processing Engine (OFS IPE)

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

You should create an additional resource reference as *JDBC/<INFODOMNAME>* pointing to the same infodom in which IPE is installed. For information on creating resource reference, see [Configuring Resource Reference in Web Application Servers](#) section.

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

## Updating OBIEE URL

To access the respective Business Intelligence Analytics Application, you need to update the OBIEE URL in the table 'AAI\_MENU\_B', once the OBIEE environment is up and running.

Following statement needs to be executed in the config schema:

```
UPDATE AAI_MENU_B
```

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

### Example 1:

```
UPDATE AAI_MENU_B
SET V_MENU_URL = ' http://IFRSIP:port/analytics'
WHERE V_MENU_ID IN ('OFS_LLFP_ANALYTICS')
/
COMMIT
/
```

### Example 2:

```
update AAI_MENU_B set V_MENU_URL
='http://ofss2221196.in.oracle.com:7001/analytics'
where V_MENU_ID = 'OFS_HM_ANALYTICS';

commit;
```

## Creating and Deploying 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.

To identify the location of the generated web archive file and to generate and deploy the web archive file, see [Creating and Deploying EAR/ WAR File](#) section.

---

---

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

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## Accessing the OFSAA Application

Prior to accessing the OFSAA application ensure the [Configuring Internet Explorer Settings](#) are configured.

Refer to [Accessing OFSAA Application](#) section for details on accessing the OFSAA Application on successful deployment of the application web archive.

You can follow the Run Charts shared in [My Oracle Support](#) to populate required data to respective tables.

## Performing Post Deployment Configurations

Prior to using the OFSAA Application perform the Post Deployment Configuration steps detailed in [Post Deployment Configurations](#) section.

## Settings to Support Jersey 2.x on IBM WebSphere 8.5.5.9+

Follow these steps before deployment of OFS IFRS 8.0.8.0.0 into WebSphere 8.5.5.9.X.

1. Change the WAS configuration from the administrative console as follows: **Global security > Web and SIP security > General settings**.
2. Then uncheck the checkbox **Use available authentication data when an unprotected URI is accessed**.

---

**Note:** This is to bypass the basic authentication from WebSphere.

---

3. Map all the Jersey2.x/Jackson related Jars to WebSphere Shared Lib directory.
4. Create a shared Library (for example: JERSEY2x) after `$FIC_WEB_HOME/ant.sh` is triggered for WAR/EAR creation.  
The WAR file excludes those.
5. Copy the jars from `$FIC_HOME/utility/externalib/WEB-INF/lib` to locally available path of Unix user (owner of WebSphere).

The screenshot shows the IBM WebSphere Administrative Console interface. On the left is a navigation tree with categories like 'Welcome', 'Guided Activities', 'Servers', 'Applications', 'Services', 'Resources', 'Security', 'Environment', 'System administration', 'Users and Groups', 'Monitoring and Tuning', 'Troubleshooting', 'Service integration', and 'UDDI'. The main content area is titled 'Shared Libraries' and shows a 'New...' configuration page. The page includes a 'Configuration' tab and a 'General Properties' section with the following fields:

- Scope:** cells:vhf00aqnNode02Cell:nodes:vhf00aqnNode01:servers:server1
- Name:** JERSEY2x
- Description:** Providing Jersey 2.x shared library
- Classpath:** /scratch/IBM/WebSphere/AppServer/profiles/AA1805/SharedLib/
- Native Library Path:** (empty field)
- Class Loading:**  Use an isolated class loader for this shared library

At the bottom of the configuration page are buttons for 'Apply', 'OK', 'Reset', and 'Cancel'.

**Shared Libraries**

Use this page to define a container-wide shared library that can be used by deployed applications.

[-] Scope: Cell=**whf00aqnNode02Cell**, Node=**whf00aqnNode01**, Server=**server1**

Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, [see the scope settings help](#).

Node=whf00aqnNode01, Server=server1 ▼

+ Preferences

New... Delete

Select	Name	Description
You can administer the following resources:		
<input type="checkbox"/>	<a href="#">JERSEY2x</a>	Providing Jersey 2.x shared library
Total 1		

**Enterprise Applications**

[Enterprise Applications](#) > [ofsa](#) > **Shared library references**

Shared Library Mapping for Modules

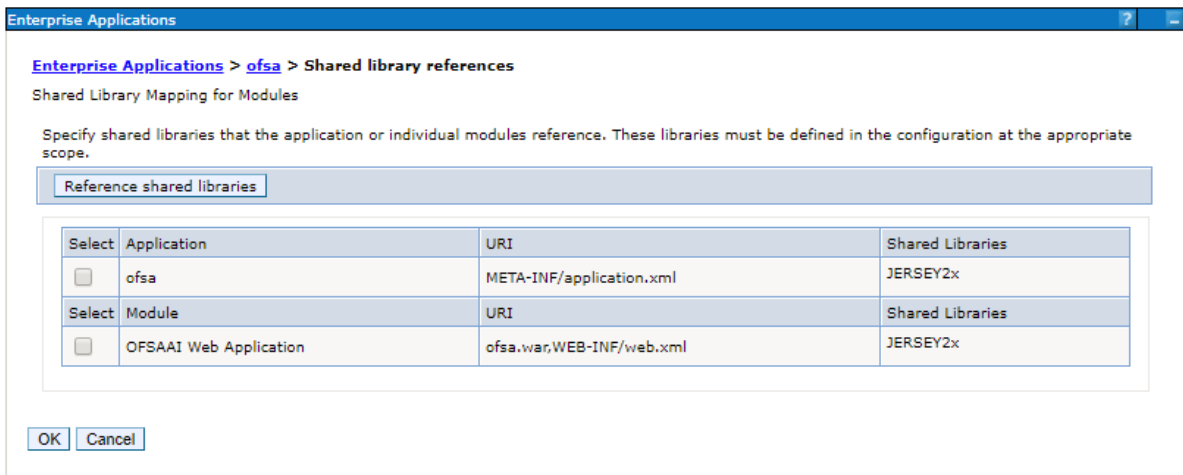
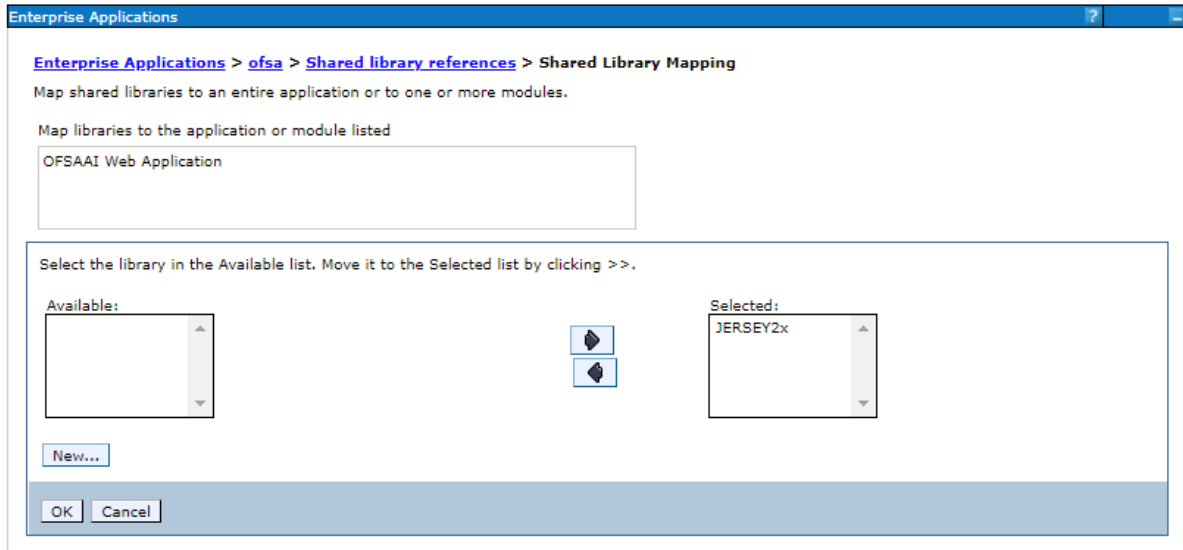
Specify shared libraries that the application or individual modules reference. These libraries must be defined in the configuration at the appropriate scope.

Reference shared libraries

Select	Application	URI	Shared Libraries
<input checked="" type="checkbox"/>	ofsa	META-INF/application.xml	
Select	Module	URI	Shared Libraries
<input checked="" type="checkbox"/>	OFSAAI Web Application	ofsa.war,WEB-INF/web.xml	

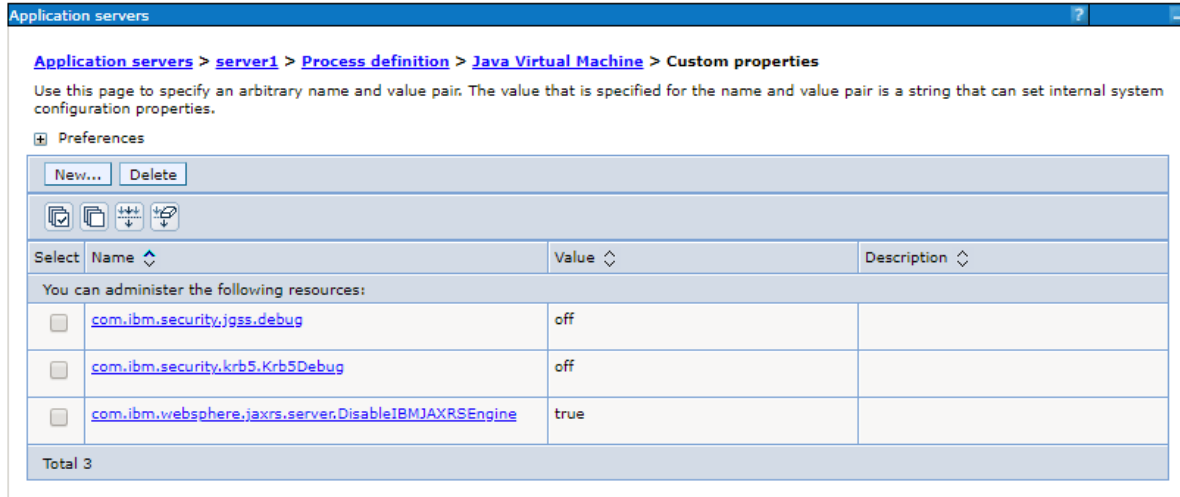
OK Cancel

6. Map the Shared-Lib reference with the OFSA applications.



7. Disable the built-in JAX-RS via JVM property.
  1. Navigate to WebSphere admin console in **Servers > WebSphere Application Servers > yourServerName**.
  2. Navigate to **Java and Process Management > Process definition > Java Virtual Machine > Custom properties**, in Server Infrastructure section.
  3. Add the following property:
 

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



## Update the Properties of ifrs-eir.ini File

The behavior of the IFRS EIR engine is controlled by six execution properties, which are present in the **ifrs-eir.ini** located at *\$FIC\_DB\_HOME/conf* folder. You can update these properties for the following purposes:

**Table 6-1**

Property	Update Required/Function/Description
EIR_CALC_SCRIPT	This refers to the name of the stored procedure that computes/persists the EIR value.  Typically, this should be left unmodified from the factory-setting.
PARALLEL_TABLES	Tune the engine performance.  If more than one instrument table is attached to an ALM-process, you can perform the EIR calculation for these tables in parallel.  For example, If you set this to 5, the EIR calculation for a max of 5 tables will be started in parallel.  If property is not set or is set to an invalid value, it will be defaulted to 1 - serial mode.
NUM_EIR_THREADS	Tune the engine performance.  If instrument table has more than 1 instrument record, this property determines how many parallel EIR executions are launched - one for each instrument record. One database-connection will be opened for each instrument-record.  For example, if you set this to 5, then EIR calculation will be launched for 5 instrument records at a time - each having its own private connection to the database.  By controlling (PARALLEL_TABLES) & (NUM_EIR_THREADS) properties, you can control how many sessions are connected to the database.

Table 6–1

Property	Update Required/Function/Description
NUM_ACCOUNTS	<p>Tune the engine performance.</p> <p>The engine queries the list of instrument IDs into memory and then iterates through these instrument IDs. Since there can be any number of instrument records, there may or may not be sufficient memory to load the list of instrument IDs. The engine therefore fetches the instrument IDs from the table(s) in smaller batches. The NUM_ACCOUNTS setting specifies that batch size.</p> <p>If the number is too low, that engine needs to query the instrument table multiple times, to load the next set of instrument IDs.</p>
OFSRM_EXECUTOR	<p>The EIR engine internally triggers the Cash Flow engine to generate the cash flows. The CFE, by design, expects a user ID as one of the inputs; all subsequent Cash Flow generation is done using the application preference of this user ID. By default, the EIR engine uses the last modified by / creator ID of the Cash Flow process, for the CFE execution.</p> <p>A different user ID can be forced by using of this property. However, it implies that the ALM application preferences are available for this overridden user ID.</p> <p>By default, this setting is disabled in the application.</p>
IGNORE_CFE_ERROR	<p>By default, the EIR engine skips EIR computation if the Cash Flow generation process fails (that is, returns a non-zero exit status).</p> <p>If this property is set to Y (or y), the EIR computation is not skipped and EIR will be computed for the instruments, for which Cash Flows have been generated.</p> <p>By default, this setting is disabled in the application.</p>

## Performance Tuning Parameters

For better performance of the OFS LLFP application, ensure that the following parameters are set accordingly:

- Ensure that the following parameters are set in the file **OracleDB.conf** present under \$FIC\_DB\_HOME/conf folder, as mentioned:
  - CNF\_PARALLEL\_QUERY=FORCE
  - CNF\_PARALLEL\_DML=FORCE
  - CNF\_DEGREE\_OF\_PARALLELISM=##DOP##
  - CNF\_PARALLEL\_DEGREE\_POLICY=Manual

---

**Note:** Replace the placeholder ##DOP## according to the hardware configuration of the database server.

---

- In case of execution of large volumes of data, to ensure better performance of T2T's, make sure that you perform the following:
- Ensure that Degree of Parallelism is enabled in the database.
- Ensure that the DOP value is set accordingly in the SETUP\_MASTER table. Following is a sample query:

```
UPDATE SETUP_MASTER SET V_COMPONENT_VALUE =##DOP## WHERE V_
COMPONENT_CODE='LLFP_PARALLEL_DOP';
```

---

---

**Note:** Replace the placeholder ##DOP## according to the hardware configuration of the database server.

---

---

## Other Tuning Parameters

Following are few additional performance tuning parameters.

- Enable parallelism for Rules using the following query:

```
UPDATE configuration SET PARAMVALUE = 'alter session set
star_transformation_enabled=true; alter session force
parallel dml parallel ##DOP##; alter session force parallel
query parallel ##DOP##;' where PARAMNAME = 'QRY_OPT_PRE_
SCRIPT';
```

---

---

**Note:** Replace the placeholder ##DOP## according to the hardware configuration of the database server.

---

---

- For large volumes of data, consider disabling foreign keys in **FCT\_ACCOUNT\_DETAILS** and **FCT\_IFRS\_STAGE\_DETERMINATION** tables before the execution of ECL and Stage Determination runs respectively. Also, ensure to re-enable these after the completion of the run.

---

---

**Note:** Re-enabling is required if the ECL rules need to be modified from the UI.

---

---

- Gather stats before and after SCD and LLFP runs.
- Consider list partitioning strategy to partition the **FSI\_CF\_PROCESS\_OUTPUTS** table based on **N\_METHOD\_SKEY** column.
- If partitioning is enabled, as mentioned above, execute the following query:  

```
ALTER TABLE FSI_CF_PROCESS_OUTPUTS ENABLE ROW MOVEMENT;
```
- Place Gather stats tasks at different stages of the ECL/CECL runs, as follows:
  - Gather table stats on **FSI\_CF\_PROCESS\_OUTPUTS** after DT - **IFRS9\_Load\_Forward\_Exposures**.
  - Gather table stats on **FSI\_CF\_PROCESS\_OUTPUTS/FCT\_ACCOUNT\_DETAILS** before DT - **IFRS9\_PD\_Cumulative\_Loss\_Rate**.
  - Gather table stats on **LLFP\_FCT\_ACCOUNT\_SUMMARY** before DT - **IFRS9\_REFRESH\_MV**.

## Database Tuning Parameters

Ensure that the following parameters are set appropriately:

- Temporary space
- `sga_max_size` and `sga_target`.



- pga\_aggregate\_limit and pga\_aggregate\_target
- open\_cursors

## Creating Global Variables for OBIEE

To create the global variables for OBIEE, in this release of IFRS application, perform the following procedure:

1. Host the RPD and Catalog for LLFP solution as part of this release.
2. Log in into OBIEE/analytics using the application URL.
3. Click the **Analytics** link.



4. Click and select the subject area as **IFRS 9**.



The subject area details are displayed.

5. Expand a folder and double click on any column from the subject area.
6. Click **Edit formula** menu item.
7. Click *Variables* tab and select the **Global** option from the menu.
8. Create a global variables with the following details:

- **Variable Name:** denomination

**Value:** case when '{@denomination} {in thousand}' = 'in thousand' then 1000 else 1000000 end

This variable is used to divide all amount values by thousand or million, depending on the selected criteria.

- **Variable Name:** RSkey

Value: case when "Run"."Run Execution Id" = '@{RunId}{1476270723292}' then  
"Run"."Run Skey" end

- **Variable Name:** stage

Value: "Previous IFRS9 Stages"."IFRS Stage Code"

9. Refresh the materialized by executing the following queries:

- EXECUTE DBMS\_MVIEW.REFRESH(LIST=>'FCT\_IFRS\_STG\_DETERMINATION\_MV');

This refreshing of MV should be done when there is a change to the Stage Determination table.

- EXECUTE DBMS\_MVIEW.REFRESH(LIST=>'FCT\_COLLECTIVE\_ASSESSMENT\_MV');

## Deploying of Image file for HM Reports

Perform the following steps to deploy the Image file for HM reports.

1. Copy all the images from the source path Customer Deliverables\Images.
2. Navigate to the location where OBIEE 12c has been installed.
3. Place the images file in this location Oracle\_Home/user\_projects/domains/bi/servers/bi\_server1/tmp/\_WL\_user/analytics/za01ic/war/res/s\_blafp/meters/light/stop.
4. Restart the OBIEE services.

---

---

## Configuring Web Server

This section covers the following topics:

- [Configuring Web Server](#)
- [Configuring Web Application Servers](#)

### Configuring Web Server

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

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

- 
- 
- Note:** •Make a note of the IP Address/ Hostname and Port of the web server. This information is required during the installation process.
- Refer Oracle Financial Services Analytical Applications Infrastructure Security Guide mentioned in the [Related Documents](#) section for additional information on securely configuring your web server.
  - Ensure to enable sticky session/affinity session configuration on the web server. 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).
- 
- 

### Configuring Web Application Servers

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).
  - 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.
- 
- 

## Configuring WebSphere Application Server for Application Deployment

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

This section covers the following topics:

- [Creating New Profile in WebSphere](#)
- [Managing IBM WebSphere SDK Java Technology Edition Versions](#)
- [Managing Applications in WebSphere](#)
- [Deleting WebSphere Profiles](#)
- [Configuring WebSphere Shared Library to Support Jersey 2x and Jackson 2.9x Libraries](#)
- [Configuring WebSphere HTTPS](#)
- [Configuring WebSphere Memory Settings](#)
- [Configuring WebSphere for REST Services Authorization](#)
- [Configuring Application Security in WebSphere](#)

### Creating New Profile in WebSphere

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

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](#).

---

## Managing IBM WebSphere SDK Java Technology Edition Versions

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

**Prerequisites:** Install the IBM WebSphere SDK Java Technology Edition Versions 1.7.X\_64 or 1.8.X\_64.

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

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

**Figure A–1 Application Server - Java SDKs**



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

**Figure A–2 Application Server - List of Java SDKs**



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

## Managing Applications in WebSphere

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

1. Open the administrator console using the following URL:

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

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

---

**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.

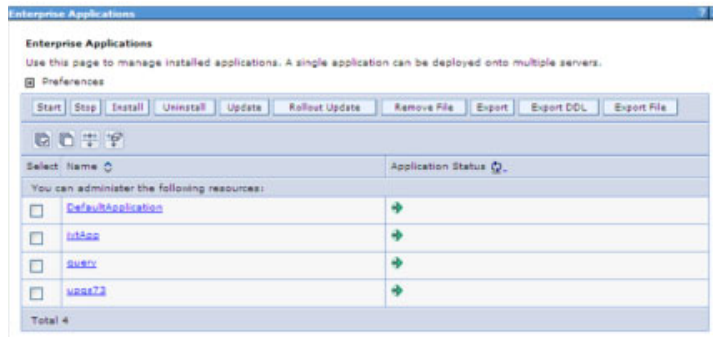
**Figure 6–1** *Integrated Solutions Console Login*



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**.

The *Enterprise Applications* window is displayed.

**Figure 6–2 Enterprise Applications**



This Enterprise Applications window helps you to:

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

### Deleting WebSphere Profiles

To delete a WebSphere profile, follow these steps:

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

`<WebSphere_Installation_Directory>/AppServer/bin/`

4. Execute the command:

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

5. Delete profile folder.

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

6. Execute the command:

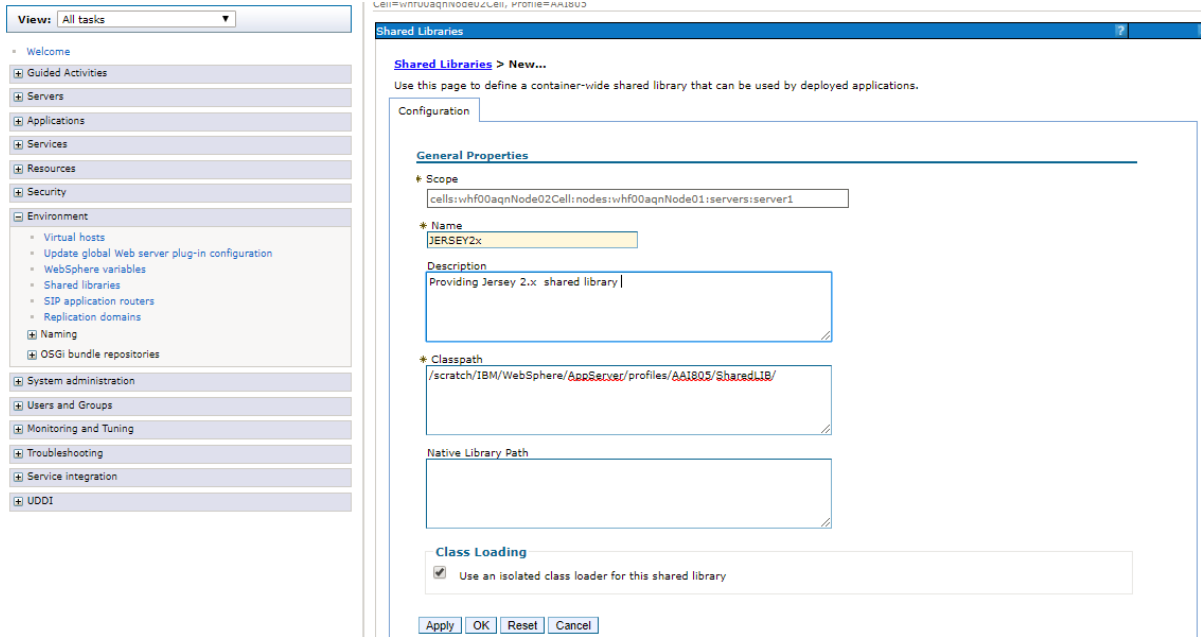
```
manageprofiles.sh -validateAndUpdateRegistry
```

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

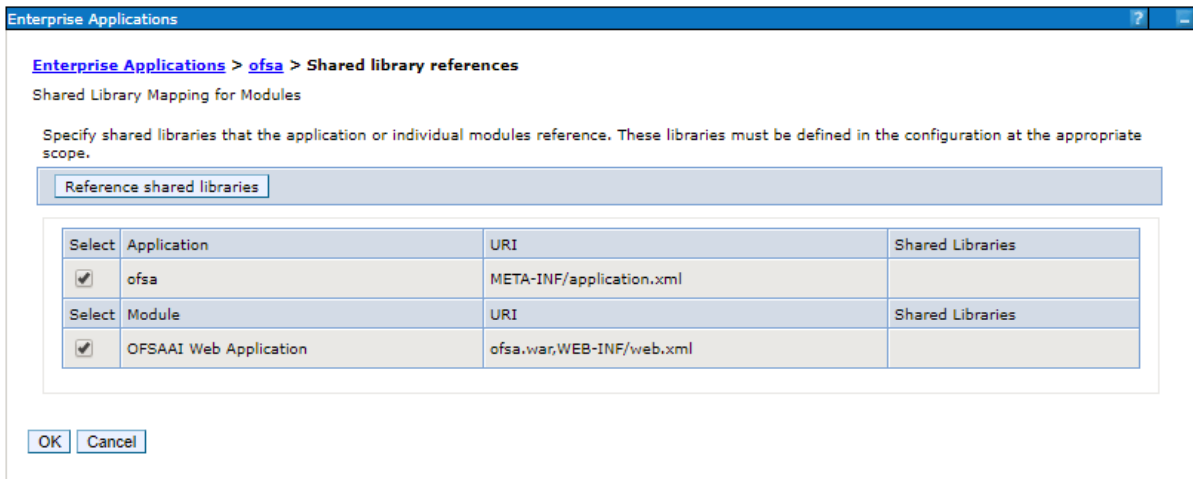
Perform the following configuration to set WebSphere shared library to support jersey 2x and Jackson 2.9x libraries.

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

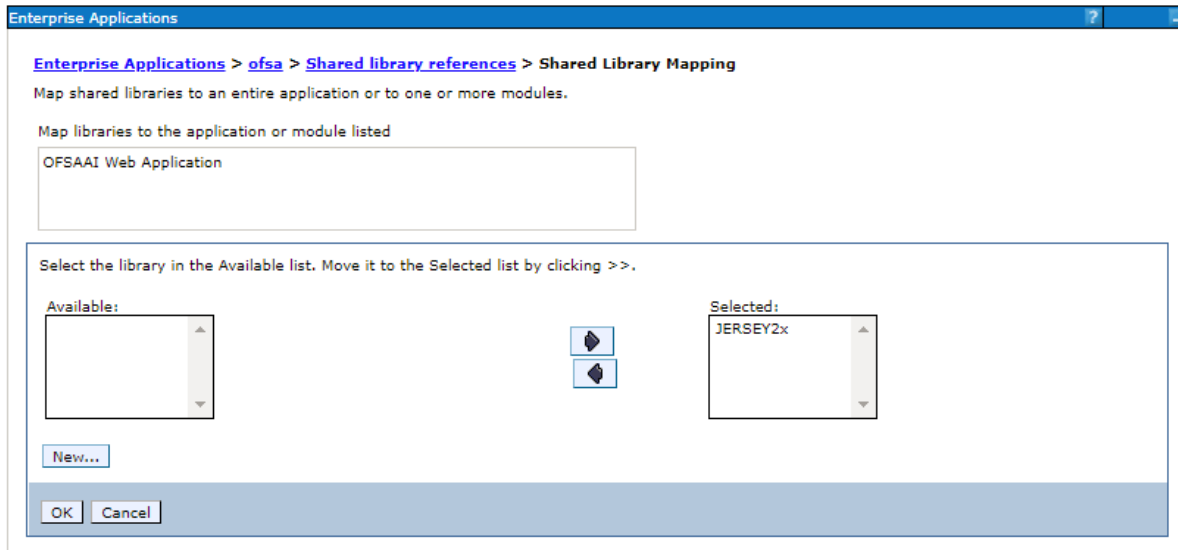




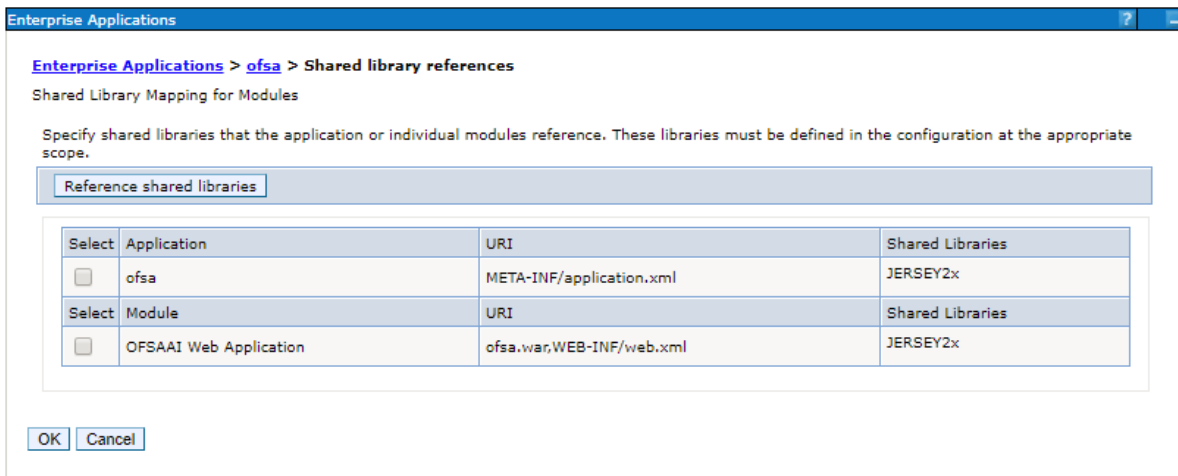
2. Enter details as shown in the following:
  1. **Name:** Enter a unique identifiable name.
  2. **Description:** Enter a valid description.
  3. **Classpath:** Enter the absolute path where the JARs related to Jersey 2.x and Jackson 2.9x are copied. These jars are available in the <OFSAA\_HOME>/utility/externallib/WEB-INF/lib directory after creation of the EAR file.
3. Select **Use an isolated class loader for this library**.
4. Click **OK** to save to master configuration.
5. Select the application or module and map the shared libraries. Click **OK**. In the following illustration, ofsa is selected.



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



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



9. Disable the built-in JAX-RS via JVM property.
  1. Go to WebSphere admin console in *Servers > WebSphere Application Servers > yourServerName*.
  2. In Server Infrastructure section, go to **Java** and *Process Management > Process definition > Java Virtual Machine > Custom properties*.
  3. Add the following property:  
`com.ibm.websphere.jaxrs.server.DisableIBMJAXRSEngine=true`
10. Restart the application.

## Configuring WebSphere HTTPS

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

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

---

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

---

2. To enable https configuration on Infrastructure, assign value 1 to "HTTPS\_ENABLE" in OFSAAI\_InstallConfig.xml for Silent mode OFSAAI installation.

## Configuring WebSphere Memory Settings

To configure the WebSphere Memory Settings, follow these steps:

1. Navigate to Websphere applications server > Application servers > server1 > Process definition > Java Virtual Machine.

2. Change the memory setting for Java Heap:

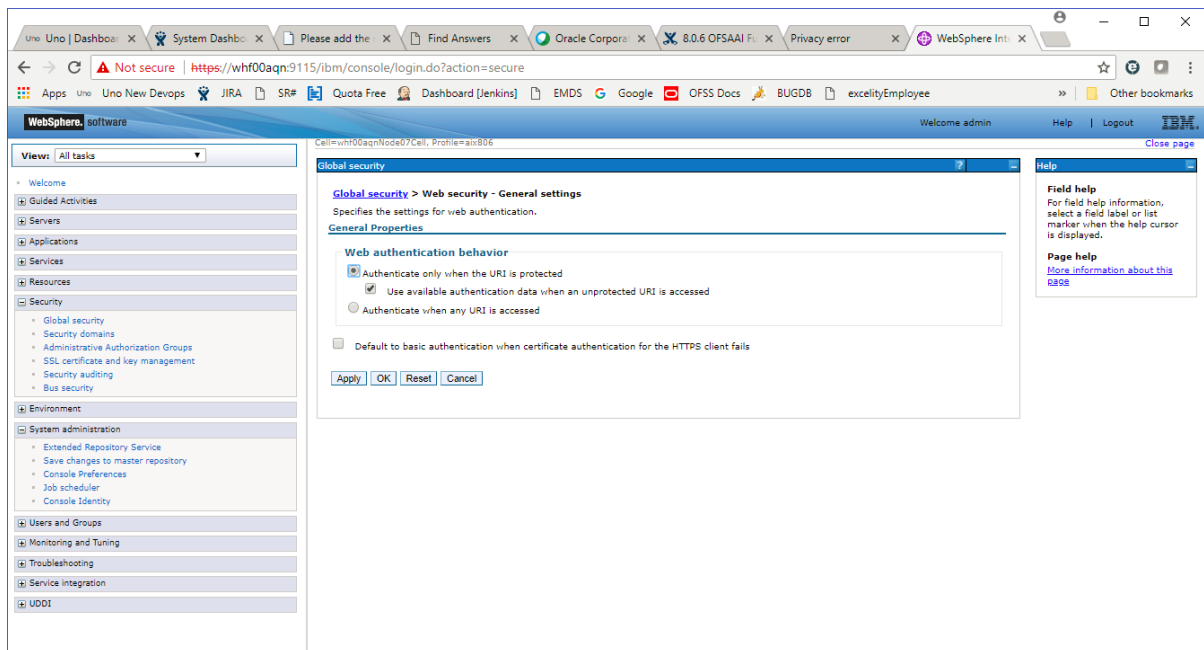
Initial heap size = 512

Maximum heap size = 3072

## Configuring WebSphere for REST Services Authorization

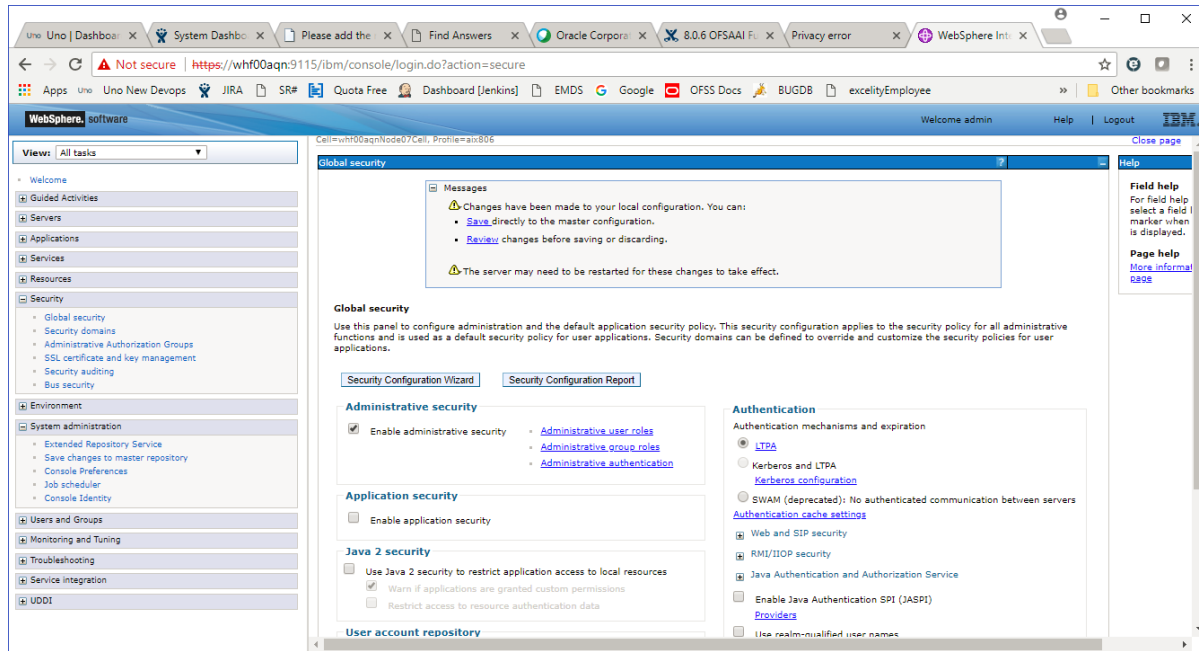
Configure the following in WebSphere to enable REST API authorization by OFSAA:

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



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

4. Click OK.



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

### Configuring Application Security in WebSphere

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

## 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.

This section covers the following topics:

- [Creating Domain in WebLogic Server](#)
- [Deleting Domain in WebLogic](#)
- [Configuring WebLogic Memory Settings](#)
- [Configuring WebLogic for REST Services Authorization](#)

### Creating Domain in WebLogic Server

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

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

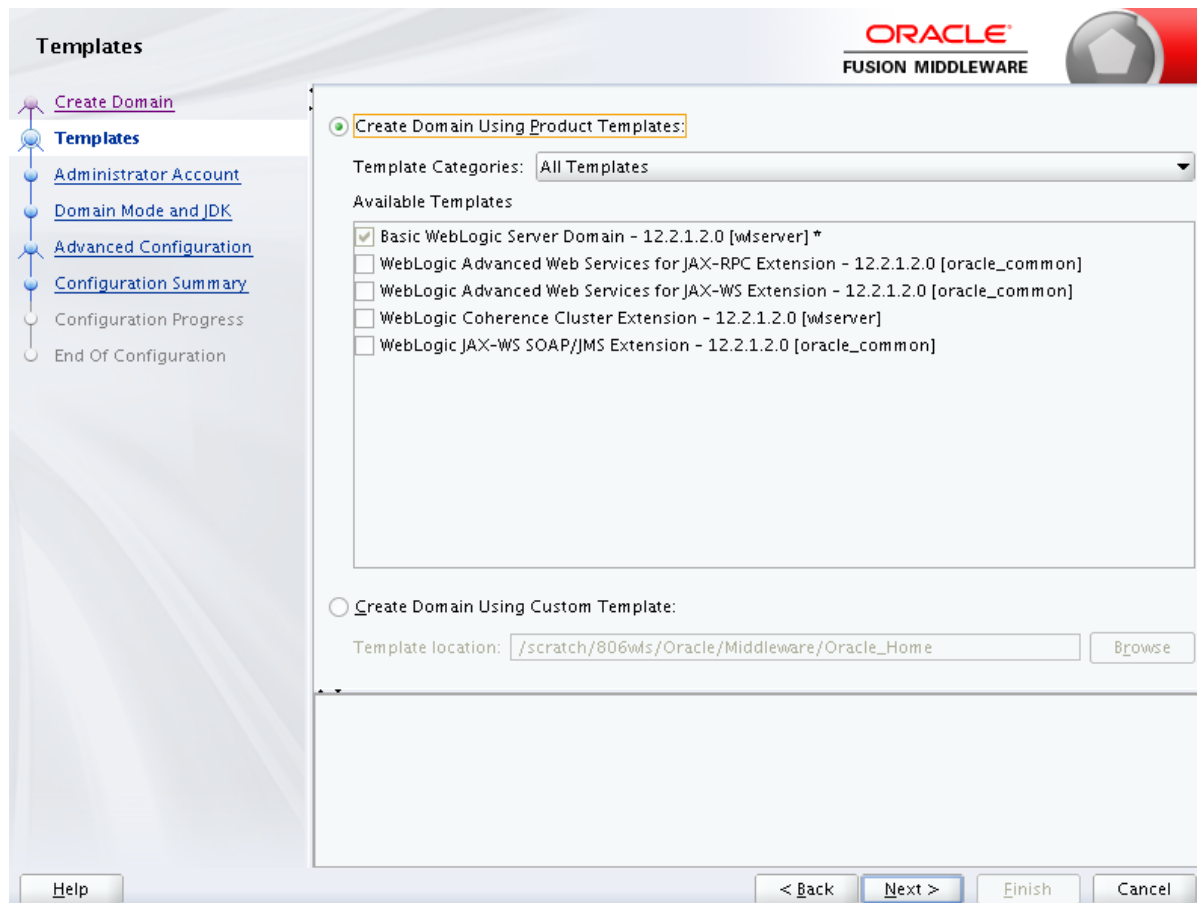
```
./config.sh
```

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



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

The *Templates* window is displayed.



3. Select the **Create Domain Using Product Templates** option and click **Next**.  
The *Administrator Account* window is displayed.

The screenshot shows the Oracle Fusion Middleware Administrator Account configuration window. The title bar reads "Administrator Account" and the Oracle Fusion Middleware logo is in the top right corner. A navigation pane on the left lists the following steps: "Create Domain", "Templates", "Administrator Account" (which is highlighted), "Domain Mode and JDK", "Advanced Configuration", "Configuration Summary", "Configuration Progress", and "End Of Configuration". The main area contains three input fields: "Name" with the value "weblogic", "Password", and "Confirm Password". Below these fields is a warning message: "User name may not contain commas, tabs, or any of the following characters: <>#|&?(){". At the bottom, there are four buttons: "Help", "< Back", "Next >", "Finish", and "Cancel".

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

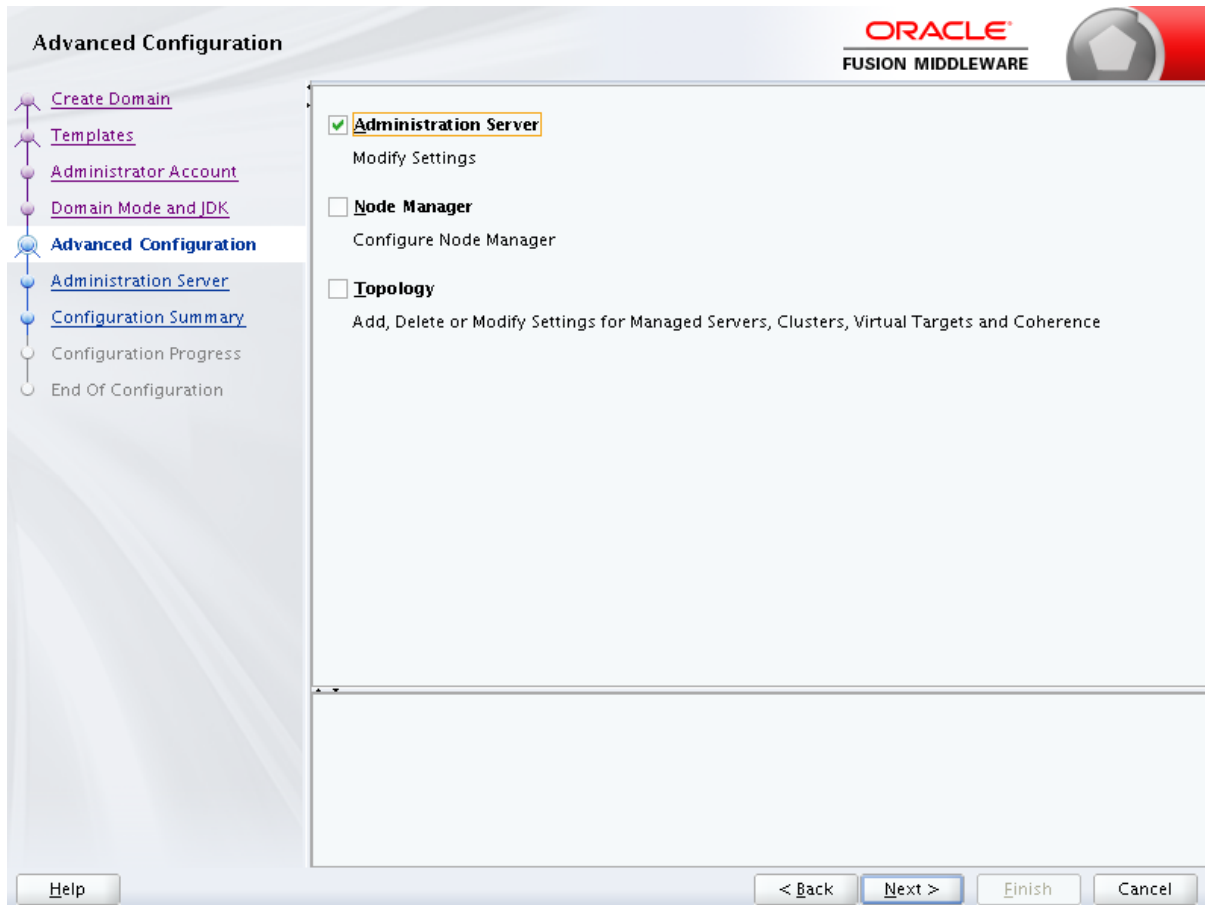
The Domain Mode and JDK window is displayed.



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

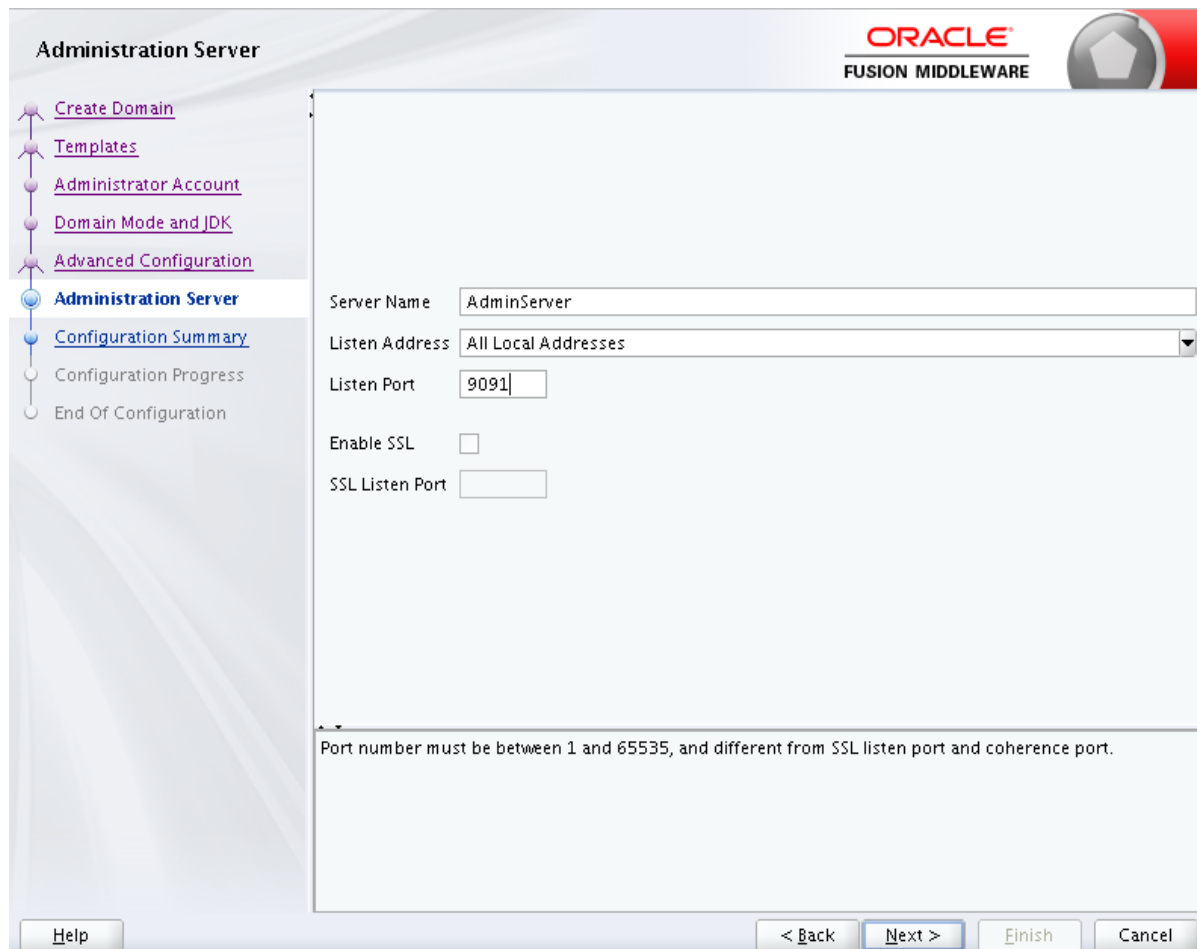
The Advanced Configuration window is displayed.





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

The Administration Server window is displayed.



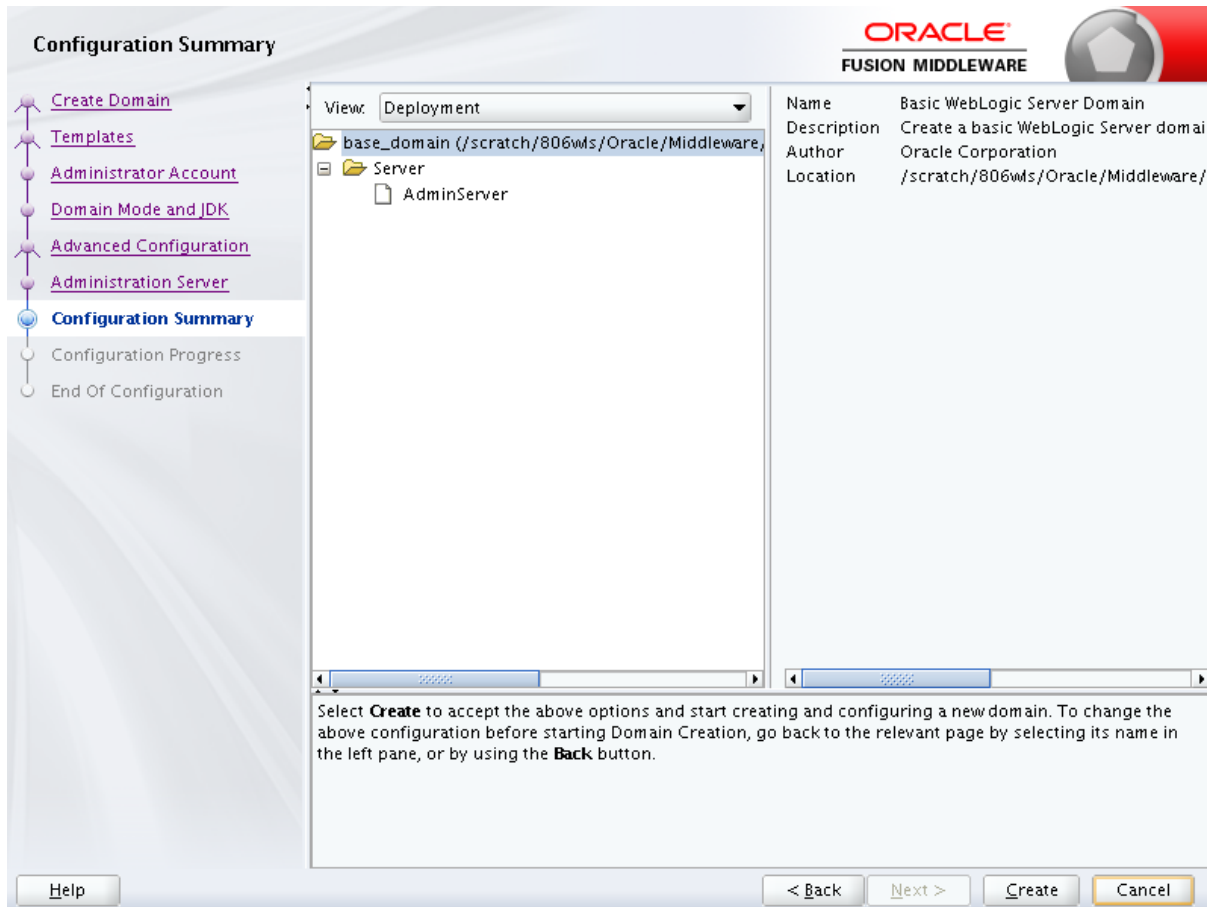
7. Enter Administration Server details such as the Server Name, Listen address, Listen Port, Enable SSL(for secure login using https, select this checkbox), and SSL listen port. Click **Next**.

The *Configuration Summary* window is displayed

---

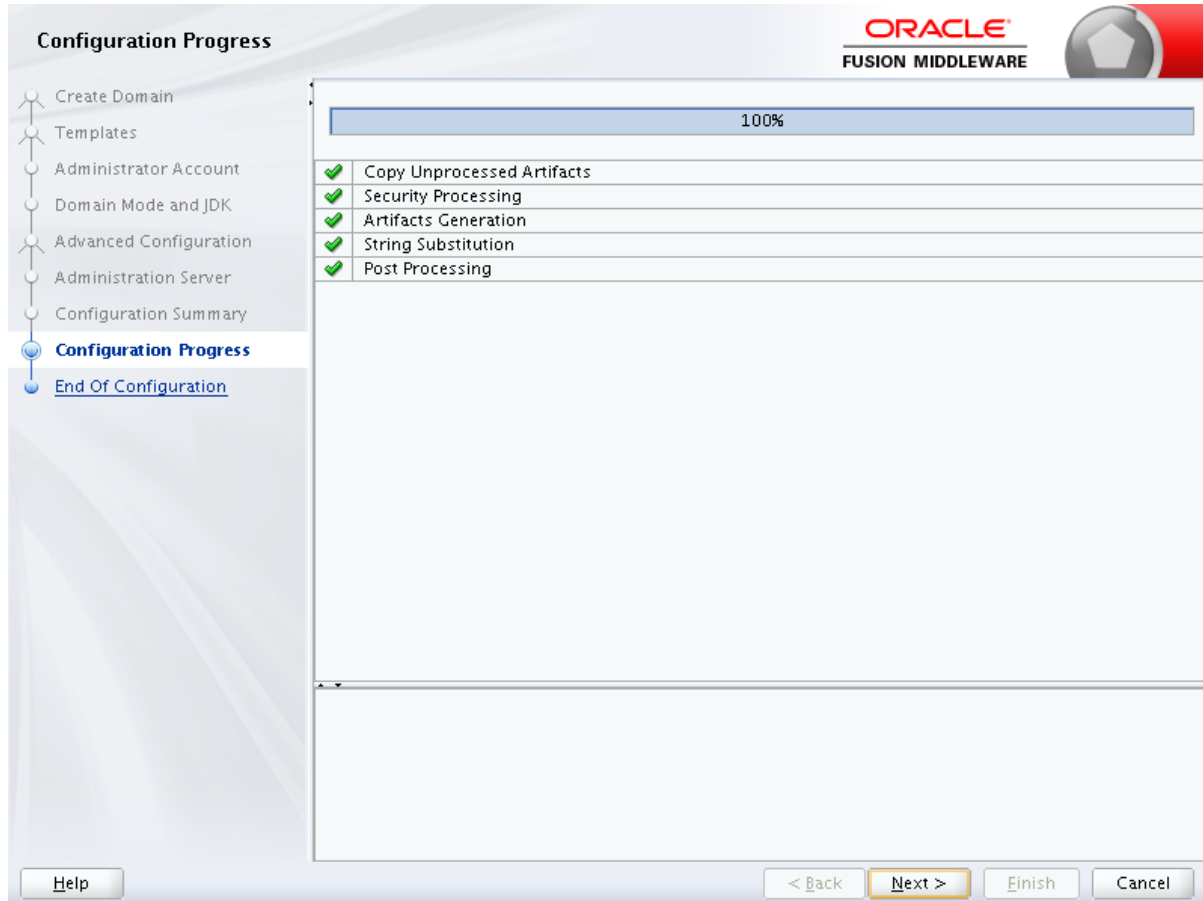
**Note:** Make a note of the Listen Port or SSL Listen Port value (for example: 7007), since the same has to be re-entered in the Servlet port field during Infrastructure installation.

---

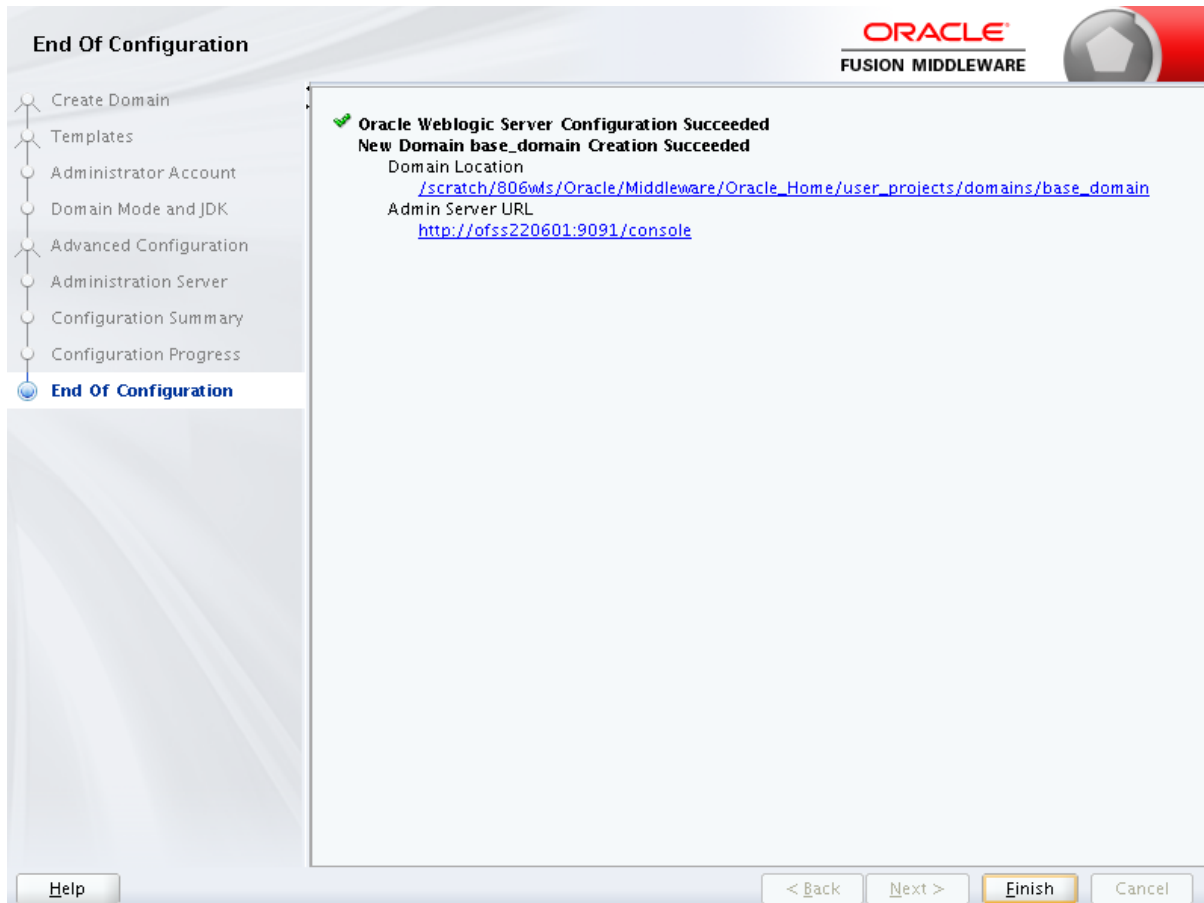


- Verify the configuration details of the WebLogic domain and click **Create**.

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



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



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

---



---

**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

---



---

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

### Deleting Domain in WebLogic

To delete a domain in WebLogic, follow these steps:

1. Navigate to the following directory:

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

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

3. Delete the Weblogic domain.

## Configuring WebLogic Memory Settings

To configure the WebLogic Memory Settings, follow these steps:

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

Example 1:

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

Example 2:

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

## Configuring WebLogic for REST Services Authorization

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

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

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

## 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](#)
- [Configuring Tomcat to use JAVA 64 bit Executables](#)
- [Configuring Servlet Port](#)
- [Configuring SSL Port](#)
- [Apache Tomcat Memory Settings](#)

- [Configuration for Axis API](#)
- [Uninstalling WAR Files in Tomcat](#)

## 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 <user> for each individual user, which will display the user name 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 user name/password combination as shown in the preceding example.
2. Use the same user name/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 aforementioned configuration is done.

## Configuring Tomcat to use JAVA 64 bit Executables

To configure Tomcat to use JAVA 64 bit, follow these steps:

1. Navigate to the "\$CATALINA\_HOME/bin" folder.
2. Edit the setclasspath.sh file as follows:
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 aforementioned 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/java7_64/jre/bin
export JAVA_BIN = /usr/java7_64/jre/bin//sparcv9 for Solaris Sparc
```

---

## Configuring 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` file in the `conf` directory of Tomcat Installation directory.

To configure the Servlet Port, follow these steps:

1. Navigate to `$(CATALINA_HOME)/conf`. Open `server.xml` and locate the tag:
2. "Define a non-SSL HTTP/1.1 Connector on port 8080 "
3. Against this tag, a parameter is specified '`Connector port = "8080"` '. Edit this value to the new port number that was used during the Infrastructure installation process.
4. Save your changes in `server.xml` file.

---

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

---

## Configuring SSL Port

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` file for SILENT mode OFSAAI installation.
- 

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

## Apache Tomcat Memory Settings

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

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

```
if [ -z "$LOGGING_MANAGER" ]; then
```



```
JAVA_OPTS="$JAVA_OPTS -Xms512m -Xmx1024m
-Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManager"
else
JAVA_OPTS="$JAVA_OPTS -Xms512m -Xmx1024m $LOGGING_MANAGER"
fi
```

## Configuring Axis API

Copy the **jaxrpc.jar** from the *<OFSAA Installation Directory>/axis-1\_4/webapps/axis/WEB-INF/lib* and place it inside the *<Tomcat Installation Directory>/lib* folder and restart the Tomcat Server.

## Configuring Tomcat for User Group Authorization and Data Mapping

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

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

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

3. Save and close the file.

## Uninstalling WAR Files in Tomcat

To uninstall WAR files in tomcat, refer [Uninstalling WAR Files in Tomcat](#).

## Configuration for Axis API

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



---

---

## Configuring Resource Reference in Web Application Servers

This section covers the following topics:

- [Configuring Resource Reference in WebSphere Application Server](#)
- [Configuring Resource Reference in Weblogic Application Server](#)
- [Configuring Resource Reference in Tomcat Application Server](#)

### Configuring Resource Reference in WebSphere Application Server

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

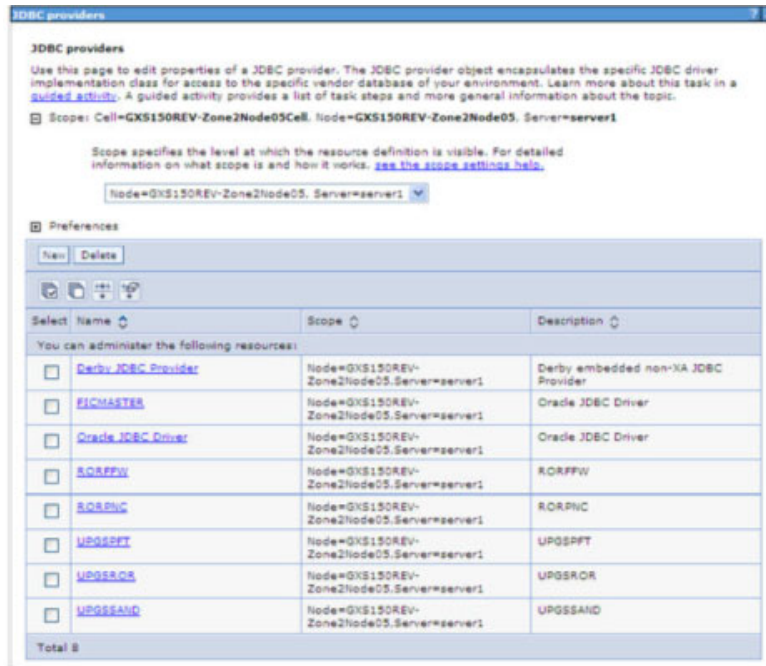
This section covers the following topics:

- [Creating JDBC Provider](#)
- [Creating a Data Source](#)
- [Creating J2C Authentication Details](#)
- [Defining JDBC Connection Pooling](#)

#### Creating JDBC Provider

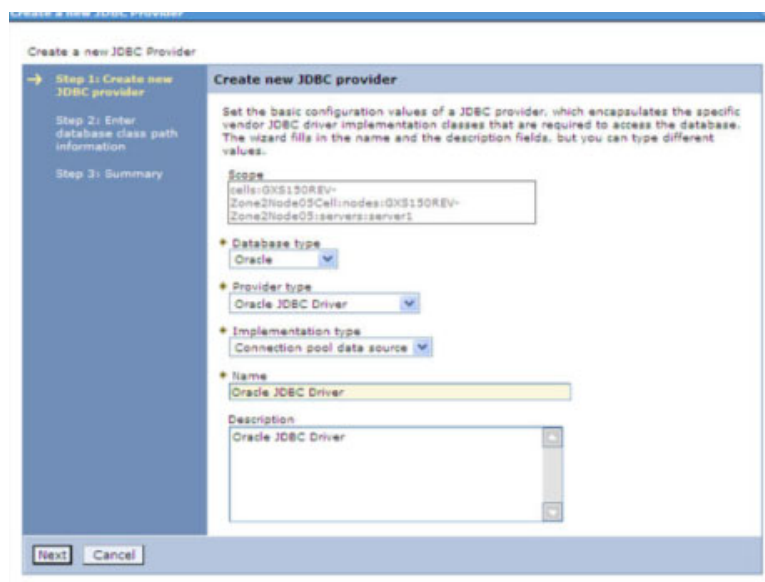
1. Open the WebSphere admin console in the browser window:  
`http://<ipaddress>:<administrative console port>/ibm/console`. (https if SSL is enabled). The *Login* window is displayed.
2. Login with the user id that has admin rights.
3. Expand the **Resources** option in the LHS menu and click **JDBC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

Figure 6–3 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 6–4 Create a new JDBC Provider



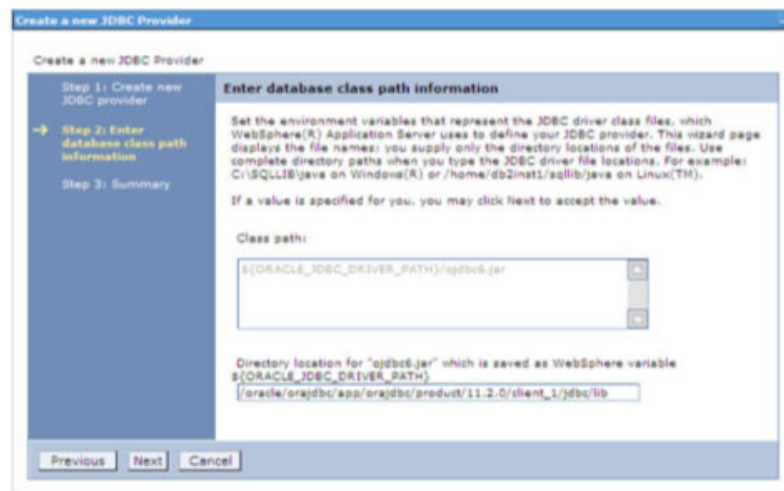
6. Enter the following details:

**Table B-1 Fields and their description**

Field	Description
Database Type	Oracle
Provider Type	Oracle JDBC Driver
Implementation Type	Connection pool data source
Name	The required display name for the resource
Description	The optional description for the resource

**7. Click Next.**

Enter database class path information



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

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

- ⤵ [Oracle Database 11g Release 2 \(11.2.0.4\) JDBC Drivers](#)
- ⤵ [Oracle Database 12c Release 1 \(12.1.0.1\) JDBC Drivers](#)

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

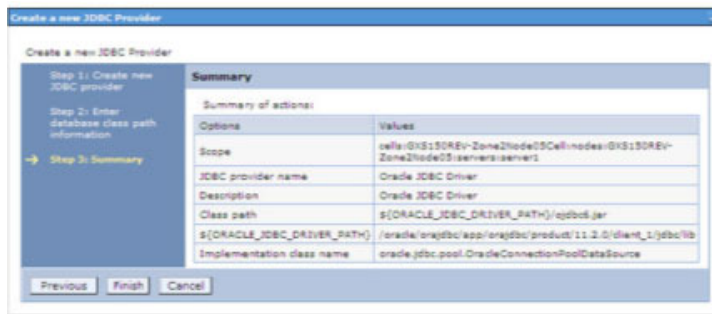
---

**Note:** Refer [Appendix O](#) section for identifying the correct ojdbc<version>.jar version to be copied.

---

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

*Summary*



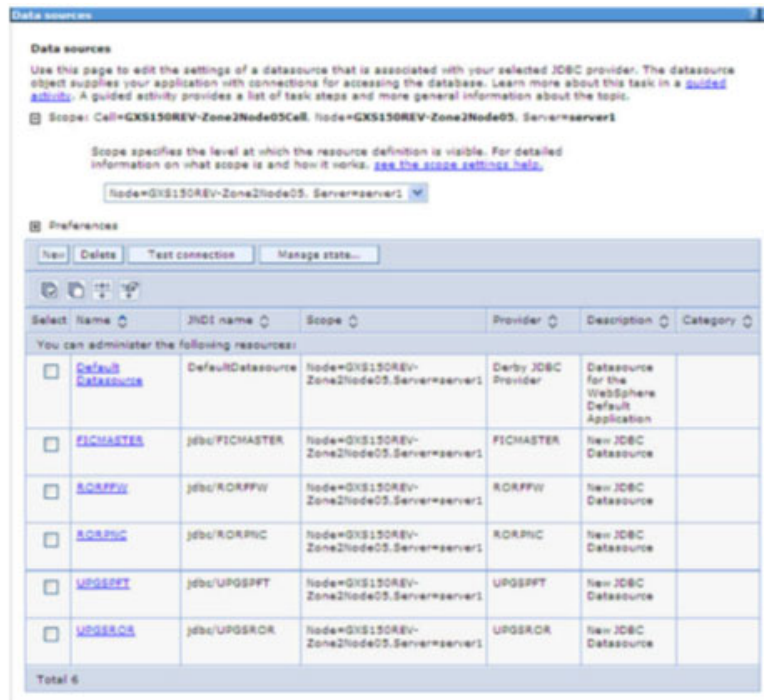
10. Verify the details and click **Finish** to create the JDBC Provider.
11. The options to **Save** and **Review** are displayed. Click **Save**.

## Creating a Data Source

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

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

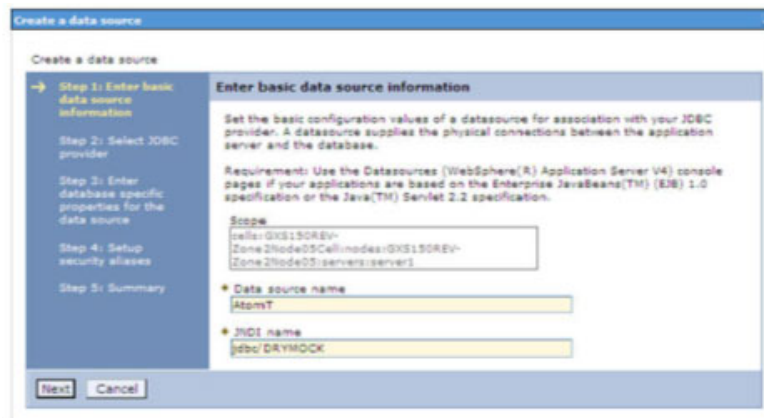
Figure B-1 Data Sources



4. Select the **Scope** from the drop-down list. Scope specifies the level at which the resource definition is visible.

- Click **New**. The Create a Data Source window is displayed.

**Figure B-2 Create Data Source**



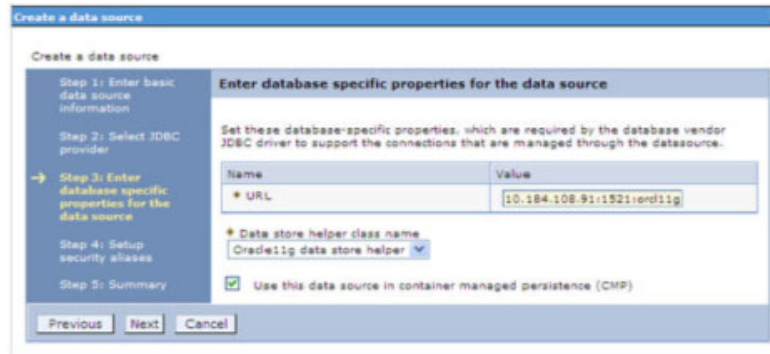
- Specify the **Data Source name** and **JNDI name** for the new "Data Source".  
The **JNDI** and **Data Source** name are case sensitive and ensure that JNDI name is same as the "Information Domain" name.
- Click **Next**. The Select JDBC provider window is displayed.

**Figure B-3 Select JDBC provider**



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

**Figure B-4 Enter database specific properties**



9. Specify the database connection URL.

For example: jdbc:oracle:thin:@<DB\_SERVER\_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.

---

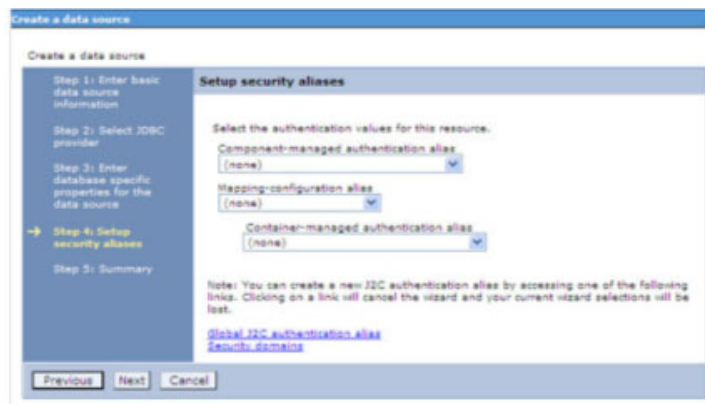
**Note:** For RAC configuration, provide the RAC url specified during installation.

---

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.

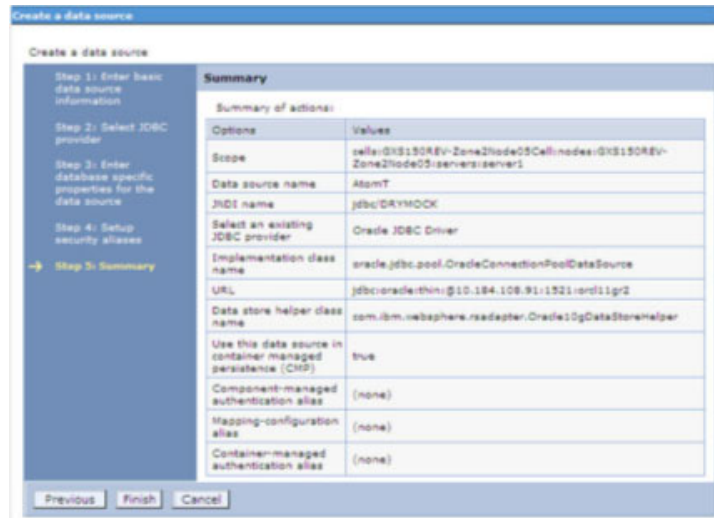
**Figure B-5 Enter Database specific properties**



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 B-6 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 aforementioned procedure with jdbc/FICMASTER as JNDI name pointing to the "configuration schema" of Infrastructure.

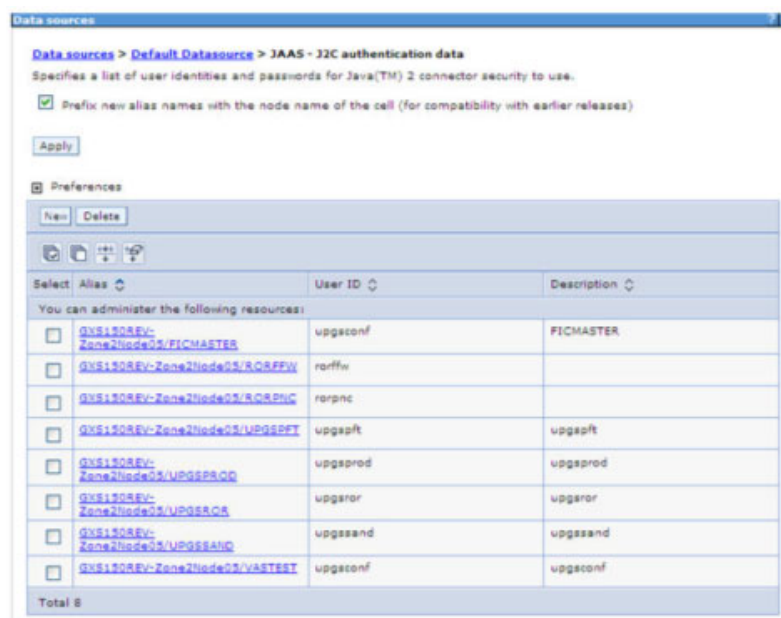
## Creating J2C Authentication Details

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

To create J2C Authentication details, follow these steps:

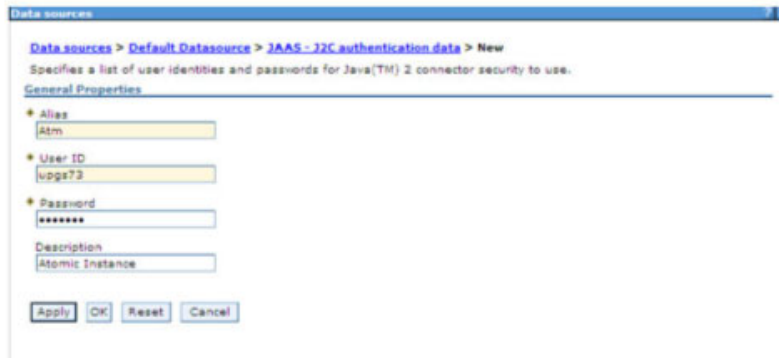
1. Select the newly created Data Source and click **JAAS - J2C authentication data** link under **Related Items**.

Figure B-7 JAAS- J2C authentication data



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

**Figure 6–5 JAAS- J2C authentication data- New**



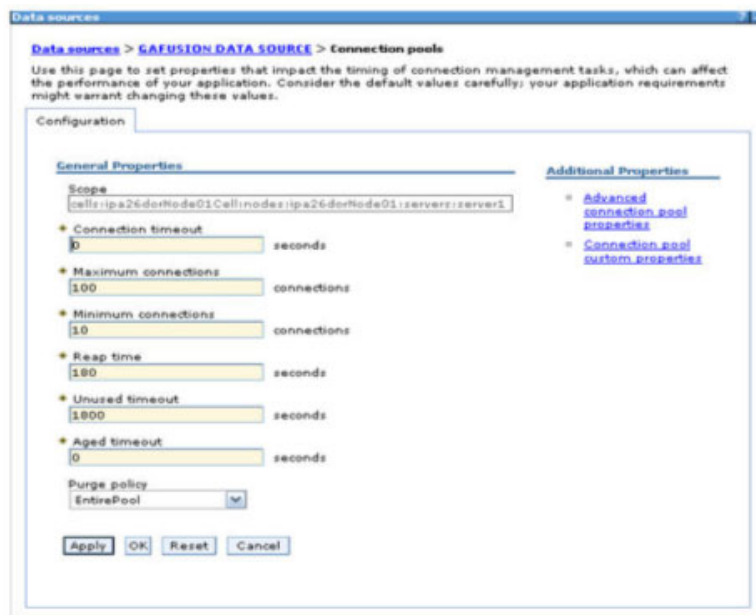
3. Enter the **Alias**, **User ID**, **Password**, and **Description**. Ensure the following:
  - ⌘ User ID is the Oracle user ID created for the respective Config and Atomic Schema for the "Information Domain".
  - ⌘ Specify the Config database user ID and password information for the jdbc/FICMASTER 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.

## Defining 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 window is displayed.
2. Click the newly created Data Source `$DATA_SOURCE$` and navigate to the path `Data sources>$DATA_SOURCE$>Connection pools`.

Figure B–8 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 aforementioned figure. You can also define **Reap Time**, **Unused Timeout**, and **Aged Timeout** as required.

## Configuring Resource Reference in Weblogic Application Server

This section is applicable only when the Web Application Server type is WebLogic. This section includes the following topics:

- [Creating Data Source](#)
- [Creating GridLink Data Source](#)
- [Configuring Multi Data Sources](#)
- [Configuring Advanced Settings for Data Source](#)
- [Defining 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.

### Creating Data Source

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

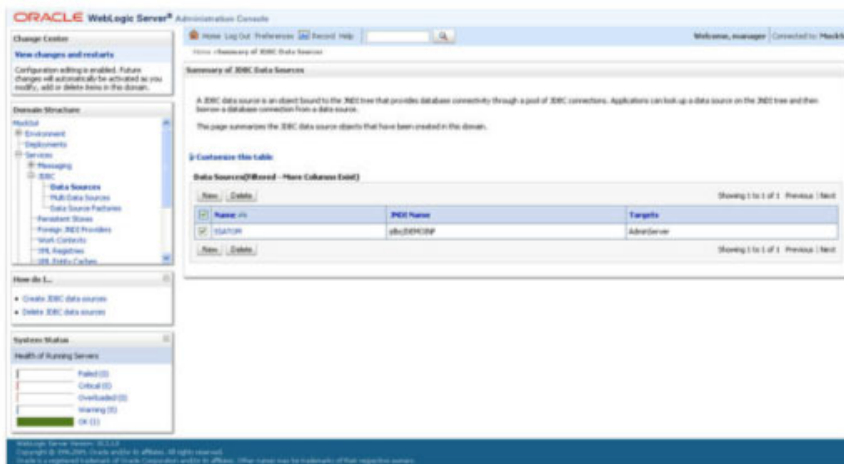
1. Open the following URL in the browser window:  
<http://<ipaddress>:<administrative console port>/console>. (https if SSL is enabled). The Welcome window is displayed.
2. Log in with the Administrator **User name** and **Password**.

**Figure B-9 Welcome**



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

**Figure B-10 Summary of JDBC Data Sources**



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

You can also select **GridLink Data Source** or **Multi Data Source** while creating a Data Source. For more information, see [Creating Data Source](#) or [Configuring Multi Data Sources](#).

**Figure 6–6 Create a New JDBC Data Source**

The screenshot shows a wizard window titled "Create a New JDBC Data Source". At the top, there are buttons for "Back", "Next", "Finish", and "Cancel". Below this is the "JDBC Data Source Properties" section, which states: "The following properties will be used to identify your new JDBC data source. \* Indicates required fields." The first question is "What would you like to name your new JDBC data source?" with a text input field containing "ATOMSTSOL". The second question is "What JNDI name would you like to assign to your new JDBC Data Source?" with a text input field containing "jdbc/ATOMSTSOL". The third question is "What database type would you like to select?" with a dropdown menu set to "Oracle". At the bottom, there are buttons for "Back", "Next", "Finish", and "Cancel".

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 B–11 JDBC Data Source Properties**

The screenshot shows the same wizard window, but at a later stage. The "Database Type" is now set to "Oracle". The question is "What database driver would you like to use to create database connections? Note: \* indicates that the driver is explicitly supported by Oracle WebLogic Server." The "Database Driver" dropdown menu is open, showing "Oracle's Driver (Thin XA) for Instance connections; Versions 9.0.1 and later" selected. The "Back", "Next", "Finish", and "Cancel" buttons are visible at the bottom.

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 B–12 Transaction Options**

The screenshot shows the 'Transaction Options' section of the 'Create a New JDBC Data Source' wizard. It contains the following text and controls:

- Transaction Options**
- You have selected non-XA JDBC driver to create database connection in your new data source.
- Does this data source support global transactions? If yes, please choose the transaction protocol for this data source.
- Supports Global Transactions**
- Select this option if you want to enable non-XA JDBC connections from the data source to participate in global transactions using the Logging Last Resource (LLR) transaction optimization. Recommended in place of Emulate Two-Phase Commit.
- Logging Last Resource**
- Select this option if you want to enable non-XA JDBC connections from the data source to emulate participation in global transactions using JTA. Select this option only if your application can tolerate heuristic conditions.
- Emulate Two-Phase Commit**
- Select this option if you want to enable non-XA JDBC connections from the data source to participate in global transactions using the one-phase commit transaction processing. With this option, no other resources can participate in the global transaction.
- One-Phase Commit**

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

**Figure B–13 Connection Properties**

The screenshot shows the 'Connection Properties' section of the 'Create a New JDBC Data Source' wizard. It contains the following text and controls:

- Connection Properties**
- Define Connection Properties.
- What is the name of the database you would like to connect to?
- Database Name:** tjgfu
- What is the name or IP address of the database server?
- Host Name:** 10.104.74.80
- What is the port on the database server used to connect to the database?
- Port:** 1521
- What database account/user name do you want to use to create database connections?
- Database User Name:** system
- What is the database account password to use to create database connections?
- Password:** \*\*\*\*\*
- Confirm Password:** \*\*\*\*\*

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 B-14 Test Database Connection**

Create a New JDBC Data Source

Test Configuration Back Next Finish Cancel

**Test Database Connection**

Test the database availability and the connection properties you provided.

What is the full package name of JDBC driver class used to create database connections in the connection pool?  
(Note that the driver class must be in the classpath of any server to which it is deployed.)

Driver Class Name: oracle.jdbc.OracleDriver

What is the URL of the database to connect to? The format of the URL varies by JDBC driver.

URL: jdbc:oracle:thin:@10.104.

What database account user name do you want to use to create database connections?

Database User Name: ssatom

What is the database account password to use to create database connections?  
(Note: for secure password management, enter the password in the Password field instead of the Properties field below.)

Password: \*\*\*\*\*

Confirm Password: \*\*\*\*\*

What are the properties to pass to the JDBC driver when creating database connections?

Properties:  
USERID=SSATOM

The set of driver properties whose values are derived at runtime from the named system property.

System Properties:

What table name or SQL statement would you like to use to test database connections?

Text Table Name:  
SQL SELECT 1 FROM DUAL

Test Configuration Back Next Finish Cancel

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

**Note:**

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

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

**Figure B–15 Select Targets**

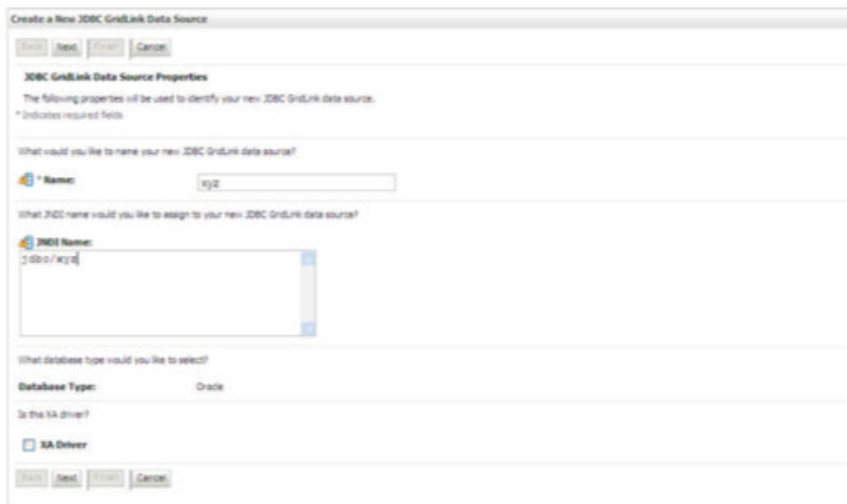


14. Select the **AdminServer** option and click **Finish**.

## Creating 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 6–7 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/infodomain" and the **XA Driver** checkbox is not selected. Click **Next**.



**Figure 6–8 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.

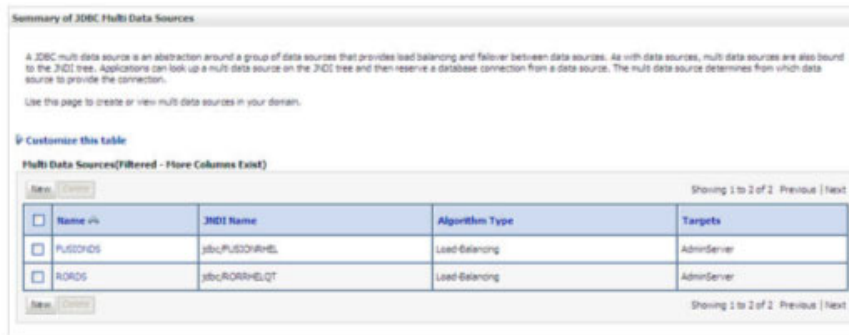
## Configuring Multi Data Sources

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 6–9 Summary of JDBC Multi Data Sources**



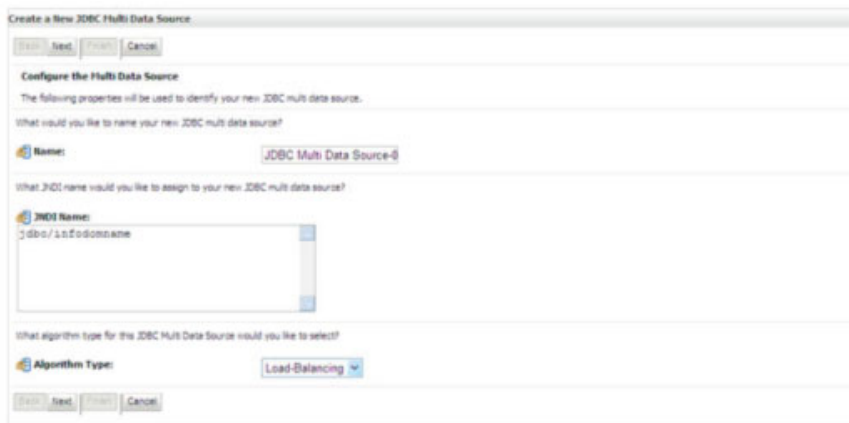
4. Click **New**. The New JDBC Multi Data Source window is displayed.

---

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

---

**Figure 6–10 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**.

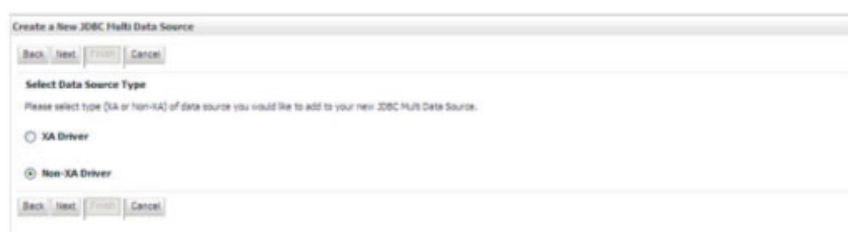
---

**Note:**

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

**Figure 6–11 Select Targets**

6. Select the **AdminServer** checkbox and click **Next**.

**Figure 6–12 Select Data Source Type**

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

**Figure 6–13 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.

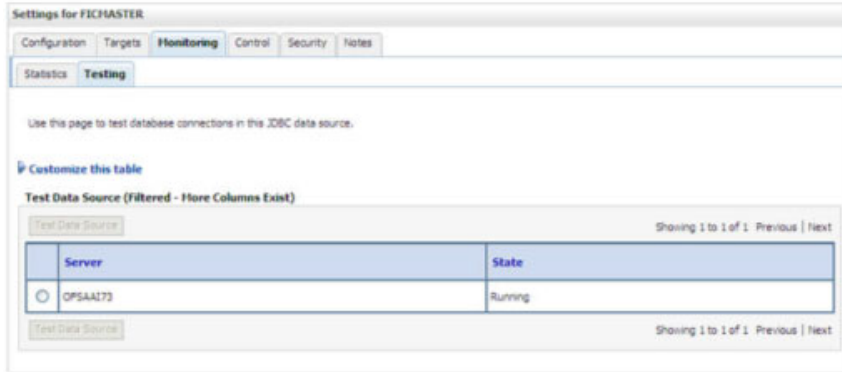
## Configuring Advanced Settings for Data Source

Perform the following steps for advanced settings for Data Source:

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

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

**Figure 6–14 Settings for <Data Source Name>**



4. Select the server and click **Test Data Source**.  
A message is displayed indicating that the test was successful.
5. Once the "Data Source" is created successfully, the following messages are displayed:
  - ⌘ All changes have been activated. No restart is necessary.
  - ⌘ Settings updated successfully.
 If not, follow the aforementioned steps to recreate the data source.

## Defining 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**.

## Configuring Resource Reference in Tomcat Application Server

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

This section covers the following topics:

- [Creating Data Source](#)
- [Defining JDBC Connection Pooling](#)
- [Configuring Class Loader for Apache Tomcat](#)

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

---



---

**Note:** Refer [Appendix O](#) for identifying the correct `ojdbc<version>.jar` version to be copied.

---



---

## Creating Data Source

To create "data source" for Infrastructure 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 `ofsaconf`, then the actual schema created in the database would be `DEV_ofsaconf`.

---



---

In the event, Oracle Wallet is configured in OFSAA server to store the database passwords, edit the `server.xml` present under the path `$TOMCAT_DIRECTORY/conf/` with the following changes, which is required for connection pooling.

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

<Resource auth="Container"
name="jdbc/ $INFODOM_NAME$"
type="javax.sql.DataSource"

driverClassName="oracle.jdbc.driver.OracleDriver"
url="$JDBC_CONNECTION_URL"
maxTotal="100"
maxIdle="30"
maxWaitMillis="10000"

removeAbandoned="true"
removeAbandonedTimeout="60"
logAbandoned="true"/>
</Context>
```

---



---

**Note:**

- \$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://@<TNS STRING>. For example, jdbc:oracle:thin://@CONFIG

Note: If you use Oracle Wallet for database password configuration, see Creation of Oracle Wallet on OFSAA Server.

- 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 ofsaconf, then the actual schema created in the database would be DEV\_ofsaconf.

---



---

## Defining JDBC Connection Pooling

To define the JDBC connection pooling, do the following:

1. Copy \$ORACLE\_HOME/jdbc/lib/ojdbc<version>.jar to the path \$TOMCAT\_DIRECTORY/lib/.

---



---

**Note:** Refer [Appendix O](#) section for identifying the correct ojdbc<version>.jar version to be copied.

---



---

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

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

```
  <Resource auth="Container"
name="jdbc/ $INFODOM_NAME$"
type="javax.sql.DataSource"
driverClassName="oracle.jdbc.driver.OracleDriver"
username=" $ATOMICSCHEMA_USERNAME$"
password=" $ATOMICSCHEMA_PASSWORD$"
url=" $JDBC_CONNECTION_URL "
maxActive="100"
maxIdle="30"
maxWait="10000"
removeAbandoned="true" removeAbandonedTimeout="60"
```

```
logAbandoned="true" />  
</Context>
```

Note the following:

---

---

**Note:**

- `$APP_DEPLOYED_PATH$` 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 `ofsaconf`, then the actual schema created in the database would be `DEV_ofsaconf`.

---

---

## Configuring Class Loader for Apache Tomcat

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

---

---

**Note:** This configuration is required if Apache Tomcat version is 8.

---

---





---

## Creating and Deploying EAR/ WAR File

This section covers the following topics:

- [Creating EAR/WAR File](#)
- [Deploying EAR/WAR File](#)

### Creating EAR/WAR File

To create EAR/WAR File, follow these steps:

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

*Figure C-1 Creating EAR/ WAR File*

```
/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 is created.

ANT warning for `tools.jar` can be ignored while executing `./ant.sh`

---

---

## Deploying EAR/WAR File

This section covers the following topics:

- [Deploying EAR/WAR Files on WebSphere](#)
- [Deploying EAR/WAR files for WebLogic](#)
- [Deploying Tomcat WAR Files on Tomcat](#)

---

---

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

---

---

### Deploying EAR/WAR Files on WebSphere

To deploy Infrastructure application in WebSphere:

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

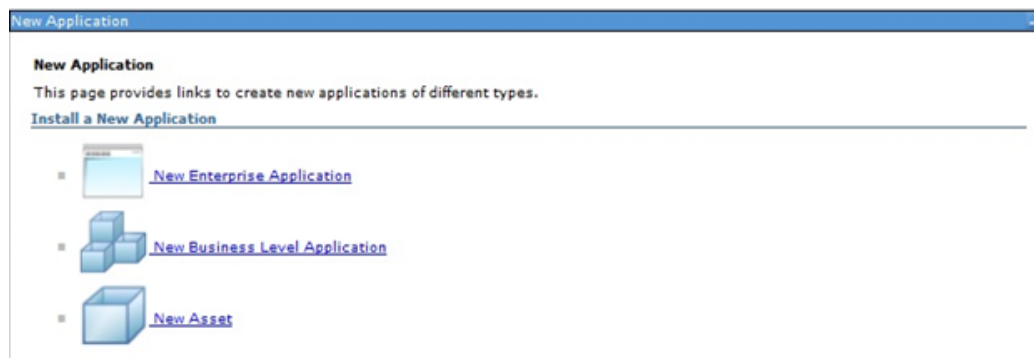
```
./startServer.sh server1
```
2. Open the following URL in the browser: `http://<ipaddress>:<Administrative Console Port>/ibm/console`. (https if SSL is enabled). The login window is displayed.

Figure C-2 Login Window



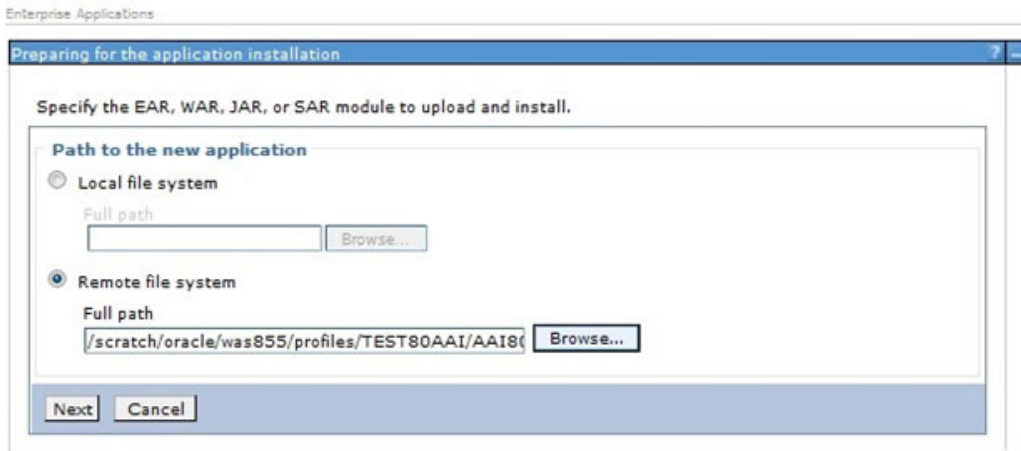
3. Enter the user credentials which has administrator rights and click **Log In**.
4. From the LHS menu, select **Applications** and click **New Application**. The New Application window is displayed.

Figure C-3 New Application



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

**Figure C-4** Preparing for the application installation



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

**Figure C-5** Installation Options



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

Figure C-6 Install New Application

Specify options for installing enterprise applications and modules.

Step 1: Select installation options  
 Step 2: Map modules to servers  
 Step 3: Summary

**Select installation options**

Specify the various options that are available for your application.

Precompile JavaServer Pages files

Directory to install application

Distribute application

Use Binary Configuration

Deploy enterprise beans

Application name

Create MBeans for resources

Override class reloading settings for Web and EJB modules

Reload interval in seconds

Deploy Web services

Validate Input off/warn/fail  
 warn

Process embedded configuration

**File Permission**

Allow all files to be read but not written to  
 Allow executables to execute  
 Allow HTML and image files to be read by everyone

Application Build ID

Allow dispatching includes to remote resources

Allow servicing includes from remote resources

Business level application name  
 Create New BLA

Asynchronous Request Dispatch Type  
 Disabled

Allow EJB reference targets to resolve automatically

Deploy client modules  
 Client deployment mode  
 Isolated

Validate schema

Next Cancel

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

Figure C-7 Map Modules to Servers

Specify options for installing enterprise applications and modules.

Step 1: Select installation options  
 Step 2: Map modules to servers  
 Step 3: Summary

**Map modules to servers**

Specify targets such as application servers or clusters of application servers where you want to install the modules that are contained in your application. Modules can be installed on the same application server or dispersed among several application servers. Also, specify the Web servers as targets that serve as routers for requests to this application. The plug-in configuration file (plugin-cfg.xml) for each Web server is generated, based on the applications that are routed through.

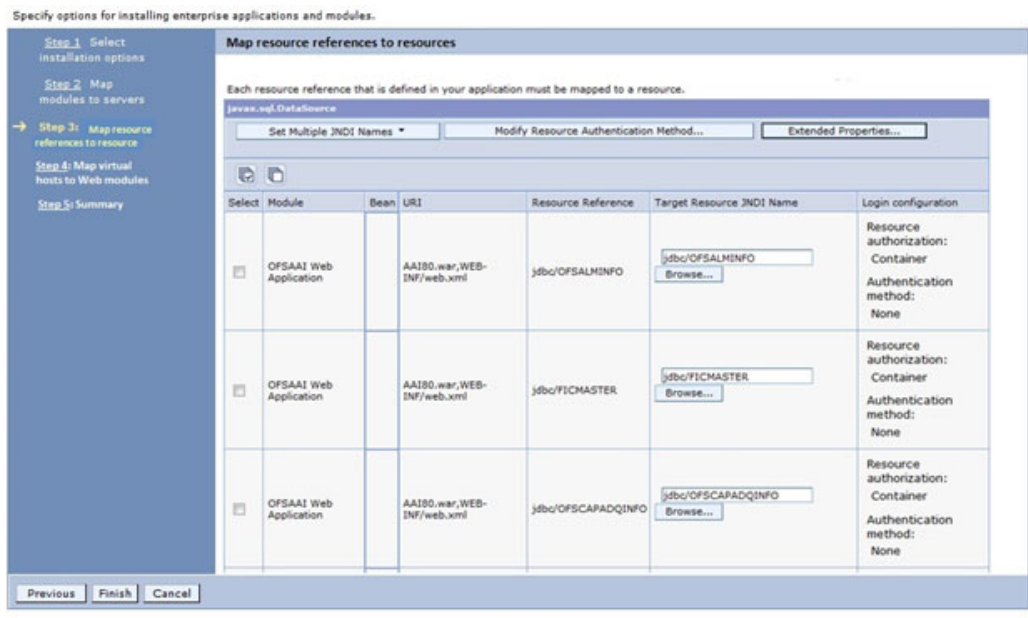
Clusters and servers:

Select	Module	URI	Server
<input checked="" type="checkbox"/>	OFSAAI Web Application	AAI80.war,WEB-INF/web.xml	WebSphere:cell=ofss2311701Node02Cell,node=ofss2311701Node02.server=server1

Previous Next Cancel

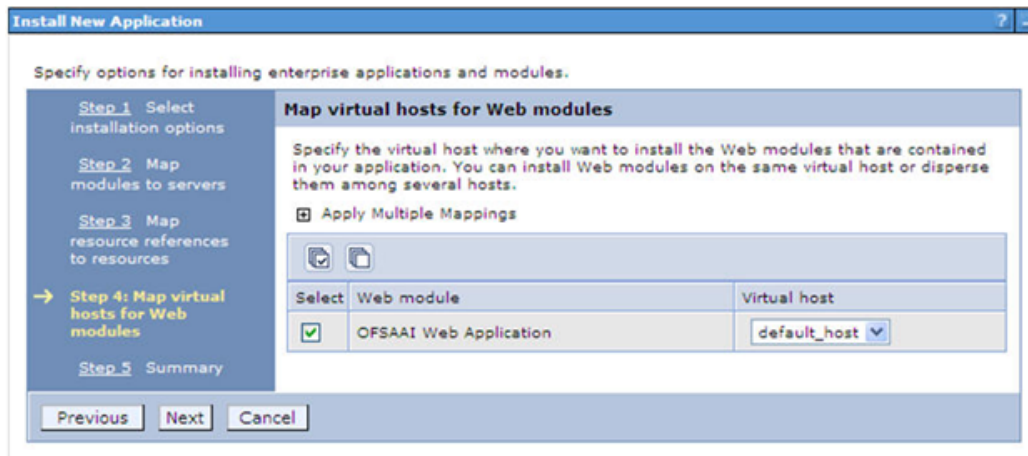
9. Select the **Web Application** and click **Next**. The Map Resource References to Resources window is displayed.

**Figure C–8 Map Resource References to Resources**



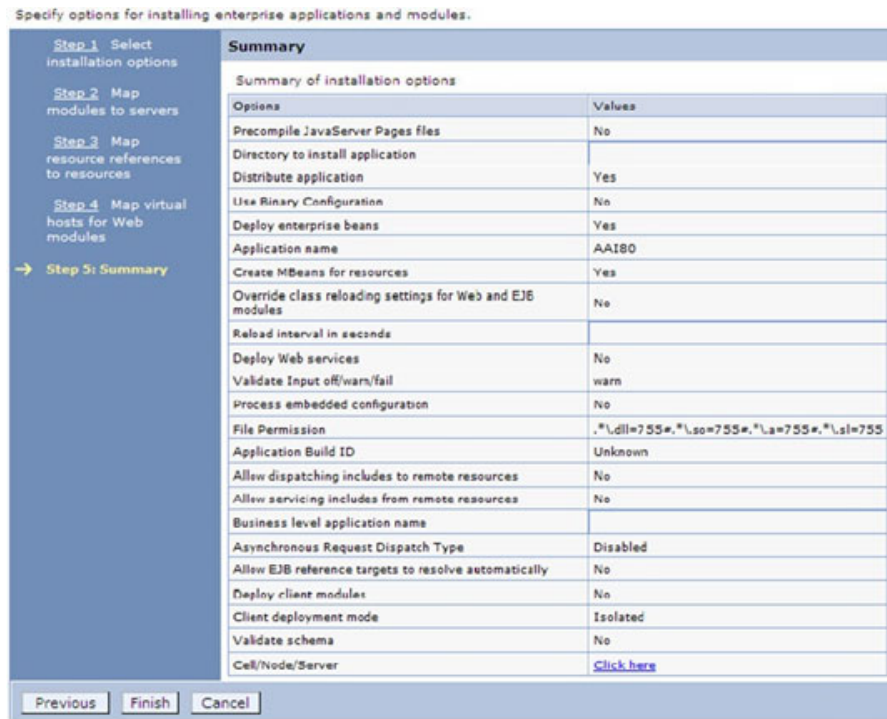
10. Map each resource defined in the application to a resource JNDI name defined earlier.
11. Click **Modify Resource Authentication Method** and specify the authentication method created earlier.  
You can specify "config" for FICMASTER resource or "atomic" for atomic resource as the authentication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

**Figure C–9 Map Virtual host for Web Modules**



13. Select the **Web Application** checkbox and click **Next**. The Summary window is displayed.

Figure C–10 Summary



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

On successful installation, a message is displayed.

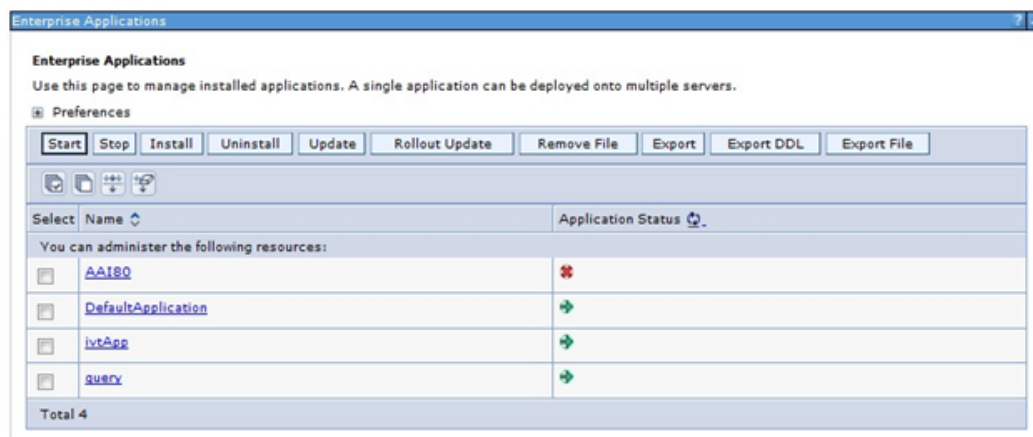
15. Click **Save** and save the master file configuration. The details are displayed in the Master File Configuration window.

## Starting the Application

To start the application, follow these steps:

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

Figure C–11 Enterprise Application



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.
- 
- 

## Exploding 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
```

## Deploying EAR/WAR files 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.



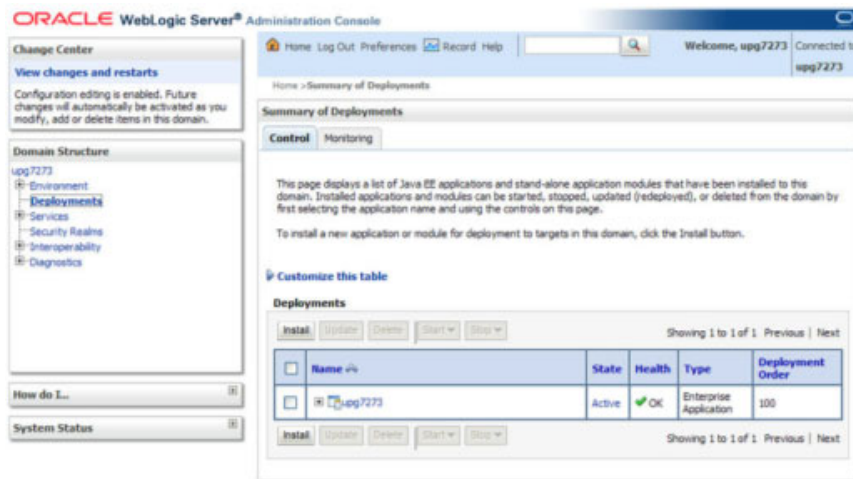
---

**Note:** Ensure that you have started Infrastructure Server by executing `./startofsaai.sh` as mentioned in *Starting Infrastructure Services* section.

---

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

**Figure C–12 Summary of Deployments**



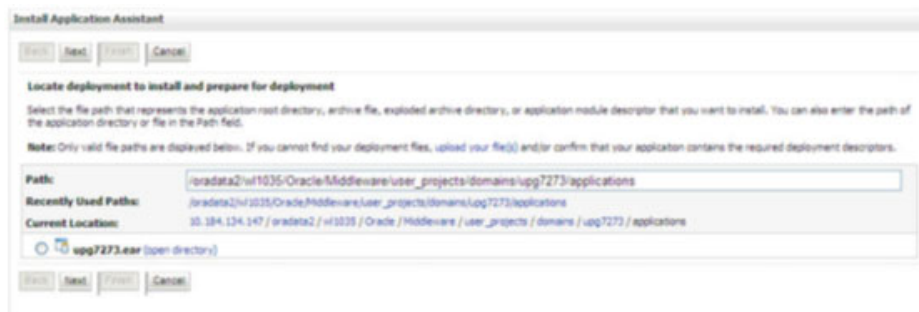
6. Click **Install**. The Install Application Assistant window is displayed.
7. Select the Exploded EAR directory after browsing to the directory where it is saved and click **Next**.

## Installing Application

To install Application, follow these steps:

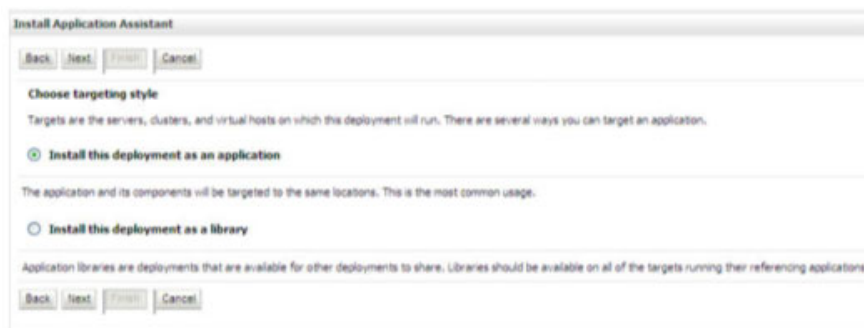
1. Open the Install Application Assistant.

**Figure C–13 Install Application Assistant**



2. Click **Next**.

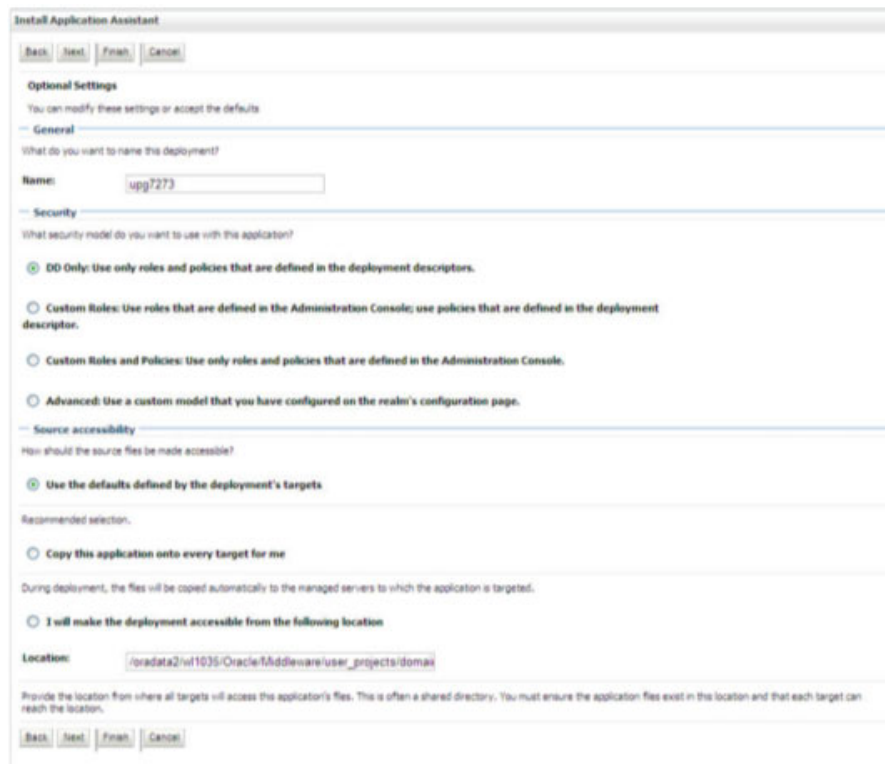
**Figure C–14 Install Application Assistant**



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.

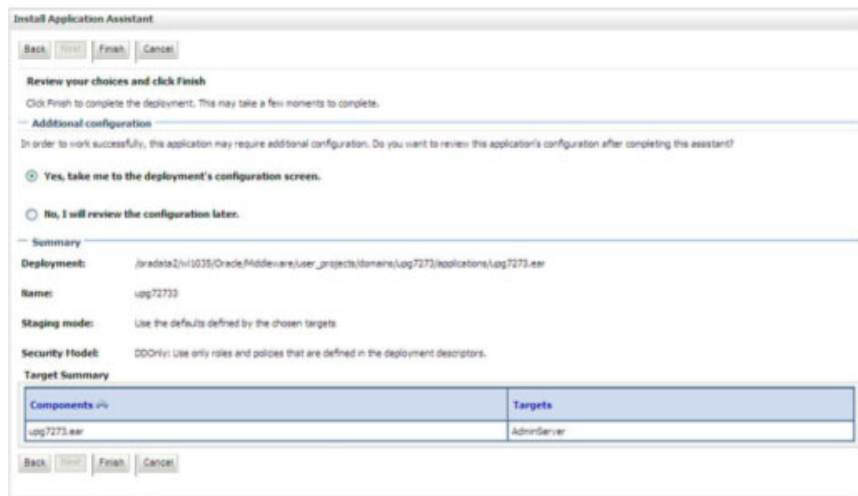
**Figure C–15 Optional Settings**



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.

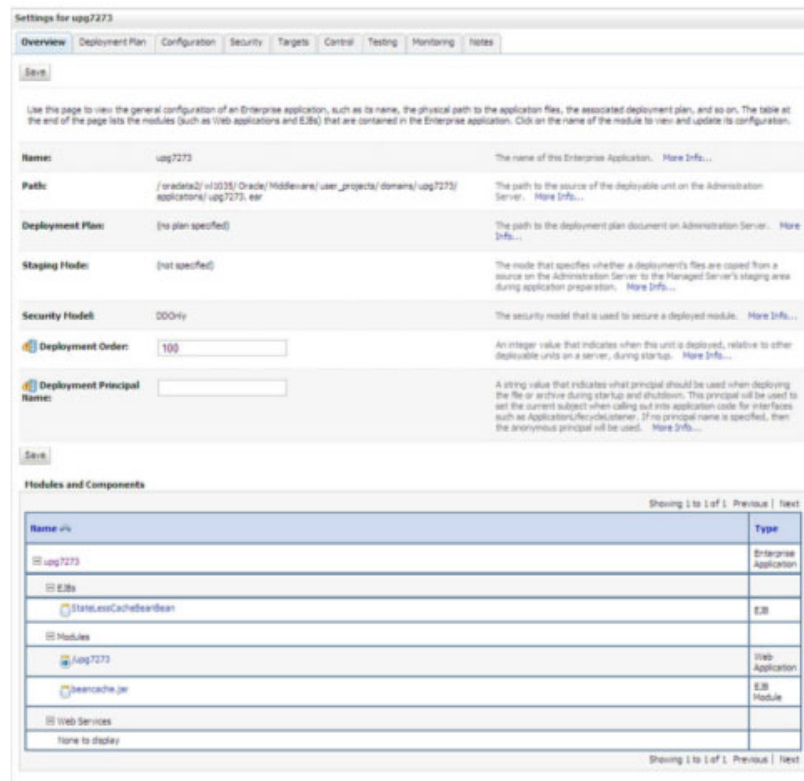
Figure C–16 Deployment Summary



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 C–17 Settings for &lt;Deployment Name&gt;

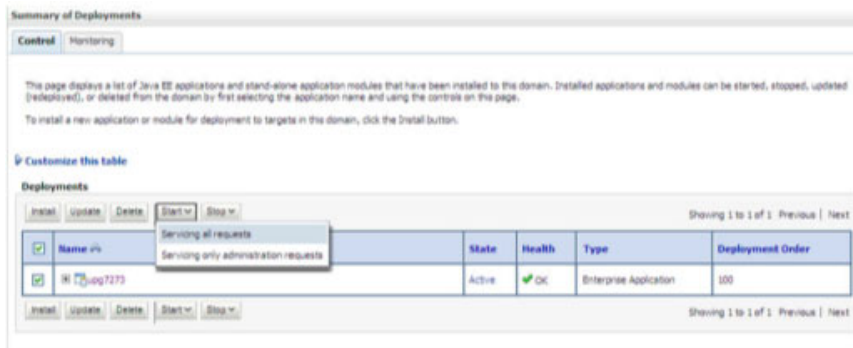


9. Review the general configuration details of the deployment. You can also update the configuration of the deployment in this window. In the Overview tab, you can view the complete deployment configuration.

10. Click **Save** to update the changes, if any.
11. From the LHS menu, click **Deployments**.

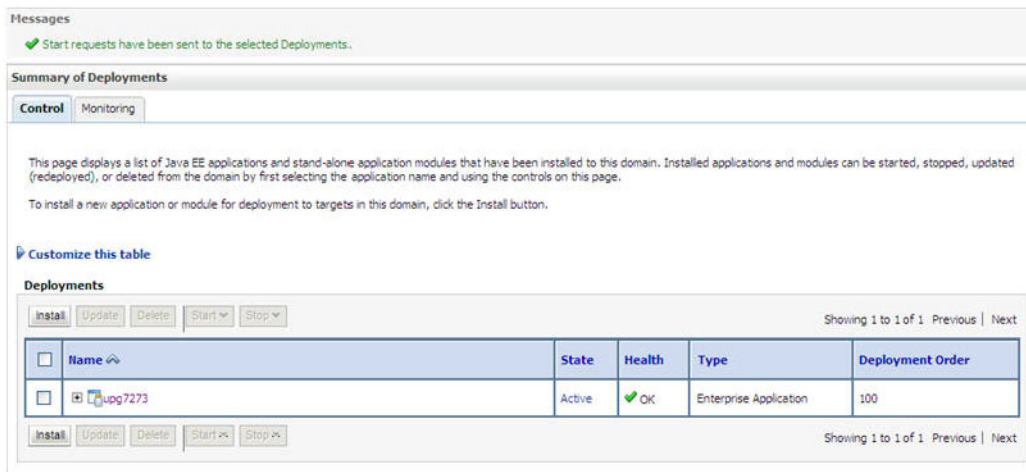
The Summary of Deployments window is displayed.

**Figure C–18 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 C–19 Summary of Deployments**



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

## Deploying Tomcat WAR Files on Tomcat

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

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

1. Copy the <context-name>.war from \$FIC\_WEB\_HOME/ficweb<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/ficweb<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.



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## Starting/ Stopping Infrastructure Services

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

- [Starting Infrastructure Services](#)
- [Stopping Infrastructure Services](#)

### Starting Infrastructure Services

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

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

```
./startofsaai.sh
```

---

---

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

---

---

2. 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:

```
./iccservice.sh
```

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

**3. Start Back-end Services:**

- 7 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

- 7 Start Back-end services using the command:

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

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

## Starting Web Application Servers

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

**Table D-1 Webserver start up options**

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  <b>Note:</b> If WebLogic is already running, access the <i>WebLogic Admin Console</i> . 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

## Stopping Infrastructure Services

To stop Infrastructure services, follow these steps:

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

```
./stopofsaai.sh
```

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

```
./iccserversshutdown.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
```



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## Accessing OFSAA Application

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

### Access the OFSAA Application

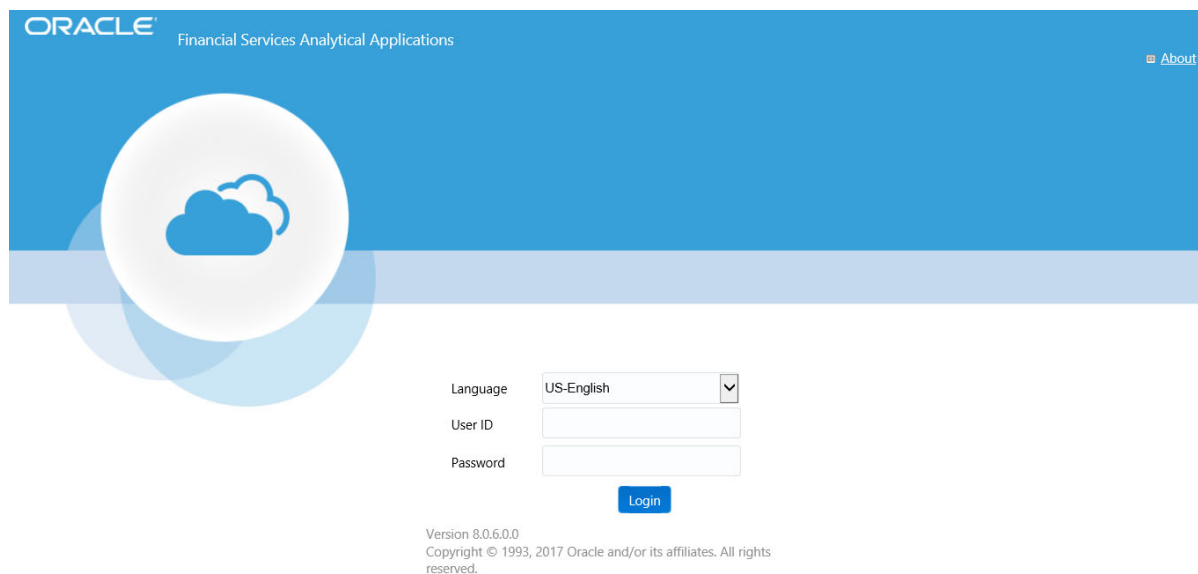
1. From your desktop, open the browser and enter the URL in below format:

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

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

The OFSAA login window is displayed.

**Figure E-1 OFSAA Login Window**



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

"SYSADMN - System Administrator

"SYSAUTH - System Authorizer

---

---

**Note:** For SYSADMN and SYSAUTH, the default password is "password0".

---

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3. Login to the application using the "SYSADMN" User ID. (Note that, there is no "I" in the SYSADMN login USER ID). Enter the default password "password0". On the first login, you will be prompted to change the password.

---

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## Post Deployment Configurations

This section provides detailed information about the Post Deployment Configurations.

### Post Deployment Configurations

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

- [Logging as System Administrator](#)
- [Creating Application Users](#)
- [Mapping Application User\(s\) to User Group](#)

### Logging as System Administrator

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

### Creating Application Users

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

---

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**Note:** This step may not be required if you have already setup users in the OFSAA setup.

For more information, see user creation section from the [Oracle Financial Services Analytical Applications Infrastructure User Guide](#).

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### Mapping Application User(s) to User Group

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

User Groups seeded with the OFS IFRS Application Pack are listed in [Table F-1, "Seeded User Groups"](#).

**Table F-1 Seeded User Groups**

Name	Description
Modeler Group	User mapped to this group has access to all the menu items for Enterprise modeling but does not have authorization rights for sandbox population, model deployment and modeling technique authorization.
Modeling Administrator Group	User mapped to this group has access to all the menu items for Enterprise modeling and has authorization rights for sandbox population, model deployment and modeling technique authorization.
Inline Processing Admin Group	User mapped to this group has access to all the menu items and actions for Inline Processing module.
Business Administrator	User mapped to this group has access to all the menu items and actions for advanced operations of metadata objects.
Business Authorizer	User mapped to this group has access to all the menu items and actions for authorization of changes to metadata objects.
Business Owner	User mapped to this group has access to all the menu items and actions for read and write of metadata objects
Business User	User mapped to this group has access to all the menu items and actions for access and read of metadata objects.
Identity Administrator	User mapped to this group has access to all the menu items for managing User entitlements, User Group Entitlements and Access Management configurations.
Identity Authorizer	User mapped to this group has access to all the menu items for authorizing User entitlements, User Group Entitlements and Access Management configurations.
System Administrator	User mapped to this group has access to all menu items for managing the setup configurations.
Object Administrator	User mapped to this group has access to all menu items for managing object migration and metadata traceability using metadata browser.
Guest Group	User mapped to this group has access to certain menu items with only access privileges.
LLFP Admin	User mapped to this group has access to all the modules in OFS LLFP application.
HM Admin	User mapped to this group has access to all the modules in OFS HM application.
LLFP Analyst	User mapped to this group has limited access in OFS LLFP application. This user cannot perform user creation and authorization.
HM Analyst	User mapped to this group has limited access in OFS HM application. This user cannot perform user creation and authorization.
HM Auditor	User mapped to this group has only <b>View</b> access to OFS HM modules.

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

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

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## 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, see OFSAA Cloning Reference Guide.





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## OFSAA Landing Window

This section includes the following topics:

- [Installation Checklist](#)
- [OFSAA Landing Window](#)
- [Enabling a Product within an Application Pack](#)

### Installation Checklist

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

**Table H-1**

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

### OFSAA Landing Window

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

The landing window 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 window:

- [Applications Tab](#)
- [Sandbox Tab](#)
- [Object Administration Tab](#)
- [System Configuration and Identity Management Tab](#)

### Applications Tab

This tab lists the various OFSAA Applications that are installed in the setup.

The "<Select Application>" drop-down lists the OFSAA Applications based on the user logged in and User Group(s) mapped to OFSAA Application. Selecting an Application from the drop-down refreshes the menus/ links.

### Sandbox Tab

This tab lists the various OFSAA Sandboxes created in the setup.

The "<Select Sandbox>" drop-down lists the OFSAA Sandboxes based on the user logged in and User Group(s) mapped to OFSAA Application.

Selecting a Sandbox from the drop-down would refresh the menus/ links.

### Object Administration Tab

This tab lists the various OFSAA Information Domains created in the setup.

The "<Select Information Domain>" drop-down lists the OFSAA Information Domains based on the user logged in and User Group(s) mapped to OFSAA Application.

Selecting an Information Domain from the drop-down refreshes the menus/ links.

### 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/ Information Domain drop-down list in this tab.

---

---

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

---

---

## Enabling a Product within an Application Pack

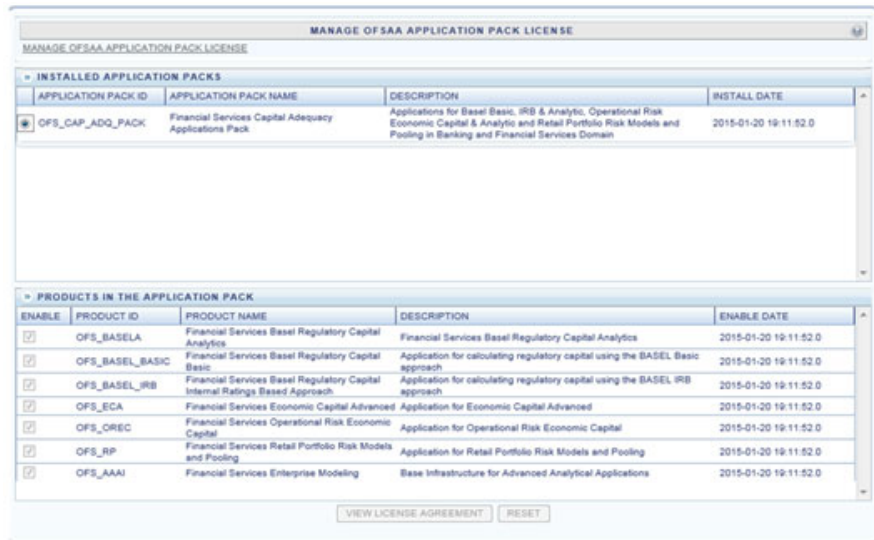
You can also enable a product/ application within an application pack post installation at any point of time.

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

1. Login to the application as SYSADMN user or any user with System Administrator privileges.

2. Navigate to *System Configurations & Identity Management* tab, expand **Administration and Configuration**, and select **System Configuration**.
3. Click **Manage OFSAA Product License(s)**. The *Manage OFSAA Product License(s)* window is displayed.

**Figure H-1** *Manage OFSAA Product License(s) window*



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

A pop-up message confirmation is displayed showing that the product is enabled for the pack.

---

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

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

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

---



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# Additional Configuration

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

## Additional Configuration Topics

This section covers the following topics:

- [Configuring FTP/SFTP](#)
- [Configure Infrastructure Server Memory](#)
- [Configuring Internet Explorer Settings](#)
- [Setting OLAP Data Server Configuration](#)
- [Changing IP/ Hostname, Ports, and Deployed Paths of OFSAA Instance](#)
- [Executing OFSAAI Setup Information Fetching Tool](#)
- [Executing Encryption Changer](#)
- [Setting Infrastructure LDAP Configuration](#)
- [Configuring Message Details in Forms Designer](#)
- [Clearing Application Cache](#)
- [Configuring Password Changes](#)
- [Configure Internal Service \(Document Upload/Download\)](#)
- [Configurations to Deploy the LLFPBI Application](#)

## Configuring FTP/SFTP

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

### Adding FTP/SFTP Configuration for File Transfer

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

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

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

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

This will add an entry into the "known\_hosts" file.

4. A confirmation message is displayed:

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

## Setting Up SFTP Private Key

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

To generate private key, enter the commands as shown:

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

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

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

Ensure the following permissions exist for the given folders:

- Permission of `.ssh` should be 700
- Permission of `.ssh/authorized_keys` should be 640
- Permission of `.ssh/id_rsa` should be 400
- Permission of Unix user created should be 755

## 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 128 MB for heap and 64 MB for stack.

### Configuring Infrastructure Application Server Memory Settings

You can configure the Infrastructure Application Memory settings as follows:

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

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

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

---

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

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

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

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

---

## Configuring Internet Explorer Settings

---

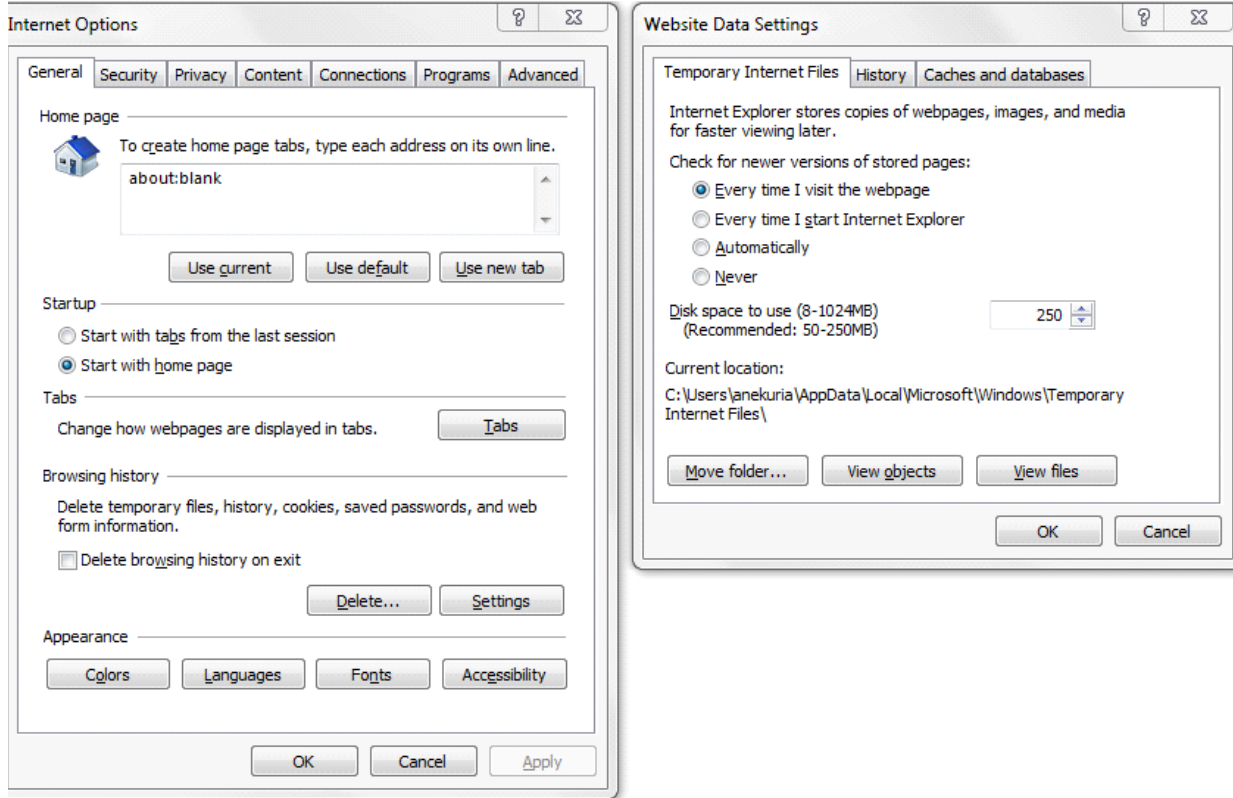
**Note:** OFSAAI supports only default zoom setting in Internet Explorer, that is, 100%.  
Cookies should be enabled.

---

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

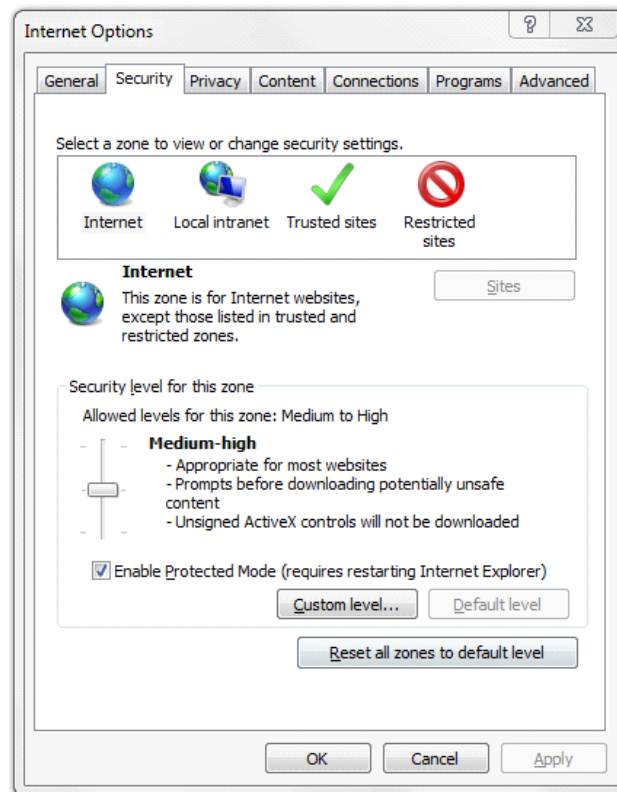
1. Open **Internet Explorer**. Select **Tools > Internet Options**. The *Internet Options* window is displayed.
2. Click **Settings**. The *Settings* window is displayed.
3. Select **Everytime I Visit the webpage** option and click **OK**.

**Figure I-1 Internet Options - Website Data Settings**

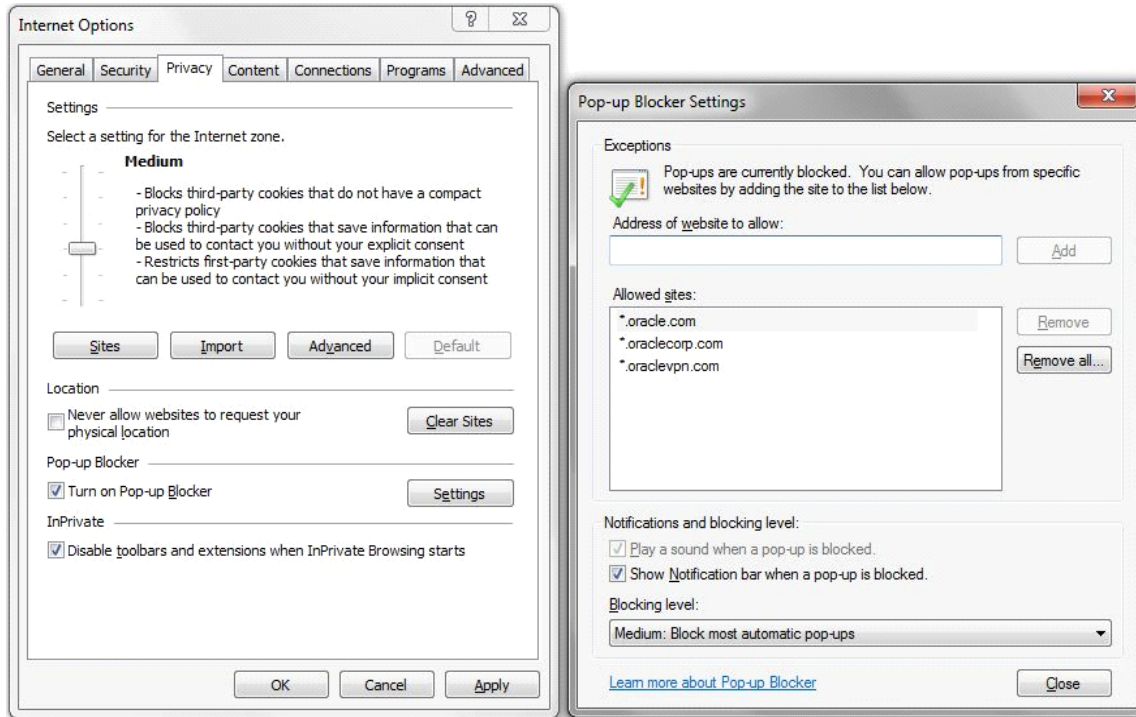


4. In the *Internet Options* window, select the **Security** tab and select the **Internet** option under **Select a zone to view or change the security** settings.
5. Click **Default Level** under **Security level for this zone**.



Figure I-2 *internet Options - Security*

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



12. Click **Settings**. The Pop-up Blocker Settings window is displayed.
13. Enter the URL of the OFSAA Application in the **Address of Website to Allow**: 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.

## Retrieve Patch Information

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

1. Login to the OFSAA application as a user with Object AdminAdvanced Role.
2. Navigate to Object Administration tab.
3. Click System Utilities.
4. Click Patch Information.
5. The window displays the list of patches installed on the OFSAA setup across Applications/Platform.

## Setting 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.

For 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.

## Changing IP/ Hostname, Ports, and Deployed Paths of OFSAA Instance

For information on this section, see OFS Analytical Applications Infrastructure Administration User Guide in OHC Documentation Library.

## Executing 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, follow these steps:

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.

## Executing Encryption Changer

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

## Setting Infrastructure LDAP Configuration

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

## Enabling 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 from 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.

## Configuring Message Details in Forms Designer

You can configure the Message Details in Forms Designer under Data Entry Forms and Queries module by updating the details of mail server in the "`NotificationConfig.cfg`" file 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 I-1 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.

## Clearing Application Cache

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

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

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

## Configuring Password Changes

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

### Modifying OFSAA Infrastructure Config Schema Password

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

1. Change the Config schema User Password in the database.
2. .
3. Shutdown the OFSAAI App service:

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



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

```
./startofsaai.sh
```

5. At the prompt, enter System Password. Enter the "new Config schema" password. The service will start and initialize itself if it is able to successfully connect to the DB.
6. Post successful startup of the service, if required, the Infrastructure server may be shut down and restarted in the background using nohup mode.

### Modifying OFSAA Infrastructure Atomic Schema Password

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

1. Change the Atomic schema User Password in the database.
2. Login to the application from the browser using SYSADMN account or any user id, which has System Administrator role mapped.
3. Navigate to *System Configuration > Database Details* window. Modify the password as explained in the following steps:
  - a. From the *Database Master* window, select the connection whose password you want to modify and click  button from the toolbar.
  - b. Click  button corresponding to the **Alias Name**. The *Alias Details* window is displayed.
  - c. Modify the password in the **Auth String** field.
4. If you are using Apache Tomcat as Web server, update the <Context> -> Resource tag details in *Server.xml* file from the *\$CATALINA\_HOME/conf* folder. (In case of Tomcat only Atomic <Resource> will exist).

If you are using WebSphere as Web server:

- a. Login to the WebSphere Administration Console, from the left side menu.
- b. Navigate to *Resources > JDBC > Data Sources*. A list of data sources will be populated on the right side.
- c. Select the appropriate Data Source and edit the connection details. (In this case, both Config and Atomic data sources will need to be modified).

If you are using WebLogic as Web server:

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

5. Restart the OFSAAI services.

## 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.

## 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.

## Configurations to Deploy the LLFPBI Application

The following are the steps to configure the LLFPBI Analytics:

Before you begin this process, ensure that Oracle Business Intelligence (versions 11.1.1.9.5 and 12.2.1.2.0) installation is completed and is available.

### Steps to Start the LLFPBI Analytics for OBIEE v11.1.1.9.5

1. Set the `<Oracle BI Instance Home>` directory.

For example: `/u01/OBIEE11G/instances/instance1`

2. Start WebLogic AdminServer.
  1. Set the <BI Domain Home> directory  
For Example: /u01/OBIEE11G/user\_projects/domains/bifoundation\_domain
  2. Navigate to <BI Domain Home >/bin and execute the following command:  
**nohup ./startWebLogic.sh &**

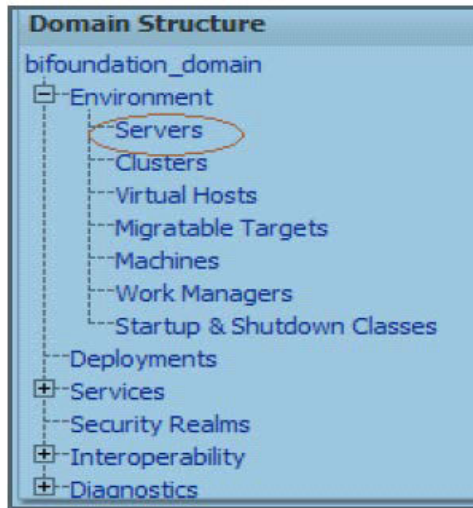
---

**Note:** Bringing up this service may take a few minutes depending on your environment. Check the logs using the command:

```
tail -f nohup.out
```

---

3. Start Node Manager.
  1. Set the < WebLogic Server Home> directory.  
For example: /u01/OBIEE11G/wlserver\_10.3
  2. Navigate to <WebLogic Server Home>/server/bin and execute the following command:  
**nohup ./startNodeManager.sh &**
4. Start WebLogic Managed Server (bi\_server1).
  1. Login onto http://localhost:7001/console using your Administrator credentials created during platform install (Replace the hostname based on your setup).
  2. Under Environment tab, click **Servers** link.

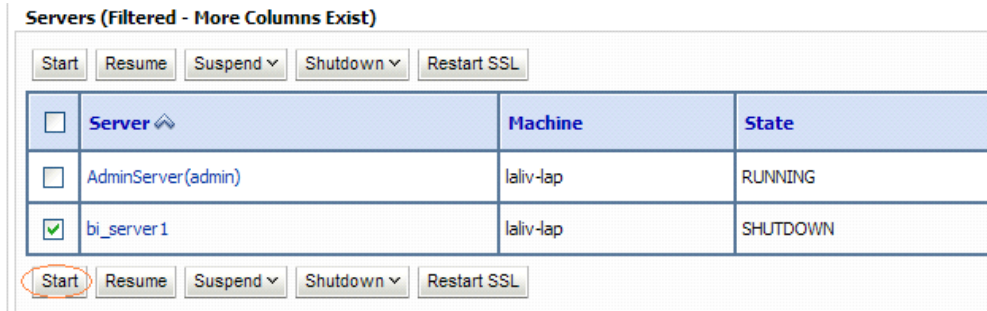


The bi\_server1 displays the shutdown state at this point.

<input type="checkbox"/>	Server ^	Machine	State	Status of Last Action
<input type="checkbox"/>	AdminServer(admin)	laliv-lap	RUNNING	None
<input type="checkbox"/>	bi_server1	laliv-lap	SHUTDOWN	TASK COMPLETED

3. Click *Control* tab.
4. Select the bi\_server1 line by clicking on the left tick box.

5. Click **Start** button at the top of the list and confirm starting this service.
6. State will update to "RUNNING" mode after a few minutes.



5. Start OBIEE services and login.
  1. Starting services From EM screen:
6. Deploy RPD and webcatalog file(s).
7. Configure **tnsnames.ora** file.
  1. Open tnsnames.ora file under the folder - <Oracle Home>/network/admin.
  2. Make sure that an entry is made in the tnsnames.ora to connect to atomic schema of OFSAA application.
  3. Save the **tnsnames.ora** file.
8. Configure ODBC data source to connect to Oracle BI Server.
  1. Navigate to Control Panel>Administrative Tools>Data Sources (ODBC).
  2. Select the System DSN tab and click **Add** button.
  3. Select a driver specific to (Oracle BI Server 11g) and click **Finish** button.
  4. Enter Name and Server details (specify the Host Name or IP Address of the BI Server) and click **Next**.
  5. Enter Oracle BI Server login id and password (Enter User Name and Password created at the time of OBIEE installation). Click **Next**.
  6. Click **Finish**.
9. Modify connection pool and set the properties.
  1. Open the OBI Administration tool.
  2. Select Start > Programs > Oracle Business Intelligence > BI Administration.
  3. Select File > Open > Online and select **LLFP.rpd** file.
  4. In the **Open** dialog box, select and open **LLFP.rpd** file.
  5. Enter Repository password as '**Admin123**'.
  6. In the Physical layer, double-click the **Connect Pool**. The properties of Connection Pool LLFP is displayed.
  7. In the *General* tab, edit / check the following entries:
    - Call Interface: (OCI 10g/11g).
    - Data source name:** <tnsnames.ora entry created in the step 8.b connecting to OFSAA atomic schema>.
    - User name:** <enter atomic db user name>.



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

Confirm password and Click **OK** to close the window.

Similarly, configure the connection pools for 'LLFPBI'.

---

**Note:** Repeat similar steps from (g) above for connection pool 'Connection Pool MR' under Database 'Market Risk'.

---

Click **Save** to save the RPD file.

Click **No** for the Global Consistency Message.

Close the RPD file (File / Exit).

10. Login into LLFPBI Application using the URL: **http://localhost:<port number>/analytics**.(Replace the port number based on your setup).

### Steps to Start the LLFPBI Analytics for OBIEE v12.2.1.2.0

1. Set the <BI Domain Home> directory

For Example: /u01/OBIEE11G/user\_projects/domains/bifoundation\_domain

2. Navigate to <BI Domain Home>/bitools/bin and execute the following command:

**./Start.sh**

3. Navigate to <BI Domain Home>/bitools/bin and execute the following command to check the status of the services:

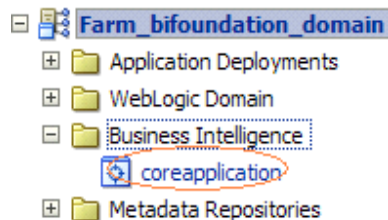
**./status.sh**

### Starting Services from EM Screen (For OBIEE v11.1.1.9.5 or v12.2.1.2.0)

1. 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 OBIEE installation to log in.

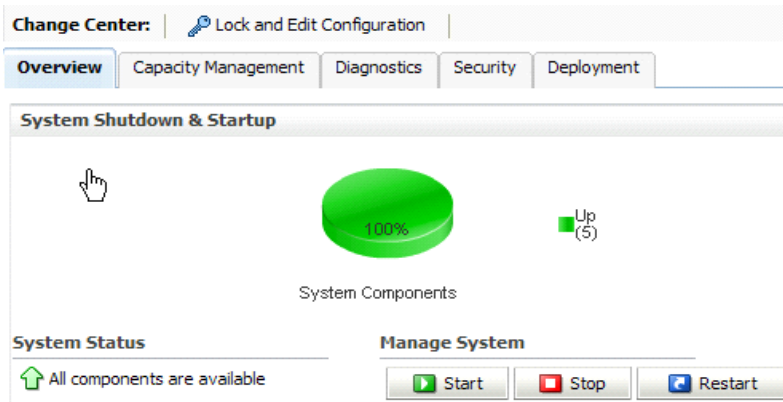
2. Expand 'Business Intelligence' node on the left and choose **Coreapplication**.



3. Click *Overview* Tab.

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

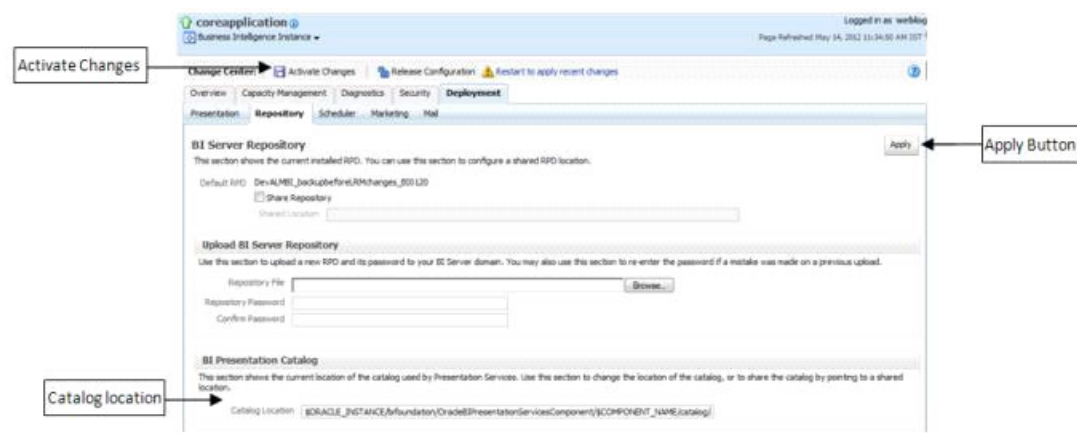
- Click **Yes** on dialog box to confirm the action. Wait for message that confirms successful restart.



- If the start process using EM is not successful and returning an error about OPMNCTL not up, follow starting process with OPMNCTL.
  - Open a command prompt, navigate to <Oracle BI Instance Home>/bin.
  - Execute the command `./opmnctl status`. This displays the status of all the OBIEE core services.
  - Execute the command `./opmnctl startall` or `./opmnctl stopall` depending on your requirement.

### Deploy RPD File (For OBIEE v11.1.1.9.5)

- Navigate to folder `$FIC_HOME/LLFP_DASHBOARDS/` which contains **LLFP.rpd** file and `$FIC_HOME/LLFP_DASHBOARDS/` which contains **LLFP.catalog** file.
- Login to OBIEE - Enterprise Manager URL (`http://<ip address>:<port>/em`).
- Click on **coreapplication** from *Business Intelligence* tab on left hand side.
- Under coreapplication, select the *Deployment* tab and click **Lock and Edit Configuration** button. The following screen is displayed:



- Select **Browse** button available under Upload BI Server Repository section and select **LLFP.rpd** file from the local folder. Enter the Repository password **Admin123**.

## Deploy RPD File (for OBIEE v12.2.1.2.0)

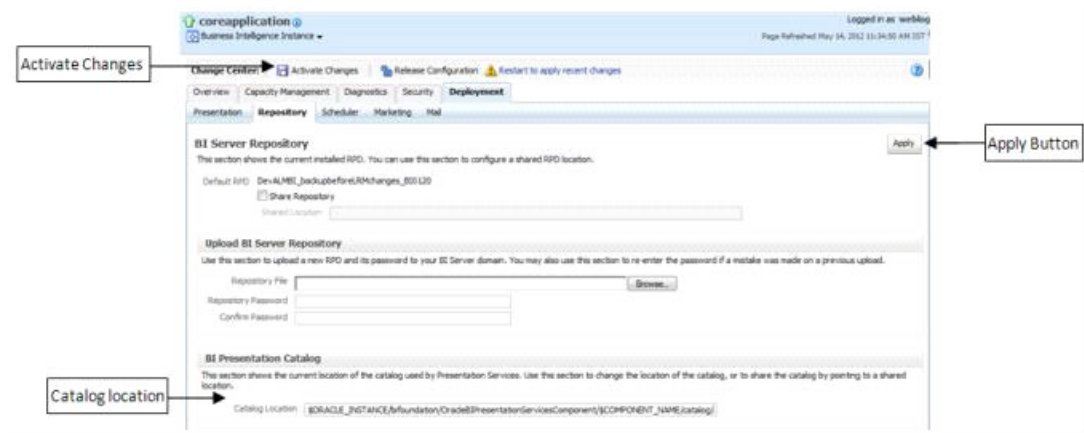
1. Navigate to folder `$FIC_HOME/LLFP_DASHBOARDS/` which contains **IFRS\_12.2.1.2.0.rpd** file and save the file to a local folder.
2. Copy the **IFRS\_12.2.1.2.0.rpd** file from the local folder to the folder `<BI Domain Home>/bitools/bin` folder.
3. Execute the following command in the same directory as in the preceding step:  

```
./datamodel.sh uploadrpd -I <RPD_FILE_NAME.rpd> -SI ssi -U <WEBLOGIC_USERNAME>
-P <WEBLOGIC_PASSWORD>
```

For example:

```
./datamodel.sh uploadrpd -I IFRS_12.2.1.2.0.rpd -SI ssi -U weblogic -P weblogic123
```

4. Login to OBIEE - Enterprise Manager URL - (`http://<ip address>:<port>/em`).
5. Expand **Business Intelligence** node on the left and choose **Coreapplication**.
6. Select *Deployment* tab and click **Lock and Edit** configuration button. The following screen is displayed:



7. Select **Browse** button available under Upload BI Server Repository section and select **IFRS\_12.2.1.2.0.rpd** file from the local folder.

## Web Catalog Deployment (for v11.1.1.9.5)

1. Create a new web catalog folder for LLFPBI application through Enterprise Manager of OBIEE.
2. Set the **Catalog Location** available under BI Presentation Catalog as follows:  

```
$ORACLE_INSTANCE/bifoundation/OracleBIPresentationServicesComponent/$COMPONENT_NAME/catalog/LLFPBI
```
3. Click **Apply** and then click **Activate changes**. A pop up is displayed after successful activation.
4. Click **Close** button 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.

Once the Presentation Service is restarted, it displays the pop up notifying the successful restart.

6. Click **Close** button.
7. Verify that new folder structure is created in the system.

It can be found under the following folder:

```
<Oracle BI Instance  
Home>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_  
obips1\catalog\LLFPBI
```

### **Catalog File Deployment (for OBIEE v11.1.1.9.5 and 12.2.1.2.0)**

1. Open the Catalog Manager from OBIEE client. Navigate to **File** menu and open the catalog online (File->Open catalog) by giving the necessary credentials based on the setup (Type - (online), URL - (*http://<ipaddress>:<port>/analytics/saw.dll*)).
2. Once the catalog is opened, it displays a folder structure on left hand side. Select the shared folder in the LHS tree structure.
3. Go to **File** menu and select **Unarchive**. It asks for the path for a file.
4. Browse the path of the archived catalog file saved in the local folder using the **Browse** button in the pop up.
5. Click **OK**.
6. The catalog is unarchived in specified location. A pop up confirming the successful operation is displayed.
7. Restart the presentation services again.
8. Open the analytics OBIEE URL- (*http://<ipaddress>:<port>/analytics*) and login with credentials based on the setup. Verify the availability of the catalog.

### **Configure tnsnames.ora file (for OBIEE v11.1.1.9.5 and 12.2.1.2.0)**

1. Open **tnsnames.ora** file present under the folder *<Oracle Home>/network/admin*.
2. An entry should be made in the **tnsnames.ora** to connect to atomic schema of OFSAA application.
3. Save the **tnsnames.ora** file.

### **Configure ODBC Data Source to Connect to Oracle BI Server (for OBIEE v11.1.1.9.5 and 12.2.1.2.0)**

1. From your local machine, navigate to *Control Panel>Administrative Tools>Data Sources (ODBC)*.
2. Select the *System DSN* tab and click **Add** button.
3. Select a driver specific to (Oracle BI Server 11g) and click **Finish** button.
4. Enter Name and Server details (specify the Host Name or IP Address of the BI Server) and click **Next**.
5. Enter Oracle BI Server login ID and password (enter the User Name and Password created at the time of OBIEE installation).
6. Click **Next**.
7. Click **Finish**.

## Modify Connection Pool and Set the Properties (for OBIEE v11.1.1.9.5 and 12.2.1.2.0)

1. Open the OBI Administration tool.
2. Navigate to *Start > Programs > Oracle Business Intelligence > BI Administration*.
3. Select *File > Open > Online* and select *LLFP.rpd/IFRS\_12.2.1.2.0.rpd* file.
4. In the **Open** dialog box, select and open **LLFP.rpd/IFRS\_12.2.1.2.0.rpd** file.
5. Enter the Repository password as **Admin123**.
6. In the Physical layer, double-click the **Connect Pool**.  
The properties of Connection Pool LLFP is displayed.
7. In the *General* tab, edit and check the following entries:
  - **Call Interface:** (OCI 10g/11g)
  - **Data source name:** <tnsnames.ora entry created in the step 8.b connecting to OFSAA atomic schema>
  - **User name:** <enter atomic db user name>
  - **Password:** <enter atomic db user password>
8. Confirm password and Click **OK** to close the window.

---

---

**Note:** Similarly, configure the connection pools for LLFPBI.

---

---

9. Click **Save** to save the RPD file.
10. Close the RPD file (**File/Exit**).
11. Login into LLFPBI Application using the following URL:  
*http://localhost:<portnumber>/analytics*.  
Replace the port number based on the setup.
12. Navigate to **Administration** link and click **Reload Files and Metadata** in order to load the metadata in the reports and clear the cache.
13. Navigate to **Manage Sessions** and click **Close All Cursors** to clear cursor cache.



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## Patching OFSAA Infrastructure Installation

### Patching Your OFSAA Infrastructure Installation

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

Refer <http://support.oracle.com> for more information on latest release.





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## Grants for Atomic/ Config Schema

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

This section discusses the following sections:

- [Configuring Grants for Atomic Schema](#)
- [Configuring Grants for Config Schema](#)
- [Configuring Grants for Config Schema Entities for Atomic Users](#)

### Configuring Grants for Atomic Schema

Atomic Schema creation requires certain grants for object creation. This can be located in \$FIC\_HOME/privileges\_atomic\_user.sql file.

The following are the Grants for Atomic Schema:

```
grant create SESSION to &database_username
/

grant create PROCEDURE to &database_username
/

grant create SEQUENCE to &database_username
/

grant create TABLE to &database_username
/

grant create TRIGGER to &database_username
/

grant create VIEW to &database_username
/

grant create MATERIALIZED VIEW to &database_username
/

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

grant create SYNONYM to &database_username
/
```

---

---

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

---

---

## Configuring Grants for Config Schema

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

The following are the Grants for Config Schema:

```
grant create SESSION to &database_username
/

grant create PROCEDURE to &database_username
/

grant create SEQUENCE to &database_username
/

grant create TABLE to &database_username
/

grant create TRIGGER to &database_username
/

grant create VIEW to &database_username
/

grant create MATERIALIZED VIEW to &database_username
/

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

grant create SYNONYM to &database_username
/
```

## Configuring Grants for Config Schema Entities for Atomic Users

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

## Configuring Application Pack XML Files

This section explains configuration of OFS\_IFRS\_PACK.xml and OFS\_IFRS\_SCHEMA\_IN.xml files.

This section includes the following topics:

- [Configuring OFS\\_IFRS\\_PACK.xml File](#)
- [Configuring OFS\\_IFRS\\_SCHEMA\\_IN.XML File](#)

### Configuring OFS\_IFRS\_PACK.xml File

The OFS\_IFRS\_PACK.xml file holds details on the various OFSAA products that are packaged in a particular Application Pack.

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

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

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**Table L-1 OFS\_IFRS\_PACK.xml Parameters**

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

**Table L-1 OFS\_IFRS\_PACK.xml Parameters**

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

## Configuring OFS\_IFRS\_SCHEMA\_IN.XML File

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

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

Table L-2 OFS\_IFRS\_SCHEMA\_IN.xml Parameters

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
<APP_PACK_ID>	Unique Application Pack Identifier	Y	Unique Seeded Value	DO NOT modify this value.
<JDBC_URL>	Enter the JDBC URL. <b>Note:</b> You can enter RAC and NON-RAC enabled database connectivity URL.	Y	jdbc:oracle:thin:@< DBSERVER IP/HOST>:<PORT>:<SID> or 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])))	Ensure to add an entry (with SID/SERVICE NAME) in the tnsnames.ora file on the OFSAA server. The entry should match with the SID/SERVICE NAME used in the JDBC URL.
<JDBC_DRIVER>	By default this driver name is seeded. <b>Note:</b> 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	

Table L-2 OFS\_IFRS\_SCHEMA\_IN.xml Parameters

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
<SETUPINFO>/ NAME	<p>Enter the acronym for the type of implementation. This information will be displayed in the OFSAA Home window.</p> <p><b>Note:</b> On executing the schema creator utility, this value will be prefixed with each schema name. For example: dev_ofsaaconf, uat_ofsaaatm.</p>	Y	<p>Accepts strings with a minimum length of two and maximum of four.</p> <p><b>Example,</b> DEV, SIT, PROD</p>	<p>This name would appear in the OFSAA Landing window as "Connected To: xxxx".</p> <p>The schemas being created would get this prefix. For example, dev_ofsaaconf, uat_ofsaaconf, and so on.</p>
<SETUPINFO>/ PREFIX_SCHEMA_NAME	<p>Identifies if the value specified in &lt;SETUPINFO&gt;/ NAME attribute should be prefixed to the schema name.</p>	N	Y or N	Default value is N.
<PASSWORD DEFAULT>/ APPLYSAMEFORALL	<p>Enter as Y if you want to apply the password specified in DEFAULT attribute for all the schemas.</p> <p>If you enter as N, you need to provide individual passwords for all schemas.</p> <p><b>Note:</b> 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.</p>	Y	<p>Default - N</p> <p>Permissible - Y or N</p>	<p>Note: Setting this attribute value is mandatory, If DEFAULT attribute is set.</p>

Table L-2 OFS\_IFRS\_SCHEMA\_IN.xml Parameters

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

**Table L-2 OFS\_IFRS\_SCHEMA\_IN.xml Parameters**

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
<SCHEMA>/ PASSWORD*	Enter the password of the schema to be created.  <b>Note:</b> 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.	<b>Note:</b> 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.  <b>Note:</b> Do not edit this attribute value.	Y	Unique Seeded Value	Identifies the Application/ Product for which the schema is being created.  DO NOT modify this value.
<SCHEMA>/ DEFAULTTABLESPACE	Enter the available default tablespace for DB User.  <b>Note:</b> If this attribute is left blank, then USERS is set as the default tablespace.	N	Default - USERS  Permissible - Any existing valid tablespace name.	Modify this value to associate any valid tablespace with the schema.
<SCHEMA>/ TEMPTABLESPACE	Enter the available temporary tablespace for the DB User.  <b>Note:</b> 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	<b>Example:</b> 600M/m 20G/g UNLIMITED/unlimited	Modify this value to grant the specified quota on the mentioned tablespace to the user.



Table L-2 OFS\_IFRS\_SCHEMA\_IN.xml Parameters

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
<SCHEMA>/ INFODOM	Enter the name of the Information Domain to associate this schema.  The schema creator utility automatically derives an Information Domain Name based on the Application Pack if no value is specified for this attribute.	Optional for Atomic and mandatory for sandbox	Permissible length is 16 characters and only alphanumeric characters allowed. No special characters allowed.	
<ADV_SEC_OPTIONS>	Parent tag to hold Advance Security Options.	N		Uncomment the tag and edit if you want to add security options. For example, TDE and Data Redact.  For details, see the example following the table.
<ADV_SEC_OPTIONS>/TDE	Tag to enable/disable TDE.	N	Default is FALSE. To enable TDE, set this to TRUE.	Ensure this tag is not commented if you have uncommented <ADV_SEC_OPTIONS>
<ADV_SEC_OPTIONS>/DATA_REDACT	Tag to enable/disable Data Redaction feature.	N	Default is FALSE. To enable DATA_REDACT, set this to TRUE	Ensure this tag is not commented if you have uncommented <ADV_SEC_OPTIONS>/
<TABLESPACES>	Parent tag to hold <TABLESPACE> elements	N	NA	Uncomment the tag and edit. ONLY if tablespaces are to be created as part of the installation.  For details, see the example following the table.  Note: When TDE is TRUE in ADV_SEC_OPTIONS, then it is mandatory for the <TABLESPACES> tag to be present in the xml file.

**Table L-2 OFS\_IFRS\_SCHEMA\_IN.xml Parameters**

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
<TABLESPACE>/ NAME	Logical Name of tablespace to be created.	Y		Name if specified should be referred in the <SCHEMA DEFAULTTABLESPACE= "##NAME##"> attribute. Note the ## syntax.
<TABLESPACE>/ VALUE	Physical Name of the tablespace to be created	Y	NA	Value if specified will be the actual name of the TABLESPACE.
<TABLESPACE>/ DATAFILE	Specifies the location of the data file on the server	Y	NA	Enter the absolute path of the file to be created.
<TABLESPACE>/ AUTOEXTEND	Specifies if the tablespace should be extensible or have a hard limit	Y	ON or OFF	Set to ON to ensure that the tablespace does not run out of space when full.
<TABLESPACE>/ ENCRYPT	Specifies if the tablespace(s) should be encrypted using TDE.	Y	ON or OFF	Set to ON to ensure that the tablespaces when created are encrypted using TDE.

**Note:** Encryption of tablespaces requires to enabling Transparent Data Encryption (TDE) on the Database Server.

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

```

<ADV_SEC_OPTIONS>
<OPTION NAME="TDE" VALUE="FALSE" />
<OPTION NAME="DATA_REDACT" VALUE="FALSE" />
</ADV_SEC_OPTIONS>
<TABLESPACES>
<TABLESPACE NAME="OFS_AAI_TBSP_1" VALUE="TS_USERS1"
DATAFILE="/scratch/ora12c/app/oracle/oradata/OFSPQA12CDB/ts_
users1.dbf" SIZE="500M" AUTOEXTEND="ON" ENCRYPT="ON" />
<TABLESPACE NAME="OFS_AAI_TBSP_2" VALUE="TS_USERS2"
DATAFILE="/scratch/ora12c/app/oracle/oradata/OFSPQA12CDB/ts_
users2.dbf" SIZE="500M" AUTOEXTEND="ON" ENCRYPT="ON" />
</TABLESPACES>
<SCHEMAS>
<SCHEMA TYPE="CONFIG" NAME="ofsaconf" PASSWORD="" APP_ID="OFS_
AAI" DEFAULTTABLESPACE="##OFS_AAI_TBSP_1##"
TEMPTABLESPACE="TEMP" QUOTA="unlimited"/>

```

```
<SCHEMA TYPE="ATOMIC" NAME="ofsaaatm" PASSWORD="" APP_ID="OFS_
AAAI" DEFAULTTABLESPACE="##OFS_AAI_TBSP_2##"
TEMPTABLESPACE="TEMP" QUOTA="unlimited" INFODOM="OFSAAAIINFO"/>
</SCHEMAS>
```



## Configuring OFSAAI\_InstallConfig.xml File

This section gives details about the OFSAAI\_InstallConfig.xml file.

### Configuring OFSAAI\_InstallConfig.xml file

To configure the OFSAAI\_InstallConfig.xml file, follow these steps.

1. Navigate to *OFS\_IFRS\_PACK/OFS\_AAI/conf/* directory.
2. Open the file **OFSAAI\_InstallConfig.xml** in text editor.
3. Configure the **OFSAAI\_InstallConfig.xml** as mentioned in the [Table M-1, "OFSAA Infrastructure Installation Tasks and Descriptions"](#).
4. You must 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.

**Table M-1 OFSAA Infrastructure Installation Tasks and Descriptions**

InteractionVariable Name	Significance and Expected Value	Mandatory
<b>InteractionGroup name="WebServerType"</b>		
WEBAPPSERVERTYPE	<p>Identifies the web application server on which the OFSAA Infrastructure web components would be deployed.</p> <p>The below numeric value should be set depending on the type:</p> <ul style="list-style-type: none"> <li>• Apache Tomcat = 1</li> <li>• IBM WebSphere Application Server = 2</li> <li>• Oracle WebLogic Server = 3</li> </ul> <p>For example, &lt;InteractionVariable name="WEBAPPSERVERTYPE"&gt;3&lt;/InteractionVariable&gt;</p>	Yes
<b>InteractionGroup name="OFSAA Infrastructure Server Details"</b>		

**Table M-1 (Cont.) OFSAA Infrastructure Installation Tasks and Descriptions**

InteractionVariable Name	Significance and Expected Value	Mandatory
DBSERVER_IP	<p>Identifies the hostname or IP address of the system on which the Database Engine is hosted.</p> <p><b>Note:</b> For RAC Database, the value should be NA.</p> <p>For example, &lt;InteractionVariable name="DBSERVER_IP"&gt;14.15.16.17&lt;/InteractionVariable&gt; or &lt;InteractionVariable name="DBSERVER_IP"&gt;dbhost.server.com&lt;/InteractionVariable&gt;</p>	Yes
<b>InteractionGroup name="Database Details"</b>		
ORACLE_SID/SERVICE_NAME	<p>Identifies the Oracle DB Instance SID or SERVICE_NAME</p> <p><b>Note:</b> The Oracle_SID value should be exactly the same as it is mentioned in JDBC_URL.</p> <p>For example, &lt;InteractionVariable name="ORACLE_SID/SERVICE_NAME"&gt;ofsaser&lt;/InteractionVariable&gt;</p>	Yes
ABS_DRIVER_PATH	<p>Identifies the directory where the JDBC driver (ojdbc&lt;version&gt;.jar) exists. This would typically be the \$ORACLE_HOME/jdbc/lib</p> <p>For example, &lt;InteractionVariable name="ABS_DRIVER_PATH"&gt;"/oradata6/revwb7/oracle&lt;/InteractionVariable&gt;</p> <p><b>Note:</b> Refer to <a href="#">Appendix O</a> section for identifying the correct "ojdbc&lt;version&gt;.jar" version to be copied.</p>	Yes
<b>InteractionGroup name="OLAP Detail"</b>		
OLAP_SERVER_IMPLEMENTATION	<p>Identifies if the OFSAA Infrastructure OLAP component needs to be configured depending on whether you intend to use the OLAP feature. The below numeric value should be set depending on the choice:</p> <ul style="list-style-type: none"> <li>• YES - 1</li> <li>• NO - 0</li> </ul>	No
<p><b>Note:</b> If value for OLAP_SERVER_IMPLEMENTATION is set to <b>1</b>, it checks for following environment variables are set in.profile: ARBORPATH, HYPERION_HOME and ESSBASEPATH.</p>		
<b>InteractionGroup name="SFTP Details"</b>		
SFTP_ENABLE	<p>Identifies if the SFTP (Secure File Transfer Protocol) feature is to be enabled. The below numeric value should be set depending on the choice:</p> <ul style="list-style-type: none"> <li>• For SFTP, set this field to 1 or -1.</li> <li>• For FTP, set this field to - 0</li> </ul>	Yes
<p><b>Note:</b> The default value for SFTP_ENABLE is 1, which signifies that SFTP will be used. Oracle recommends using SFTP instead of FTP because SFTP is considered more secure. However, a client may choose to ignore this recommendation and to use FTP by setting SFTP_ENABLE to 0. You can change this selection later by using the OFSAAI administration interface.</p> <p>Set SFTP_ENABLE to -1 to configure ftpshare and weblocal path as local path mounted for OFSAAI server.</p>		

**Table M-1 (Cont.) OFSAA Infrastructure Installation Tasks and Descriptions**

InteractionVariable Name	Significance and Expected Value	Mandatory
FILE_TRANSFER_PORT	<p>Identifies the port used for the file transfer service. The default value specified is 22 (SFTP). Specify default value as 21 (FTP) if SFTP_ENABLE is 0. Alternatively, this value can be any Port configured by System Administrators to support SFTP/FTP.</p> <p>For example, &lt;InteractionVariable name="FILE_TRANSFER_PORT"&gt;21&lt;/InteractionVariable&gt;</p>	Yes
<b>InteractionGroup name="Locale Detail"</b>		
LOCALE	<p>Identifies the locale information to be used during the installation. This release of the OFSAA Infrastructure supports only US English.</p> <p>For example, &lt;InteractionVariable name="LOCALE"&gt;en_US&lt;/InteractionVariable&gt;</p>	Yes
<p><b>InteractionGroup name="OFSAA Infrastructure Communicating ports"</b></p> <p><b>Note:</b> The below ports are used internally by the various OFSAA Infrastructure services. The default values mentioned below are set in the installation. If you intend to specify a different value, update the parameter value accordingly and ensure this port value is in the range of 1025 to 65535 and the respective port is enabled.</p>		
JAVAPORT	9999	Yes
NATIVEPORT	6666	Yes
AGENTPORT	6510	Yes
ICCPOR	6507	Yes
ICCNATIVEPORT	6509	Yes
OLAPPORT	10101	Yes
MSGPORT	6501	Yes
ROUTERPORT	6500	Yes
AMPORT	6505	Yes
<b>InteractionGroup name="Web Details"</b>		
<p><b>Note:</b> 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.</p>		
HTTPS_ENABLE	<p>Identifies if the UI should be accessed using HTTP or HTTPS scheme. The default value set is 0. The below numeric value should be set depending on the choice:</p> <ul style="list-style-type: none"> <li>• YES - 1</li> <li>• NO - 0</li> </ul> <p>For example, &lt;InteractionVariable name="HTTPS_ENABLE"&gt;0&lt;/InteractionVariable&gt;</p>	Yes

**Table M-1 (Cont.) OFSAA Infrastructure Installation Tasks and Descriptions**

InteractionVariable Name	Significance and Expected Value	Mandatory
WEB_SERVER_IP	<p>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.</p> <p>If no separate HTTP Server is available, the value should be Web Application Server IP/Hostname.</p> <p>For example, <code>&lt;InteractionVariable name="WEB_SERVER_IP"&gt;10.11.12.13&lt;/InteractionVariable&gt;</code></p> <p>or</p> <p><code>&lt;InteractionVariable name="WEB_SERVER_IP"&gt;myweb.server.com&lt;/InteractionVariable&gt;</code></p>	No
WEB_SERVER_PORT	<p>Identifies the Web Server Port. This would typically be <b>80</b> for non SSL and <b>443</b> for SSL. If no separate HTTP Server exists, the value should be the port configured for Web Server.</p> <p><b>Note:</b> The port value will not be accepted as 80 if HTTPS_ENABLE is 1 and as 443, if HTTPS_ENABLE is 0.</p> <p>For example, <code>&lt;InteractionVariable name="WEB_SERVER_PORT"&gt;80&lt;/InteractionVariable&gt;</code></p>	No
CONTEXT_NAME	<p>Identifies the web application context name which will be used to built the URL to access the OFSAA applications. The context name can be identified from a URL as below:</p> <p><code>&lt;scheme&gt;://&lt;host&gt;:&lt;port&gt;/&lt;context-name&gt;/login.jsp</code></p> <p>Sample URL:  <code>https://myweb:443/ofsaadev/login.jsp</code></p> <p>For example, <code>&lt;InteractionVariable name="CONTEXT_NAME"&gt;ofsaadev&lt;/InteractionVariable&gt;</code></p>	Yes
WEBAPP_CONTEXT_PATH	<p>Identifies the absolute path of the exploded .ear file on the web application server.</p> <p>For Tomcat, specify the Tomcat directory path till /webapps, such as  <code>/oradata6/revwb7/tomcat/webapps/.</code></p> <p>For WebSphere, enter the WebSphere path as <code>&lt;WebSphere profile directory&gt;/installedApps/&lt;NodeCellName&gt;</code>. For example,  <code>/data2/test//WebSphere/AppServer/profiles/&lt;Profile_Name&gt;/installedApps/aix-imfNode01Cell.</code>                      Where aix-imf is Host name.</p> <p>For WebLogic, provide the WebLogic home directory path as <code>/&lt;WebLogic home directory path&gt;/bea/wlserver_10.3</code></p>	Yes
WEB_LOCAL_PATH	<p>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.</p> <p>Note: In case of a clustered deployment, ensure this path and directory is same on all the nodes.</p>	Yes
<b>InteractionGroup name="Weblogic Setup Details"</b>		



**Table M-1 (Cont.) OFSAAI Infrastructure Installation Tasks and Descriptions**

<b>InteractionVariable Name</b>	<b>Significance and Expected Value</b>	<b>Mandatory</b>
WEBLOGIC_DOMAIN_HOME	Identifies the WebLogic Domain Home. For example, <InteractionVariable name="WEBLOGIC_DOMAIN_HOME"/>/home/weblogic/boa/user_projects/domains/mydomain</InteractionVariable>	Yes Specify the value only if WEBSERVERTYPE is set as 3 (WebLogic)
<b>InteractionGroup name="OFSAAI FTP Details"</b>		
OFSAAI_FTPSHARE_PATH	Identifies the absolute path to the directory identified as file system stage area. <b>Note:</b> <ul style="list-style-type: none"> <li>The directory should exist on the same system on which the OFSAAI Infrastructure is being installed (can be on a separate mount).</li> <li>The user mentioned in APP_SFTP_USER_ID parameter below should have RWX permission on the directory.</li> </ul> For example, <InteractionVariable name="APP_FTPSHARE_PATH"/>"/oradata6/revwb7/ftpshare</InteractionVariable>	Yes
OFSAAI_SFTP_USER_ID	Identifies the user who has RWX permissions on the directory identified under the aforementioned parameter APP_FTPSHARE_PATH.	Yes
OFSAAI_SFTP_PRIVATE_KEY	Identifies the SFTP private key for OFSAAI. For example, <InteractionVariable name="OFSAAI_SFTP_PRIVATE_KEY"/>/home/ofsaapp/.ssh/id_rsa</InteractionVariable> By default, the value is NA, which indicates password will be prompted for the user <OFSAAI_SFTP_USER_ID> for authentication. For more information on generating SFTP Private key, see the Setting Up SFTP Private Key section.	No
OFSAAI_SFTP_PASSPHRASE	Identifies the passphrase for the SFTP private key for OFSAAI. For example, InteractionVariable name="OFSAAI_SFTP_PASSPHRASE"/>enter a pass phrase here</InteractionVariable> By default, the value is NA.	No
<b>InteractionGroup name="Hive Details"</b>		
The default value set for the interaction variables under this group is set as NA. These are required only for Hive Configuration.		

**Table M-1 (Cont.) OFSAA Infrastructure Installation Tasks and Descriptions**

InteractionVariable Name	Significance and Expected Value	Mandatory
HIVE_SERVER_PORT	<p>Identifies the port used for the file transfer service. The default value set is 22 (SFTP). Set this value as 21 for FTP.</p> <p>For example,</p> <p>InteractionVariable name="HIVE_SERVER_PORT"&gt;22&lt;/InteractionVariable&gt;</p>	Yes, only for HIVE Configuration
HIVE_SERVER_FTPDRIVE	<p>Identifies the absolute path to the directory identified as file system stage area of HIVE server.</p> <p>For example,</p> <p>InteractionVariable name="HIVE_SERVER_FTPDRIVE"&gt;/scratch/ofsaa/ftpshare&lt;/InteractionVariable&gt;</p>	Yes, only for HIVE Configuration
HIVE_SERVER_FTP_USERID	<p>Identifies the user who has RWX permissions on the directory identified under the preceding parameter HIVE_SERVER_FTPDRIVE.</p> <p>For example,</p> <p>InteractionVariable name="HIVE_SERVER_FTP_USERID"&gt;ofsaa&lt;/InteractionVariable&gt;</p>	Yes, only for HIVE Configuration
HIVE_SERVER_FTP_PROTOCOL	<p>If the HIVE_SERVER_PORT is 21, then set value as FTP, else set it as SFTP.</p> <p>For example,</p> <p>InteractionVariable name="HIVE_SERVER_FTP_PROTOCOL"&gt;SFTP&lt;/InteractionVariable&gt;</p>	Yes, only for HIVE Configuration
HIVE_SFTP_PRIVATE_KEY	<p>Identifies the SFTP private key for the HIVE server.</p> <p>For example,</p> <p>&lt;InteractionVariable name="HIVE_SFTP_PRIVATE_KEY"&gt;/scratch/testuser/.ssh/id_rsa&lt;/InteractionVariable&gt;</p> <p>By default, the value is NA, which indicates password will be prompted for the user &lt;HIVE_SERVER_FTP_USERID&gt; for authentication.</p> <p>For more information on generating SFTP Private key, see the Setting Up SFTP Private Key section.</p>	Yes, only for HIVE Configuration
HIVE_SFTP_PASSPHRASE	<p>Identifies the passphrase for the SFTP private key for HIVE.</p> <p>For example,</p> <p>&lt;InteractionVariable name="HIVE_SFTP_PASSPHRASE"&gt;NA&lt;/InteractionVariable&gt;</p> <p>By default, the value is NA.</p> <p>If HIVE_SFTP_PRIVATE_KEY value is given and this is kept as NA, then it is assumed as empty passphrase.</p>	Yes, only for HIVE Configuration

---

---

## Migrating Excel Upload Functionality

This section provides detailed instructions to migrate excel upload functionality.

### 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.

### Migrating 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 aforementioned Step 1 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. Kindly note, excel upload mappings will work only if the target infodom has same data model entities as used in the mappings defined on source setup.

---

---

6. Update V\_CREATED\_BY column with the name of any user present in the target setup that has appropriate roles to perform Excel Upload tasks.

---

---

**Note:** It is mandatory to update values for V\_INFODOM and V\_CREATED\_BY columns.

---

---

7. Open WinSCP and login a new session by entering the host name, port number, user name and password to access the source setup.
8. Navigate to the folder referred as FTPSHARE.
9. Copy the excel-entity mapping xml file(s) which are located in this folder according to their folder structure on to your desktop. For example: /ftpshare  
/STAGE/ExcelUpload/\$SOURCE\_INFODOM\_NAME/\$EXCEL\_FILE\_NAME.xml

---

---

**Note:** Actual file name of Excel Sheet is mentioned in the V\_EXCEL\_NAME column of EXCEL\_MAPPING\_MASTER table.

---

---

10. Copy the excel templates (.xls/ .xlsx) file(s) which are located in this folder according to their folder structure on to your desktop. For example:  
/ftpshare/STAGE/ExcelUpload/TEMPLATE/\*.xls or \*.xlsx

---

---

**Note:** Ignore this step if files are not present at the location.

---

---

11. Login a new session in WinSCP by entering the host name, port number, user name and password to access the target setup.
12. Copy the xml file(s) from Step3 to the below location in the target setup. For example:  
/ftpshare/STAGE/ExcelUpload/\$TARGET\_INFODOM\_NAME/\$EXCEL\_FILE\_NAME.xml

---

---

**Note:** \$TARGET\_INFODOM\_NAME should be target setup infodomain in which you have uploaded the appropriate data model and the name should be same as the V\_INFODOM column value updated in EXCEL\_MAPPING\_MASTER table.

---

---

13. Copy the xls/ xlsx file(s) from Step 3 to the below location in target setup. For example:  
/ftpshare/STAGE/ExcelUpload/TEMPLATE/\*.xls or \*.xlsx

---

---

**Note:** Ignore this step if files are not present at the location.

---

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## JDBC Jar Files

The `ojdbc<version>.jar` file should be copied based on the Database version and the supported Java (JDK/JRE) version. See to the following table for details.

**Table O-1** *JDBC Jar files version details*

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



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---

# Upgrading an Existing OFSAA 8.0.x Java 7 Instance to Java 8

This section explains the configurations required to upgrade an existing OFSAA 8.0.x Java 7 instance to Java 8. It consists of the following topics:

- [Prerequisites](#)
- [Upgrading OFSAA 8.0.x Java 7 instance to Java 8](#)
- [Configuring Web Application Server Configurations](#)
- [OFSAA Generic Configurations](#)
- [Configuring OFSAA for New Web Application Server Installation](#)

## 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.

## 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 [Configuring 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 [Configuring OFSAA 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](#).

## Configuring 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:

- [Upgrading Oracle WebLogic Server Updates](#)
- [Upgrading Apache Tomcat Server Updates](#)

## Upgrading Oracle WebLogic Server Updates

Perform the following configurations to upgrade the existing WebLogic server instance to Java 8:

1. Navigate to `<WLS_HOME>/Middleware/Oracle_Home/wlserver.`
2. Edit the `product.properties` file. Set `JAVA_HOME`, `WLS_JAVA_HOME`, `JAVAHOME` properties to the new Java path and `java.vm.version` to the new Java version. For example,

```
JAVA_HOME=/usr/java/jre1.8.0_45
WLS_JAVA_HOME=/usr/java/jre1.8.0_45
JAVAHOME=/usr/java/jre1.8.0_45
java.vm.version=1.8.0_45
```

3. Navigate to `<WLS_HOME>/Middleware/Oracle_Home/user_projects/domains/<domain>/bin`. Update `SUN_JAVA_HOME`, `DEFAULT_JAVA_HOME`, `JAVA_HOME` in the `setDomainEnv.sh` file to point to the new Java path. For example,

```
SUN_JAVA_HOME="/usr/java/jre1.8.0_45"
DEFAULT_SUN_JAVA_HOME="/usr/java/jre1.8.0_45"
JAVA_HOME="/usr/java/jre1.8.0_45"
```

4. Clear the Application cache. Navigate to the following path and delete the files:  
`<Weblogic installation location>/domains/<Domain name>/servers/<Server name>/tmp/_WL_user/<Application name>/qaelce/jsp_servlet`

If you wish to install a new instance of the Oracle WebLogic Server, follow these steps:

1. Install Oracle WebLogic Server 12.2.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.

---

---

## Upgrading 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.

---

## OFSAA Generic Configurations

This section consists of the following topics:

- [Configuring User .profile Settings](#)
- [Configuring Java 8](#)

### Configuring 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
```

### Configuring Java 8

This section is applicable only if you upgrade OFSAA instance from 8.x to 8.0.8.0.0. Refer to the following instructions to extract and apply the patch.

1. If the Oracle Database version is 12c, copy ojdbc7.jar from \$ORACLE\_HOME/jdbc/lib to the following locations:
  - \$FIC\_HOME/utility/OFSAAGenerateRepository/lib/
  - \$FIC\_HOME/realtime\_processing/WebContent/WEB-INF/lib/
  - \$FIC\_HOME/ficdb/lib/
  - \$FIC\_HOME/ficapp/icc/lib/
  - \$FIC\_HOME/ficapp/common/FICServer/lib/

- \$FIC\_HOME/FMStandalone/FormsManager/WEB-INF/lib/
- \$FIC\_HOME/ficweb/webroot/WEB-INF/lib/
- \$FIC\_HOME/ficdb/etl/classes/

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---

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

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---

2. If the Oracle Database version is 11g, copy `ojdbc6.jar` from `$ORACLE_HOME/jdbc/lib` to the following locations:
  - \$FIC\_HOME/utility/OFSAAGenerateRepository/lib/
  - \$FIC\_HOME/realtime\_processing/WebContent/WEB-INF/lib/
  - \$FIC\_HOME/ficdb/lib/
  - \$FIC\_HOME/ficapp/icc/lib/
  - \$FIC\_HOME/ficapp/common/FICServer/lib/
  - \$FIC\_HOME/FMStandalone/FormsManager/WEB-INF/lib/
  - \$FIC\_HOME/ficweb/webroot/WEB-INF/lib/
  - \$FIC\_HOME/ficdb/etl/classes/

## Configuring OFSAA for New Web Application Server Installation

This configuration is required only if you have freshly installed Oracle WebLogic 12.2.x 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



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## Removing OFSAA

This chapter includes the following sections:

- [Uninstalling OFSAA Infrastructure](#)
- [Uninstalling EAR Files in WebSphere](#)
- [Uninstalling EAR Files in WebLogic](#)
- [Uninstalling WAR Files in Tomcat](#)

### Uninstalling OFSAA Infrastructure

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

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

To uninstall OFSAA Infrastructure:

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

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

**Figure 6–15** *Uninstalling OFSAA Infrastructure*

```
/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>█
```

**Note:**

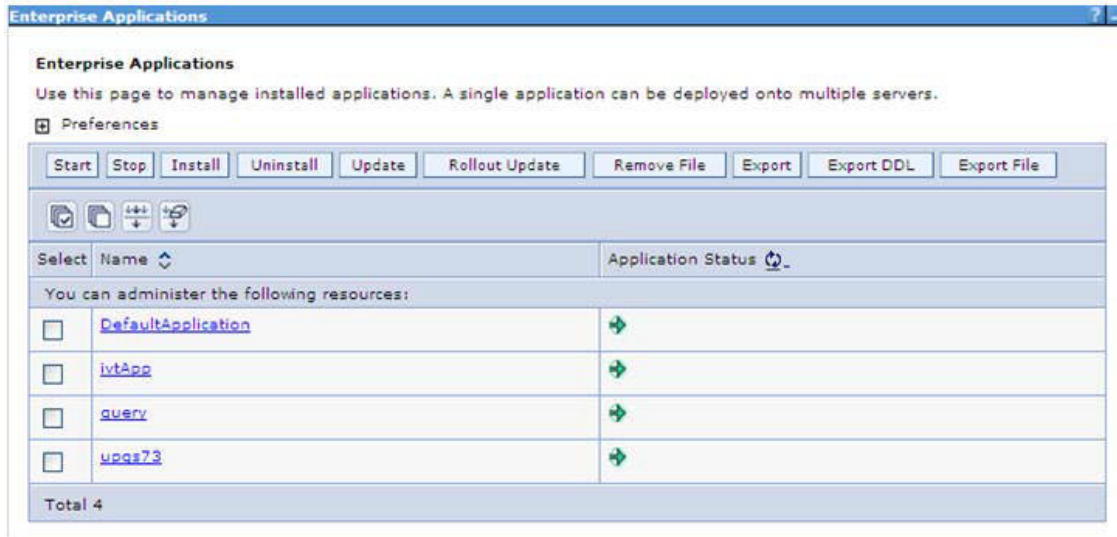
- Uninstallation does not remove the Infrastructure application from the Web Application Server. This has to be done manually.
- The entries in the `.profile` file will have to be removed manually.
- The files/ folders under the file system staging area (ftpsahre) have to be deleted manually.
- All the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

## 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 6–16** 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 6–17 Uninstall Application



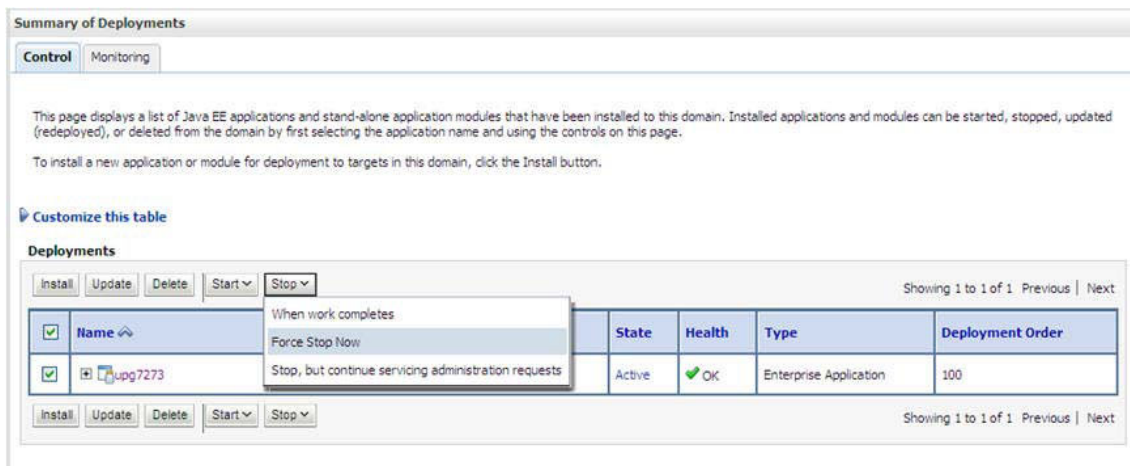
6. Click **OK** to confirm.
7. Click **Save** to save the master file configuration.

## Uninstalling EAR Files in WebLogic

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

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

Figure 6–18 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 6–19** Summary of Deployments- Messages

Messages

✔ Selected Deployments have been requested to stop.

Summary of Deployments

Control Monitoring

This page displays a list of Java EE applications and stand-alone application modules that have been installed to this domain. Installed applications and modules can be started, stopped, updated (redeployed), or deleted from the domain by first selecting the application name and using the controls on this page.

To install a new application or module for deployment to targets in this domain, click the Install button.

Customize this table

Deployments

Install Update Delete Start Stop

Showing 1 to 1 of 1 Previous Next

<input type="checkbox"/>	Name	State	Health	Type	Deployment Order
<input type="checkbox"/>	upg7273	Prepared	OK	Enterprise Application	100

Install Update Delete Start Stop

Showing 1 to 1 of 1 Previous Next

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.

## 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 = "/pr2test"
docBase="/home/perfuser/tomcat-7.0.19/webapps/pr2test" debug="0"
reloadable="true" crossContext="true">
<Resource auth="Container"
name="jdbc/PR2ATM"
type="javax.sql.DataSource"
driverClassName="oracle.jdbc.driver.OracleDriver"
username="pr2atm"
password="pr2atm"
url="jdbc:oracle:thin:@10.184.74.99:1521:PERFTEST"
maxActive="100"
maxIdle="30"
maxWait="10000"/>
```



```
</Context>
```

```
-->
```

Restart the Tomcat service by doing the following:

- d. Login to the "Unix server" through a terminal emulator.
  - e. Navigate to `$catalina_home/bin` directory.
  - f. Stop the tomcat services using the command `./shutdown.sh`
  - g. 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 6–20** Tomcat Web Application Manager

The Apache Software Foundation http://www.apache.org/				
Tomcat Web Application Manager				
<b>Manager</b>				
<a href="#">List Applications</a>	<a href="#">HTML Manager Help</a>	<a href="#">Manager Help</a>	<a href="#">Server Status</a>	
<b>Applications</b>				
Path	Display Name	Running	Sessions	Commands
/	Welcome to Tomcat	true	0	Start Stop Reload Undeploy Expire sessions with idle 30 minutes
/docs	Tomcat Documentation	true	0	Start Stop Reload Undeploy Expire sessions with idle 30 minutes
/examples	Servlet and JSP Examples	true	0	Start Stop Reload Undeploy Expire sessions with idle 30 minutes
/host-manager	Tomcat Manager Application	true	0	Start Stop Reload Undeploy Expire sessions with idle 30 minutes
/manager	Tomcat Manager Application	true	0	Start Stop Reload Undeploy Expire sessions with idle 30 minutes
/ofsaant	Reveles web Application	true	1	Start Stop Reload Undeploy

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



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# Configuring Transparent Data Encryption (TDE) and Data Redaction in OFSAA

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

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

## Transparent Data Encryption (TDE)

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

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

## Configuring TDE During OFS IFRS Installation Using Full Installer

This section provides information on how to enable TDE (Transparent Data Encryption) in the database. This section consists of the following sub sections:

- Configuring Software Keystore and Encrypted Tablespace Creation
- Running the Schema Creator Utility
- Testing the Encryption

### Configuring a Software Keystore and Encrypted Tablespace Creation

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

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

1. The location specified by the ENCRYPTION\_WALLET\_LOCATION parameter in the sqlnet.ora file.

2. The location specified by the `WALLET_LOCATION` parameter in the `sqlnet.ora` file.

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

---

---

**Note:** You should have proper privileges to perform the following actions.

---

---

For details to configure the software keystore, perform the following steps:

1. Set the Software keystore location in the `sqlnet.ora` file.

The first step is to designate a location for software keystore in the `sqlnet.ora` file. The Oracle Database will check the `sqlnet.ora` file for the directory location of the keystore to determine whether it is a software keystore or a hardware module security (HSM) keystore.

---

---

**Note:** Ensure that the directory location which you want to set for software keystore exists beforehand. Preferably, this directory should be empty.

In a multitenant environment, the keystore location is set for the entire multitenant container database (CDB), not for individual pluggable databases (PDBs).

By default, the `sqlnet.ora` file is located in the `ORACLE_HOME/network/admin` directory or in the location set by the `TNS_ADMIN` environment variable. Ensure that you have properly set the `TNS_ADMIN` environment variable to point to the correct `sqlnet.ora` file.

---

---

To create a software keystore on a regular file system, use the following format when you edit the `sqlnet.ora` file:

```
ENCRYPTION_WALLET_LOCATION=
(SOURCE=
  (METHOD=FILE)
  (METHOD_DATA=
    (DIRECTORY=<<path to keystore>>)))
```

Examples:

For regular file system in which the database name is `orclb`:

```
ENCRYPTION_WALLET_LOCATION=
(SOURCE=
  (METHOD=FILE)
  (METHOD_DATA=
    (DIRECTORY=/etc/ORACLE/WALLETS/orcl)))
```

When multiple databases share the `sqlnet.ora` file:

```
ENCRYPTION_WALLET_LOCATION=
(SOURCE=
  (METHOD=FILE)
  (METHOD_DATA=
```

```
(DIRECTORY=/etc/ORACLE/WALLETS/orcl))
```

When Oracle Automatic Storage Management (ASM) is configured:

```
ENCRYPTION_WALLET_LOCATION=
(SOURCE=
(METHOD=FILE)
(METHOD_DATA=
(DIRECTORY=+disk1/mydb/wallet)))
```

For ASM Diskgroup:

```
ENCRYPTION_WALLET_LOCATION=
(SOURCE=
(METHOD=FILE)
(METHOD_DATA=
(DIRECTORY=+ASM_file_path_of_the_diskgroup)))
```

## 2. Create the Software Keystore.

There are three different types of Software Keystores:

- Password-based Software Keystores
- Auto-login Software Keystores
- Local Auto-login Software Keystores

Perform the following steps to create a software keystore:

1. Login as sysdba or user with ADMINISTER KEY MANAGEMENT or SYSKM privilege.
2. Use the following command to create password-based software keystore:

```
CONN sys/password@serviceid AS SYSDBA
ADMINISTER KEY MANAGEMENT CREATE KEYSTORE 'keystore_
location' IDENTIFIED BY software_keystore_password;
```

**keystore\_location** is the path of the keystore directory you want to create.

**software\_keystore\_password** is the password of the keystore that you want to create.

For example, to create the keystore in the /etc/ORACLE/WALLETS/orcl directory:

```
ADMINISTER KEY MANAGEMENT CREATE KEYSTORE
'/etc/ORACLE/WALLETS/orcl' IDENTIFIED BY password;
```

After you run this statement, the ewallet.p12 file, which is the keystore, appears in the keystore location.

- Alternatively, you can create an Auto-Login or Local-Login Keystore to avoid opening the Keystore manually every time. Use the following command:

```
ADMINISTER KEY MANAGEMENT CREATE [LOCAL] AUTO_LOGIN
KEYSTORE FROM KEYSTORE 'keystore_location' IDENTIFIED BY keystore_
password;
```

LOCAL enables you to create a local auto-login software keystore. Otherwise, omit this clause if you want the keystore to be accessible by other computers.

After you run this statement, the cwallet.sso file appears in the keystore location.

---

---

**Note:** It is important to remember the master key password (<keystore\_password>) used during creation of the keystore. There are no ways to retrieve the password if forgotten.

---

---

### 3. Open the Software Keystore

Depending on the type of keystore you create, you must manually open the keystore before you can use it.

You do not need to manually open auto-login or local auto-login software keystores. These keystore are automatically opened when it is required, that is, when an encryption operation must access the key. If necessary, you can explicitly close any of these types of keystores. You can check the status of whether a keystore is open, closed, open but with no master key, or open but with an unknown master key by querying the STATUS column of the V\$ENCRYPTION\_WALLET view.

---

---

**Note:** After you open a keystore, it remains open until you manually close it. Each time you restart a database instance, you must manually open the password keystore to re-enable encryption and decryption operations.

---

---

Perform the following steps to open the software wallet:

1. Login as sysdba or user with ADMINISTER KEY MANAGEMENT or SYSKM privilege.
2. Use the following command to open password-based software keystore:

```
CONN sys/password@serviceid AS SYSDBA
```

```
ADMINISTER KEY MANAGEMENT SET KEYSTORE OPEN IDENTIFIED BY  
software_keystore_password [CONTAINER = ALL | CURRENT];
```

**software\_keystore\_password** is the same password that you used to create the keystore in "Step 2: Create the Software Keystore".

**CONTAINER** is for use in a multitenant environment. Enter ALL to set the keystore in all of the PDBs in this CDB, or CURRENT for the current PDB.

---

---

**Note:** In a CDB, open the Keystore in the ROOT (CDB\$ROOT) container and in all the associated PDBs, where TDE is enabled.

You do not need to manually open auto-login or local auto-login software Keystores.

---

---

### 4. Set the Software TDE Master Encryption Key

Once the keystore is open, you can set a TDE master encryption key for it. The TDE master encryption key is stored in the keystore. This key protects the TDE table keys and tablespace encryption keys. By default, the TDE master encryption key is a key that Transparent Data Encryption (TDE) generates.

In a multitenant environment, you can create and manage the TDE master encryption key from either the root or the PDB.

Ensure that the database OPEN\_MODE is set as READ WRITE. To find the status for a non-multitenant environment, query the OPEN\_MODE column of the V\$DATABASE

dynamic view. If you are using a multitenant environment, then query the V\$PDBS view. (If you cannot access these views, then connect as SYSDBA and try the query again. In order to connect as SYSKM for this type of query, you must create a password file for it. See Oracle Database Administrator's Guide for more information.)

Perform the following steps to set the encryption key:

1. Login as sysdba or user with ADMINISTER KEY MANAGEMENT or SYSKM privilege.
2. Use the following command to set the encryption key:

```
CONN sys/password@serviceid AS SYSDBA
```

```
ADMINISTER KEY MANAGEMENT SET KEY [USING TAG 'tag']
IDENTIFIED BY password [WITH BACKUP [USING 'backup_
identifier']] [CONTAINER = ALL | CURRENT];
```

**tag** is the associated attributes and information that you define. Enclose this setting in single quotation marks (' ').

**password** is the mandatory keystore password that you created when you created the keystore in "Step 2: Create the Software Keystore".

**WITH BACKUP** creates a backup of the keystore. You must use this option for password-based keystores. Optionally, you can use the USING clause to add a brief description of the backup. Enclose this description in single quotation marks (' '). This identifier is appended to the named keystore file (for example, ewallet\_time\_stamp\_emp\_key\_backup.p12, with emp\_key\_backup being the backup identifier). Follow the file naming conventions that your operating system uses.

CONTAINER is for use in a multitenant environment. Enter ALL to set the key in all of the PDBs in this CDB, or CURRENT for the current PDB.

For example,

```
ADMINISTER KEY MANAGEMENT SET KEY IDENTIFIED BY password
WITH BACKUP USING 'emp_key_backup';
```

## 5. Encrypting your Data

After completing the keystore configuration, encrypt the data. You can encrypt individual columns in a table or entire tablespaces. OFSAA recommends encrypting entire tablespaces and the description in this section covers encrypting entire tablespaces.

Note the following restrictions on using Transparent Data Encryption when you encrypt a tablespace:

- Transparent Data Encryption (TDE) tablespace encryption encrypts or decrypts data during read and write operations, as compared to TDE column encryption, which encrypts and decrypts data at the SQL layer. This means that most restrictions that apply to TDE column encryption, such as data type restrictions and index type restrictions, do not apply to TDE tablespace encryption.
- To perform import and export operations, use Oracle Data Pump.

Encrypting data involves the following steps:

Step 1: Setting the COMPATIBLE initialization parameter for tablespace encryption.

Step 2: Setting the tablespace TDE master encryption key.

Step 3: Creating the Encrypted Tablespace.

- Step 1: Setting the COMPATIBLE initialization parameter for tablespace encryption

Prerequisite- You must set the COMPATIBLE initialization parameter for the database to 11.2.0.0 or later. Once you set this parameter to 11.2.0.0, the change is irreversible.

Perform the following steps to set the COMPATIBLE initialization parameter:

1. Log into the database instance. In a multitenant environment, log into the PDB.
2. Check the current setting of the COMPATIBLE parameter.

For example:

**Table R-1 SHOW PARAMETER COMPATIBLE**

Name	Type	Value
compatible	string	12.0.0.0
noncdbcompatible	BOOLEAN	FALSE

3. If you want to change the COMPATIBLE parameter, perform the following steps:

- a. Locate the initialization parameter file for the database instance.

**UNIX systems:** This file is in the ORACLE\_HOME/dbs directory and is named initORACLE\_SID.ora (for example, initmydb.ora).

- b. In SQL\*Plus, connect as a user who has the SYSDBA administrative privilege, and then shut down the database.

For example:

```
CONNECT /AS SYSDBA
SHUTDOWN
```

- c. Edit the initialization parameter file to use the correct COMPATIBLE setting.

For example:

```
COMPATIBLE = 12.2.0.0
```

- d. In SQL\*Plus, ensure that you are connected as a user who has the SYSDBA administrative privilege, and then start the database.

For example:

```
CONNECT /AS SYSDBA
STARTUP
```

- e. If tablespace encryption is in use, then open the keystore at the database mount. The keystore must be open before you can access data in an encrypted tablespace.

```
STARTUP MOUNT;
ADMINISTER KEY MANAGEMENT SET KEYSTORE OPEN IDENTIFIED BY
password;
ALTER DATABASE OPEN;
```

- Step 2: Setting the tablespace TDE master encryption key

Make sure that you have configured the TDE master encryption key as shown in Step 4: Setting the software TDE master encryption key.

- Step 3: Creating the Encrypted Tablespace

After you have set the COMPATIBLE initialization parameter, you are ready to create the encrypted tablespace.



Follow the instruction given in Running the Schema Creator Utility with Encryption section for configuring the schema creator file to create tablespaces.

If you are enabling TDE in case of upgrade or you did not enable it during installation and want to enable at a later point of time, see the following reference link for details on manually creating encrypted tablespaces:

[https://docs.oracle.com/cloud/latest/db121/ASOAG/asotrans\\_config.htm#ASOAG9555](https://docs.oracle.com/cloud/latest/db121/ASOAG/asotrans_config.htm#ASOAG9555)

## Running the Schema Creator Utility with Encryption

This section is applicable only if you want to enable TDE during installation.

Run the schema creator utility by including the encrypt=on option in the Tablespace tag in the <<APP PACK>>\_SCHEMA\_IN.xml file. You have to perform this procedure manually as it is not a part of the <<APP PACK>>\_SCHEMA\_IN.xml.TEMPLATE originally.

Following is an example for OFS\_AAAI\_PACK\_SCHEMA\_IN.xml

```
<APPPACKSCHEMA>
<APP_PACK_ID>OFS_AAAI_PACK</APP_PACK_ID>
<JDBC_URL>jdbc:oracle:thin:@<DB_Server_IP>:1521:<DB_NAME></JDBC_URL>
<JDBC_DRIVER>oracle.jdbc.driver.OracleDriver</JDBC_DRIVER>
<HOST><OFSAA_Server_IP/HOST Name></HOST>
<SETUPINFO NAME="<PREFIX_NAME>" PREFIX_SCHEMA_NAME="Y"/>
<PASSWORD APPLYSAMEFORALL="Y" DEFAULT="<PASSWORD>"/>
<TABLESPACES>
<TABLESPACE NAME="OFS_AAI_TBSP" VALUE="TS_USERS1"
DATAFILE="<ABSOLUTE PATH to TABLESPACE>/<TABLESPACE_DATA_FILE_NAME>.dbf" SIZE="500M" AUTOEXTEND="OFF" ENCRYPT="ON" />
</TABLESPACES>
<SCHEMAS>
<SCHEMA TYPE="CONFIG" NAME="ofsaaconf" PASSWORD="" APP_ID="OFS_AAAI" DEFAULTTABLESPACE="##OFS_AAI_TBSP##" TEMPTABLESPACE="TEMP" QUOTA="unlimited"/>
<SCHEMA TYPE="ATOMIC" NAME="ofsaaatm" PASSWORD="" APP_ID="OFS_AAAI" DEFAULTTABLESPACE="##OFS_AAI_TBSP##" TEMPTABLESPACE="TEMP" QUOTA="unlimited" INFODOM="OFSAAAIINFO"/>
<SCHEMA TYPE="ATOMIC" NAME="ofsaaatm" PASSWORD="" APP_ID="OFS_IPE" DEFAULTTABLESPACE="##OFS_AAI_TBSP##" TEMPTABLESPACE="TEMP" QUOTA="unlimited" INFODOM="OFSAAAIINFO"/>
</SCHEMAS>
</APPPACKSCHEMA>
```

## Testing the Encryption

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

```
SELECT tablespace_name, encrypted FROM dba_tablespaces;
```

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

**Table R-2**

TABLESPACE_NAME	ENCRYPTED
SYSTEM	No
SYSAUX	No
UNDOTBS1	No
TEMP	No
USERS	No
ENCRYPTED_TS	No

6 rows selected.

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

## Configuring TDE in case of Upgrade

This section details about the configurations required in case you want to enable TDE in OFSAA applications after upgrade to OFSAA 8.0.8.0.0 version from a previous version. Additionally, these configurations are required in case you did not enable TDE during 8.0.8.0.0 installation and want to enable at a later point of time.

1. Create a new PDB (12c)/ instance (11g) on same or different Database Server for TDE. For more information, see [Configuring a Software Keystore and Encrypted Tablespace Creation](#).
2. Shutdown the OFSAAI Services
3. Export all Configuration, Atomic and Sandbox Schemas as per the applications installed in your OFSAA instance.

For example:

```
expdp SYSTEM/oracle@OFSAA12C2DB DIRECTORY=data_pump_dir
DUMPFILE=ofsaaconf_ofsaaatm_%U.dmp filesize=2G
SCHEMAS=ofsaaconf,ofsaaatm LOGFILE=ofsaaconf_ofsaaatm_exp.log
```

---

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

---

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

For example:

```
impdp SYSTEM/oracle@OFSAA12nDB DIRECTORY=data_pump_dir
DUMPFILE=ofsaaconf_ofsaaatm_%U.dmp
SCHEMAS=ofsaaconf,ofsaaatm LOGFILE=ofsaaconf_ofsaaatm_imp.log
```

---



---

**Note:** Restoring the exported dumps creates Configuration and Atomic Schema(s) with the same user credentials as that of the source, along with the existing grants.

If schemas are restored using a tool/ mechanism other than as mentioned in the Step 1 and 2, retain the user credentials of Configuration and Atomic Schemas same as in the Source environment, along with the Schema grants.

---



---

5. Provide select grants on `sys.v_$parameter` to view Configuration and Atomic Schemas of Target Environment database.

For example:

Login as sys user:

```
SQL> GRANT SELECT ON SYS.V_$PARAMETER TO ofsaaconf;
```

```
Grant succeeded
```

```
SQL> GRANT SELECT ON SYS.V_$PARAMETER TO ofsaaatm;
```

```
Grant succeeded
```

6. Update `.profile` for `ORACLE_SID` environment variable with new `ORACLE_SID`.
7. Update JDBC URL by executing Port Changer utility. For details on how to execute Port Changer utility, see [Changing IP/ Hostname, Ports, and Deployed Paths of OFSAA Instance](#) section.
8. Navigate to the `$FIC_WEB_HOME` directory and execute the following command to trigger the creation of EAR/WAR file:
 

```
./ant.sh
```
9. The EAR/WAR file - `<contextname>.ear/.war` - is created in `$FIC_WEB_HOME` directory.
10. On completion of EAR/WAR file creation, the message "BUILD SUCCESSFUL" will be displayed.
11. Edit the existing Connection Pool settings to point to new JDBC URL and verify connections.
12. Clear the webserver cache and redeploy the application onto your configured web application server.
13. Restart the OFSAA Services. For more information, refer to the [Starting OFSAA Infrastructure Services](#) section.

## Data Redaction

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

## Enabling Data Redaction in case of Upgrade

This section details about the configurations required in case you want to enable Data Redaction in OFSAA applications after upgrade to OFSAA 8.0.8.0.0 version from a previous version. Additionally, these configurations are required in case you did not enable TDE during OFS AAI 8.0.8.0.0 installation and want to enable at a later point of time.

Perform the following steps:

1. Login as SYSDBA into the database.
2. Execute the file `$FIC_HOME/utility/data_security/scripts/create_data_sec_roles.sql` only once per database (PDB in case of 12c).
3. Execute the following sql statement to find out the list of atomic users from the table:  

```
select v_schema_name from aai_db_detail where V_DB_NAME <>
'CONFIG' AND V_DB_TYPE = 'ORACLE'
```
4. Execute the file `$FIC_HOME/utility/data_security/scripts/grant_data_sec_roles.sql` for all atomic users found in the previous step.
5. From the Configuration window in the System Configuration module, select the Allow Data Redaction checkbox.
6. Run the Data Redaction utility. For more details on how to run the utility, see Data Redaction section under Data Security and Data Privacy chapter in [OFS Analytical Applications Infrastructure Administration Guide](#).

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## 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](#)
- [Application Pack 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.

### 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 FAQs](#)
- [Forms Framework FAQs](#)

### 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 [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 is the Operating system, webservers and other software versions that OFSAA supports?***

Refer to OFSAA Technology Stack Matrices.

***What are the different files required to install OFSAAI?***

The following files are required:

- setup.sh.
- envCheck.sh
- preinstallcheck.sh
- VerInfo.txt
- OFSAAInfrastructure.bin
- validatedXMLinputs.jar
- MyResources\_en\_US.properties
- log4j.xml
- OFSAAI\_PostInstallConfig.xml
- OFSAAI\_InstallConfig.xml
- privileges\_config\_user.sql
- privileges\_atomic\_user.sql

***What should I do if I get the following error message during installation, "Execute Permission denied"?***

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

To give execute permissions,

- Navigate to the path OFSAAI\_80200 and execute the command  
`chmod 755`

***"Graphical installers are not.."***

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

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

---

---

**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 6, "Post Installation Configuration"](#).

***What is to be done when OFSAAI Installation is unsuccessful?***

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

***How do I completely uninstall OFSAAI?***

OFSAAI can be completely uninstalled by performing the steps provided in [Uninstalling OFSAA Infrastructure](#) in the OFS AAI Installation and Configuration 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 to grant privileges if a new information domain is created?***

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

- Log into the database as `sys` and connect as `sysdba` user.

- Execute the file `privileges_config_user.sql` available under `$FIC_HOME` directory
- Enter the database schema for which you want to grant privileges.

***When should I run the MLS utility?***

See the Multiple Language Support (MLS) Utility section in OFS AAI Administration Guide available on [OHC Documentation Library](#).

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

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

See [Verifying System Environment](#) section for additional information.

***How do I know if the installation is completed successfully?***

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

1. Navigate to the path `$FIC_HOME` (Product Installation Directory).
2. Execute the command:

```
./piverify.sh
```

***What should I 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 I 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.

***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 is abruptly terminated, then the installation process 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 I do if the database connection from connection pool displays the following error message, "java.sql.SQLRecoverableException: IO Error: Connection reset"?***

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

---

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

---

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

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

This could mostly happen:

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

To correct this, follow the steps:

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

2. Unzip the installer using the command:  

```
unzip <OFSAAI_Installer>.zip
```
3. The corrupted `setup.sh` file would have introduced certain `^M` characters into the file. You can remove `^M` characters from `setup.sh` file by following these steps:
  - a. Login to the server where the installer is copied.
  - b. Navigate to the directory `OFSAAI_80200`.
  - 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 happens when 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. On the server start up parameters options, refer [Starting Infrastructure Services](#) section.

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

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

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

***Can we have distributed OFSAAI Application Server for load balancing?***

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

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

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

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

Yes, 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 which has complete permissions on ftpshare directory, and 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.

And on any new file that is created in the 'ftpshare' folder of any installation layer should be granted specific/explicit permission.

Port Change utility could be used to have the Port number modified, which are currently being used by the Infrastructure application. For more information, refer [Changing IP/ Hostname, Ports, and Deployed Paths of OFSAA Instance](#) section.

***Are there any in-built system administration users within OFSAAI Application?***

The three in-built system administration users are provided to configure and setup OFSAAI.

- SYSADMN
- SYSAUTH
- GUEST

***Does OFSAAI Application support both FTP and SFTP?***

OFSAAI supports both FTP and SFTP configuration.

***Is it necessary to enable the FTP/SFTP services to use the OFSAAI?***

Yes, enabling of FTP/SFTP services and its ports is a pre-requisite step towards using the OFSAAI.

***OFSAAI Configuration: Unable to save the server details?***

- Ensure the input User ID, Password, and Share Name are correct.
- Ensure FTP/SFTP services are enabled.
- Have a test FTP/SFTP connection made and confirm if they are successful.

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

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

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

- Verify whether connection to the "configuration schema" can be established through sqlplus.
- 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 the same in both the Application and Database Layers.

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

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

***Does OFSAAI Application support LDAP authentication?***

OFSAAI supports LDAP configuration and authentication.

***Does OFSAAI support multiple languages?***

Yes, OFSAAI supports multiple languages.

***Does OFSAAI provide any data back-up features?***

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

***What kind of security features does the OFSAAI provide?***

OFSAAI provides security at:

- Segment Level - Users can access only the segment they are mapped to.
- Application Level - Users can perform an operation only if mapped to appropriate role and functions.

***Does OFSAAI have the ability to enforce periodic password change?***

OFSAAI provides configurable parameters to define number of days after which the user password would expire and then the user is forced to change the password after expiration period.

***What is the password policy followed in OFSAAI?***

OFSAAI enforces a minimum password length with a combination of Upper and Lower case characters and alpha-numeric strings.

***Which version of Erwin Data Modeller does OFSAAI support?***

OFSAAI now supports ERwin version 9.6 generated xmls.

***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 Unified Metadata Manager --> 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.

Refer the section *Run Model Upload Utility* of the OFS Analytical Applications Infrastructure User Guide available on [OHC Documentation Library](#) for details.

***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 would necessitate updating in these. Contact OFSAAI support 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 would necessitate updating the password.

To change the Atomic Schema password, follow the steps:

1. Login to OFSAA.
2. Navigate to System Configuration > Database Details window. Select the appropriate connection, provide the modified password and save.
3. Navigate to Unified Metadata Manager > Technical Metadata> Data Integrator > Define Sources window. Update the appropriate Source details.
  - a. If you are using Apache 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).
  - b. If you are using WebSphere as Web server:
    - Login to the WebSphere Administration Console from the left side menu.
    - Navigate to Resources > JDBC > Data Sources. A list of data sources will be populated on the right side.
    - Select the appropriate Data Source and edit the connection details. (In this case, both Config and Atomic data sources need to be modified).
  - c. If you are using WebLogic as Web server:
    - Login to the WebLogic Administration Console from the left side menu.
    - Under Domain Structure list box, expand the appropriate Domain and navigate to Services > JDBC > Data Sources. A list of data sources will be populated on the right side.

- Select the appropriate Data Source and edit the connection details. (In this case, both Config and Atomic data sources need to be modified).
4. Restart the OFSAAI services

---

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

---

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

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

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

The Log file in `DynamicServices.xml` which resides in `$FIC_HOME/conf` is continuously being updated/refreshed to cache metadata. This can be observed when you are starting `startofsaai.sh` and if any of the log file (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 window taking a longer time to load.

Increase the cache size limit in `Dynamicservices.xml` located at `<FIC_HOME>/conf`, depending on the currently logged count for the specific metadata.

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 preceding query returns a list of codes with their respective metadata count. You can refer to "metadata\_type\_master" table to identify the metadata name.
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 Unified Metadata Manager- Import Model, you need to configure the required model size in `struts.xml` file available in the path `$FIC_WEB_HOME/webroot/WEB-INF/classes`.

---

**Note:** The size requirements have to be always specified in bytes.

---

For example, if you need to configure for model size of 2.5GB, then you can approximately set the max size to 3GB (3221225472 bytes) as follows, in order to avoid size constraints during model upload.

```
<constant name="struts.multipart.maxSize" value="3221225472"/>
```

After configuring `struts.xml` file, generate the application EAR/WAR file and redeploy the application onto your configured web application server. For more information on generating and deploying EAR / WAR file, refer [Appendix C](#).

***What should I do if my Hierarchy filter is not reflecting correctly after I make changes to the underlying Hierarchy?***

In some cases, the Hierarchy Filters do not save the edits correctly if the underlying Hierarchy has been changed. This can occur in hierarchy maintenance, where you have moved a member to another hierarchy branch, and that member was explicitly selected in the Filter and is now a child of a node which is already selected in the Filter.

Please refer [Support Note](#) for the workaround.

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

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

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

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

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

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

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

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

**Table S-1 Optimized Memory Settings for New Model Upload**

<b>Model Upload Options</b>	<b>Size of Data Model XML File</b>	<b>X_ARGS_APP ENV Variable in OFSAI APP Layer</b>
Pick from Server	106 MB	"-Xms1024m -Xmx1024m
	36 MB	"-Xms2048m -Xmx2048m
	815 MB	"-Xms4096m -Xmx4096m
	1243 MB	"-Xms6144m -Xmx6144m
Model Upload Utility	106 MB	"-Xms1024m -Xmx1024m"-Xms2048m -Xmx2048m
	336 MB	"-Xms4096m -Xmx4096m
	815 MB	"-Xms4096m -Xmx4096m
	1243 MB	"-Xms6144m -Xmx6144m
Save New Erwin File In Server	106 MB	"-Xms1024m -Xmx1024m
	336 MB	"-Xms2048m -Xmx2048m
		"-Xms4096m -Xmx4096m
		"-Xms6144m -Xmx6144m

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

Yes. Follow the instructions explained in the OFS Inline Processing Engine Configuration Guide available on [OHC Documentation Library](#).

***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 OFSAI 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 to the [Appendix C](#) section.



5. Restart the OFSAAI Services (APP and WEB). For more information, refer to the [Starting Infrastructure Services](#) section.

---

**Note:** This setting help cache the Infodom metadata only for the infodoms that get accessed after user login. Infodoms which are not accessed, are not cached.

---

Sample code is as follows:

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

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

Check if the version of Internet Explorer and JRE Plugin are as mentioned in the Desktop Requirements section of this manual. If not, use the qualified versions as mentioned.

***Can Multiple OFSAA Infrastructure instances share the same config schema?***

No, only one OFSAA environment can be installed using one config schema.

***Can Atomic schema be shared?***

Yes, it can be shared between two OFSAA instances.

***While setting a firewall, which ports should be opened for communication between the 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 infodoms?***

No, it is not possible to install the same application in two different infodoms.

***How can I configure the OFSAA application for High Availability?***

OFSAA can have active-passive high availability. For more details, refer [Configuration for High Availability- Best Practices Guide](#).

***During OFSAA installation should I provide web application server's IP/Hostname and port or web server's IP/Hostname and port, if the Apache HTTP Server/ Oracle HTTP Server/ IBM HTTP Server are configured?***

In case the web server is configured, you should enter the Web Server IP Address/Hostname and Port details during OFSAA installation. Here the Servlet port should be same as the Web Server port.

If Web Server is not configured, the Web Application Server's IP Address/ Hostname and Port is required during the installation process. Here the Servlet port should be same as the Web application Server port.

***Is "ReveleusAdminConsoleAgent" applicable for OFSAAI 8.0.0.0 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 max 5000kb & 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 HW 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="REVERSERVERAPPENDER"
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 preceding section.

### ***Can we modify the Log file path?***

Yes, Log file path is configurable, it can be configured in `RevLog4jConfig.xml`. default log file path (file) is set by the installer. This can be configured to another path.

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

For more details, see the HTTPS section in the *OFSAAI Administration Guide*.

***What should I do if my HIVE connection fails with the following exception:***

```
java.sql.SQLException: [Cloudera][HiveJDBCdriver] (500164)
Error initialized or created transport for authentication:
[Cloudera][HiveJDBCdriver] (500168) Unable to connect to server:
GSS initiate failed.

    com.ibm.security.krb5.KrbException, status code: 37
        message: PROCESS_TGS at
com.ibm.security.krb5.KrbTgsRep.<init> (KrbTgsRep.java:20)
```

This happens if there is a clock skew between the client and the KDC server. To resolve this, there are two solutions:

- **Solution 1:**

Synchronize the clocks between the servers. For more information, refer <http://docs.oracle.com/cd/E19253-01/816-4557/setup-192/index.html>

- **Solution 2:**

1. Set clockskew parameter on the server side (KDC) krb5.conf file and replace the same file in HIVE\_LIBRARY\_PATH folder. Parameter value should be decided on the basis of the time difference between the two machines.
2. Get the epoch time on the two servers by firing “date +%s” on the command line.
3. Clockskew param value should be chosen as a value sufficiently larger than the difference of the preceding two calculated values.
4. Set “clockskew = <value>” in the /etc/krb5.conf on the KDC server.
5. Restart Kerberos services.

***What should I do if my schema creator log has the following exception:***

```
Failed to detect a valid hadoop home directory
java.io.IOException: HADOOP_HOME or hadoop.home.dir are not set.
at org.apache.hadoop.util.Shell.checkHadoopHome (Shell.java:302)
at org.apache.hadoop.util.Shell.<clinit> (Shell.java:327)
at org.apache.hadoop.util.StringUtils.<clinit> (StringUtils.java:79)
at
org.apache.hadoop.security.Groups.parseStaticMapping (Groups.java:130)
at org.apache.hadoop.security.Groups.<init> (Groups.java:94)
at org.apache.hadoop.security.Groups.<init> (Groups.java:74)
at
org.apache.hadoop.security.Groups.getUserToGroupsMappingService (Groups.java:303)
at
org.apache.hadoop.security.UserGroupInformation.initialize (UserGroupInformation.java:283)
```

```

at
org.apache.hadoop.security.UserGroupInformation.setConfiguration(UserGroupInformation.java:311)
at HdfsDbUtil.connect(HdfsDbUtil.java:162)
at
SchemaParserUtil.validateHiveConnection(SchemaParserUtil.java:1359)
at SchemaParserUtil.checkAllPreChecks(SchemaParserUtil.java:1011)
at Main.execute(Main.java:317)
at Main.main(Main.java:145)

```

This occurs when HADOOP\_HOME environment variable is not set. You can ignore this exception since we do not mandate to install HIVE where OFSAA is installed.

***What should I do if the sliced data model upload takes a long time to complete?***

If the metadata cache size is set to a lower value than the actual count of each metadata type (hierarchy, dataset, dimension etc), then it gets into performance degrade issues. We have to increase the cache size for each metadata type according to the count in the environment.

Following are the parameters in DynamicServices.xml to be configured depends on the metadata count in your environment.

```

<PARAMETER NAME="HIERARCHY_NODE_LIMIT" VALUE="2000"/>
<PARAMETER NAME="ALIAS_CACHE_SIZE" VALUE="1000"/>
<PARAMETER NAME="DATASET_CACHE_SIZE" VALUE="2000"/>
<PARAMETER NAME="MEASURE_CACHE_SIZE" VALUE="3000"/>
<PARAMETER NAME="HIERARCHY_CACHE_SIZE" VALUE="2000"/>
<PARAMETER NAME="DIMENSION_CACHE_SIZE" VALUE="2000"/>
<PARAMETER NAME="CUBE_CACHE_SIZE" VALUE="1000"/>
<PARAMETER NAME="BUSINESSPROCESSOR_CACHE_SIZE" VALUE="2000"/>
<PARAMETER NAME="DERIVEDENTITY_CACHE_SIZE" VALUE="1000"/>

```

Metadata count can be derived based on the following queries:

```
select count(1) from metadata_master where metadata_version=0 --- for all metadata
```

```
select count(1) from metadata_master where metadata_version=0 and metadata_type=1 --- for measure
```

```
select count(1) from metadata_master where metadata_version=0 and metadata_type=2 --- for Dimension
```

```
select count(1) from metadata_master where metadata_version=0 and metadata_type=3 --- for HCY
```

```
select count(1) from metadata_master where metadata_version=0 and metadata_type=4 --- for DATASET
```

```
select count(1) from metadata_master where metadata_version=0 and metadata_type=59 --- for BP's
```

```
select count(1) from metadata_master where metadata_version=0 and metadata_type=54 --- for Alias
```

```
select count(1) from metadata_master where metadata_version=0 and metadata_type=5 --- for CUBES
```

```
select count(1) from metadata_master where metadata_version=0 and metadata_type=856 ---
for Derived Entity
```

***For LDAP authentication, which server connects with the LDAP server, the Application server (where ofsaai is installed), or Web Application server (where EAR is deployed)?***

For LDAP authentication, the Application server (ficapp) connects with the LDAP server.

***The LDAP server in the setup listens on secure protocol ldaps (port 636). I have the root certificate of the LDAP server for SSL, and would like to know where to offload this certificate?***

You need to import the certificate into the JDK/JVM used by Reveleus server in ficapp layer.

***How to relocate FTPSHARE folder?***

You can run the PortC.jar utility. For more details, refer [Changing IP/ Hostname, Ports, and Deployed Paths of OFSAA Instance](#) section in the OFSAAI Admin Guide available on [OHC Documentation Library](#).

***How do we identify the list of ports that are used by/configured in an OFSAA environment?***

1. Navigate to \$FIC\_HOME directory on Target.

The file **PortsDef.log** will be available in the \$FIC\_HOME directory. It will contain the ports information.

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

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

***What should I do when an entity containing many attributes (>100 columns) is selected as Source entity and the Data Mapping (T2T definition) save operation takes longer than expected with the hourglass in the UI continuously rotating?***

The workaround is:

1. Locate the webserver deployed area `webroot/conf/excludeURLList.cfg` file.
2. Modify the following entries:
  - `[SQLIA] ./dataIntegrator/` to `[ALL] ./dataIntegrator/`
  - `[SQLIA] ./ETLExtractionServlet` to `[ALL] ./ETLExtractionServlet`
3. Save the changes and restart the webserver.
4. Resave the definition.

***What should I do if I get the following error message when I try to start the OLAP server?***

```
./olapdataserver: error while loading shared libraries:
libessapinu.so:
```

```
cannot open shared object file: No such file or directory FATAL ERROR :- OLAP DATA
SERVER start up failed.
```

This error occurs when OLAP component is not configured and OLAP feature in OFSAA is not used. However, this error can be ignored.

***What should I do if I get the error "FATAL ERROR-Problem with OFSAA Service" during OFS\_AAAI\_PACK installation?***

Increase the sleep counter (default value is 80) to a higher value in the following section of the `OFS_AAAI_PACK/OFSAAIUpdate.sh` file:

```

if [ $count -eq 0 ] ; then sleep 80;
count=` grep -i "FICServer Initialization Complete"
$FIC_HOME/ficapp/common/FICServer/bin/nohup.out|wc -l ` fi
if [[ $count -gt 0 ]] ; then echo OFSAA Service - OK

else

echo FATAL ERROR-Problem with OFSAA Service
exit 1
fi

```

*How do I upgrade to Oracle Database 12c Release 1 or 2, if my previous database versions are Release 11.2.0.2+, 12.1.0.1 or 12.1.0.2?*

If you are upgrading the Database Server from the previous versions to the current versions mentioned in the following table:

**Table S-2**

Sl. No.	Source Database Version	Destination Database Version
1	11.2.0.2+ or 12.1.0.1	12c Release 1 (12.1.0.2)
2	11.2.0.3+, 12.1.0.1 or 12.1.0.2	12c Release 2 (12.2.0.1)

Perform the instructions mentioned in the following MOS documents:

- Doc ID [2412630.1](#)
- Doc ID [2075401.1](#)

## Application Pack FAQs

### *What is an Application pack?*

An Application Pack is suite of products. For more information, refer [About Oracle Financial Services Analytical Applications \(OFSAA\) Application Packs](#).

### *Can I get a standalone installer for OFSAA 8.0.8.0.0?*

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

### *How does OFSAA 8.0.8.0.0 Application pack relate to OFSAA 7.x series?*

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

### *Can existing OFSAA 7.x customers upgrade to OFSAA 8.0.8.0.0 Application Pack?*

There is no upgrade path available. However, we will have migration kit / path for every product to 8.0.8.0.0 application pack. Further details will be available with Oracle Support.

### *Does OFSAA 8.0.8.0.0 Application pack UPGRADE automatically existing environments?*

No. Refer Point 5. OFSAA 8.0.8.0.0 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. Note that we will have migration path only from the previously released version of OFSAA products.

### *Where can I download OFSAA 8.0.8.0.0 Application Pack?*

You can download the OFSAAI 8.0.8.0.0 Application Pack from Oracle Software Delivery Cloud (OSDC).

***What are the minimum system and software requirements for OFSAA 8.0.8.0.0 Application Pack?***

Refer to [Hardware and Software Requirements](#) section.

***Is my environment compatible with OFSAA 8.0.8.0.0 Application Pack?***

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

***Has OFSAA 8.0.8.0.0 Application Pack is supports all Operating systems?***

LINUX, AIX, SOLARIS. Refer to [Technology Matrix](#) for the technology matrix that OFSAA suite products are/ will be qualified on.

***How can I install OFSAA 8.0.8.0.0 Application Pack?***

Refer to Oracle Financial Services Advanced Analytical Infrastructure Installation And Configuration Guide published in [OHC Documentation Library](#) for the application pack installers.

***Does this installation require any Third party Software?***

Oracle Financial Services Advanced Analytical Infrastructure Installation And Configuration Guide published in OHC Documentation Library lists the third party software that needs to be installed.

***What languages are supported during OFSAA 8.0.8.0.0 Application Pack installation?***

US English is the language supported.

***What mode of installations OFSAA Application Pack supports? [i.e., Silent, GUI]***

OFSAA Application Packs supports both, GUI and Silent Mode.

***Does OFSAA 8.0.8.0.0 Application Pack support Multi tier Installations?***

OFSAA 8.0.8.0.0 does single tier installation. For more information refer to [OFSAAI FAQs](#) section.

***Does this Application Pack validate all Pre-requisites required for this installation i.e., Memory, Disk Space etc.?***

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

***What happens if it aborts during installation of any application with in Application pack?***

Customer needs to restore the system and retrigger the installation

***Does this Application pack 'Rolls Back' if any of application installation fails due to errors?***

Rollback of installation is not supported.

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

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

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

Yes. You can retrigger in case of failure.

***Does this Application pack allow enabling / disabling any of the applications installed?***

Yes. You cannot disable once the product is enabled in an environment.

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



No, installation is not required. Enabling the application is an option to use it later.

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

There is no issue in installing separate OFSAAI installations, each with their own PFT/FTP installations and separate associated database instances and separate Web Server installations on the same server as long as adequate memory is allocated for each instance and as long as each OFSAAI installation is installed using a separate UNIX user and profile. Care should be taken if running multiple OFSAAI installations

on a single server. Adequate memory will be required for each installation as several OFSAAI processes (model upload, DEFQ services, etc) take significant amounts of memory. So it depends on your server memory.

***Is it possible to Install OFSAA 8.0.8.0.0 Application pack on an existing 'Infodom' where another OFSAA 8.0.8.0.0 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 in 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 Behavioural 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.

***Is the 'Data Model' bundled specific to an Application pack or to an individual application?***

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

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

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

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

Yes, Sandbox creation is part of application install process.

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

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

***Can I upgrade AAI only?***

Yes, you can upgrade AAI alone.

***Can I upgrade one application within the Application Pack? i.e., LRM will be upgraded in Treasury Application pack, but MR won't be upgraded.***

No. Not possible Upgrade is applied across packs.

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

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

***Can I uninstall entire Application Pack?***

No, you cannot uninstall the Application Pack.

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

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

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

Language Packs 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 Behavioural Detection

Application Pack and Compliance Regulatory Reporting Application Pack, Asset Liability Management Application Pack and Profitability Application Pack are the exceptions. They need to be installed in a different INFODOM.

***Can I use an existing manually created schema as information domain for application pack installation?***

No. Schemas required by OFSAA applications have to be created using Schema Creator Utility.

***Does OFSAA 8.0.8.0.0 support on WebLogic 10.3.6 with Oracle 12c?***

Yes, OFSAA 8.0.8.0.0 will support on WebLogic 10.3.6 with Oracle 12c. WebLogic 10.3.6 supports oracle 12c with some additional configurations. Refer the link [http://docs.oracle.com/cd/E28280\\_01/web.1111/e13737/ds\\_12cdriver.htm#JDBCA655](http://docs.oracle.com/cd/E28280_01/web.1111/e13737/ds_12cdriver.htm#JDBCA655) for additional configurations.

***While running the schema creator utility, I get an error "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 IFRS Application Pack version 8.0.8.0.0?***

OFS IFRS Application Pack supports Java 1.7.x and 1.8.x.

***Is this release of the OFS IFRS Application Pack version 8.0.8.0.0 supported on Java 8?***

Yes. To install this release of the OFS IFRS Application Pack version 8.0.8.0.0 on Java 8. For more information, refer to specific notes mentioned in the sections [Installer and Installation PrerequisitesConfigurations supported for Java 8](#), [Configuring the Schema Creator Utility](#), [Installing in GUI Mode](#), and [Installing in SILENT Mode](#).

***What should be done if you encounter the following "FATAL" exception in the installation log because of insufficient DB process value?***

***[FATAL] - =====Exception=====***

***java.sql.SQLRecoverableException: IO Error: Got minus one from a read call***

***at oracle.jdbc.driver.T4CConnection.logon(T4CConnection.java:419)***

***at oracle.jdbc.driver.PhysicalConnection.<init>(PhysicalConnection.java:536)***

***at oracle.jdbc.driver.T4CConnection.<init>(T4CConnection.java:228)***

***at oracle.jdbc.driver.T4CDriverExtension.getConnection(T4CDriverExtension.java:32)***

*at oracle.jdbc.driver.OracleDriver.connect(OracleDriver.java:521)*

Contact the DBA team to increase the DB process/sessions value accordingly, which depends on the number of database process running at that particular point of time.

***Can I upgrade the Oracle Database version from 11g to 12C on which OFSAA 8.0.8.0.0 version is installed?***

Yes, you can upgrade. When the DB Server was Oracle 11g, the ojdbc jar used was ojdbc6.jar. But, when the DB is upgraded to 12c, you need to upgrade the ojdbc6.jar to ojdbc7.jar.

Copy ojdbc7.jar from \$ORACLE\_HOME/jdbc/lib to the following locations:

- \$FIC\_HOME/utility/OFSAAGenerateRepository/lib/
- \$FIC\_HOME/realtime\_processing/WebContent/WEB-INF/lib/
- \$FIC\_HOME/ficdb/lib/
- \$FIC\_HOME/ficapp/icc/lib/
- \$FIC\_HOME/ficapp/common/FICServer/lib/
- \$FIC\_HOME/ficweb/webroot/WEB-INF/lib/

## Forms Framework FAQs

***What should I do when I have large volume of data to be exported?***

It is recommended to use BIP reports or OBIEE reports if you have to export large volume of data.

***How do I export the columns added to the grid using Field Chooser option?***

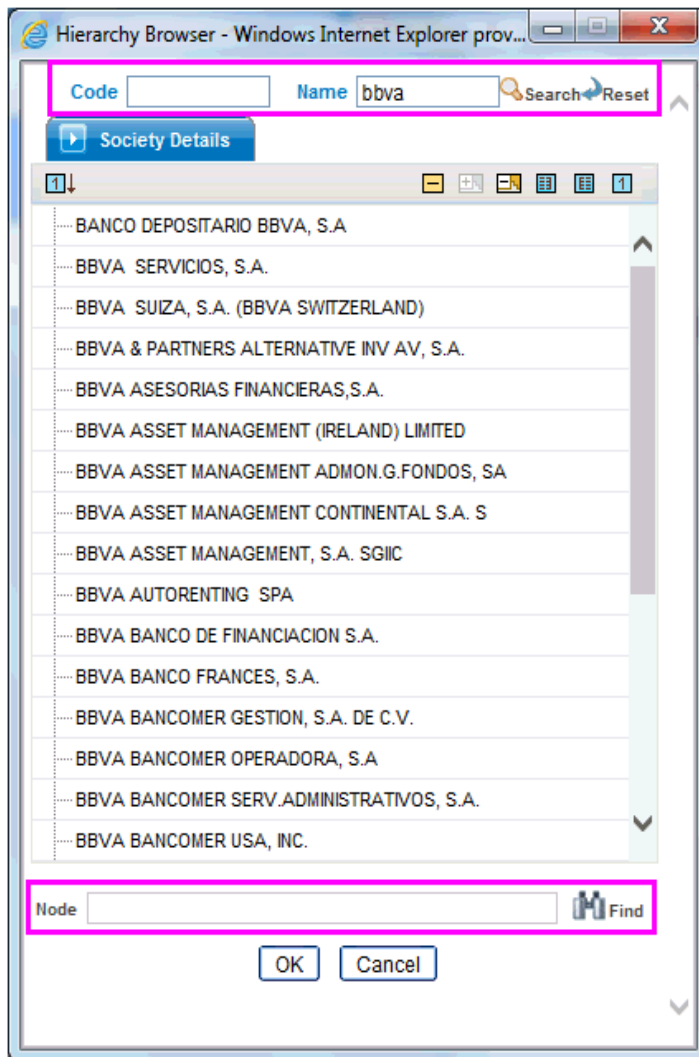
Perform Grid Export operation to export the columns added to the grid by Field Chooser option.

***'Expand All/ Collapse All' button is not visible in the Hierarchy Browser window. What should I do?***

Expand All/ Collapse All button is disabled if the number of hierarchy nodes is more than 50 and if it is a non-custom hierarchy. Hierarchy with more than 50 nodes is considered as large hierarchy and the data will be fetched dynamically when you expand the parent node.

***What is the difference between the two Searches available in the Hierarchy Browser window?***

In the new *Hierarchy Browser* window introduced from 7.3.5.1.0 version, there are 2 search options available 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.

## Error Dictionary

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

This section includes the following topics:

- [Accessing Error Dictionary](#)
- [Error Code Dictionary](#)

## Accessing Error Dictionary

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

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

**Figure S-1 Error Code**

Error code - OFSAAI-1003	
<b>Cause</b>	JAVA_HOME/bin not found in PATH variable.
<b>Resolution</b>	Import <JAVA_HOME>/bin into PATH variable. Example: PATH = %JAVA_HOME%/bin %PATH% export PATH.

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](http://support.oracle.com) along with log files and appropriate screen shots.

## Error Code Dictionary

### Error code - OFSAAI-1001

**Table S-3 Error code - OFSAAI-1001**

<b>Cause</b>	Unix shell is not "korn" shell.
<b>Resolution</b>	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

**Table S-4 Error code - OFSAAI-1002**

<b>Cause</b>	No proper arguments are available.
<b>Resolution</b>	Provide proper arguments. Invoke Setup.sh using either SILENT or GUI mode. Example: ./Setup.sh SILENT or ./Setup.sh GUI

### Error code - OFSAAI-1004

**Table S-5 Error code - OFSAAI-1004**

<b>Cause</b>	File .profile is not present in \$HOME.
<b>Resolution</b>	Create .profile in \$HOME, i.e. in the home directory of user.

### Error code - OFSAAI-1005

**Table S-6 Error code - OFSAAI-1005**

<b>Cause</b>	File OFSAAInfrastructure.bin is not present in current folder.
<b>Resolution</b>	Copy OFSAAInfrastructure.bin into installation kit directory.

### Error code - OFSAAI-1006

**Table S-7 Error code - OFSAAI-1006**

<b>Cause</b>	File CustReg.DAT is not present in current folder.
<b>Resolution</b>	Copy CustReg.DAT into installation kit directory.

### Error code - OFSAAI-1007

**Table S-8 Error code - OFSAAI-1007**

<b>Cause</b>	File OFSAAI_InstallConfig.xml is not present in current folder.
<b>Resolution</b>	Copy OFSAAI_InstallConfig.xml into installation kit directory.

**Error code - OFSAAI-1008****Table S-9 Error code - OFSAAI-1008**

<b>Cause</b>	File validateXMLInputs.jar is not present in current folder.
<b>Resolution</b>	Copy validateXMLInputs.jar into installation kit directory.

**Error code - OFSAAI-1009****Table S-10 Error code - OFSAAI-1009**

<b>Cause</b>	File log4j.xml is not present in current folder.
<b>Resolution</b>	Copy log4j.xml into installation kit directory.

**Error code - OFSAAI-1010****Table S-11 Error code - OFSAAI-1010**

<b>Cause</b>	Unknown error occurred.
<b>Resolution</b>	Make sure to provide proper argument (SILENT or GUI) to the Setup.sh file.

**Error code - OFSAAI-1011****Table S-12 Error code - OFSAAI-1011**

<b>Cause</b>	XML validation failed.
<b>Resolution</b>	Check InfrastructurePreValidations.Log for more details.

**Error code - OFSAAI-1012****Table S-13 Error code - OFSAAI-1012**

<b>Cause</b>	Property file with locale name does not exist.
<b>Resolution</b>	Copy MyResources_en_US.properties to the setup kit directory and keep en_US in LOCALE tag of OFSAAI_InstallConfig.xml.

**Error code - OFSAAI-1013****Table S-14 Error code - OFSAAI-1013**

<b>Cause</b>	File OFSAAI_InstallConfig.xml/OFSAAI_PostInstallConfig.xml not found.
<b>Resolution</b>	Copy OFSAAI_InstallConfig.xml/OFSAAI_PostInstallConfig.xml to the setup kit directory.

**Error code - OFSAAI-1014****Table S-15 Error code - OFSAAI-1014**

<b>Cause</b>	XML node value is blank.
<b>Resolution</b>	Make sure all node values except SMTPSERVER, PROXYHOST, PROXYPORT, PROXYUSERNAME, PROXYPASSWORD, NONPROXYHOST, or RAC_URL are not blank.

**Error code - OFSAAI-1015****Table S-16 Error code - OFSAAI-1015**

<b>Cause</b>	XML is not well formed.
<b>Resolution</b>	Execute the command <code>dos2unix OFSAAI_InstallConfig.xml</code> to convert plain text file from DOS/MAC format to UNIX format.  OR  Make sure that <code>OFSAAI_InstallConfig.xml</code> 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 <code>OFSAAI_InstallConfig.xml</code> using the <code>XML_UTILITY.jar</code> .

**Error code - OFSAAI-1016****Table S-17 Error code - OFSAAI-1016**

<b>Cause</b>	User installation directory contain blank spaces.
<b>Resolution</b>	Provide an installation path that does not contain spaces. Check the tag <code>USER_INSTALL_DIR</code> in <code>OFSAAI_InstallConfig.xml</code> file. This path should not contain any spaces.

**Error code - OFSAAI-1017****Table S-18 Error code - OFSAAI-1017**

<b>Cause</b>	User installation directory is invalid.
<b>Resolution</b>	Provide a valid installation path. Check if you are able to create the directory mentioned in <code>USER_INSTALL_DIR</code> tag value of <code>OFSAAI_InstallConfig.xml</code> file.