

**Oracle® Financial Services Capital  
Adequacy Pack**

Installation and Configuration Guide

Release 8.0.6.0.0

**E66256-02**

**ORACLE®**

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**FINANCIAL SERVICES**

Oracle Financial Services Capital Adequacy Pack Installation and Configuration Guide, Release 8.0.6.0.0

E66256-02

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# Document Control

This section provides the revision details of the document.

Version Number	Revision Date	Changes Done
1.0	November 2017	Captured installation and configuration steps for 8.0.5.0.0 Release.
2.0	May 2018	Captured installation and configuration steps for 8.0.6.0.0 release.

This document includes the necessary instructions to install the OFS CAP Application Pack 8.0.6.0.0 and perform the required post installation configurations. The latest copy of this guide can be accessed from [OHC Documentation Library](#).



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# Preface

This Preface provides supporting information for the Oracle Financial Services Capital Adequacy Pack 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 the [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 Capital Adequacy 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

The document assumes the following prerequisites (with experience in installing Enterprise components and basic knowledge) for the administrators installing this product before starting the actual installation:

- Oracle Financial Services Capital Adequacy Pack components
- OFSAA Architecture
- UNIX Commands
- Database Concepts
- Web Server/ Web Application Server

## Related Documents

For more information, see the following documents in [Oracle Financial Services Capital Adequacy Pack 8.0.6.0.0 documentation set](#):

- *Oracle Financial Services Basel Regulatory Capital Basic User Guide*
- *Oracle Financial Services Basel Regulatory Capital Internal Ratings Based Approach User Guide*
- *Oracle Financial Services Basel Regulatory Analytics User Guide*
- *Oracle Financial Services Basel Regulatory Capital Adequacy Admin Guide*
- *Oracle Financial Services Economic Capital Advanced User Guide*
- *Oracle Financial Services Operational Risk Economic Capital User Guide*

## Conventions

The following text conventions are used in this document:

Convention	Meaning
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action or terms defined in text or in 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 screen, or text that you enter.

## Abbreviations

The following table lists the abbreviations used in this document:

Abbreviation	Meaning
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

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<b>Abbreviation</b>	<b>Meaning</b>
JNDI	Java Naming and Directory Interface
JRE	Java Runtime Environment
JVM	Java Virtual Machine
LDAP	Lightweight Directory Access Protocol
LHS	Left Hand Side
MFA	Multi-Factor Authentication
MOS	My Oracle Support
OFSAAI	Oracle Financial Services Analytical Application Infrastructure
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 Capital Adequacy 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.

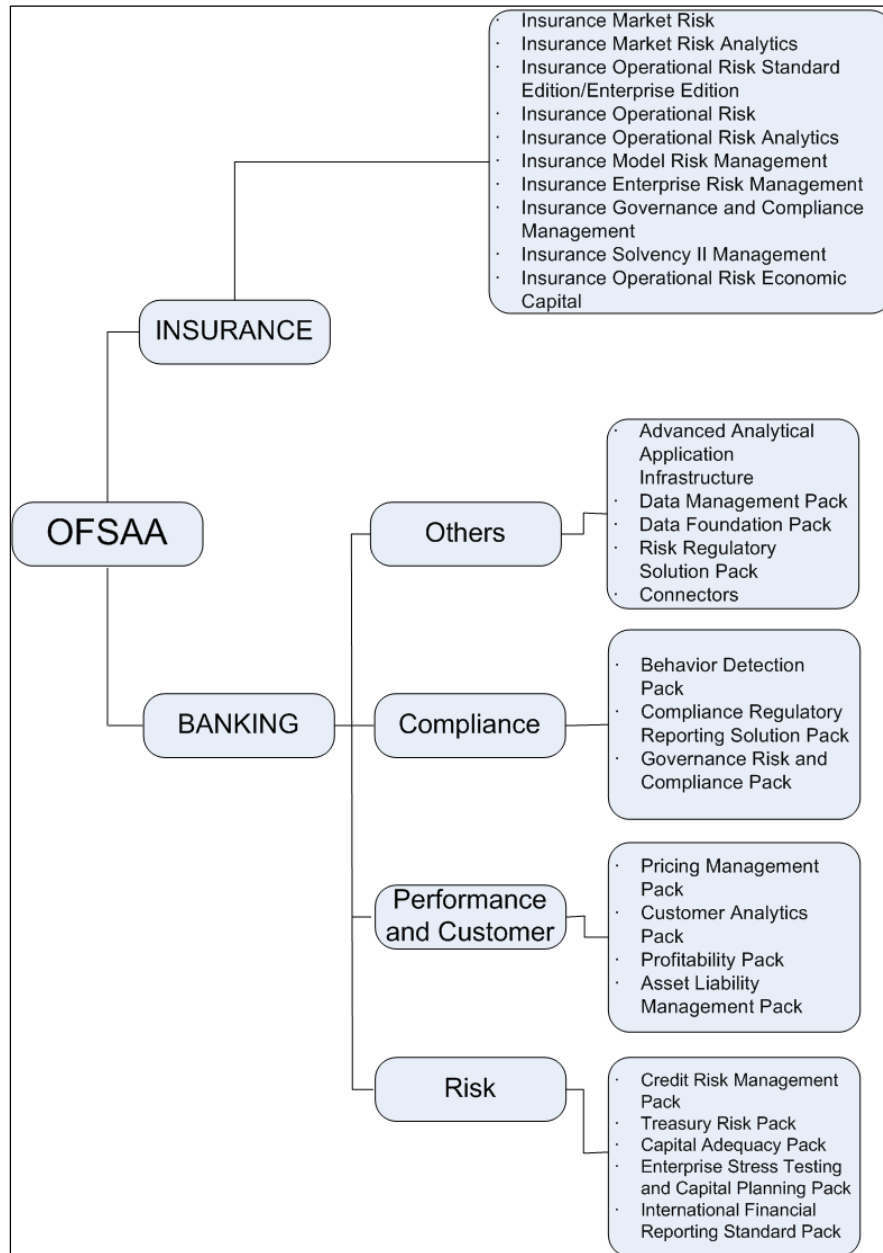
OFSAA uses industry-leading analytical methods, shared data models, and applications architecture to enable integrated risk management, performance management, customer insight, and compliance management. OFSAA actively incorporates risk into decision making, enables to achieve a consistent view of performance,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

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

OFS CAP 8.0.6.0.0 Pack includes the following applications:

- Oracle Financial Services Basel Regulatory Capital Basic:** The application encompasses Credit, Market, and Operational Risks and provides a detailed breakup of the Capital Requirements across Tier 1, 2 and 3. The application supports the computation of Capital Adequacy Ratio (CAR) as per the guidelines laid out in the BIS (Basel I, Basel II, and Basel III), India, USA, Islamic Banking, Brazilian, and CBRC jurisdictions.
- Oracle Financial Services Basel Regulatory Capital Internal Ratings Based Approach:** This application is based on the approaches supported by the OFS Basel

Regulatory Capital Basic Application as well as the advanced approaches for BIS, USA, and CBRC Jurisdictions.

- **Oracle Financial Services Basel Regulatory Capital Analytics:** This application allows institutions to capitalize on their Basel II compliance investments by providing extensive dashboards that enable efficient and timely Pillar I analysis and Pillar 3 disclosures, regulatory reporting and provide a complete platform for strategic decision-making across the institution.
- **Oracle Financial Services Operational Risk Economic Capital:** This application provides pre-configured models based on actuarial methods that enable institutions to calculate capital for operational risk. This is achieved through the computation of the risk measures such as Operational Risk VaR and Conditional VaR.

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

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

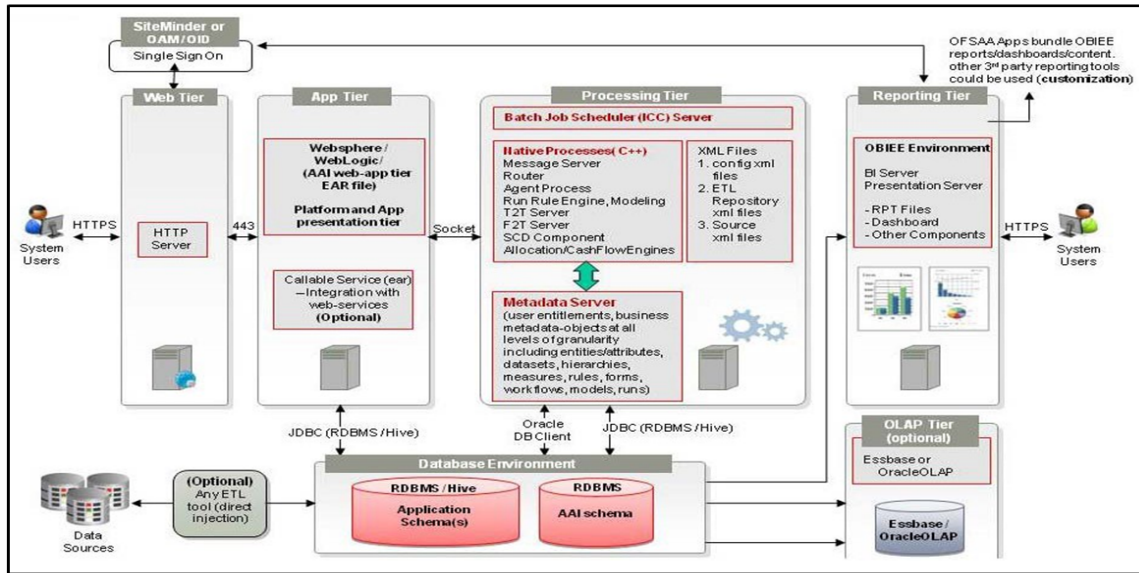
### Components of OFSAAI

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

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

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

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 [Oracle Financial Services Analytical Applications 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 the OFS CAP Pack Installation

This chapter includes the following topics:

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

## Installation Overview

This section gives an overview of the OFS CAP Pack Installation. [Figure 2–1](#) shows the order of procedures you must follow.

**Figure 2–1 Installation Overview**

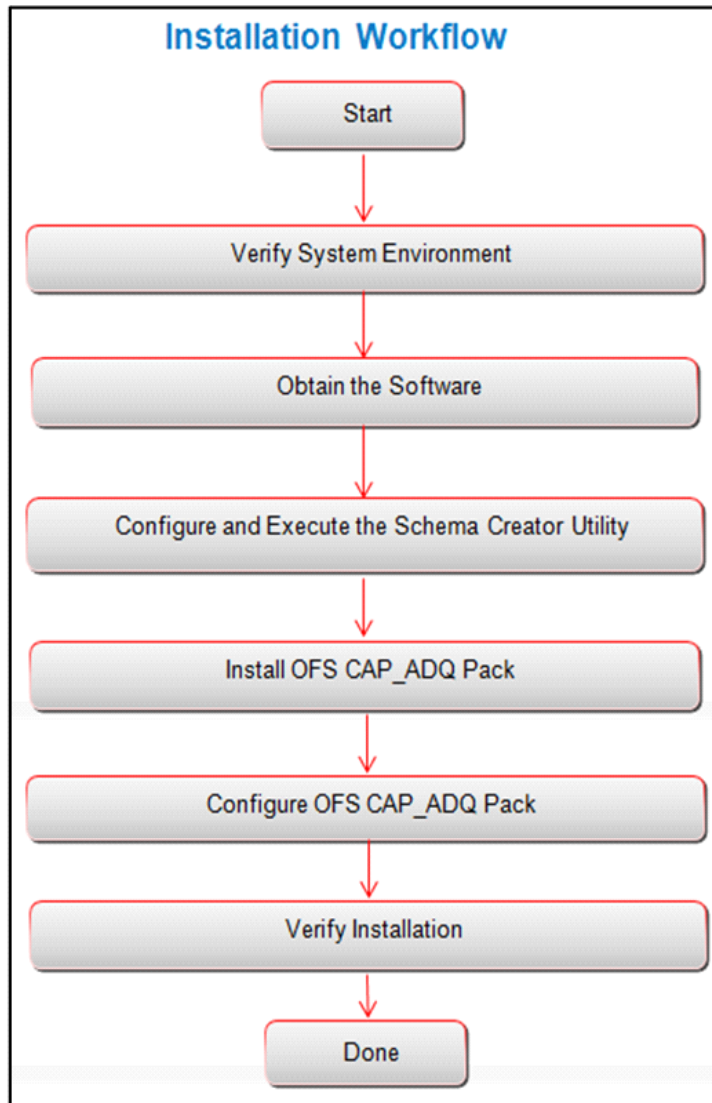


Table 2–1 provides additional information and links to specific documentation for each task in the flowchart.

**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 the 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	For instructions on creating the database schemas, see <a href="#">Configuring and Executing the Schema Creator Utility</a> .
Install OFS CAP Pack	For instructions on installing the OFS CAP Application Pack, see <a href="#">Installing the OFS CAP Application Pack</a> .

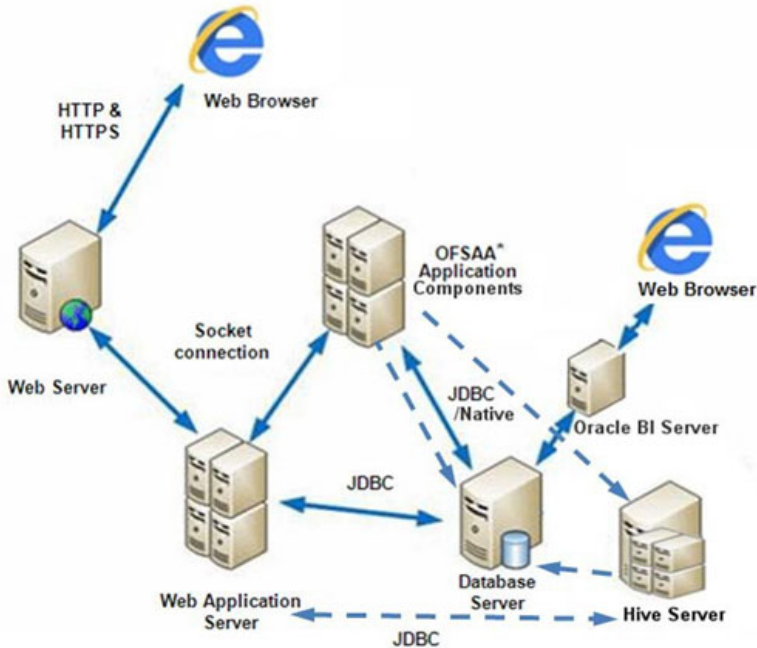
**Table 2-1 OFSAA Application Pack Installation Tasks and Descriptions**

Tasks	Details and Documentation
Configure OFS CAP Pack	For instructions on configuring the OFS CAP Application Pack, see <a href="#">Post Installation Configuration</a> .

## Deployment Topology

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

**Figure 2-2 Deployment Topology**



## Hardware and Software Requirements

This section describes the various Operating Systems, Database, Web Server, Web Application Server versions, and other variant details that this release of the OFS CAP Application Pack have been qualified.

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

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The following tables show the minimum hardware and software requirements for installing the OFS CAP 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)	<p>Red Hat Enterprise Linux or Oracle Linux Server Release 6 Update 6 to latest update version</p> <p>Red Hat Enterprise Linux or Oracle Linux Server Release 7 Update 1 to latest update version</p>
Oracle Solaris(SPARC) Solaris x86	<ul style="list-style-type: none"> <li>• Solaris 10 – Install the required OS patches. For more information, see <a href="#">Installing the Required Oracle Solaris 10 Patches</a>. Additionally, install the required runtime libraries. For more information, see <a href="#">Installing Only the Runtime Libraries on Oracle Solaris 10</a>.</li> <li>• Solaris 11 – Upgrade to Oracle Solaris 11.3 with SRU09 or higher. See <a href="https://docs.oracle.com/cd/E60778_01/html/E60743/gouaw.html#scrolltoc">https://docs.oracle.com/cd/E60778_01/html/E60743/gouaw.html#scrolltoc</a> to upgrade to SRU09 if you have a lower SRU version. Additionally, install the required runtime libraries. For more information, see <a href="#">Installing Only the Runtime Libraries on Oracle Solaris 11</a>.</li> </ul>
IBM AIX (POWERPC)	<ul style="list-style-type: none"> <li>• AIX 6.1 (TL 9 and above)</li> <li>• AIX 7.1 (TL 3 and above)</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: <p>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 an restart of the AIX server to pick up the new configuration. For more information refer IBM Support.</p> </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>• <code>yum install redhat-lsb-core</code></li> <li>• <code>yum install redhat-lsb</code></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 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</li> <li>• Oracle Database Server Enterprise Edition 12c Release 1 (12.1.0.1.0 +)- 64 bit RAC/ Non-RAC with/ without partitioning option</li> </ul> <p>** Note: See the “Additional Notes” section in the 806 Tech Matrix for details.</p> <ul style="list-style-type: none"> <li>• Oracle Database Server 12c Release 2 (12.2.0.1+) Enterprise Edition</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 Distribution of R version 3.1.1 (Optional)</li> <li>• Oracle R Distribution (ORD) 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>• Also for latest information, refer <a href="https://support.oracle.com/">https://support.oracle.com/</a>:                             <ul style="list-style-type: none"> <li>• 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>• Select Statement Throws ORA-01792 Error in 12c (Doc ID 1951689.1)</li> </ul> </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> </ul>															
<p><b>ORD and ORE versions compatible along with Oracle DB version</b></p> <table border="1"> <thead> <tr> <th>NO</th> <th>Oracle R Enterprise</th> <th>Open source R or Oracle R Distribution</th> <th>Oracle Database Enterprise Edition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1.5.1</td> <td>3.3.0</td> <td>11.2.0.4, 12.1.0.1, 12.1.0.2, 12.2.0.1</td> </tr> <tr> <td>2</td> <td>1.5.0</td> <td>3.2.0</td> <td>11.2.0.4, 12.1.0.1, 12.1.0.2</td> </tr> </tbody> </table>				NO	Oracle R Enterprise	Open source R or Oracle R Distribution	Oracle Database Enterprise Edition	1	1.5.1	3.3.0	11.2.0.4, 12.1.0.1, 12.1.0.2, 12.2.0.1	2	1.5.0	3.2.0	11.2.0.4, 12.1.0.1, 12.1.0.2
NO	Oracle R Enterprise	Open source R or Oracle R Distribution	Oracle Database Enterprise Edition												
1	1.5.1	3.3.0	11.2.0.4, 12.1.0.1, 12.1.0.2, 12.2.0.1												
2	1.5.0	3.2.0	11.2.0.4, 12.1.0.1, 12.1.0.2												
<p><b>OLAP</b></p> <table border="1"> <tr> <td>Oracle Hyperion Essbase</td> <td> <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> </td> </tr> <tr> <td>Oracle OLAP</td> <td> <ul style="list-style-type: none"> <li>• V 11.2.0.3+ with Oracle 11g Database</li> <li>• V 12.1.0.1+ with Oracle 12c Database</li> </ul> </td> </tr> </table>				Oracle Hyperion Essbase	<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>	Oracle OLAP	<ul style="list-style-type: none"> <li>• V 11.2.0.3+ with Oracle 11g Database</li> <li>• V 12.1.0.1+ with Oracle 12c Database</li> </ul>								
Oracle Hyperion Essbase	<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>														
Oracle OLAP	<ul style="list-style-type: none"> <li>• V 11.2.0.3+ with Oracle 11g Database</li> <li>• V 12.1.0.1+ with Oracle 12c Database</li> </ul>														
<p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• Oracle Hyperion Essbase &amp; Oracle OLAP is required only if you are using the OLAP feature of OFSAI. For Oracle OLAP, ensure that you have configured the Oracle Database server with OLAP option.</li> </ul>															

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

<b>Web Server/ Web Application Server</b>	
Oracle Linux / Red Hat Enterprise Linux/ IBM AIX Oracle Solaris	Oracle HTTP Server 11.1.1.7.1 or 11.1.1.9+ / Apache HTTP Server 2.2.x/ IBM HTTP Server 8.5.5 <ul style="list-style-type: none"> <li>• Oracle WebLogic Server 12.1.3+ (64 bit) / Oracle WebLogic Server 12.2.x (64 bit)</li> <li>• Apache Tomcat 8.0.25+ (64 bit)</li> <li>• IBM WebSphere Application Server 8.5.5.9.+ (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> </ul>	
<b>Big Data</b>	
Cloudera Distribution Hadoop 5.3.3	<ul style="list-style-type: none"> <li>• CDH Version 5.3.3</li> <li>• Hadoop-2.5.0+cdh5.3.3+844</li> <li>• Hive-0.13.1+cdh5.3.3+350</li> <li>• Sqoop1 V 1.4.5+cdh5.3.3+67</li> <li>• Sqoop2 V 1.99.4+cdh5.3.3+23</li> <li>• Oracle Loader For Hadoop (OLH) V 3.2</li> </ul>
Cloudera Distribution Hadoop 5.4.4	<ul style="list-style-type: none"> <li>• CDH Version –5.4</li> <li>• Hadoop-2.6.0+cdh5.4.4+597</li> <li>• Hive V 1.1.0+cdh5.4.4+152</li> <li>• Sqoop1 V 1.4.5+cdh5.4.4+101</li> <li>• Sqoop2 V 1.99.5+cdh5.4.4+36</li> </ul>
Cloudera Distribution Hadoop 5.8.4	<ul style="list-style-type: none"> <li>• CDH Version –5.8.4</li> <li>• Hadoop-2.6.0+cdh5.8.4+1801</li> <li>• Hive-1.1.0+cdh5.8.4+723</li> <li>• Sqoop-1.4.6+cdh5.8.4+100</li> <li>• Sqoop2-1.99.5+cdh5.8.4+42</li> </ul>
Cloudera Hive Connectors	Hive JDBC Connectors V 2.5.15 and V 2.5.18
Oracle R Advanced Analytics for Hadoop	Oracle R Advanced Analytics for Hadoop (ORAAH) 2.4.0 2.6.0/2.7.0.
Hadoop Security Protocol	<ul style="list-style-type: none"> <li>• Kerberos R release 1.6.1</li> <li>• Sentry-1.4.0</li> </ul>
<b>Desktop Requirements</b>	
Operating System	MS Windows 7, Windows 8, Windows 8.1, Windows 10

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

Browser	<ul style="list-style-type: none"> <li>Microsoft Internet Explorer 11.x (Compatibility Mode)</li> <li>Oracle Java plug-in 1.7.0+* (64-bit)</li> </ul> <p>Turn on Pop-up blocker settings. For more information, refer <a href="#">Setting up Internet Explorer</a></p> <ul style="list-style-type: none"> <li>Google Chrome 57.x</li> <li>Mozilla Firefox 52.x</li> </ul> <p>For Chrome and Firefox, Turn off Pop-up blocker settings by choosing "Always allow pop-ups for &lt;URL&gt;"</p>
Office Tools	<ul style="list-style-type: none"> <li>MS Office 2007/2010/2013/2016</li> <li>Adobe Acrobat Reader 10 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 like 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="#">Configuring the Infrastructure LDAP</a>.</li> <li>Open LDAP needs to be installed on MS Windows Server machine only.</li> </ul>	

## Configurations supported for Java 8

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

Operating System	
Oracle Linux / Red Hat Enterprise Linux (x86-64)	<p>Red Hat Enterprise Linux or Oracle Linux Server Release 6 Update 6 to latest update version</p> <p>Red Hat Enterprise Linux or Oracle Linux Server Release 7 Update 1 to latest update version</p>
Oracle Solaris(SPARC)/ Solaris x86	<ul style="list-style-type: none"> <li>Solaris 10 – Install the required OS patches. For more information, see <a href="#">Installing the Required Oracle Solaris 10 Patches</a>. Additionally, install the required runtime libraries. For more information, see <a href="#">Installing Only the Runtime Libraries on Oracle Solaris 10</a>.</li> <li>Solaris 11 – Upgrade to Oracle Solaris 11.3 with SRU09 or higher. See <a href="https://docs.oracle.com/cd/E60778_01/html/E60743/gouaw.html#scrolltoc">https://docs.oracle.com/cd/E60778_01/html/E60743/gouaw.html#scrolltoc</a> to upgrade to SRU09 if you have a lower SRU version. Additionally, install the required runtime libraries. For more information, see <a href="#">Installing Only the Runtime Libraries on Oracle Solaris 11</a>.</li> </ul>
IBM AIX (POWERPC)	<ul style="list-style-type: none"> <li>AIX 6.1 (TL 9 and above)</li> <li>AIX 7.1 (TL 3 and above)</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 an 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>	<p>Oracle Java Runtime Environment (JRE) 1.8.x - 64 bit</p>
<p>IBM AIX</p>	<p>IBM AIX Runtime, Java Technology JRE 1.8.x - 64 bit</p>
<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.**                      ** Note: See the “Additional Notes” section in the 806 Tech Matrix for details.</li> <li>Oracle Database Server 12c Release 2 (12.2.0.1+) Enterprise Edition</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 (ORD) version 3.2.0/3.3.0 (Optional)</li> <li>Oracle R Enterprise (Server) version 1.4.1 (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>	

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

<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="https://support.oracle.com/">https://support.oracle.com/</a>:             <ul style="list-style-type: none"> <li>• 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>• Select Statement Throws ORA-01792 Error in 12c (Doc ID 1951689.1)</li> </ul> </li> </ul> <p>Oracle R Enterprise 1.5 and 1.5.1 requires Oracle Database Enterprise Edition 11.2.0.4/12.1.0.1/12.1.0.2/12.2.0.1.</p> <p><b>ORD and ORE versions compatible along with Oracle DB version</b></p> <table border="1"> <thead> <tr> <th>No</th> <th>Oracle R Enterprise</th> <th>Open source R or Oracle R Distribution</th> <th>Oracle Database Enterprise Edition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1.5.1</td> <td>3.3.0</td> <td>11.2.0.4, 12.1.0.1, 12.1.0.2, 12.2.0.1</td> </tr> <tr> <td>2</td> <td>1.5.0</td> <td>3.2.0</td> <td>11.2.0.4, 12.1.0.1, 12.1.0.2</td> </tr> </tbody> </table>				No	Oracle R Enterprise	Open source R or Oracle R Distribution	Oracle Database Enterprise Edition	1	1.5.1	3.3.0	11.2.0.4, 12.1.0.1, 12.1.0.2, 12.2.0.1	2	1.5.0	3.2.0	11.2.0.4, 12.1.0.1, 12.1.0.2
No	Oracle R Enterprise	Open source R or Oracle R Distribution	Oracle Database Enterprise Edition												
1	1.5.1	3.3.0	11.2.0.4, 12.1.0.1, 12.1.0.2, 12.2.0.1												
2	1.5.0	3.2.0	11.2.0.4, 12.1.0.1, 12.1.0.2												
<p><b>Note:</b></p> <p>Oracle Hyperion Essbase &amp; Oracle OLAP is required only if you are using the OLAP feature of OFSAAI. For Oracle OLAP, ensure that you have configured the Oracle Database server with OLAP option.</p>															
<p>Web Server/ Web Application Server</p> <table border="1"> <tr> <td>Oracle Linux / Red Hat Enterprise Linux / IBM AIX</td> <td>Oracle HTTP Server 11.1.1.7.1 or 11.1.1.9+ / Apache HTTP Server 2.2.x/ IBM HTTP Server 8.5.5</td> </tr> <tr> <td>Oracle Solaris</td> <td> <ul style="list-style-type: none"> <li>• Oracle WebLogic Server 12.1.3+ (64 bit) / Oracle WebLogic Server 12.2.x (64 bit)</li> <li>• Apache Tomcat 8.0.25+ (64 bit)</li> <li>• IBM WebSphere Application Server 8.5.5.9.+ (64 bit)</li> </ul> </td> </tr> </table>				Oracle Linux / Red Hat Enterprise Linux / IBM AIX	Oracle HTTP Server 11.1.1.7.1 or 11.1.1.9+ / Apache HTTP Server 2.2.x/ IBM HTTP Server 8.5.5	Oracle Solaris	<ul style="list-style-type: none"> <li>• Oracle WebLogic Server 12.1.3+ (64 bit) / Oracle WebLogic Server 12.2.x (64 bit)</li> <li>• Apache Tomcat 8.0.25+ (64 bit)</li> <li>• IBM WebSphere Application Server 8.5.5.9.+ (64 bit)</li> </ul>								
Oracle Linux / Red Hat Enterprise Linux / IBM AIX	Oracle HTTP Server 11.1.1.7.1 or 11.1.1.9+ / Apache HTTP Server 2.2.x/ IBM HTTP Server 8.5.5														
Oracle Solaris	<ul style="list-style-type: none"> <li>• Oracle WebLogic Server 12.1.3+ (64 bit) / Oracle WebLogic Server 12.2.x (64 bit)</li> <li>• Apache Tomcat 8.0.25+ (64 bit)</li> <li>• IBM WebSphere Application Server 8.5.5.9.+ (64 bit)</li> </ul>														
<p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• OFSAA Infrastructure web component deployment on Oracle WebLogic Server with Oracle JRockit is not supported.</li> </ul> <p>For deployment on Oracle WebLogic Server 12.1.3+ (64 bit) with Java 8, download and install patch 18729264 from <a href="https://support.oracle.com/">https://support.oracle.com/</a>.</p>															
<p><b>Big Data</b></p> <table border="1"> <tr> <td>Cloudera Distribution Hadoop 5.3.3</td> <td> <ul style="list-style-type: none"> <li>• CDH Version 5.3.3</li> <li>• Hadoop-2.5.0+cdh5.3.3+844</li> <li>• Hive-0.13.1+cdh5.3.3+350</li> <li>• Sqoop1 V 1.4.5+cdh5.3.3+67</li> <li>• Sqoop2 V 1.99.4+cdh5.3.3+23</li> <li>• Oracle Loader For Hadoop (OLH) V 3.2</li> </ul> </td> </tr> </table>				Cloudera Distribution Hadoop 5.3.3	<ul style="list-style-type: none"> <li>• CDH Version 5.3.3</li> <li>• Hadoop-2.5.0+cdh5.3.3+844</li> <li>• Hive-0.13.1+cdh5.3.3+350</li> <li>• Sqoop1 V 1.4.5+cdh5.3.3+67</li> <li>• Sqoop2 V 1.99.4+cdh5.3.3+23</li> <li>• Oracle Loader For Hadoop (OLH) V 3.2</li> </ul>										
Cloudera Distribution Hadoop 5.3.3	<ul style="list-style-type: none"> <li>• CDH Version 5.3.3</li> <li>• Hadoop-2.5.0+cdh5.3.3+844</li> <li>• Hive-0.13.1+cdh5.3.3+350</li> <li>• Sqoop1 V 1.4.5+cdh5.3.3+67</li> <li>• Sqoop2 V 1.99.4+cdh5.3.3+23</li> <li>• Oracle Loader For Hadoop (OLH) V 3.2</li> </ul>														

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

Cloudera Distribution Hadoop –5.4.4	<ul style="list-style-type: none"> <li>• CDH Version –5.4</li> <li>• Hadoop-2.6.0+cdh5.4.4+597</li> <li>• Hive V 1.1.0+cdh5.4.4+152</li> <li>• Sqoop1 V 1.4.5+cdh5.4.4+101</li> <li>• Sqoop2 V 1.99.5+cdh5.4.4+36</li> </ul>
Cloudera Distribution Hadoop 5.8.4	<ul style="list-style-type: none"> <li>• CDH Version –5.8.4</li> <li>• Hadoop-2.6.0+cdh5.8.4+1801</li> <li>• Hive-1.1.0+cdh5.8.4+723</li> <li>• Sqoop-1.4.6+cdh5.8.4+100</li> <li>• Sqoop2-1.99.5+cdh5.8.4+42</li> </ul>
Cloudera Hive Connectors	Hive JDBC Connectors V 2.5.15 and V 2.5.18
Oracle R Advanced Analytics for Hadoop	Oracle R Advanced Analytics for Hadoop (ORAAH) 2.6.0/2.7.0.
Hadoop Security Protocol	<ul style="list-style-type: none"> <li>• Kerberos R release 1.6.1</li> <li>• Sentry-1.4.0</li> </ul>
<b>Desktop Requirements</b>	
Operating System	Microsoft Windows 7/ Windows 10
Browser	<ul style="list-style-type: none"> <li>• Microsoft Internet Explorer 11.x (Compatibility Mode)</li> <li>• Oracle Java plug-in 1.7.0+* (64- bit)</li> </ul> <p>Turn on pop-up blocker settings. For more information, refer <a href="#">Setting up Internet Explorer</a></p> <ul style="list-style-type: none"> <li>• Google Chrome 57.x</li> <li>• Mozilla Firefox 52.x</li> </ul> <p>For Chrome and Firefox, Turn off Pop-up blocker settings by choosing "Always allow pop-ups for &lt;URL&gt;"</p>
Office Tools	<ul style="list-style-type: none"> <li>• MS Office 2007/2010/2013/2016</li> <li>• Adobe Acrobat Reader 10 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 like MS Active Directory.
<p><b>Note:</b></p> <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="#">Configuring the Infrastructure LDAP</a>.</li> </ul> <p>Open LDAP needs to be installed on MS Windows Server machine only.</p>	

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

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

**Table 2–4 Recommended Software Combinations**

Operating System	Database	Web Application Server	Web Server
Oracle Linux 6.6 / 7.1	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 / 7.1	Oracle Database	IBM WebSphere Application Server /Apache Tomcat Server	IBM HTTP Server/ Apache HTTP Server

## Verifying the 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 CAP Applications Pack.

- [GUI Mode](#)
- [SILENT Mode](#)

### GUI Mode

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

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**Note:** For more information on configuration required for GUI Mode installation, see [Configurations for GUI Mode Installation](#).

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### 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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**Note:** For more information on configuration required for SILENT Mode installation, see Configuration for [SILENT Mode Installation](#).

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## Preparing for Installation

This chapter provides necessary information to review before installing the OFS CAP v8.0.6.0.0. This chapter includes the following topics:

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

### Installer and Installation Prerequisites

[Table 3–1](#) mentions the list of prerequisites required before beginning the installation for the OFS CAP 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 in .profile to be set to include the Java Runtime Environment absolute path. The path should include java version (java 7 or java 8) based on the configuration.</li> </ul> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>Ensure the absolute path to JRE/bin is set at the beginning of PATH variable.</li> <li>For example, PATH=/usr/java/jre1.7/bin:\$ORACLE_HOME/bin:\$PATH</li> <li>Ensure no SYMBOLIC links to JAVA installation is being set in the PATH variable.</li> </ul>
	Oracle Database Settings	<p><b>Oracle Database Server</b></p> <ul style="list-style-type: none"> <li>TNS_ADMIN to be set in .profile pointing to appropriate tnsnames.ora file</li> <li>Enable Transparent Data Encryption (TDE) and/ or Data Redaction**</li> <li>** Note: For more information, see Appendix R: Enabling TDE, Data Redaction and the Corresponding Settings in OFSAA.</li> </ul> <p><b>OFSAA Processing Server</b></p> <ul style="list-style-type: none"> <li>ORACLE_HOME to be set in .profile pointing to appropriate Oracle Client installation</li> <li>PATH in .profile to be set to include appropriate \$ORACLE_HOME/bin path</li> <li>Ensure to add an entry (with SID/ SERVICE NAME) in the tnsnames.ora file on the OFSAA server.</li> </ul>
	Oracle Essbase Settings	<ul style="list-style-type: none"> <li>ARBORPATH, ESSBASEPATH, and HYPERION_HOME to be set in the .profile 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 installation files will be installed.</li> <li>Set 755 permission on 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 different mount or under a different user profile.</li> <li>Set 777 permission on this directory.</li> </ul>
	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: locale -a   grep -i 'en_US.utf'</p>
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> <li>OPEN CURSORS limit to be greater than 1000</li> </ul>

**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></p> <ul style="list-style-type: none"> <li>Refer <a href="#">Configuring the Web Server</a> section for WebSphere Profile Creation and WebLogic Domain Creation.</li> <li>For deployment on Oracle WebLogic Server 12.1.3+ (64 bit) with Java 8, download and install patch <b>18729264</b> from <a href="https://support.oracle.com/">https://support.oracle.com/</a>.</li> </ul>
Web Server	Apache HTTP Server/ Oracle HTTP Server/ IBM HTTP Server	<p>This is an optional requirement. HTTP Server Installation to be present. You will be required to enter the Web Server IP/Hostname and Port details during installation.</p> <p><b>Note:</b> Refer <a href="#">Configuring the 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>Refer to section <a href="#">Installing Oracle R distribution and Oracle R Enterprise (ORE)</a> for more details.</li> </ul>
	OFSAA	<ul style="list-style-type: none"> <li>Download the consolidated one-off patch 28079607 from <a href="https://support.oracle.com">https://support.oracle.com</a>. Refer to the Readme available with the patch for further instructions on installing the patch.</li> </ul>
OFS AAI	One-off	<p>Download the consolidated one- off patch for bug number 27938294 from <a href="http://support.oracle.com/">http://support.oracle.com/</a>.</p> <p>If the OFS CAP application is installed on Solaris, then this patch needs to be applied after AAI and the OFS CAP application installation is successfully completed, this step is mandatory.</p> <p>Download the compatibility patch 28033582 from My Oracle Support, which needs to be mandatorily applied. This patch enables you to upgrade selected packs in your OFSAA instance to 8.0.6.0.0 and makes the existing packs from earlier versions compatible with 8.0.6.0.0</p>

---

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

---

## Obtaining the Software

This release of OFS CAP Application Pack v8.0.6.0.0 can be downloaded from My Oracle Support (<https://support.oracle.com>) by searching for the patch ID **28073868** under Patches & Upgrades. You need to have a valid Oracle account in order to download the software.

## Common Installation Tasks

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

This section includes the following topics:

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

## Configurations for GUI Mode Installation

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

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

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

### Syntax:

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

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

For example, 10.11.12.13:0.0 or myhostname:0.0

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

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

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

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**Note:**

- Assign **755** user permission to the installation directory.
  - Assign **775** user permission to the staging directory.
- 
- 

## Downloading and Copying the OFS CAP Applications Pack Installer

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

- To download the OFS CAP Applications Pack, you must login to My Oracle Support (<https://support.oracle.com>) and search patch ID **28073868** under Patches & Upgrades. 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 CAP installation.

Log in to My Oracle Support, search for the **33663417** Mandatory Patch in the **Patches & Updates** Tab and download it.

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**Note:**

On the 10th of December 2021, Oracle released Security Alert CVE-2021-44228 in response to the disclosure of a new vulnerability affecting Apache Log4J before version 2.15. The application of the **33663417** Mandatory Patch fixes the issue.

For details, see the My Oracle Support Doc ID 2827801.1.

Ensure that you reapply the 33663417 Mandatory Patch whenever you install or upgrade the application, or apply an incremental patch.

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## Copying and Extracting the Software

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

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

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1. Download the unzip utility (OS specific) `unzip_<os>.Z` and copy it in Binary mode to the directory that is included in your PATH variable. If you already have the unzip utility to extract the contents of the downloaded archive, skip to the next step.
2. Uncompress the unzip installer file using the command:

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

---

---

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

---

---

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

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

For example, `chmod 751 unzip_sparc`

4. Extract the contents of the OFS CAP Application Pack 8.0.6.0.0 in Download Directory installer archive file using the following command:

```
unzip OFS_CAP_ADQ_8.0.6.0.0_<OperatingSystem>.zip
```

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

```
chmod -R 755 OFS_CAP_PACK
```

## Setting Up the Web Application Server

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

## 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 and Release 1.5.1 at Oracle R Enterprise Documentation Library.

### ORD and ORE versions compatible along with Oracle DB version

**Table 3–2**

NO	Open source R or Oracle R Distribution	Oracle Database Enterprise Edition
1	3.3.0	11.2.0.4, 12.1.0.1, 12.1.0.2, 12.2.0.1
2	3.2.0	11.2.0.4, 12.1.0.1, 12.1.0.2

- 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 3.3.0 and version 1.5.1 with ORD 3.3.1.

---

**Note:** Oracle R Enterprise 1.5 and 1.5.1 requires Oracle Database Enterprise Edition 11.2.0.4/ 12.1.0.1/12.1.0.2/12.2.0.1.

If you use ORE 1.5 or ORE 1.5.1 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.

---

**Note:** For configuration and installation of R packages for OREC refer to sections 1.4.2.2, 1.4.2.3 and 1.4.2.4 of OFSCAP 8.0.2.0.0 Installation Guide.

## Installing Open R

Open R or Oracle R distribution must be installed in the OFSAA server where OFSCAP is installed. The R versions supported are 3.1.1. See Oracle® R Enterprise Installation and Administration Guide for Windows, Linux, Solaris and AIX, Release 1.4 at Oracle R Enterprise Documentation Library to install Oracle R distribution.

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**Note:** If you have super user privileges, install R into **/bin** or **/usr/bin** directory to enable access for all users. If you are not the super user, you can run R in your home directory.

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---

Include the R\_HOME pointing to the R-3.1.1 installation directory and add \$R\_HOME/bin to PATH variable in the .profile file.

## Installing Open R Libraries

Install the following R packages:

a. DBI: DBI\_0.6.tar.gz

<https://cran.r-project.org/web/packages/DBI/index.html>

b. ROracle: ROracle\_1.3-1.tar.gz

<https://cran.r-project.org/web/packages/ROracle/index.html>

c. log4r: log4r\_0.2.tar.gz

<https://cran.rstudio.com/web/packages/log4r/index.html>

d. glpk: glpk-4.55.tar.gz

<http://ftp.gnu.org/gnu/glpk/glpk-4.55.tar.gz>

e. Rglpk : Rglpk\_0.6-3.tar.gz

[http://cran.r-project.org/src/contrib/Rglpk\\_0.6-3.tar.gz](http://cran.r-project.org/src/contrib/Rglpk_0.6-3.tar.gz)

## Creating an Oracle Wallet

The Oracle Wallet is a directory on the server where the passwords are written (in an encrypted form) by the Oracle `mkstore` command.

Perform the following steps to create an Oracle Wallet with the name `dbwallet` pointing to the atomic schema:

1. Create a directory for the Oracle Wallet location:

```
mkdir -p <wallet_location>
```

---

---

**Note:** The Oracle Wallet can be created in any location.

---

---

Use the `mkstore` command on the created directory:

```
mkstore -wrl <wallet_location> - create
```



---

---

**Note:** You will be prompted for a password to secure the wallet. Create a secure password, and record the password in your central password store.

---

---

2. Add the following lines to the `sqlnet.ora` configuration file:

```
SQLNET.WALLET_OVERRIDE = TRUE
WALLET_LOCATION= (
SOURCE= (METHOD=FILE)
METHOD_DATA= (DIRECTORY=<wallet_location>)
)
```

3. Create an alias in the `tnsnames.ora` file by the name `dbwallet` pointing to the database where the atomic schema is present. This is used whenever you log in using the stored credentials. Only one password can be stored in the wallet per TNS alias:

```
# Connection string for dbwallet Oracle Wallet
dbwallet =
(DESCRIPTION =
(AADDRESS= (PROTOCOL=TCP) (HOST=`hostname`-vip) (PORT=XXXX))
(CONNECT_DATA= (SID=YYYY_ZZ)
)
```

4. Add a username and password to an existing wallet using the `mkstore` command with the `-createCredential` option as follows:

```
mkstore -wrl <wallet_location> -createCredential dbwallet <username>
<password>
```

5. Check if your wallet is created and you have stored a username and password inside it using the TNS alias:

```
sqlplus /@dbwallet
```



---

---

## Installing the OFS CAP Application Pack

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

This chapter includes the following sections:

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

### Schema Creator Utility

Creating database users/schemas is one of the primary steps in the complete OFSAA installation. This release of OFSAA provides a utility to quickly get started with the installation by creating database User(s)/ Schema(s), assign the necessary GRANT(s), creating the required entities in these 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 the Schema Creator Utility](#)
- [Selecting Execution Modes in the Schema Creator Utility](#)
- [Selecting Execution Options in the Schema Creator Utility](#)

### About the Schema Creator Utility

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

The following are the types of schemas can be configured in the OFSAA:

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

---

---

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

---

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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.

---

---

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

---

---

**Note:** There can be multiple SANDBOX schemas per OFSAA Instance.

---

---

## Selecting Execution Modes in the 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 DDLs for User, Objects, and Grants. If you have the SYSDBA privileges you can execute the Schema Creator Utility in Online mode and thereby create the Users, Objects, and Grants during the execution process.

---

---

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

---

---

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

For more information, refer [Configuring the OFS\\_CAP\\_ADQ\\_SCHEMA\\_IN.XML file](#).

3. Do not modify the `CAP_ADQ_SCHEMA_OUT.XML` file generated after the execution of this utility.
- 
- 

## Selecting Execution Options in the Schema Creator Utility

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

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

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

Optionally, for HIVE installation, the prerequisites you must have before configuring the Schema Creator Utility are:

- HIVE connection credentials (For example, the Kerberos connection properties).
- Hostname/IP of the HIVE Server installation.

### Configuring the Schema Creator Utility

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

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

---

---

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

---

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### Executing the Schema Creator Utility

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

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

- [Executing the Schema Creator Utility with -s option](#)
- [Executing the Schema Creator Utility while Installing Subsequent Applications Pack](#)

### Executing the Schema Creator Utility in Online Mode

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

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

1. Log in to the system as a non-root user.
2. Navigate to the following folder path: `OFS_CAP_ADQ_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.  
or  
Enter N/ n to quit script creation.
5. Enter the DB Username with SYSDBA Privileges. For example: SYS as SYSDBA.
6. Enter the User Password.

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

```

/scratch/ofsaacbie/OFS_CAP_ADQ_PACK/schema_creator/bin>ls
osc.sh
/scratch/ofsaacbie/OFS_CAP_ADQ_PACK/schema_creator/bin>./osc.sh
Executing profile
.profile executed
=====
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/oracle/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
Enter the User Password:
Oracle Client version : 11.2.0.3.0. Status : SUCCESS
Oracle Server version Current value : 11.2.0.2.0. Status : SUCCESS
DB specific Validation Completed. Status : SUCCESS

```

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.

or

Enter N/n to quit schema creation.

The following message is displayed:

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

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

```

=====
Schema Creation Started
=====
Checking OFSAA installation...
OFSAA installation not found.
Validating the dat file OFS_TR_CFG.dat started...
Successfully validated OFS_TR_CFG.dat file
Validating the input XML file.../scratch/tr80dev/INSTALLER/OFS_TR/installer/OFS_TR_PACK/schema_creator/conf/OFS_TR_SCHEMA_IN.xml
Input XML file validated successfully.
=====
Validating Connection URL ...jdbc:oracle:thin:@10.184.148.5:1521:ora12c
Successfully connected to User - sys as sysdba URL - jdbc:oracle:thin:@10.184.148.5:1521:ora12c
Connection URL successfully validated...
You have chosen to install this Application Pack on "tre_dev80atm" ATOMIC schema. Do you want to proceed? (Y/N)
Y

```

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

Or

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

**Figure 4–3 Schema Creator Utility - Online**

```

=====
Executing TableSpace Scripts started...
Executing TableSpace Scripts completed...
=====
Creating Schemas started...
CONFIG User st_cpfinconf successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
Grants creation scripts execution started...
Grants creation scripts execution completed...
Successfully connected to User - st_cpfinconf URL - jdbc:oracle:thin:@10.184.151.231:1521:QAERM
Scripts execution for CONFIG schema started ...
Scripts execution for CONFIG schema completed ...
User st_cpfinconf details updated into the dbmaster table
Skipping the creation of AAAI/IFE app.
User st_cpfinatom details updated into the dbmaster table
User st_cpfinatom is successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
User st_cpfinatom already exists in dbmaster table.
User st_cpfinatom already exists in dbmaster table.
User st_cpfinatom already exists in dbmaster table.
User st_cpfinatom already exists in dbmaster table.
User st_cpfinatom already exists in dbmaster table.
User st_cpfinatom already exists in dbmaster table.
User st_cpfinrpsnd details updated into the dbmaster table
User st_cpfinrpsnd is successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
User st_cpfinorsnd details updated into the dbmaster table
User st_cpfinorsnd is successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
User st_cpfincon details updated into the dbmaster table
User st_cpfincon is successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
User st_cpfinsec details updated into the dbmaster table
User st_cpfinsec is successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
User st_cpfincof details updated into the dbmaster table
User st_cpfincof is successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
Creating Schemas completed ...
=====
Roles creation scripts execution started ...
Executing ... /scratch/ofsaobie/OFS_CAP_ADQ_PACK/schema_creator/dist/roles/OFS_CAP_ADQ_createroles.sql
Roles creation scripts execution completed ...
=====
Grants creation scripts execution started...
Grants creation scripts execution completed...
=====
Schemas Creation Completed
=====
Schema Creator executed Successfully.Please proceed with the installation.
/scratch/ofsaobie/OFS_CAP_ADQ_PACK/schema_creator/bin>

```

---



---

**Note:**

- On successful execution of schema creator utility, the console displays the following status message:  
*Schema Creator executed successfully. Please proceed with the installation.*
  - Refer log file in `OFS_CAP_ADQ_PACK/schema_creator/logs` directory for execution status. In case of 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 has to be executed manually by logging in as a database user with SYSDBA privileges. The SQL file contains the creation of Schemas, Schema Objects, Tablespaces, Grants, and Roles.

### Prerequisites

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

- SELECT ON DBA\_ROLES
- SELECT ON DBA\_USERS
- SELECT ON DBA\_DIRECTORIES
- SELECT ON DBA\_TABLESPACES
- CREATE SESSION

---

---

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

---

---

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

1. Log in to the system as a non-root user.
2. Navigate to the *OFS\_CAP\_ADQ\_PACK/schema\_creator/bin* folder.
3. Execute the osc.sh file using the following command:

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

4. The following message is displayed:

*You have chosen OFFLINE mode. Triggering the utility in OFFLINE mode will generate the script. Do you wish to proceed? (Y/y or N/n).*

5. Enter Y /y to generate the script.

or

Enter N/n to quit the schema creation.

6. Enter the DB Username with SELECT privileges.
7. Enter the User Password.



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

```

$ ls -lrt
total 16
-rwxrwxrwx 1 ofsaapp 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.

Or

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

The following message is displayed:

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

**Figure 4–5 Schema Creation - Offline Mode**

```

Oracle Client version : 11.2.0.4.0. Status : SUCCESS
Oracle Server version Current value : 11.2.0.4.0. Status : SUCCESS
DB specific Validation Completed. Status : SUCCESS
=====
Generating Schema Creation Scripts Started
=====
Checking OFSRA installation...
OFSAA installation not found.
Validating the dat file OFS_CAP_ADQ_CFG.dat started...
Successfully validated OFS_CAP_ADQ_CFG.dat file
Validating the input XML file.../scratch/ofsaapp/OFS_CAP_ADQ_PACK/schema_creator/conf/OFS_CAP_ADQ_SCHEMA_IN.xml
Input XML file validated successfully.
=====
Validating Connection URL ...jdbc:oracle:thin:@ofss222466:1521:MEDIADB
Successfully connected to User - sys as SYSDBA URL - jdbc:oracle:thin:@ofss222466:1521:MEDIADB
Connection URL successfully validated...
You have chosen to install this Application Pack on "dev_ofsaatmsln2" ATOMIC schema. Do you want to proceed? (Y/N)

```

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

Or

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

**Figure 4-6 Schema Creator Utility - Offline**

```

=====
Generating TableSpace creation Scripts started...
Generating TableSpace creation Scripts completed...
=====
Generating Schema creation scripts started...
CONFIG User dev_ofsaacsonfln2 creation script generated successfully on Default TableSpace : USERS on Temp TableSpace : TEMP
Generation of grants creation scripts started...
Generation of grants creation scripts completed...
Scripts Generation for CONFIG schema started ...
Scripts Generation for CONFIG schema completed ...
User dev_ofsaacsonfln2 details updated into the dbmaster table
Skipping the creation of AAAL/IFE app.
User dev_ofsaaatm3ln2 details updated into the dbmaster table
User dev_ofsaaatm3ln2 creation script generated successfully on Default TableSpace : USERS on Temp TableSpace : TEMP
User dev_ofsaaatm3ln2 creation is skipping as the user is already created.
User dev_ofsaaatm3ln2 creation is skipping as the user is already created.
User dev_ofsaaatm3ln2 creation is skipping as the user is already created.
User dev_ofsaaatm3ln2 creation is skipping as the user is already created.
User dev_ofsaaatm3ln2 creation is skipping as the user is already created.
User dev_ofsaaatm3ln2 details updated into the dbmaster table
User dev_ofsaaatm3ln2 creation script generated successfully on Default TableSpace : USERS on Temp TableSpace : TEMP
User dev_ofsaaatm3ln2 creation is skipping as the user is already created.
User dev_ofsaaatm3ln2 creation is skipping as the user is already created.
User dev_ofsaaatm3ln2 creation is skipping as the user is already created.
User dev_ofsaaatm3ln2 details updated into the dbmaster table
User dev_ofsaaatm3ln2 creation script generated successfully on Default TableSpace : USERS on Temp TableSpace : TEMP
User dev_ofsaaatm3ln2 creation is skipping as the user is already created.
User dev_ofsaaatm3ln2 creation is skipping as the user is already created.
User dev_ofsaaatm3ln2 details updated into the dbmaster table
User dev_ofsaaatm3ln2 creation script generated successfully on Default TableSpace : USERS on Temp TableSpace : TEMP
User dev_ofsaaatm3ln2 creation is skipping as the user is already created.
User dev_ofsaaatm3ln2 creation is skipping as the user is already created.
User dev_ofsaaatm3ln2 details updated into the dbmaster table
User dev_ofsaaatm3ln2 creation script generated successfully on Default TableSpace : USERS on Temp TableSpace : TEMP
Generating Schema creation scripts completed...
=====
Generating Roles creation Scripts started...
Executing ... /scratch/ofsaapp/OFS_CAP_ADQ_PACK/schema_creator/dist/roles/OFS_CAP_ADQ_createroles.sql
Generating Roles creation Scripts completed...
=====
Generating Grants creation scripts started...
Generating Grants creation scripts completed...
=====
Generating Schema Creation Scripts Completed
=====
Schema Creator executed Successfully.Please execute /scratch/ofsaapp/OFS_CAP_ADQ_PACK/schema_creator/sysdba_output_scripts.sql before proceeding with the installation.
    
```

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

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

11. Navigate to the directory:  
OFS\_CAP\_ADQ\_PACK/schema\_creator
12. Log in to SQLPLUS with a user having SYSDBA privileges.
13. Execute the sysdba\_output\_scripts.sql file using the following command:

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

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

**Note:** See sysdba\_output\_scripts.log file for execution status. In case of any errors, contact Oracle Support Services. If there are no errors in the execution, this log file is empty.

### Executing the Schema Creator Utility with -s option

If you intend to run the OFS CAP 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\_CAP\_ADQ\_PACK/schema\_creator/conf/OFS\_CAP\_ADQ\_SCHEMA\_IN.xml in text editor.
2. Set the value for attribute "INFODOM" of <SCHEMA> tag(s) to specify a specific Information Domain name. By default, the value is empty and the utility will derive the Information Domain name. If the attribute value is set, the utility/installer will configure the Information Domain against this <SCHEMA>.
3. Execute the utility with -s option.

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

**Figure 4–7 Schema Creator Utility with -s option**

```

/scratch/ofsaebas/OFS_CAP_ADQ_PACK/schema_creator/bin>ls
osc.sh
/scratch/ofsaebas/OFS_CAP_ADQ_PACK/schema_creator/bin>./osc.sh -s
Executing profile
Executing profile
.profile executed
=====
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/oracle/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
Enter the User Password:
Oracle Client version : 11.2.0.3.0. Status : SUCCESS
Oracle Server version Current value : 11.2.0.2.0. Status : SUCCESS
DB specific Validation Completed. Status : SUCCESS
=====
Schema Creation Started
=====
Checking OFSAA installation...
OFSAA installation not found.
Validating the dat file OFS CAP ADQ CFG.dat started...
Successfully validated OFS CAP ADQ CFG.dat file
Validating the input XML file.../scratch/ofsaebas/OFS_CAP_ADQ_PACK/schema_creator/conf/OFS_CAP_ADQ_SCHEMA_IN.xml
Input XML file validated successfully.
=====
Validating Connection URL ...jdbc:oracle:thin:@10.184.151.231:1521:QAERM
Successfully connected to User - sys as SYSDBA URL - jdbc:oracle:thin:@10.184.151.231:1521:QAERM
Connection URL successfully validated...
You have chosen to install this Application Pack on "sit_cpsilatcm" ATOMIC schema. Do you want to proceed? (Y/N)
Y
You have chosen to install this Application Pack on INFODOM "cpsilinf". Do you want to proceed? (Y/N)
Y
=====
Executing TableSpace Scripts started...
Executing TableSpace Scripts completed...
=====
Creating Schemas started...
CONFIG User sit_cpsilconf successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
Grants creation scripts execution started...
Grants creation scripts execution completed...
Successfully connected to User - sit_cpsilconf URL - jdbc:oracle:thin:@10.184.151.231:1521:QAERM
Scripts execution for CONFIG schema started ...

```

---



---

**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`
- 
- 

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

**Figure 4–8 Schema Creator Utility with -s option**

```

User sit_cpasilconf details updated into the dbmaster table
Skipping the creation of AAAI/IPE app.
User sit_cpasilatom details updated into the dbmaster table
User sit_cpasilatom is successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
User sit_cpasilatom already exists in dbmaster table.
User sit_cpasilatom already exists in dbmaster table.
User sit_cpasilatom already exists in dbmaster table.
User sit_cpasilatom already exists in dbmaster table.
User sit_cpasilatom already exists in dbmaster table.
User sit_cpasilatom already exists in dbmaster table.
User sit_cpasilrpsnd details updated into the dbmaster table
User sit_cpasilrpsnd is successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
User sit_cpasilrpsnd details updated into the dbmaster table
User sit_cpasilrpsnd is successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
User sit_cpasilrpsnd details updated into the dbmaster table
User sit_cpasilrpsnd is successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
User sit_cpasilcsec details updated into the dbmaster table
User sit_cpasilcsec is successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
User sit_cpasilccf details updated into the dbmaster table
User sit_cpasilccf is successfully created on Default TableSpace : USERS on Temp TableSpace : TEMP
Creating Schemas completed ...

=====
Roles creation scripts execution started ...
Executing ... /scratch/ofsaabas/OFS_CAP_ADQ_PACK/schema_creator/dist/roles/OFS_CAP_ADQ_createroles.sql
Roles creation scripts execution completed ...

=====
Grants creation scripts execution started...
Grants creation scripts execution completed...

=====
Schemas Creation Completed

=====
Schema Creator executed Successfully.Please proceed with the installation.
/scratch/ofsaabas/OFS_CAP_ADQ_PACK/schema_creator/bin>

```

## 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 CAP 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 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:**

- See log file in OFS\_CAP\_ADQ\_PACK/schema\_creator/logs folder for execution status.
  - See log file 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 Services.
- 
- 

## Installing the OFS CAP Application Pack

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

This section includes the following topics:

- [SILENT Mode Installation](#)
- [GUI Mode Installation](#)
- [Verifying the Log File](#)

For installing OFS CAP pack 8.0.6 on AIX as a full installer, silent mode of installation is recommended. Contact Oracle Support Services if you want to use GUI mode.

### SILENT Mode Installation

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

To install OFS CAP 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 below:
 

```
FIC_HOME=<OFSAA Installation Directory>
export FIC_HOME
```
3. Execute the user .profile file.
4. Navigate to OFS\_CAP\_ADQ\_PACK folder.
5. Edit the OFS\_CAP\_ADQ\_PACK/conf/OFS\_CAP\_ADQ\_PACK.xml file to enable the product licenses.

---



---

**Note:** •Ensure to enter **Yes** in **ENABLE** tag for OFS\_AAI/APP\_ID to install CAP ADQ applications.

- Refer [Configuring the OFS\\_CAP\\_ADQ\\_PACK.xml file](#) for details on configuring this XML file.
- 
- 

6. Edit the OFS\_CAP\_ADQ\_PACK/schema\_creator/conf/OFS\_CAP\_ADQ\_SCHEMA\_IN.xml file to set the appropriate attribute values.

Include INFODOM = "<Infodom Name>" in OFS\_CAP\_ADQ\_SCHEMA\_IN.xml file.

**Note:** •Refer [Configuring the OFS\\_CAP\\_ADQ\\_SCHEMA\\_IN.XML file](#) for details on configuring this XML file.

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

7. Edit the OFS\_CAP\_ADQ\_PACK/OFS\_AAI/conf/OFSAAI\_InstallConfig.xml file to set the appropriate infrastructure installation attribute values.

**Note:**

- This step can be ignored if an installation of OFSAA 8.0.0.0.0 already exists.
- Refer [Configuring the 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, refer [Executing the Schema Creator Utility](#).

9. Grant `rqrole` and `rqadmin` rights to config, atomic and OREC sandbox schema if you are installing / enabling Oracle Financial Services Capital Adequacy Pack - Operational Risk Economic Capital. If not, ignore the error in CAP installation log file (`OREC_Sys_Scripts.sql`).

10. Create a copy of the **Silent.template** file present in the installer folder OFS\_CAP\_ADQ\_PACK/OFS\_CAP\_ADQ/conf and rename it as **Silent.props**.

11. 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.

**Table 4-1 Silent.props File Elements**

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 Capital Adequacy.	User Input (not exceeding 10 characters)	

**Table 4–1 Silent.props File Elements**

<b>Property Name</b>	<b>Description of Property</b>	<b>Permissible Values</b>	<b>Comments</b>
SEGMENT_2_CODE	Specify the Attribution Analysis Segment	User Input (not exceeding 10 characters)	
SEGMENT_3_CODE	Specify the Operational Risk Economic Capital Segment	User Input (not exceeding 10 characters)	
SEGMENT_4_CODE	Specify the segment for Forecasting	User Input (not exceeding 10 characters)	
BIS_SEGMENT_CODE	Specify the Selected Jurisdictions Segment name	User Input (not exceeding 10 characters)	
BRAZIL_SEGMENT_CODE	Specify the Selected Jurisdictions Segment name	User Input (not exceeding 10 characters)	
IFSB_SEGMENT_CODE	Specify the Selected Jurisdictions Segment name	User Input (not exceeding 10 characters)	
CBRC_SEGMENT_CODE	Specify the Selected Jurisdictions Segment name	User Input (not exceeding 10 characters)	
INDIA_SEGMENT_CODE	Specify the Selected Jurisdictions Segment name	User Input (not exceeding 10 characters)	
USA_SEGMENT_CODE	Specify the Selected Jurisdictions Segment name	User Input (not exceeding 10 characters)	
CRD_SEGMENT_CODE	Specify the Selected Jurisdictions Segment name	User Input (not exceeding 10 characters)	
APPFTP_LOG_PATH	Specify the Infodom Maintenance log path(to be created) for the new Infodom  Ignore if you are doing installation on an existing information domain	User Input	
DBFTP_LOG_PATH	Specify the Infodom Maintenance log path(to be created) for the new Infodom  Ignore if you are doing installation on an existing information domain	User Input	

**Table 4–1 Silent.props File Elements**

<b>Property Name</b>	<b>Description of Property</b>	<b>Permissible Values</b>	<b>Comments</b>
UPLOAD_MODEL	Specify whether you want to perform Model Upload	0 = If you have already performed Model Upload and want to skip it.  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	
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 FSAPPS 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_DESC	ETL Staging 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_2_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.



**Table 4–1 Silent.props File Elements**

Property Name	Description of Property	Permissible Values	Comments
ETL_SRC_3_DESC	ETL OREC 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_4_DESC	ETL Reporting 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_APP_1_NAME	ETL FSAPPS Application name	User Input	Specify the ETL Application into which ETL Area Definitions will be deployed.
ETL_SRC_1_NAME	ETL Staging source name	User Input	Specify the ETL Source Name into which ETL Area Definitions will be deployed.
ETL_SRC_2_NAME	ETL Processing source name	User Input	Specify the ETL Source Name into which ETL Area Definitions will be deployed.
ETL_SRC_3_NAME	ETL OREC source name	User Input	Specify the ETL Source Name into which ETL Area Definitions will be deployed.
ETL_SRC_4_NAME	ETL Reporting source name	User Input	Specify the ETL Source Name into which ETL Area Definitions will be deployed.
ORECSAND_SEGMENT	Specify name of the Segment for Operational Risk Economic Capital Modelling sandbox infodom.	User Input	
ORECSAND_APPSERVER_FTP_LOGPATH	Specify the Sandbox Maintenance log path (to be created) for the Operational Risk Economic Capital Modelling sandbox.	User Input	
ORECSAND_DBSERVER_FTP_LOGPATH	Specify the Sandbox Maintenance log path (to be created) for the Operational Risk Economic Capital Modelling sandbox.	User Input	

**12.** Give a path for the installation log file in the log4j.xml file present in the OFS\_CAP\_ADQ\_PACK/OFS\_CAP\_ADQ/conf directory.

**13.** On successful execution of the schema creator utility, navigate to OFS\_CAP\_ADQ\_PACK/bin/ directory.

**14.** To install OFS CAP Application Pack on:

- **For Java 7:** Proceed with the next step.
- **For Java 8:** Edit the VerInfo.txt file to modify the value for property JAVA\_VERSION to 1.8. Save the changes and proceed with step 14.

- Enter the following command in the console to execute the application pack installer with SILENT option.

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

**Figure 4–9 Silent Mode Installation**

```

/scratch/ofsaebas/OFS_CAP_ADQ_PACK/bin>ls
fichome.sh install.jar OFSAAI.jar pack_install.bin pack_installsilent.bin setup.sh
/scratch/ofsaebas/OFS_CAP_ADQ_PACK/bin>./setup.sh SILENT
Executing profile
Executing profile
.profile executed
FIC_HOME : /scratch/ofsaebas/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/sample
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 :

```

- Enter the Infrastructure FTP/SFTP password value, when prompted at the command prompt.

**Figure 4–10 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 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 AAI) and Oracle Financial Services Inline Processing Engine (OFS IPE) products are separately licensable products and should not be enabled unless 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 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 AAI) or Oracle Financial Services Inline Processing Engine (OFS IPE) product gets pre-selected 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, 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.*
-----
Do you accept the terms and conditions mentioned above? (Y/N)

```

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

Console Prompts	User Inputs
Enter Infrastructure FTP/SFTP password	Enter the password to access Product Staging/Metadata repository directory in the application server.  <b>Note:</b> In case the prompt reads as below, 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>

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

The OFSAAI License Agreement is displayed.

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

---



---

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

'password0' will be set as default password for these users.

---



---

**Figure 4–11 Silent Mode Installation**

```
Starting installation...
Preparing to install...
Extracting the installation resources from the installer archive...
Configuring the installer for this system's environment...

Launching installer...

Preparing SILENT Mode Installation...

-----
OFSAAInfrastructure                               (created with InstallAnywhere)
-----

Installing...

-----
[*****] [*****] [*****] [*****]
[-----] [-----] [-----] [-----]
-----

Installation Complete.
Executing profile
Executing profile
.profile executed
Executing profile
Executing profile
.profile executed

*****
Welcome to OFS_CAP_ADQ PACK Installation
*****
Starting OFSAA Service...
nohup: appending output to 'nohup.out'
OFSAA Service - OK
Preparing to install...
Extracting the installation resources from the installer archive...
```

---



---

**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 to the CAP PACK installation. After successfully installing the CAP pack, a WAR file is generated and all the servers are verified.

19. The following message is displayed in the console:

*Installation completed...*

```

Installing...
-----
[-----]
[-----]

Installation Complete.
Executing profile
Executing profile
.profile executed
*****
CTRL characters removal started ...
CTRL characters removal over ...
Windows executable files removal started ...
Windows executable files removal over ...
We are now in /scratch/ofsaebas ...
*****
Executing profile
Executing profile
.profile executed
Executing profile
Executing profile
.profile executed
executing "ant"
Buildfile: /scratch/ofsaebas/OFSAA80/ficweb/build.xml
Trying to override old definition of datatype resources

existstest:
[echo] Checking for file /scratch/ofsaebas/OFSAA80/ficweb/OFSAA80.war existense

createwar:
[echo] Creating /scratch/ofsaebas/OFSAA80/ficweb/OFSAA80.war freshly..
[war] Building war: /scratch/ofsaebas/OFSAA80/ficweb/OFSAA80.war

BUILD SUCCESSFUL
Total time: 58 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...

```

20. On completion of installation, refer the installation log files.  
For more information, refer [Verifying the Log File](#).
21. Perform the steps mentioned in [Post Installation Configuration](#) section.

## GUI Mode Installation

---



---

**Note:** Ensure that you have followed the steps as mentioned in the [Configurations for GUI Mode Installation](#) section prior to proceeding with the next steps.

---



---

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

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

3. Execute the user .profile.
4. Navigate to the path: OFS\_CAP\_ADQ\_PACK.
5. Edit the OFS\_CAP\_ADQ\_PACK/schema\_creator/conf/OFS\_CAP\_ADQ\_SCHEMA\_IN.xml file to set the appropriate attribute values.

---

---

**Note:** Refer [Configuring the OFS\\_CAP\\_ADQ\\_SCHEMA\\_IN.XML file](#) for details on configuring this XML file.

---

---

6. Execute the schema creator utility.

---

---

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

Refer [Executing the Schema Creator Utility](#) for more details.

---

---

7. Grant `rqrole` and `rqadmin` rights to config, atomic and OREC sandbox schema if you are installing / enabling Oracle Financial Services Capital Adequacy Pack - Operational Risk Economic Capital. If not, ignore the error in CAP installation log file (`OREC_Sys_Scripts.sql`).
8. Navigate to the path: OFS\_CAP\_ADQ\_PACK/bin
9. To install the OFS CAP Application Pack on:
  - **For Java 7:** Proceed with the next step.
  - **For Java 8:** Edit the `VerInfo.txt` file to modify the value for property `JAVA_VERSION` to **1.8**. Save the changes and proceed with the next step.
10. Execute the following command in the console:

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

---

---

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

---

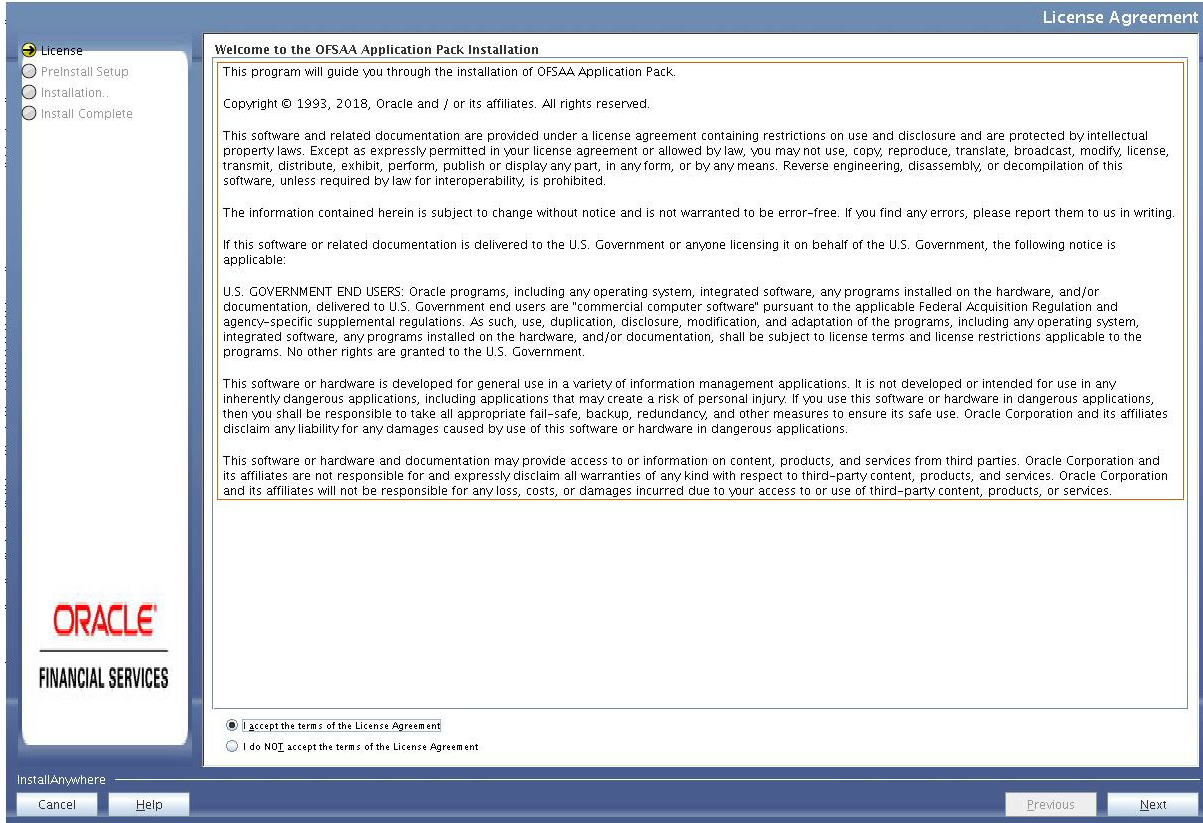
---

*Figure 4–12 Initialization Window*



11. The general License Agreement is displayed.

Figure 4–13 License Agreement



12. Select **I accept the terms of the License Agreement** option.

13. Click **Next**.

The OFS CAP Application Pack details are displayed.

Figure 4–14 Applications Pack Details



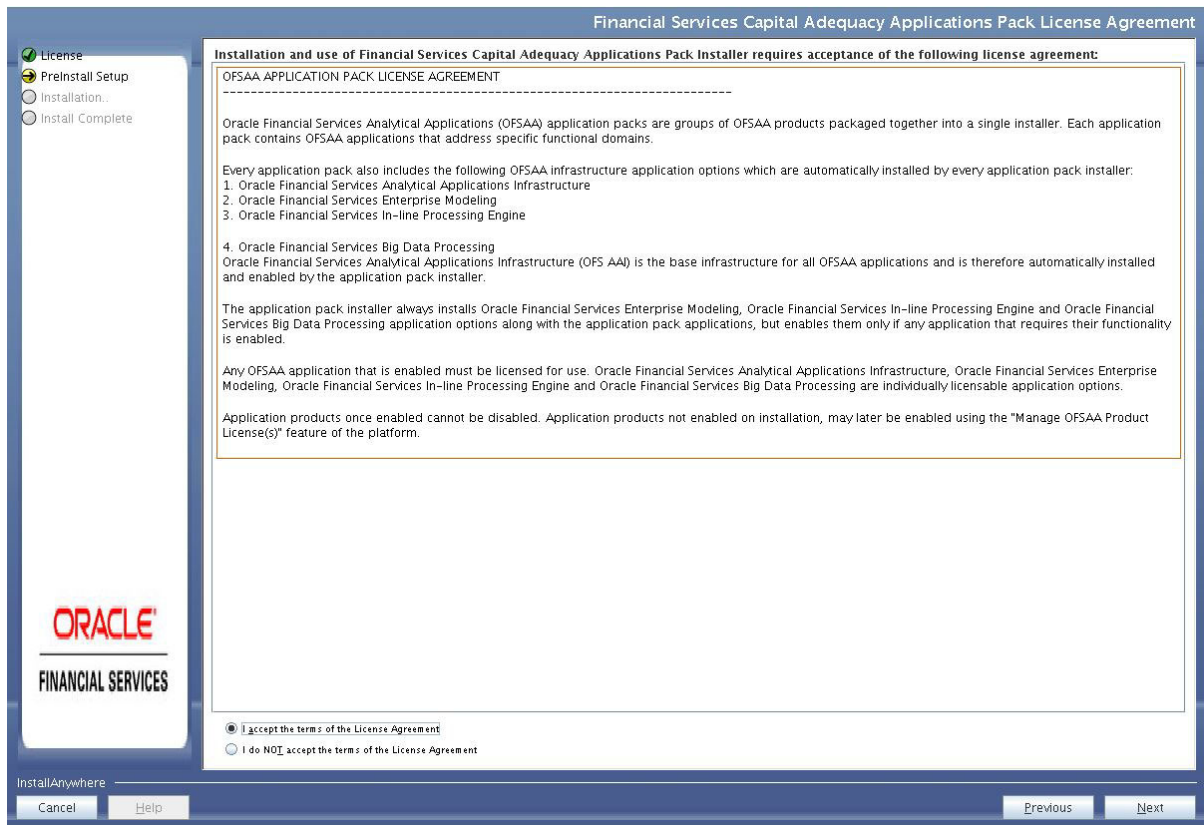
14. Select the product(s) to enable.

15. Click Next.

The Application Pack License Agreement page is displayed.



Figure 4–15 Application Pack License Agreement page

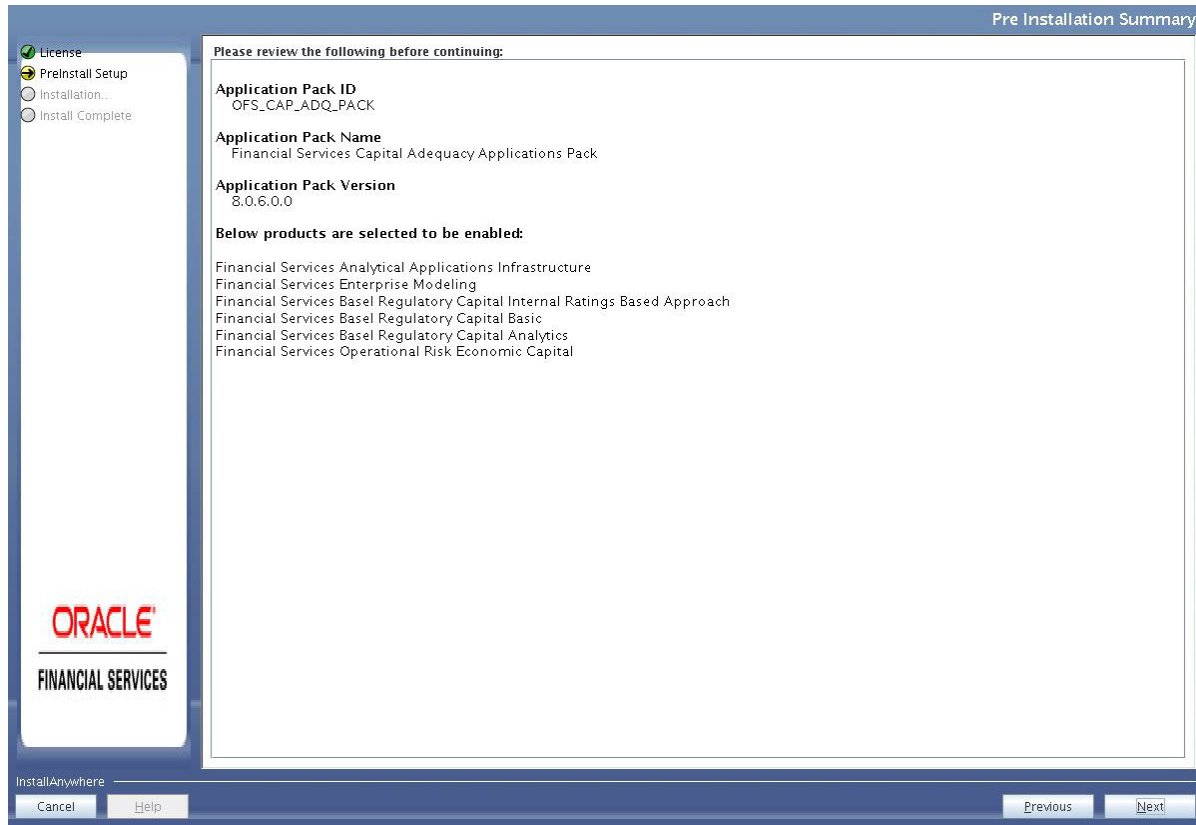


16. Select **I accept the terms of the License Agreement** option.

17. Click **Next**.

The Pre Installation Summary is displayed.

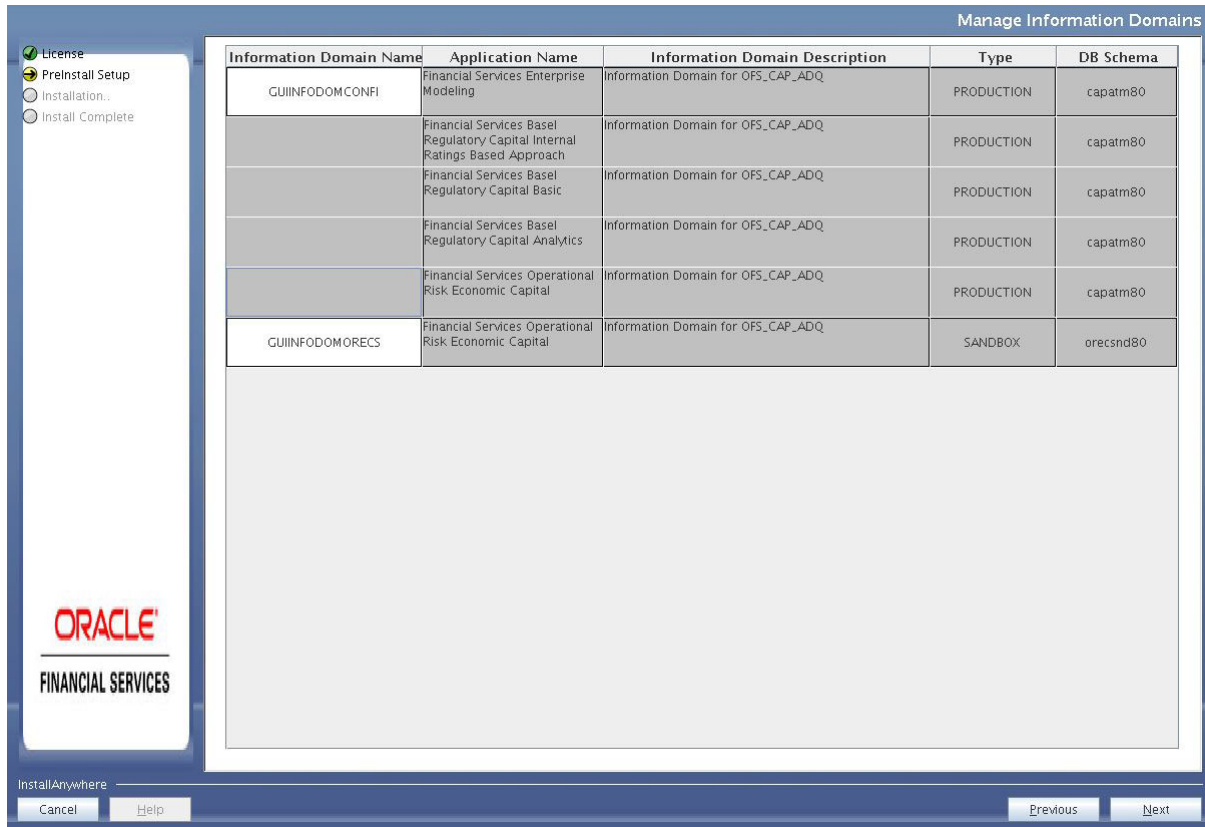
Figure 4–16 Pre-Installation Summary



18. Click Next.

The Manage Information Domains page is displayed.

Figure 4–17 Manage Information Domains



19. The default Information Domain Name for this Application Pack is OFSCAPADQINFO. Double-click the Information Domain Name field to edit.

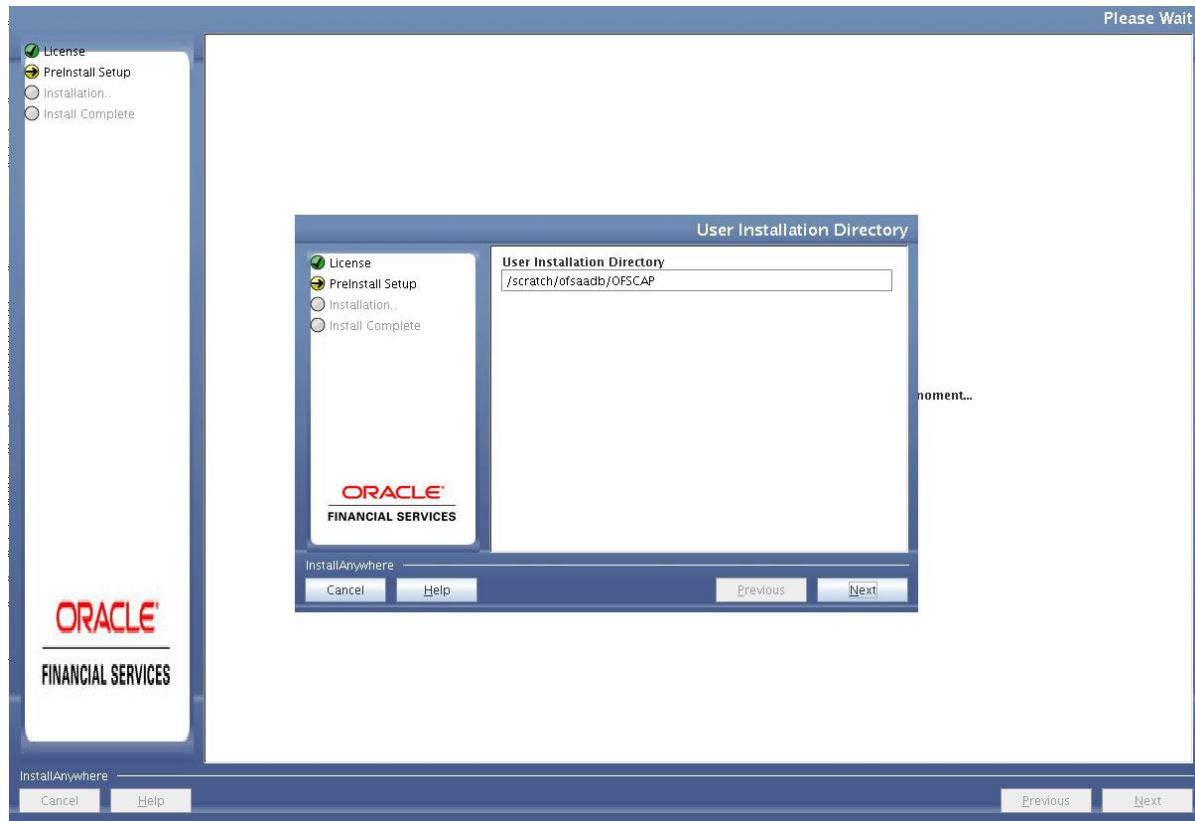
---

**Note:** In case of subsequent Application Pack installation on the same Information Domain, the Information Domain Name is not editable. Permissible length is 16 characters and only alphanumeric characters are allowed. No special characters are allowed.

---

20. Click Next.  
The User Installation Directory panel is displayed.

**Figure 4–18** User Installation Directory



---

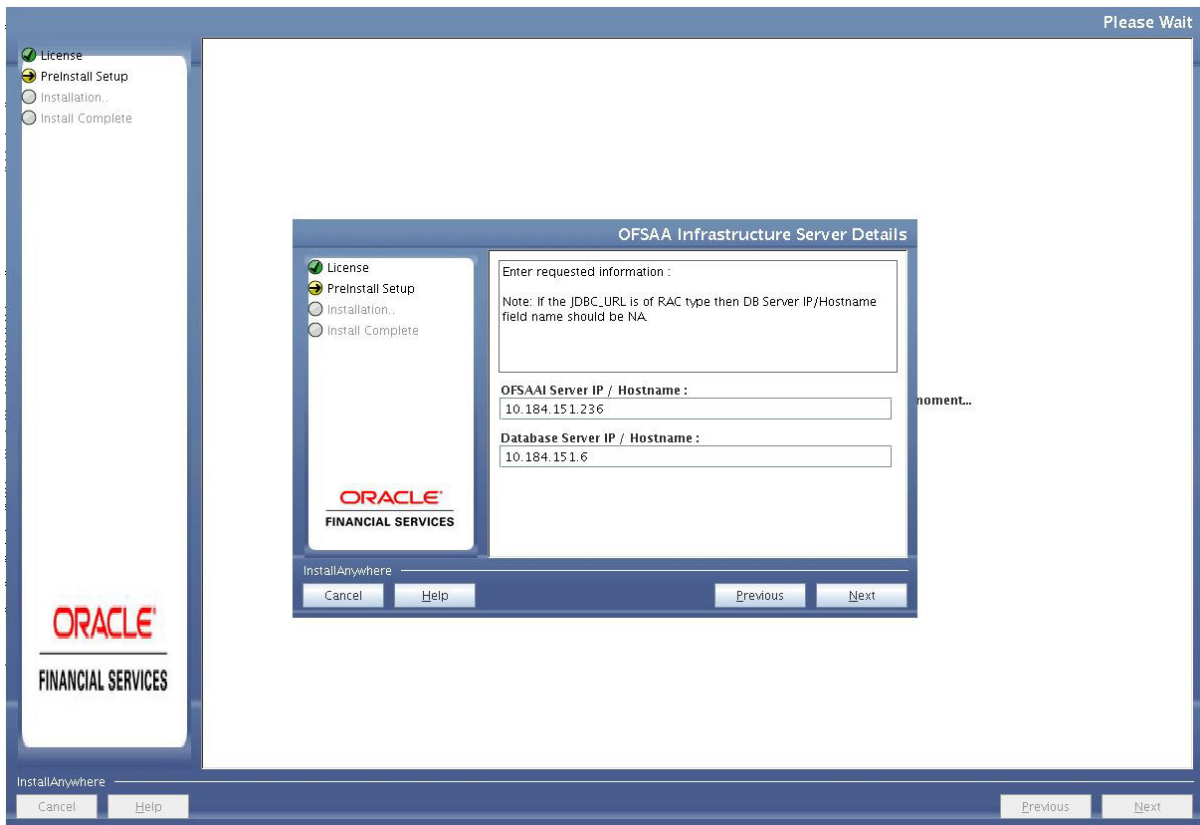
**Note:** The User Installation Directory path is auto-populated from the path you have set in the user `.profile` file in Step 2.

---

**21. Click Next.**

The OFSAA Infrastructure Server Details panel is displayed.

Figure 4–19 OFSAA Infrastructure Server Details



22. Enter the IP address or hostname of the Database Server.

---

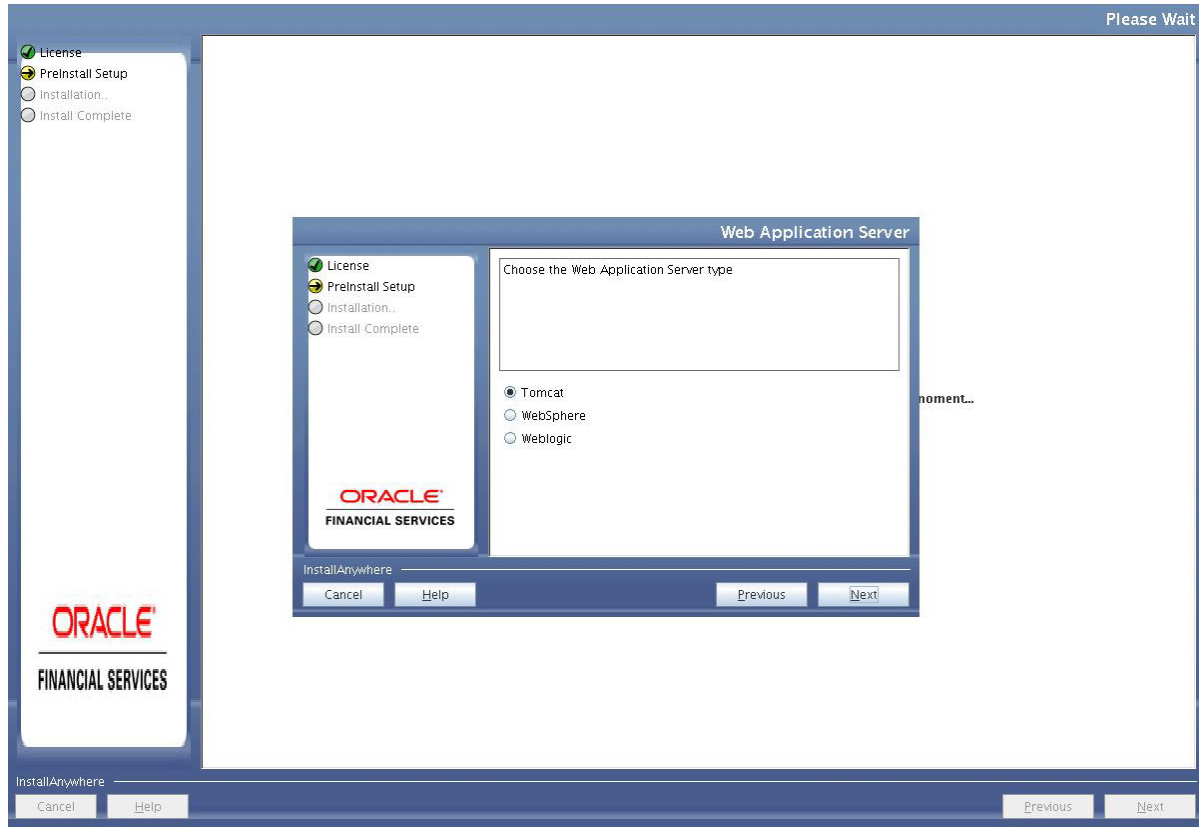
**Note:** The OFSAAI Server IP/Hostname is auto-populated by default.

---

23. Click **Next**.

The **Web Application Server** panel is displayed.

**Figure 4–20 Web Application Server**



24. Select the appropriate Web Application server type. The options are Tomcat, WebSphere, and WebLogic.
25. Click **Next**. Based on the selection, corresponding screens are displayed.
26. **For WebSphere:** The WebSphere Setup Details window is displayed.  
 Enter the profile path (up to the Node Cell Name directory) of WebSphere.  
 The format is:  
 WebSphere path <WebSphere profile directory>/installedApps/  
 <NodeCellName>

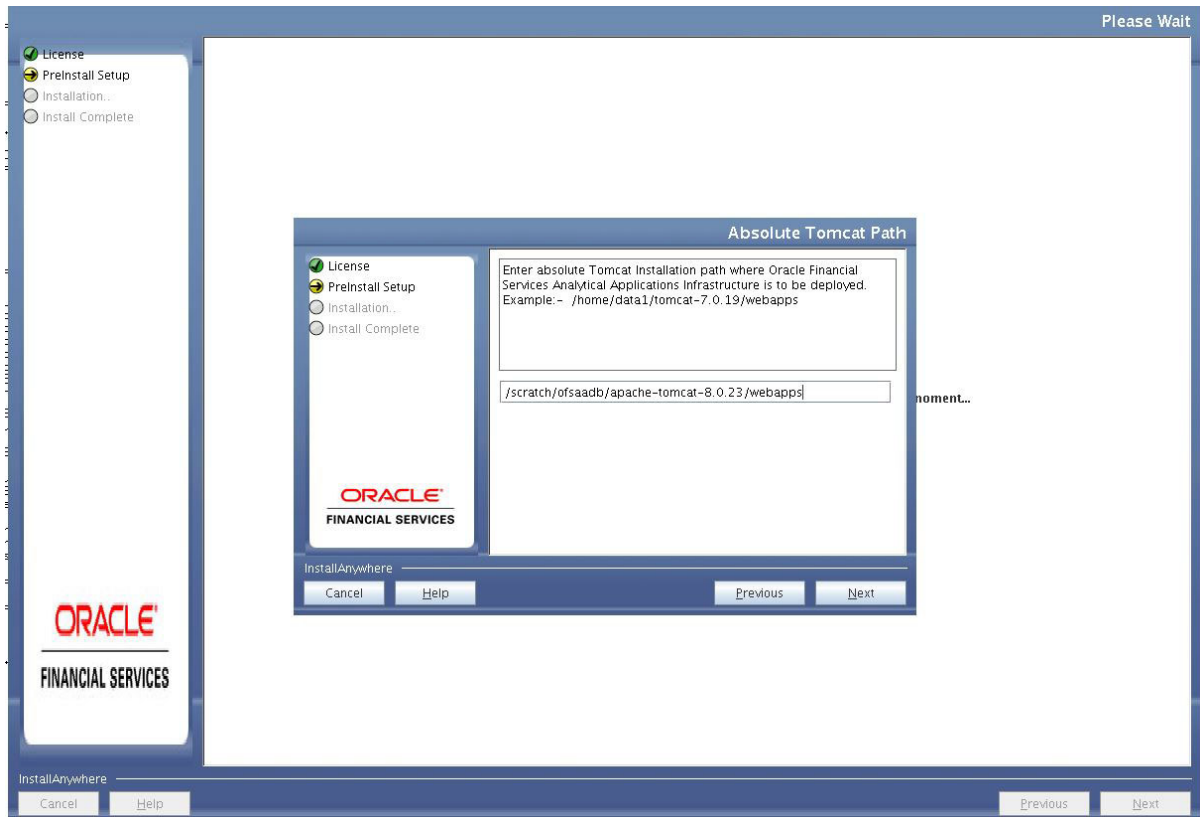
Figure 4–21 WebSphere Setup Details



- a. Enter the installation path (up to the Node Cell Name directory) of WebSphere. The format is WebSphere path <WebSphere profile directory>/installedApps/<NodeCellName>.

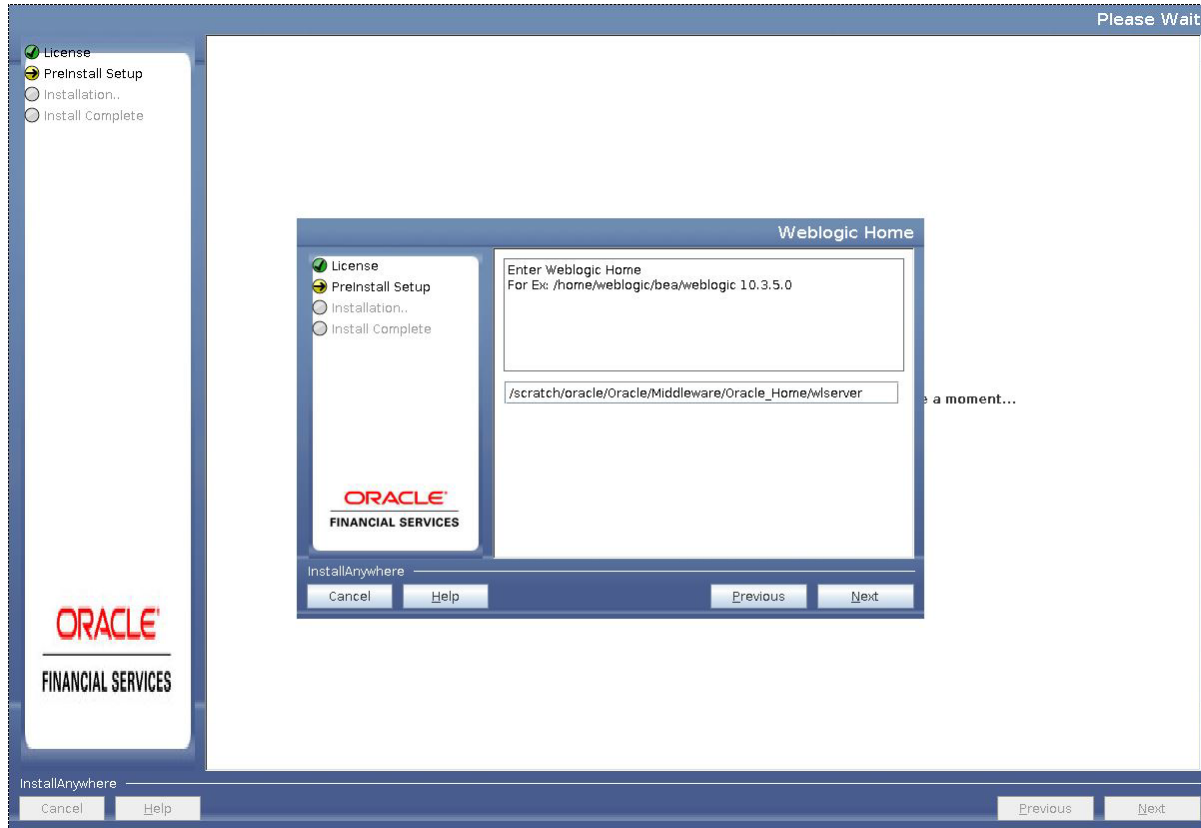
27. **For Tomcat:** The Absolute Tomcat Path window is displayed.

Figure 4–22 Absolute Tomcat Path



- a. Enter the Tomcat installation path (till /webapps) where OFSAAI is deployed.
- 28. For WebLogic:** The Weblogic Home window is displayed.

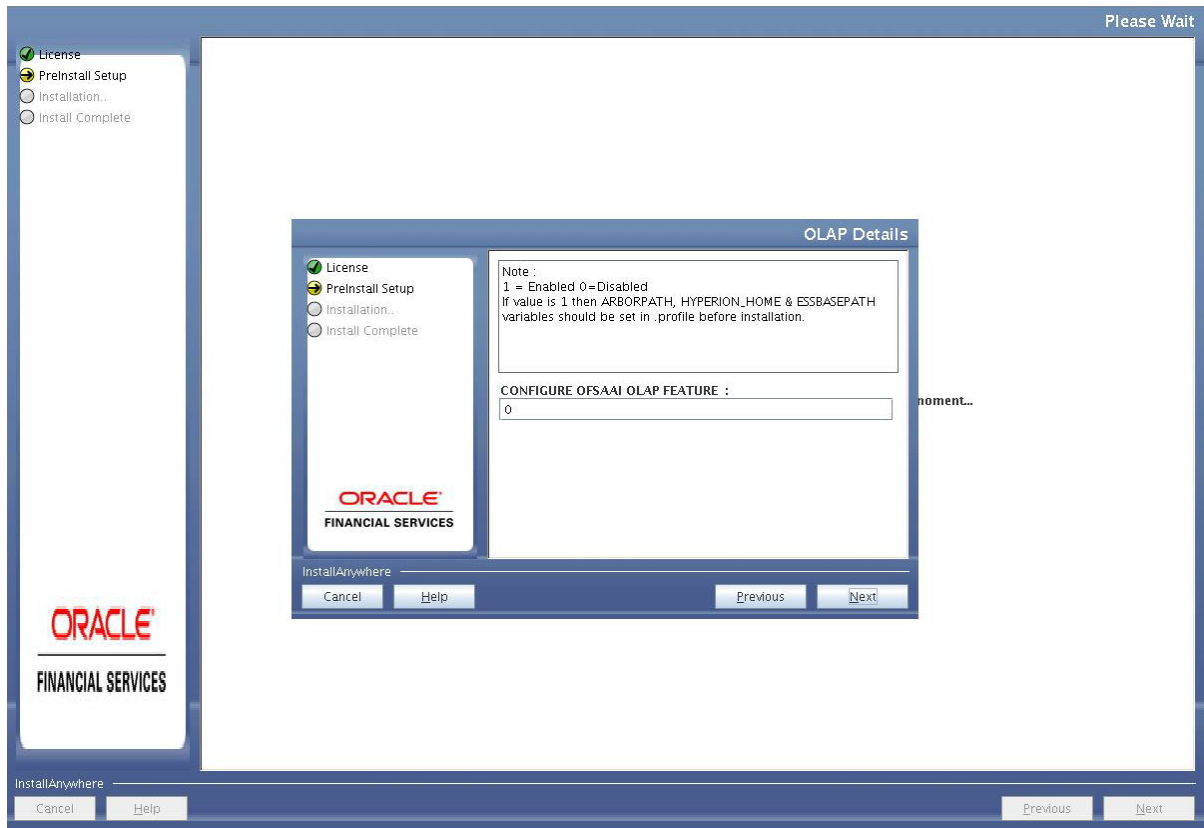
**Figure 4–23 Weblogic Home**



- a. Enter the WebLogic home directory path.
  - b. Enter the path of the Weblogic domain directory and click **Next**.
- 29.** The OLAP Details window is displayed.

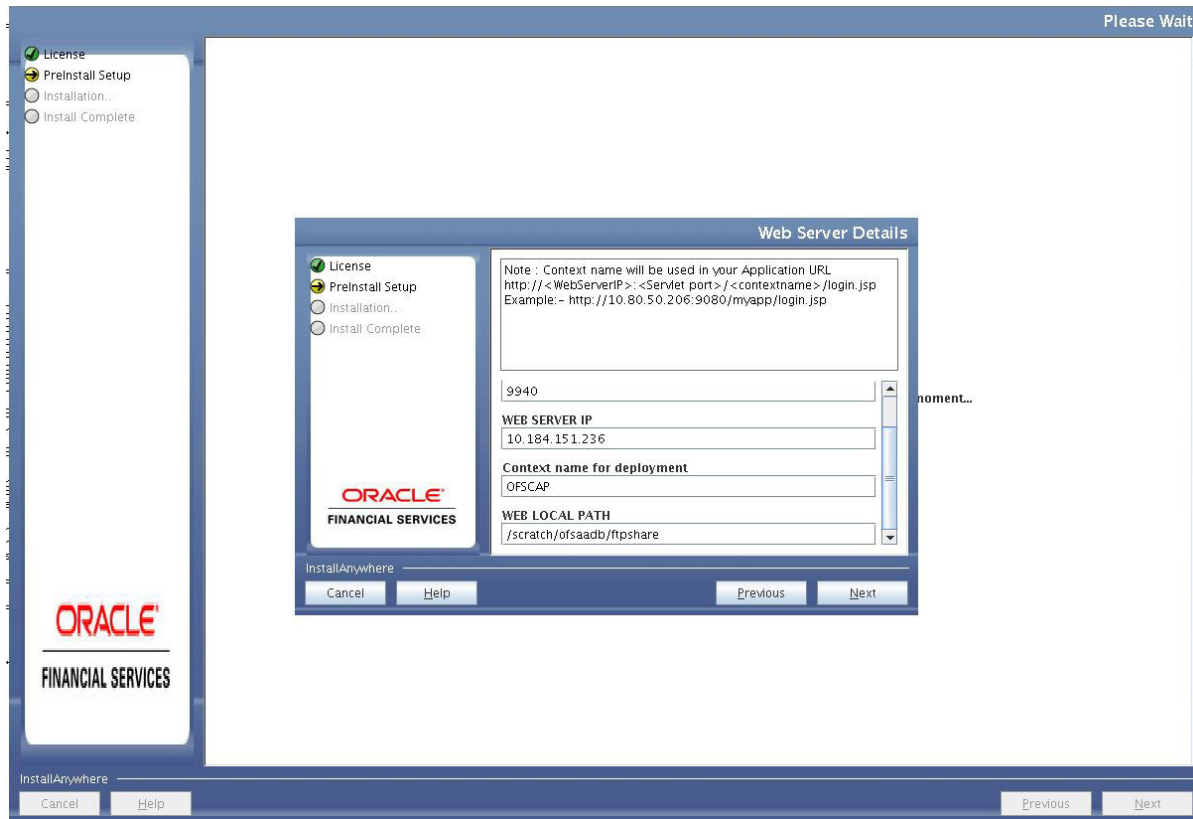


Figure 4–24 OLAP Details



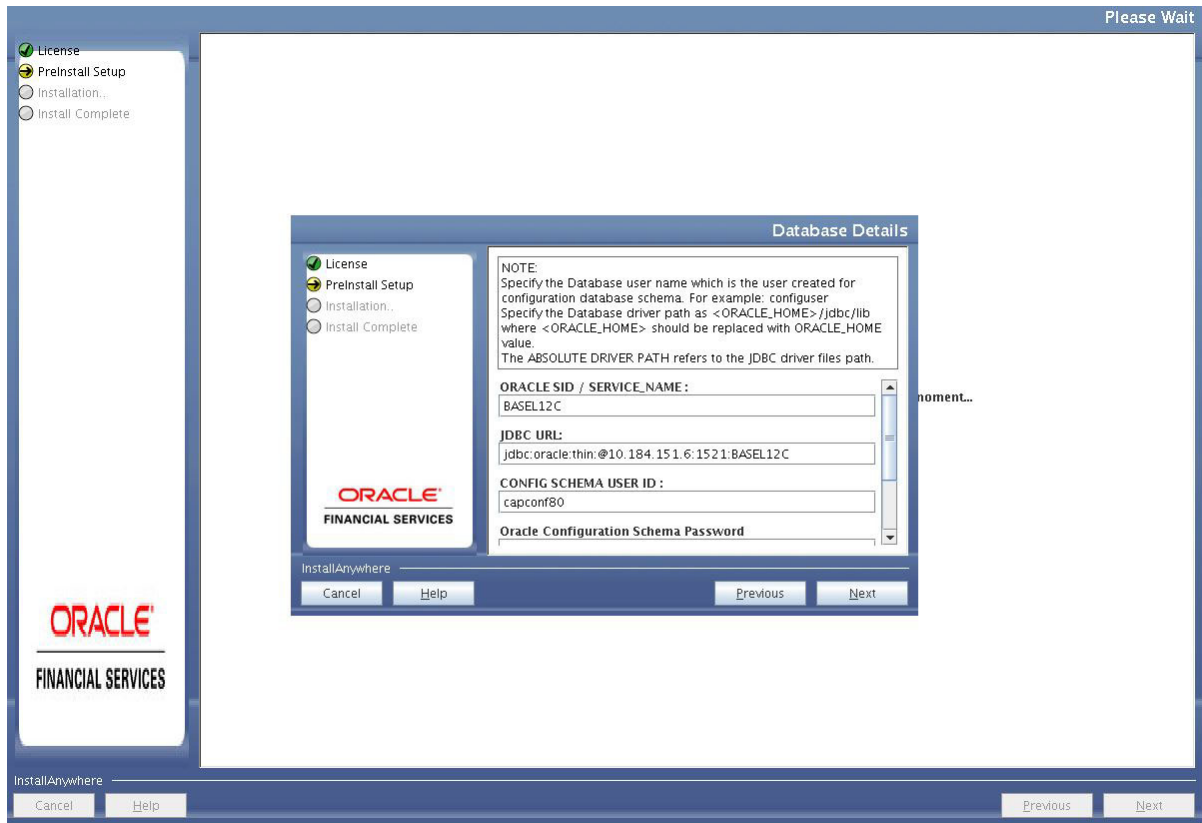
30. Enter 1 if you want to configure OFSAA OLAP feature using Oracle Hyperion Essbase. By default, it is set to 0.
31. Click **Next**. The Web Server Details panel is displayed.

Figure 4–25 Web Server Details



32. Select **Enable HTTPS** checkbox to configure HTTPS, if required, and enter the Web Server (HTTP Server) Port, Context name for deployment, and Local path to any folder on the Web Application Server (Tomcat/Websphere/Weblogic).
33. Click **Next**. The Database Details panel is displayed.

Figure 4–26 Database Details



**34. Enter Oracle SID/Service Name.**

---



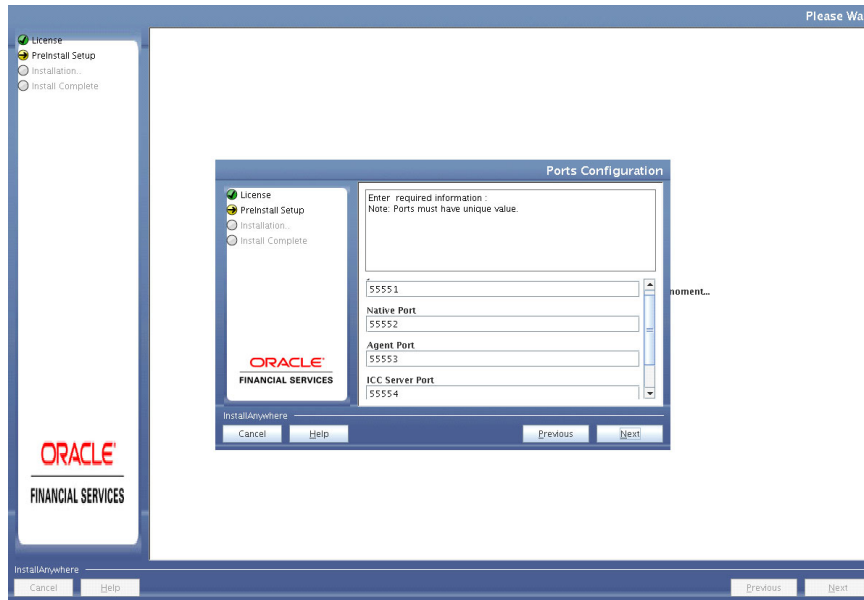
---

**Note:**

- The JDBC URL, Configuration Schema User ID, Oracle Configuration Schema Password, and Absolute Driver Path are auto-populated.
  - Absolute Driver Path can be the path where Oracle DB client is installed or JDBC driver is installed. For example,  
/scratch/oracle/app/oracle/product/11.2.0/client\_1/jdbc/lib
- 
- 

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

Figure 4–27 Ports Configuration



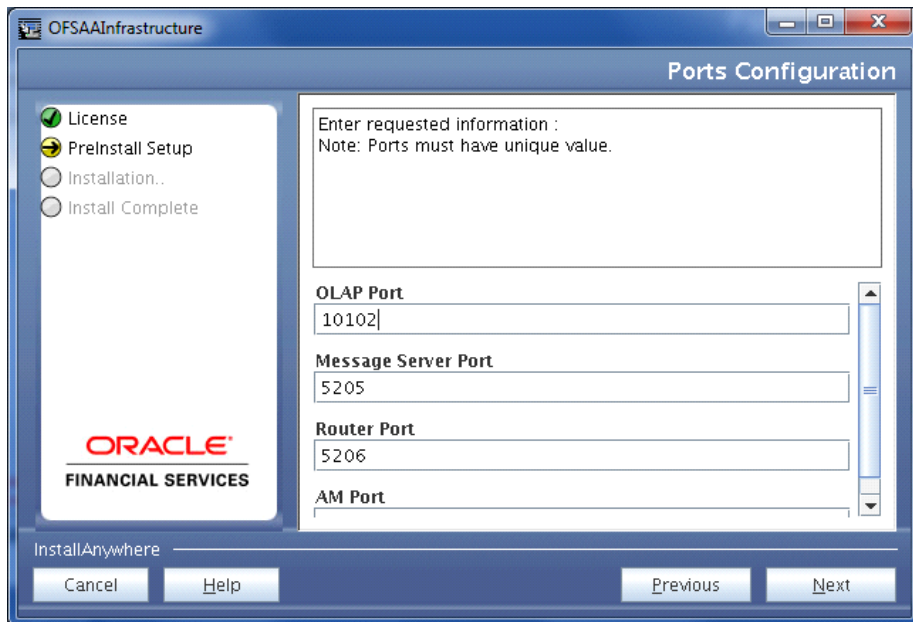
---

**Note:** The Java Port, Native Port, Agent Port, ICC Server Port, and ICC Native Ports are auto-populated. You can also modify the Ports settings.

---

36. Click Next. The **Ports Configuration** panel is displayed.

Figure 4–28 Ports Configuration



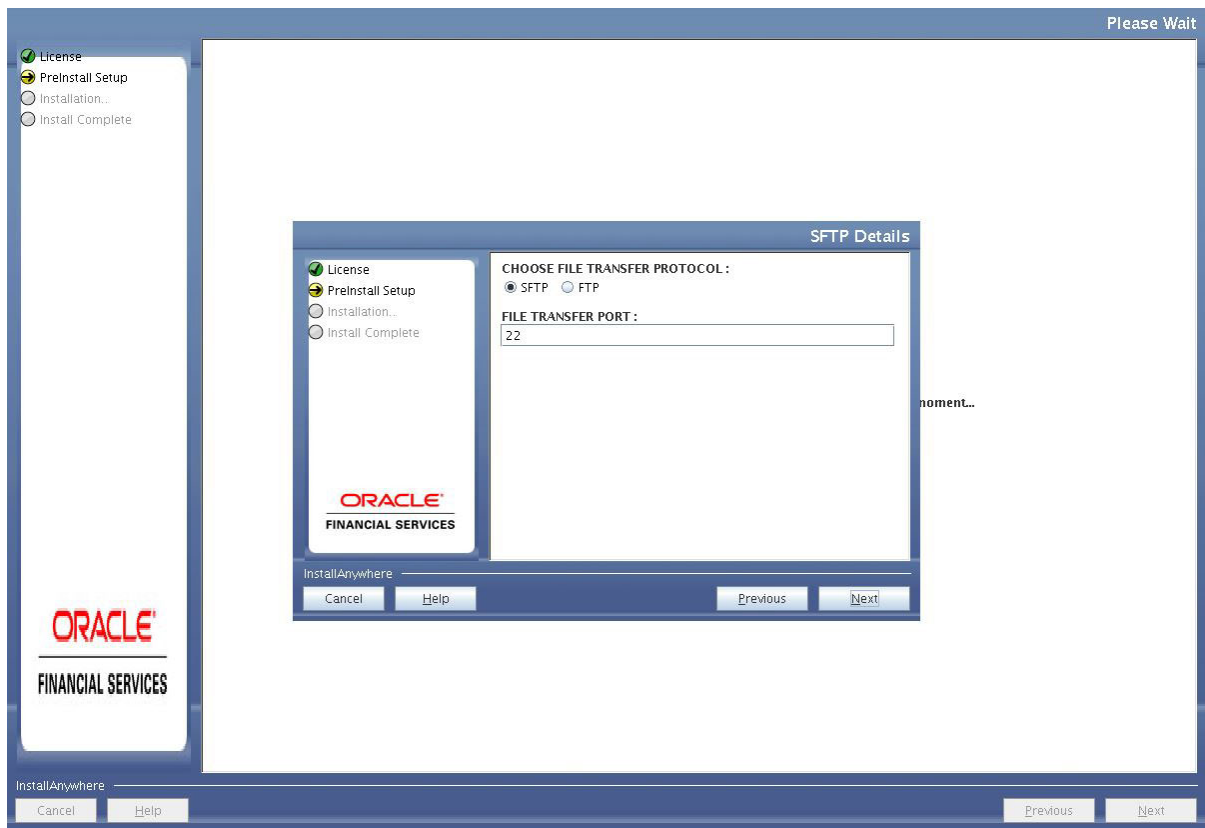
---

**Note:** The OLAP Port, Message Server Port, Router Port, and AM Port details are auto-populated. You can also configure the Ports settings.

---

37. Click **Next**. The SFTP Details panel is displayed.

**Figure 4–29 SFTP Details**



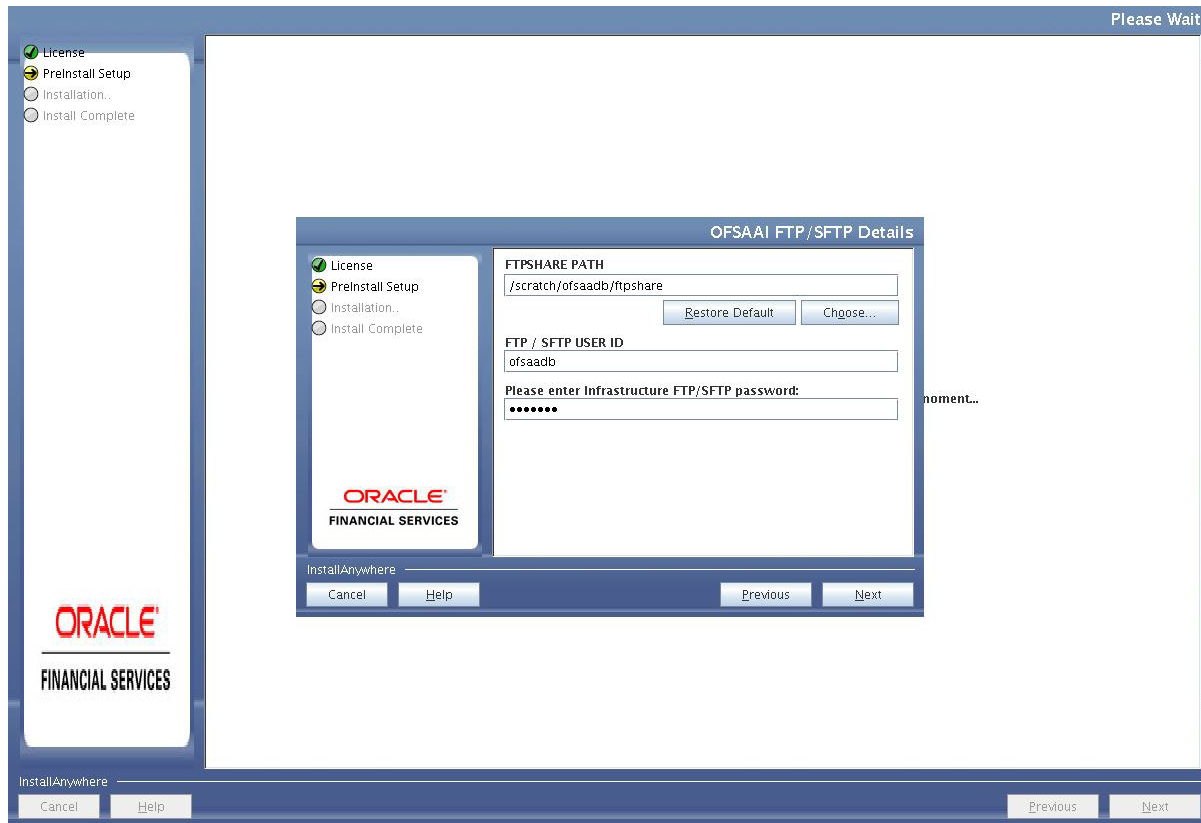

---

**Note:**

- Enable SFTP and File Transfer Port details are auto-populated.
  - Ensure that the system, on which the OFSAA Infrastructure is being installed, has either FTP/SFTP enabled.
  - You can also modify the SFTP settings.
- 

38. Click **Next**. The OFSAAI FTP/SFTP Details panel is displayed.

Figure 4–30 OFSAAI FTP/SFTP Details



39. Enter the FTPSHARE Path. This is same as the OFSAA Staging/ Metadata Repository Directory.
40. Enter the FTP/SFTP User ID and Password for FTPSHARE Directory access.

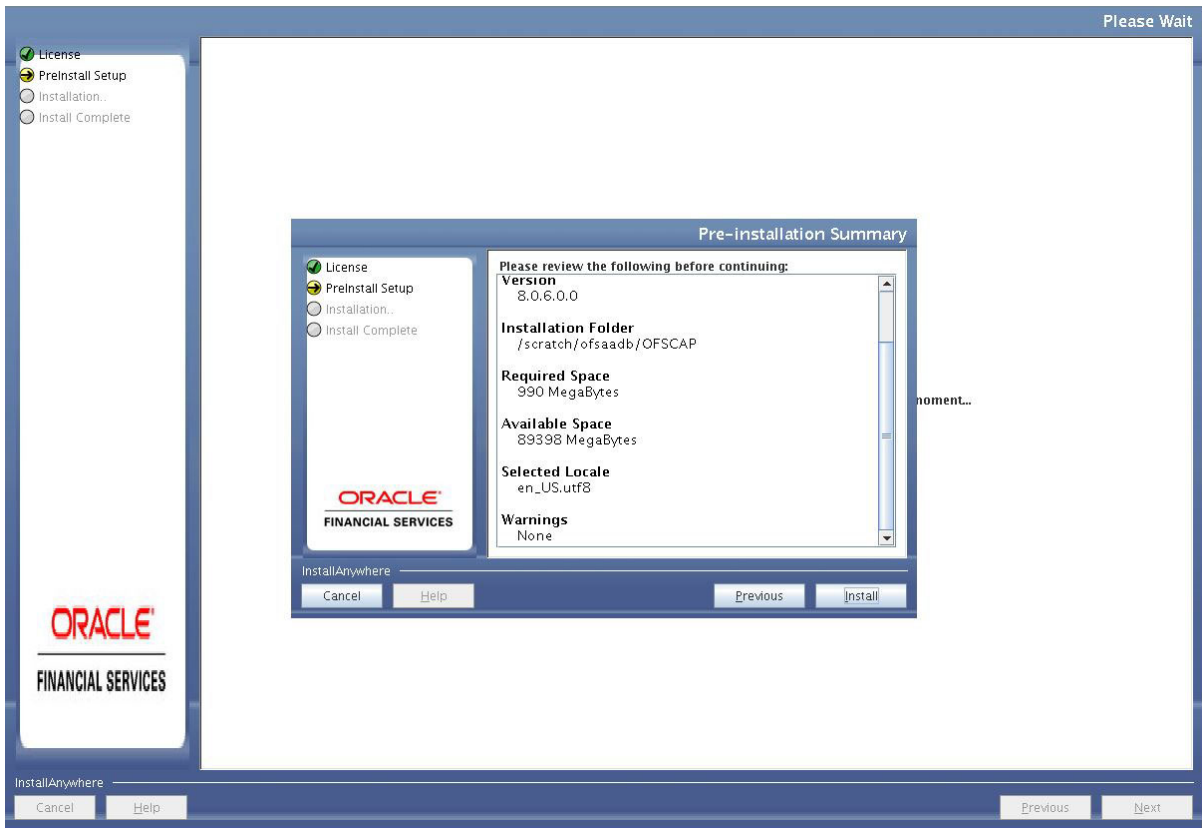
---

**Note:** The transfer of data (files) between the OFSAA Server and the Web Application Server happens over FTP/ SFTP. Ensure the necessary host configurations are made for a successful handshake. For more details, refer [Configuring FTP/SFTP](#).

---

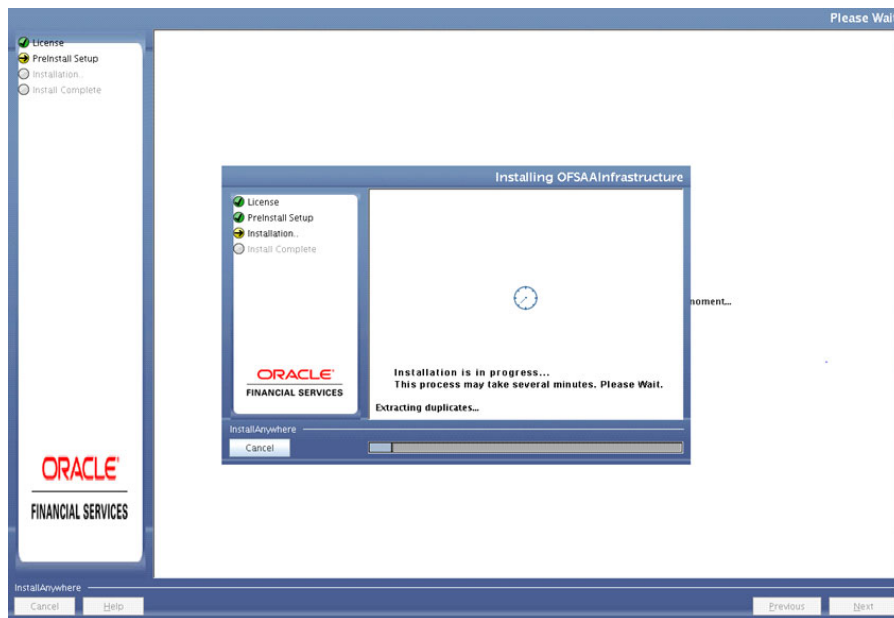
41. Click Next. The Pre Installation Summary window is displayed.

Figure 4–31 Pre Installation Summary



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

Figure 4–32 Installing OFSAA Infrastructure



---

---

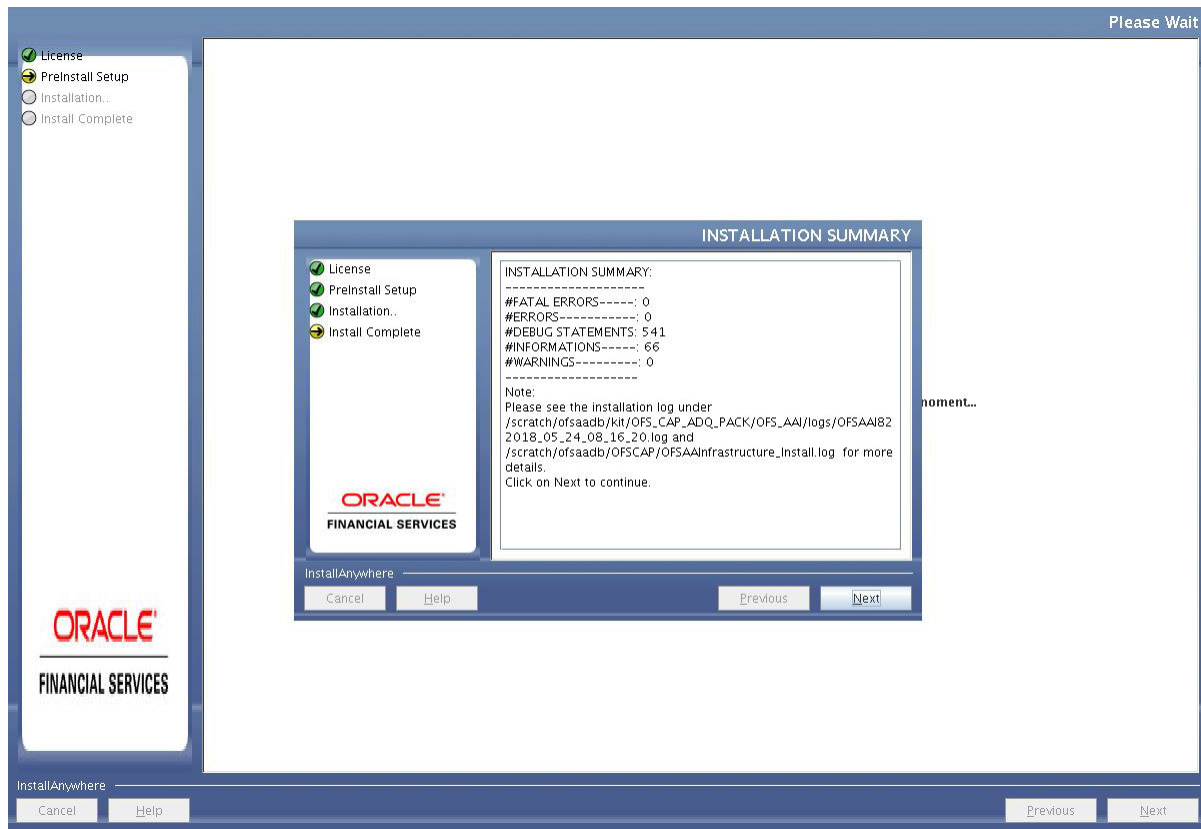
**Note:** Anytime during the installation you can click **Cancel** to stop the installation.

---

---

43. Once completed, the Installation Summary screen is displayed.

**Figure 4–33 Installation Summary**

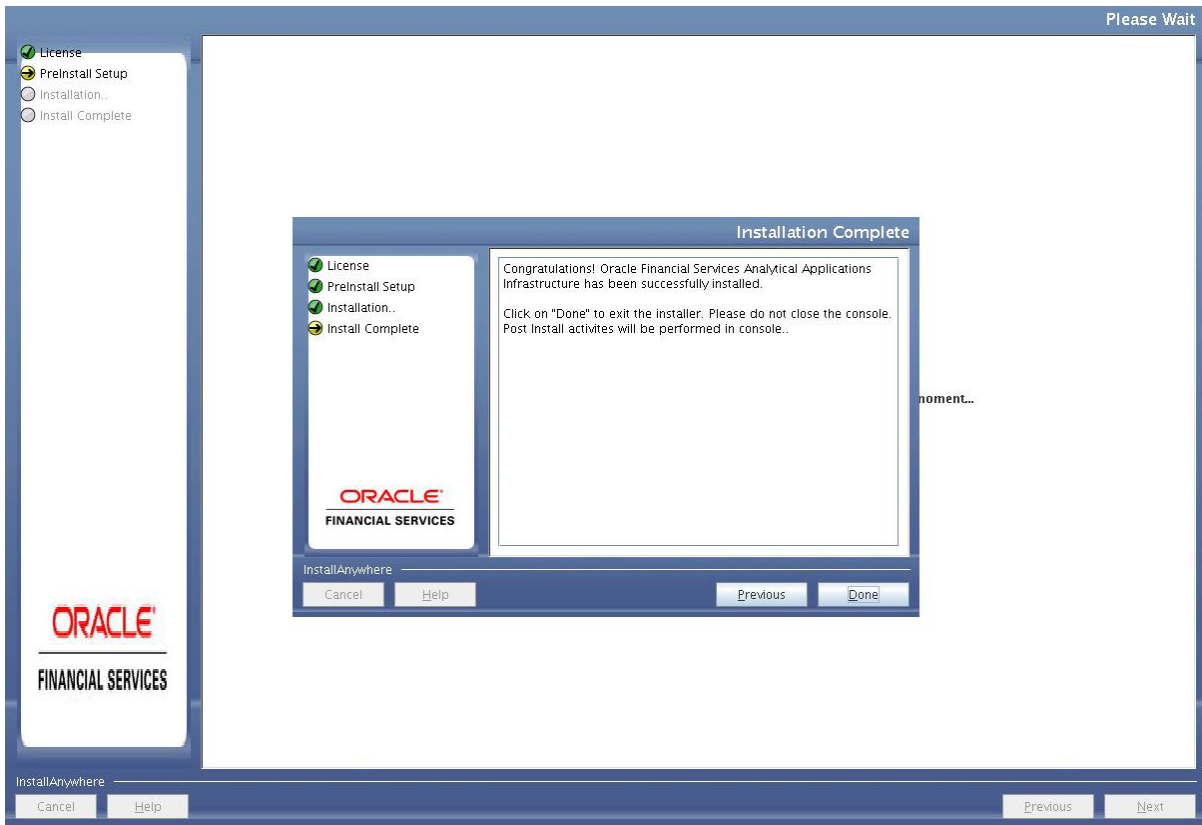


The Summary window displays the number of Fatal Errors, Errors, Debug Statements, Informations, and Warnings along with the location of log files.

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



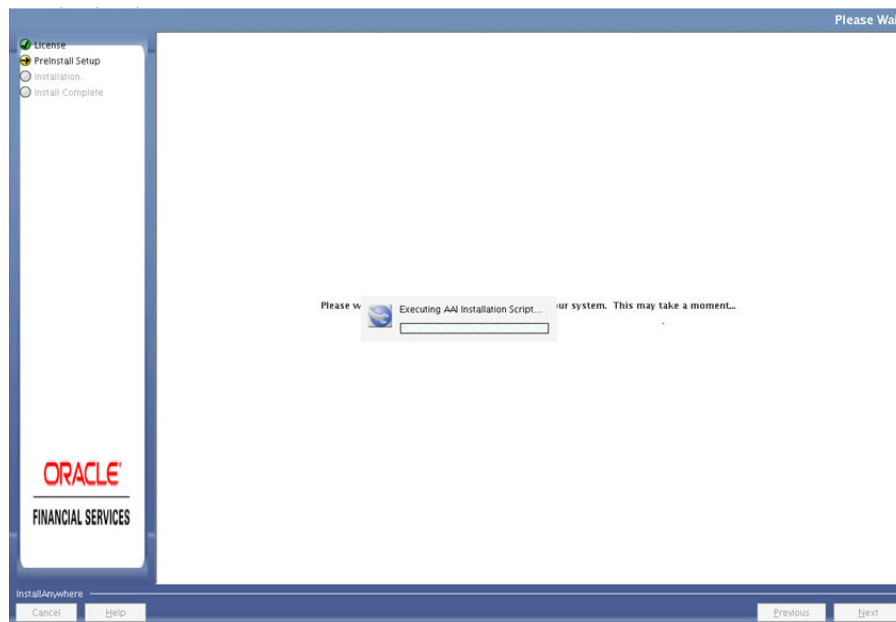
**Figure 4–34 Installation Complete**



45. Click **Done**. The following message is displayed:

*Please wait, pack\_install is being configured for your system. This may take a moment.*

**Figure 4–35 Checking OFSAAI Services**



46. The Checking OFSAA Service screen is displayed.

---

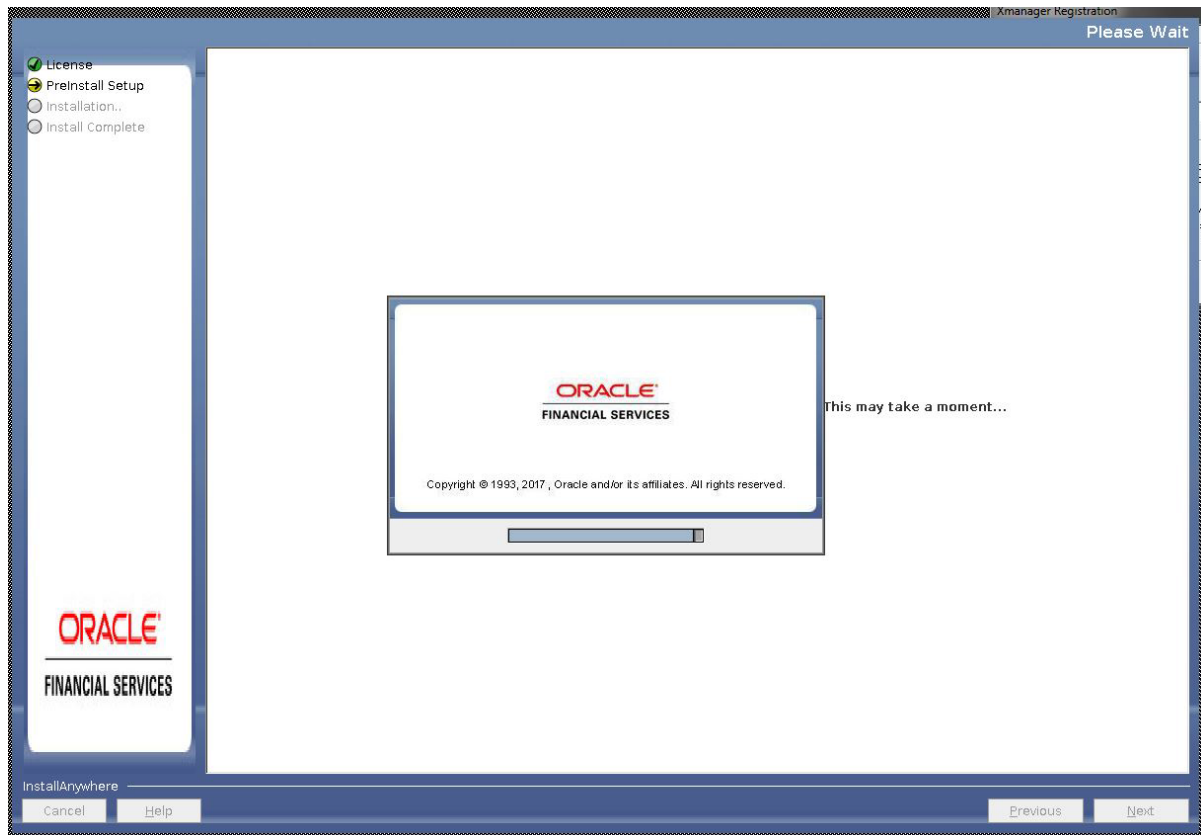
**Note:** This step verifies the OFSAA services startup. In case of errors during services check, an appropriate error message is displayed.

---

47. After checking the OFSAA services, installation proceeds with the OFS CAP Application Pack Installation.

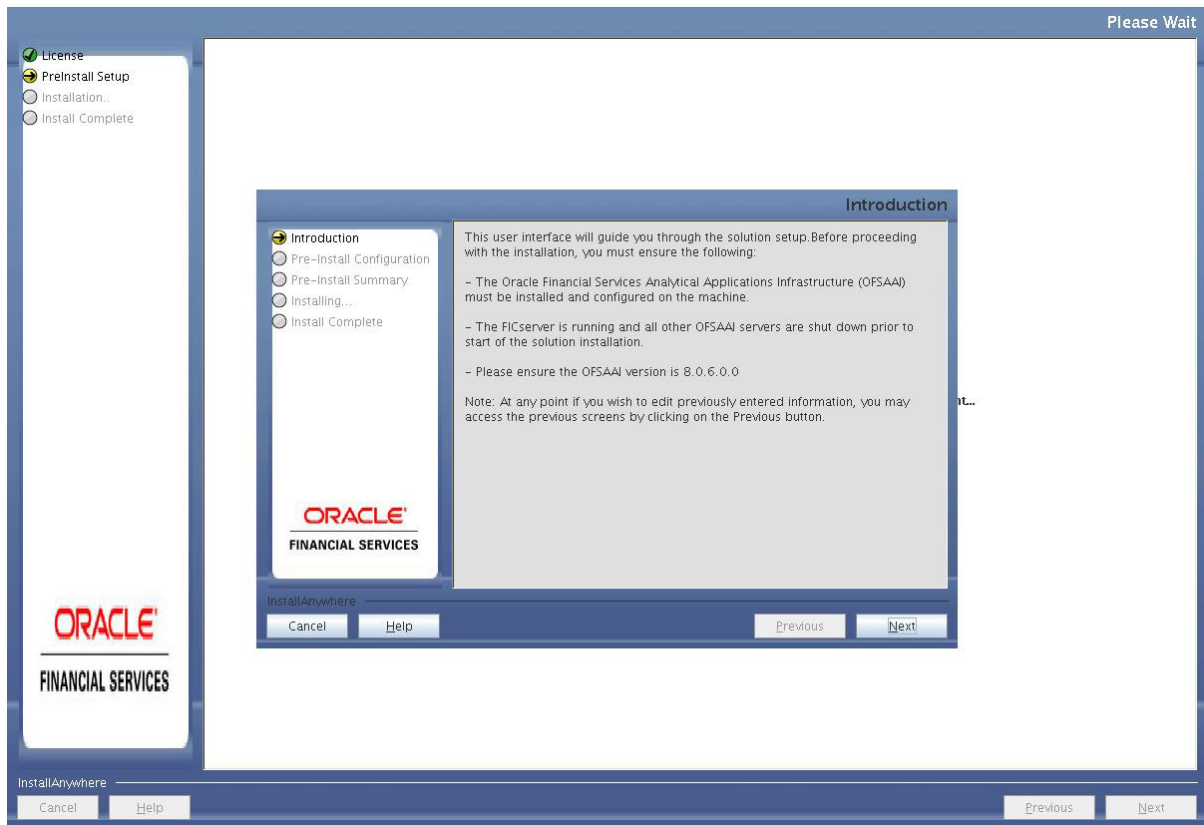
The Installing Oracle Financial Services Capital Adequacy Pack screen is displayed.

**Figure 4–36** *Installing Application Pack*



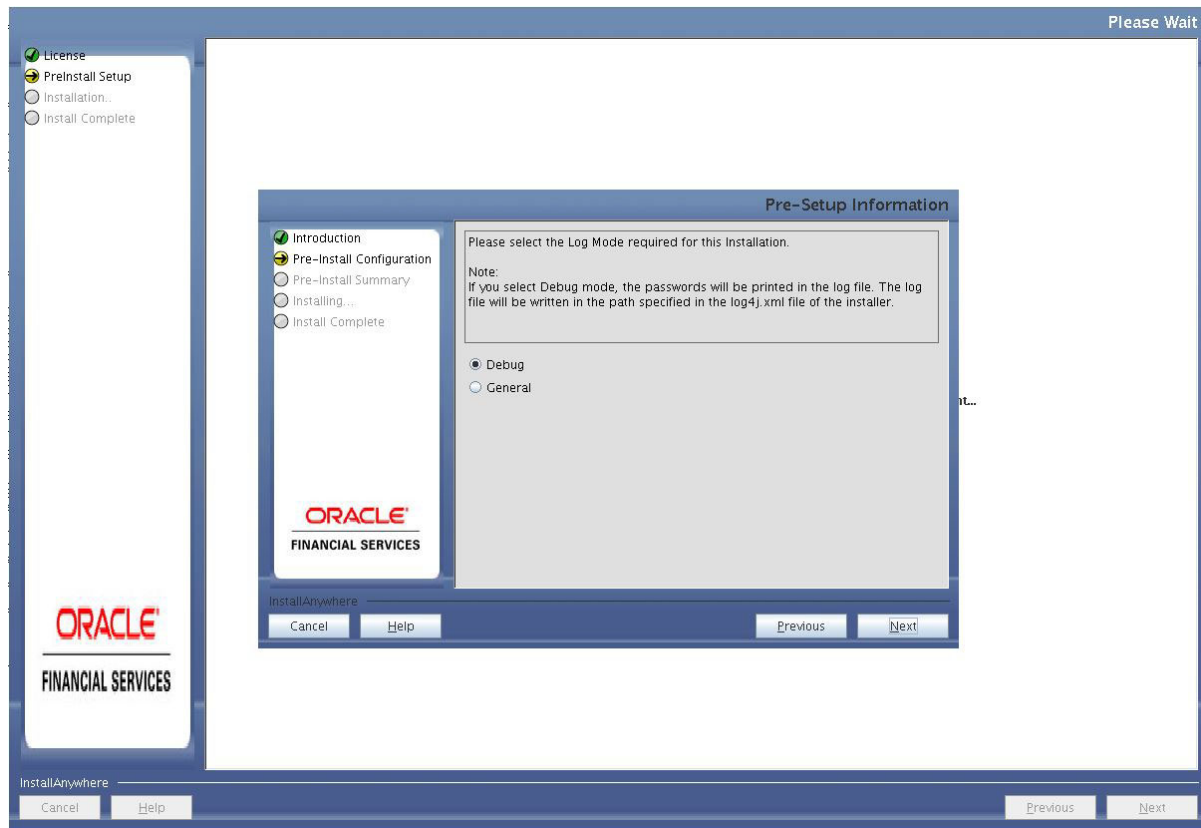
48. Upon invoking the installer, the Introduction screen is displayed with the prerequisites for installation. Ensure that all the prerequisites are met before you proceed with the installation.

Figure 4–37 Installation Introduction



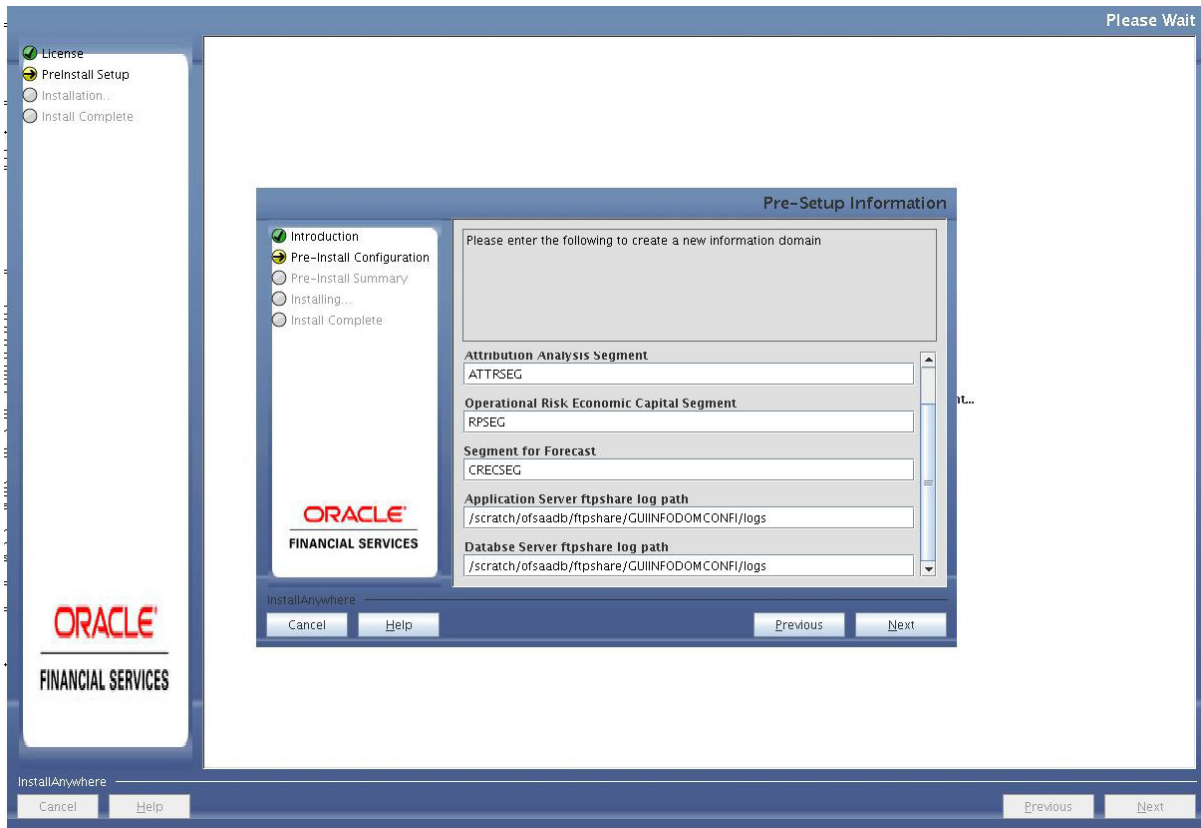
49. Click **Next**. Choose the log mode for this installer. If **Debug** is selected, the passwords will be printed in the log file. If **General** is selected then the general information will get printed in the log file.

Figure 4–38 Log Mode Selection



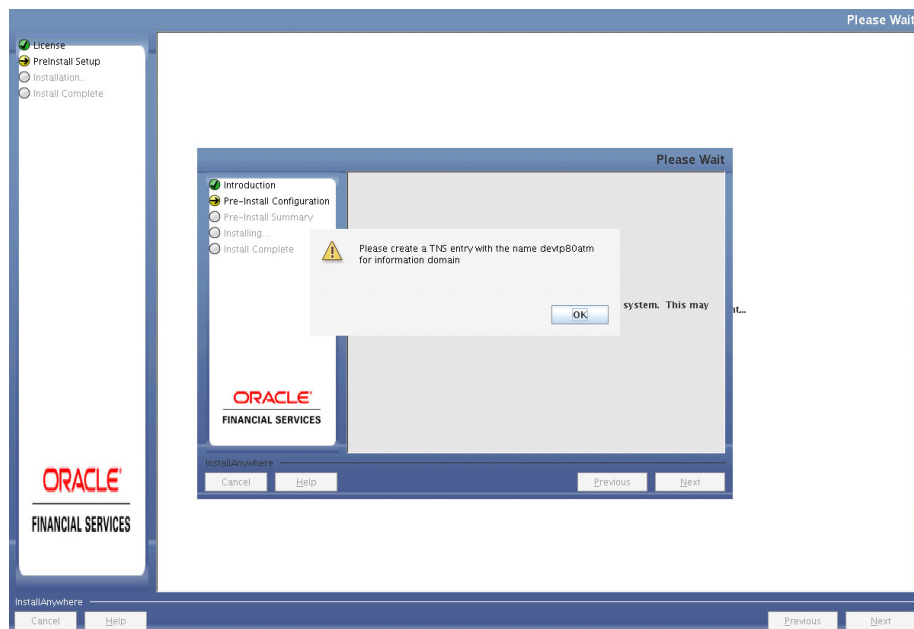
50. Click **Next**. Segment creation window will be displayed. Enter the log paths and segment names.

Figure 4–39 Segment Creation



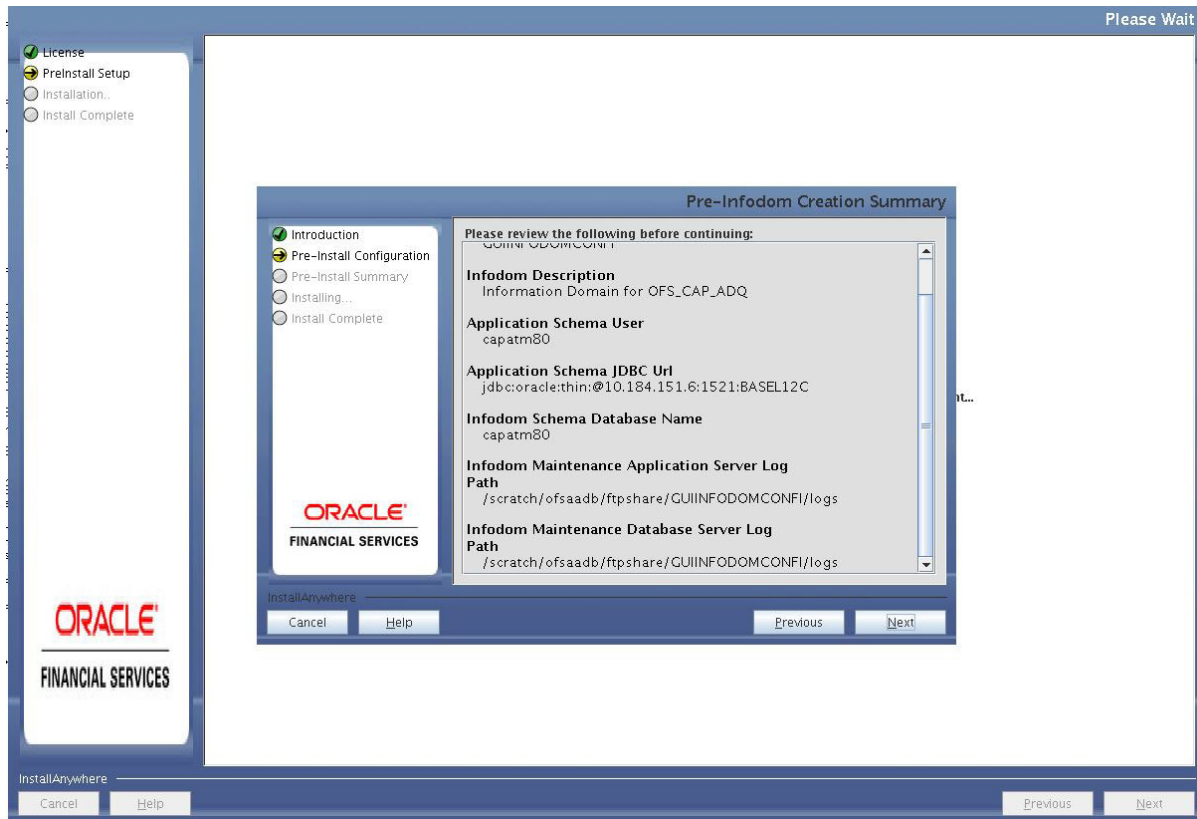
51. Click **Next**. If invalid TNS name message appears, click **OK** to make TNS entry in **tnsnames.ora** file and then proceed.

Figure 4–40 TNS Name Failure



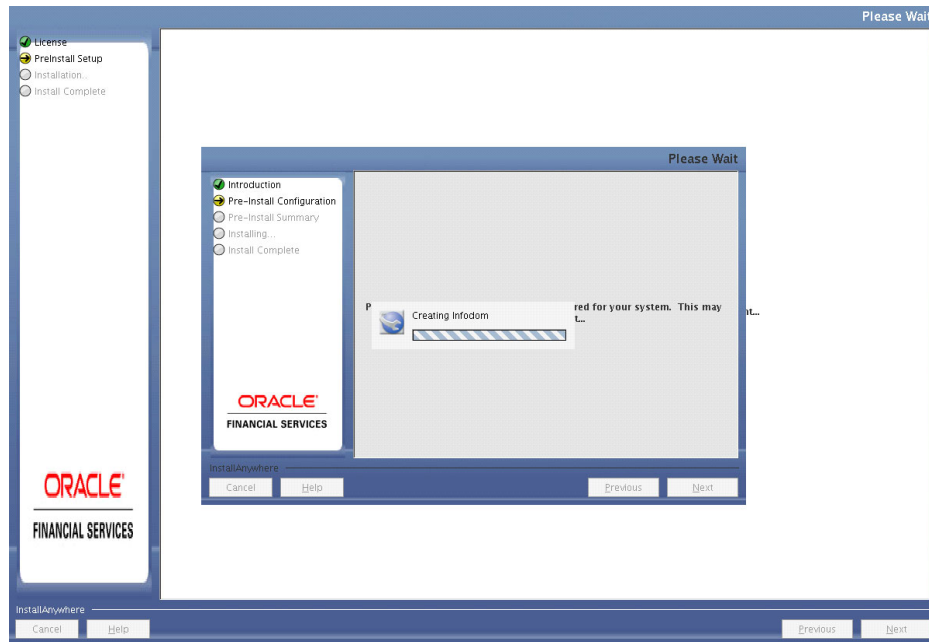
52. Click **Next**. Pre-Infodom Creation Summary window is displayed.

**Figure 4–41 Pre-Infodom Creation Summary**



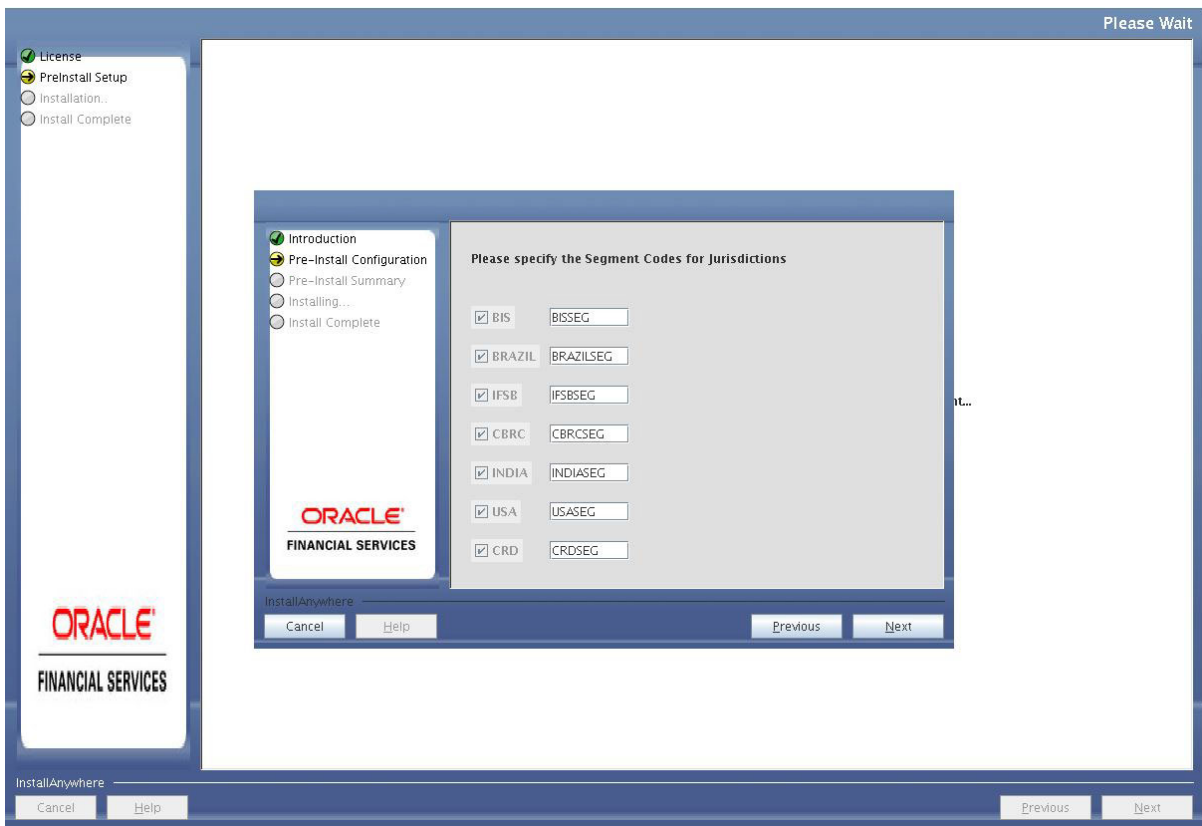
53. Click **Next**. The Infodom creation window is displayed.

Figure 4-42 Infodom Creation Summary



54. Select all jurisdictions and click **Next**.

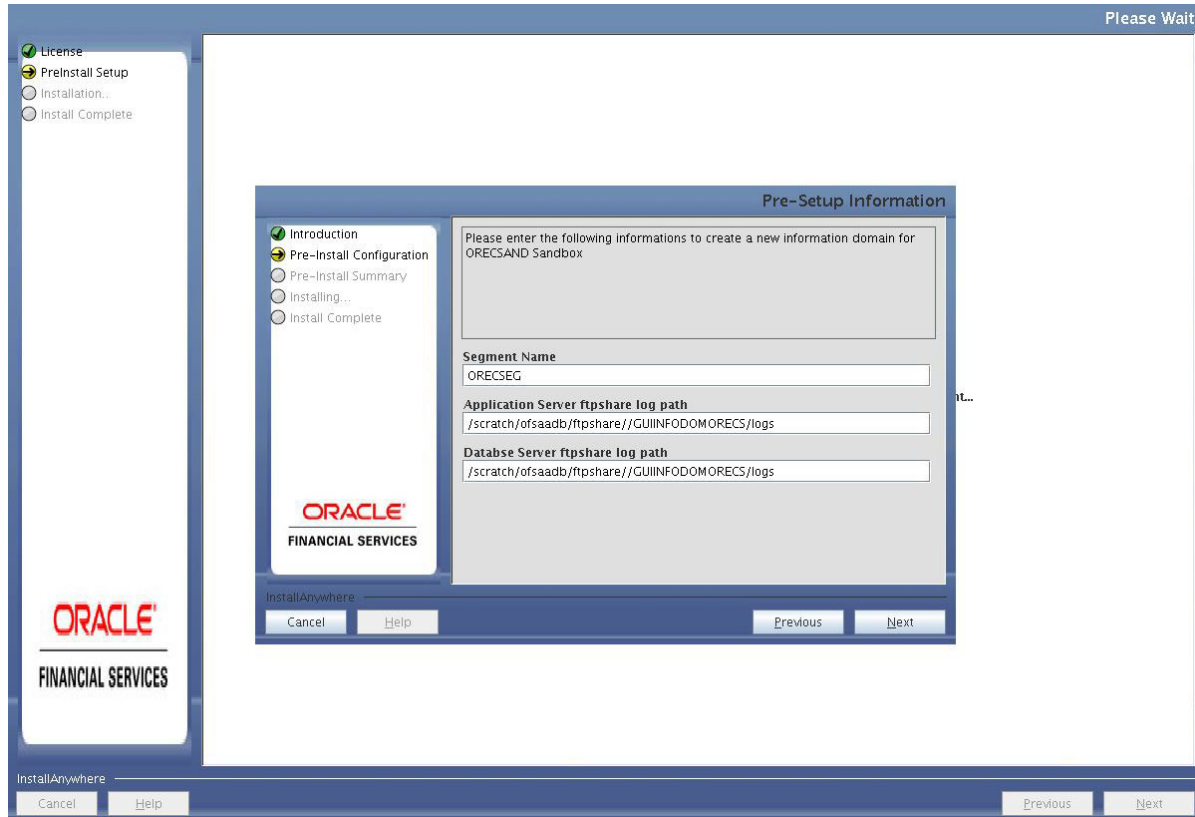
Figure 4-43 Jurisdictions Details



**Note:** You can modify or rename the segment name under each jurisdiction.

55. Click **Next**. The Pre-Setup Information window will be displayed.

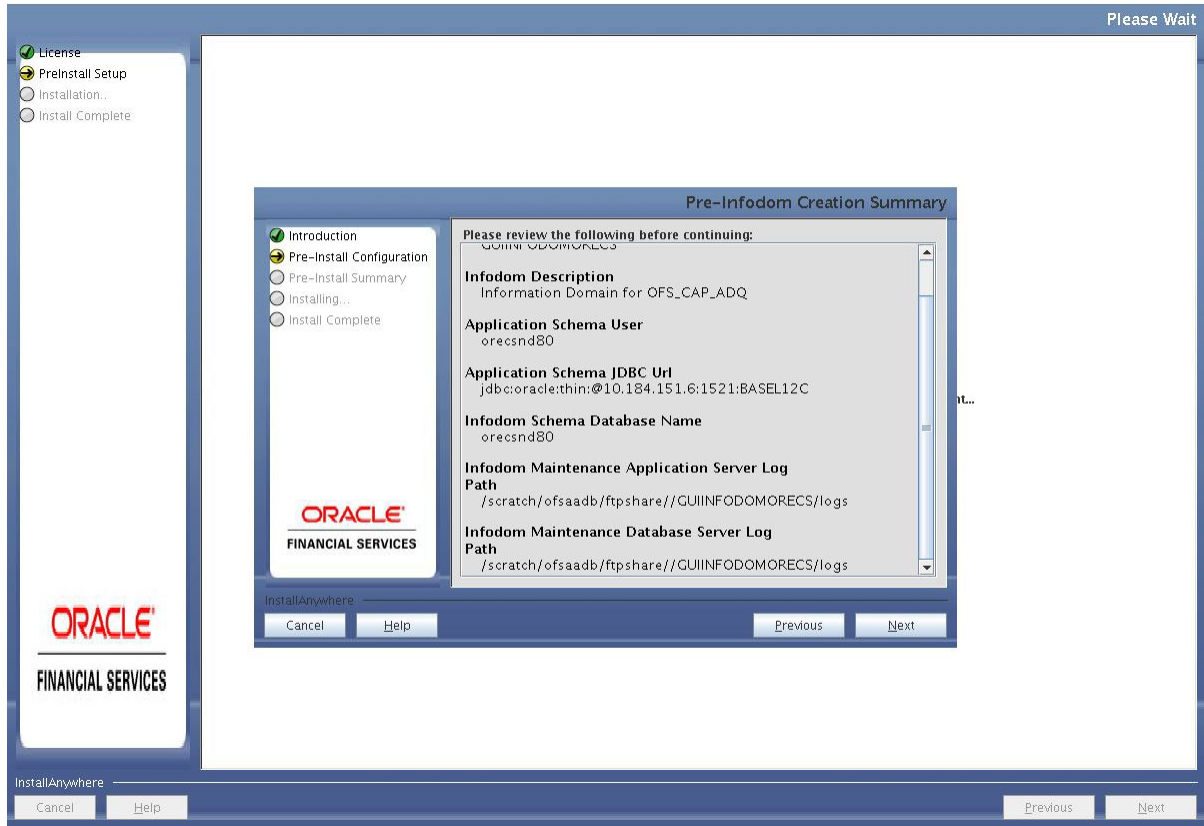
56. Pre-Setup Information 1



57. Verify the details and click **Next**. The Pre-Infodom Creation Summary is displayed.

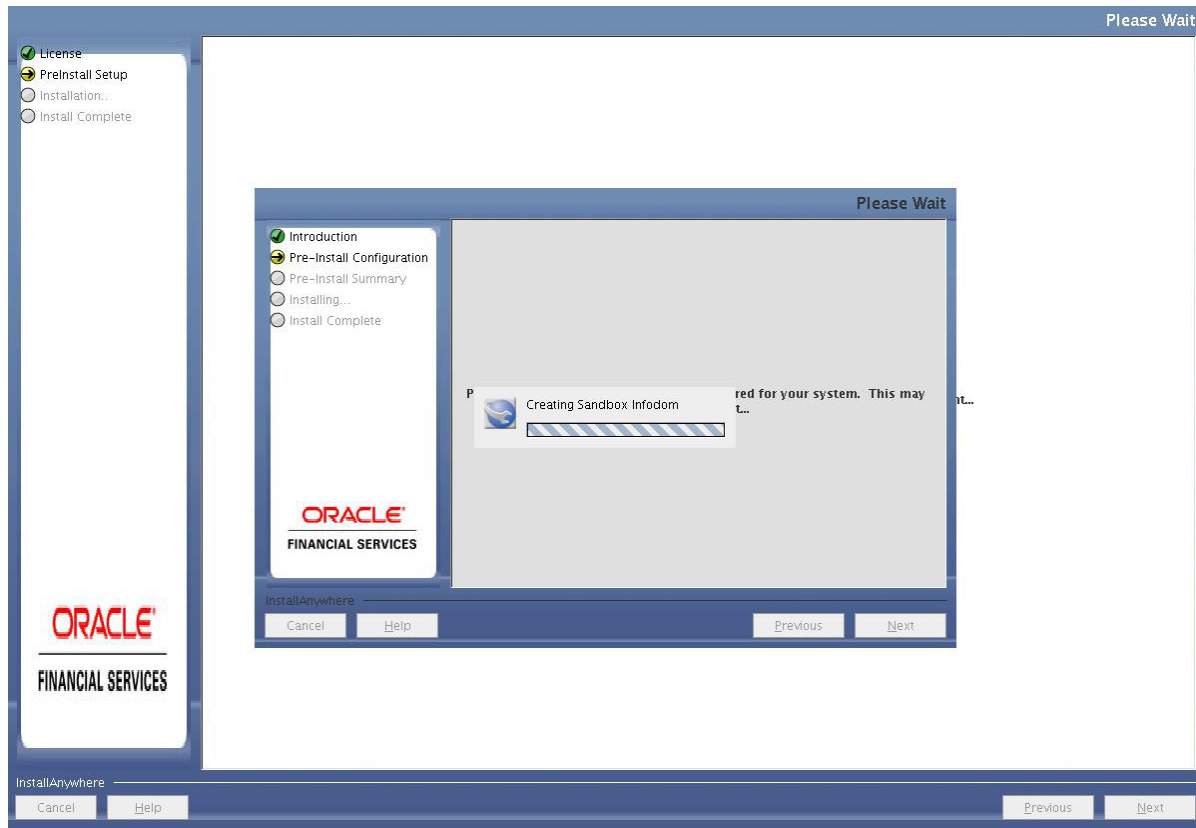


Pre-Infodom Creation Summary 1

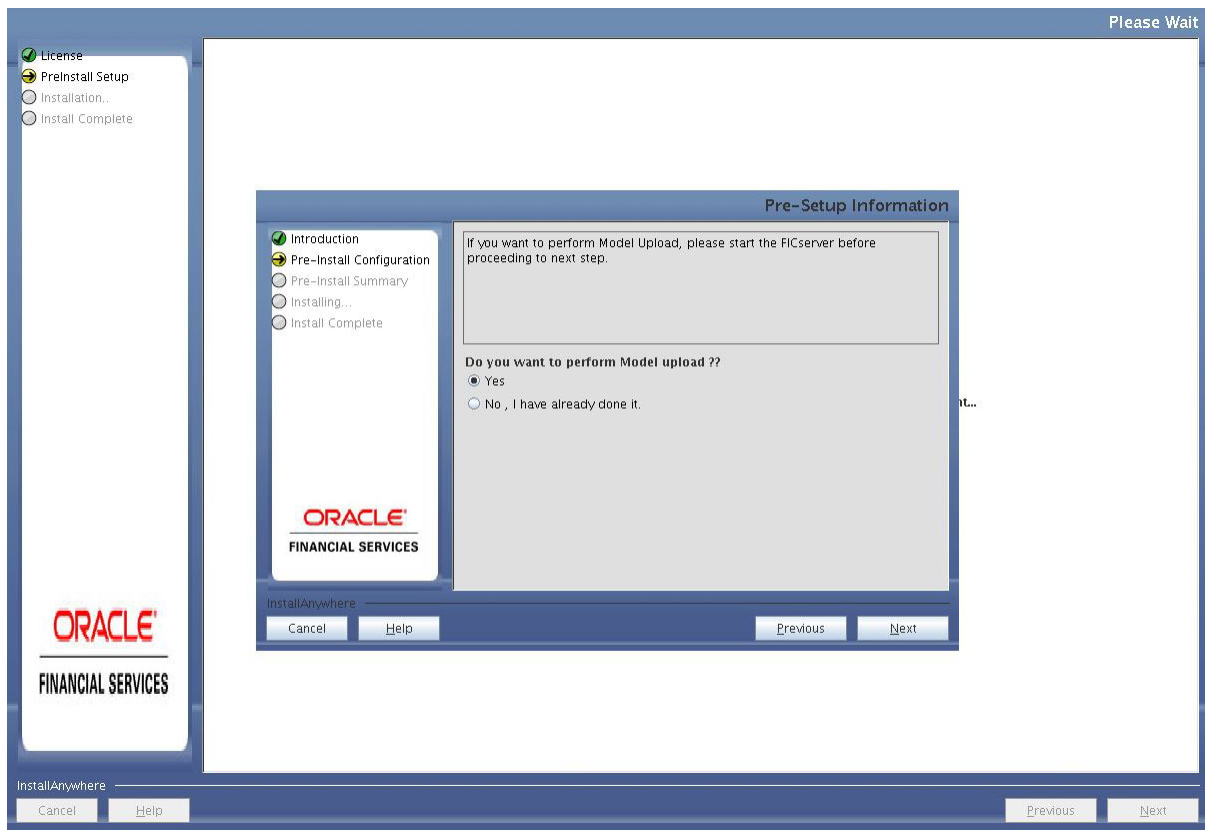


58. Click Next. The Creating Sandbox Infodom Page is displayed.

Figure 4-44 Sandbox Creation 1

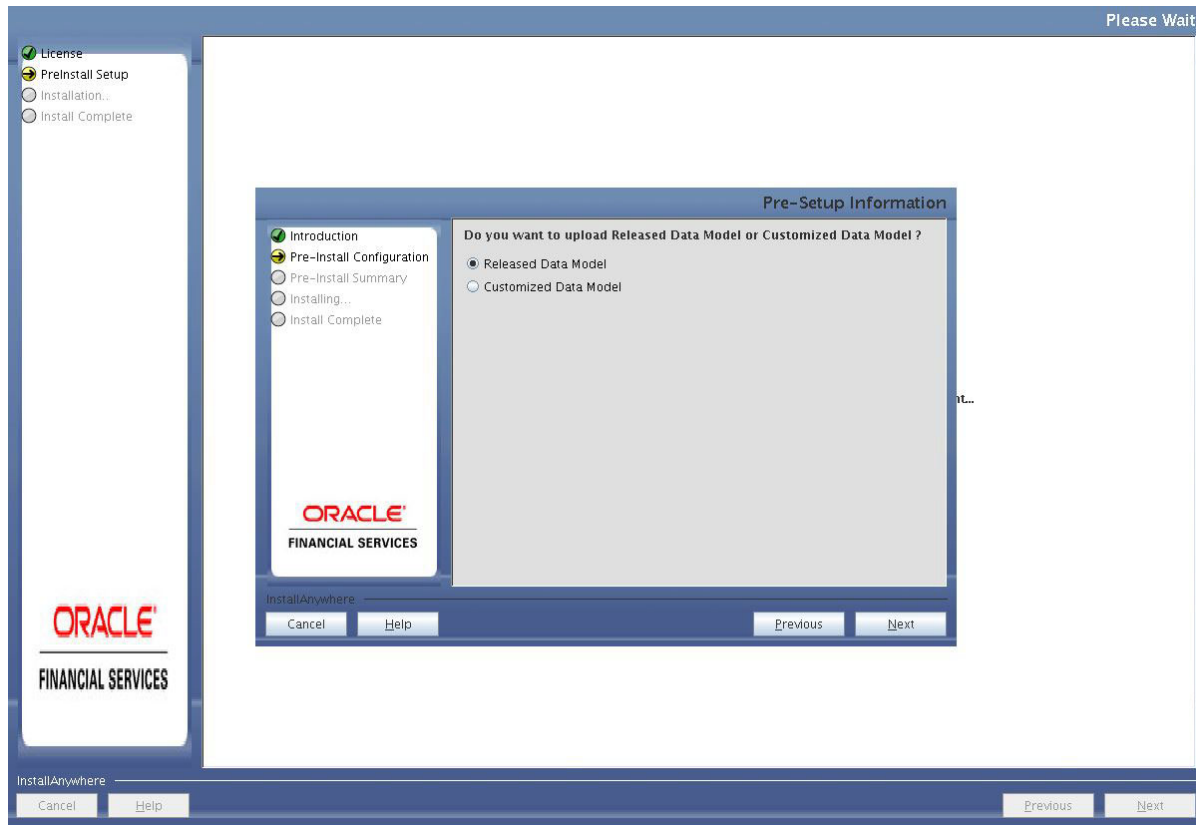


59. Select Yes if you want to upload the data model or select No to skip it and click **Next**.

**Figure 4–45 Model Upload selection**

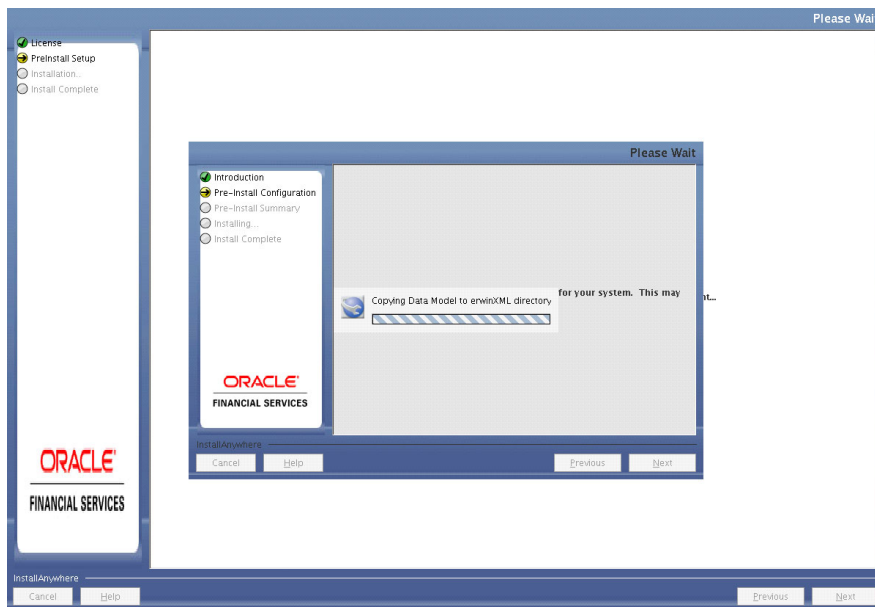
**60.** Select the data model type and click **Next**.

Figure 4–46 Data Model Selection



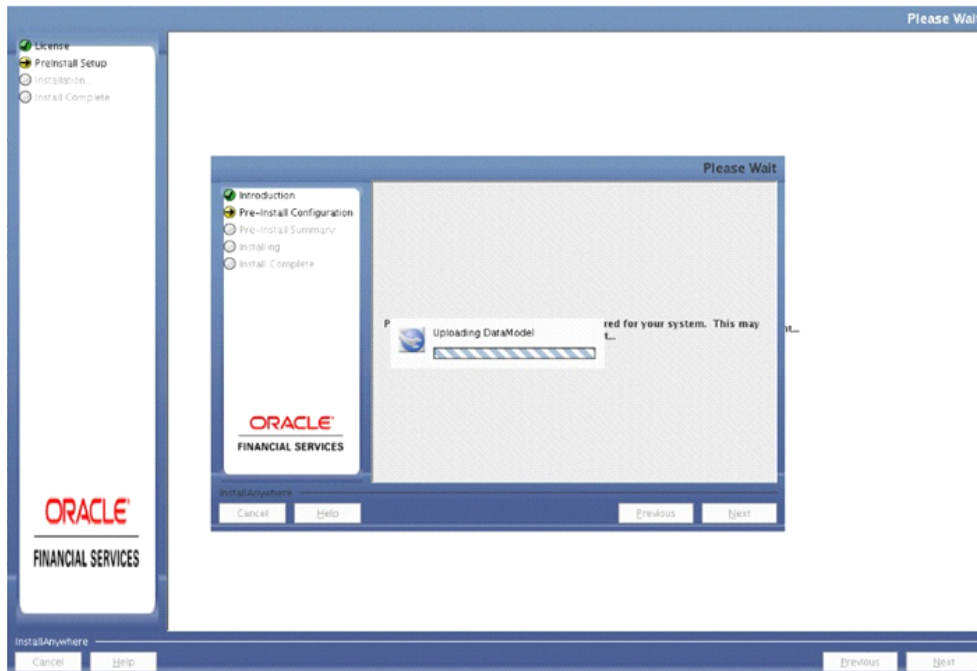
61. Click **Next**, to copy data model to **erwin.xml** file.

Figure 4–47 Data Model to ERwin



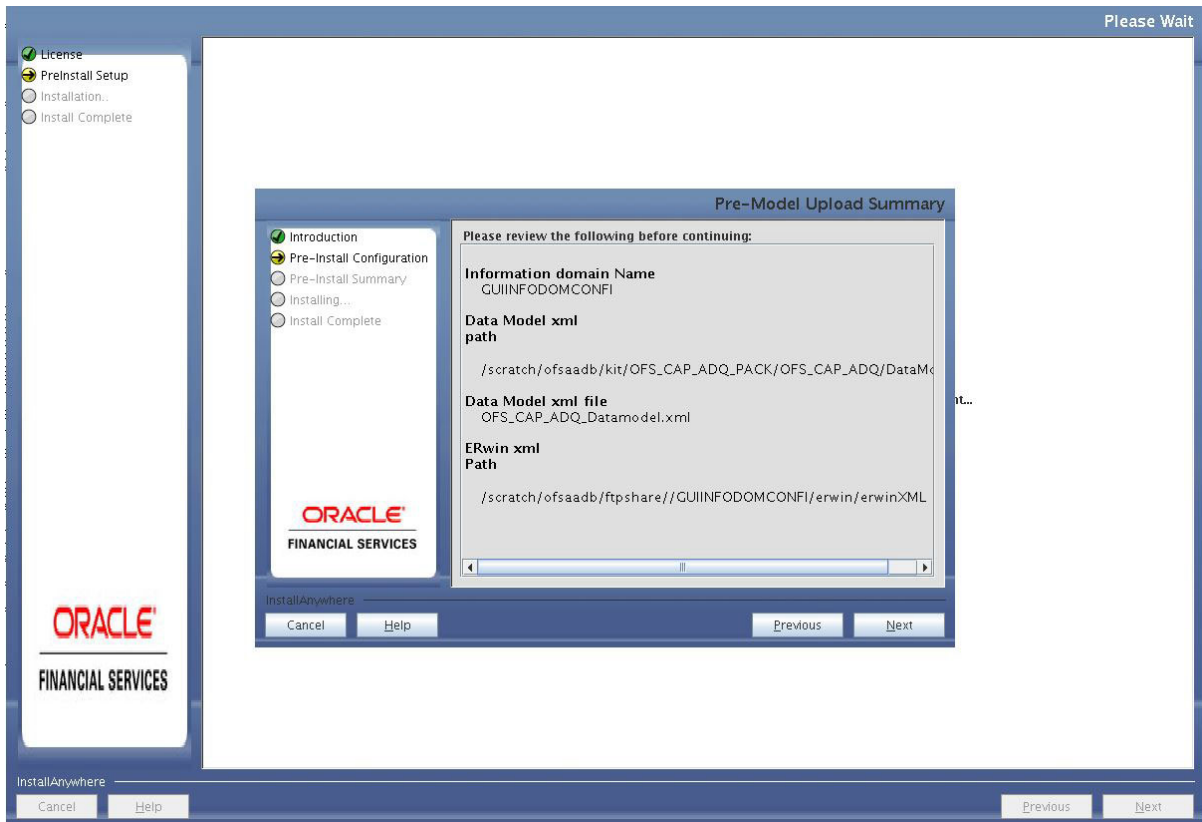
62. Click **Next**, to upload the data model.

**Figure 4–48 Data Model Upload**



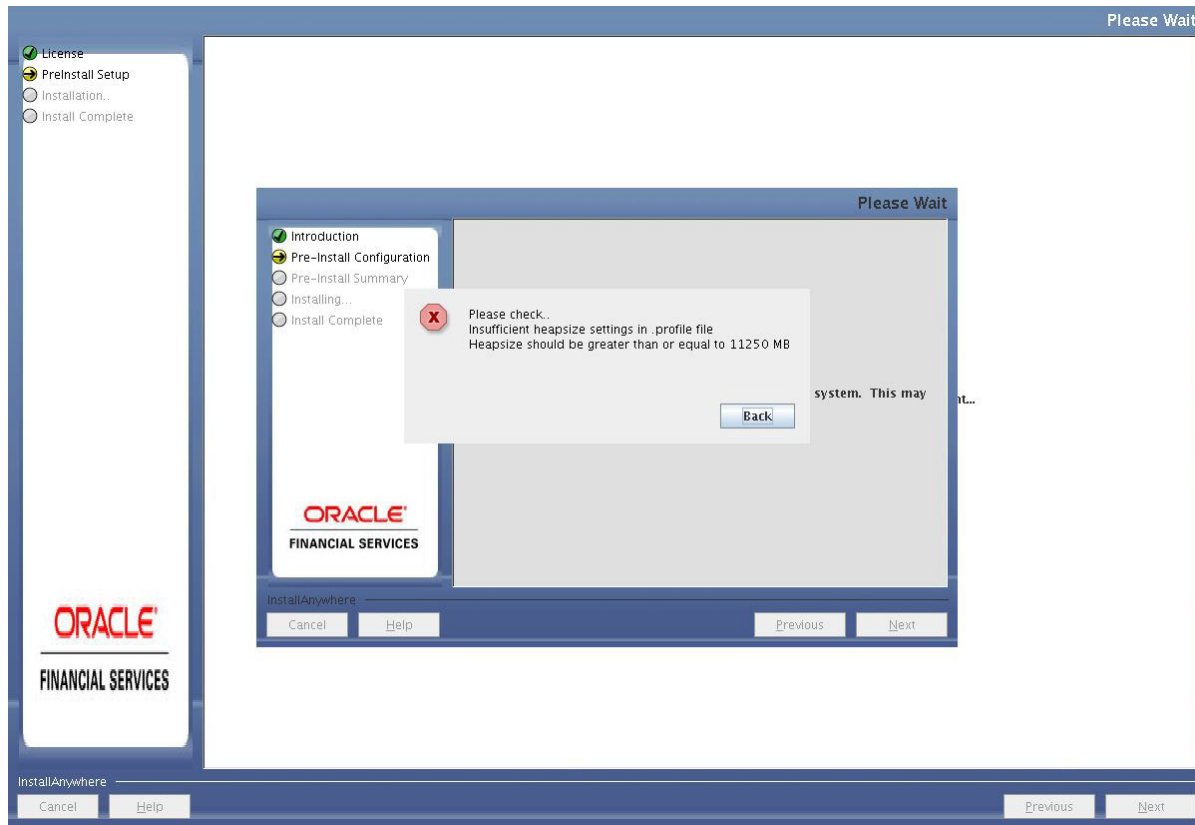
63. Verify the Pre-Model Upload Summary and click **Next**.

**Figure 4–49 Pre-Model Upload Summary**



64. Click **Next**. It will check for the Heap Memory.

**Figure 4–50 Model Heap Memory Warning**



65. If there is any error, click **Back**, update your **.profile** entry with required heap memory size.

- Open a new session in Putty.
- Shutdown OFSAAI server using `$FIC_HOME/ficapp/common/FICServer/bin/ stopofsaai.sh` file.
- Update the `X_ARGS_APP` entry in `.profile` file as mentioned in the following example:

```
X_ARGS_APP="-Xms2g -Xmx18g -XX:+UseAdaptiveSizePolicy
-XX:MaxPermSize=1024M -XX:+UseParallelOldGC
-XX:+DisableExplicitGC"
```

---

**Note:** Ensure that, in an integrated environment for pack on pack installation the memory size is 10 times the value of all the datamodel sizes taken together.

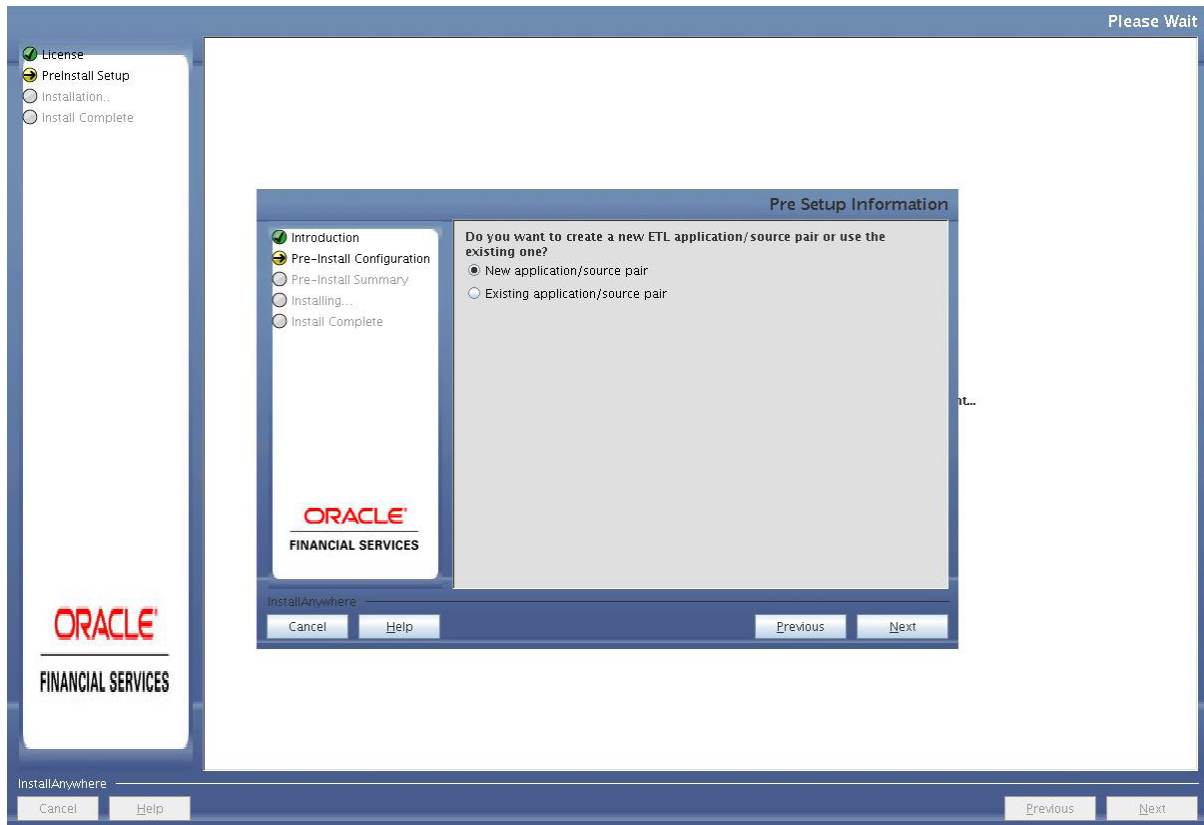
---

- Execute **.profile** file.
- Start OFSAAI services using `$FIC_HOME/ficapp/common/FICServer/bin/ startofsaai.sh`.
- Proceed for model Upload.

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

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

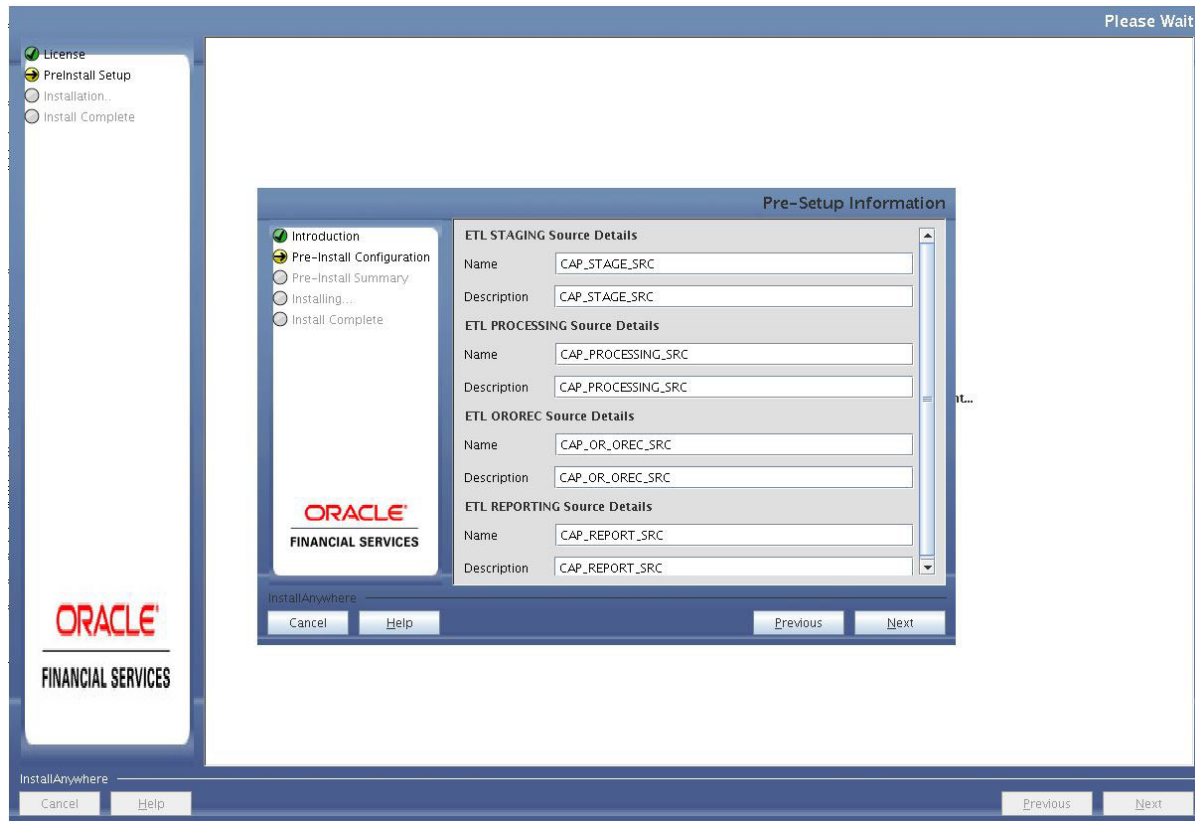
**Figure 4–51 ETL Application/ Source Pair**



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

67. Specify all the details required for application and source creation.

**Figure 4–52 ETL Application Details**

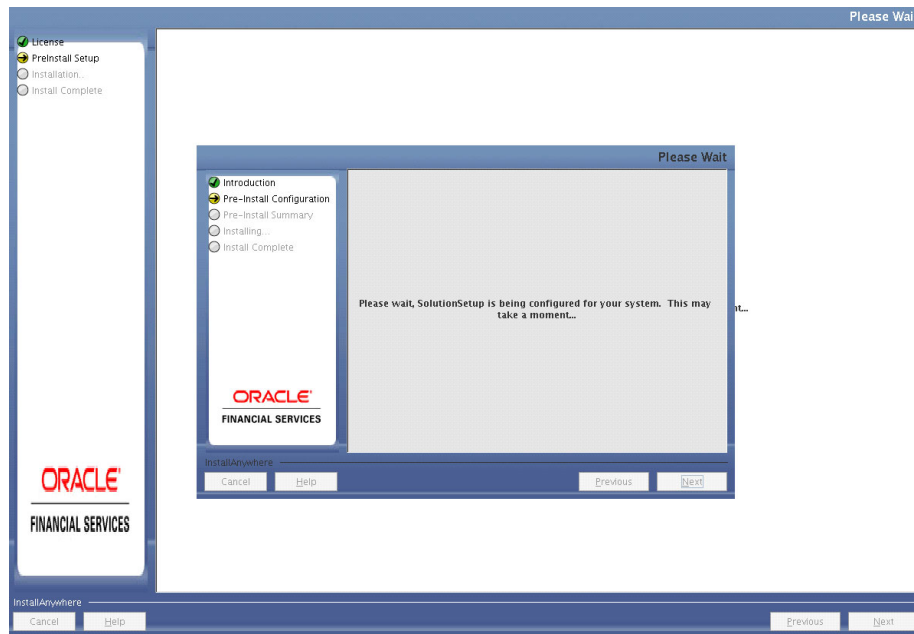


**68.** Click **Next** to proceed.

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

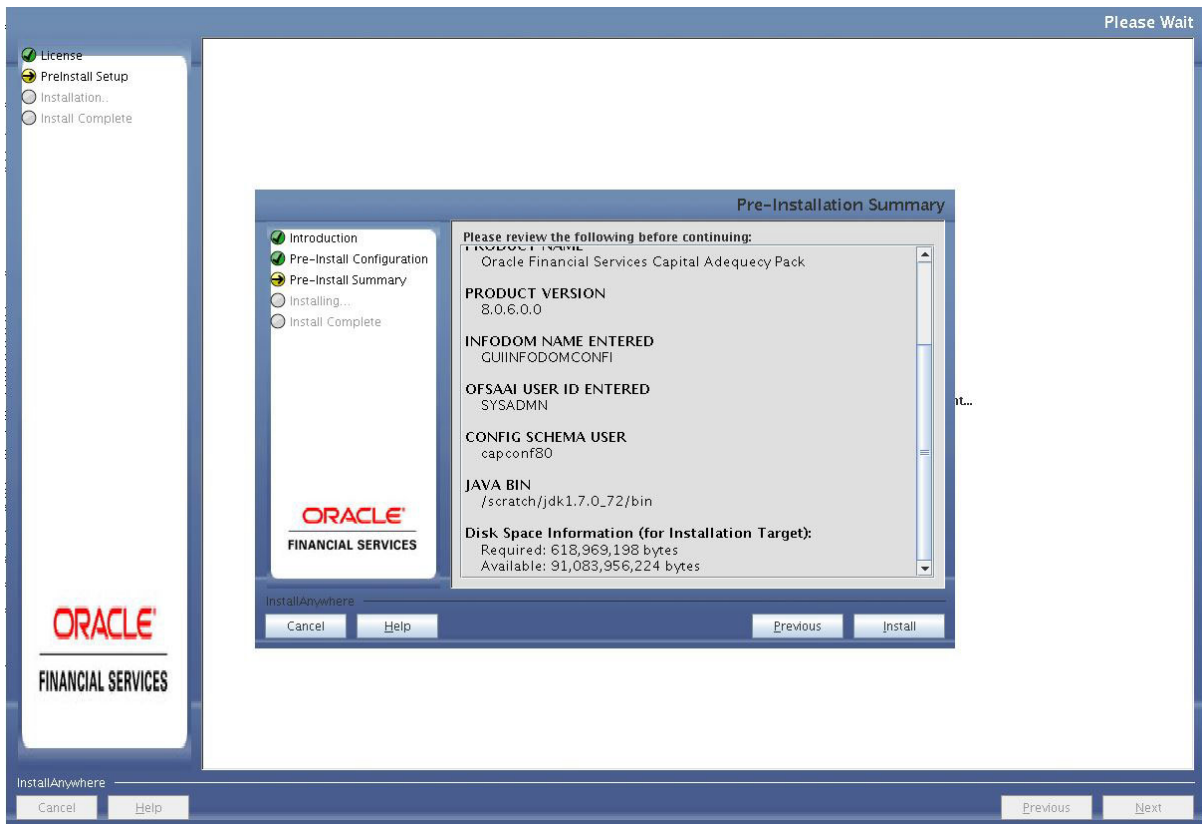


**Figure 4-53 Application and Source Creation**



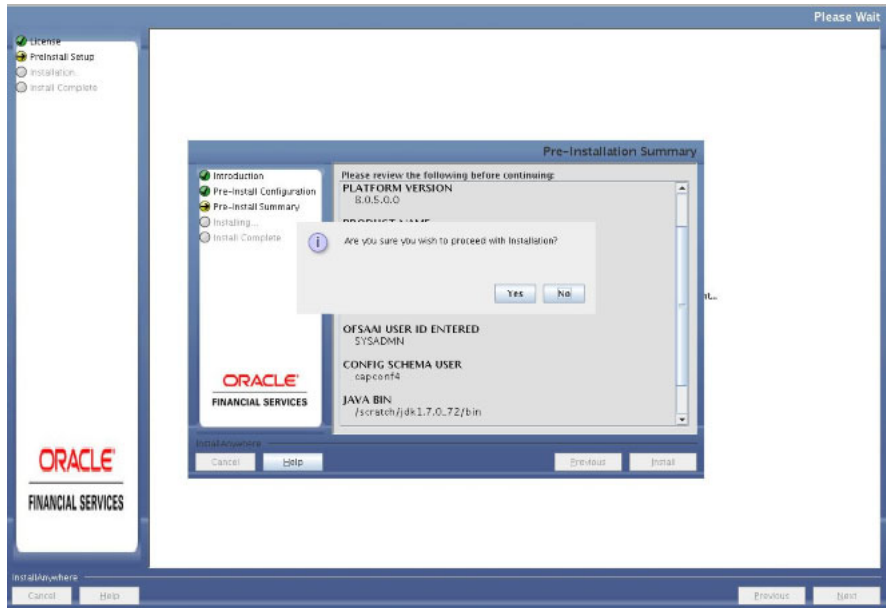
69. After Creation, click **Next**. This panel displays the pre-installation summary. Verify all details and proceed.

**Figure 4-54 Pre-installation Summary**



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

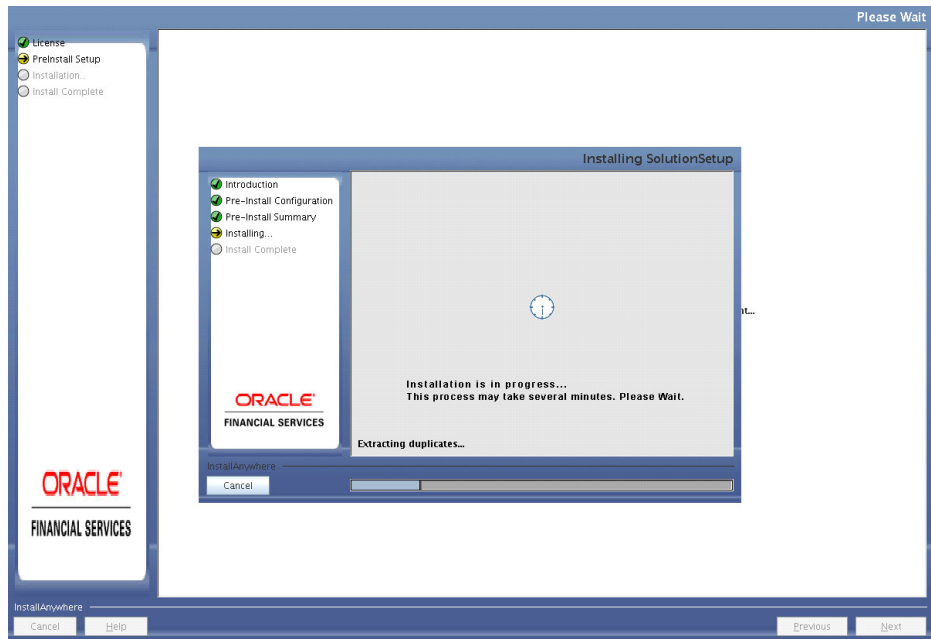
**Figure 4–55 Installation Confirmation**



71. Click Yes, Installation is initiated. The Installation Progress is displayed in Installation Progress window.

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

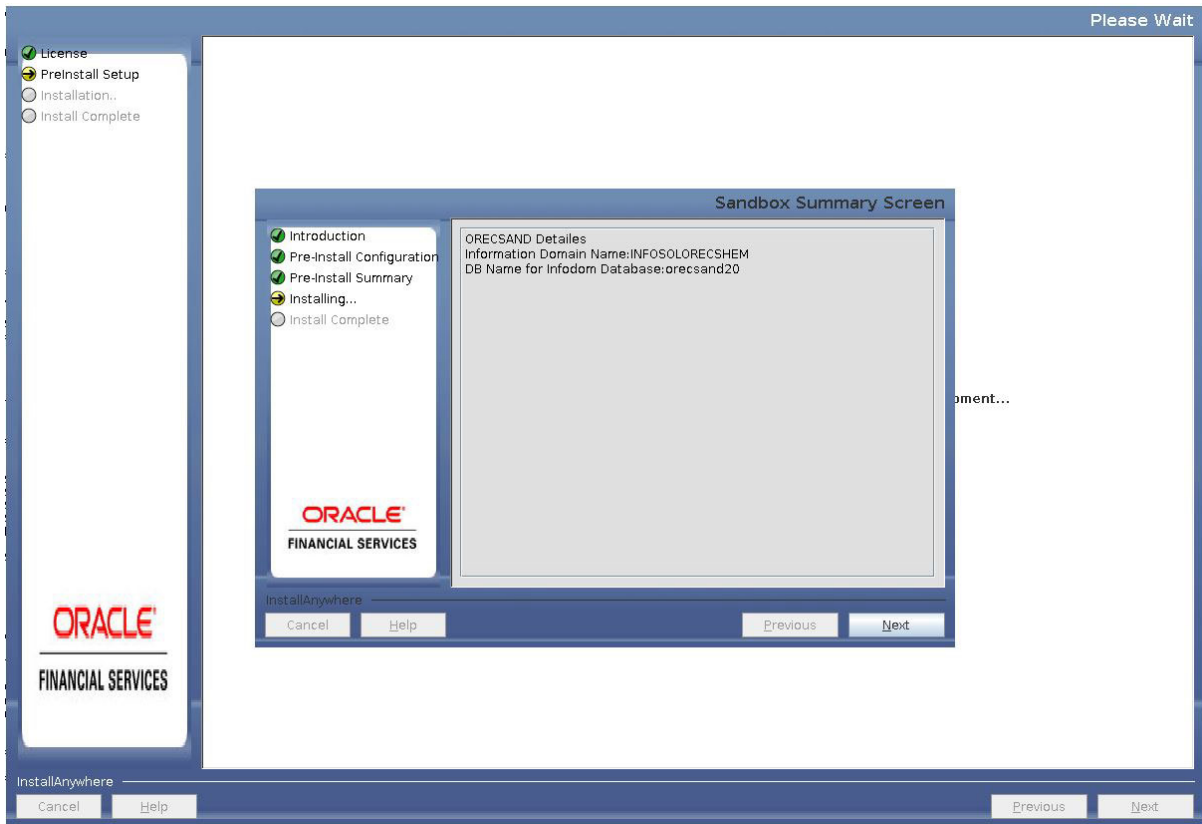
**Figure 4–56 Installation Progress**



The following screen displays the completion of installation of the Oracle Financial Services Capital Adequacy Pack Setup.

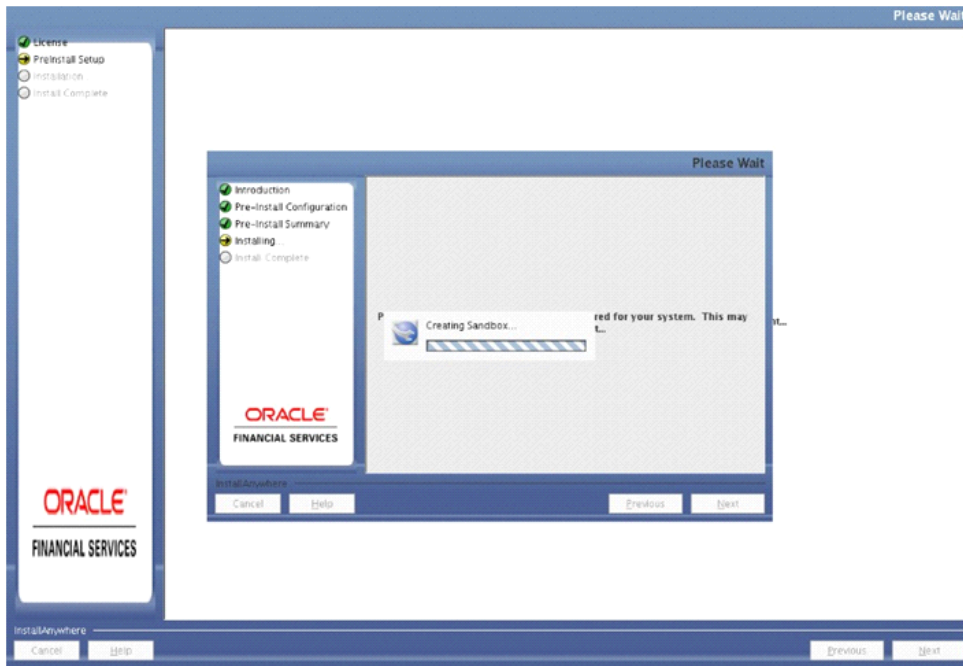
72. Click **Next**. Sandbox Summary Page is displayed.

**Figure 4–57** Sandbox Summary Screen



73. Click **Next** to create sandbox.

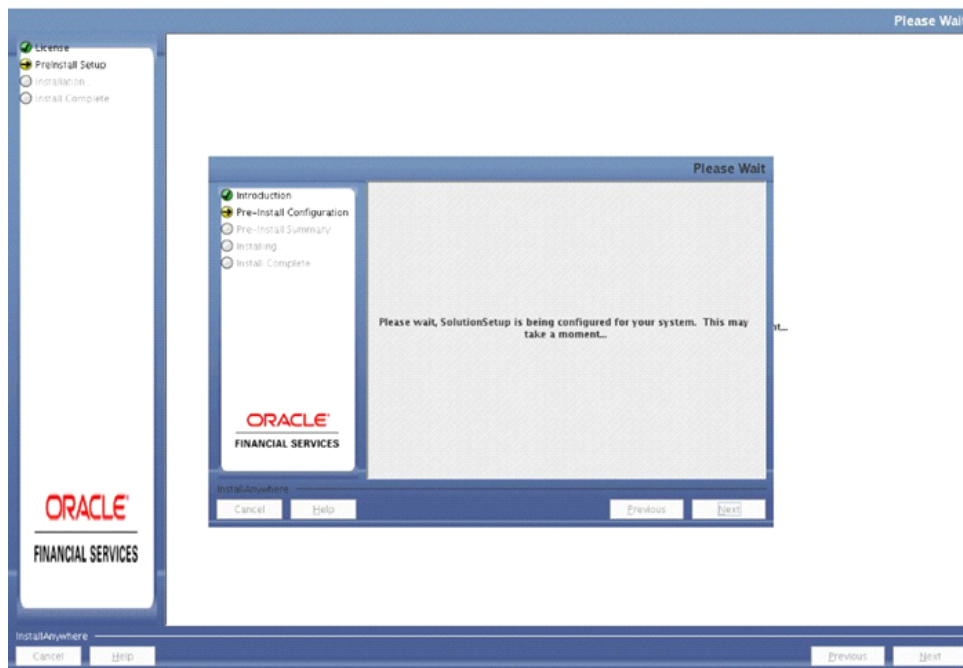
**Figure 4–58 Sandbox Creation**



74. Click **Next**. The following message is displayed:

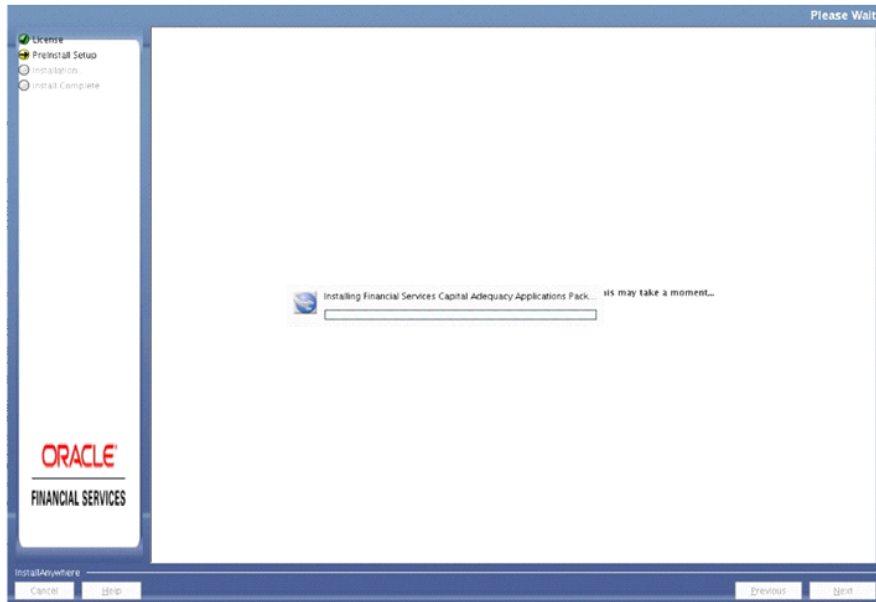
*Please wait, SolutionSetup is being configured for your system. This may take a moment...*

**Figure 4–59 SolutionSetup Progress**



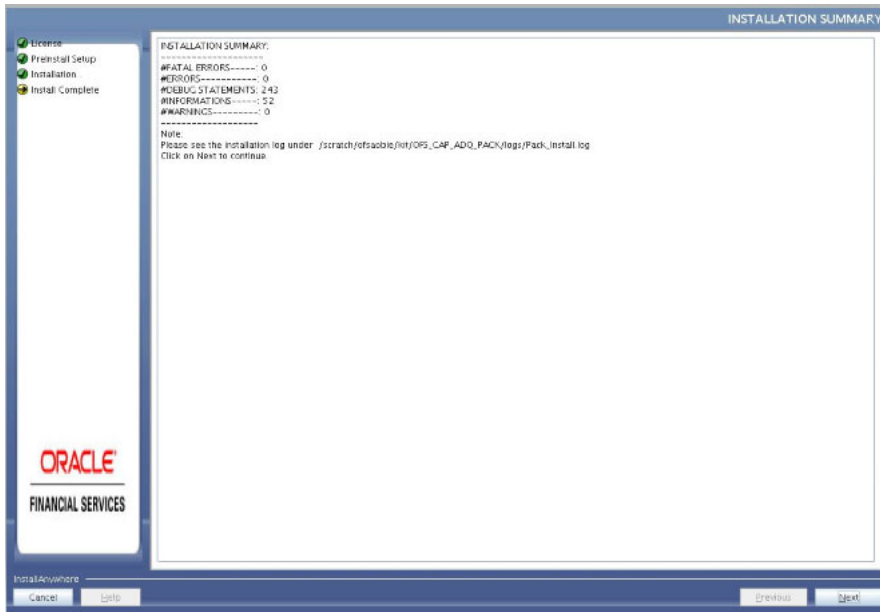
75. Click **Next**. The Installing Financial Service Capital Adequacy Pack window is displayed.

**Figure 4–60 Financial Service Capital Adequacy Pack Installation**

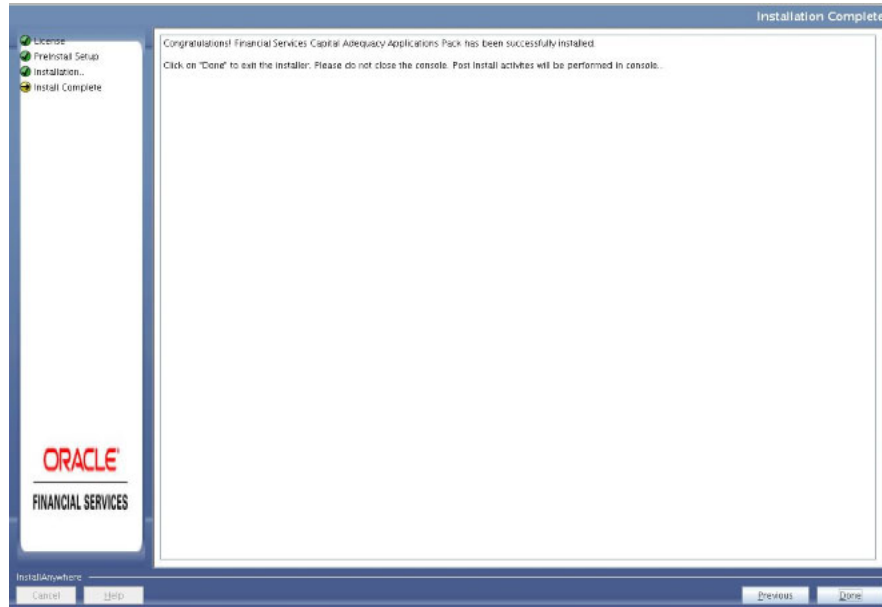


76. Click **Next**. Installation Summary page is displayed.

**Figure 4–61 Installation Summary**



**Figure 4–62 Installation Complete**



77. Click **Done**.

---

---

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

---

---

The Post Install Health check results are displayed:

**Figure 4–63 Post Health Check Results**

```

CREATE TRIGGER has been granted to user, Status : SUCCESS
CREATE MATERIALIZED VIEW has been granted to user, Status : SUCCESS
CREATE INDEXTYPE has been granted to user, Status : SUCCESS
CREATE RESOURCE has been granted to user, Status : SUCCESS
SELECT privilege is granted for NLS_INSTANCE_PARAMETERS view, Current value : SELECT, Status : SUCCESS
NLS_LENGTH_SEMANTICS : NLS_LENGTH_SEMANTICS, Current value : NLS_LENGTH_SEMANTICS, Status : SUCCESS
NLS_NUMERIC_CHARACTERS : NLS_NUMERIC_CHARACTERS, Current value : NLS_NUMERIC_CHARACTERS, Status : SUCCESS
SELECT privilege is granted for 'Userparameter' view, Current value : SELECT, Status : SUCCESS
Open cursor value is greater than 3000, Current value : 3000, Status : SUCCESS
SELECT privilege is granted for USER_TABLESPACE view, Current value : SELECT, Status : SUCCESS
Schema is granted with at least 500 MB table space, Current value : Unlimited, Status : SUCCESS
Oracle Server version Current value : 11.1.0.7.0, Status : SUCCESS
DB specific Validation Completed, Status : SUCCESS
=====
Environment check utility Status : SUCCESS
=====
Starting installation...
Preparing to install...
Extracting the installation resources from the installer archive...
Configuring the installer for this system's environment...

Launching installer...

Executing profile
=====
CTRL characters removal started ...
CTRL characters removal over ...
Windows executable files removal started ...
Windows executable files removal over ...

We are now in /scratch/ofsabc
=====
Executing profile
Executing profile
Executing 'ant'
Buildfile: /scratch/ofsabc/OFSDP/ofsabc/build.xml
[try to override old definition of dsstatge resources

assistant:
[echo] Checking for File /scratch/ofsabc/OFSDP/ofsabc/OFSDP_user.xml exists

createuser:
[echo] Creating /scratch/ofsabc/OFSDP/ofsabc/OFSDP_user.freshlog...
[war] Building war: /scratch/ofsabc/OFSDP/ofsabc/OFSDP_user

BUILD SUCCESSFUL
Total time: 55 seconds
OFSAA Top Layer Services start-up check started...
Starting startofsaa.sh service...
OFSAA Service - OK
Starting ioc service...
IOC service - OK
Shutting down ioc service...
Shutting down OFSDA service...
OFSAA Top Layer Services check Status: SUCCESSFUL.
OFSAA II Layer Services check started...
Calling sgen@shutdown.sh to check and kill, if any of the server is running...
OLAP Data Server service is not running.
MESSAGE Server service is not running.
IM service is not running.
ROUTER service is not running.
Starting ROUTER Service
ROUTER service started in background mode.
Starting IM Service
IM service started in background mode.
Starting MESSAGE SERVER Service
MESSAGE SERVER service started in background mode.
Starting OLAP DATA SERVER Service
OLAP DATA SERVER service started in background mode.
OLAP Data Server service is not running.
Stop MESSAGE Server service with Process ID : 3062
Stop IM service with Process ID : 3049
Stop ROUTER service with Process ID : 3034
OFSAA II Layer File Services check Status: SUCCESSFUL.
=====
Installation completed...
=====

```

You have successfully installed the OFS CAP Application Pack.

78. Perform the steps mentioned in [Post Installation Configuration](#) section.

## Verifying the Log File

See the following logs files for more information:

- Refer the `Pack_Install.log` located at `OFS_CAP_ADQ_PACK/logs/` directory and log file(s) located at `OFS_CAP_ADQ_PACK/OFS_CAP_ADQ/logs` for OFS CAP Application Pack installation logs.
- See the log file(s) located at `OFS_CAP_ADQ_PACK/OFS_AAI/logs/` directory for Infrastructure installation logs.
- See the `OFSAAInfrastructure_Install.log` file located at `$FIC_HOME` directory for Infrastructure installation logs.





---

---

## Upgrading the OFS CAP Application Pack

Release 8.0.6.0.0 of the Capital Adequacy Pack is not fully backward compatible with earlier versions of the OFSAA applications. You can either upgrade all your applications from existing 8.0.x versions to the 8.0.6.0.0 version or upgrade only selective application packs to v8.0.6.0.0. In the case of the latter, you must also apply the forthcoming compatibility patches for the required application packs, so that the remaining application-packs can continue to be at their pre-8.0.6.0.0 versions.

This chapter includes the following topics:

- [Upgrading the OFS CAP Application Pack](#)

### Upgrading the OFS CAP Application Pack

Perform the following instructions to download, extract, install, and configure this release:

1. Download the OFS CAP Application Pack v8.0.6.0.0 archive file and copy it to your OFSAA server in Binary mode. For more information, see [Downloading and Copying the OFS CAP Applications Pack Installer](#) section.

---

---

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

---

---

2. Log in to My Oracle Support, search for the **33663417** Mandatory Patch in the Patches & Updates Tab and download it.

---

---

**Note:** On the 10th of December 2021, Oracle released Security Alert CVE-2021-44228 in response to the disclosure of a new vulnerability affecting Apache Log4J before version 2.15. The application of the **33663417** Mandatory Patch fixes the issue.

For details, see the My Oracle Support Doc ID 2827801.1.

Ensure that you reapply the **33663417** Mandatory Patch whenever you install or upgrade the application, or apply an incremental patch.

---

---

3. Log in to the OFSAA Server with the user credentials you used to install OFSSA.

---

---

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

---

---

Download the unzip utility (OS specific) `unzip_<os>.Z` and copy it in Binary mode to the directory that is included in your PATH variable. If you already have the unzip utility to extract the contents of the downloaded archive, skip to the next step.

Uncompress the unzip installer file using the command:

1. `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.

---

---

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

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

For example, `chmod 751 unzip_sparc`

3. Extract the contents of the OFS CAP Application Pack 8.0.6.0.0 in Download Directory installer archive file using the following command:

```
unzip OFS_CAP_PACK.zip
```

4. Give below permission to the installer folder. Navigate to the Download Directory and execute the command:

```
chmod -R 755 OFS_CAP_PACK
```

4. Shut down all the OFSAAI Services. For more information, refer to the *Start/Stop Infrastructure Services* section in [Appendix D](#).
5. Create a copy of the `Silent.template` file present in the installer folder `OFS_CAP_ADQ_PACK/OFS_CAP_ADQ/conf` and rename it as `Silent.props`.
6. Edit the `Silent.props` file and for any upgrade, specify parameter values only for `LOG_MODE`, `UPLOAD_MODEL`, `MODEL_TYPE`, `DATAMODEL`, `DM_DIRECTORY` (if applicable). Let the segment codes and parameter `ETL_APPSRC_TYPE` and the `DESC` and `NAME` fields that follow it be blank.
7. In the `Silent.props` file, uncomment the parameters (segment code, src name and desc) from the blocks provided under it, as per the base version and provide values wherever required, as directed in the comment section.
8. To install the OFS CAP Application Pack on:
  - **For Java 7:** Proceed with the next step.
  - **For Java 8:** Edit the `VerInfo.txt` file to modify the value for property `JAVA_VERSION` to 1.8. Save the changes and proceed with the next step.
9. Grant `rqrole` and `rqadmin` rights to the config, atomic and OREC sandbox schema if you are installing / enabling Oracle Financial Services Capital Adequacy Pack - Operational Risk Economic Capital. If not, ignore the error in CAP installation log file (`OREC_Sys_Scripts.sql`).
10. Enter the following command in the console to execute the application pack installer with `SILENT` option.

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

11. After processing, the following message is displayed in the console:

```
Installation completed...
```

12. For more information on securing your OFSAA Infrastructure, refer to the Security Guide in [OHC Documentation Library](#).
13. After successful installation, follow these steps:
- a. 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
```
    - **Websphere**

```
<Websphere installation
directory>/AppServer/profiles/<Profile name>/temp/<Node
name>/server1/<Application name>/<.war file name>
```
  - b. Map the Attribution UI function codes to Attribution roles such as Attribution Admin, Attribution Analyst, and Attribution Audit.
14. Add `umask 0027` in the `.profile` of the UNIX account which manages the WEB server to ensure restricted access permissions.
15. Generate the application EAR/WAR file and redeploy the application onto your configured web application server. For more information on generating and deploying EAR / WAR file, see [Appendix C](#) section.
16. Restart all the OFSAAI services. For more information, see the *Start/Stop Infrastructure Services* section in [Appendix D](#).
17. On completion of installation, refer the installation log files. For more information, see the [Verifying the Log File](#) section.
18. If there is Error:ORA-00904: "LAST\_MODIFIED\_BY": invalid identifier, specifically on upgrade from version 8.0.4.0.0 to version 8.0.6.0.0, Execute the following in ATOMIC SCHEMA and OREC SANDBOX SCHEMA:

```
SELECT *
FROM user_tab_cols
WHERE table_name = 'DIM_UOM_ATTR'
      AND column_name IN (
          'N_SEGMENT_ID'
        , 'N_ATTRIBUTE_ID'
        , 'N_ATTRIBUTE_NUM_MEMBER'
        , 'V_ATTRIBUTE_CHAR_MEMBER'
```

```

        , 'N_ASSIGN_VALUE'
        , 'V_ASSIGN_VALUE'
    );

SELECT *
FROM user_tab_cols
WHERE table_name = 'DIM_UOM_HIER'
      AND column_name IN (
        'N_HIERARCHY_ID'
        , 'N_PARENT_ID'
        , 'N_CHILD_ID'
        , 'N_PARENT_DEPTH'
        , 'N_CHILD_DEPTH'
        , 'N_DISPLAY_ORDER'
        , 'F_SINGLE_DEPTH'
        , 'V_CREATED_BY'
        , 'D_CREATION_DATE'
        , 'V_LAST_MODIFIED_BY'
    );

```

If any records are retrieved from either of the above given statement blocks, execute the following statements:

```

*/
ALTER TABLE DIM_UOM_ATTR RENAME COLUMN N_SEGMENT_ID to N_UOM_ID
/
ALTER TABLE DIM_UOM_ATTR RENAME COLUMN N_ATTRIBUTE_ID to ATTRIBUTE_ID
/
ALTER TABLE DIM_UOM_ATTR RENAME COLUMN N_ATTRIBUTE_NUM_MEMBER to DIM_
ATTRIBUTE_NUMERIC_MEMBER
/
ALTER TABLE DIM_UOM_ATTR RENAME COLUMN V_ATTRIBUTE_CHAR_MEMBER to DIM_
ATTRIBUTE_VARCHAR_MEMBER
/
ALTER TABLE DIM_UOM_ATTR RENAME COLUMN N_ASSIGN_VALUE to NUMBER_ASSIGN_
VALUE
/
ALTER TABLE DIM_UOM_ATTR RENAME COLUMN V_ASSIGN_VALUE to VARCHAR_
ASSIGN_VALUE
/

```

```

ALTER TABLE DIM_UOM_HIER RENAME COLUMN N_HIERARCHY_ID to HIERARCHY_ID
/
ALTER TABLE DIM_UOM_HIER RENAME COLUMN N_PARENT_ID to PARENT_ID
/
ALTER TABLE DIM_UOM_HIER RENAME COLUMN N_CHILD_ID to CHILD_ID
/
ALTER TABLE DIM_UOM_HIER RENAME COLUMN N_PARENT_DEPTH to PARENT_DEPTH_
NUM
/
ALTER TABLE DIM_UOM_HIER RENAME COLUMN N_CHILD_DEPTH to CHILD_DEPTH_NUM
/
ALTER TABLE DIM_UOM_HIER RENAME COLUMN N_DISPLAY_ORDER to DISPLAY_
ORDER_NUM
/
ALTER TABLE DIM_UOM_HIER RENAME COLUMN F_SINGLE_DEPTH to SINGLE_DEPTH_
FLAG
/
ALTER TABLE DIM_UOM_HIER RENAME COLUMN V_CREATED_BY to CREATED_BY
/
ALTER TABLE DIM_UOM_HIER RENAME COLUMN D_CREATION_DATE to CREATION_DATE
/
ALTER TABLE DIM_UOM_HIER RENAME COLUMN V_LAST_MODIFIED_BY to LAST_
MODIFIED_BY
/
ALTER TABLE DIM_UOM_B ADD N_UOM_DISPLAY_CODE NUMBER(14)
/
INSERT INTO DIM_UOM_ATTR (
    N_UOM_ID
    ,ATTRIBUTE_ID
    ,DIM_ATTRIBUTE_NUMERIC_MEMBER
    ,DIM_ATTRIBUTE_VARCHAR_MEMBER
    ,NUMBER_ASSIGN_VALUE
    ,VARCHAR_ASSIGN_VALUE
    ,DATE_ASSIGN_VALUE
)
SELECT N_UOM_ID
    ,ATTRIBUTE_ID
    ,DIM_ATTRIBUTE_NUMERIC_MEMBER

```

```

        ,DIM_ATTRIBUTE_VARCHAR_MEMBER
        ,NUMBER_ASSIGN_VALUE
        ,VARCHAR_ASSIGN_VALUE
        ,DATE_ASSIGN_VALUE
FROM DIM_UOM_ATTR_BKP
    /
INSERT INTO DIM_UOM_HIER (
    HIERARCHY_ID
    ,PARENT_ID
    ,CHILD_ID
    ,PARENT_DEPTH_NUM
    ,CHILD_DEPTH_NUM
    ,DISPLAY_ORDER_NUM
    ,SINGLE_DEPTH_FLAG
    ,CREATED_BY
    ,CREATION_DATE
    ,LAST_MODIFIED_BY
    ,LAST_MODIFIED_DATE
)
SELECT HIERARCHY_ID
    ,PARENT_ID
    ,CHILD_ID
    ,PARENT_DEPTH_NUM
    ,CHILD_DEPTH_NUM
    ,DISPLAY_ORDER_NUM
    ,SINGLE_DEPTH_FLAG
    ,CREATED_BY
    ,CREATION_DATE
    ,LAST_MODIFIED_BY
    ,LAST_MODIFIED_DATE
FROM DIM_UOM_HIER_BKP
    /
COMMIT
    /

```

19. 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 [Configuration for Oracle R distribution and Oracle R Enterprise \(ORE\)](#)

---

---

## Post Installation Configuration

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

This chapter includes the following sections:

- [Configuring Resource Reference](#)
- [Starting OFSAA Infrastructure Services](#)
- [Configuring Work Manager in Web Application Server](#)
- [Adding TNS entries in TNSNAMES.ORA file](#)
- [Configuration for Oracle R distribution and Oracle R Enterprise \(ORE\)](#)
- [Updating OBIEE URL](#)
- [Configurations for Java 8](#)
- [Setting Up Library Path on Solaris](#)
- [Configuring Pooling and Optimizer](#)
- [Enabling Transparent Data Encryption and Data Redaction](#)
- [Creating and Deploying the Application Pack Web Archive](#)
- [Accessing the OFSAA Application](#)
- [Performing Post Deployment Configurations](#)

---

---

**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 [Clearing the Application Cache](#) section.

---

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**Note:** You must install the consolidated patch for bug 27938294 and the from <https://support.oracle.com/>. Refer to the read me available with the patch for further instructions on installing the patch.

---

---

### Patch OFSAA Infrastructure Installation

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

Apply the following mandatory patch:

33663417

---

---

**Note:** On the 10th of December 2021, Oracle released Security Alert CVE-2021-44228 in response to the disclosure of a new vulnerability affecting Apache Log4J before version 2.15. The application of the **33663417** Mandatory Patch fixes the issue.

For details, see the My Oracle Support Doc ID 2827801.1.

Ensure that you reapply the 33663417 Mandatory Patch whenever you install or upgrade the application, or apply an incremental patch.

---

---

## Configuring Resource Reference

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

## Starting OFSAA Infrastructure Services

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

## Configuring Work Manager in Web Application Server

Configure the work manager in the web applications servers. Refer to the [Configuring Work Manager in Web Application Servers](#) section.

## Adding TNS entries in TNSNAMES.ORA file

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

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

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

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

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

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

1. Install OFSAAIRunner Package. For more information, refer [Installing OFS AAI Runner Package](#). If you have already installed OFSAAIRunner package (as part of a previous



installation), uninstall it . (For more information, refer [Uninstalling OFSAAIRunner Package](#) section), and reinstall the latest available OFSAAIRunner package.

2. Log in to the database with dba privileges and provide the following privilege to Configuration Schema:
  - RQADMIN by executing the command:  
GRANT RQADMIN TO <config\_schema>;
3. Log in to the database with dba privileges and provide the following privileges to Atomic Schema:
  - CREATE 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 should be installed on the Oracle Database server before installing 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.

---

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

```
ls -l
```

## Uninstalling OFSAIRunner Package

Refer to the following instructions to uninstall the OFSAIRunner package:

- Log in to the Oracle Database Server with the same username, using which Oracle Database Server installation is done.
- Enter ORE in command prompt and execute the command:  
#ORE
- To save workspace image, enter the command:  
>remove.packages("OFSAIRunner")
- Enter y when prompted to save the workspace image.  
q()
- Navigate to the directory `$ORACLE_HOME/R/library` and verify the package is not listed there by executing the command:
- Save workspace image? [y/n/c]: y

```
ls -l
```

## 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.

- To access Basel Analytics application, you need to update the following OBIEE url in the table 'AAI\_MENU\_B':

```
UPDATE AAI_MENU_B SET V_MENU_URL = '<<BASEL Analytics
Dashboard URL>>' WHERE V_MENU_ID = 'OFS_CAP_BASANA_DASH'
/
COMMIT
```

- To access OREC Analytics application, you need to update the following OBIEE url in the table 'AAI\_MENU\_B':

```
UPDATE AAI_MENU_B SET V_MENU_URL = '<< OREC
Dashboard URL>>' WHERE V_MENU_ID = 'OFS_CAP_OREC_DASH'
/
COMMIT
```

## Configurations for Java 8

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

- Copy the downloaded patch file (21160684) to your OFSAA server in Binary mode.

For more information on downloading the patch files, refer [Prerequisite Information](#) section >> Category - Others >> Sub-Category - OFSAA.

2. Follow the instructions given in the Readme to apply the patch.
3. If the Oracle Database version is 12c, copy ojdbc7.jar from \$ORACLE\_HOME/jdbc/lib to the following locations:
  - \$FIC\_HOME/utility/OFSAGenerateRepository/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/
4. If the Oracle Database version is 11g, copy ojdbc6.jar from \$ORACLE\_HOME/jdbc/lib to the following locations:
  - \$FIC\_HOME/utility/OFSAGenerateRepository/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/

## Setting Up Library Path on Solaris

If the OFS CAP application is installed as a full installer on Solaris, add the following entry in the .profile file and execute the .profile file:

```
export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$FIC_DB_HOME/lib/libSTLPORTON
```

## Configuring Pooling and Optimizer

In order to execute pooling and optimizer tasks, you must perform the following configuration steps:

1. Append the following in the am.conf file present in the \$FIC\_HOME/ficdb/conf directory:

```
<COMPONENT_START_TAG>
<COMPONENT_
NAME>`optimizer`<PATH>`Optimizer.sh`<TYPE>`U`<M>`main`
<COMPONENT_END_TAG>
<COMPONENT_START_TAG>
<COMPONENT_
NAME>`optimizerCRE`<PATH>`OptimizerCRE.sh`<TYPE>`U`<M>`main`
<COMPONENT_END_TAG>
```

```
<COMPONENT_START_TAG>  
<COMPONENT_NAME> `pooling` <PATH> `Pooling.sh` <TYPE> `U` <M> `main`  
<COMPONENT_END_TAG>
```

2. Append the following in the server.conf.properties file present in the \$FIC\_HOME/ficapp/icc/conf directory:

```
POOLING=10  
OPTIMIZER=10
```

## Enabling Transparent Data Encryption and Data Redaction

1. For enabling TDE, see [Configuring TDE](#) section in Appendix R.
2. For detailed steps on how to enable Data Redaction and Right to be Forgotten, refer to the Oracle Financial Services Capital Adequacy Pack Release 8.0.6 Admin Guide.

## 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.

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

---

---

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

---

---

## Accessing the OFSAA Application

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

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

## Performing Post Deployment Configurations

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

---

---

## Configuring the Web Server

This section covers the following topics:

- [Configuring the Web Server](#)
- [Configuring the Web Application Servers](#)
- [Configuring WebSphere Shared Library to Support Jersey 2x and Jackson 2.9x Libraries](#)
- [Configuring WebSphere HTTPS](#)
- [WebSphere Memory Settings](#)
- [Creating a Domain in the WebLogic Server](#)
- [Configuring WebSphere for REST Services Authorization](#)
- [Configuring WebLogic for REST Services Authorization](#)
- [Configuring the Application Security in WebSphere](#)

### Configuring the Web Server

This step assumes an 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 the 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 a WebSphere Application Server for Application Deployment](#)
- [Configuring WebLogic for Application Deployment](#)
- [Configuring Apache Tomcat Server for Application Deployment](#)

---

---

**Note:**

- Make a note of the IP Address/ Hostname and Port of the web application server. This information is required during the installation process (required if Web Server is not configured).
  - Refer OFSAA Secure Configuration Guide/ Security Guide mentioned in the Related Documents section for additional information on securely configuring your Web Server.
- 
- 

## Configuring a 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 a New Profile in WebSphere](#)
- [Managing Applications in WebSphere](#)
- [Deleteing WebSphere Profiles](#)
- [To enable https configuration on Infrastructure, assign value 1 to "HTTPS\\_ENABLE" in OFSAAI\\_InstallConfig.xml for Silent mode OFSAAI installation.](#)

### Creating a New Profile in WebSphere

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

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

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

Example:

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

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

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

Example:

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

---

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

---

## 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
```

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*

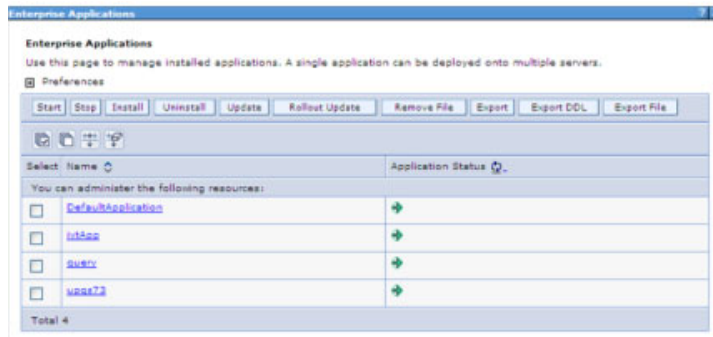


2. Log on with the **User ID** provided with the admin rights.

- From the LHS menu, expand the **Applications > Application Type > WebSphere Enterprise Applications**.

The *Enterprise Applications* screen is displayed.

**Figure 6–2 Enterprise Applications**



This Enterprise Applications screen helps you to:

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

### Deleteing WebSphere Profiles

To delete a WebSphere profile, follow these steps:

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

```
<WebSphere_Installation_Directory>/AppServer/bin/
```

- Execute the command:

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

- Delete profile folder.

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

- Execute the command:

```
manageprofiles.sh -validateAndUpdateRegistry
```

## Configuring WebLogic for Application Deployment

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

---

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

---



Following configuration is required only if OFS Big Data Processing is licensed and enabled in your OFSAA instance and OFSAA is deployed on Oracle WebLogic Server version 12.2.x:

- ? The `jersey-server-1.9.jar` file should be copied to the `<HIVE_LIB_PATH>` path.

This section covers the following topics:

- [Creating a Domain in WebLogic Server](#)
- [Deleting a Domain in WebLogic](#)
- [WebLogic Memory Settings](#)

## Configuring WebSphere for REST Services Authorization

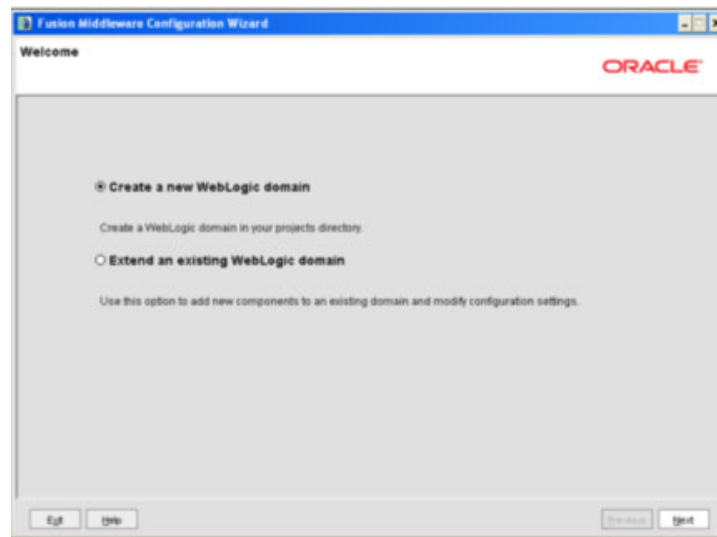
### Creating a Domain in WebLogic Server

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
```

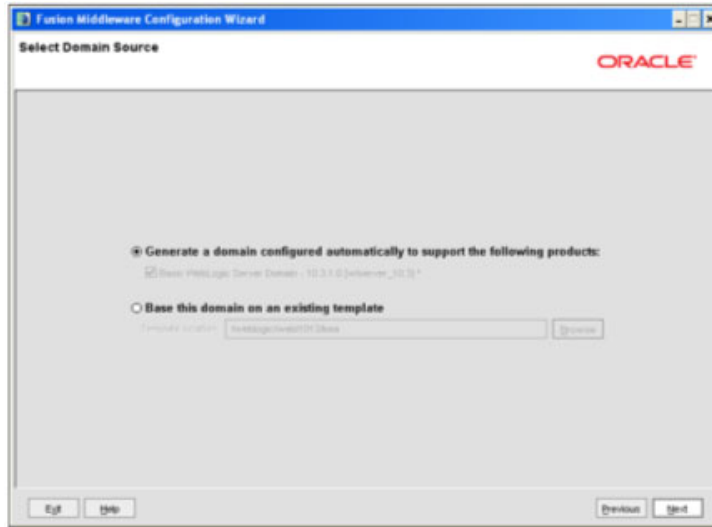
The Welcome window of the Configuration Wizard is displayed.



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

The *Select Domain Source* window is displayed.

Select Domain Source



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

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

Specify Domain Name and Location



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

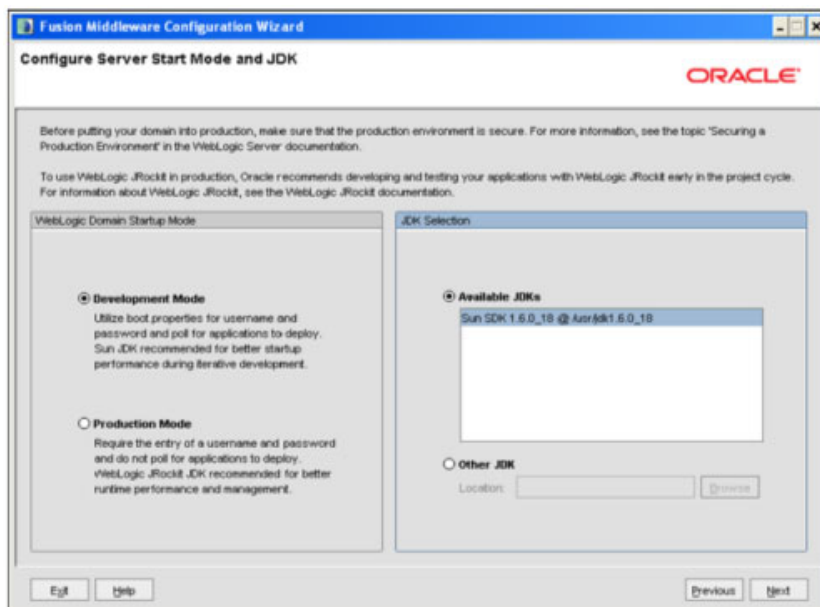
The *Configure Administrator Username and Password* window is displayed.

Configure Administrator Username and Password



5. Enter the **User name** and **User password** to be assigned to the Administrator. Ensure that the password is of minimum 8 characters in length.
6. Re-enter the password for confirmation and add a brief **Description**. Click **Next**.  
The *Configure Server Start Mode and JDK* window is displayed.

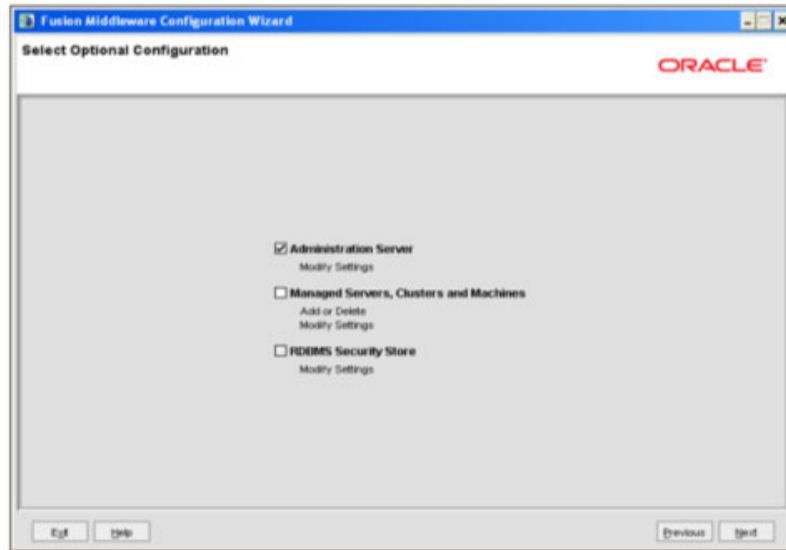
Configure Server Start Mode and JDK



7. Select the following options:  
In the WebLogic Domain Startup Mode section, select the required mode (Development Mode or Production Mode).  
In the JDK Selection section, select **Other JDK**. Click **Browse** and navigate to the JDK location. Click **Next**.

The Select Optional Configuration window is displayed.

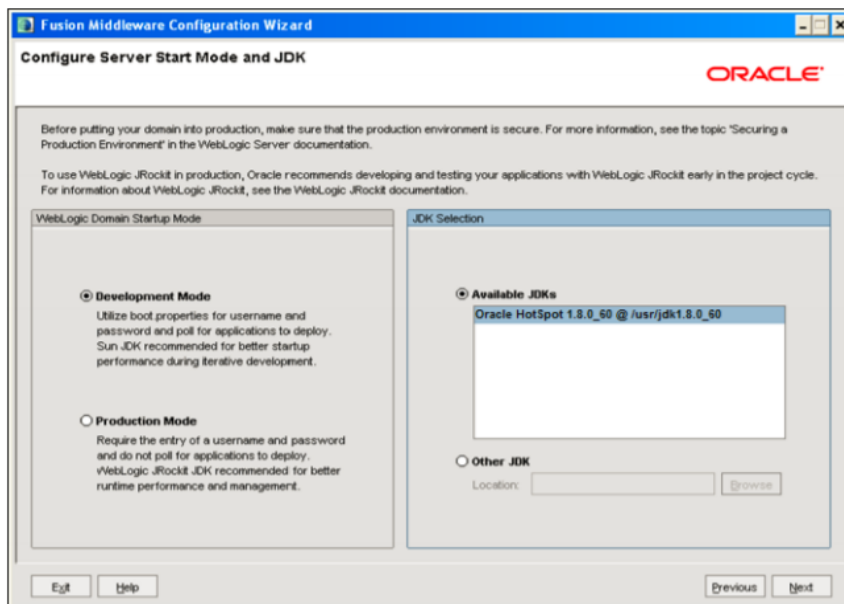
Select Optional Configuration



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

The Configure the Administration Server window is displayed.

Configure the Administration Server



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

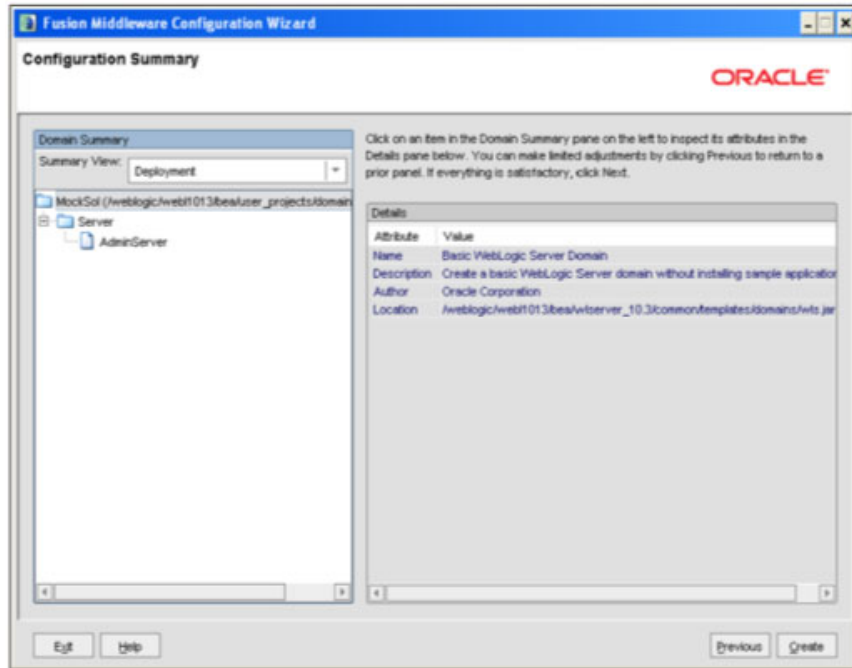
The Configuration Summary window is displayed.

---

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

---

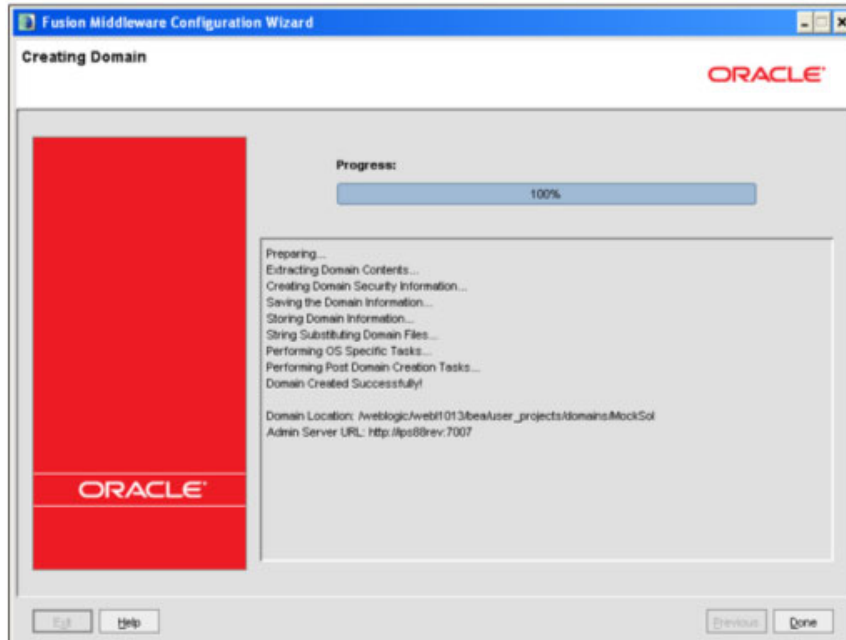
Configure Server Start Mode and JDK



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

The Creating Domain window is displayed with the status indication of the domain creation process.

Configure Server Start Mode and JDK



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

---



---

**Note:**

- Note down the HTTPS port specified during this process and use the same as servlet port or web server port during OFSAAI Installation.

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

---



---

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

### Deleting a 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.

### 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 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 the Servlet Port](#)
- [Configuring the SSL Port](#)
- [Apache Tomcat Memory Settings](#)
- [Uninstalling WAR Files in Tomcat](#)
- [Configuring Axis API](#)

### 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 username and password used by admin to log on to Tomcat, and the role names to which the admin user is associated with. For example, <user name="admin" password="admin" roles="standard,manager" />

1. Add the manager role to any one of the existing username/password combination as shown in the example above.
2. Use the same username/password to which the manager role has been assigned to access the Tomcat Application Manager.
3. If the Tomcat server is already running, it requires a re-start after the above configuration is done.

## 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 as explained below:
3. Replace the following block of text

```
# Set standard commands for invoking Java.
_RUNJAVA="$JRE_HOME"/bin/java
if [ "$os400" != "true" ]; then
_RUNJDB="$JAVA_HOME"/bin/jdb
```

With:

```
# Set standard commands for invoking Java.
_RUNJAVA="$JAVA_BIN"/java
if [ "$os400" != "true" ]; then
_RUNJDB="$JAVA_BIN"/jdb
```

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

---



---

**Note:** In case tomcat is installed under different Unix profile, set JAVA\_BIN environment variable in .profile to include the Java Runtime Environment absolute path.

For example:

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

---



---

## Configuring the Servlet Port

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

If you need to use a different port number, you must first configure the port in the "server.xml" in the "conf" directory of Tomcat Installation directory.

To configure the Servlet Port, follow these steps:

1. Navigate to \$CATALINA\_HOME/conf. Open server.xml and locate the tag:
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".

---



---

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

---



---



## Configuring the 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 for SILENT mode OFSAAI installation.
- 
- 

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

## Apache Tomcat Memory Settings

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

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

## Uninstalling WAR Files in Tomcat

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

## Configuring Axis API

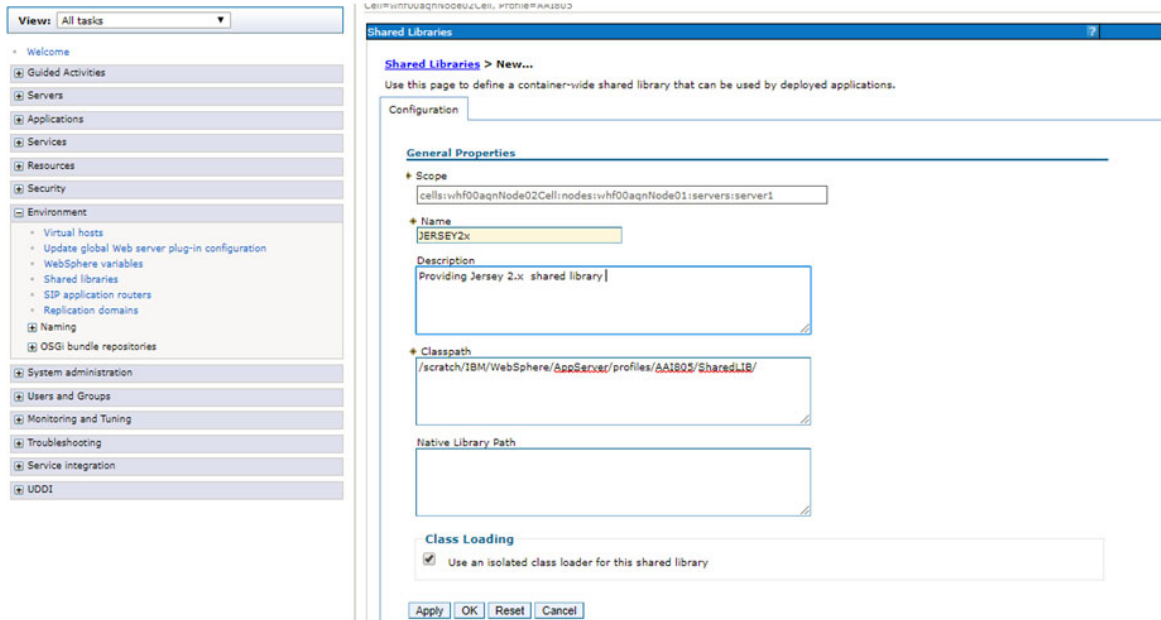
This step is optional and required only if the web application server used in Apache Tomcat. If you use any other web application server, skip and proceed to next step.

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

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

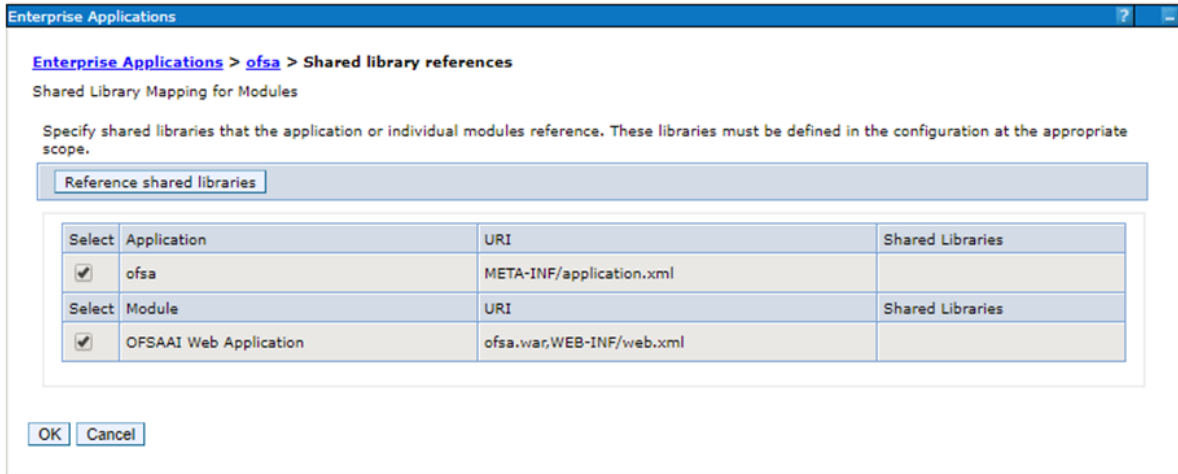
Perform the following configuration to set WebSphere shared library to support jersey 2x and Jackson 2.9x libraries.

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

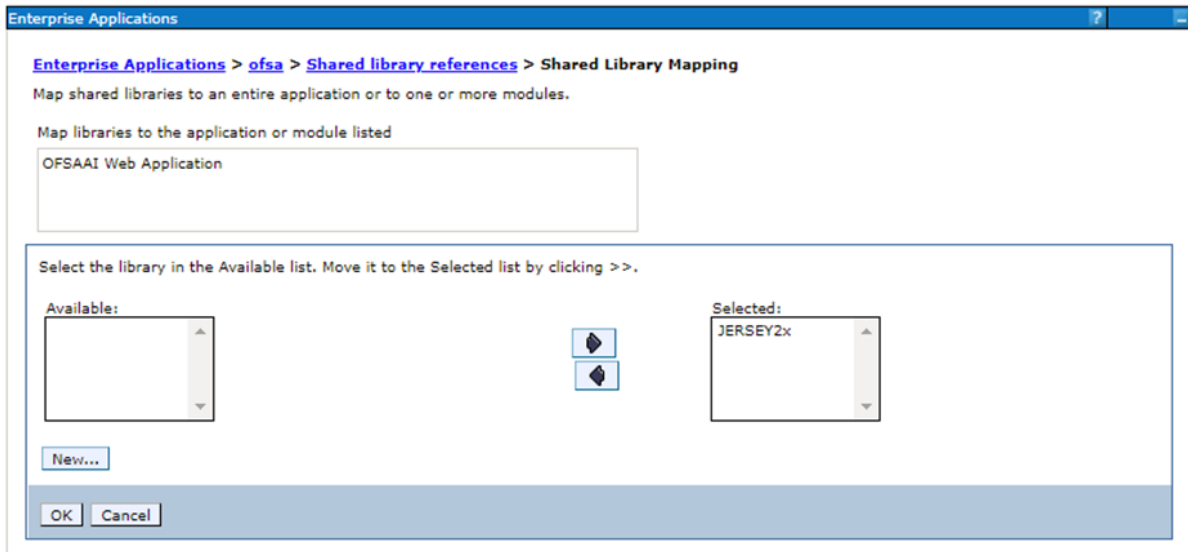


2. Enter the following details:
  1. **Name:** Enter a unique identifiable name.
  2. **Description:** Enter a valid description.
  3. **Classpath:** Enter the absolute path where the JARs related to Jersey 2.x and Jackson 2.9x are copied. These jars are available in the <OFSAA\_HOME>/utility/externallib/WEB-INF/lib 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.

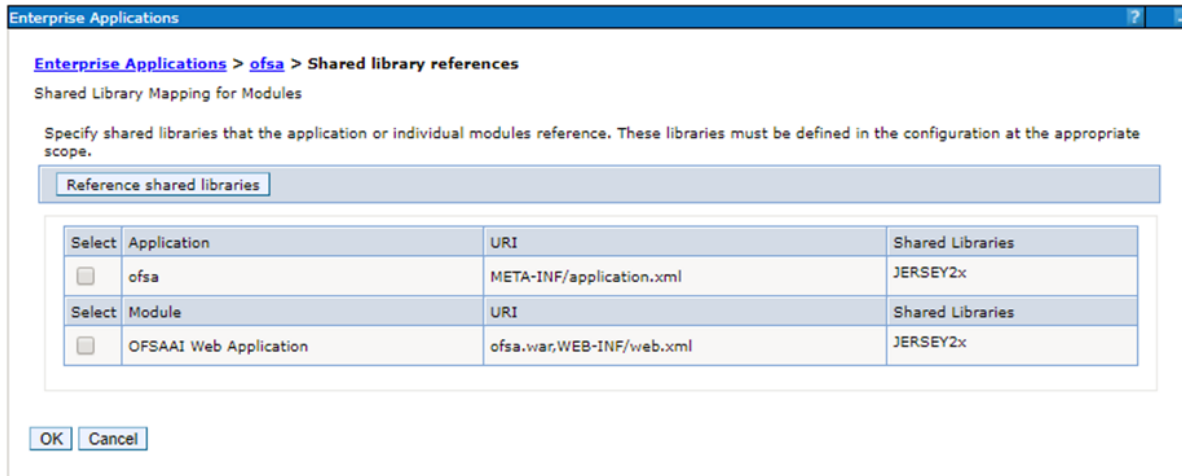


6. From the **Shared Library Mapping** window, move the required shared libraries from **Available** to **Selected**. In the following illustration, **JERSEY2x** is selected.



7. Click **OK**.

- Similarly, select the next application or module and repeat the procedure from steps 5 to 7.



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

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

## Configuring WebSphere HTTPS

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

- 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.

---

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

## WebSphere Memory Settings

To configure the WebSphere Memory Settings, follow these steps:

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

```
Initial heap size = 512
Maximum heap size = 3072
```

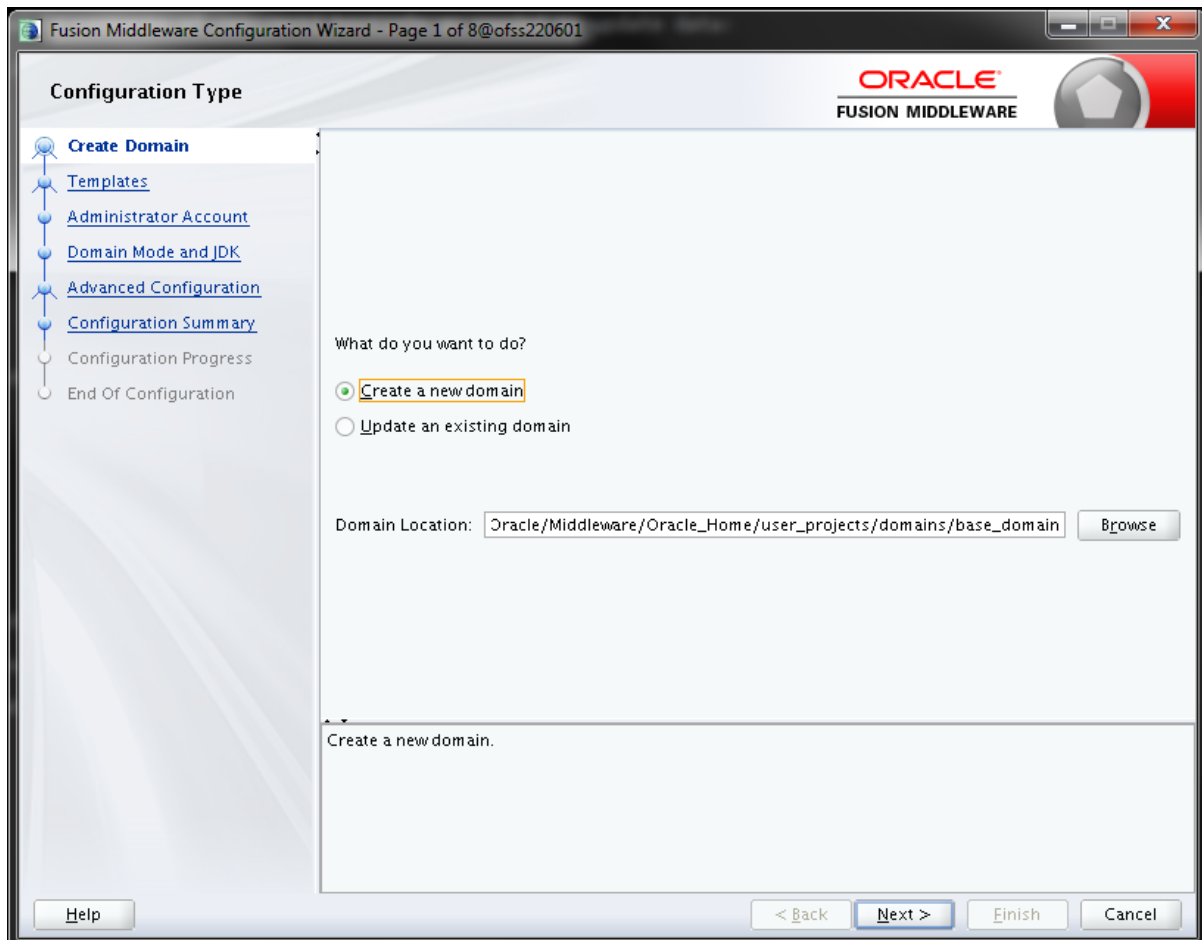
## Creating a Domain in the WebLogic Server

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

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

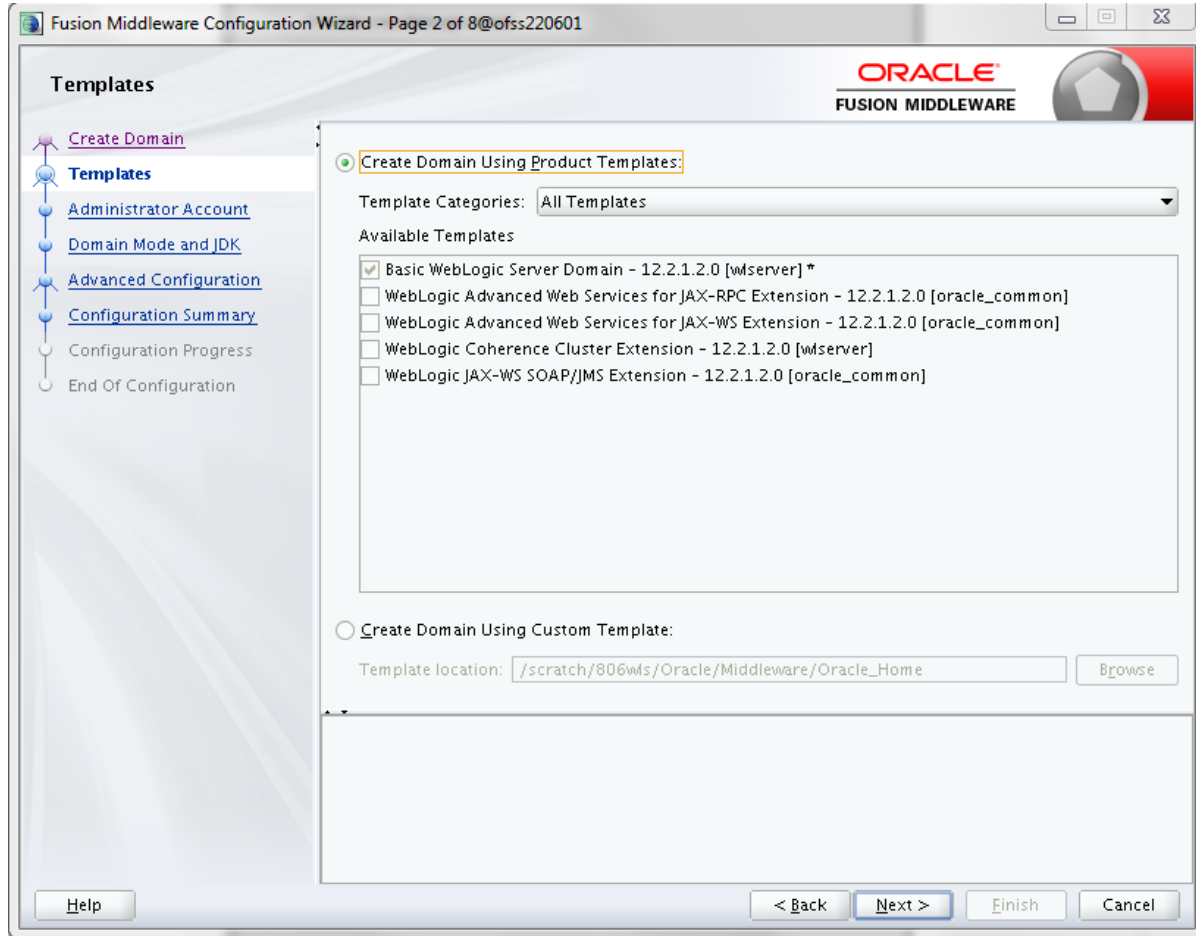
```
./config.sh
```

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



2. Select **Create a new domain** 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.

Fusion Middleware Configuration Wizard - Page 3 of 8@ofss220601

**Administrator Account**

ORACLE  
FUSION MIDDLEWARE

Create Domain  
Templates  
**Administrator Account**  
Domain Mode and JDK  
Advanced Configuration  
Configuration Summary  
Configuration Progress  
End Of Configuration

Name

Password

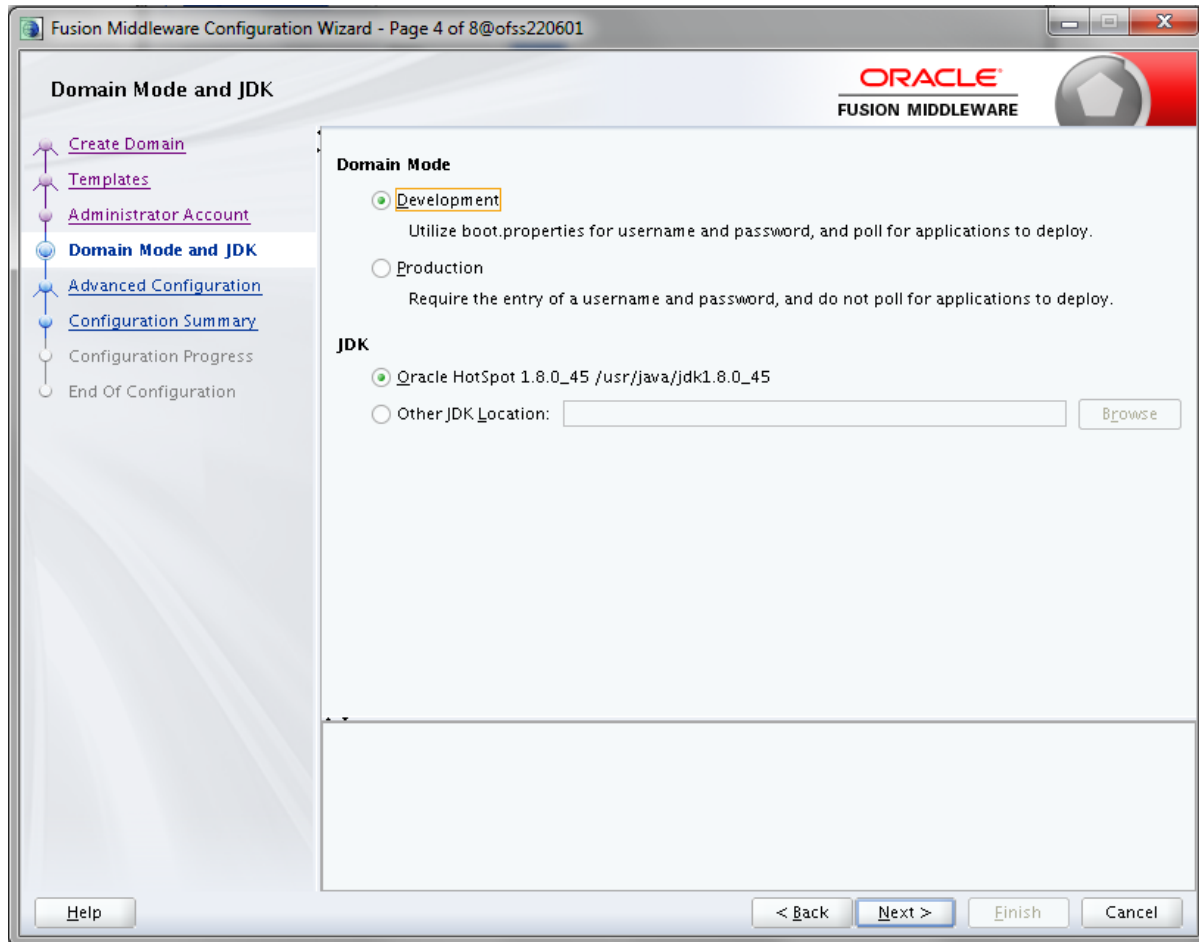
Confirm Password

User name may not contain commas, tabs, or any of the following characters: <>#|&?{}

Help < Back Next > Finish Cancel

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

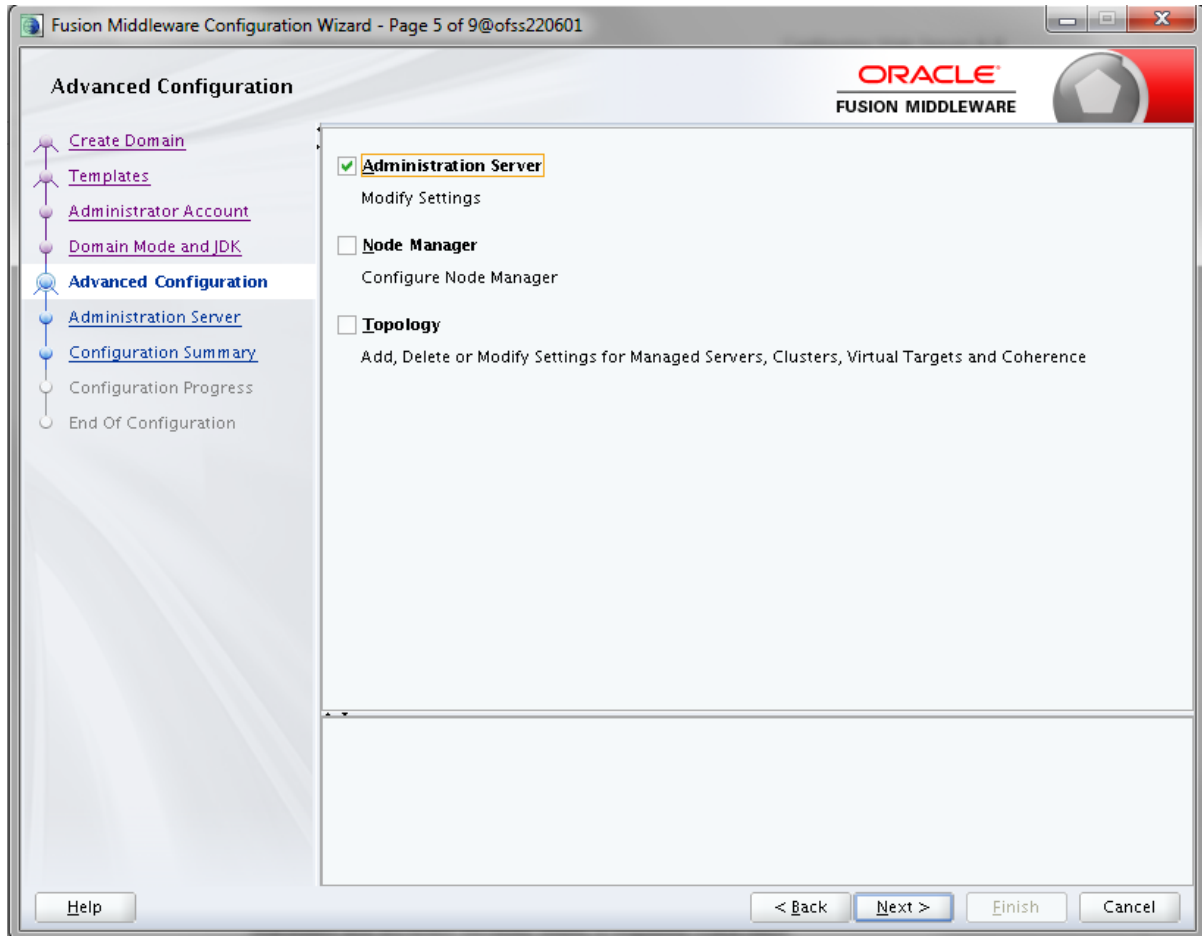
The **Domain Mode** and **JDK** window is displayed.



5. Select any one of 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**, and then navigate to the JDK location, and select the required JDK.
6. Click **Next**.

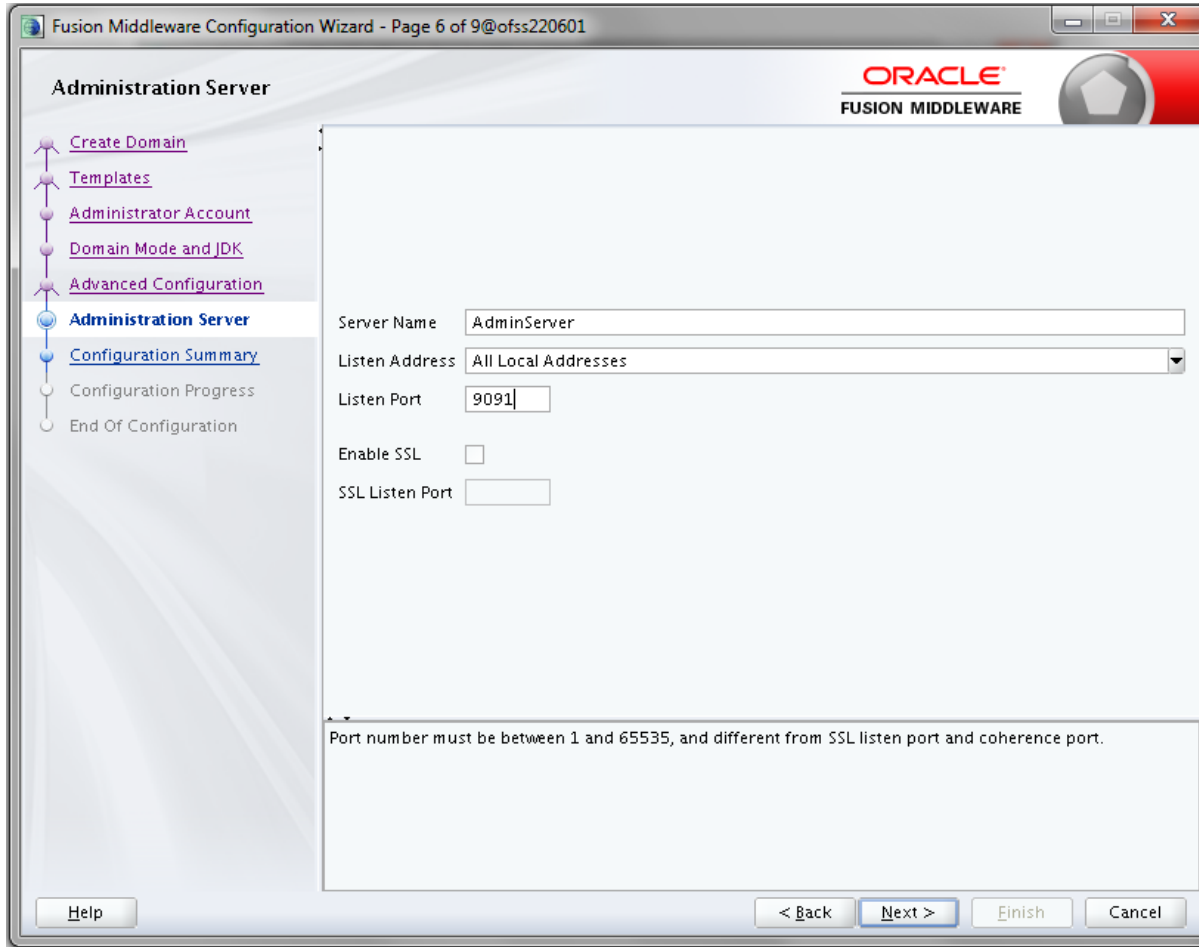


The **Advanced Configuration** window is displayed.



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

The **Administration Server** window is displayed.

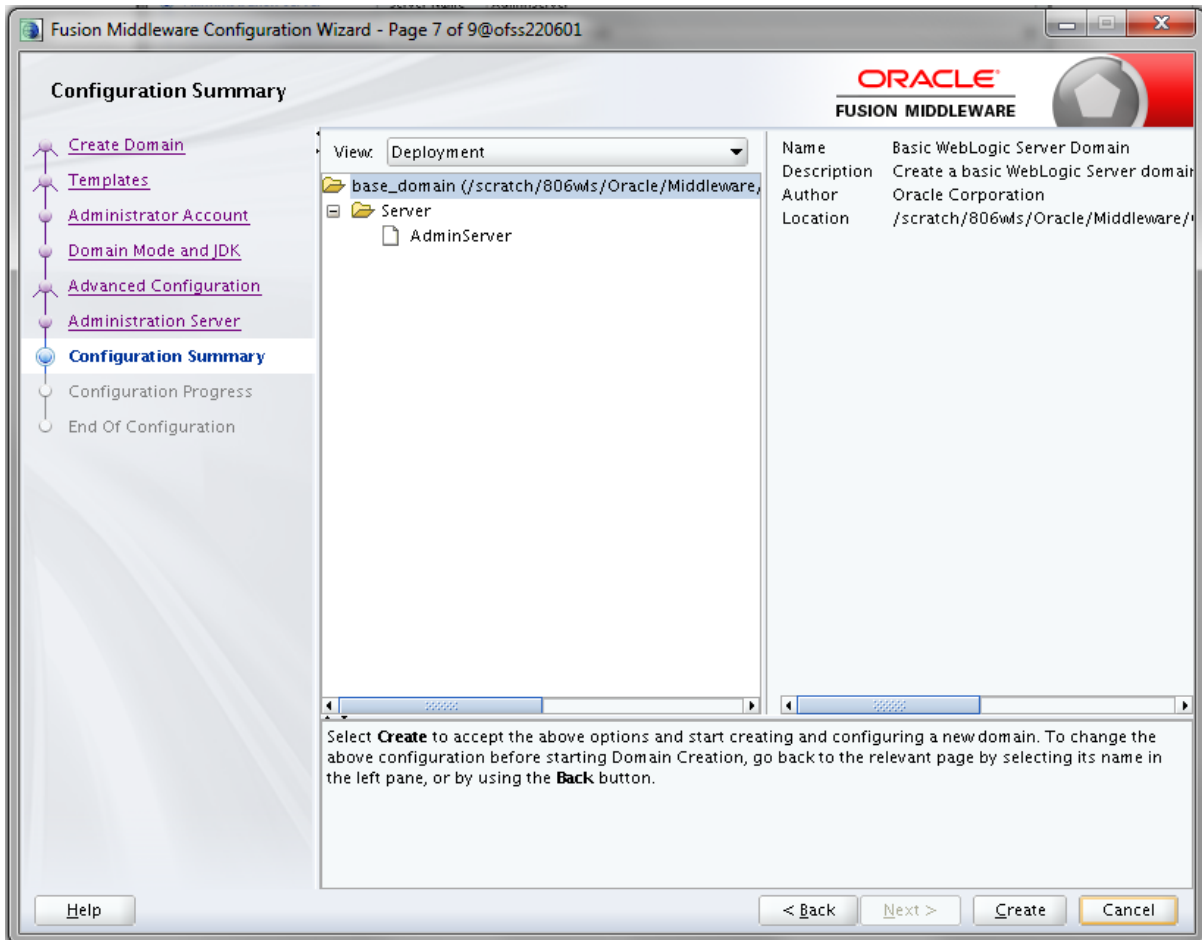


9. Enter the Administration Server details such as the server name, listen address, and listen port in the respective fields.
10. Select the **Enable SSL** check box for secure login when using https and enter a value in the **SSL listen port field**.
11. Click **Next**.

The **Configuration Summary** window is displayed.

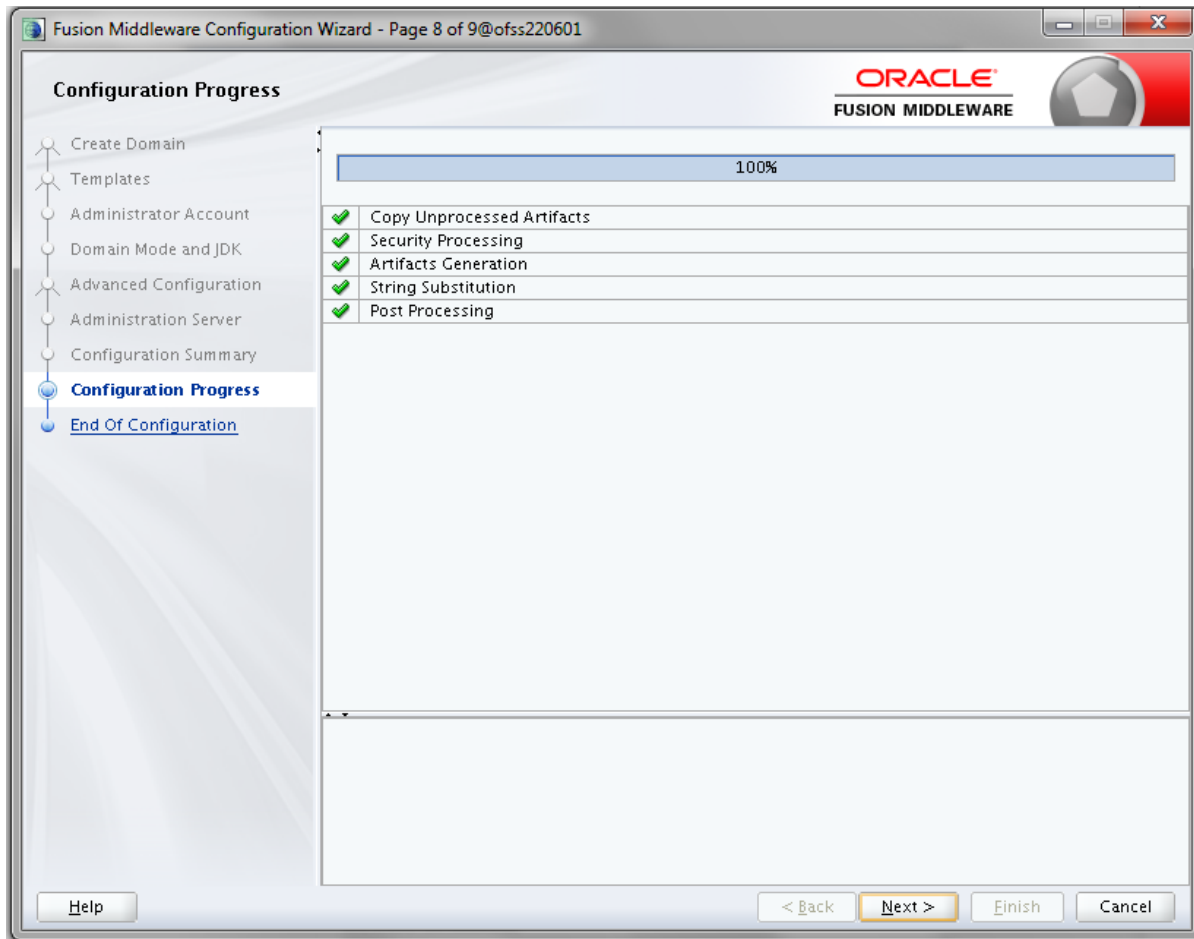
Make a note of the Listen Port or SSL Listen Port value (for example: 7007), since the same has

to be re-entered in the Servlet port field during Infrastructure installation.



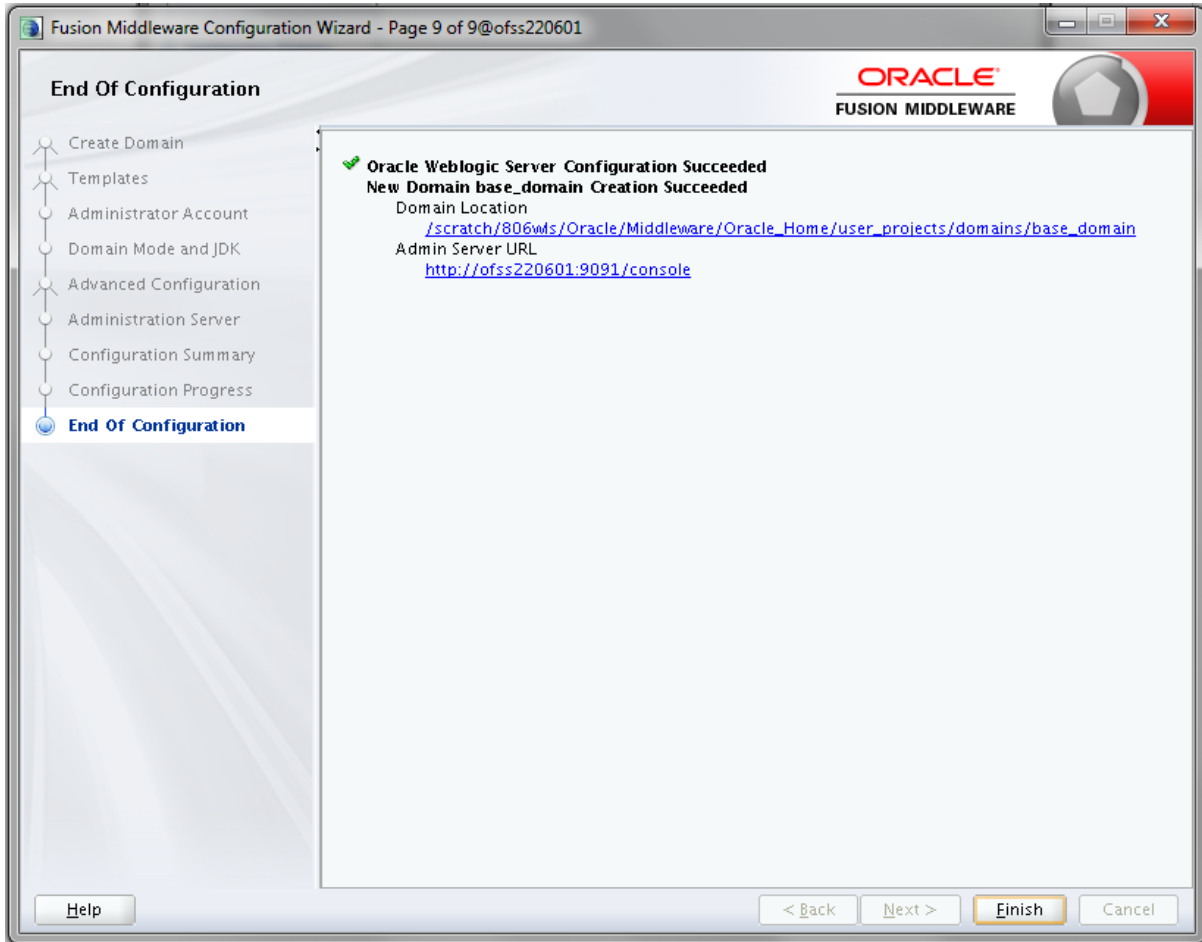
12. Verify the configuration details of the WebLogic domain and then click **Create**.

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



13. Click Next when 100% of the activity is complete.

The **End of Configuration** window is displayed



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

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 the infrastructure, assign a value of 1 to "HTTPS\_ENABLE" in the OFSAAI\_InstallConfig.xml for silent mode OFSAAI installation.

The Add a java option entry -DUseSunHttpHandler=true in WLS\_HOME/bin/"setDomainEnv.sh" file is required only if the self signed certificate is used.

## Configuring WebSphere for REST Services Authorization

To enable REST API authorization by OFSAA, configure the following in WebSphere :

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** check box.
4. Click **OK**

## 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-ba  
sic-auth-credentials>
```

## Configuring the 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.







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## Configuring Resource Reference in Web Application Servers

This section covers the following topics:

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

### Configuring the Resource Reference in the WebSphere Application Server

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

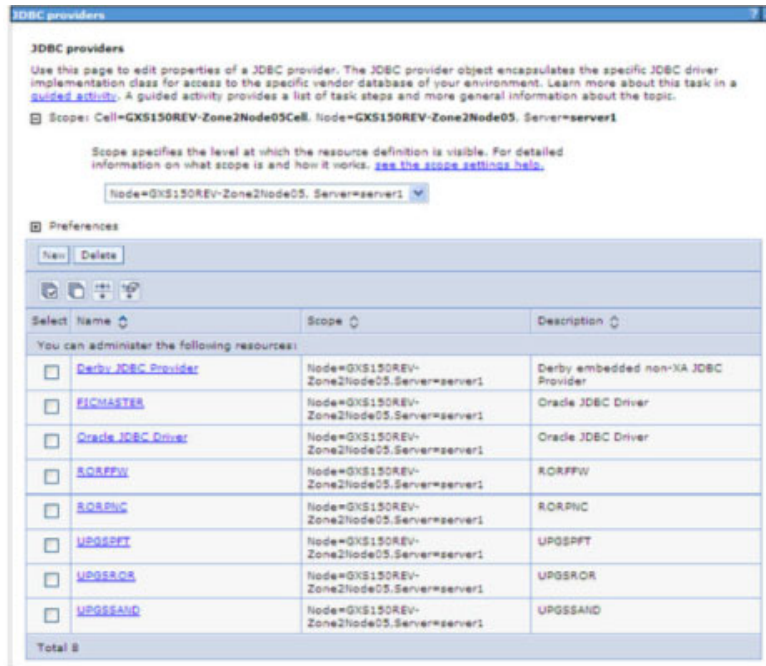
This section covers the following topics:

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

#### Creating a JDBC Provider

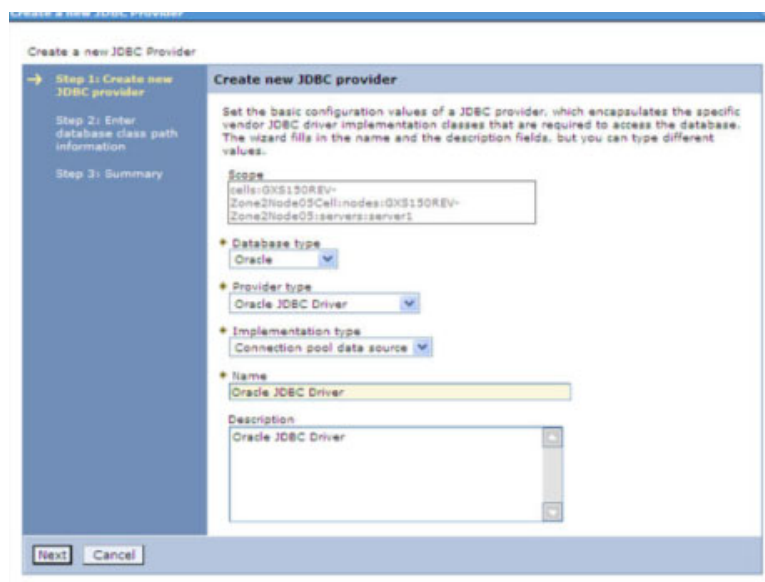
1. Open the WebSphere admin console in the browser window:  
`http://<ipaddress>:<administrative console port>/ibm/console`. (https if SSL is enabled). The *Login* window is displayed.
2. Login with the user id that has admin rights.
3. Expand the **Resources** option in the LHS menu and click **JDBC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



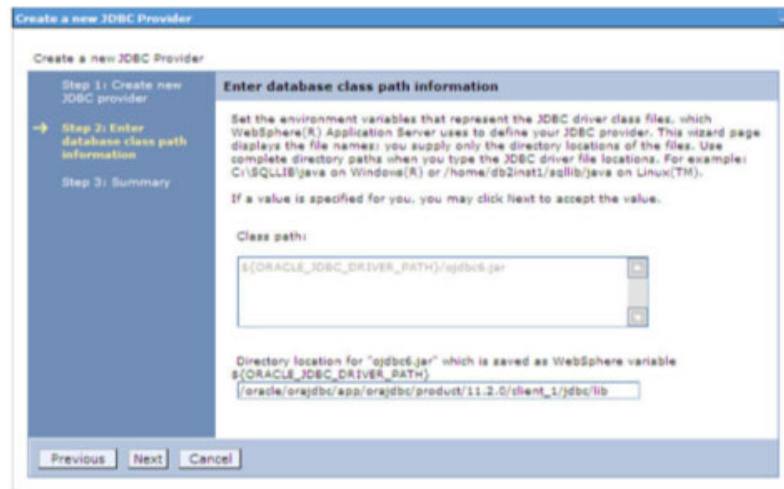
6. Enter the following details:

**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.

**Figure 6-5 Enter database class path information**



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

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

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

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

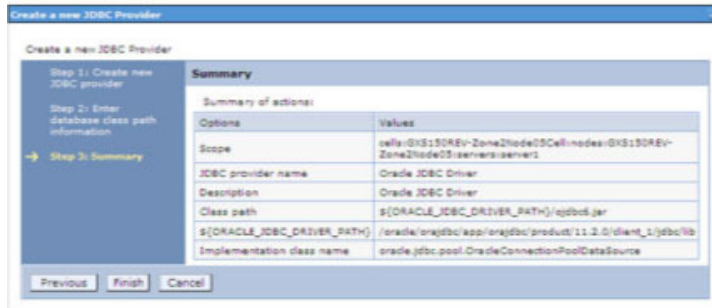
---

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

---

9. Click Next. The Summary window is displayed.

Figure 6–6 Summary



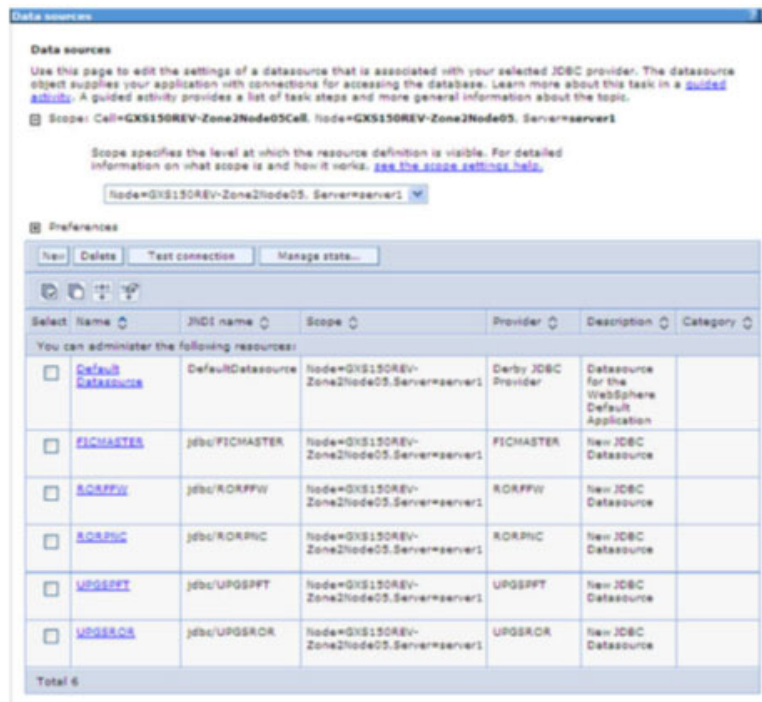
10. Verify the details and click **Finish** to create the JDBC Provider.
11. The options to **Save** and **Review** are displayed. Click **Save**.

## 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 page 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.
5. Click **New**. The Create a Data Source window is displayed.

**Figure B–2 Create Data Source**



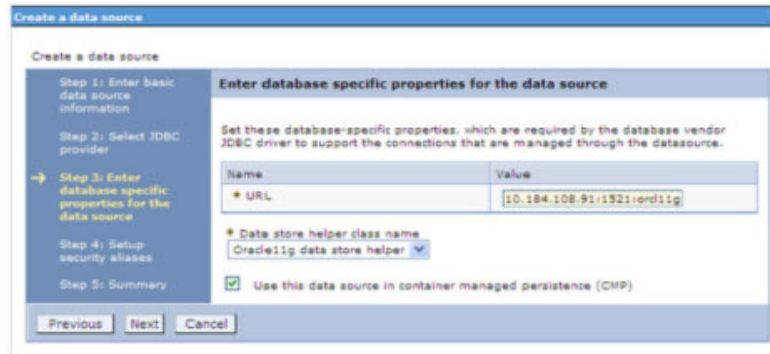
6. Specify the **Data Source name** and **JNDI name** for the new "Data Source".  
The **JNDI** and **Data Source** name are case sensitive and ensure that JNDI name is same as the "Information Domain" name.
7. Click **Next**. The Select JDBC provider window is displayed.

**Figure B–3 Select JDBC provider**



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

**Figure 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.

---

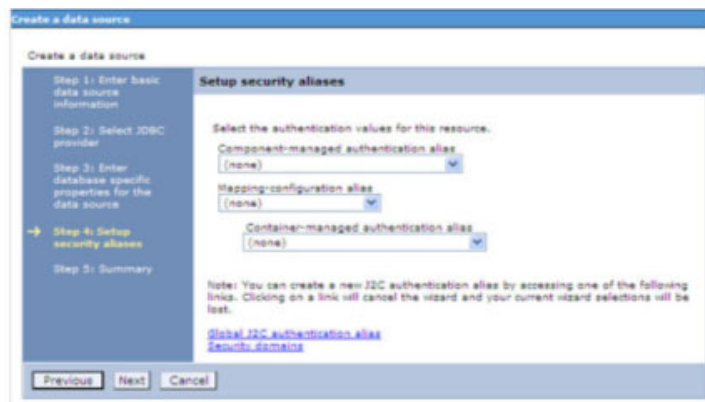
**Note:** For RAC configuration, provide the RAC url specified during installation.

---

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))`

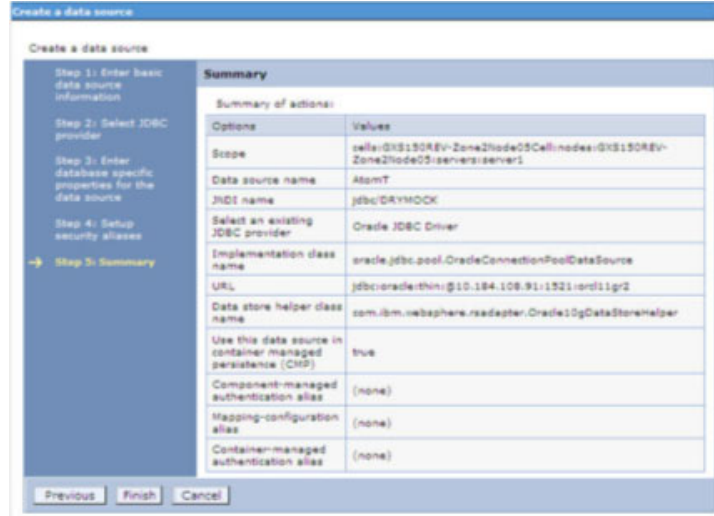
11. Click Next.

**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 above procedure with jdbc/FICMASTER as JNDI name pointing to the "configuration schema" of Infrastructure.

## J2C Authentication Details

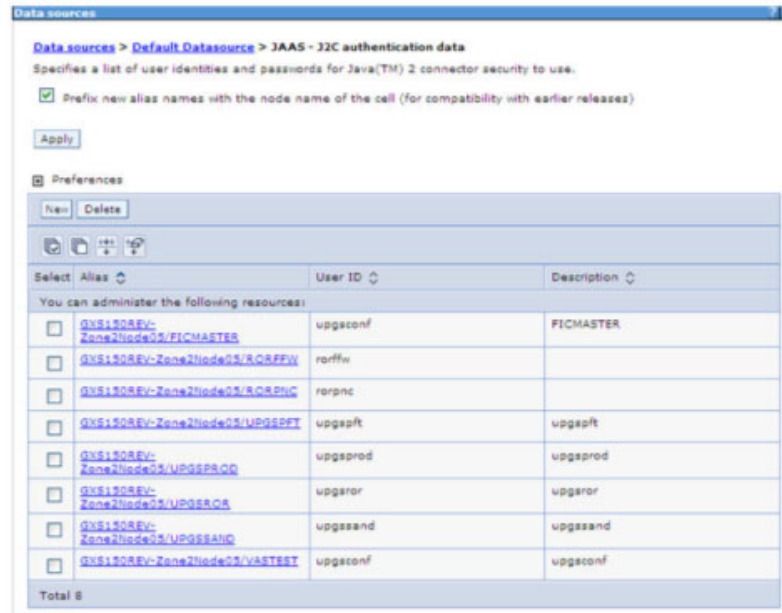
The steps given below are applicable for creating both config and atomic J2C Authentication.

To create J2C Authentication details:

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

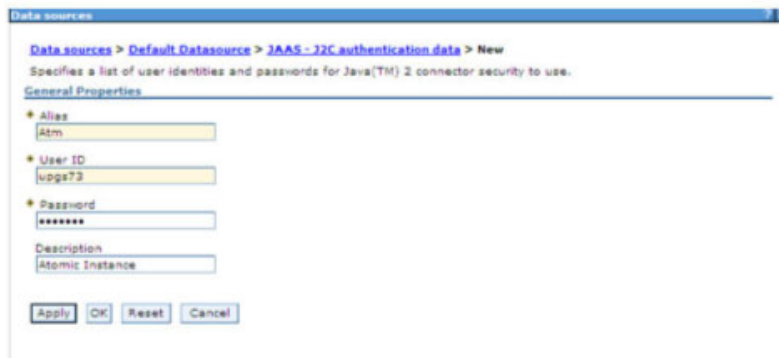
*JAAS- J2C authentication data*

**Figure B-7 JAAS- J2C authentication data**



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

**Figure 6-7 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.

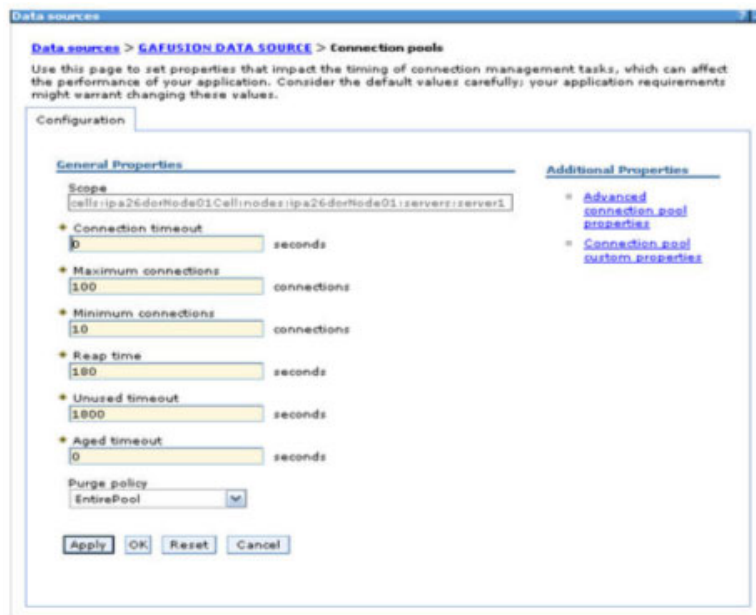
## Defining a JDBC Connection Pooling

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



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

**Figure 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 above figure. You can also define **Reap Time**, **Unused Timeout**, and **Aged Timeout** as required.

## Configuring a Resource Reference in the Weblogic Application Server

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

- [Creating a Data Source](#)
- [Creating a GridLink Data Source](#)
- [Configuring Multi Data Sources](#)
- [Advanced Settings for a Data Source](#)
- [JDBC Connection Pooling](#)

In WebLogic, you can create a "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 a Data Source

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

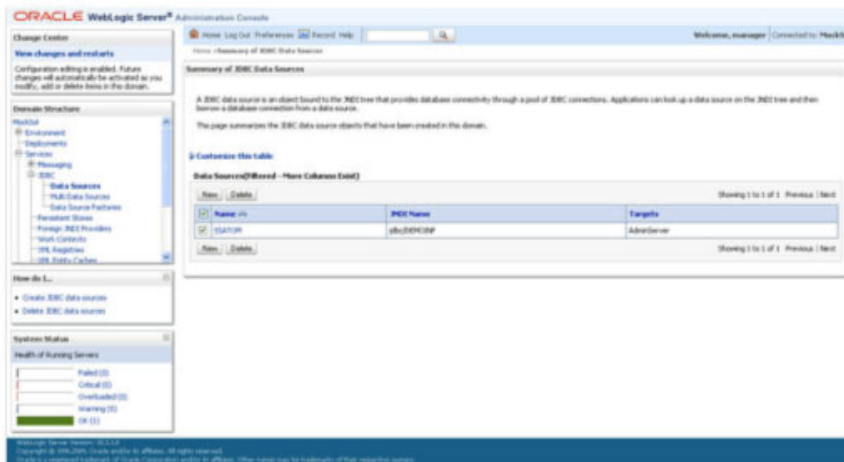
1. Open the following URL in the browser window:  
<http://<ipaddress>:<administrative console port>/console>. (https if SSL is enabled). The Welcome window is displayed.
2. Log in with the Administrator **Username** and **Password**.

**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 a Data Source](#) or [Configuring Multi Data Sources](#).

**Figure 6–8 Create a New JDBC Data Source**

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

Ensure the following:

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

**Figure B–11 JDBC Data Source Properties**

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

**Figure B–12 Transaction Options**

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

- Buttons: Back, Next, Finish, Cancel
- Section: **Transaction Options**
- Text: "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."
- Option 1:  **Supports Global Transactions**
- Option 2:  **Logging Last Resource**
- Option 3:  **Emulate Two-Phase Commit**
- Option 4:  **One-Phase Commit**
- Buttons: Back, Next, Finish, Cancel

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 elements:

- Buttons: Back, Next, Finish, Cancel
- Section: **Connection Properties**
- Text: "Define Connection Properties."
- Text: "What is the name of the database you would like to connect to?"
- Field: **Database Name:**
- Text: "What is the name or IP address of the database server?"
- Field: **Host Name:**
- Text: "What is the port on the database server used to connect to the database?"
- Field: **Port:**
- Text: "What database account/user name do you want to use to create database connections?"
- Field: **Database User Name:**
- Text: "What is the database account password to use to create database connections?"
- Field: **Password:**
- Field: **Confirm Password:**
- Buttons: Back, Next, Finish, Cancel

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:@10.104.1

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

Database User Name: scott

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: [masked]

Confirm Password: [masked]

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

Properties:  
USER=SCOTT

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?

Test 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**

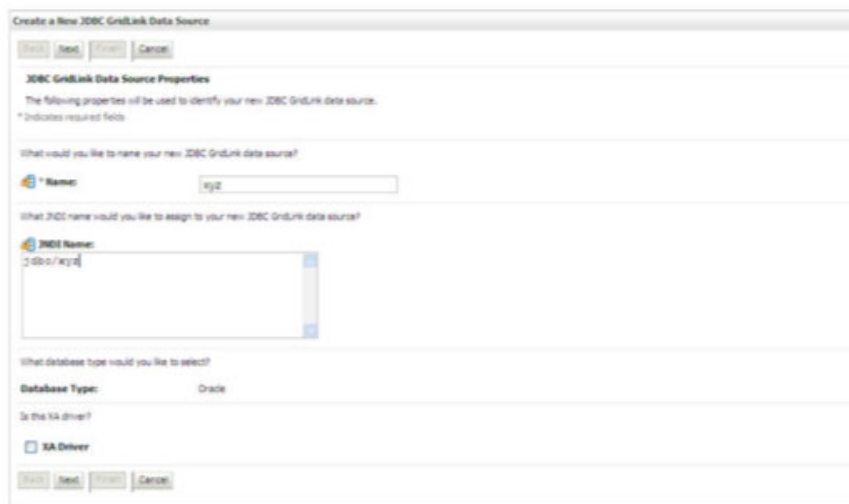


14. Select the **AdminServer** option and click **Finish**.

## Creating a 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 6–9 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 6–10 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.

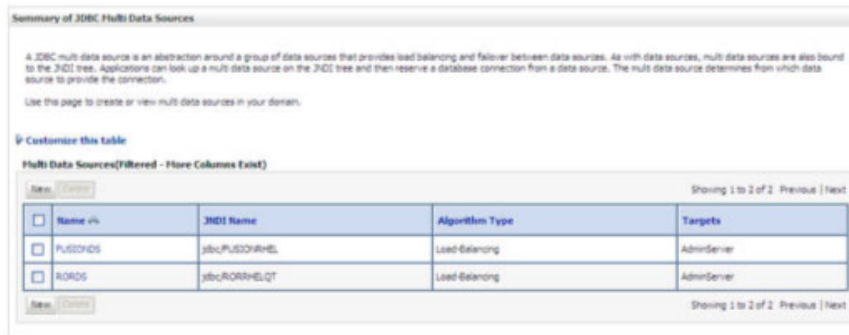
## Configuring Multi Data Sources

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 6–11 Summary of JDBC Multi Data Sources**



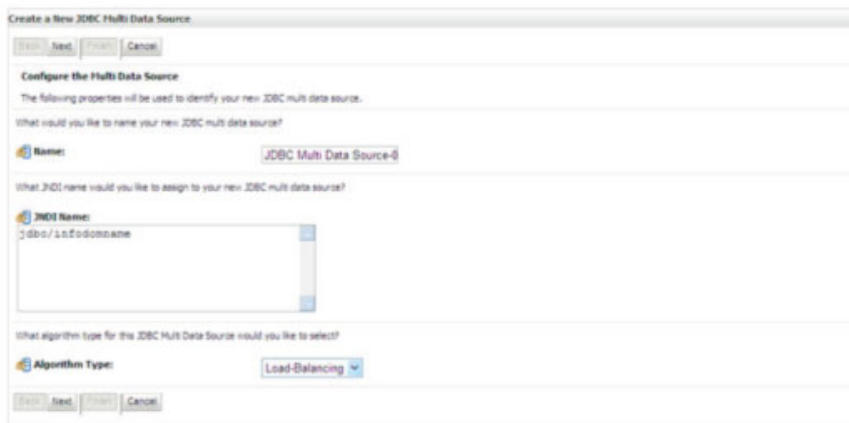
4. Click **New**. The New JDBC Multi Data Source screen is displayed.

---

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

---

**Figure 6–12 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**.
-

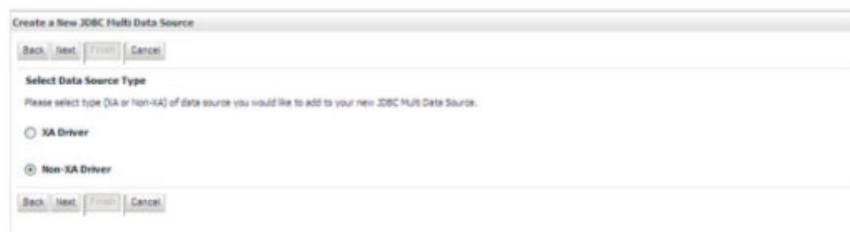


**Figure 6–13 Select Targets**



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

**Figure 6–14 Select Data Source Type**



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

**Figure 6–15 Add Data Sources**



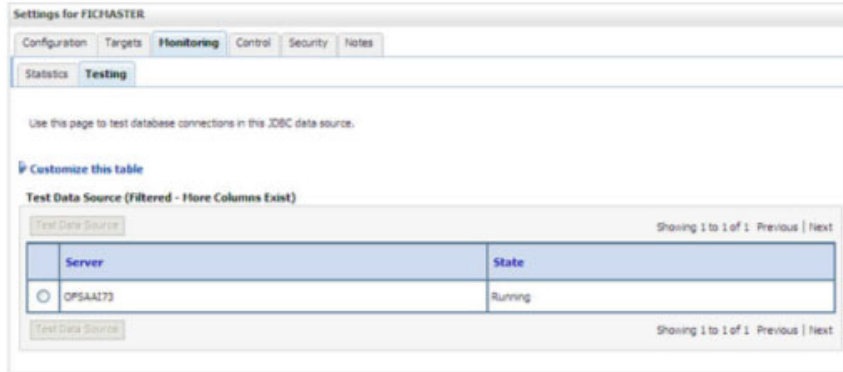
8. Map the required Data Source from the Available Data Sources. Click **Finish**.  
The New JDBC Multi Data Source is created with added data sources.

## Advanced Settings for a Data Source

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

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

**Figure 6–16 Settings for <Data Source Name>**



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

## 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 a Data Source](#)
- [JDBC Connection Pooling](#)
- [Configuring a 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 P](#) for identifying the correct `ojdbc<version>.jar` version to be copied.

---



---

## Creating a 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`.

---



---

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

<Loader delegate="true" />

<Resource auth="Container"
    name="jdbc/FICMASTER"
    type="javax.sql.DataSource"
    driverClassName="oracle.jdbc.driver.OracleDriver"
    username="<user id for the configuration schema>"
    password="<password for the above user ID>"
    url="jdbc:oracle:thin:@<DB engine IP address>:<DB Port>:<SID>"
    maxActive="100"
    maxIdle="30"
    maxWait="10000"/>

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

<Resource auth="Container"
    name="jdbc/< SANDBOX INFORMATION DOMAIN NAME >"
```

```
type="javax.sql.DataSource"
driverClassName="oracle.jdbc.driver.OracleDriver"
username="<user id for the sandbox schema>"
password="<password for the above user ID>"
url="jdbc:oracle:thin:@<DB engine IP address>:<DB Port>:<SID>"
maxActive="100"
maxIdle="30"
maxWait="10000"/>
</Context>
```

---

---

**Note:**

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

## 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 P](#) 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>

## Configuring a 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 an EAR/WAR File](#)
- [Deploying an EAR/WAR File](#)

### Creating an EAR/WAR File

To create EAR/WAR File, follow these steps:

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

*Figure 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 when executing ./ant.sh

---

---

## Deploying an 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 the 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 screen is displayed.



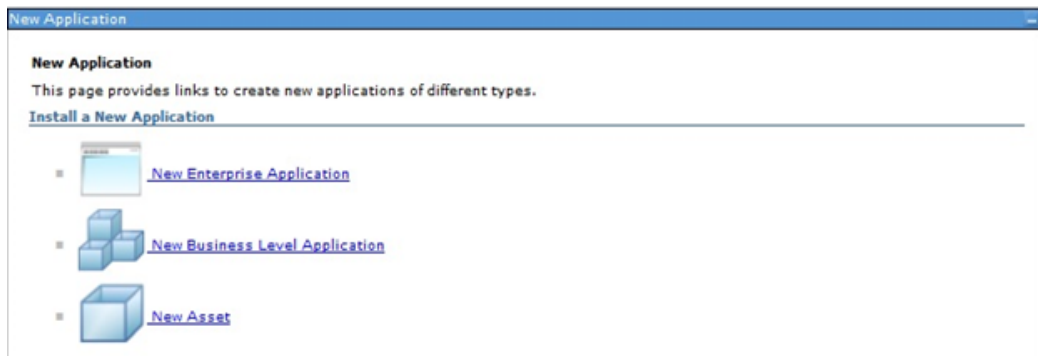
Figure C-2 Login Window



The image shows the login window for the WebSphere Integrated Solutions Console. At the top left, it says "WebSphere. software". In the center, there is a graphic of three stylized human figures (blue, orange, and green) with a large yellow key in front of them. To the right of this graphic, the text "WebSphere Integrated Solutions Console" is displayed. Below this text are two input fields: "User ID:" with the value "admin" and "Password:" with a masked password "•••••". A "Log in" button is positioned below the password field. At the bottom left is the IBM logo. At the bottom right, there is a block of small text: "Licensed Materials - Property of IBM (c) Copyright IBM Corp. 1997, 2011 All Rights Reserved. IBM, the IBM logo, ibm.com and WebSphere are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at [Copyright and trademark information](#)."

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.

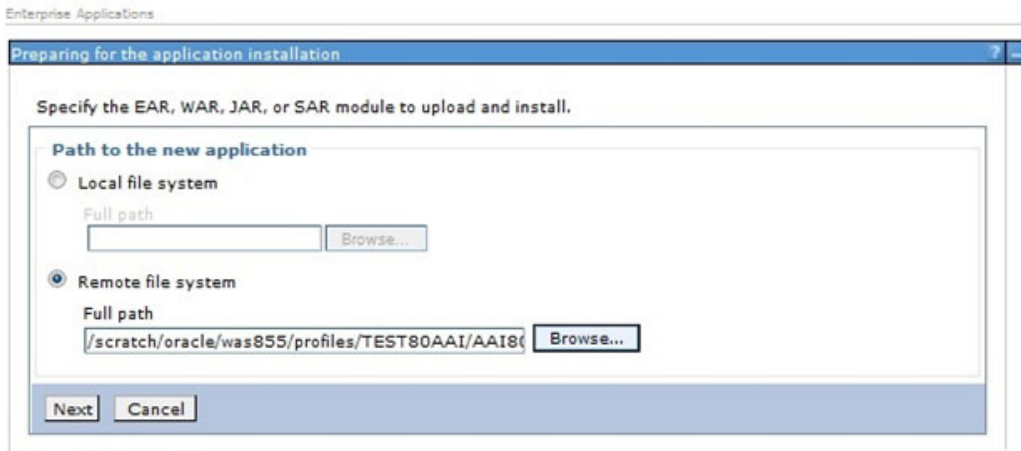
Figure C-3 New Application



The image shows a window titled "New Application". The main heading is "New Application". Below it, the text reads: "This page provides links to create new applications of different types." Underneath, there is a section titled "Install a New Application" with a horizontal line below it. There are three options, each with a small icon and a link: "New Enterprise Application" (with a blue folder icon), "New Business Level Application" (with a blue cube icon), and "New Asset" (with a blue cube icon).

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.

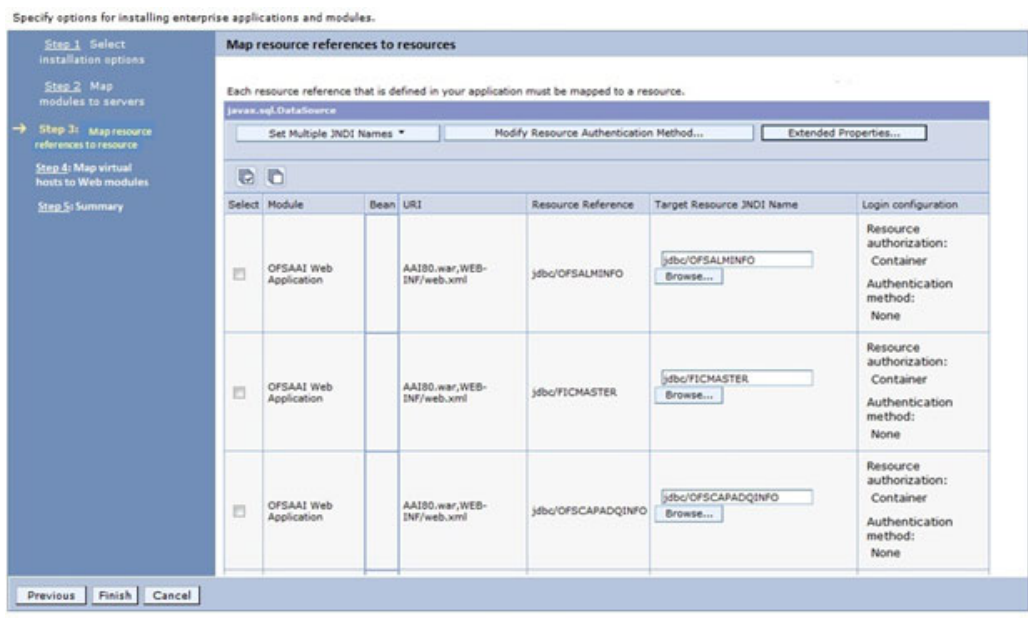
Clusters and servers:

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

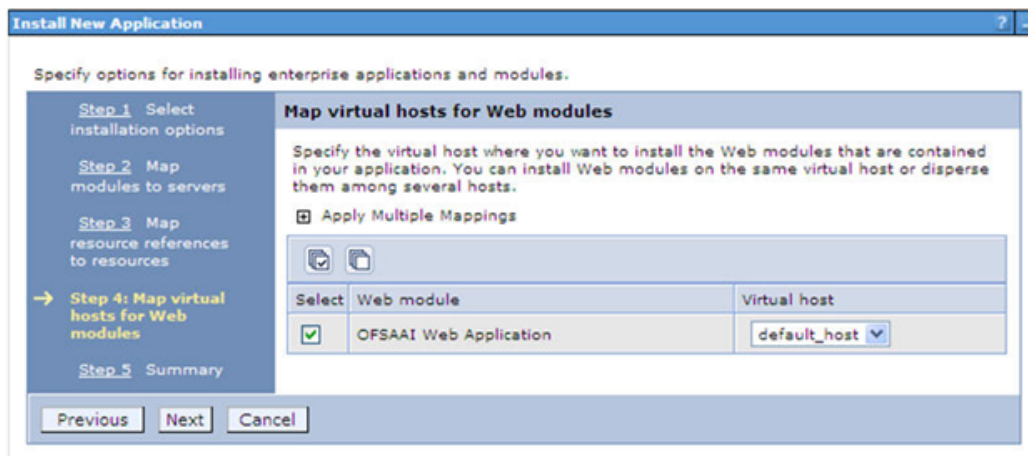
9. Select the **Web Application** and click **Next**. The Map Resource References to Resources window is displayed.

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



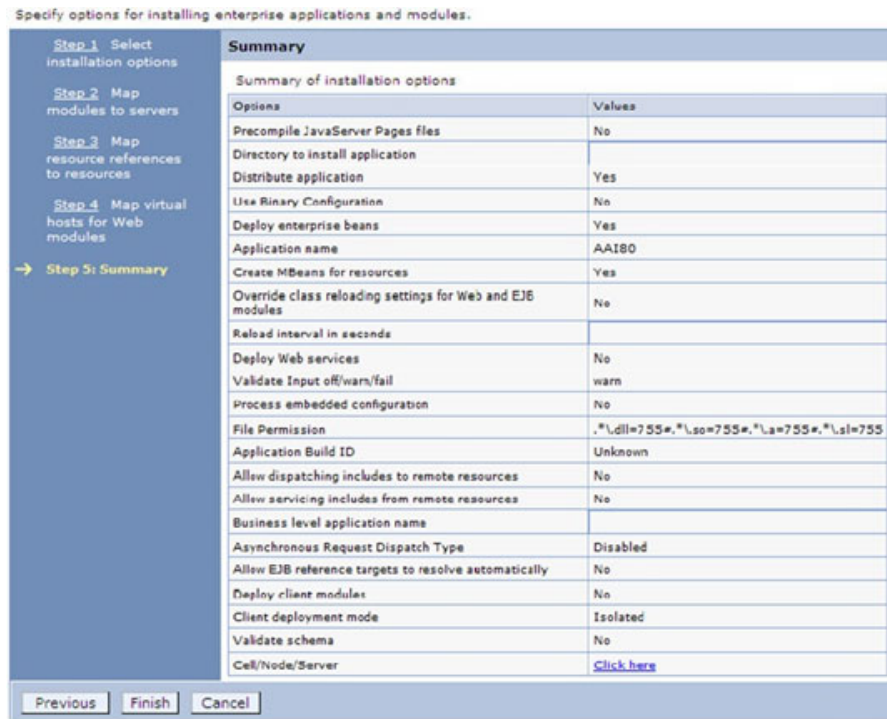
10. Map each resource defined in the application to a resource JNDI name defined earlier.
11. Click **Modify Resource Authentication Method** and specify the authentication method created earlier.  
You can specify "config" for FICMASTER resource or "atomic" for atomic resource as the authentication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

Figure C–10 Summary



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

On successful installation, a message is displayed.

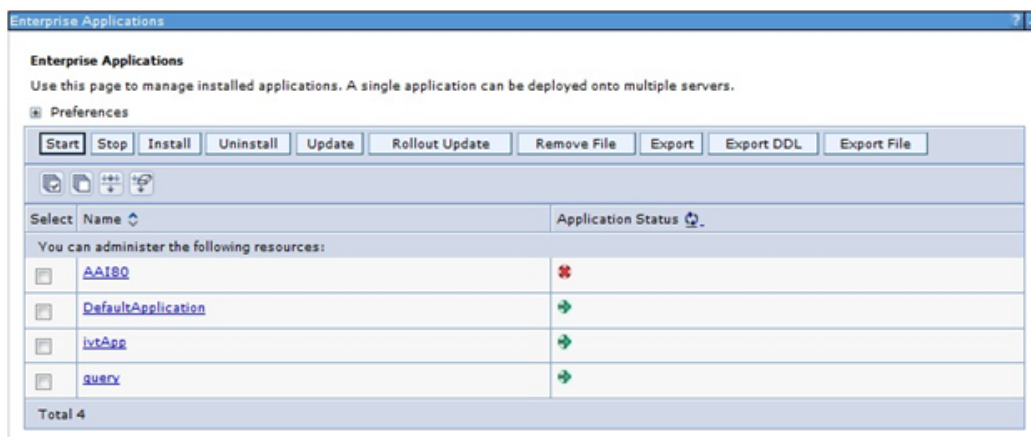
15. Click **Save** and save the master file configuration. The details are displayed in the Master File Configuration window.

## 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.

## Deploying EAR/WAR files for WebLogic

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

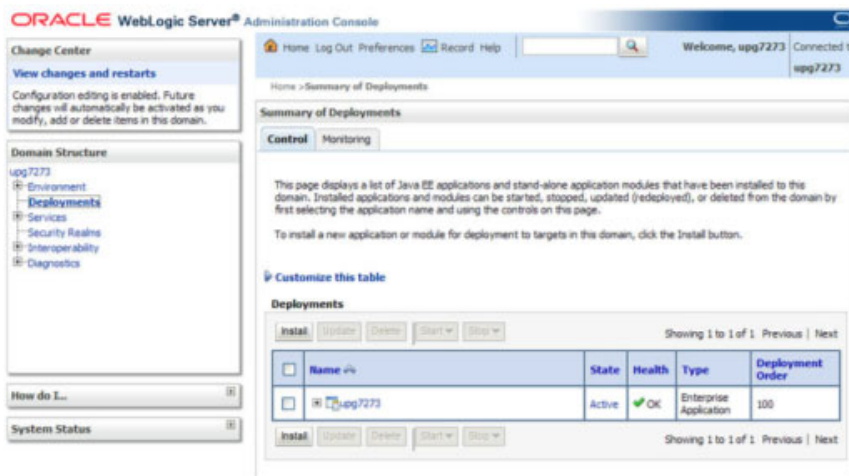
1. Navigate to the path "<WebLogic Installation directory>/user\_projects/domains/<domain name>/bin" in the machine in which WebLogic is installed.
2. Start WebLogic by executing the command:  

```
./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 `./reveleusstartup.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**.

## Exploding the EAR File

To explode the 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:

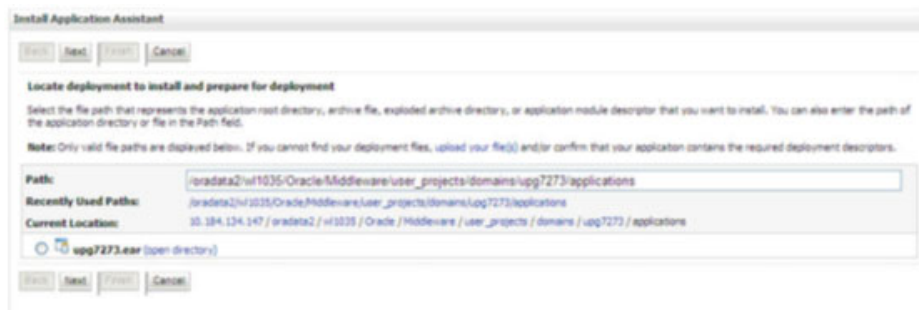
```
jar -xvf <context_name>.war
```

## Installing the Application

To install Application, follow these steps:

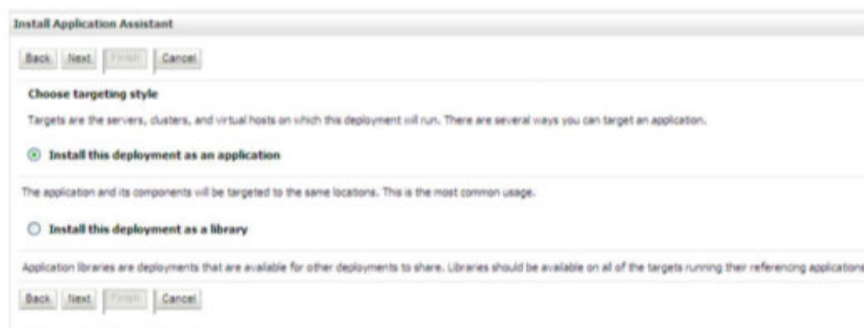
1. Open the Install Application Assistant.

**Figure C–13** *Install Application Assistant*



2. Click **Next**.

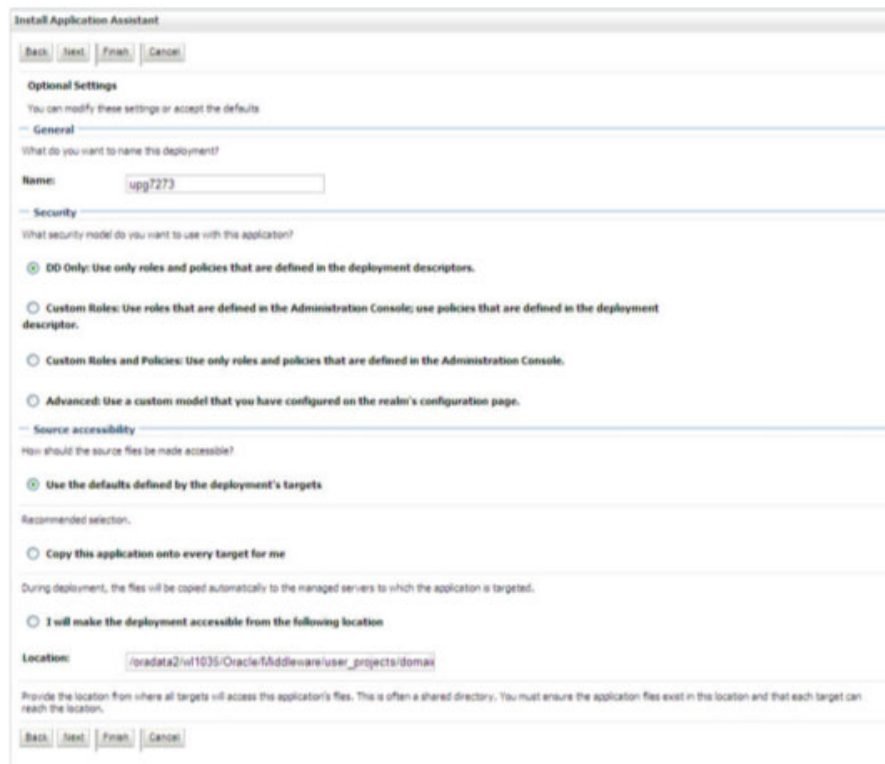
**Figure C–14 Install Application Assistant**



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**

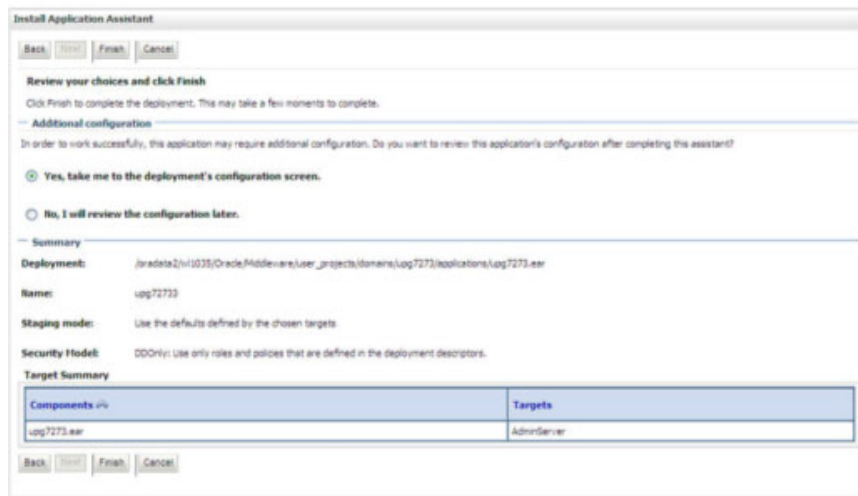


4. Enter a **Name** for the deployment if required.
5. Under the Security section, select the **DD only** option to specify that only roles and policies that are defined in the deployment descriptors should be used.
6. Select the **I will make the deployment available from the following location** option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

The Deployment Summary window is displayed.



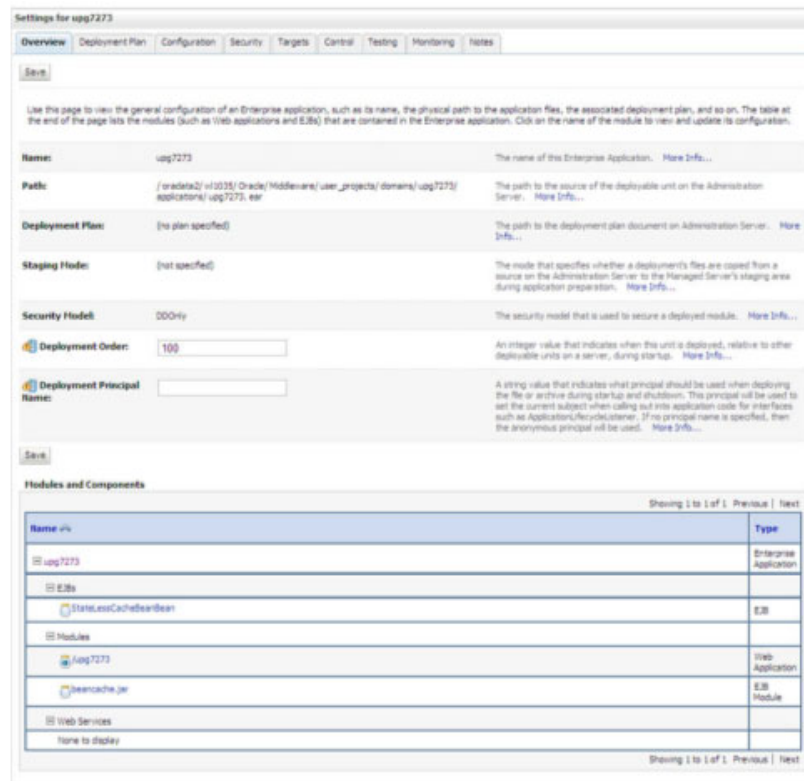
Figure C–16 Deployment Summary



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;

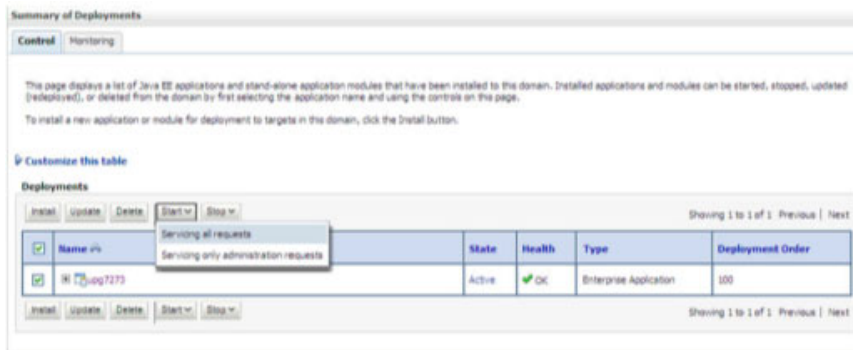


9. Review the general configuration details of the deployment. You can also update the configuration of the deployment in this window. In the Overview tab, you can view the complete deployment configuration.

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

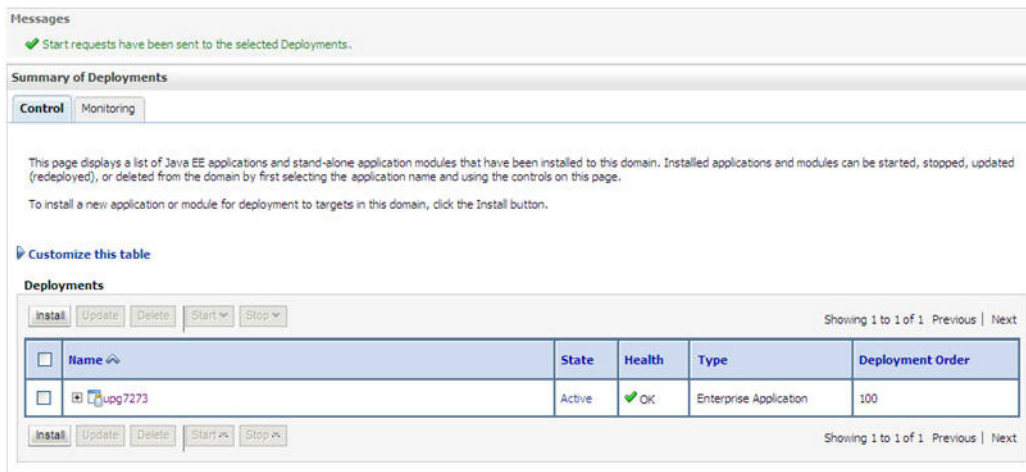
The Summary of Deployments window is displayed.

**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/<context-name.war> to <Tomcat Installation Directory>/webapps/ directory.
2. Click **Manager App**. The Connect to dialog box is displayed.

3. Enter the **User Id** and **Password** that has admin rights and click **OK**. (For user creation in tomcat, see [Tomcat User Administration](#). The Tomcat Web Application Manager window is displayed with the list of all the applications deployed.
4. In the *Deploy* section, enter the **Context Path** provided during the installation as `"/<context-name>"`.
5. Enter the path where the `<context-name>.war` file resides (by default `"$FIC_WEB_HOME/<context-name.war>"`) in the **WAR or Directory URL** field and click **Deploy**.
6. On successful application deployment, a confirmation message is displayed.  
Start the Tomcat server. Refer [Starting Infrastructure Services](#) for more details.



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

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

```
./startofsaai.sh
```

---

---

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

- On the machine on which Infrastructure Database components have been installed, navigate to \$FIC\_DB\_HOME/bin and execute the command to start "Agent server":

```
./agentstartup.sh
```

Or

- Start Back-end services using the command:

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

**Note:** 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:

- 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
```

- 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 the OFSAA Application

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

### Accessing 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 screen is displayed.

**Figure E-1 OFSAA Login Window**

ORACLE<sup>®</sup> Financial Services Analytical Applications [About](#)

Language: US-English

User ID:

Password:

Login

Version 8.0.6.0.0  
Copyright © 1993, 2017 Oracle and/or its affiliates. All rights reserved.

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

For SYSADMN and SYSAUTH, the default password is password0.

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



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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.

- [Deploying the Application](#)
- [Logging as System Administrator](#)
- [Create Application Users](#)
- [Map Application User\(s\) to User Group](#)
- [Configuring Web.xml for Tomcat](#)
- [Executing Update Scripts](#)

### Deploying the Application

This section explains steps to deploy the application.

To deploy the application, follow these steps:

1. Execute the query:

```
select * from aai_menu_b b where b.v_menu_id in ('OFS_CAP');
```
2. Update the URL: "V\_MENU\_URL" and "V\_URL\_PARAMETERS".

### 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**.

### Create Application Users

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

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

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

## Map 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 CAP Application Pack are listed in the table.

**Table F-1 Seeded User Groups**

Name	Description
Modeler Group	User mapped to this group will have access to all the menu items for Enterprise modeling but will not have authorization rights for sandbox population, model deployment and modeling technique authorization.
Modeling Administrator Group	User mapped to this group will have access to all the menu items for Enterprise modeling and will be have authorization rights for sandbox population, model deployment and modeling technique authorization.
Inline Processing Admin Group	User mapped to this group will have access to all the menu items and actions for Inline Processing module.
Business Administrator	User mapped to this group will have access to all the menu items and actions for advanced operations of metadata objects.
Business Authorizer	User mapped to this group will have access to all the menu items and actions for authorization of changes to metadata objects.
Business Owner	User mapped to this group will have access to all the menu items and actions for read and write of metadata objects
Business User	User mapped to this group will have access to all the menu items and actions for access and read of metadata objects.
Identity Administrator	User mapped to this group will have access to all the menu items for managing User entitlements, User Group Entitlements and Access Management configurations.
Identity Authorizer	User mapped to this group will have access to all the menu items for authorizing User entitlements, User Group Entitlements and Access Management configurations.
System Administrator	User mapped to this group will have access to all menu items for managing the setup configurations.
Object Administrator	User mapped to this group will have access to all menu items for managing object migration and metadata traceability using metadata browser.
Guest Group	User mapped to this group will have access to certain menu items with only access privileges.

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

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

## Configuring Web.xml for Tomcat

If the OFS CAP application is deployed on Tomcat, the following tags should be added in \$CATALINA\_HOME/conf/web.xml file under the <servlet> tag

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

## Executing Update Scripts

1. Replace the following placeholders in the script DERBI903.SQL and execute it in the config schema:  
##INFODOM## by the production infodom name  
##REVUSER## by SYSADMN.
2. Execute the script dim\_bands\_update.sql in the atomic schema and commit the changes.
3. Replace the following placeholders, execute the script DSBL0401.sql in the config schema, and commit the changes:  
##INFODOM## by production infodom name  
##USER## by SYSADMN



---

---

## MRMM Integration

If MRMM 8.0.6.0.0 is installed on top of OFS CAP 8.0.6.0.0, the following scripts must be executed post installation of MRMM.

1. The following scripts should be executed in the atomic schema:

- FSI\_BASEL\_MR\_SCENARIO\_DEFN\_MRMM.sql
- FSI\_M\_OBJECT\_DEFINITION\_B.sql
- FSI\_M\_OBJECT\_DEFINITION\_TL.sql
- FSI\_MR\_OBJECTS.sql
- FSI\_MR\_STRESS\_SCENARIO.sql
- scd-53-dim\_instrument\_contract-vw\_stg\_instrument\_contract\_delta\_MRMM.sql
- VW\_STG\_INSTRUMENT\_CONTRACT\_MRMM.SQL

2. After replacing the following placeholders:

##INFODOM## by production infodomain name

##USER## by SYSADMIN

##CAP\_STAGE\_SRC## by ETL staging source name

##CAP\_PROCESSING\_SRC## by ETL processing source name

##BIS\_SEG## by BIS jurisdiction segment name

The following scripts should be executed in the config schema

- DM\_T2T\_MRMM\_FRTB\_CURVATURE\_INFO\_POP.sql
- DM\_T2T\_MRMM\_FRTB\_DELTA\_INFO\_POP.sql
- DM\_T2T\_MRMM\_FRTB\_VEGA\_INFO.sql
- MRMM\_Integration\_Metadata.sql
- PLC\_FRTB\_EQ\_CURVATURE\_POP.sql
- PRFRTB068\_0.sql
- PRFRTB070\_0.sql
- RNFRTB001\_0.sql





---



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## OFSAA Landing Page

This section includes the following topics:

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

### Installation Checklist

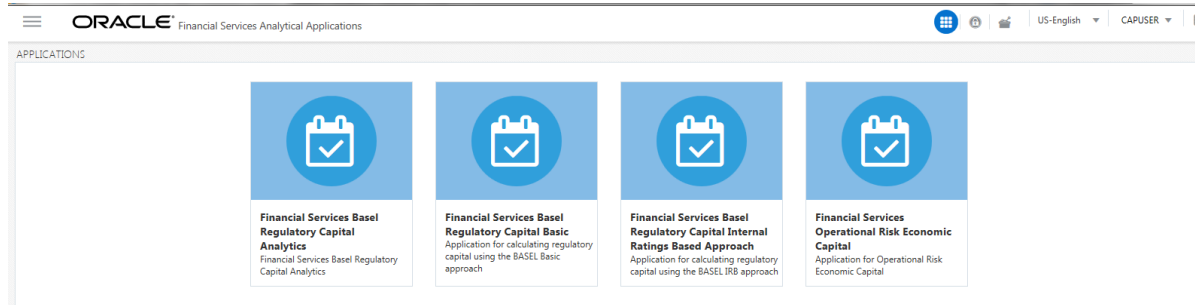
Before starting on the OFSAAI Installation Kit, ensure that the following pre-installation activities checklist is completed successfully. It is recommended to take a print out of the checklist and follow the checklist step by step.

**Table H-1 Installation Checklist**

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

# OFSAA Landing Page

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



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

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

The following tabs are available in the Landing Page:

- [Applications Tab](#)

## Applications Tab

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

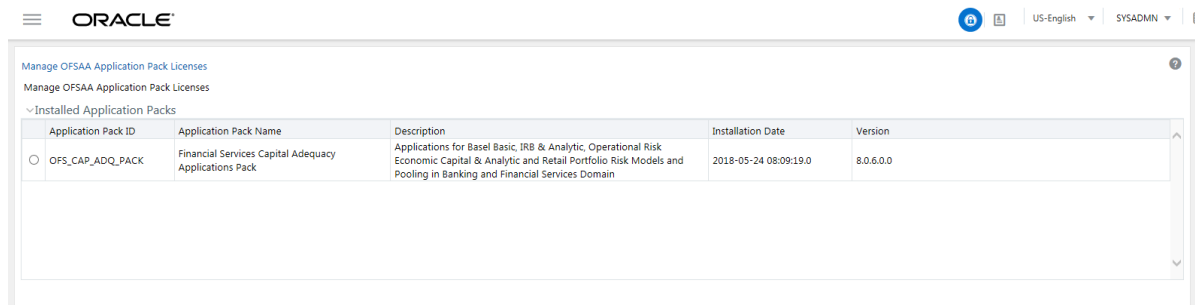
The Applications page lists the OFSAA Applications based on the user logged in and User Group(s) mapped to OFSAA Application. Selecting an Application from the options redirects to the selected application.

## 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. Select **Manage OFSAA Application Pack Licenses**.
3. The **Manage OFSAA Application Pack Licenses** page is displayed .



4. The following fields are displayed in the **Installed Application Packs** section:

**Table H–2 Installed Application Pack - Field Description**

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

5. Select an Application Pack by clicking the radio button next to the Application Pack ID field.

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

**Table H–3 products in the Application Pack - Field Description**

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

6. Products which were enabled at the time of installation will have the checkbox **Enable** disabled. You can enable any product within the selected Application Pack by clicking the **Enable** checkbox against the respective Product ID.
7. Click on **Reset** button to cancel the operation and refresh the screen.
8. Click **View License Agreement** button.  
The **License Agreement** section is displayed.
9. Select **I Accept the License Agreement**.
10. Click **Enable**.
11. A confirmation message is displayed showing that the product is enabled for the pack.

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**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.

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**Note:**

- For more information refer to Mapping/Unmapping Users section in the *Oracle Financial Services Analytical Applications Infrastructure User Guide 8.0.6*.
  - To identify the newly enabled product specific UserGroups/ Application Pack specific User\_Groups, refer to the respective Application Pack specific Installation and Configuration Guide/ User Manual.
- 
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# Additional Configuration

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

## Additional Configuration

This section covers the following topics:

- [Configuring FTP/SFTP](#)
- [Configuring the Infrastructure Server Memory](#)
- [Setting up Internet Explorer](#)
- [Retrieving Patch Information](#)
- [Configuring the OLAP Data Server](#)
- [Changing the IP/ Hostname, Ports, and Deployed Paths of the OFSAA Instance](#)
- [Executing the OFSAAI Setup Information Fetching Tool](#)
- [Executing the Encryption Changer](#)
- [Configuring the Infrastructure LDAP](#)
- [Configuring OFSAAI Web Services](#)
- [Deploying OFSAAI Web Services](#)
- [Enabling Parallel Execution of DML statements](#)
- [Configuring Message Details in Forms Designer](#)
- [Clearing the Application Cache](#)
- [Configuring Passwords Changes](#)
- [Configuring the Internal Service \(Document Upload/Download\)](#)

## Configuring FTP/SFTP

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

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

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

1. Login to the web application server.

2. Type `sftp <user>@<OFSAA Server>`
3. Specify Yes when prompted for permission.  
*Are you sure you want to continue connecting (Yes/No)?*
4. This will add an entry into the "known\_hosts" file.
5. A confirmation message is displayed:  
*Permanently added <OFSAA Server> RSA) to the list of known hosts.*

## Setting Up SFTP Private Key

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

To generate a 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 an SFTP Private key for the Hive server, append the content of `/home/ofsaapp/.ssh/id_rsa.pub` to the 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

## Configuring the Infrastructure Server Memory

The memory settings for Infrastructure Application Server, Tomcat, WebSphere, and WebLogic can be edited for customizing memory settings and garbage collector settings depending on the available hardware configuration as explained below. These settings are base minimum and has to be incremented considering the deployment metrics into account. The increments are usually handled in multiples of 128mb for heap and 64mb for stack.

### Setting the Infrastructure Application Server Memory

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:** This parameter is modified in 7.3.2 IR and you need to modify `X_ARGS_APP` variable in the `.profile` file to customize Java Memory Settings for Model Upload based on the Data Model size.

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

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

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

---

## Setting up Internet Explorer

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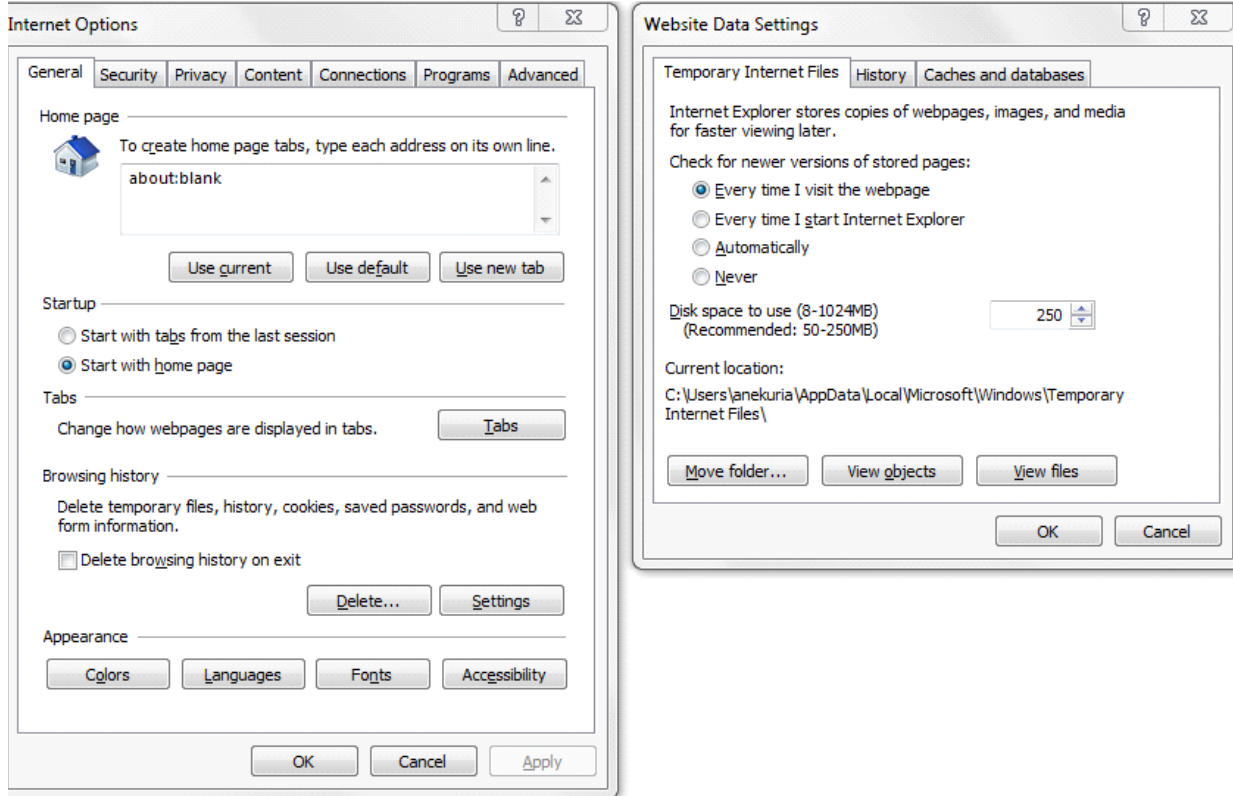
**Note:** OFSAAI supports only default zoom setting in Internet Explorer, that is, 100%.  
Cookies should be enabled.

---

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

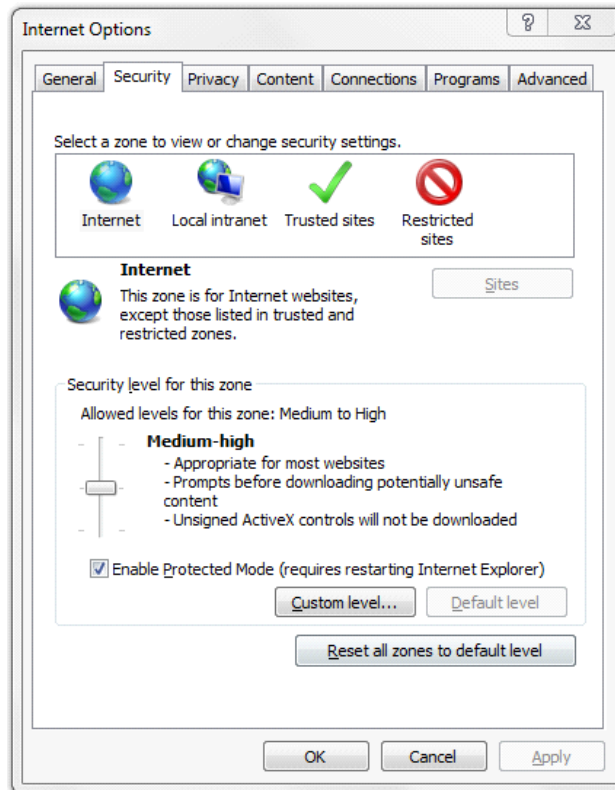
1. Open **Internet Explorer**. Select **Tools > Internet Options**. The *Internet Options* window is displayed.
2. Click the **Settings** button. The *Settings* window is displayed.
3. Select the option **Everytime I Visit the webpage** and click **OK**.

**Figure I-1 Internet Options**

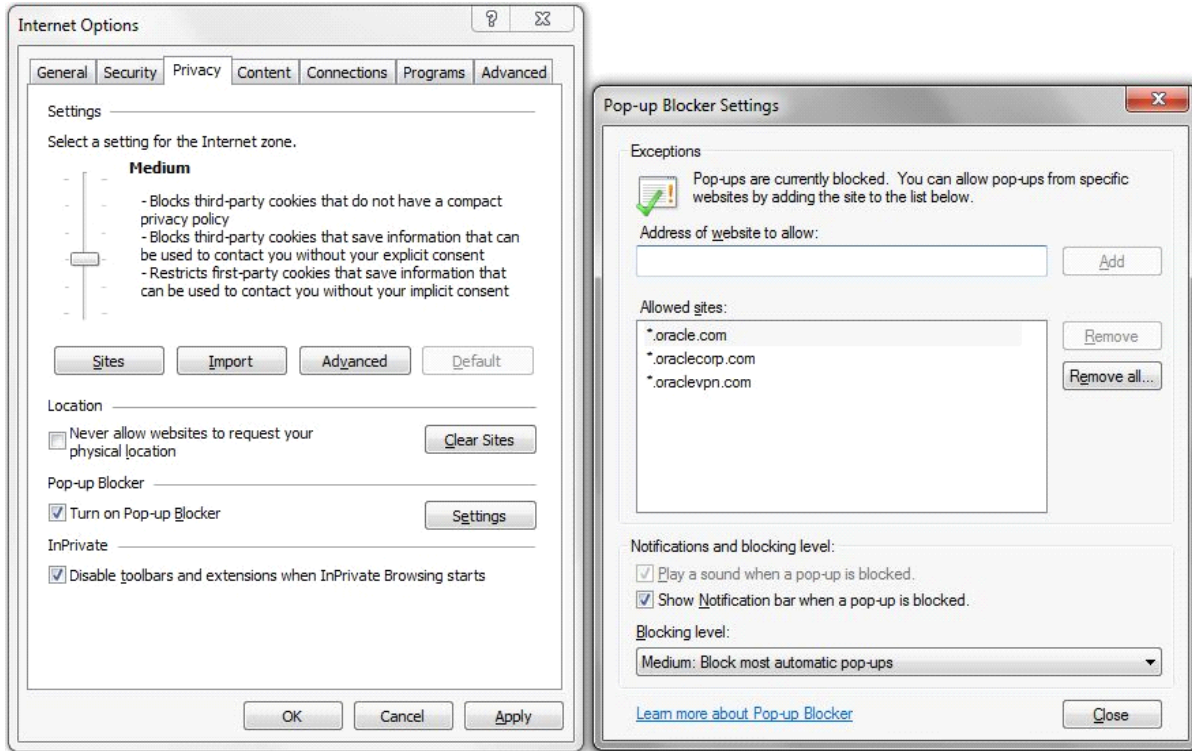


4. In the *Internet Options* window, select the **Security** tab and select the **Internet** option under **Select a zone to view or change the security** settings.
5. Click **Default Level** under **Security level for this zone**.



**Figure I-2** *internet Options*

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



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.

## Retrieving Patch Information

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

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

## Configuring the OLAP Data Server

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

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

Example:

Process Memory Limit

Max Thread Stack Size

Max Number of Threads per Process

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

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

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

## Executing the OFSAAI Setup Information Fetching Tool

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

To execute "`SetupInfo.jar`" in console:

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

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

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

## Executing the Encryption Changer

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

To execute `EncryptC.jar` in console:

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

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

A confirmation message is displayed after execution.

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

## Configuring the Infrastructure LDAP

This provides you with the option of using LDAP (Lightweight Directory Access Protocol) authentication or Infrastructure SMS authentication for logging on to Infrastructure.

If you are using the Infrastructure authentication, the user and user group details, profile creation, function and role maintenance and other mappings can be done through the Infrastructure Administration module under Security Management. The data in this case, will be updated in the CSSMS table.

However, if you wish to use LDAP for user authentication, then you have to ensure that the LDAP server is installed and configured. Also make sure that OPEN LDAP 2.2.29+ is installed and configured in Windows machine. Before doing the following configuration, it is required to select the "Authentication type" as LDAP in the *Configuration* screen of Infrastructure. This screen can be accessed by selecting *System Configuration > Configuration* in the LHS menu of Infrastructure. In the Windows machine in which LDAP Server is installed, go to the OpenLDAP installation directory through the command prompt and execute the command "slapd -d 1" to start the LDAP server.

### Configuring the Infrastructure Configuration Schema

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

**Table I-1 Configuration Schema**

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

---

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

---

### Configuring OpenLDAP Files

1. Copy the reveleusSchema.schema from <Infrastructure Installation Directory> /ficapp/common/FICServer/conf/LDAP\_LDIF folder to LDAPServer Schema folder.

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

---

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

---

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

---

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

---

5. In the command prompt, navigate to the `LDAP` installation directory and execute the command `"ldapadd -D"ROOTDN" -w ROOTPASS -f/data/Reveleus.ldif"`  
This is for creating the entries for `Users`, `User Groups`, `Functions`, `Profiles`, `Segments`, `Domains`, `Roles`, and `HolidayMaster` in the `Data` information Tree of `LDAP`.
6. Make an entry in the `Domains.ldif` file for each `Information Domain` that is created through the `Infrastructure UI`.

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

---

**Note:** `DSNID` refers to `Information Domain` name.

---

```
dn: DSNID=<DSN ID>,ou=Domains,@LDAP_DIRECTORY_ROOTCONTEXT@
changetype: add
mappedsegments: <Mapped segments/~>
dsnid: <DSN ID>
infodomname: < Information Domain Name>
objectClass: Infodom
objectClass: top
infodomdescription: < Information Domain Description>
```

**Example:**

```
dn: DSNID=FUSIONMOCK, ou=Domains, dc=FTP1,dc=com
mappedsegments: ~
dsnid: FUSIONMOCK
infodomname: FUSIONMOCK
objectClass: Infodom
objectClass: top
```

```
infodomdescription: FUSIONMOCK
```

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

---

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

---

### Migrating Data from CSSMS tables to the LDAP server

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

To migrate data from CSSMS tables to LDAP server:

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

**Figure I-3** *Select Source & Destination for Migration*



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

**Figure I-4** *Select Entities to Migrate*



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

3. Select the entities that you wish to migrate and click Migrate. The data is migrated and a confirmation dialog is displayed.

You can verify the data migrated to LDAP server through the LDAP Browser.

---



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

---



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## Configuring OFSAAI Web Services

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

### Configuring the DynamicWSConfig.xml File

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

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

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

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

This template is given below:

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

```

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

```

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

**Setting the Attributes for the WEBSERVICE tag**

**Table I-2 WEBSERVICE tag**

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

**Setting the Attributes for the OPERATION tag** Ensure that the "operation tag attributes" are repeated for each of the operation tags.



**Table I-3 OPERSTION tag**

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

**Setting the Attributes for the INPUT tag****Table I-4 INPUT tag**

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

**Setting the Attributes for the OUTPUT tag****Table I-5 OUTPUT tag**

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

**Setting the web.xml Entries**

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

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

2. Navigate to <OFSAAI Installation Directory>/EXEWebService/<WebServer>/ROOT/WEB-INF/ and edit the web.xml file as explained below.

---



---

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

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

with

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

---



---

#### Entry for WsConfig File

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

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

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

#### Setting the Proxy

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

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

```
<context-param>
<description>http Proxy Host</description>
<param-name>http.proxyHost</param-name>
<param-value>$PROXYHOST$</param-value>
<!-- Specify the IP address or hostname of the http proxy server-->
</context-param>
<context-param>
```

```

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

```

### Setting the OFSAAI Home Entry

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

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

```

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

```

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

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

## Deploying OFSAAI Web Services

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

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

```
./ant.sh
```

This will trigger the EAR/WAR file creation, which is required for the deployment.

3. Deploy the generated EXEWebService.EAR/EXEWebService.WAR file into the WebServer.

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

## 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-6 NotificationConfig.cfg File**

Parameter	Description
SMTP_SERVER_IP	Specify the hostname or IP address of SMTP Server.

**Table I-6 (Cont.) NotificationConfig.cfg File**

Parameter	Description
SMTP_DEBUG_MODE	To run SMTP service in Demode, 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 the 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:

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

## Configuring Passwords Changes

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

### OFSAA Infrastructure Config Schema password modification

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

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

```
cd $FIC_APP_HOME/common/FICServer/bin
./reveleusshutdown.sh
```
4. Start the Infrastructure Server in foreground directly on the server or through X-Windows software using the command:

```
./reveleusstartup.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 the 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. Select the appropriate connection and edit the password.
4. Navigate to *Data Management Tools > Data Sources > Source Designer* window. Update the password of the appropriate Source
5. If you are using Apache Tomcat as Web server, update the <Context> -> Resource tag details in *Server.xml* file from the *\$CATALINA\_HOME/conf* folder. (In case of Tomcat only Atomic <Resource> will exist).

If you are using WebSphere as Web server:

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

If you are using WebLogic as Web server:

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

### Configuring the 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.





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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, refer OFSAA Cloning Reference Guide.



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## Patching OFSAA Infrastructure Installation

### Patching Your OFSAA Infrastructure Installation

Oracle strongly recommends installing the latest available patchset 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:

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

### Adding Grants for the Atomic Schema

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

The following are the Grants for Atomic Schema:

```
grant create SESSION to &database_username
/

grant create PROCEDURE to &database_username
/

grant create SEQUENCE to &database_username
/

grant create TABLE to &database_username
/

grant create TRIGGER to &database_username
/

grant create VIEW to &database_username
/

grant create MATERIALIZED VIEW to &database_username
/

grant olap_user to &database_username
/

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

```
grant create SYNONYM to &database_username  
/
```

---

---

**Note:** If you intend to use Oracle OLAP feature, execute the below grant on all ATOMIC schema(s) grant olap\_user to &database\_username

---

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## Adding Grants for the Config Schema

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

The following are the Grants for Config Schema:

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

## Adding Grants for the Config Schema Entities for Atomic Users

Atomic Schema creation requires certain grants for config schema object access. This can be located in the \$FIC\_HOME/config\_table\_privileges\_for\_atomic\_user.sql file.

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

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

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

```
/
grant select on ICC_MESSAGELOG to &database_username
/
grant select on PR2_MASTER to &database_username
/
grant select on PR2_RUN_REQUEST to &database_username
/
grant select on MF_MODEL_SCRIPT_MASTER to &database_username
/
grant select on MF_INPUT_VALUES to &database_username
/
grant select on MF_MODEL_OUTPUT_VALUES to &database_username
/
grant select on DB_MASTER to &database_username
/
grant select on DSNMASTER to &database_username
/
grant select on pr2_rule_map to &database_username
/
grant delete on pr2_rule_map_pr to &database_username
/
grant insert on pr2_rule_map_pr to &database_username
/
grant update on pr2_rule_map_pr to &database_username
/
grant select on pr2_rule_map_pr to &database_username
/
grant delete on pr2_rule_map_pr_tmp to &database_username
/
grant insert on pr2_rule_map_pr_tmp to &database_username
/
grant update on pr2_rule_map_pr_tmp to &database_username
/
grant select on pr2_rule_map_pr_tmp to &database_username
/
grant select on pr2_rule_map_exclude to &database_username
/
```



```

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

```

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

```

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

```

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

## Configuring Application Pack XML Files

This section explains configuration of OFS\_CAP\_ADQ\_PACK.xml and OFS\_CAP\_ADQ\_SCHEMA\_IN.xml files.

This section includes the following topics:

- [Configuring the OFS\\_CAP\\_ADQ\\_PACK.xml file](#)
- [Configuring the OFS\\_CAP\\_ADQ\\_SCHEMA\\_IN.XML file](#)

### Configuring the OFS\_CAP\_ADQ\_PACK.xml file

The OFS\_CAP\_ADQ\_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 M-1** OFS\_CAP\_ADQ\_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 M-1 OFS\_CAP\_ADQ\_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.
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 the OFS\_CAP\_ADQ\_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\_CAP\_ADQ\_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 M-2 OFS\_CAP\_ADQ\_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 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 M-2 OFS\_CAP\_ADQ\_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 Page.</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 Page 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>/ 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 M-2 OFS\_CAP\_ADQ\_SCHEMA\_IN.xml Parameters

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
<PASSWORD>/ DEFAULT*	Enter the password if you want to set a default password for all schemas.  Note: You also need to set APPLYSAMEFORALL attribute as Y to apply the default password for all the schemas.	N	The maximum length allowed is 30 characters. Special characters are not allowed.	
<SCHEMA>/ TYPE	The different types of schemas that are supported in this release are ATOMIC, CONFIG, SANDBOX, and ADDON.  By default, the schemas types are seeded based on the Application Pack.  Note: Do not edit this attribute value.	Y	ATOMIC/CONFIG/SANDBOX/ADDON  <b>Note:</b> ADDON schemas are not applicable for OFS CAP Application Pack.	Only One CONFIG schema can exist in the file.  This schema identifies as the CONFIGURATION schema that holds the OFSAA setup details and other metadata information.  Multiple ATOMIC/SANDBOX/ ADDON schemas can exist in the file.  ATOMIC schema refers to the Information Domain schema. SANDBOX schema refers to the SANDBOX schema. ADDON schema refers to other miscellaneous schema (not applicable for this Application Pack).

**Table M-2 OFS\_CAP\_ADQ\_SCHEMA\_IN.xml Parameters**

Tag Name/ Attribute Name	Description	Mandatory (Y/N)	Default Value/ Permissible Value	Comments
<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>	Y	The permissible length is 15 characters and only alphanumeric characters allowed. No special characters allowed except underscore '_'.	<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.</p>
<SCHEMA>/ PASSWORD	<p>Enter the password of the schema to be created.</p> <p><b>Note:</b> If this attribute is left blank, then the password specified in the &lt;PASSWORD&gt;/DEFAULT attribute is applied as the Schema Password.</p>	N	The maximum length allowed is 30 characters. Special characters are not allowed.	<p><b>Note:</b> You need to mandatorily enter the password if you have set the &lt;PASSWORD&gt;/APPLYSAMEFORALL attribute as N.</p>
<SCHEMA>/ APP_ID	<p>By default, the Application ID is seeded based on the Application Pack.</p> <p><b>Note:</b> Do not edit this attribute value.</p>	Y	Unique Seeded Value	<p>Identifies the Application/ Product for which the schema is being created.</p> <p>DO NOT modify this value.</p>
<SCHEMA>/ DEFAULTTABLESPACE	<p>Enter the available default tablespace for DB User.</p> <p><b>Note:</b> If this attribute is left blank, then USERS is set as the default tablespace.</p>	N	<p>Default - USERS</p> <p>Permissible - Any existing valid tablespace name.</p>	<p>Modify this value to associate any valid tablespace with the schema.</p>

Table M-2 OFS\_CAP\_ADQ\_SCHEMA\_IN.xml Parameters

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

Table M-2 OFS\_CAP\_ADQ\_SCHEMA\_IN.xml Parameters

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

Encryption of tablespaces requires to enabling Transparent Data Encryption (TDE) on the Database Server.

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

```
<ADV_SEC_OPTIONS>
<OPTION NAME="TDE" VALUE="FALSE"/>
<OPTION NAME="DATA_REDACT" VALUE="FALSE" />
</ADV_SEC_OPTIONS>
<TABLESPACES>
```

```
<TABLESPACE NAME="OFS_AAI_TBSP_1" VALUE="TS_USERS1"
DATAFILE="/scratch/ora12c/app/oracle/oradata/OFSPQA12CDB/ts_users1.dbf"
SIZE="500M" AUTOEXTEND="ON" ENCRYPT="ON" />
<TABLESPACE NAME="OFS_AAI_TBSP_2" VALUE="TS_USERS2"
DATAFILE="/scratch/ora12c/app/oracle/oradata/OFSPQA12CDB/ts_users2.dbf"
SIZE="500M" AUTOEXTEND="ON" ENCRYPT="ON" />
</TABLESPACES>

<SCHEMAS>
<SCHEMA TYPE="CONFIG" NAME="ofsaaconf" PASSWORD="" APP_ID="OFS_AAI"
DEFAULTTABLESPACE="##OFS_AAI_TBSP_1##" TEMPTABLESPACE="TEMP"
QUOTA="unlimited"/>
<SCHEMA TYPE="ATOMIC" NAME="ofsaaatm" PASSWORD="" APP_ID="OFS_AAAI"
DEFAULTTABLESPACE="##OFS_AAI_TBSP_2##" TEMPTABLESPACE="TEMP"
QUOTA="unlimited" INFODOM="OFSAAAIINFO"/>
</SCHEMAS>
```

On successful execution of the utility, the entered passwords in the OFS\_CAP\_ADQ\_SCHEMA\_IN.xml file are nullified.



## Configuring the OFSAAI\_InstallConfig.xml File

This section gives details about the OFSAAI\_InstallConfig.xml file.

### Configuring the OFSAAI\_InstallConfig.xml file

To configure the OFSAAI\_InstallConfig.xml file, follow these steps.

1. Navigate to OFS\_CAP\_ADQ\_PACK/OFS\_AAI/conf/
2. Open the file OFSAAI\_InstallConfig.xml in text editor.
3. Configure the OFSAAI\_InstallConfig.xml as mentioned in the below table:
4. You need to manually set the InteractionVariable parameter values as mentioned in the table. If a value is not applicable, enter NA and ensure that the value is not entered as NULL.

**Table N-1 OFSAA Infrastructure Installation Tasks and Descriptions**

InteractionVariable Name	Significance and Expected Value	Mandatory
<b>&lt;Layer name="GENERAL"&gt;</b>		
<b>InteractionGroup name="WebServerType"</b>		
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components would be deployed.  The below numeric value should be set depending on the type: <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> For example, <InteractionVariable name="WEBAPPSERVERTYPE">3</InteractionVariable>	Yes
<b>InteractionGroup name="OFSAA Infrastructure Server Details"</b>		

**Table N-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 P</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 1, 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> Note: The default value for SFTP_ENABLE is 1, which signifies that SFTP will be used. Oracle recommends using SFTP instead of FTP because SFTP is considered more secure. However, a client may choose to ignore this recommendation and to use FTP by setting SFTP_ENABLE to 0. You can change this selection later by using the OFSAAI administration interface.</p> <p>Set SFTP_ENABLE to -1 to configure ftpshare and weblocal path as local path mounted for OFSAAI server.</p>		



**Table N-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 <b>22</b> (SFTP). Specify default value as <b>21</b> (FTP) if SFTP_ENABLE is <b>0</b>. 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>Note: The below ports are used internally by the various OFSAA Infrastructure services. The default values mentioned below are set in the installation. If you intend to specify a different value, update the parameter value accordingly and ensure this port value is in the range of 1025 to 65535 and the respective port is enabled.</p>		
JAVAPORT	9999	Yes
NATIVEPORT	6666	Yes
AGENTPORT	6510	Yes
ICCPORT	6507	Yes
ICCNATIVEPORT	6509	Yes
OLAPPORT	10101	Yes
MSGPORT	6501	Yes
ROUTERPORT	6500	Yes
AMPORT	6505	Yes
<b>InteractionGroup name="Web Details"</b>		
<p>Note: If value for HTTPS_ENABLE is set to 1, ensure you have a valid certificate available from a trusted CA and the same is configured on your web application server.</p>		
HTTPS_ENABLE	<p>Identifies if the UI should be accessed using HTTP or HTTPS scheme. The default value set is <b>0</b>. 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 N-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, &lt;InteractionVariable name="WEB_SERVER_IP"&gt;10.11.12.13&lt;/InteractionVariable&gt;</p> <p>or</p> <p>&lt;InteractionVariable name="WEB_SERVER_IP"&gt;myweb.server.com&lt;/InteractionVariable&gt;</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, &lt;InteractionVariable name="WEB_SERVER_PORT"&gt;80&lt;/InteractionVariable&gt;</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>&lt;scheme&gt;://&lt;host&gt;:&lt;port&gt;/&lt;context-name&gt;/login.jsp</p> <p>Sample URL: https://myweb:443/ofsaadev/login.jsp</p> <p>For example, &lt;InteractionVariable name="CONTEXT_NAME"&gt;ofsaadev&lt;/InteractionVariable&gt;</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 /oradata6/revwb7/tomcat/webapps/.</p> <p>For WebSphere, enter the WebSphere path as &lt;WebSphere profile directory&gt;/installedApps/&lt;NodeCellName&gt;. For example, /data2/test//WebSphere/AppServer/profiles/&lt;ProfileName&gt;/installedApps/aix-imfNode01Cell. Where aix-imf is Host name.</p> <p>For WebLogic, provide the WebLogic home directory path as /&lt;WebLogic home directory path&gt;/bea/wlserver_10.3</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

**Table N-1 (Cont.) OFSAA Infrastructure Installation Tasks and Descriptions**

InteractionVariable Name	Significance and Expected Value	Mandatory
<b>InteractionGroup name="Weblogic Setup Details"</b>		
WEBLOGIC_DOMAIN_HOME	Identifies the WebLogic Domain Home. For example, <InteractionVariable name="WEBLOGIC_DOMAIN_HOME">/home/weblogic/bea/user_projects/domains/mydomain</InteractionVariable>	Yes Specify the value only if WEBSERVERTYPE is set as 3 (WebLogic)
<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 OFSAA 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 parameter APP_FTPSHARE_PATH above.	Yes
OFSAAI_SFTP_PRIVATE_KEY	Identifies the SFTP private key for OFSAAI. For example, <InteractionVariable name="OFSAAI_SFTP_PRIVATE_KEY">/home/ofsaapp/.ssh/id_rsa</InteractionVariable> By default, the value is NA, which indicates password will be prompted for the user <OFSAAI_SFTP_USER_ID> for authentication. For more information on generating SFTP Private key, see the Setting Up SFTP Private Key section.	No
OFSAAI_SFTP_PASSPHRASE	Identifies the passphrase for the SFTP private key for OFSAAI. For example, InteractionVariable name="OFSAAI_SFTP_PASSPHRASE">enter a pass phrase here</InteractionVariable> By default, the value is NA. If OFSAAI_SFTP_PRIVATE_KEY value is given and this is kept as NA, then it is assumed as empty passphrase.	No
<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 N-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> <pre>InteractionVariable name="HIVE_SERVER_PORT"&gt;22&lt;/InteractionVariable&gt;</pre>	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> <pre>InteractionVariable name="HIVE_SERVER_FTPDRIVE"&gt;/scratch/ofsaa/ftpshare&lt;/InteractionVariable&gt;</pre>	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> <pre>InteractionVariable name="HIVE_SERVER_FTP_USERID"&gt;ofsaa&lt;/InteractionVariable&gt;</pre>	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> <pre>InteractionVariable name="HIVE_SERVER_FTP_PROTOCOL"&gt;SFTP&lt;/InteractionVariable&gt;</pre>	Yes, only for HIVE Configuration
HIVE_SFTP_PRIVATE_KEY	<p>Identifies the SFTP private key for the HIVE server.</p> <p>For example,</p> <pre>&lt;InteractionVariable name="HIVE_SFTP_PRIVATE_KEY"&gt;/scratch/testuser/.ssh/id_rsa&lt;/InteractionVariable&gt;</pre> <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> <pre>&lt;InteractionVariable name="HIVE_SFTP_PASSPHRASE"&gt;NA&lt;/InteractionVariable&gt;</pre> <p>By default, the value is NA. If HIVE_SFTP_PRIVATE_KEY value is given and this is kept as NA, then it is assumed as empty passphrase.</p>	Yes, only for HIVE Configuration





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# Migration for Excel Upload

This section provides detailed instructions to migrate for excel upload.

## Prerequisites

The following are the pre-requisites 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.

## Migration for Excel Upload

To migrate, follow these steps:

1. Open PL/SQL Developer and logon to the source setup's configuration (CONFIG) schema by entering the appropriate username and password.
2. In a new SQL window query the data of table EXCEL\_MAPPING\_MASTER.
3. Open a new session in PL/SQL developer and logon to the target setup's configuration (CONFIG) schema by entering the appropriate username and password.
4. Insert the records from Step 1 above in to this table.
5. In V\_INFODOM column of EXCEL\_MAPPING\_MASTER table update the infodom name with the target infodom name.

---

---

**Note:** If all the mappings can work out of the single target Infodom, update same Infodom value across all rows. If only few mappings will work out of the target infodom, update the infodom value for selective records. 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.

---

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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.

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---

**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.

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---

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 Database & Java version. Refer to the following table for details.

**Table P-1 JDBC Jar files version details**

Oracle Database Version	JDK/JRE Version Supported	JDBC Jar files specific to the release
12.1 or 12cR1	JDK 8 and JDK 7	ojdbc7.jar for JDK 7 and JDK 8
11.2 or 11gR2	JDK 7 and JDK 8 supported in 11.2.0.3 and 11.2.0.4	ojdbc6.jar for JDK 8 and 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 an OFSAA 8.0.x Java 7 instance to Java 8](#)
- [Configuring the Web Application Server](#)
- [OFSAA Generic Configurations](#)
- [OFSAA Configurations 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.

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

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### Upgrading an 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 the Web Application Server](#).
2. Configure the OFSAA instance to Java 8. For more information, refer [OFSAA Generic Configurations](#). For a newly installed Web Application Server, refer [OFSAA Configurations for New Web Application Server Installation](#)
3. Restart the OFSAA services. For more information, refer the *Start/Stop Infrastructure Services* section in [Appendix D](#)
4. Generate the application EAR/WAR file and redeploy the application onto your configured web application server. For more information on generating and deploying EAR / WAR file, refer [Appendix C](#).

### Configuring the Web Application Server

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:

- [Updating the Oracle WebLogic Server](#)
- [Updating the Apache Tomcat Server](#)

### Updating the Oracle WebLogic Server

Perform the following configurations to upgrade the existing WebLogic server instance to Java 8:

1. Navigate to `<WLS_HOME>/Middleware/Oracle_Home/wlserver.`
2. Edit the `product.properties` file. Set `JAVA_HOME`, `WLS_JAVA_HOME`, `JAVAHOME` properties to the new Java path and `java.vm.version` to the new Java version. For example,

```
JAVA_HOME=/usr/java/jre1.8.0_45
WLS_JAVA_HOME=/usr/java/jre1.8.0_45
JAVAHOME=/usr/java/jre1.8.0_45
java.vm.version=1.8.0_45
```

3. Navigate to `<WLS_HOME>/Middleware/Oracle_Home/user_projects/domains/<domain>/bin`. Update `SUN_JAVA_HOME`, `DEFAULT_JAVA_HOME`, `JAVA_HOME` in the `setDomainEnv.sh` file to point to the new Java path. For example,

```
SUN_JAVA_HOME="/usr/java/jre1.8.0_45"
DEFAULT_SUN_JAVA_HOME="/usr/java/jre1.8.0_45"
JAVA_HOME="/usr/java/jre1.8.0_45"
```

4. Clear the Application cache. Navigate to the following path and delete the files:

```
<Weblogic installation location>/domains/<Domain name>/servers/<Server name>/tmp/_WL_user/<Application name>/qaelce/jsp_servlet
```

If you wish to install a new instance of the Oracle WebLogic Server, follow these steps:

1. Install Oracle WebLogic Server 12.1.3.x on Java 8.
2. Perform the configurations for the newly installed WebLogic server. For more information refer [Configuring a Resource Reference in the 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.

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### Updating the Apache Tomcat Server

Perform the following configurations to upgrade the existing Apache Tomcat Server from Java 7 to Java 8:

1. Log in 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:

- [Setting the User .profile](#)
- [Configurations for Java 8](#)

### Setting the User .profile

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
```

### Configurations for Java 8

Perform the configurations explained in the section [Configurations for Java 8](#).

## OFSAA Configurations for New Web Application Server Installation

This configuration is required only if you have freshly installed Oracle WebLogic 12.1.3 or Apache Tomcat Server 8.0. Follow these steps:

1. Modify the following parameters in the Configuration table present in the Config Schema with the new Domain Path in case of WebLogic or with the new deployment path in case of Tomcat:
  - DeFiHome
  - REV\_IMG\_PATH
  - EMBEDDED\_JSP\_JS\_PATH
2. Login to the OFSAA Server as a non-root user.
3. Navigate to `$FIC_HOME/ficweb/webroot/WEB_INF` and update the following parameters in the `web.xml` file with the new Domain path in case of WebLogic or with the new deployment path in case of Tomcat:
  - FIC\_PHYSICAL\_HOME\_LOC
  - FIC\_HOME
  - ICC\_SERVLET\_LOG\_FILE
4. Navigate to `$FIC_HOME/ficweb/webroot/conf` and update the Domain path in case of WebLogic or with the new deployment path in case of Tomcat:
  - OFSAALogger.xml
  - MDBLogger.xml
  - RevLog4jConfig.xml
  - RFDLogger.xml
  - ExportLog4jConfig.xml
  - RFDLogger.xml
  - PR2Logger.xml

---

---

# Configuring Transparent Data Encryption (TDE) and, Data Redaction in OFSAA

Two features comprise of Oracle Advanced Security: Transparent Data Encryption and Oracle Data Redaction.

This section details 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 a TDE During OFS CAP Installation by Using the 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:

- WalletConfiguring 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:

Step 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.

---

**Note:** In a multitenant environment, the keystore location is set for the entire multitenant container database (CDB), not for individual pluggable databases (PDBs).

**Note:** 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/orclb)))
```



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)))
```

Step 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.

Step 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.

Step 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';
```

#### Step 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:

```
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:

1. 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).

2. 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
```

3. Edit the initialization parameter file to use the correct COMPATIBLE setting.

For example:

```
COMPATIBLE = 12.2.0.0
```

4. 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
```

5. 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:@whf00ajn<DB_Server_IP>:1521:OFSPQA12CDB<DB_
NAME></JDBC_URL>
<JDBC_DRIVER>oracle.jdbc.driver.OracleDriver</JDBC_DRIVER>
<HOST>ofss220608<OFSAA_Server_IP/HOST Name></HOST>
<SETUPINFO NAME="t608<PREFIX_NAME>" PREFIX_SCHEMA_NAME="Y"/>
<PASSWORD APPLYSAMEFORALL="Y" DEFAULT="password123<PASSWORD>"/>
<TABLESPACES>
<TABLESPACE NAME="OFS_AAI_TBSP" VALUE="TS_USERS1"
DATAFILE="/scratch/ora12c/app/oracle/oradata/OFSPQA12CDB<ABSOLUTE PATH to
TABLESPACE>/ts_users1<TABLESPACE_DATA_FILE_NAME>.dbf" SIZE="500M"
AUTOEXTEND="OFF" ENCRYPT="ON" />
</TABLESPACES>
<SCHEMAS>
<SCHEMA TYPE="CONFIG" NAME="ofsaconf" PASSWORD="" APP_ID="OFS_AAI"
DEFAULTTABLESPACE="TS_USERS1##OFS_AAI_TBSP##"
TEMPTABLESPACE="TEMP" QUOTA="unlimited"/>
<SCHEMA TYPE="ATOMIC" NAME="ofsaatm" PASSWORD="" APP_ID="OFS_AAAI"
DEFAULTTABLESPACE="##OFS_AAI_TBSP##TS_USERS1"
TEMPTABLESPACE="TEMP" QUOTA="unlimited" INFODOM="OFSAAAIINFO"/>
<SCHEMA TYPE="ATOMIC" NAME="ofsaatm" PASSWORD="" APP_ID="OFS_IPE"
DEFAULTTABLESPACE="##OFS_AAI_TBSP##TS_USERS1"
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 (ENCRYPTED TS - YES) or not (ENCRYPTED TS - NO) in the ENCRYPTED column:

TABLESPACE_NAME	ENCRYPTED
SYSTEM	NO
SYSAUX	NO
UNDOTBS1	NO
TEMP	NO
USERS	NO
ENCRYPTED_TS	YES

6 rows selected.

The above example indicates TABLESPACE ENCRYPTED\_TS is created with Encryption ON.

## 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 8.0.6.0.0 version from a previous version. Additionally, these configurations are required in case you did not enable TDE during 8.0.6.0.0 installation and want to enable at a later point of time.

1. Create a new PDB (12c)/ instance (11g) on same or different Database Server for TDE. For more information, see Configuring Software Keystore and Encrypted Tablespace Creation.
2. Shutdown the OFSAAI Services.
3. Export all Configuration, Atomic and Sandbox Schemas as per the applications installed in your OFSAA instance.

For example:

```
expdp SYSTEM/oracle@OFS12C2DB 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@OFS12nDB 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. NOTE: 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 ofsaacnf;
```

Grant succeeded

```
SQL> GRANT SELECT ON SYS.V_$PARAMETER TO ofsaatm;
```

Grant succeeded

6. Update .profile for ORACLE\_SID environment variable with new ORACLE\_SID.
7. Update JDBC URL by executing Port Changer utility. For details on how to execute Port Changer utility, see Changing IP/ Hostname, Ports, Deployed paths, Protocol of the OFSAA Instance 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 Start/Stop Infrastructure Services section in the Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide 8.0.2.0.0.

## 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 8.0.6.0.0 version from a previous version. Additionally, these configurations are required in case you did not enable TDE during OFS AAI 8.0.6.0.0 installation and want to enable at a later point of time.

Perform the following steps:

1. Login as SYSDBA into the database.
2. Execute the file \$FIC\_HOME/utility/data\_security/scripts/create\_data\_sec\_roles.sql only once per database (PDB in case of 12c).
3. Execute the following sql statement to find out the list of atomic users from the table:
 

```
select v_schema_name from aai_db_detail where V_DB_NAME <> 'CONFIG' AND V_DB_TYPE = 'ORACLE'
```
4. Execute the file \$FIC\_HOME/utility/data\_security/scripts/grant\_data\_sec\_roles.sql for all atomic users found in the previous step.

5. From the Configuration window in the System Configuration module, select the Allow Data Redaction checkbox.
6. Run the Data Redaction utility. For more details on how to run the utility, see Data Redaction section under Data Security and Data Privacy chapter in OFS Analytical Applications Infrastructure Administration Guide 8.0.6.0.0.



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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 6–17** *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:**

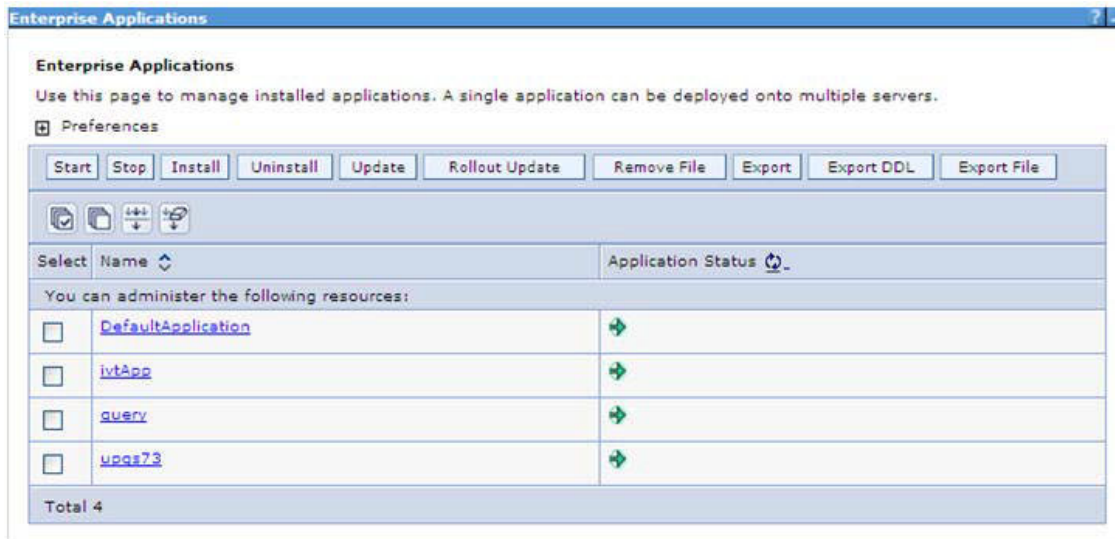
- Uninstallation does not remove the Infrastructure application from the Web Application Server. This has to be done manually.
- The entries in the `.profile` file will have to be removed manually.
- The files/ folders under the file system staging area (ftpsahre) have to be deleted manually.
- All the 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 6–18** 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 6–19 Uninstall Application



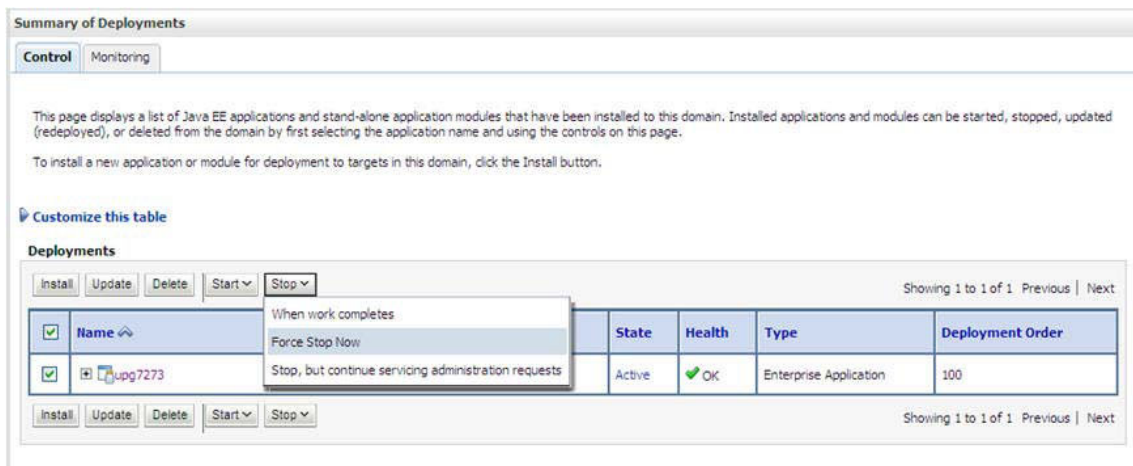
6. Click **OK** to confirm.
7. Click **Save** to save the master file configuration.

## 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* screen is displayed.

Figure 6–20 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 6–21** 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"/>
```

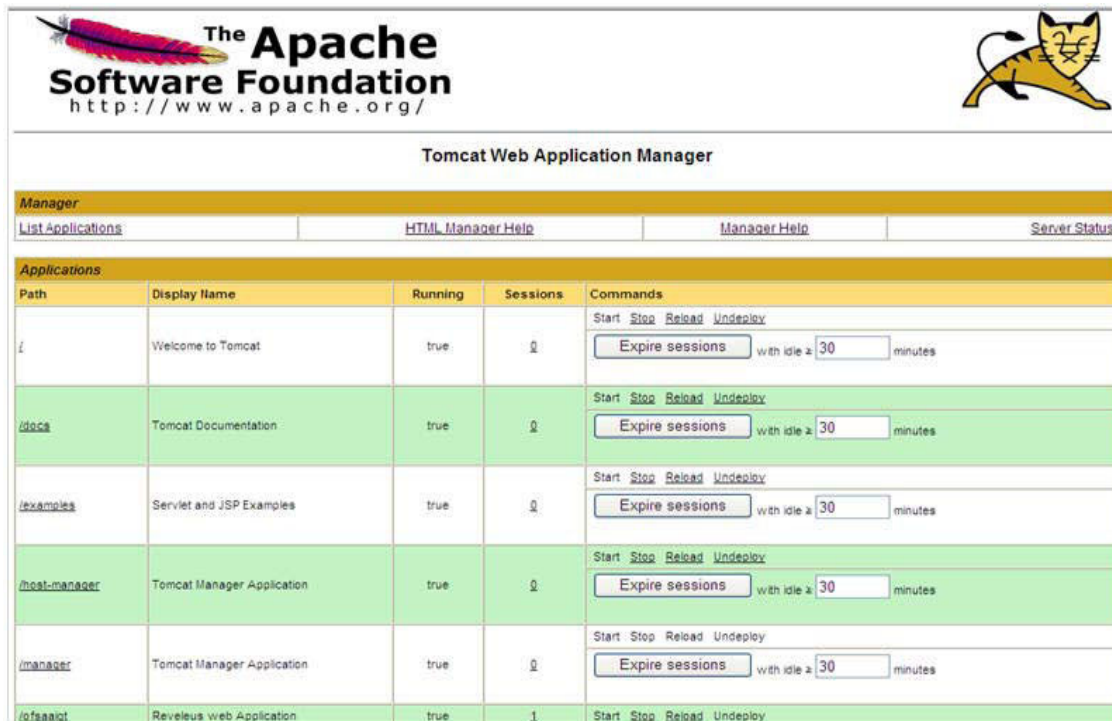
```
</Context>
```

```
-->
```

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 6–22** 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 <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> Expire sessions with idle <input type="text" value="30"/> minutes
/docs	Tomcat Documentation	true	0	Start <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> Expire sessions with idle <input type="text" value="30"/> minutes
/examples	Servlet and JSP Examples	true	0	Start <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> Expire sessions with idle <input type="text" value="30"/> minutes
/host-manager	Tomcat Manager Application	true	0	Start <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> Expire sessions with idle <input type="text" value="30"/> minutes
/manager	Tomcat Manager Application	true	0	Start <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a> Expire sessions with idle <input type="text" value="30"/> minutes
/ofsaant	Reveles web Application	true	1	Start <a href="#">Stop</a> <a href="#">Reload</a> <a href="#">Undeploy</a>

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



---

---

# Configuring Work Manager in Web Application Servers

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

This section covers the following topics:

- [Configuring a Work Manager in the WebSphere Application Server](#)
- [Configuring a Work Manager in the WebLogic Application Server](#)

## Configuring a Work Manager in the WebSphere Application Server

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

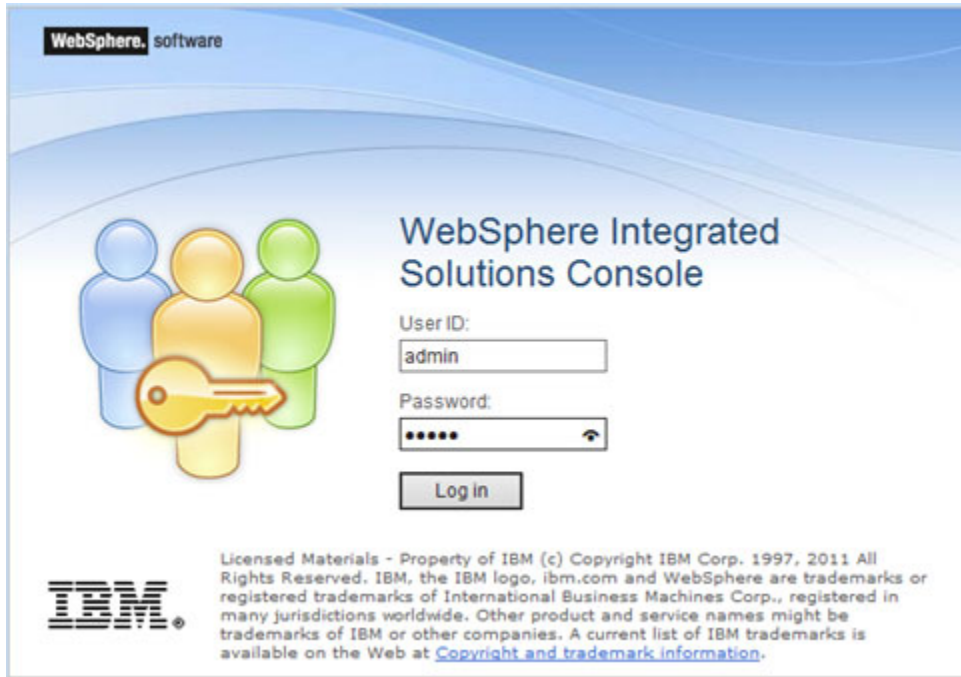
This section covers the following topics:

- Creating Work Manager
- Mapping Work Manager to OFSAA WebSphere Instance

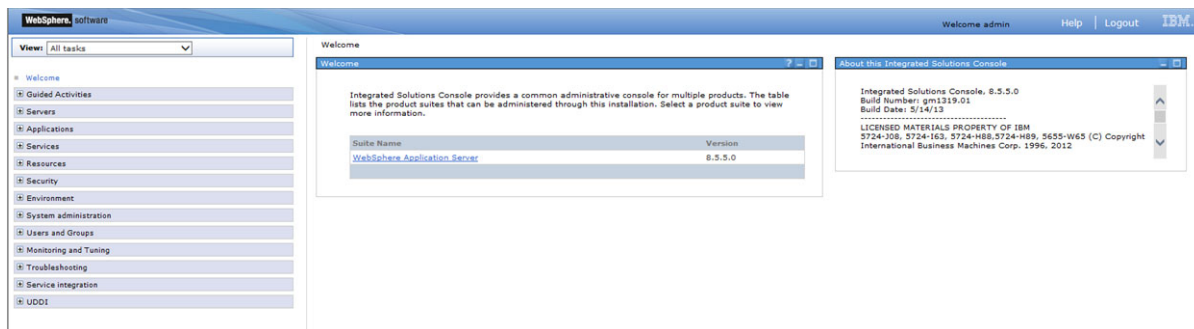
### Creating a Work Manager

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

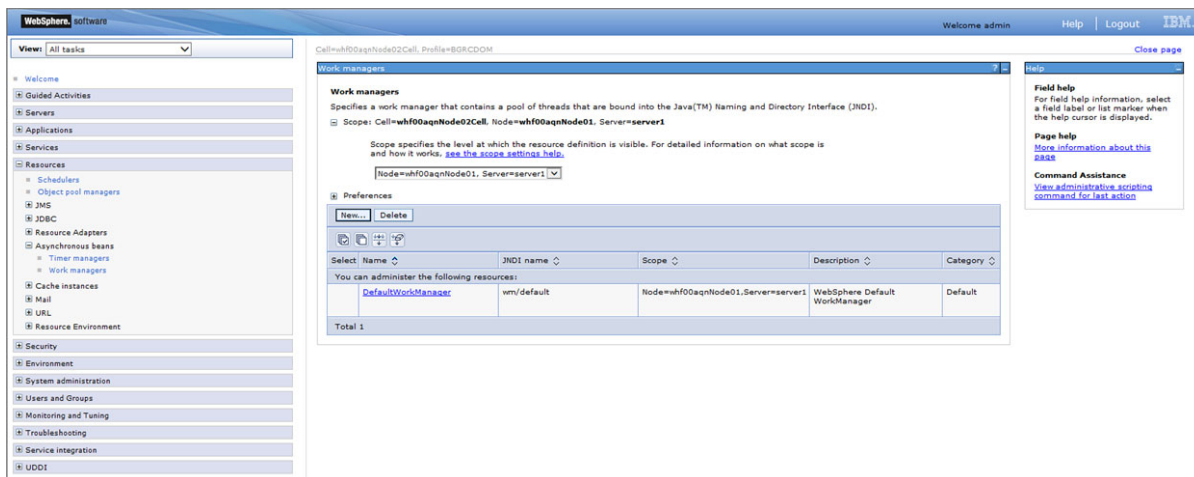
The **Login** window is displayed.



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



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

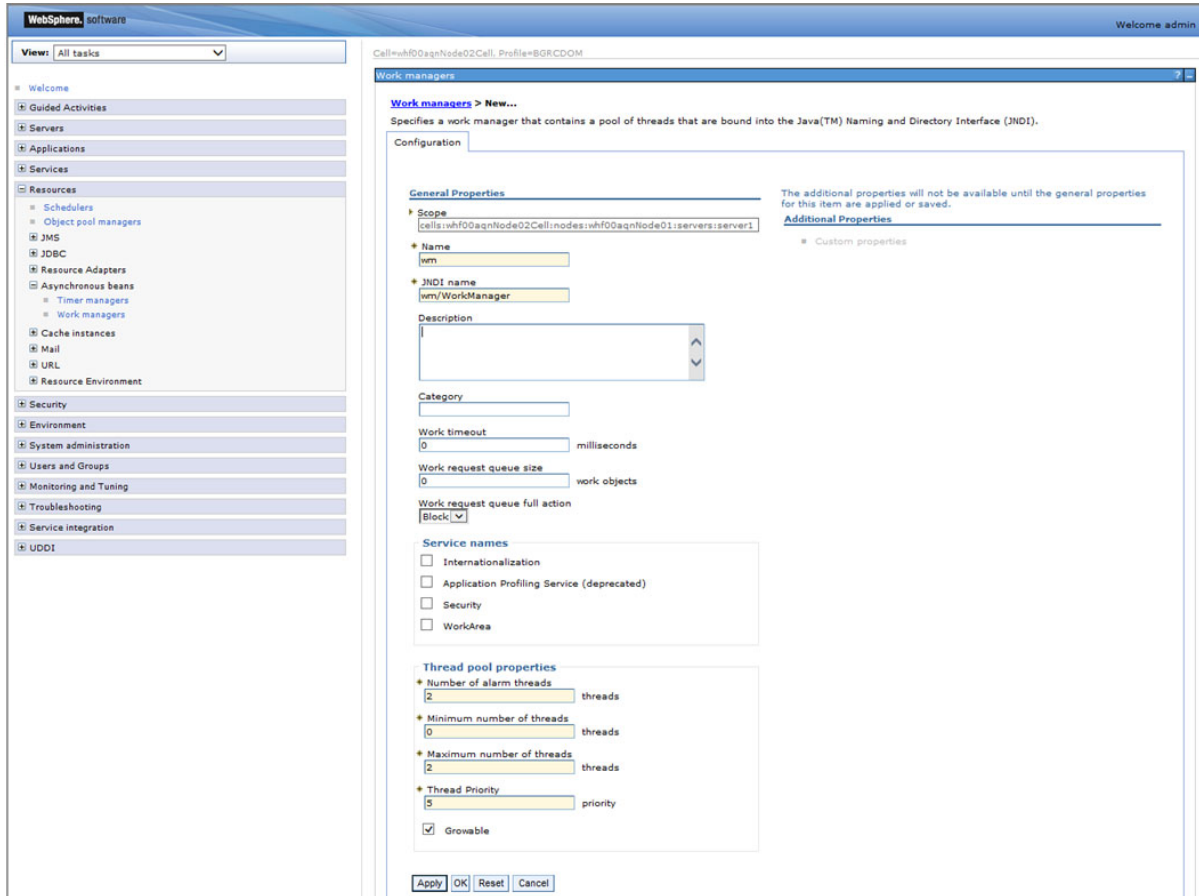


4. From the drop-down list, select the required **Scope**.



For example, Node=whf00aqnNode01, Server=server1.

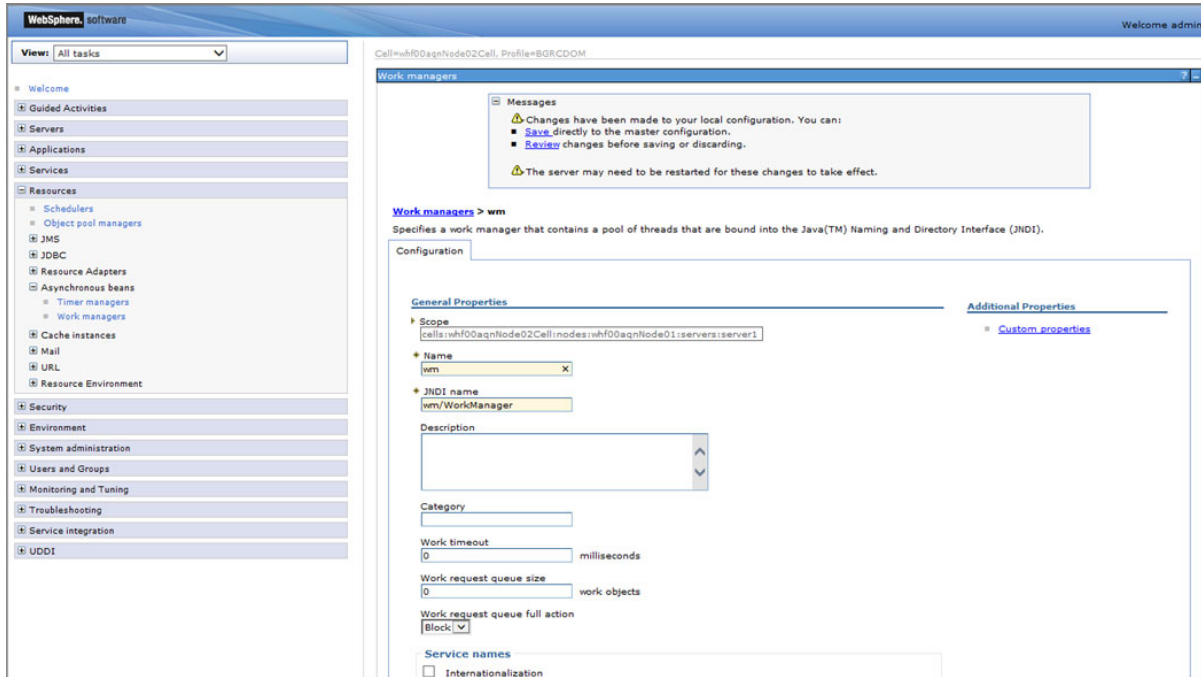
5. In the **Preferences** section, click **New**.



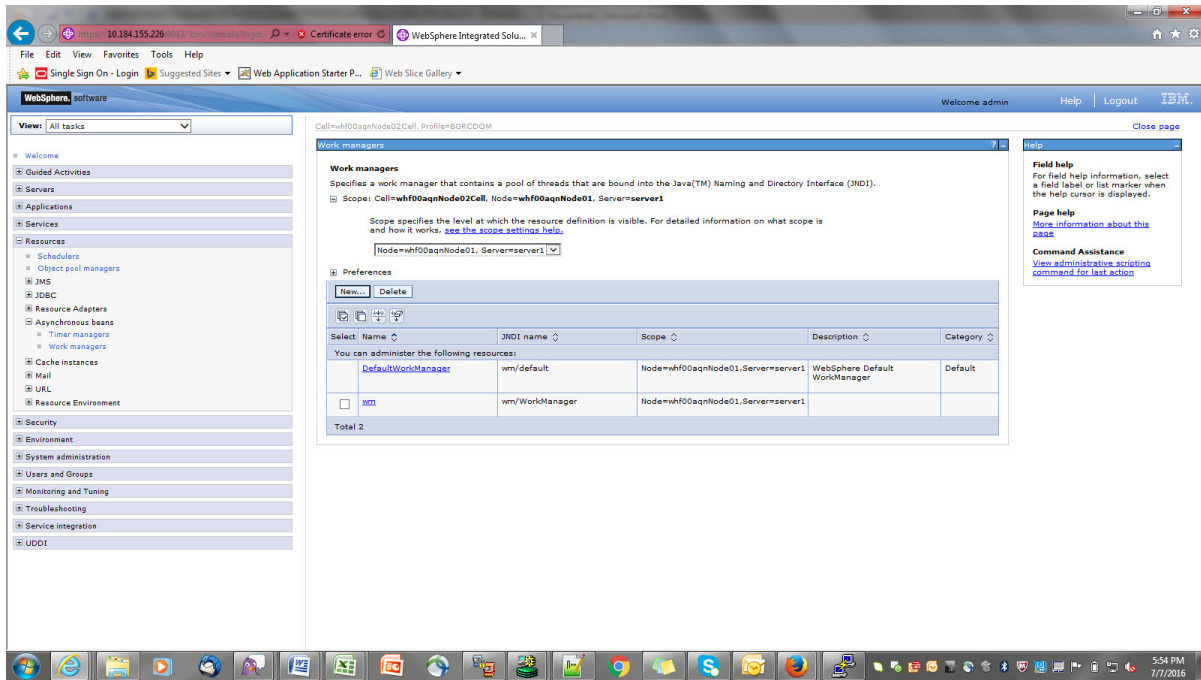
6. In the **Name** field, enter the **Name** as 'wm' and in the **JNDI Name** field, enter the **JNDI** name as 'wm/WorkManager'

7. Enter the **Thread pool** properties.

8. Click **Apply**.



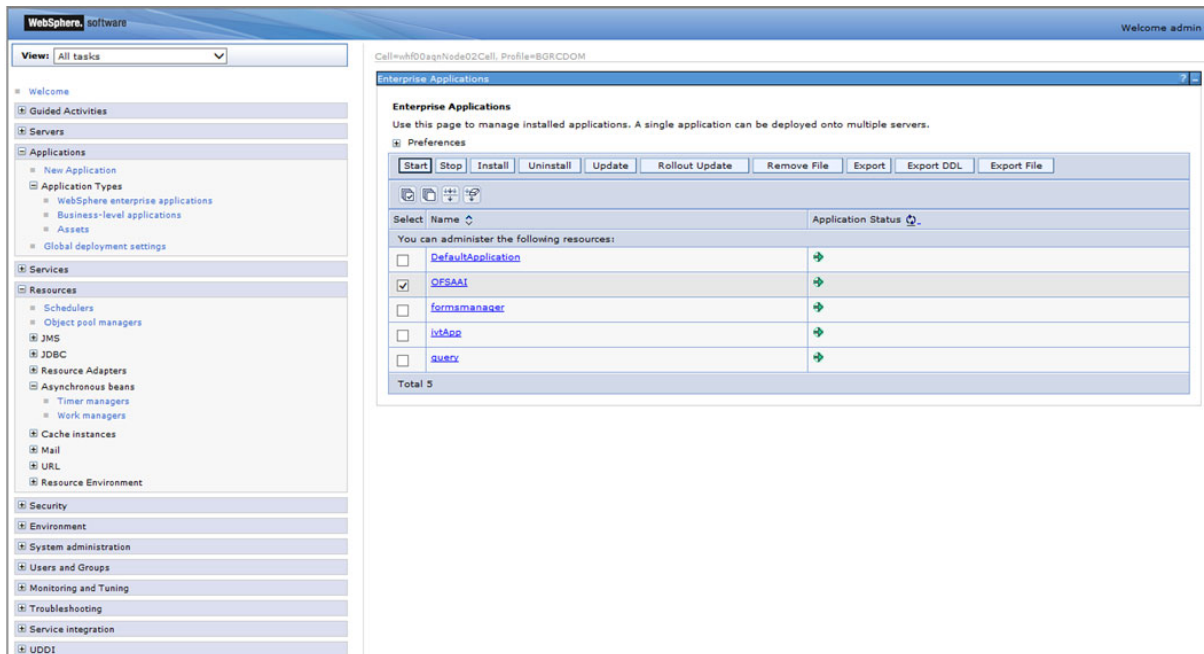
9. Click **Save**.



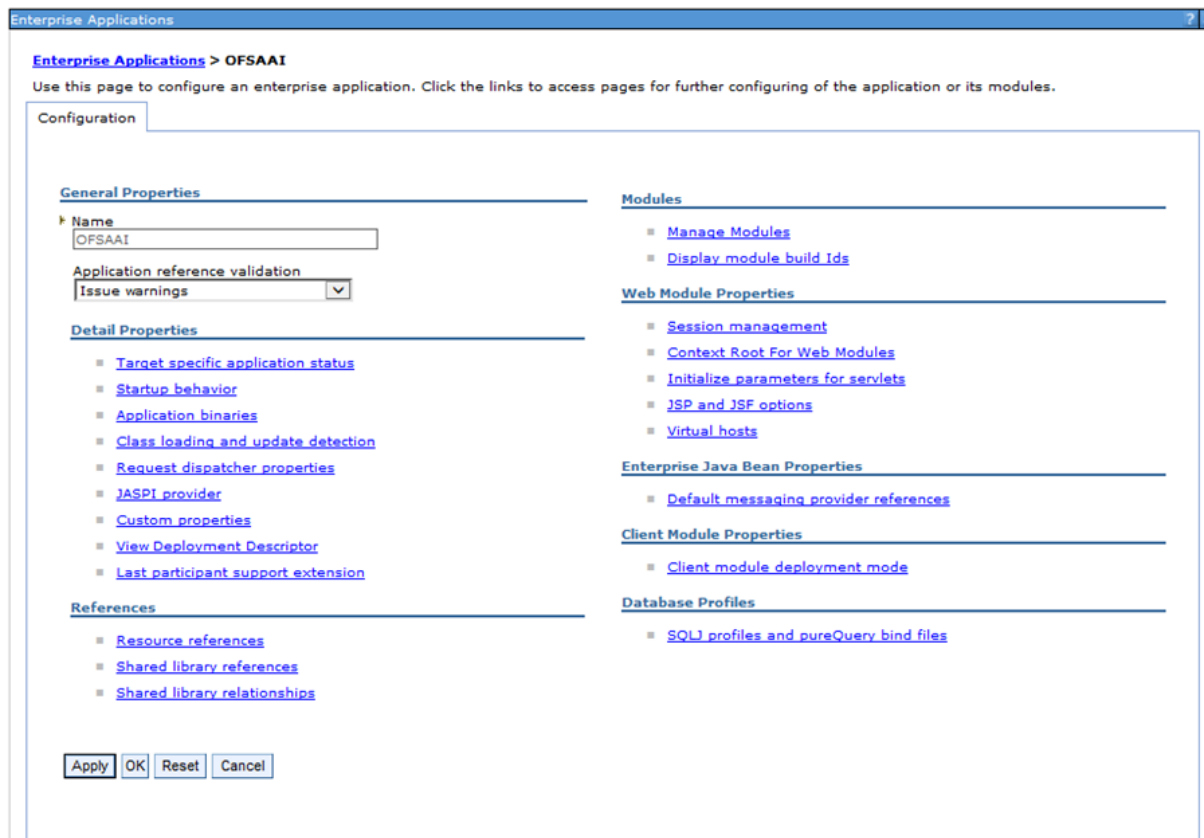
After creating the work manager successfully, you have to map it to the OFSAA instance.

## Mapping Work Manager to OFSAA WebSphere Instance

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



2. Click the OFSAAI instance hyperlink.



- Under the **References** section, click the **Resources references** link.

The screenshot shows the 'Enterprise Applications' console with the path 'Enterprise Applications > OFSAAI > Resource references'. It displays two sections for configuring resource references.

**commonj.work.WorkManager**

Buttons: Set Multiple JNDI Names

Select	Module	Bean	URI	Resource Reference	Target Resource JNDI Name
<input checked="" type="checkbox"/>	OFSAAI Web Application		OFSAAI.war,WEB-INF/web.xml	wm/WorkManager	wm/default <input type="button" value="Browse..."/>

**javax.sql.DataSource**

Buttons: Set Multiple JNDI Names, Modify Resource Authentication Method..., Extended Properties...

Select	Module	Bean	URI	Resource Reference	Target Resource JNDI Name	Login configuration
<input type="checkbox"/>	OFSAAI Web Application		OFSAAI.war,WEB-INF/web.xml	jdbc/FICMASTER	jdbc/FICMASTER <input type="button" value="Browse..."/>	Resource authorization: Container Authentication method: None
<input type="checkbox"/>	OFSAAI Web Application		OFSAAI.war,WEB-INF/web.xml	jdbc/OFSBGRINFO	jdbc/OFSBGRINFO <input type="button" value="Browse..."/>	Resource authorization: Container Authentication method: None

Buttons: OK, Cancel

- Click the **Browse** button that corresponds to the Work Manager Resource Reference. The available resources are displayed.

The screenshot shows the 'Enterprise Applications' console with the path 'Enterprise Applications > OFSAAI > Resource references > Available resources'. It displays a list of available resources for binding to the resource-reference of a bean.

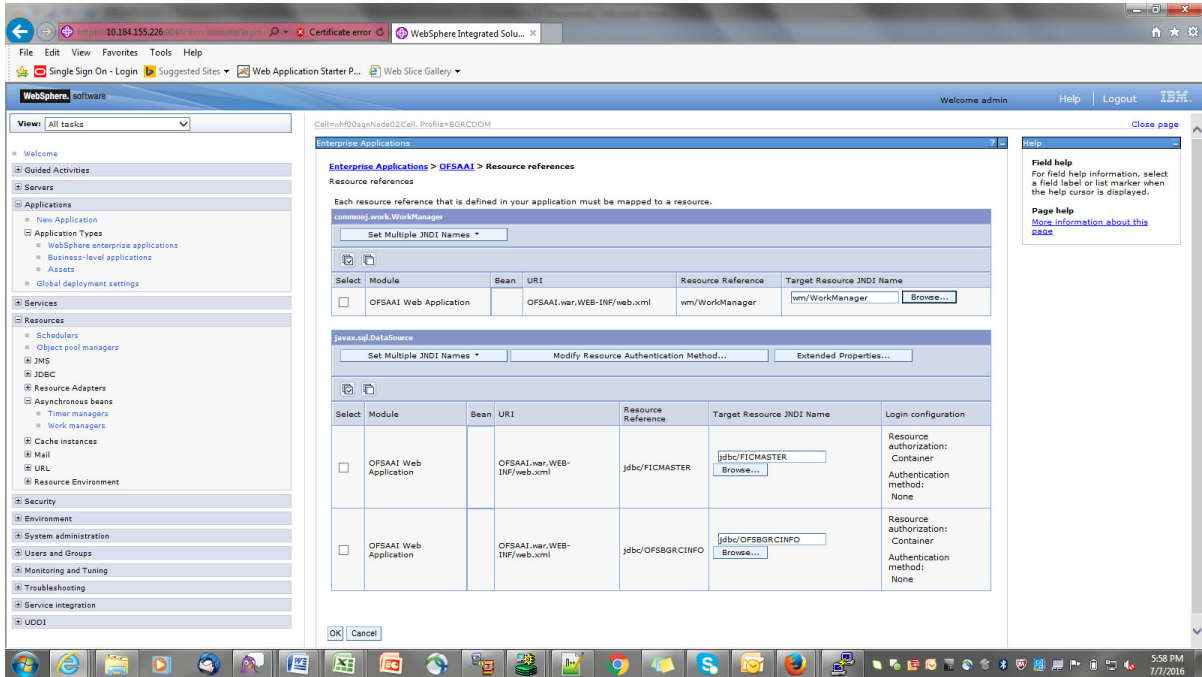
Resources that can be used to bind to the resource-reference of a bean. Resources shown here are only those available to that module carrying the bean. This is determined by the targets to which that module is mapped. Resources available to a module can come from a hierarchical scope of a bean. If resources at different scopes have the same JNDI name, the one at the lower scope will override the parent. The overridden resources are not shown here.

Buttons: Apply, Cancel

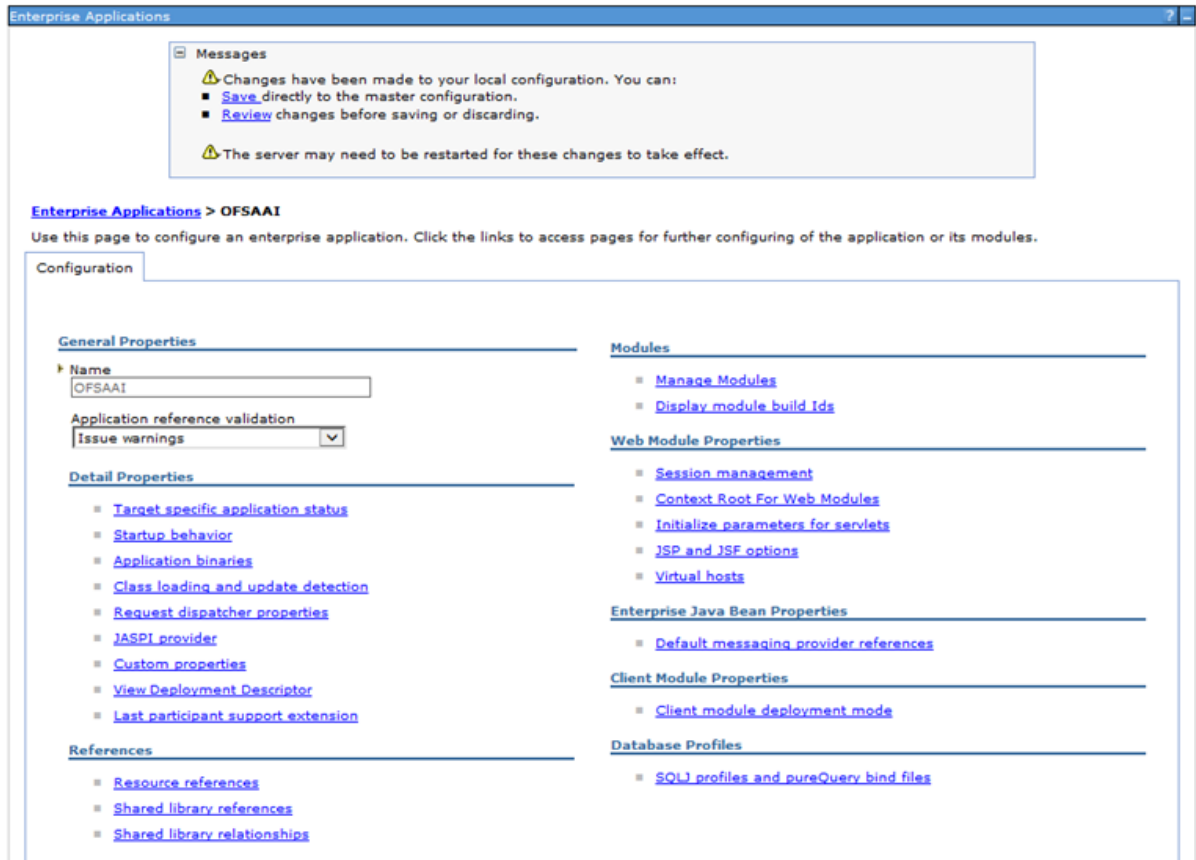
Select	Name	JNDI name	Scope	Description
<input type="radio"/>	AsyncRequestDispatcherWorkManager	wm/ard	Node=whf00aqnNode01	
<input type="radio"/>	DefaultWorkManager	wm/default	Node=whf00aqnNode01,Server=server1	WebSphere Default WorkManager
<input checked="" type="radio"/>	wm	wm/WorkManager	Node=whf00aqnNode01,Server=server1	

Total 3

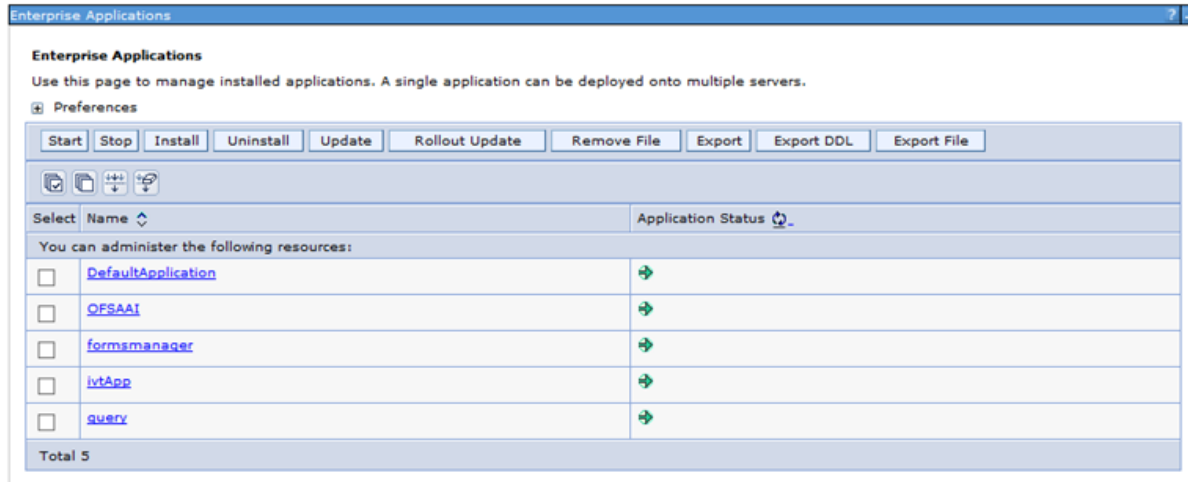
5. Select the newly created Work Manager ('wm') and click **Apply**.



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



7. Click **Save**.



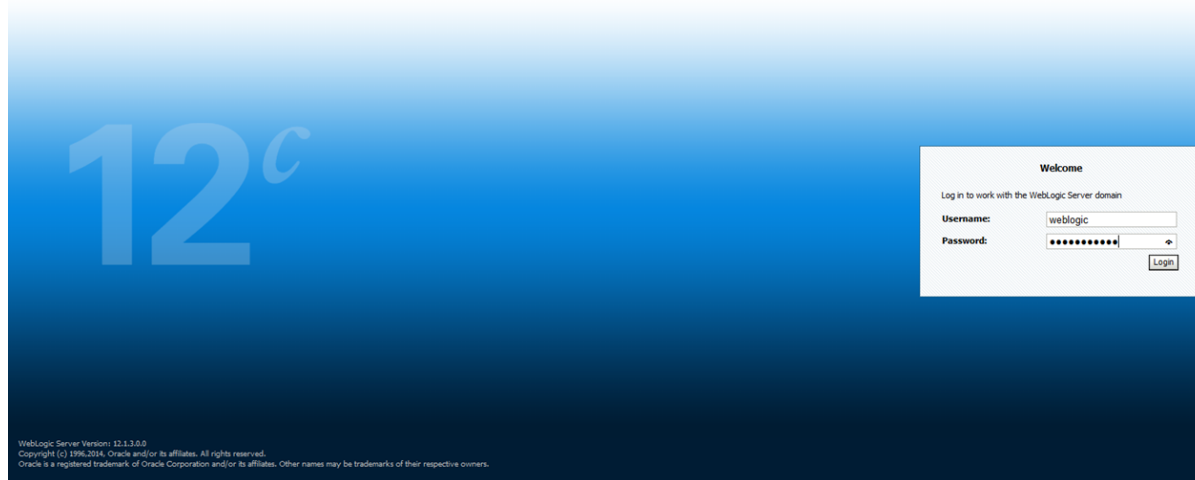
## Configuring a Work Manager in the WebLogic Application Server

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

### Creating a Work Manager

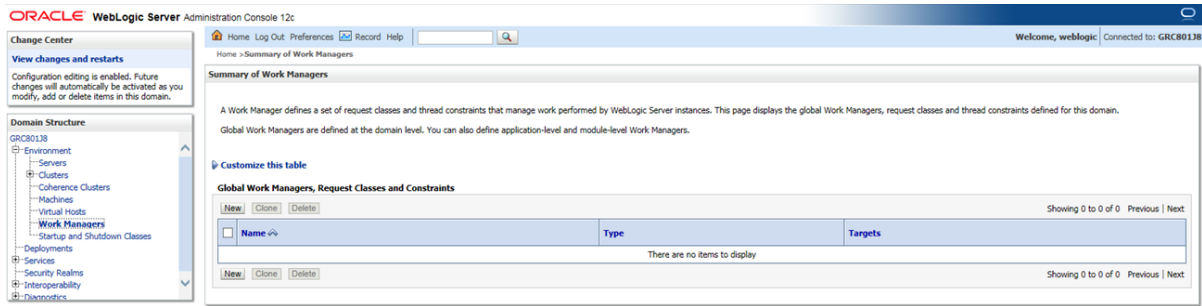
1. Open the WebLogic admin console in the browser window:  
<http://<ipaddress>:<administrative console port>/console>. (https if SSL is enabled). The **Welcome** window is displayed.

ORACLE WebLogic Server Administration Console 12c

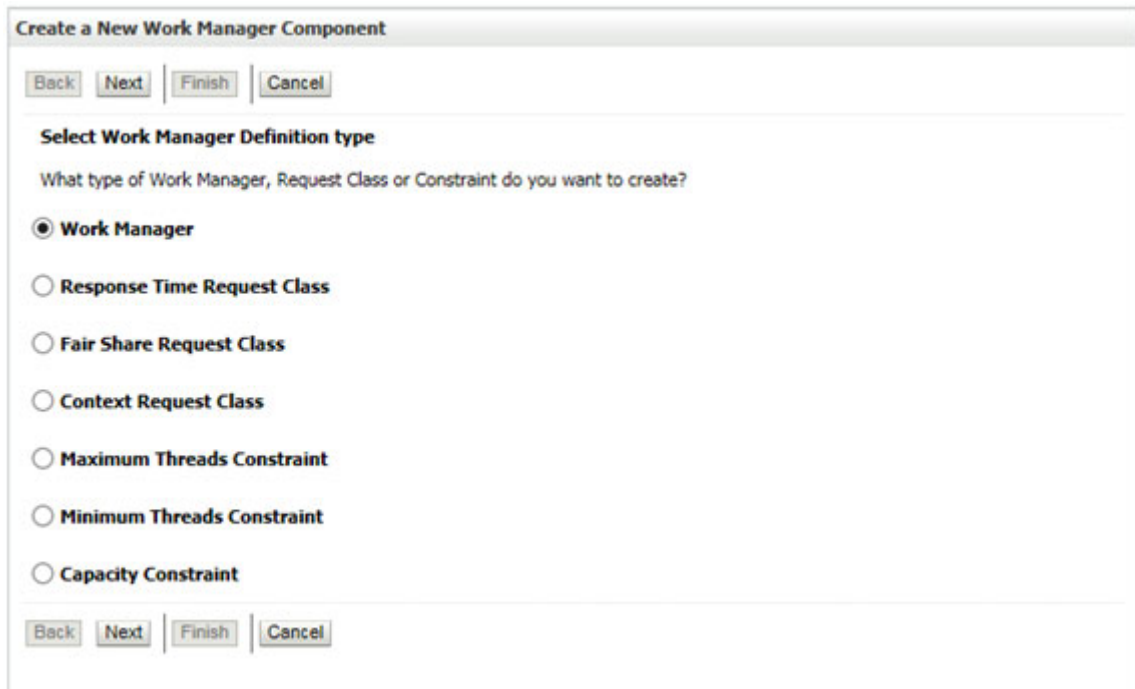


2. Login with the user id that has admin rights.

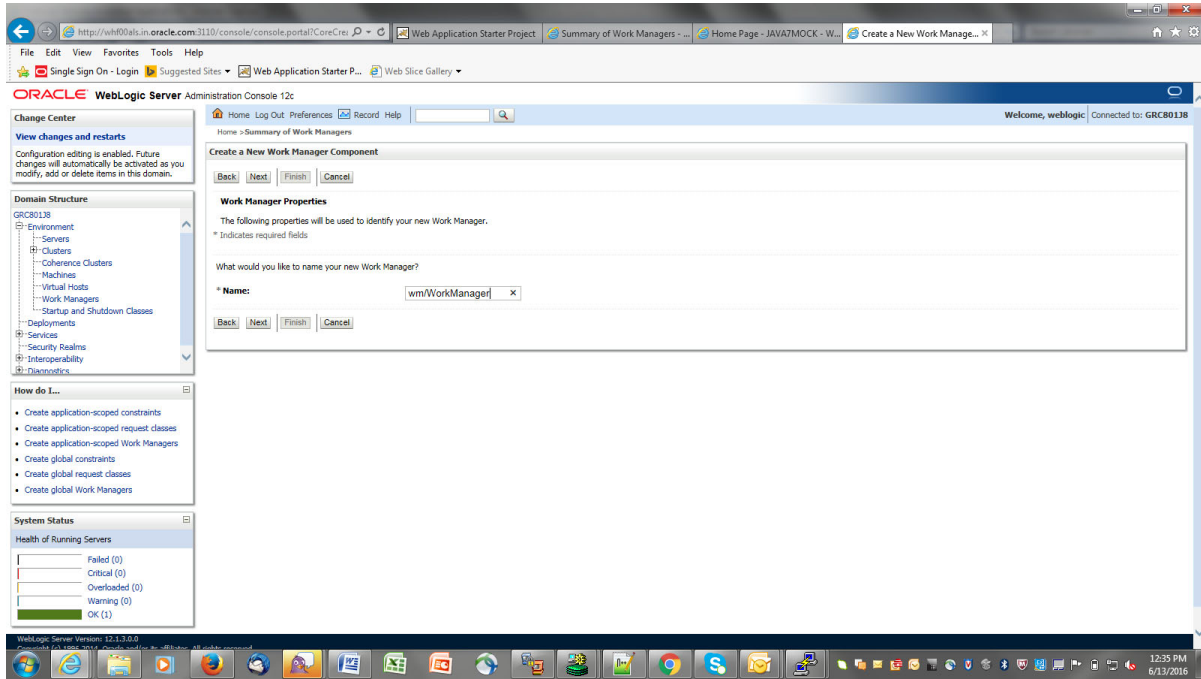
- From the **Domain Structure** menu in the LHS, expand **Environment** and select **Work Managers**. The **Summary of Work Managers** window is displayed.



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

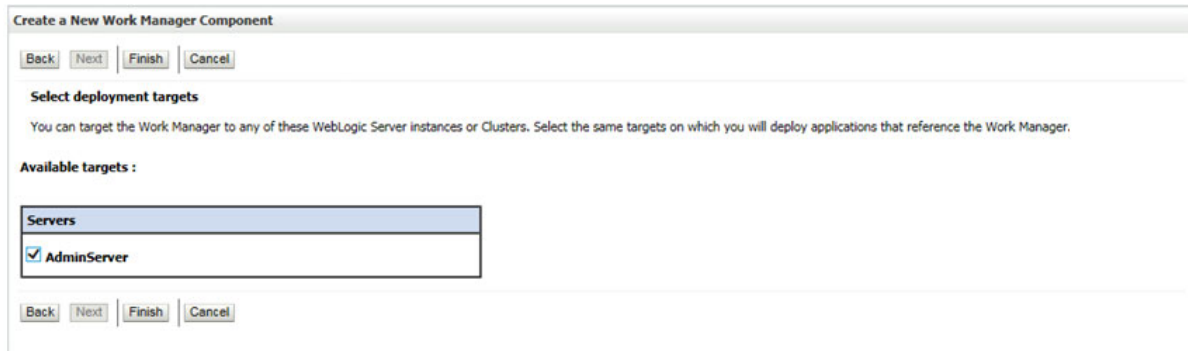


5. Select **Work Manager** and click **Next**.

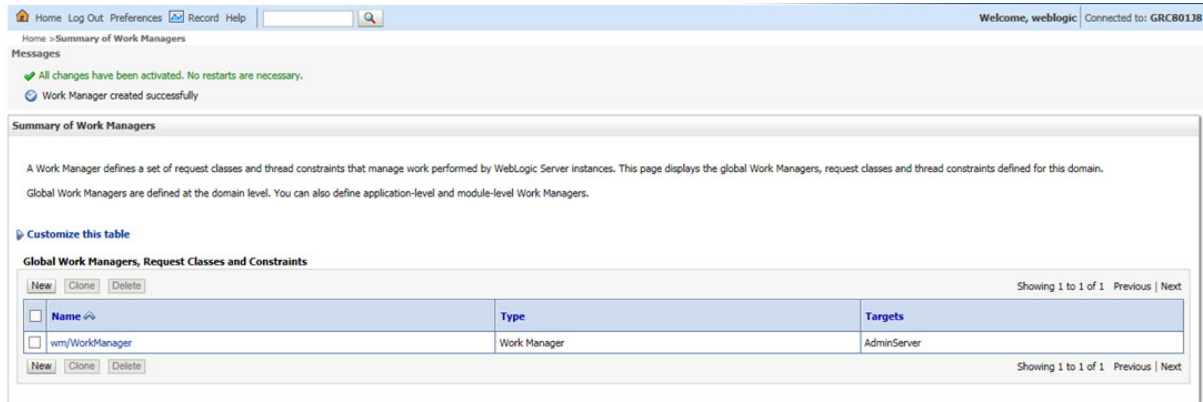


6. Enter the Name as 'wm/WorkManager'.

7. Click **Next**.



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





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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](#)
- [Error Dictionary](#)

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

### Frequently Asked Questions

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

This section includes the following topics:

- [OFSAAI FAQs](#)
- [Application Pack 8.0.6.0.0 FAQs](#)
- [Forms Framework FAQs](#)

### OFSAAI FAQs

***What are the different components that get installed during OFSAAI?***

The different components of OFSAAI are illustrated in [Components of OFSAAI](#).

***What are the different modes of OFSAAI installation?***

OFSAAI can be installed in two modes, Silent Mode, and GUI mode.

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

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

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

JDK is not required during installation of OFSAA and only a run time is needed for details. 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
- XML\_UTILITY.jar

***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\_80000 and execute the command  

```
chmod 755
```

***"Graphical installers are not.."***

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

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

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**Note:** Type 'xclock' from prompt and this should display clock in graphical mode.

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***"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 `OFSAAInfrastructure_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 Release 8.0.6.0.0.

***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 [OTN](#).

### ***Does OFSAAI support Oracle Linux versions other than 5.5?***

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

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

1. Login as root user on the Unix machine where OFSAAI is getting installed.
2. Navigate to the path `/etc/security/`.
3. Edit the file `limits.conf` to add/edit a row for the unix user installing OFSAA:  

```
<Unix User> soft nofile 9216
```
4. After saving the changes, log in as unix user with which OFSAAI is getting installed and execute the command:

```
ulimit -n
```

The command should return the value 9216.

### ***How 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 the 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 [Configurations 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.

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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_80000`.
  - c. Open the `setup.sh` file in the `vi` editor using the command: `vi setup.sh`.
  - d. Inside `vi` editor in Esc mode, type: `%s/^M//g`

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**Note:** To enter `^M`, hold the CTRL key then press V and M in succession.

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- 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 the IP/Hostname, Ports, and Deployed Paths of the 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 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 9.2 and 9.5 generated xmls in addition to ERwin 4.1, ERwin 7.1, ERwin 7.3 and ERwin 9.0 formats.



***Does OFSAAI provide the mechanism to upload Business Data model?***

OFSAAI provides two mechanisms for business data model upload:

- Easy to use GUI based Model upload mechanism to upload the Business Data Model through 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 [OTN](#) 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 the 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 U-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 OFSAAI 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 [OTN](#).

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

Execute the following grant on the appropriate ATOMIC schema  

```
grant olap_user to &database_username
```

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

Follow these steps to turn off unused infodoms from caching:

1. Navigate to \$FIC\_HOME/conf in the APP layer of your OFSAAI installation.
2. In the DynamicServices.xml file, identify the section for <Service code="20">.
3. Modify the value of parameter CACHE\_ON\_STARTUP to 0 (default is 1).
4. Repeat the same in the WEB layer too. Generate the application EAR/WAR file and redeploy the application onto your configured web application server. For more information on generating and deploying EAR / WAR file, refer [Appendix C](#).

- Restart the OFSAAI Services (APP and WEB). For more information, refer to the [Starting OFSAA Infrastructure Services](#) section.

---

**Note:** This setting will cache the Infodom metadata only for the infodoms that get accessed upon user login. Infodoms which do not get accessed, will not be cached.

---

Sample code is 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 excel mapping creation is done using I.E 8 with JRE 1.4 plug in enabled on machine. If so, upgrade the JRE plug in to 1.7+.

***Can Multiple OFSAA Infrastructure instances share the same config schema?***

No, only one OFSAA environment can be installed using one config schema.

***Can Atomic schema be shared?***

Yes, it can be shared between two OFSAA instances.

***While setting a firewall, which ports should be opened for communication between the Web Server (Apache HTTP Server/ Oracle HTTP Server/ IBM HTTP Server) and the Web Application Server (WebSphere/ WebLogic/ Tomcat) for OFSAAI to operate properly?***

The OFSAA Servlet port which is same as Web server port should be open. Also the web application port should be open.

***Can I modify the NLS\_LENGTH\_SEMANTICS to BYTE from CHAR for the Database where older versions of OFSAA is Installed?***

Yes, NLS\_LENGTH\_SEMANTICS can be modified to BYTE from CHAR if you are not intending to use multi language support.

***Can I install already installed application in a different 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 8.0.6.0.0 and higher versions?***

No, ReveleusAdminConsoleAgent is not applicable starting OFSAAI 7.3.3.0.0. There is a change in the way agentservers are managed through AGENTSTARTUP.SH & 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="REVSERVERAPPENDER"
class="org.apache.log4j.RollingFileAppender">

<param name="file" value="$(FIC_
HOME/ficapp/common/FICServer/logs/RevAppserver.log"/>

<param name="Append" value="true" />

<param name="MaxFileSize" value="5000kb" />

<param name="MaxBackupIndex" value="5" />

<layout class="org.apache.log4j.PatternLayout">

<param name="ConversionPattern" value="[REVELEUSLOG] %m%n"/>

</layout>

</appender>
```

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

1. Navigate to `<EAR/WAR Deploy area>/conf` folder.
2. Repeat step 2 from the 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 the sliced data model upload takes a long time to complete?***

If the metadata cache size is set to a lower value than the actual count of each metadata type (hierarchy, dataset, dimension etc), then it gets into performance degrade issues. We have to increase the cache size for each metadata type according to the count in the environment.

Following are the parameters in DynamicServices.xml to be configured depends on the metadata count in your environment.

```
<PARAMETER NAME="HIERARCHY_NODE_LIMIT" VALUE="2000"/>
<PARAMETER NAME="ALIAS_CACHE_SIZE" VALUE="1000"/>
<PARAMETER NAME="DATASET_CACHE_SIZE" VALUE="2000"/>
<PARAMETER NAME="MEASURE_CACHE_SIZE" VALUE="3000"/>
<PARAMETER NAME="HIERARCHY_CACHE_SIZE" VALUE="2000"/>
<PARAMETER NAME="DIMENSION_CACHE_SIZE" VALUE="2000"/>
<PARAMETER NAME="CUBE_CACHE_SIZE" VALUE="1000"/>
<PARAMETER NAME="BUSINESSPROCESSOR_CACHE_SIZE" VALUE="2000"/>
<PARAMETER NAME="DERIVEDENTITY_CACHE_SIZE" VALUE="1000"/>
```

Metadata count can be derived based on the following queries:

```
select count(1) from metadata_master where metadata_version=0 --- for all
metadata

select count(1) from metadata_master where metadata_version=0 and
metadata_type=1 --- for measure

select count(1) from metadata_master where metadata_version=0 and
metadata_type=2 --- for Dimension

select count(1) from metadata_master where metadata_version=0 and
metadata_type=3 --- for HCY

select count(1) from metadata_master where metadata_version=0 and
metadata_type=4 --- for DATASET

select count(1) from metadata_master where metadata_version=0 and
metadata_type=59 --- for BP's

select count(1) from metadata_master where metadata_version=0 and
metadata_type=54 --- for Alias

select count(1) from metadata_master where metadata_version=0 and
metadata_type=5 --- for CUBES

select count(1) from metadata_master where metadata_version=0 and
metadata_type=856 --- for Derived Entity
```

***For LDAP authentication, which server connects with the LDAP server, the Application server (where ofsaai is installed), or Web Application server (where EAR is deployed)?***

For LDAP authentication, the Application server (ficapp) connects with the LDAP server.

***The LDAP server in the setup listens on secure protocol ldaps (port 636). I have the root certificate of the LDAP server for SSL, and would like to know where to offload this certificate?***

You need to import the certificate into the JDK/JVM used by Reveleus server in ficapp layer.



***How to relocate FTPSHARE folder?***

You can run the PortC.jar utility. For more details, refer Changing IP/ Hostname, Ports, Deployed Paths of the OFSAA Instance section in the OFSAAI Admin Guide available on [OTN](#).

***Identify the list of ports that are used by/configured in an OFSAA environment?***

1. Navigate to \$FIC\_HOME folder 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 if I get the error "FATAL ERROR-Problem with OFSAA Service" during OFS\_AAAI\_PACK installation?

***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
```

**Application Pack 8.0.6.0.0 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?***

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

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

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

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

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

***Does OFSAA 8.0 Application pack UPGRADE automatically existing environments?***

No. Refer Point 5. OFSAA 8.0 application pack has to be installed in an new environment and subsequently migration path / migration kit needs to be run to migrate from 7.x to 8.0. Note that we will have migration path only from the previously released version of OFSAA products.

***Where can I download OFSAA 8.0 Application Pack?***

You can download the OFSAAI 8.0 Application Pack from Oracle Software Delivery Cloud (OSDC).

***What are the minimum system and software requirements for OFSAA 8.0 Application Pack?***

Refer to [Hardware and Software Requirements](#) section.

***Is my environment compatible with OFSAA 8.0 Application Pack?***

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

***Has OFSAA 8.0 Application Pack is supports all Operating systems?***

LINUX, AIX, SOLARIS 10, 11. Refer to [Technology Matrix](#) for the technology matrix that OFSAA suite products are/ will be qualified on.

***How can I install OFSAA 8.0 Application Pack?***

Refer to Oracle Financial Services Advanced Analytical Infrastructure Installation And Configuration Guide published in [OTN](#) for the application pack installers.

***Does this installation require any Third party Software?***

Oracle Financial Services Advanced Analytical Infrastructure Installation And Configuration Guide published in OTN lists the third party software that needs to be installed.

***What languages are supported during OFSAA 8.0 Application Pack installation?***

US English is the language supported.

***What mode of installations OFSAA Application Pack supports? [i.e., Silent , GUI]***

OFSAA Application Packs supports both, GUI and Silent Mode.

***Does OFSAA 8.0 Application Pack support Multi tier Installations?***

OFSAA 8.0 does single tier installation. For more information refer to [OFSAAI FAQs](#) section.

***Does this Application Pack validate all Pre-requisites required for this installation that is, Memory, Disk Space, and so on?***

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

***What happens if it aborts during installation of any application with in Application pack?***

Customer needs to restore the system and retrigger the installation

***Does this Application pack 'Rolls Back' if any of application installation fails due to errors?***

Rollback of installation is not supported.

***Does the Application pack installs all applications bundled?***

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

***Can I re-install any of the Application Pack?***

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 Application pack on an existing 'Infodom' where another OFSAA 8.0 application is installed?***

Yes. However, the Behavioral Detection Application Pack and Compliance Regulatory Reporting Application pack are the exceptions. They need to be installed in a different INFODOM.

***Can I select an Infodom 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 infodomain or different infodomain)?***

Yes, you can install an Application Pack over another Application Pack in the same information domain or different information domain. But Behavioural Detection

Application Pack and Compliance Regulatory Reporting Application Pack, Asset Liability Management Application Pack and Profitability Application Pack are the exceptions. They need to be installed in a different INFODOM.

***Can I use an existing manually created schema as information domain for application pack installation?***

No. Schemas required by OFSAA applications have to be created using Schema Creator Utility.

***Does OFSAA 8.0 support on WebLogic 10.3.6 with Oracle 12c?***

Yes, OFSAA 8.0 will support on WebLogic 10.3.6 with Oracle 12c. WebLogic 10.3.6 supports oracle 12c with some additional configurations. Refer the link [http://docs.oracle.com/cd/E28280\\_01/web.1111/e13737/ds\\_12cdriver.htm#JDBCA655](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 CAP Application Pack version 8.0.6.0.0?***

OFS CAP Application Pack supports Java 1.7.x and 1.8.x.

***Is this release of the OFS CAP Application Pack version 8.0.6.0.0 supported on Java 8?***

Yes. To install this release of the OFS CAP Application Pack version 8.0.6.0.0 on Java 8. For more information, refer to specific notes mentioned in the sections [Installer and Installation PrerequisitesConfigurations supported for Java 8](#), [Configuring the Schema Creator Utility](#), [GUI Mode Installation](#), and [SILENT Mode Installation](#).

*What should be done if you encounter the following "FATAL" exception in the installation log because of insufficient DB process value?*

*[FATAL] - =====Exception=====*

*java.sql.SQLRecoverableException: IO Error: Got minus one from a read call*

*at oracle.jdbc.driver.T4CConnection.logon(T4CConnection.java:419)*

*at oracle.jdbc.driver.PhysicalConnection.<init>(PhysicalConnection.java:536)*

*at oracle.jdbc.driver.T4CConnection.<init>(T4CConnection.java:228)*

*at oracle.jdbc.driver.T4CDriverExtension.getConnection(T4CDriverExtension.java:32)*

*at oracle.jdbc.driver.OracleDriver.connect(OracleDriver.java:521)*

Contact the DBA team to increase the DB process/sessions value accordingly, which depends on the number of database process running at that particular point of time.

## 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 enabled only if the number of hierarchy nodes is less than 50. If it is more than that, it is considered as large hierarchy and the data will be fetched dynamically when you expand each node.

## 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 screen during Infrastructure installation.

- Press **Enter**. The search results are displayed and highlighted as indicated below.

**Figure U-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: <code>PATH = \$JAVA_HOME/bin:\$PATH export PATH.</code>

View the details of the issues, its cause, and resolution specific to the error code. Repeat the step to find an answer to any other errors that you notice during installation. If you are not able to resolve the issue even after following the steps provided in resolution, you can contact [support.oracle.com](http://support.oracle.com) along with log files and appropriate screen shots.

## Error Code Dictionary

### Error code - OFSAAI-1001

**Table U-2 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 U-3 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: <code>./Setup.sh SILENT</code> or <code>./Setup.sh GUI</code>

### Error code - OFSAAI-1004

**Table U-4 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 U-5 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 U-6 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 U-7 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 U-8 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 U-9 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 U-10 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 U-11 Error code - OFSAAI-1011**

<b>Cause</b>	XML validation failed.
<b>Resolution</b>	Check InfrastructurePreValidations.Log for more details.

**Error code - OFSAAI-1012****Table U-12 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 U-13 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 U-14 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 U-15 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 OFSAAI_InstallConfig.xml is valid. Try to open the file through Internet Explorer for a quick way to check validity. If it is not getting opened, create new OFSAAI_InstallConfig.xml using the XML_UTILITY.jar.

**Error code - OFSAAI-1016****Table U-16 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 OFSAAI_InstallConfig.xml file. This path should not contain any spaces.

**Error code - OFSAAI-1017****Table U-17 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 OFSAAI_InstallConfig.xml file.



