

## **Customer Analytics Application Pack**

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## PREFACE

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

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

#### Audience

Oracle Financial Services Customer Analytical Applications 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 that you have experience in installing Enterprise components and basic knowledge about the following is recommended.

The following are the expected preparations from the administrator before starting the actual installation:

- Oracle Financial Services Customer Analytical Applications pack components
- OFSAA Architecture
- UNIX Commands
- Database Concepts
- Web Server/ Web Application Server

#### Recommended Environment

Infrastructure application has been tested with Microsoft Internet Explorer<sup>™</sup> browser. For best viewing of Infrastructure pages, set the screen resolution to a minimum resolution of 1024 x 768 pixels.

#### **Related Documents**

For more information, refer the Oracle Financial Services Customer Analytical Applications Pack 8.0.6.0.0 documents available in Oracle Help Center OHC.

#### Conventions

The following text conventions are used in this guide:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, folder paths, or placeholder variables for which you supply particular values.
monospace	monospace indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.
Filenames	filenames indicate the file names within a pragraph.
Hyperlink	Hyperlinks indicate the cross-references, external document links, and external website links.

#### Abbreviations

Abbreviation	Meaning
AIX	Advanced Interactive eXecutive
BDP	Big Data Processing
DBA	Database Administrator
DDL	Data Definition Language
DEFQ	Data Entry Forms and Queries
DML	Data Manipulation Language
EAR	Enterprise Archive
EJB	Enterprise JavaBean
ERM	Enterprise Resource Management
Abbreviation	Meaning
FTP	File Transfer Protocol
GUI	Graphical User Interface
HDFS	Hadoop Distributed File System
HTTPS	Hypertext Transfer Protocol Secure
J2C	J2EE Connector

Abbreviation	Meaning			
J2EE	Java 2 Enterprise Edition			
JDBC	Java Database Connectivity			
JDK	Java Development Kit			
JNDI	Java Naming and Directory Interface			
JRE	Java Runtime Environment			
JVM	Java Virtual Machine			
LDAP	Lightweight Directory Access Protocol			
LHS	Left Hand Side			
MOS	My Oracle Support			
OFSAAI	Oracle Financial Services Analytical Application Infrastructure			
ОНС	Oracle Help Center			
OLAP	On-Line Analytical Processing			
OLH	Oracle Loader for Hadoop			
ORAAH	Oracle R Advanced Analytics for Hadoop			
OS	Operating System			
RAM	Random Access Memory			
RDBMS	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			
WAR	Web Archive			
XML	Extensible Markup Language			

This chapter includes the following topics:

- About Oracle Financial Services Analytical Applications (OFSAA)
- About Oracle Financial Services Analytical Applications (OFSAA) Packs
- Introduction to Oracle Financial Services Customer Analytics (OFS CA) Application
- About Oracle Financial Services Analytical Applications Infrastructure (OFS AAI)

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

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

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

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

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



# *Introduction to Oracle Financial Services Customer Analytics (OFS CA) Application*

OFS CA Application is a complete end-to-end web-based Business Intelligence solution for Customer Analytics. It provides tools for data integration and includes customizable, pre-built dashboards and reports, a reporting data model, and user friendly functional subject areas for ad-hoc reporting. It enables you to actively plan, manage, and track marketing investments with pre-built reports, dashboards, and underlying data structures.

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

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

#### **Components of OFSAAI**

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

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

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



#### OFSAA Infrastructure High Availability

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

This release supports Active-Passive model of implementation for OFSAAI components. For more information, see Oracle Financial Services Analytical Applications Configuration for High Availability- Best Practices Guide.

## About Data Security Configuration

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

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

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

## CHAPTER 2 – UNDERSTANDING OFS CUSTOMER ANALYTICS APPLICATION PACK INSTALLATIONS

This chapter includes the following topics:

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

#### Installation Overview

This section gives an overview of the OFS CA Pack Installation. The following figure shows the order of procedures you will need to follow:



The following table describes the tasks and their descriptions:

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

#### **Deployment Topology**



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

#### Hardware and Software Requirements

This section describes the various Operating Systems, Database, Web Server, and Web Application Server versions, and other variant details on which this release of the Oracle Financial Services Customer Analytics Application Pack has been qualified.

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

#### Configurations Supported for Java 7

The following table shows the minimum hardware and software requirements for installing OFS Customer Analytics Application Pack (for Java 7):

Requirement	Sub-Category	Value				
Operating System	Oracle Linux / Red Hat Enterprise Linux (x86-64)	<ul> <li>Red Hat Enterprise Linux or Oracle Linux Server release 6 update 6 to latest update version</li> <li>Red Hat Enterprise Linux or Oracle Linux Server</li> </ul>				
		release 7 update 1 to latest update version				
	Oracle Solaris (SPARC)/ Solaris x86	<ul> <li>Oracle Solaris v5.10 Update 11 and above - 64 bit</li> <li>Oracle Solaris v5.11 update 3 and above - 64 bit</li> </ul>				
	IBM AIX (PowerPC)	<ul> <li>AIX 6.1 (TL 09 and above) - 64 bit</li> <li>AIX 7.1 (TL 03 and above) - 64 bit</li> </ul>				
	Shell	KORN Shell (KSH)				
	Note:					
	If the OS is IBM AIX 6.1 and the file size limit for the AIX user on the target server is too small, configure the size parameter setting for "Large File Support". Follow these steps:					
	Change the file size limit for the user that initiates the transfer on the AIX system. To change the file size limit for a particular user, add or edit the fsize attribute for the user in the /etc/ security/limits file on the AIX system. Change the file size limit to unlimited (fsize = -1) or to a size equal to the size of the file being transferred. This may require an restart of the AIX server to pick up the new configuration. For more information, see IBM Support.					
	If the operating system is RHEL, install the package Isb_release using one of the following commands by logging in as root user:					
	• yum install redhat-lsb-core					
	• yum install redhat-lsb					
	<ul> <li>To install this release on Oracle Solaris OS, refer to the following list for version specific information:</li> </ul>					
	<ul> <li>Solaris 11 - Upgrade to Oracle Solaris 11.3 with SRU09 or higher. See https:// docs.oracle.com/cd/E60778_01/html/E60743/gouaw.html#scrolltoc to upgrade to SRU09 if you have a lower SRU version. Additionally, install the required runtime libraries. For more information, see Installing Only the Runtime Libraries on Oracle Solaris 11.</li> </ul>					
	• Solaris 10 - Install the required OS patches. For more information, see Installing the Required Oracle Solaris 10 Patches. Additionally, install the required runtime libraries. For more information, see Installing Only the Runtime Libraries on Oracle Solaris 10.					
	<b>Note:</b> In an OFSAA instance where multiple OFSAA application packs have been installed/ deployed, it is mandatory to upgrade all OFSAA application packs to 8.0.4.0.0 release. You should start the upgrade of OFS AAAI< <your name="" pack="">&gt;pack, only after confirming that all of the application packs in your OFSAA instance are available for upgrade to 8.0.4.0.0 version. For information on availability of the required OFSAA Application Packs, see 2246606.1.</your>					

Requirement	Sub-	Category		Value		
Java Runtime Environment	Oracle Linux / Red Hat Enterprise Linux		<ul> <li>Oracle Java Runtime Environment (JRE) 1.7.x - 64 bit</li> </ul>			
	IBM A	AIX		IBM AIX Runti	ime, Java Techno	ology JRE 1.7.x - 64 bit
Oracle Database Server and Client	<ul> <li>Oracle Database Server Enterprise Edition 11g Release 2 (11.2.0.3.0 +) - 64 bit RAC/ Non-RAC with partitioning option</li> <li>Oracle Database Server Enterprise Edition 11g Release 2 (11.2.0.4.0 +) - 64 bit RAC/Non-RAC with 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 partitioning option, Advanced Security Option**</li> <li>Oracle Database Server Enterprise Edition 12C Release 2 (12.2.0.1.0 +) - 64 bit RAC/ Non-RAC with partitioning option, Advanced Security Option**</li> <li>Oracle Database Server Enterprise Edition 12C Release 2 (12.2.0.1.0 +) - 64 bit RAC/Non-RAC with partitioning option, Advanced Security Option**</li> <li>Note: ** See the "Additional Notes" section in the 806 Tech Matrix for details.</li> <li>Oracle Client 11g Release 2 (11.2.0.3.0+) - 64 bit</li> <li>Oracle Client 12c Release 1 (12.1.0.1.0+) - 64 bit</li> <li>Oracle 11g Release 2 (11.2.0.3+) JDBC driver (Oracle thin driver)</li> <li>Oracle 12C Release 1 (12.1.0.1+) JDBC driver (Oracle thin driver)</li> <li>Oracle R Distribution (ORD) version 3.2.0/3.3.0 (Optional)</li> </ul>					
	<b>■</b> (	Oracle R Enterpri Optional).	ise (Server) versio	on 1.5 with ORD	0 3.2.0 and version	on 1.5.1 with ORD 3.3.0
	Note	: Ensure that the	following patches	s are applied:		
	<ul> <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>					
	ORAAH Technical Description					
	No	Oracle R Enterprise	Oracle R Advanced Analytics for Hadoop	Open Source R or Oracle R Distribution	Oracle Database Enterprise Edition	
	1	1.5.1	2.7.1	3.3.0	11.2.0.4, 12.1.0.1, 12.1.0.2, 12.2.0.1	
	2	1.5.0	2.5.1, 2.6.0, 2.7.0	3.2.0	11.2.0.4, 12.1.0.1, 12.1.0.2	

Requirement	Sub-Category	Value	
OLAP	Oracle Hyperion Essbase	<ul> <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</li> </ul>	
		Database	
	Note: Oracle Hyperion Essbase is requi	red only if you are using the OLAP feature of OFSAAI.	
Web Server/ Web Application Server	Oracle Linux / Red Hat Enterprise Linux / IBM AIX Oracle Solaris	Oracle HTTP Server 11.1.1.1/ Apache HTTP Server 2.2.x/ IBM HTTP Server	
		<ul> <li>Oracle Weblogic Server 12.1.3+ with jersey 2.25</li> </ul>	
		<ul> <li>Oracle WebLogic Server 12.2.x (64 bit)</li> </ul>	
		<ul> <li>IBM WebSphere Application Server 8.5.5.9+ (Full Profile) with IBM Java Runtime - 64 bit</li> </ul>	
		<ul> <li>Apache Tomcat version 8.0.21+ up to version 8.0.38 (64 bit)</li> </ul>	
		<b>Note:</b> OFS Inline Processing Engine does not support Tomcat Web Application Server.	
	Note: OFSAA Infrastructure web component deployment on Oracle WebLogic Server with Oracle JRockit is not supported.		
Big Data	Cloudera Distribution Hadoop 5.3.3	CDH Version 5.3.3	
		Hadoop-2.5.0+cdh5.3.3+844	
		Hive-0.13.1+cdh5.3.3+350	
		<ul> <li>Sqoop1 V 1.4.5+cdh5.3.3+67</li> </ul>	
		<ul> <li>Sqoop2 V 1.99.4+cdh5.3.3+23</li> </ul>	
		<ul> <li>Oracle Loader For Hadoop (OLH) V 3.2</li> </ul>	
	Cloudera Distribution Hadoop 5.4.4	CDH Version -5.4	
		Hadoop-2.6.0+cdh5.4.4+597	
		<ul> <li>Hive V 1.1.0+cdh5.4.4+152</li> </ul>	
		Sqoop1 V 1.4.5+cdh5.4.4+101	
		<ul> <li>Sqoop2 V 1.99.5+cdh5.4.4+36</li> </ul>	
	Cloudera Distribution Hadoop 5.8.4	CDH Version -5.8.4	
		■ Hadoop-2.6.0+cdh5.8.4+1801	
		■ Hive-1.1.0+cdh5.8.4+723	
		Sqoop-1.4.6+cdh5.8.4+100	
		<ul> <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> <li>Kerberos R release 1.6.1</li> </ul>	
		Sentry-1.4.0	

Requirement	Sub-Category	Value	
Desktop	Operating System	Windows 7/8/10	
Requirements	Browser	<ul> <li>Microsoft Internet Explorer Browser 11.x</li> <li>Chrome 57.x</li> <li>FireFox 52.x</li> <li>Note: Turn off Pop-up blocker settings. For more information, see Internet Explorer Settings.</li> </ul>	
	Office Tools	<ul> <li>MS Office 2007/ 2010/ 2013/ 2016</li> <li>Adobe Acrobat Reader 10 and 11</li> </ul>	
	Screen Resolution	1024*768 or 1280*1024	
Other Software	Directory Services	OFSAAI is qualified on both OPEN LDAP 2.2.29+ and Oracle Internet Directory v 11.1.1.3.0. However, it can be integrated with other directory services software such as MS Active Directory.	
	<b>Note:</b> Configuration of Directory services software for OFSAAI installation is optional. For more information on configuration, see LDAP Configuration section in OFSAAI Administration Guide. Open LDAP needs to be installed on MS Windows Server machine only.		
AAI	One-off patch	Download the consolidated one-off patch for bug number <b>27938294</b> from http://support.oracle.com.	

#### Configurations Supported for Java 8

The following table shows the minimum hardware and software requirements for installing OFS Customer Analytics Application Pack (for Java 8):

Requirement	Sub-Category	Value	
Operating System	Oracle Linux / Red Hat Enterprise Linux (x86-64)	<ul> <li>Red Hat Enterprise Linux or Oracle Linux Server release 6 update 6 to latest update version</li> <li>Red Hat Enterprise Linux or Oracle Linux Server release 7 update 1 to latest update version</li> </ul>	
	Oracle Solaris (SPARC)/ Solaris x86	<ul> <li>Oracle Solaris v5.10 Update 11 and above - 64 bit</li> <li>Oracle Solaris v5.11 update 3 and above - 64 bit</li> </ul>	
	IBM AIX (PowerPC)	<ul> <li>AIX 6.1 (TL 09 and above) - 64 bit</li> <li>AIX 7.1 (TL 03 and above) - 64 bit</li> </ul>	
	Shell	KORN Shell (KSH)	
	Note:		
	<ul> <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, see IBM Support.</li> <li>If the operating system is RHEL, install the package Isb_release using one of the following commands by logging in as root user:</li> </ul>		
	• yum install redhat-lsb		
	<ul> <li>To install this release on Oracle Solaris OS, refer to the following list for version specific information:</li> </ul>		
	<ul> <li>Solaris 11 - Upgrade to Oracle Solaris 11.3 with SRU09 or higher. See https:// docs.oracle.com/cd/E60778_01/html/E60743/gouaw.html#scrolltoc to upgrade to SRU09 if you have a lower SRU version. Additionally, install the required runtime libraries. For more information, see Installing Only the Runtime Libraries on Oracle Solaris 11.</li> </ul>		
	<ul> <li>Solaris 10 - Install the required OS patches. For more information, see Installing the Required Oracle Solaris 10 Patches. Additionally, install the required runtime libraries. For more information, see Installing Only the Runtime Libraries on Oracle Solaris 10.</li> </ul>		
	<b>Note:</b> In an OFSAA instance where multi deployed, it is mandatory to upgrade all of start the upgrade of OFS AAAI< <your part<br="">application packs in your OFSAA instance information on availability of the required</your>	tiple OFSAA application packs have been installed/ OFSAA application packs to 8.0.4.0.0 release. You should ack name>>pack, only after confirming that all of the ce are available for upgrade to 8.0.4.0.0 version. For d OFSAA Application Packs, see 2246606.1.	

Java Runtime Environment	Oracle Linux / Red Hat Ent Linux//IBM AIX Oracle Solaris	erprise	Oracle Java Runtime I bit Oracle Java Runtime I bit	Environment (JRE) 1.7 Environment (JRE) 1.8	7.x - 64 9.x - 64
	IBM AIX	IBM	AIX Runtime, Java Teo	chnology JRE 1.8.x - 6	4 bit
Oracle Database Server and Client	IBM AIX  Oracle Database Server RAC with partitioning of Oracle Database Server with partitioning option  Oracle Database Server RAC with partitioning of Note: See the "Additional I Oracle Client 11g Relea Oracle Client 11g Relea Oracle Client 12c Relea Oracle 11g Release 2 Oracle 12C Release 1 Oracle R Distribution ( Oracle R Enterprise (S (Optional).  Note: Ensure that the following p Oracle Server 12c, v12 Oracle Server 12c, v12 For Oracle DB Server from My Oracle Suppo For Oracle DB Server apply. Also for latest information, Systems and DB In-Memo ORAAH Technical Descript	IBM er Enterprise Edition er Enterprise Edition (Advanced Secur- er Enterprise Edition) (Advanced Secur- er Enterprise Edition) (Advanced Secur- er Enterprise Edition) (Notes" section in the ease 2 (11.2.0.3.0+ (12.1.0.1+) JDBC (12.1.0.1+) JDBC (12.1.0.1+) JDBC (12.1.0.1+) JDBC (12.1.0.1+) JDBC ORD) version 3.2. Server) version 1.5 (2.1.0.2 - 19392604) (2.1.0.1 - 17082699) (2.1.0.2 - 19392604) (2.1.0.2 - 19392604) (2.1.0.1 and 12.1. (2.1.0.1 and 12.1. (2.1.0.1 and 12.1. (2.1.0.1 and 12.1. (2.1.0.2 - 19392604) (2.1.0.2 - 19392604) (2.1.0.2 - 19392604) (2.1.0.1 entry) them (1.2.0.4, download) (2.1.0.1 entry) them (1.2.0.4, download) (2.1.1)	AIX Runtime, Java Teo on 11g Release 2 (11.2 ty Option** on 12c Release 1 (12.7 Security Option** ne 806 Tech Matrix for ) - 64 bit driver (Oracle thin driv driver (Oracle thin driv driver (Oracle thin driv 0/3.3.0 (Optional) with ORD 3.2.0 and ver security Optional) with ORD 3.2.0 and ver the patch 22205607 for oracle.com, 12.1.0.2 B each Bundle (Doc ID for Open Source R or Oracle R Distribution 3.3.0	chnology JRE 1.8.x - 6 2.0.3.0 +) - 64 bit RAC. 0.4.0 +) - 64 bit RAC/Na 1.0.1.0 +) - 64 bit RAC/ or details. eer) /er) ersion 1.5.1 with ORD ches 27010930 and 22 from My Oracle Suppo undle Patches for Eng 1937782.1). Oracle Database Enterprise Edition 11.2.0.4, 12.1.0.1, 12.1.0.2, 12.2.0.1, 12.1.0.2	4 bit / Non- on-RAC / Non- 3.3.0 205607 rt and ineered

Requirement	Sub-Category	Value	
OLAP	Oracle Hyperion Essbase	<ul> <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>	
	Note: Oracle Hyperion Essbase is requi	ired only if you are using the OLAP feature of OFSAAI.	
Web Server/ Web Application Server	Oracle Linux / Red Hat Enterprise Linux / IBM AIX	Oracle HTTP Server 11.1.1.1/Apache HTTP Server 2.2.x/ IBM HTTP Server	
	Oracle Solaris	Oracle Weblogic Server 12.1.3+ with jersey 2.25	
		<ul> <li>Oracle WebLogic Server 12.2.x - (64 bit)</li> </ul>	
		<ul> <li>IBM WebSphere Application Server 8.5.5.9+ (Full Profile) with IBM Java Runtime - 64 bit</li> </ul>	
		<ul> <li>Apache Tomcat version 8.0.21+ up to version 8.0.38</li> <li>- 64 bit</li> </ul>	
		<b>Note:</b> OFS Inline Processing Engine does not support Tomcat Web Application Server.	
	Note: OFSAA Infrastructure web component deployment on Oracle WebLogic Server with Oracle JRockit is not supported.		
	For deployment on Oracle WebLogic Ser 18729264 from http://support.oracle.con	rver 12.1.3+ (64 bit) with Java 8, download and install patch n.	

Requirement	Sub-Category	Value
Big Data	Cloudera Distribution Hadoop 5.3.3	<ul> <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> <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> <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><li>Kerberos R release 1.6.1</li><li>Sentry-1.4.0</li></ul>
Desktop	Operating System	MS Windows 7/8/10
Requirements	Browser	<ul> <li>Microsoft Internet Explorer Browser 11.x</li> <li>Chrome 57.x</li> <li>FireFox 52.x</li> <li>Note: Turn off Pop-up blocker settings. For more information, see Internet Explorer Settings.</li> </ul>
	Office Tools	<ul> <li>MS Office 2007/ 2010/ 2013/ 2016</li> <li>Adobe Acrobat Reader 10 and 11</li> </ul>
	Screen Resolution	1024*768 or 1280*1024

Requirement	Sub-Category	Value	
Other Software	Directory Services	OFSAAI is qualified on both OPEN LDAP 2.2.29+ and Oracle Internet Directory v 11.1.1.3.0. However, it can be integrated with other directory services software like MS Active Directory.	
	<b>Note:</b> Configuration of Directory services software for OFSAAI installation is optional. For more information on configuration, see LDAP Configuration section in OFSAAI Administration Guide. Open LDAP needs to be installed on MS Windows Server machine only.		
AAI	One-off patch	Download the consolidated one-off patch for bug number <b>27938294</b> from http://support.oracle.com.	

## **Note:** To upgrade an existing OFSAA 8.0.x Java 7 instance to Java 8, see Upgrading an Existing OFSAA 8.0.x Java 7 Instance to Java 8.

#### **Recommended Software Combinations**

OFS Customer Analytics Application Pack recommends the following software combinations for deployment:

Operating System	Database	Web Application Server	Web Server
Oracle Linux 5.3 up to 5.10/ 6.0 and above	Oracle Database	Oracle WebLogic Server/ Apache Tomcat Server	Oracle HTTP Server/ Apache HTTP Server
Oracle Solaris 5.10/ 5.11	Oracle Database	Oracle WebLogic Server/ Apache Tomcat Server	Oracle HTTP Server/ Apache HTTP Server
IBM AIX 6.1	Oracle Database	IBM WebSphere Application Server/ Apache Tomcat Server	IBM HTTP Server/ Apache HTTP Server

#### Verifying the System Environment

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

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

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

## **Understanding Installation Modes**

OFA CA application pack can be installed in Hybrid and Standard modes.

Standard Installation: This is used for RDBMS Only installation using the standard template.

**Hybrid Installation**: Hybrid installation files are used for HADOOP additional capability. The hybrid files are provided as template which needs to be changed to proper extension by removing 'template'. After changing file name, the values need to be provided as mentioned in the section 1.3.1.

## CHAPTER 3 – PREPARING FOR INSTALLATION

This chapter provides necessary information to review before installing the OFS CA Pack 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

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

Requirement	Sub-Category	Expected Value
Environment Settings	Java Settings	PATH in .profile to be set to include the Java Runtime Environment absolute path. The path should include Java version (Java 7 or Java 8) based on the configuration.
		<b>Note:</b> Ensure the absolute path to JRE/bin is set at the beginning of PATH variable.
		For example, PATH=/usr/java/jre1.6/bin:\$ORACLE_HOME/ bin:\$PATH
		Ensure no SYMBOLIC links to JAVA installation is being set in the PATH variable.
	Oracle Database	Oracle Database Server
	Settings	<ul> <li>TNS_ADMIN must be set in .profile file pointing to appropriate tnsnames.ora file.</li> </ul>
		<ul> <li>Enable Transparent Data Encryption (TDE) and/ or Data Redaction**</li> </ul>
		<b>Note:</b> For more information, see TDE, Data Redaction and the Corresponding Settings in OFSAA.
		OFSAA Processing Server
		<ul> <li>ORACLE_HOME must be set in .profile file pointing to appropriate Oracle Client installation.</li> </ul>
		<ul> <li>PATH in .profile must be set to include appropriate \$ORACLE_HOME/bin path.</li> </ul>
		<ul> <li>Ensure that an entry (with SID/ SERVICE NAME) is added in the tnsnames.ora file.</li> </ul>
	Oracle Essbase Settings	ARBORPATH, ESSBASEPATH, HYPERION_HOME to be set in the .profile pointing to an appropriate Oracle Essbase Client installation.
		<b>Note:</b> These settings are required only if you want to use Oracle Hyperion Essbase OLAP features.

Requirement	Sub-Category	Expected Value
OS/ File System Settings	File Descriptor Settings	Greater than 15000
		<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.
	Total Number of Process	Greater than 4096
	Settings	<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.
	Port Settings	Default port numbers to be enabled on the system are 6500, 6501, 6505, 6507, 6509, 6510, 6666, 9999, and 10101.
	.profile permissions	User to have 755 permission on the .profile file.
	Installation Directory	A directory where the product files will be installed/ copied. Assign 755 permission on this directory. This directory needs to be set as FIC_HOME.
	Staging Area/ Metadata Repository	A directory to hold the application Metadata artifacts and additionally act as staging area for flat files.
		The directory should exist on the same system as the OFSAA Installation. This directory can be configured on different mount or under a different user profile.
		Assign 775 permission on this directory.
		<b>Note:</b> This directory is also referred to as FTPSHARE folder.
	Download Directory	A directory where the product installer files will be downloaded/ copied.
		Set 755 permission on this directory.
	OS Locale	<ul> <li>Linux: en_US.utf8</li> <li>AIX: EN_US.UTF-8</li> </ul>
		<ul> <li>Solaris: en_US.UTF-8</li> <li>To check the locale installed, execute the following command:</li> </ul>
		locale -a   grep -i 'en_US.utf'
Database Settings	Database Instance Settings	NLS_CHARACTERSET to be AL32UTF8 NLS_LENGTH_SEMANTICS to be BYTE OPEN CURSORS limit to be greater than 1000

Requirement	Sub-Category	Expected Value
Web Application Server	WebSphere/ WebLogic/ Tomcat	Web Application Server should be installed and profile /domain created.
		You will be prompted to enter the WebSphere Profile path or WebLogic Domain path or Tomcat Deployment path during OFSAAI installation.
		<b>Note:</b> See Configuring Web Server for WebSphere Profile Creation and WebLogic Domain Creation.
Web Server	Apache HTTP Server/	This is an optional requirement.
	Oracle HTTP Server/	HTTP Server Installation to be present.
	IBM HTTP Server	You will be required to enter the Web Server IP/ Hostname and Port details during installation.
		Note: See Configuring Web Server for Web Server configuration.
Big Data	Cloudera CDH and Cloudera JDBC Connectors	This is an optional requirement and required if Oracle Financial Services - Big Data Processing license is enabled. For more information, see Installing Cloudera CDH.
Others	Oracle R/ Oracle R Enterprise	This is an optional requirement. For more details, see Configuration for Oracle R Distribution and Oracle R Enterprise (ORE).

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

Login to Configuration Schema and execute the following SQL statements:

```
alter table AAI_AOM_APP_COMP_ATTR_MAPPING drop constraint AOM_APP_COMP_ATTR_PK drop index
/
alter table AAI_AOM_APP_COMP_ATTR_MAPPING add constraint AOM_APP_COMP_ATTR_PK primary key
(APP_COMP_ATTR_MAP_ID)
/
```

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

#### Prerequisites for Hybrid Installation

It is required to copy the Hive related files. To copy the files:

- 1. Create a directory /scratch/<user>/clientconf/ with 775 permission.
- 2. Copy the Hive jars, conf file, and keytab files into the above directory.
- **3.** The following is required only if you are installing OFS CA pack in Hybrid mode of installation. You need to do this after you have performed the prerequisites for standard installation.

**a.** Create a folder in *User\_Home* and copy the Hadoop jars, Kerberos files and client config of Hadoop into the newly created folder and *clientconf/lib* folder.

The files for CDH 5.3.1 are as shown below. Note that the version number is different for each CDH. Ensure that the user permission is set to 755 on this folder.

Note: The following list is a sample and may vary from Hadoop release to release.

```
avro-1.7.6-cdh5.3.1.jar
```

- commons-cli-1.2.jar
- commons-collections-3.2.1.jar
- commons-configuration-1.6.jar
- commons-httpclient-3.1.jar
- commons-io-2.4.jar
- commons-logging-1.1.3.jar
- core-site.xml
- guava-11.0.2.jar
- hadoop-auth-2.5.0-cdh5.3.1.jar
- hadoop-common-2.5.0-cdh5.3.1.jar
- hadoop-core-2.5.0-mr1-cdh5.3.1.jar
- hadoop-core.jar
- hadoop-hdfs-2.5.0-cdh5.3.1.jar
- hdfs-site.xml
- hive-exec-0.13.1-cdh5.3.1.jar
- hive-exec.jar
- hive-jdbc-0.13.1-cdh5.3.1.jar
- HiveJDBC4.jar
- hive-jdbc.jar
- hive-metastore-0.13.1-cdh5.3.1.jar
- hive\_metastore.jar
- hive-service-0.13.1-cdh5.3.1.jar
- hive service.jar
- hive-site.xml
- htrace-core-3.0.4
- httpclient-4.2.5.jar
- httpcore-4.2.5.jar
- jackson-core-asl-1.8.8.jar
- jackson-mapper-asl-1.8.8.jar
- krb5.conf

- libfb303-0.9.0.jar
- libthrift-0.9.0-cdh5-2.jar
- libthrift-0.9.0.jar
- log4j-1.2.14.jar
- mapred-site.xml
- ofsaa.keytab
- protobuf-java-2.5.0.jar
- ql.jar
- servlet-api.jar
- slf4j-api-1.7.5.jar
- TCLIServiceClient.jar
- yarn-site.xml
- zookeeper-3.4.6.jar
- b. Copy realm, Kerberos and CDH client config files to *\$TOMCAT HOME/webapps/<context>/conf* folder.
- **c.** Copy ofsaa-hive-udf.jar to /scratch/hive in hive server.
- d. Also, carry out the following other configuration:
  - i. Remove OFS CA SCHEMA IN.xml in /schema creator/conf/folder.
  - ii. Rename OFS\_CA\_SCHEMA\_BIGDATA\_IN.XML.HYBRID.template to FS\_CA\_SCHEMA\_BIGDATA\_IN.xml.
  - iii. Update OFS\_CA\_SCHEMA\_BIGDATA\_IN.xml accordingly for hybrid installation.
  - iv. Remove OFS\_CA\_CFG.dat file present in /schema\_creator/conf/ folder.
  - v. Rename OFS\_CA\_CFG.DAT.HYBRID.template to OFS\_CA\_CFG.dat.
  - vi. Remove default.properties in /OFS\_CA/conf/ folder.
  - vii. Rename default.properties.HYBRID.template to default.properties.
  - viii. Remove Silent.template in /OFS\_CA/conf/ folder.
  - ix. Rename Silent.template.HYBRID.template to Silent.props.
  - x. Remove OFS\_CA\_PACK.xml in <installation folder>/conf/ folder.
  - xi. Rename OFS\_CA\_PACK.XML.HYBRID.template to OFS\_CA\_PACK.xml.
  - xii. Update OFSAAI\_InstallConfig.xml file.

#### **Obtaining the Software**

This release of OFS CA Application Pack v8.0.6.0.0 is available for download in My Oracle Support (https:// support.oracle.com) as Patch **28391701**. 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 CA Application Pack.

This section includes the following topics:

- Identifying the Installation, Download and Metadata Repository Directories
- Downloading and Copying the OFS CA Application Pack Installer
- Setting up the Web Server/ Web Application Server
- Installation of Oracle R Distribution

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

For installing any OFSAA Application Pack, the below folders/ directories required to be created.

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

**Note:** Ensure that the user permission is set to 755 on the Installation and Download Directory and the user permission is set to 777 on the Staging Directory.

#### Downloading and Copying the OFS CA Application Pack Installer

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

- This release of OFS CA Application Pack v8.0.6.0.0 is available for download in MOS as Patch **28391701**. You need to have a valid Oracle account in order to download the software.
- Copy the downloaded installer archive to the Download Directory (in Binary Mode) on the setup identified for OFSAA installation.
- Log in to My Oracle Support, search for the 33663417 Mandatory Patch in the Patches & Updates Tab and download it.
- **ATTENTION**: 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 prior to version 2.15. The application of the 33663417 Mandatory Patch fixes the issue.

For details, see the My Oracle Support Doc ID 2827801.1.
# Setting up the Web Server/ Web Application Server

For more information to set up the environment based on your selected Web Server/ Web Application Server, see Configuring Web Server and Configuring Web Application Server.

#### Installation of Oracle R Distribution

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.

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

**Note:** 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.

## Installing Cloudera CDH

This is an optional step and required only if you intend to install OFSAA Big Data Processing. Follow these steps:

1. Install CDH v5.3.3, 5.4.4 or v5.8.4. For more information, see Cloudera 5.3.x Documentation, Cloudera 5.4.x Documentation or Cloudera 5.8.x Documentation.

# CHAPTER 4 – INSTALLING OFS CA APPLICATION PACK

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

**Note:** Release 8.0.6.0.0 of OFS CA Application pack is not fully backward compatible with earlier versions of OFSAA applications. You can either upgrade all of your applications from existing 8.0.x versions to 8.0.6.0.0 version or choose to upgrade only selective application packs to v8.0.6.0.0. In the case of the latter, you must also apply the mentioned 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:

- About Schema Creator Utility
  - o Configuring Schema Creator Utility for RDBMS Installation
  - o Configuring Schema Creator Utility for Hybrid Installation
  - Selecting Execution Options in Schema Creator Utility
- Configuring and Executing the Schema Creator Utility
  - o Prerequisites
  - o Configuring the Schema Creator Utility
  - Executing the Schema Creator Utility
- Installing the OFS CA Application Pack
  - o Verifying the Log File

## About Schema Creator Utility

Creating database users/ schemas (RDBMS/ HIVE) is one of the primary steps in the complete OFSAA installation process. The Schema Creator utility facilitates you to quickly get started with the OFSAA 8.0 installation by allowing easier and faster creation of database User(s)/ Schema(s) (RDBMS/ HIVE), assigning the necessary GRANT(s), creating the required entities in the schemas, and so on.

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

This section includes the following topics:

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

## Configuring Schema Creator Utility for RDBMS Installation

OFS CA Application Pack specific schema details need to be filled in the OFS\_CA\_SCHEMA\_IN.xml file before executing the Schema Creator Utility. For more information on the xml file, see Configuring OFS\_CA\_SCHEMA\_IN.xml.

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

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

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

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

**Note:** For some application packs, there can be multiple ATOMIC schemas per OFSAA Instance, but the OFS Customer Analytics Pack supports only one atomic schema per OFSAA instance.

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

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

ADDON: Denotes any additional schema used by the OFSAA Applications.

Note: This Schema type is not applicable for OFS Customer Analytics Application Pack.

## Configuring Schema Creator Utility for Hybrid Installation

In case the installation is being performed for Big Data, the pack specific schema details need to be filled in the OFS\_CA\_SCHEMA\_BIGDATA\_IN.xml file, before executing the utility. For more information on the xml file, see Configuring OFS\_CA\_SCHEMA\_BIGDATA\_IN.XML file.

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

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

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

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

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

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

**Note:** There can be multiple DATADOM schemas per OFSAA Instance. Each Datadom has a Metadom. However, the names of the Datadom and Metadom name cannot be the same.

#### Selecting Execution Options in Schema Creator Utility

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

# 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 ensured before configuring the Schema Creator Utility:

- You must have the Oracle User ID/Password with SYSDBA privileges.
- · You must have the JDBC Connection URL for RAC/Non RAC database.
- The HOSTNAME/IP of the server on which OFSAA is getting installed.
- For enabling Transparent Data Encryption (TDE) in your OFSAA instance during installation, perform the steps explained in TDE, Data Redaction and the Corresponding Settings in OFSAA.
- It is recommended to set the PGA\_AGGREGATE\_LIMIT database-parameter value sufficiently, when Oracle 12c is installed
- You must add a TNS entry before the installation.
- For HIVE installation, the prerequisites you must have before configuring the Schema Creator Utility are:
  - o HIVE connection credentials (For example: Kerberos connection properties).
  - o Hostname/IP of the HIVE Server installation

**Note:** The TNS Entry for an atomic schema should be without any special character, i.e '\_'. If the atomic schema name is like 'DEV\_ATOM', the TNS name should be like 'DEVATOM'.

# Configuring the Schema Creator Utility

To configure the Schema Creator Utility, follow these steps:

- 1. Log in to the system as non-root user.
- 2. Navigate to the following path: OFS\_CA\_PACK/schema\_creator/conf.
- 3. Edit the OFS\_CA\_SCHEMA\_IN.xml file in a text editor.
- 4. Configure the elements as described in the following files:
  - For Standard Installation: Configuring OFS\_CA\_SCHEMA\_IN.xml
  - o For Hybird Installation: Configuring OFS\_CA\_SCHEMA\_BIGDATA\_IN.XML.
- 5. Save the OFS\_CA\_SCHEMA\_IN.xml and OFS\_CA\_SCHEMA\_BIGDATA\_IN.xml files.

**Note:** On successful execution of the utility, the entered passwords in the OFS\_CA\_SCHEMA\_IN.xml and OFS\_CA\_SCHEMA\_BIGDATA\_IN.xml files are nullified.

#### **Executing the Schema Creator Utility**

This section includes the following topics:

- Executing the Schema Creator Utility with -s option
- Executing the Schema Creator Utility for Subsequent Application Pack
- Verifying the Log File

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

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

- 1. Log in to the system as non-root user.
- 2. Edit the file OFS\_CA\_PACK/schema\_creator/conf/OFS\_CA\_SCHEMA\_IN.xml in text editor.
- 3. 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 derives the Information Domain name. If the attribute value is set, the utility/ installer configures the Information Domain against this <SCHEMA>.
- 4. Navigate to the following folder path: OFS\_CA\_PACK/schema\_creator/bin/.
- 5. Execute the utility with -s option.

For Example: ./osc.sh -s

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).

#### 6. Enter Y/y to proceed.

You have chosen ONLINE mode Triggering the utility in ONLINE mode will execute the DDLs directly on the Database. Do you wish to proceed? (Y/N): Java Validation Started ... Java found in : /usr/java/jdkl.7.0\_72/bin JAVA Version found : 1.7.0\_72 JAVA Bit Version found : 64-bit Java Validation Completed. Status : SUCCESS DB specific Validation Started .. Enter the DB User Name With SYSDBA Privileges: sys as sysdba Enter the User Password: Oracle Client version : 12.1.0.2.0. Status : SUCCESS Oracle Server version Current value : 12.2.0.1.0. Status : SUCCESS DB specific Validation Completed. Status : SUCCESS Schema Creation Started Checking OFSAA installation... OFSAA installation not found. Validating the dat file OFS\_CA\_CFG.dat started... The path is:/scratch/806RCAMock/806/OFS\_CA\_PACK/schema\_creator/conf Sucessfully validated OFS\_CA\_CFG.dat file /alidating the input XML file.../scratch/806RCAMock/806/OFS CA PACK/schema creator/conf/OFS CA SCHEMA BIGDATA IN.xml Input XML file validated successfully. Validating Connection URL ...jdbc:oracle:thin:@ofss220618.in.oracle.com:1521/CIPMDB Successfully connected to User - sys as sysdba URL - jdbc:oracle:thin:@ofss220618.in.oracle.com:1521/CIPMDB localhost name - whf00azi IPAddress - 10.184.156.203 IS\_HYBRID not there in schema ADV\_SEC\_TAG not there in schema Parsing TABLESPACE tags... Parsing DATADOM... Validating the DATADOM connection principal: hdfs@DEV.ORACLE.COM - useProxy: false - proxyUserId:

7. Enter the DB Username with SYSDBA Privileges.

For example: SYS as SYSDBA.

- 8. Enter the User Password.
  - o The console runs the initial validation checks and then displays the following message:

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

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

url: jdbc:hive2://ofss2311717.in.oracle.com:10000/HVAUTO1;AuthMech=1;KrbServiceName=hive;KrbHostFQDN=ofss2311717.in.oracle.com;KrbRealm=DEV.ORACLE.COM
principal: hdfs@DEV.ORACLE.COM - useProxy: false - proxyUserId:
url: jdbc:hive2://ofss2311717.in.oracle.com:10000/HVAUTO1;AuthMech=1;KrbServiceName=hive;KrbHostFQDN=ofss2311717.in.oracle.com;KrbRealm=DEV.ORACLE.COM
SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".
SLF4J: Defaulting to no-operation (NOP) logger implementation
SLF4J: See http://www.slf4j.org/codes.html‡StaticLoggerBinder for further details.
18/11/20 16:13:08 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform using builtin-java classes where applicable
Successfully validated DATADOM connection.
Validating the DATADOM connection
principal: hdfs@DEV.ORACLE.COM - useProxy: false - proxyUserId:
url: jdbc:hive2://ofss2311717.in.oracle.com:10000/HVAUTO;AuthMech=1;KrbServiceName=hive;KrbHostFQDN=ofss2311717.in.oracle.com;KrbRealm=DEV.ORACLE.COM
principal: hdfs@DEV.ORACLE.COM - useProxy: false - proxyUserId:
url: jdbc:hive2://ofss2311717.in.oracle.com:10000/HVAUTO;AuthMech=1;KrbServiceName=hive;KrbHostFQDN=ofss2311717.in.oracle.com;KrbRealm=DEV.ORACLE.COM
Successfully validated DATADOM connection.
Executing TableSpace Scripts started
Skipping the creation of tablespace OFSAA_CONF
Skipping the creation of tablespace OFSAA_DATA
Skipping the creation of tablespace OFSAA_SAND
Creating Jonemas Statetor CONSTC Income avgragefully graated on Dafault TableSnace , OFSA CONF on Temp TableSnace , TEMD
Contro ose angoriconi successinily created on belanit indicegate . Orana cont on temp indicegate . The
Grantes Grantion scripts execution stated
Grants Gration scripts execution completed
Successivity connected to use - angeoitedin out - junctoratie.thin.gorsszzuor.in.oracle.com.ijzi/cirhbb
Scripts execution for courie schema started
Conjusta sussitian fan CONFTC solare sampleted
Scripts execution for CONFIG schema completed
Scripts execution for CONFIG schema completed User ang2011conf details updated into the dbmaster table
Scripts execution for CONFIG schema completed User ang2011conf details updated into the dbmaster table User ang2011conf details updated into the 118MMASTER table
Scripts execution for CONFIG schema completed User ang2011conf details updated into the dbmaster table User ang2011conf details updated into the INNMASTER table User ang2011conf details updated into the aai db_detail table
Scripts execution for CONTIG schema completed User ang20llconf details updated into the dbmaster table User ang20llconf details updated into the IISNMASTER table User ang20llconf details updated into the aai_db_detail table User ang20llconf details updated into the aai_db_auth_alias table
Scripts execution for CONTIG schema completed User ang2011conf details updated into the dbmaster table User ang2011conf details updated into the II8NMASTER table User ang2011conf details updated into the aai_db_detail table User ang2011conf details updated into the aai_db_auth_alias table Skipping the creation of AAAI/IFE app.
Scripts execution for CONTIG schema completed User ang2011conf details updated into the dbmaster table User ang2011conf details updated into the INNMASTER table User ang2011conf details updated into the aai_db_detail table User ang2011conf details updated into the aai_db_auth_alias table Skipping the creation of AAAI/TFE app. User ang2011atom details updated into the dbmaster table
Scripts execution for CONTIG schema completed User ang20llconf details updated into the dbmaster table User ang20llconf details updated into the IISNMASTER table User ang20llconf details updated into the aai_db_auth_alias table Skipping the creation of AAAI/IFE app. User ang20llatom details updated into the dbmaster table User ang20llatom details updated into the IISNMASTER table
Scripts execution for CONTG schema completed User ang2011conf details updated into the dbmaster table User ang2011conf details updated into the aai_db_detail table User ang2011conf details updated into the aai_db_detail table Skipping the creation of AAAI/IPE app. User ang2011atom details updated into the dbmaster table User ang2011atom details updated into the tISNMASTER table User ang2011atom details updated into the aai_db_detail table
Scripts execution for CONTG schema completed User ang20llconf details updated into the IISNMASTER table User ang20llconf details updated into the IISNMASTER table User ang20llconf details updated into the aai_db_auth_alias table Skipping the creation of AAAI/IFE app. User ang20llatom details updated into the dbmaster table User ang20llatom details updated into the IISNMASTER table User ang20llatom details updated into the IISNMASTER table User ang20llatom details updated into the aai_db_etail table User ang20llatom details updated into the aai_db_etail table User ang20llatom details updated into the aai_db_etail table
Scripts execution for CONTG schema completed User ang2011conf details updated into the dbmaster table User ang2011conf details updated into the INBMASTER table User ang2011conf details updated into the aai_db_detail table User ang2011conf details updated into the aai_db_detail table User ang2011atom details updated into the dbmaster table User ang2011atom details updated into the INBMASTER table User ang2011atom details updated into the INBMASTER table User ang2011atom details updated into the aai_db_detail table User ang2011atom is successfully created on Default TableSpace : OFSAA_DATA on Temp TableSpace : TEMP
Scripts execution for CONTG schema completed User ang2011conf details updated into the dbmaster table User ang2011conf details updated into the liNRMASTER table User ang2011conf details updated into the aai_db_detail table Skipping the creation of AAAI/IFE app. User ang2011atom details updated into the dbmaster table User ang2011atom details updated into the dbmaster table User ang2011atom details updated into the dai_db_detail table User ang2011atom details updated into the aai_db_detail table User ang2011atom details updated into the aai_db_detail table User ang2011atom details updated into the aai_db_auth_alias table User ang2011atom details updated into the aai_db_auth_alias table User ang2011atom details updated into the dbmaster table User ang2011atom details updated into the dbmaster table
Scripts execution for CONTG schema completed User anq20llconf details updated into the 118NMASTER table User anq20llconf details updated into the 118NMASTER table User anq20llconf details updated into the aai_db_auth_alias table Skipping the creation of AAAI/TFE app. User anq20llatom details updated into the dbmaster table User anq20llatom details updated into the 118NMASTER table User anq20llatom details updated into the aai_db_auth_alias table User anq20llatom is successfully created on Default TableSpace : OFSAA_DATA on Temp TableSpace : TEMP User anq20llabki details updated into the 118NMASTER table User anq20llabki details updated into the 118NMASTER table
Scripts execution for CONTG schema completed User ang2011conf details updated into the INBMASTER table User ang2011conf details updated into the ani_db_detail table User ang2011conf details updated into the aai_db_auth_alias table Skipping the creation of AAAI/IPE app. User ang2011atom details updated into the dbmaster table User ang2011atom details updated into the dbmaster table User ang2011atom details updated into the fINBMASTER table User ang2011atom details updated into the fINBMASTER table User ang2011atom details updated into the fINBMASTER table User ang2011atom details updated into the final db_detail table User ang2011atom is successfully created on Default TableSpace : OFSAA_DATA on Temp TableSpace : TEMP User ang2011sbx1 details updated into the dbmaster table User ang2011sbx1 details updated into the dbmaster table User ang2011sbx1 details updated into the dbmaster table
Scripts execution for CONTG schema completed User ang20lloonf details updated into the INSMASTER table User ang20lloonf details updated into the aai_db_etail table User ang20lloonf details updated into the aai_db_auth_alias table Skipping the creation of AAAI/IFE app. User ang20llatom details updated into the domaster table User ang20llatom details updated into the INSMASTER table User ang20llatom details updated into the INSMASTER table User ang20llatom details updated into the aai_db_etail table User ang20llatom details updated into the aai_db_etail table User ang20llatom details updated into the aai_db_etail table User ang20llatom is successfully created on Default TableSpace : OFSAA_DATA on Temp TableSpace : TEMP User ang20llabxM details updated into the INSMASTER table User ang20llabxM details updated into the INSMASTER table
Scripts execution for CONTG schema completed User anq2011conf details updated into the fl8NMASTER table User anq2011conf details updated into the aai_db_detail table User anq2011conf details updated into the aai_db_auth_alias table Skipping the creation of AAAI/TPE app. User anq2011atom details updated into the dbmaster table User anq2011atom details updated into the dbmaster table User anq2011atom details updated into the II8NMASTER table User anq2011atom details updated into the aai_db_auth_alias table User anq2011atom details updated into the aai_db_detail table User anq2011atom details updated into the aai_db_detail table User anq2011atom details updated into the aai_db_detail table User anq2011atom is successfully created on Default TableSpace : OFSAA_DATA on Temp TableSpace : TEMP User anq2011skxl details updated into the fl8NMASTER table User anq2011skxl details updated into the fl8NMASTER table User anq2011skxl details updated into the aai_db_detail table User anq2011skxl details updated into the aai_db_detail table User anq2011skxl details updated into the fl8NMASTER table User anq2011skxl details updated into the aai_db_detail table

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

Or

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

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

Schema Creator executed successfully. Please proceed with the installation.

kipping the creation of AAAI/IPE app Jser ang2011atom details updated into the dbmaster table User ang2011atom details updated into the I18NMASTER table User ang2011atom details updated into the aai\_db\_detail table User ang2011atom details updated into the aai\_db\_auth\_alias table User ang2011atom is successfully created on Default TableSpace : OFSAA\_DATA on Temp TableSpace : TEMP User ang2011sbx1 details updated into the dbmaster table User ang2011sbxl details updated into the I18NMASTER table User ang2011sbxl details updated into the aai\_db\_detail table User ang2011sbxl details updated into the aai\_db\_auth\_alias table User ang2011sbxl is successfully created on Default TableSpace : OFSAA\_SAND on Temp TableSpace : TEMP User ang2011hive details updated into the dbmaster table User ang2011hive details updated into the I18NMASTER table User ang2011hive details updated into the aai\_db\_detail table User ang2011hive details updated into the aai\_db\_auth\_alias table User ang2011hive is successfully created on Default TableSpace : OFSAA DATA on Temp TableSpace : TEMP User ang2011hvsbx details updated into the dbmaster table User ang2011hvsbx details updated into the I18NMASTER table User ang2011hvsbx details updated into the aai\_db\_detail table User ang2011hvsbx details updated into the aai\_db\_auth\_alias table User anq2011hvsbx is successfully created on Default TableSpace : OFSAA\_DATA on Temp TableSpace : TEMP Creating Schemas completed ... Creating DATADOM Schemas started... User ang2011hive2 details updated into the aai db detail table AUTH\_ALIAS hdfs details updated into the aai\_db\_auth\_alias table Creating DATADOM Schemas completed... Creating DATADOM Schemas started... User anq2011hvsbx2 details updated into the aai\_db\_detail table AUTH\_ALIAS hdfs\_sbx details updated into the aai\_db\_auth\_alias table Creating DATADOM Schemas completed... Roles creation scripts execution started ... Roles creation scripts execution completed .. the value of redaction flag in atomic schema isfalse Grants creation scripts execution started... Grants creation scripts execution completed... Schemas Creation Completed Schema Creator executed Successfully.Please proceed with the installation.

See log file in OFS\_CA\_PACK/schema\_creator/logs folder for execution status. If there are any errors, contact Oracle Support.

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

To execute the utility in OFFLINE mode with SILENT option, enter following command:

/osc.sh -o -s

#### Executing the Schema Creator Utility for Subsequent Application Pack

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

**Note:** OFS CA Application Pack can be installed on any Information Domain/ Atomic schema where any OFS Application Packs are installed other than OFS Behavior Detection Application Pack or OFS Compliance Regulatory Reporting Application Pack.

To execute the schema creator utility while installing OFS CA 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:
  - o Atomic schema of the Existing Application Pack
  - o Information Domain Name of the Existing Pack, and the
  - o List of Installed Application Packs Execute the ./osc.sh file.

Validating Connection URLjdbc:oracle:thin:@ofss220623:1521:MEDIADB Successfully connected to User - sys as sysdba URL - jdbc:oracle:thin:@ofss220623:1521:MEDIADB Connection URL successfully validated The following Application Packs are already installed in this OFSAA setup:
dev_atml- INFOTR- "OFS_TR_PACK"
You have selected to install this Application Pack on "dev_atm3" ATOMIC schema. To proceed enter (Y/y). To change the selection, enter (N/n). n Choose the ATOMIC schema from the below list on which you wish to install this Application Pack:
1. dev_atm1- INFOTR- "OFS_TR_PACK" 2. dev_atm3
Enter the option number:2
Generating TableSpace creation Scripts started Generating TableSpace creation Scripts completed
Generating Schema creation scripts started Skipping the creation of CONFIG user dev_confl is oFSAAI is already installed on dev_confl User dev_atm3 details updated into the dimmaster table User dev_atm3 creation script generated successfully on Default TableSpace : USERS on Temp TableSpace : TEMP User dev_atm3 creation is skipping as the user is already created. Generating Schema creation scripts completed
Generating Roles creation Scripts started 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/ofsaadb/OFS_AAAI_PACK/schema_creator/sysdba_output_scripts.sql before proceeding with the installation.

3. Select the Atomic User, on which you want to install the Application Pack.

On successful execution or schema creator utility, the following message is displayed:

Schemas Creation Completed.

See the log file in OFS\_CA\_PACK/schema\_creator/logs folder for execution status.

See the log sysdba\_output\_scripts.log file for execution status, if executed in offline mode. This log would be empty if there are no errors in the execution.

If there are any errors, contact Oracle Support.

#### Verifying the Log File

If schema creation is successful, the console would display an appropriate message.

🖉 ofss222582.in.oracle.com - PuTTY 💼 🔳 💌
Skipping the creation of role MANTAS LOADER ROLE
Skipping the creation of role DATA_LOADER_ROLE
Skipping the creation of role KDD_ALGORITHM_ROLE
Skipping the creation of role MANTAS_READER_ROLE
Skipping the creation of role KDD_LOADER_ROLE
Skipping the creation of role KDD_ANALYST_ROLE
Skipping the creation of role KDD_MINER_ROLE
Skipping the creation of role DATA_READER_ROLE
Roles creation scripts execution completed
Directory creation scripts execution started
Directory creation scripts execution completed
Grants creation scripts execution started
Grants creation scripts execution completed
Schemag Creation Completed
Status : SUCCESS.Please proceed with the installation.
Ş 🗸

If the schema creation runs into errors, see the log files:

<<OFSCA Installer folder>>/<<OFS\_CA\_PACK>>/schema\_creator/logs/ and <<OFS\_CA>>\_OSC\_<timestamp>.log for further details.

You may contact Oracle support anytime for assistance.

# Installing the OFS CA Application Pack

OFA CA application pack can be installed in Hybrid and Standard modes.

Standard Installation: This is used for RDBMS Only installation using the standard template.

**Hybrid Installation**: Hybrid installation files are used for HADOOP additional capability. The hybrid files are provided as template which needs to be changed to proper extension by removing 'template'. After changing file name, the values need to be provided as mentioned in the following table.

The following table gives the list of different files to be used for both Standard and Hybrid installation methods:

Type of File	Standard Installation	Hybrid Installation
Schema creator configuration	<ul><li>OFS_CA_CFG.dat</li><li>OFS_CA_SCHEMA_IN.xml</li></ul>	<ul> <li>OFS_CA_CFG.DAT.HYBRID.template</li> <li>OFS_CA_SCHEMA_BIGDATA_IN.XML.HYBRID. template</li> </ul>
Pack Installer Configuration files under OFS_CA	<ul><li>Silent.template</li><li>default.properties.template</li></ul>	<ul><li>Silent.template.HYBRID.template</li><li>default.properties.HYBRID.template</li></ul>
Pack Installer Configuration files under OFS_CA_PACK	<ul> <li>OFS_CA_PACK.XML.template</li> </ul>	<ul> <li>OFS_CA_PACK.XML.HYBRID.template</li> </ul>

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

## Installing OFS CA Pack

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

- 1. Ensure that SYS.DBMS\_DATA\_MINING privilege is available to the atomic schema if not already provided. This is to run statistical models through Modelling Framework.
- 2. Login to https://support.oracle.com/ and search for 28391701 under the Patches & Updates tab.
- **3.** Download the OFS Customer Analytics Application Pack v8.0.6.0.0 archive file and copy it to your OFSAA server in Binary mode.

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

- 4. Log in to the system as non-root user.
- **5.** Assign WRITE permission to the files/ folders such as commonscripts, EXEWebService, ficapp, ficweb, and ficdb in the *\$FIC\_HOME* folder by executing the command:

chmod -R 755 \$FIC\_HOME

6. Execute the user .profile.

- 7. If you have Unzip utility, skip to the next step. Download the Unzip utility (OS specific) unzip\_<os>.Z from the location https://updates.oracle.com/unzips/unzips.html and copy it in Binary mode to the directory that is included in your PATH variable, typically *\$HOME* path or directory in which you have copied the 8.0.6.0.0 release.
  - o Uncompress the unzip installer file using the command:

uncompress unzip\_<os>.Z

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

o Give EXECUTE permission to the file using the command:

chmod 755 OFS CA 80600 <OperatingSystem>.zip

8. Extract the contents of the 8.0.6.0.0 archive file using the command:

unzip\_<os> -a <name of the file to be unzipped>

**Note:** The above "-a" option is mandatory to unzip the archive file. For example: unzip\_aix -a OFS\_CA\_80600\_<OperatingSystem>.zip

9. Pre-Installation XML/ File Populations:

Before Proceeding to installation, we need to populate following files with pre-defined values.

• OFSAAI\_InstallConfig.xml (Location: *OFS\_CA\_PACK/OFS\_AAI/conf*). For more information, see Configuring OFSAAI\_InstallConfig.xml File section.

**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.

O SILENT.props File. (Location: OFS\_CA\_PACK/OFS\_CA/conf)

**Note:** The file name will be SILENT.template in case of the standard installer and it has to be renamed as SILENT.props.

The file name will be Silent.template.HYBRID.template in case of the hybrid installer and it has to be renamed as SILENT.props.

Property Name	Description of Property	Permissible Values	Comments
UPLOAD_MODEL	whether you want to perform Model Upload	0 = No 1 = yes	Mandatory
MODEL_TYPE	Released data model or Customized data model	0 = released 1 = customized	# Mandatory only in the case of uploading the data model
DATAMODEL	the path for the customized data model	Not Applicable	# Mandatory only in the case of uploading the customized data model # Option selected for MODEL_TYPE=1
DM_DIRECTORY	the file name for the customized data model	Not Applicable	# Mandatory only in the case of uploading the customized data model # Option selected for MODEL_TYPE=1

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

To access the respective Business Intelligence Analytics Application, update the OBIEE URL in the silent.props file in <INSTALLER\_HOME>/OFS\_CA/conf/ as given the following example:

- # Specify the Host Name of the OBIEE Server
- OBI\_HOST=<<hostname>>
- # Specify the Port Number of the OBIEE Server
- OBI PORT=<<port>>
- # Specify the Context Name of the OBIEE Server
- OBI CONTEXT=<<context name>>
- OBI PROTOCOL=<<pre>protocol like http>>
- **10.** For Hybrid installation, refer to the section Prerequisites for Hybrid Installation for updating the silent.props file.
- **11.** The OFS\_CA\_PACK.xml file holds details on the various products that are packaged together in CA Application Pack.

This section details the various tags/ parameters available in the file and the values that need to be updated. Prior to installing the CA Application Pack, it is mandatory to update this file. For more information, see Configuring OFS\_CA\_PACK.xml.

- **12.** Navigate to the folder path: OFS\_CA\_Pack/bin/.
- **13.** Execute the setup.sh file using the following command:

./setup.sh SILENT

- 14. Restart servers.
- **15.** Install the following AAI maintenance level patches. Refer to the Readme available with the patch for further instructions on installing the patch.:

- o **28033370**
- o **28622102**
- 16. Perform steps mentioned in the Post Installation Configuration section.
- **17.** For enabling Transparent Data Encryption (TDE), see TDE, Data Redaction and the Corresponding Settings in OFSAA.
- **18.** For enabling Data Redaction, see Data Redaction section under Data Security and Data Privacy chapter in OFS Analytical Applications Infrastructure Administration Guide 8.0.6.0.0.
- 19. For information on Data Protection Implementation, see Data Protection Implementation in OFSAA.

# Verifying the Log File

See the following logs files for more information:

- See the OFS\_CA\_installation.log located at OFS\_CA\_PACK/OFS\_CA/logs folder for OFS CA Application Pack installation log file.
- See the Pack\_Install.log located at OFS\_CA\_PACK/logs/ folder for OFS CAApplication Pack installation log file.
- See the log file(s) located at OFS CA PACK/OFS AAI/logs/ folder for Infrastructure installation log.
- See the OFSAAInfrastucture\_Install.log located at *\$FIC\_HOME* folder for Infrastructure installation log.

### **Registering Clusters**

Use the following procedure to register the clusters:

- 1. Select Big Data Application (Financial Services Retail Customer analytics on big data).
- 2. Select Data management framework, data management tools and then DMT configuration.
- 3. Click Register Cluster.
- 4. In Cluster Click Add, create cluster as shown in the below image and Save.

Cluster Config	gurations				
Generic					Save O Cancel
O * Name	OFSCAIINFO	Ø * Description	big data cluster		
∨ Details					
Authentication Type	KRB	KR85 Conf File Name     Core	krb5.conf	MapReduce     Configuration     XML	mapred-site.xml
Configuration File Path	/scratch/cainst/clientconf	Configuration XML		Yarn     Configuration	yarn-site.xml
<ul> <li>Principal</li> <li>Keytab File Name</li> </ul>	hdfs@DEV.ORACLE.COM hdfs.keytab	O HDFS Configuration XML	hdfs-site.aml	Configuration XML	hive-site.xml
SSH Details					
SSH Server name		SSH Port		SSH Auth Alias	
~ Livy Details					
Livy Service URL Authentication		Principal Keytab File Name		KR85 Conf File Name	
Туре				Path	

# Known Issues

1. When installing multiple packs on a single environment, that is, OFS Pack on OFS Customer Analytics Pack or OFS Customer Analytics Pack on OFS Pack, the installation log of the latter pack will have the following SQL script error:

Error:ORA-00904: "N\_PROJ\_DATE\_SKEY": invalid identifier

This is an error due to redundancy of a script when installing two packs on the same setup. This error will have no bearing on the functionality of the applications and needs to be ignored.

# CHAPTER 5 – POST INSTALLATION CONFIGURATION

After successfully installing the Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack, follow the post installation steps mentioned below.

This chapter includes the following topics:

- Configure Resource Reference
- Start/Stop OFSAA Infrastructure Services
- Add TNS entries in TNSNAMES.ORA file
- Configuring Web Server
- Configuring Work Manager in Web Application Servers
- Creating and Deploying EAR/WAR File
- Accessing the OFSAA Application
- OFSAA Landing Page for CA Administrator
- RCA and PFT Pack-on-Pack Installation
- User Group Mapping
- Create and Deploy the Application Pack Web Archive
- Patching Your OFS CA Pack Installation
- Excel Upload Mapping and Template

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

## **Configure Resource Reference**

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

# Start/Stop OFSAA Infrastructure Services

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

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

- Starting Infrastructure Services
- Starting Web Application Servers

### 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 "nohup ./ startofsaai.sh &". Starting the process using "nohup" and "&" will return the command prompt without having to wait till the process completes. However, this command cannot be used when you are starting the server after changing user password in the Configuration database schema.

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

./iccserver.sh

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

#### 3. Stopping Infrastructure Services:

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

./agentstartup.sh

Or

o Start Back-end services using the command:

nohup ./agentstartup.sh &

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

#### Starting Web Application Servers

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</profile></profiles>
Starting WebLogic Domain	On the machine in which WebLogic is installed navigate to <weblogic installation<br="">directory&gt;/user_projects/domains/<domain name="">/bin and execute the command: startWebLogic.sh -d64 <b>Note:</b> If WebLogic is already running, access the WebLogic Admin Console. Stop and start the application <context name="">.ear.</context></domain></weblogic>
Starting Tomcat Application	On the machine in which Tomcat is installed, navigate to <tomcat_install_directory>/ bin and execute the command: ./catalina.sh run</tomcat_install_directory>

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

#### Stopping Infrastructure Services

To stop Infrastructure services:

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

./stopofsaai.sh

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

./iccservershutdown.sh

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* folder and execute the command:

./agentshutdown.sh

# Add TNS entries in TNSNAMES.ORA file

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

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

- 1. Login to the application using System Administrator privileges.
- 2. Navigate to System Configuration & Identity Management tab.
- 3. Click Administration and Configuration >> System Configuration >> Database Details.
- 4. Expand the drop-down list for Name to get the list of TNS entry names.

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

select dbname from db\_master where dbname !='CONFIG'

# **Configuring Web Server**

This section includes the following topics:

- Configuring Web Server
- Configuring Web Application Server

## **Configuring Web Server**

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

Refer the product specific Installation Guide/ Configuration Guide to install/ configure the Web Server. If an installation already exists, skip and proceed to the next step.

**Note:** Make a note of the IP Address/ Host-name and Port of the web server. This information is required during the installation process.

See Oracle Financial Services Analytical Applications Infrastructure Security Guide for additional information on securely configuring your Web Server.

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

# Configuring Web Application Server

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

This section includes the following topics:

- Configuring WebSphere Application Server for Application Deployment
- Configuring WebLogic for Application Deployment
- Configuring Apache Tomcat Server for Application Deployment
- **Note:** Make a note of the IP Address/ Host-name and Port of the web application server. This information is required during the installation process (required if Web Server is not configured).

Add umask 0027 in the .profile of the UNIX account which manages the WEB server to ensure restricted access permissions.

See Oracle Financial Services Analytical Applications Infrastructure Security Guide for additional information on securely configuring your Web Server.

#### **Configuring WebSphere Application Server for Application Deployment**

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

This section includes the following topics:

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

#### 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 folder.

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 <br/>base port>" which specifies the starting port number to generate and assign all ports for the profile. For more information on using these ports, see WebSphere manageprofiles command.

#### Managing IBM WebSphere SDK Java Technology Edition Versions

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

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

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

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

ication servers > server1 his page to configure an application server. An application se	erver is a server that provides services required to run enterprise applications
Configuration	
General Properties	Container Settings
Name	<ul> <li>Session management</li> </ul>
server1	SIP Container Settings
Node name	Web Container Settings
whf00aqnNode01	Portlet Container Settings
Run in development mode	€ EJB Container Settings
<ul> <li>Parallel start</li> </ul>	Container Services
Start components as needed	Business Process Services
Access to internal server classes	Applications
Allow V	Installed applications
Server-specific Application Settings	Server merceales
Classloader policy	Server messaging
Multiple 🔻	<ul> <li>Messaging engine inbound transports</li> </ul>
Class loading mode	<ul> <li>WebSphere MQ link inbound transports</li> </ul>
Classes loaded with parent class loader first	<ul> <li>SIB service</li> </ul>
	Server Infrastructure
Apply OK Reset Cancel	

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

lication	n servers				2
his pa	ation servers > ser age lists the software ferences	ver1 > Java SDKs development kits (SDKs) that ar	re installed on the server. These SDKs are available	to the servers.	
Mak	e Default				
C	6 # 7				
elect	Name 🗘	Version 🗘	Location 🗘	Bits 🗘	Default :
You c	an administer the foll	owing resources:			
	1.6_64	1.6	\${WAS_INSTALL_ROOT}/java	64	false
	1.7_64	1.7	\${WAS_INSTALL_ROOT}/java_1.7_64	64	false
	1.8_64	1.8	\${WAS_INSTALL_ROOT}/java_1.8_64	64	true
lotal	3				

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

#### Managing Applications in WebSphere

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

1. Open the administrator console using the following URL:

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

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

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

The Integrated Solutions Console Login window is displayed.

Integrated Solutions Console	IBM
Log in to the console. User ID: upgs73 Password:	
Log in	

- 2. Log on with the User ID provided with the admin rights.
- 3. From the LHS menu, expand the Applications > Application Type> WebSphere Enterprise Applications.

The Enterprise Applications screen is displayed.

Use the	prise Applications his page to manage installed applications. A single ap iferences	plication can be deployed onto multiple servers.
Star	t] Stop Install Uninstall Update Rollout Upda	ate Remove File Export Export DDL Export File
D	D # 9	
Select	Name 🔿	Application Status 👲
You	can administer the following resources:	
	DefaultApplication	*
	IntApp	*
	query	*
	<u>upgs73</u>	•

- 4. This Enterprise Applications screen helps you to:
  - o Install new application
  - o Un-install existing applications
  - o Start or Stop the installed applications

#### **Deleting WebSphere Profiles**

To delete a WebSphere profile, do the following:

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

<WebSphere\_Installation\_Directory>/AppServer/bin/

**4.** Execute the command:

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

5. Delete profile folder.

Example: <WebSphere\_Installation\_Directory>/AppServer/profiles/<profile\_name>

6. Execute the command:

```
manageprofiles.sh -validateAndUpdateRegistry
```

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

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

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

	Cell = NILL Condition Condition = Notion 1	
View: All tasks	Shared Libraries	7
- Welcome		
Guided Activities	Shared Libraries > New	
Servers	Use this page to define a container-wide shared library that can be used by deployed applications.	
Applications	Configuration	
Services	Course Descention	
Resources	General Properties	-
Security	Scope     calls:ubf00annNode02Cell:nodes:ubf00annNode01:servers:server1	
Environment	Densi minovaqimovevk.ceni novesi minovaqimovev i serve si serve x	
Virtual hosts     Update global Web server plug-in configuration     WebSphere variables     Shared libraries     SiP application routers     Replication domains     Naming     OSGI bundle repositories     System administration     Tates and Groups	Tiame     JERSY2x     Description     Providing Jersey 2.x: shared library	
Monitoring and Tuning		
Troubleshooting	Native Library Path	
Service integration		
⊕ UDDI		
	Class Loading Use an isolated class loader for this shared library Apply OK Reset Cancel	

- 2. Enter details as shown in the following:
  - a. Name: Enter a unique identifiable name.
  - b. Description: Enter a valid description.
  - c. 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.

pecify sh	ared libraries that the application or ind	lividual modules reference. These libraries must be	e defined in the configuration at the appropriate
Referen	nce shared libraries		
Select	Application	URI	Shared Libraries
	ofsa	META-INF/application.xml	
Select	Module	URI	Shared Libraries
	and the second second second	after some WED, THE/such some	

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

Enterprise Applications	2
Enterprise Applications > ofsa > Shared library references > Shared Libr Map shared libraries to an entire application or to one or more modules.	ary Mapping
Map libraries to the application or module listed	
OFSAAI Web Application	
Select the library in the Available list. Move it to the Selected list by clicking >>	
Available:	Selected: JERSEY2x
New	
OK Cancel	

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

pecify sha	ared libraries that the application or in	ndividual modules reference. These libraries must be	defined in the configuration at the appropriate
Referen	ce shared libraries		
Select	Application	URI	Shared Libraries
	ofsa	META-INF/application.xml	JERSEY2x
Select	Module	URI	Shared Libraries
	OFSAAI Web Application	ofsa.war,WEB-INF/web.xml	JERSEY2×

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

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

10. Restart the application.

#### WebSphere HTTPS Configuration

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

- 1. Create a profile using the Profile Creation Wizard in WebSphere.
- 2. Note down the https port specified during this process and use the same as servlet port or web server port during OFSAAI installation.

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

#### WebSphere Memory Settings

To configure the WebSphere Memory Settings:

- 1. Navigate to Websphere applications server > Application servers > server1 > Process definition > Java Virtual Machine.
- 2. Change the memory setting for Java Heap:
  - o Initial heap size = 512
  - Maximum heap size = 3072

#### Configuring WebSphere for REST Services Authorization

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

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

WebSphere. software		Welcome admin	Help   Logout IBM.
View: All tasks	Cell=wht00aqnNode07Cell, Profile=aix806		Close page
Welcome     Guded Activities     Guded Activities     Servers     Geners     Geners     Services     Security     Gobal security     Gobal security     Security Contains     Administrative Activitization Groups     Security Contains     Security adding     Bus security	Global security       Web security - General settings         Specifies the settings for web authentication.         General Properties         Web authentication behavior <ul> <li>Authenticate only when the URI is protected</li> <li>Use available authentication data when an unprotected URI is accessed</li> <li>Authenticate when any URI is accessed</li> <li>Default to basic authentication when certificate authentication for the HTTPS client fails</li> <li>Appy</li> <li>OK</li> <li>Reset</li> <li>Cancel</li> </ul>		Help = Field help For field help information, select a field label or lat marker when the help cursor is displayed. Page help More information about this cape
System administration			
Extended Repository Service     Save changes to master repository     Console Preferences     Job scheduler     Console Identity			
Users and Groups			
Monitoring and Tuning			
Troubleshooting			
E Service Integration			
■ UDDI			

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



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

#### Configuring Application Security in WebSphere

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

#### Configuring WebLogic for Application Deployment

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

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

This section includes the following topics:

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

#### Creating Domain in WebLogic Server

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

1. Navigate to the directory <WLS\_HOME>/wlserver/common/bin and execute the command:

./config.sh

Fusion Middleware Configuration	Wizard - Page 1 of 8@ofss220	601			
Configuration Type			FUSI		
🙊 Create Domain	:				
Templates					
Administrator Account					
Domain Mode and JDK					
Advanced Configuration					
Configuration Summary					
Configuration Progress	What do you want to do?				
End Of Configuration					
	O Update an existing dom	ain			
	Domain Location: Dracle/	Middleware/Oracle_Home,	/user_projects/	'domains/base_dom	nain B <u>r</u> owse
Help			< <u>B</u> ack	<u>N</u> ext > <u>F</u> inis	h Cancel

The Configuration Type window of the Configuration Wizard is displayed.

2. Select Create a new domain option and click Next to display the Templates window.



3. Select the Create Domain Using Product Templates option and click Next to display the Administrator Account window.

] Fusion Middleware Configuration	on Wizard - Page 3 of 8(	Pofss220601	-	
Administrator Account				
Create Domain Templates Administrator Account Domain Mode and JDK Advanced Configuration Configuration Summary Configuration Progress End Of Configuration	Name Password Confirm Password	entain commas, tabs, or any of the fol	lowing characters: <>#[8?0()	
Help		<	Back Next > Einis	Cancel

4. Enter the user name to be assigned to the administrator, the password and confirm the password. Click **Next** to display **Domain Mode and JDK** window is displayed.



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


Click Next to display the Advanced Configuration window.

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

Fusion Middleware Configuration	on Wizard - Page 6 o	of 9@ofss220601		
Administration Server			FUSION MIDDLEWAR	ē (
Create Domain Templates Administrator Account Domain Mode and JDK Advanced Configuration Administration Server Configuration Summary Configuration Progress End Of Configuration	Server Name Listen Address Listen Port Enable SSL SSL Listen Port	AdminServer All Local Addresses 9091		
	Port number mu	st be between 1 and 65535, and	l different from SSL listen port and coh	erence port.
Help			<back next=""> F</back>	nish Cancel

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

Click Next to display the Configuration Summary window.

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



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



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

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

The End of Configuration window is displayed

End Of Configuration			
Q Create Domain	1		
Templates	Oracle Weblogic Server Configuration Succeeded New Domain base domain Creation Succeeded		
Administrator Account	Domain Location		
Domain Mode and JDK	Admin Server URL	ome/user_projects/domains/	base_domain
Advanced Configuration	http://ofss220601:9091/console		
Administration Server			
Configuration Summary			
Configuration Progress			
End Of Configuration			
Help		Back Next > Einis	h Cancel

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

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

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

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

#### Delete Domain in WebLogic

1. Navigate to the following directory:

<WebLogic Installation directory>/user projects/domains/<domain name>/bin

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

## WebLogic Memory Settings

To configure the WebLogic Memory Settings:

1. Change the memory setting for Java Heap to -Xms512m -Xmx3072m in setDomainEnv.sh file, which resides in the folder <DOMAIN HOME>/bin and in CommEnv.sh file which resides in the folder common/bin.

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"
else
WLS_MEM_ARGS_64BIT="-Xms512m -Xmx1024m"
export WLS_MEM_ARGS_64BIT
WLS_MEM_ARGS_32BIT="-Xms512m -Xmx1024m"
export WLS_MEM_ARGS_32BIT="-Xms512m -Xmx1024m"
```

• Example 2:

JAVA\_VM= MEM\_ARGS="-Xms256m -Xmx1024m"

## Configuring WebLogic for REST Services Authorization

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

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

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

# Configuring Apache Tomcat Server for Application Deployment

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

This section includes the following topics:

- Tomcat User Administration
- Configure Tomcat to use JAVA 64 bit Executables
- Configure Servlet Port
- SSL Port Configuration
- Apache Tomcat Memory Settings
- Configuring Tomcat for User Group Authorization and Data Mapping
- Uninstalling WAR Files in Tomcat
- Configuration for Axis API
- Additional Configurations for Tomcat

### Tomcat User Administration

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

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

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

## Configure Tomcat to use JAVA 64 bit Executables

- 1. Navigate to the "\$CATALINA\_HOME/bin" folder.
- 2. Edit the setclasspath.sh as explained below:
- **3.** Replace the following block of text:

```
# Set standard commands for invoking Java.
_RUNJAVA="$JRE_HOME"/bin/java
if [ "$0s400" != "true" ]; then
```

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

With:

```
# Set standard commands for invoking Java.
_RUNJAVA="$JAVA_BIN"/java
if [ "$0s400" != "true" ]; then
RUNJDB="$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.

#### Configure Servlet Port

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

If you need to use a different port number, you must first configure the port in the "server.xml" in the "conf" directory of Tomcat Installation directory. The following steps guide you through the configuration process:

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

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

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

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

#### SSL Port Configuration

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

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

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

For example, see the following connector tag for https configuration:

```
<Connector port="8091" protocol="org.apache.coyote.http11.Http11NioProtocol"
maxThreads="150" SSLEnabled="true" secure="true"
clientAuth="false"
maxHttpHeaderSize="8192"
minSpareThreads="25" maxSpareThreads="75"
enableLookups="false" disableUploadTimeout="true"
acceptCount="100" scheme="https"
sslProtocol="SSL"
keystorefile=".keystore" keystorepass="changeit"
```

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

### Apache Tomcat Memory Settings

To configure the Apache Tomcat Memory Settings:

- 1. Locate the file catalina.sh which resides in the folder <CATALINA\_HOME>/bin.
- Edit this file for customizing the memory settings and garbage collector settings depending on the available hardware configuration.
- 3. Add the memory setting for Java Heap to -xms512m -xmx1024m.

Example:

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

### Configuring Tomcat for User Group Authorization and Data Mapping

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

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

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

</init-param>

3. Save and close the file.

### Uninstalling WAR Files in Tomcat

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

## Configuration for Axis API

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

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

## Additional Configurations for Tomcat

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

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

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

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

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

# Configuring Work Manager in Web Application Servers

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

This section covers the following topics:

- Configuring Work Manager in WebSphere Application Server
- Configuring Work Manager in WebLogic Application Server

## Configuring Work Manager in WebSphere Application Server

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

This section covers the following topics:

- Creating Work Manager
- Mapping Work Manager to OFSAA WebSphere Instance

### **Creating Work Manager**

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

WebSphere. softwa	re
	WebSphere Integrated Solutions Console User ID: admin Password: Log in
IBM.	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 <u>Copyright and trademark information</u> .

2. Login with the user id that has admin rights.

WebSphere. software			Welcome admin Help Logout	IBM.
View: All tasks	Welcome			
Welcome     Goded Activities     Servers	Welcome Integrated Solutions Console provides a common adm lists the product suites that can be administered throu more information.	inistrative console for multiple products. The table of this installation. Select a product suite to view	About this Integrated Solutions Console Integrated Solutions Console, 8.5.5.0 Build Bumber: gr1219.01 Build Date: \$714713	^
Applications     Society	Suite Name	Version	LICENSED MATERIALS PROPERTY OF IBM 5724-308, 5724-163, 5724-H88, 5724-H89, 5655-W65 (C) Copyright International Revisionst Machinese Com. 1996, 2012	~
Resources	WebSphere Application Server	8.5.5.0	international dusiness machines Corp. 1994, 2012	
* Security				
Environment     System administration				
Users and Groups				
R Monitoring and Tuning				
® Troubleshooting				
Service Integration				
100U ®				

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

WebSphere, software					Welcome admin	Help   Logout IBM.
View: All tasks	Cell=whf00sgnNode02Cell, Profile=BGRC	DOM				Close page
* Welcome	Work managers				7 =	Help -
<ul> <li>K. Survers</li> <li>K. Survers</li> <li>Applications</li> <li>K. Survices</li> <li>Resources</li> <li>Scholars</li> </ul>	Work managers Specifies a work manager that con	tains a pool of threads that a cell, Node=whf00aqnNode01, at which the resource definition a scope settings help.	re bound into the Java(TM) Naming and Directory Serverserver1 on is visible. For detailed information on what scop	Interface (JNDI). pe is		Field help For field help information, select a field labels or list marker when the help cursor is displayed. Page help More information, about this BRB Command Assistance
Delectronianapers     Object pool manapers     JM5     JM5     JDBC     Resource Adapters     Asynchronous beans	R Preferences					View administrative, scripting command for last action
Timer managers     Work managers	Select Name C	JNDI name 🗘	Scope C	Description 🗘	Category O	
8 Cache instances 18 Mail 18 URL 18 Resource Environment	DefaultWorkManager Total 1	wm/default	Node=whf00aqnNode01,Server=server1	WebSphere Default WorkManager	Default	
Security						
Environment						
❀ System administration						
T Users and Groups						
Monitoring and Tuning						
Troubleshooting						
Service integration						
I UDDI						

4. Select the required **Scope** from the drop-down list

For example, Node=whf00aqnNode01, Server=server1.

5. Click New in the Preferences section.

metighers software		Walcome adm
View All tasks	Call+ub/Stup/Lelet2Call, Public-BOXCDOM	
	tlork managers	
* Walcome	The second se	
A Curded Activities	Specifies a work manager that contains a pool of threads that are bound int	to the Java(TW) Raming and Directory Interface (2001).
a Servers	Conferentian	
In Applications		
A Services		
in Resources	Seneral Properties	The additional properties will not be available until the general properties
<ul> <li>Schedulers</li> <li>Object pool merapara</li> </ul>	* Stope	Additional Properties
W 2MS	Search And a builded of the united second second second	<ul> <li>Contemportation</li> </ul>
# 206C	• Name	
IR Resource Adapters		
III Azynchronous beans	wm/WorkManager	
- Work managers	Constitution of Constitution o	
# Cache instances	Concession of the second se	
iii Mad	^	
IK URL	~	
8 Resource Environment		
# Security	Category	
X Environment	Work Smand	
X System administration	0 millascanda	
IK Users and Groups	Work request queue size	
X Manifating and Tuning	(0 sork abjects	
X Troubleshorting	Work request queue full action	
It Service Integration	[mm]]]	
× 4001	Service names	
	Internationalization	
	Application Profiling Service (deprecated)	
	G Security	
	WorkArea	
	Thread pool properties	
	Number of alarm threads	
	R Breads	
	Minimum number of threads     Dreads	
	A Maximum and an of House in	
	2 threads	
	* Thread Brianty	
	3 priority	
	P. describe	
	C. VIIII	
	Apply OK Revet Cancel	

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

#### 8. Click Apply.

WebSphere. software		Welcome admin
Viewi All tasks	Cell+wh/00aqnNode02Cell, Profile=BGRCDOM	
WebSphere: software           WebSphere: software           Verm: All tasks           II: Guided Activities           II: Servers           II: Applications           II: Services           II: Schedulers           II: Schedulers	Call=ub/001geNipde02Call.Prefix=801CDOM         Vork managers	Welcome admin
	Work request queue full action Block ▼ Service names Internationalization	

#### 9. Click Save.

WebSphere. software						Welcome admin
Viewi All tasks V	cell=whf00	sgnNode02Cell, Profile=BGRC0	ОМ			
= Welcome	Work mar	agers				2 -
Guided Activities      Gervers      Applications      Services      Services      Schedulers      Chiect pool managers      MMS      Mas	Work Specifi Sco Sco Pref	hanagers as a work manager that cont be: Cell=whf00aqnNode02C Scope specifies the level and how it works, <u>see the</u> Node=whf00aqnNode01. erences Delete	ains a pool of threads that are ell. Node=whf00aqnNode01. Se at which the resource definition i scope settings help. Server=server1 v	bound into the Java(TM) Naming and Directory vermeerver1 is visible. For detailed information on what scop	interface (JNDI). e is	
<ul> <li>★ JOBC</li> <li>⑦ Resource Adapters</li> <li>○ Asynchronous beans</li> <li>■ Timer managers</li> </ul>	E l	h ⊕ ∳	WDI asme A	Second A	Description A	Catagory A
= Work managers	You c	an administer the following r	esources:	acope 🗸	Description V	Category U
B Cache instances B Mail B URL		DefaultWorkManager	wm/default	Node=whf00aqnNode01,Server=server1	WebSphere Default WorkManager	Default
Resource Environment		wm	wm/WorkManager	Node=whf00aqnNode01.Server=server1		
❀ Security	Total	2				
Environment	_					
System administration						
Users and Groups						
Monitoring and Tuning						
Troubleshooting						
Service integration						
I UDDI						

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

# Mapping Work Manager to OFSAA WebSphere Instance

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

WebSphere. software			Welcome admin
View: All tasks	Cell=whf0	0agnNade02Cell, Profile=BGRCDOM	
	Enterpris	e Applications	2 -
= Welcome		nine Analizations	
Oulded Activities	Use t	prise Applications	ed onto multiple servers.
* Servers	IR Pr	eferences	
Applications	1.50	t Stop Testall Lipinstall Lipidate Rollout Lipidate Remov	Ela Evont DOL Evont Bla
New Application     Application			The separate separate
WebSphere enterprise applications	G	10 T 19	
<ul> <li>Business-level applications</li> </ul>	Selec	t Name 🔿	Application Status 👷
Assets     Global dealer-ment settings	You	can administer the following resources:	
		DefaultApplication	*
a Services		OFSAAL	*
C Resources		formananar	a
Object pool managers	<u> </u>		
I JMS		btése	*
B JOBC		SVBC	*
Resource Adapters     Asynchronous beans	Tota	15	
= Timer managers			
<ul> <li>Work managers</li> </ul>			
Cache instances			
B Mail			
Resource Environment			
a Security			
Environment			
* System administration			
Users and Groups			
Monitoring and Tuning			
Troubleshooting			
E Service integration			
E UDDI			

2. Click OFSAAI instance hyperlink.

General Properties  Name OFSANI Application reference validation Issue warnings V  Detail Properties  Istrate specific application status  Startup behavior  Application binaries  Class loading and update detection  Request dispatcher properties  AMSPL provider  Sustem properties  View Deployment Descriptor  Last participant support extension  References  Shared library references  Shared library references	Modules <ul> <li>Manace Modules</li> <li>Display module build Ids</li> </ul> Web Module Properties <ul> <li>Session management</li> <li>Context Root For Web Modules</li> <li>Initialize parameters for services</li> <li>ISP and ISP options</li> <li>Struct Insta</li> </ul> <ul> <li>Virtual hosts</li> </ul> Enterprise Java Bean Properties <ul> <li>Default messaging provider references</li> <li>Client Module Properties             <ul> <li>Client module deployment mode</li> <li>Database Profiles</li> <li>SQLJ profiles and pureQuery bind files</li> </ul></li></ul>
---	--

3. Click Resource references link under References section.

	nj.work.WorkManager							
	Set Multiple JNDI N	emes *						
	0							
Select	Module		Bean	URI	R	source Reference	Target Resource	INDI Name
•	OFSAAI Web Applic	ation		OFSAAL.war, WEB-	INF/web.xml w	n/WorkManager	wm/default	Browse
Select	Module	Bean	URI		Resource Reference	Target Resour	ce JNDI Name	Login configuration
Select	Module OFSAAL Web	Bean	URI	AI war WEB-	Resource Reference	Target Resour	ce JNDI Name TER	Login configuration Resource authorization: Container
	Application		INF/w	eb.xml	JODOFICHASTE	Browse		Authentication method: None
	OFSAA1 Web Application		OFSA INF/w	AL.war, WEB- eb.xml	jdbc/OFSBGRCI	jdbc/OFSBGR Browse	CINFO	Resource authorization: Container Authentication method:

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

s dete	ces that can be used to bind to the resour rmined by the targets to which that module	ce-reference of a bean. e is mapped. Resources	Resources shown here are only those availas available to a module can come from a hier	ble to that module carrying the bean. T rarchical scope of a bean. If resources a
Appl	v Cancel	one at the lower scope i	will override the parent. The overridden resou	rces are not shown here.
140.0	0			
	<b>P</b> '			
Select	Name 0_	JNDI name 🗘 _	Scope 0.	Description
		um/and	Node=whf00aonNode01	
0	AsyncRequestDispatcherWorkManager	weny and		
0	AsyncRequestDispatcherWorkManager DefaultWorkManager	wm/default	Node=whf00aqnNode01.Server=server1	WebSphere Default WorkManager

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

weblightern, auftware								Weissme admin	Help   Logout
Ween All tasks	Calmability	chodel2Cal, Publics	in coord						Close
	Enterprise P	pplications							ea/p
x Guided Activities X Earlans Applications • Association	Enterprise Resource Each res	e Assistations > Of references source reference that users biochemps	in define	mource references d in your application must	be mapped to a rea	0v708.			Field help For field help information, sele a field table or fait marker whe the help cursor is displayed. Page help Hare information alread the
Application Types     Multipliere enterprise applications     desinance-level applications     Access	0	Sec Hultiple 2001 Na D	*****						init
<ul> <li>Obhal deployment settings</li> </ul>	Select	Module		Bean URI	R.	esource Reference	Target Resource 3901	Name	
8 Services		OPEAAL Web Applica	tion	OPEAAL.max.WEB-	Diff/oath.com	m/WorkManager	www.WorkManager	Brones	
in Resources									
<ul> <li>Echadulars</li> <li>Object pool managers</li> <li>Jas</li> <li>Jas</li> <li>Jos</li> <li>Jos</li> </ul>		Set Multiple JND1 Na		) Modify Rea	ource Authentication I	Method	Extended Propertie		
8 Resource Adapters 8 Asynchronous beans 9 Timer managers	C I	C) Madula	Beat	141	Resource	Tanant Resource	ue INCI Name	Login configuration	
<ul> <li>Work managers</li> <li>E Cache instances</li> <li>W multi S unit,</li> <li>W Associate Environment</li> </ul>		OFSAAI Web Application		OPSAAL.san, WEB- 297/web.aml	Heference	Browner.	тця	Resource authorization: Container Authentication method:	
A Security								None	
K Environment K Spoten administration K Users and Groups X Wanitaring and Tasting		OFEAAL Web Application		OFDAAL.san. WEB- DAV web.ami	ульскогование	NFO Brown	ICINFO	Resource authorization: Container Authentication method: Noos	
N Treublichesting									
X UDDI	OK Car	CHE							

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

100 m		
8 M	essages b Changes have been made to your lo <u>Save</u> directly to the master configura <u>Review</u> changes before saving or disc b The server may need to be restarted	cal configuration. You can: tion. carding. 1 for these changes to take effect.
terprise Applications	• OFSAAI re an enterprise application. Click the I	inks to access pages for further configuring of the application or its modules.
configuration		
General Properties		Modules
Name		<ul> <li>Manage Modules</li> </ul>
OFSAAI		<ul> <li>Display module build Ids</li> </ul>
Application reference Issue warnings	e validation	Web Module Properties
Detail Properties		<ul> <li>Session management</li> </ul>
. Target specifi	c application status	Context Root For Web Modules
<ul> <li>Startup beha</li> </ul>	vior	<ul> <li>Initialize parameters for serviets</li> </ul>
= Application bi	naries	ISP and JSF options
· Class loading	and update detection	<ul> <li>Virtual hosts</li> </ul>
· Request disp	atcher properties	Enterprise Java Bean Properties
= JASPI provide	z	<ul> <li>Default messaging provider references</li> </ul>
<ul> <li>Custom prop</li> </ul>	erties	
View Deploym	ent Descriptor	Client Module Properties
Last participa	nt support extension	<ul> <li>Client module deployment mode</li> </ul>
References		Database Profiles
	rences	SQL2 profiles and pureQuery bind files
· Resource refe		
<ul> <li>Resource refe</li> <li>Shared library</li> </ul>	references	

7. Click Save.

Enter	e Applications prise Applications	7-
Use ti	his page to manage installed applications. A single application can be deploy eferences	yed onto multiple servers.
Sta	rt Stop Install Uninstall Update Rollout Update Remov	e File Export DDL Export File
	0 # ¥	
Select	t Name 🔿	Application Status Q_
You	can administer the following resources:	
	DefaultApplication	*
	OFSAAL	+
	formamanager	•
	bthee	•
	query	•
Total	15	

# Configuring Work Manager in WebLogic Application Server

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

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		
12	Lagar Is wait with Vermaner Fransiel	Welcome he littlings for or down weldings: 
stellungs forum factor 5.114.0 Towns (ng) (million) (class and ng addises, all splits macroal. Towns (ng addises) of this is classifier and it is addises, offer town read to believe to all their regarding comes.		

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

ORACLE WebLogic Server A	dministration Conscie 13t			0
Change Costor View changes and evolution	Home Log Dut Preferences III Record Help	<u>a</u>		Wokame, weblogic Corrected to: GBCB0E38
Configuration exting a shabled. Puture charges off automatically the attracted as you modify, and or delete terms in this domain. Bromain Structure OPCID: 2	Summary of Work Hanapers A much Hanaper defines a set of request classes and thread- Global much Hanapers are defined at the domain level. You	contrants that manage work performed by tribbugs: Server instances. The pay an abu define application-level and mobile-level strok thanagers.	pe displays the global stock Haragers, request classes and th	read constructs defined for this donare.
Cheven	P-Containing this table     Global Work Hanagers, Regionit Classes and Constrain     Jone Control	0		Showing it to G of D. Previous   Next
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4. Click **New** to create a new work manager component.

reate a New Work Manager Component	
Back Next Finish Cancel	
Select Work Manager Definition type	
What type of Work Manager, Request Class or Constraint do you want to create?	
Work Manager	
O Response Time Request Class	
○ Fair Share Request Class	
○ Context Request Class	
O Maximum Threads Constraint	
O Minimum Threads Constraint	
Capacity Constraint	
Back Next Finish Cancel	

5. Select Work Manager and click Next.

🏠 Home Log Out Preferences 🔛 Re	cord Help
Home >Summary of Work Managers	
Create a New Work Manager Compon	ent
Back Next Finish Cancel	
Work Manager Properties	
The following properties will be used to	identify your new Work Manager.
* Indicates required fields	
What would you like to name your new V	Nork Manager?
* Name:	wm/WorkManager ×
Back Next Finish Cancel	

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

reate a New Work Manager Component	
Back Next Finish Cancel	
Select deployment targets	
You can target the Work Manager to any of these WebLogic Server instances or (	Justers. Select the same targets on which you will deploy applications that reference the Work Manager.
twailable targets :	
AdminServer	
Back Next Finah Cancel	

8. Select the required deployment target and click Finish.

Nore - S Hommany of Work Henagons All dranges have been activated. No restants are recessary. Work Henagor oreated auccessfully Kennesary of Work Henagons	
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# Creating and Deploying EAR/WAR File

This section includes the following topics:

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

## Creating EAR/WAR File

To create EAR/WAR File, follow these steps:

- 1. Navigate to the *SFIC 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.



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

**Note:** The <contextname> is the name given during installation. This process overwrites any existing version of EAR file that exists in the path. In case of OFSAA configured on Tomcat installation, <contextname>.war will be created.

# Deploying EAR/WAR File

This section includes the following topics:

- Deploying EAR/WAR Files on WebSphere
- Deploying EAR / WAR File on WebLogic
- Deploying WAR Files on Tomcat
- **Note:** Ensure to clear the application cache prior to the deployment of Application Pack Web Archive. This is applicable to all Web Servers (WebSphere, WebLogic, and Tomcat). For more information, see Clearing Application Cache section.

## Deploying EAR/WAR Files on WebSphere

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

1. Start WebSphere Profile by navigating to the path "/<Websphere\_Installation\_Directory>/IBM/ WebSphere/AppServer/profiles/<Profile\_Name>/bin/" and execute the command:

./startServer.sh server1

2. Open the WebSphere admin console in the browser window:

http://<ipaddress>:<administrative console port>/ibm/console. (https if SSL is enabled). The
Login window is displayed.

WebSphere. software	
	WebSphere Integrated Solutions Console User ID: admin Password: •••••• Log in
Licensed Ma IBM, the IBI Internationa product and IBM tradem	terials - Property of IBM (c) Copyright IBM Corp. 1997, 2011 All Rights Reserved. M logo, ibm.com and WebSphere are trademarks or registered trademarks of I Business Machines Corp., registered in many jurisdictions worldwide. Other service names might be trademarks of IBM or other companies. A current list of arks is available on the Web at <u>Copyright and trademark information</u> .

3. Enter the user credentials with admin privileges and click Log In.

**4.** From the LHS menu, select **Applications** and click **New Application** to display the **New Application** window.

New App	lication
New /	Application
This p	page provides links to create new applications of different types.
Instal	a New Application
	New Enterprise Application
	New Business Level Application
	New Asset

5. Click New Enterprise Application to display the Preparing for the application installation window.

Dath to the or			
Path to the he	vapplication		
Local file sys	em		
Full path			
	Browse		
Remote file s	stam		
<ul> <li>Remote me s</li> </ul>	stem		
Full path		 	

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

aring for the application installation	
How do you want to install the application?	
Fast Path - Prompt only when additional information is required.	
$^{ m D}$ Detailed - Show all installation options and parameters.	
Choose to generate default bindings and mappings	
Previous Next Cancel	

7. Select the Fast Path option and click Next to display the Install New Application window.

8. Enter the required information and click Next to display the Map Modules to Servers window.

9. Select the Web Application and click Next to display the Map Resource References to Resources window.

Step 1 Select installation options	Map	esource refere	nces to	resources			
<u>Step 2</u> Map modules to servers	Each n	esource reference	that is d	efined in your applicat	ion must be mapped to a re	source.	Kara -
Stwp 3: Mapresource eferences to resource		Set Multiple JND	I Names	• M	odify Resource Authenticatio	n Method Extender	d Properties
<u>tep 4</u> : Map virtual losts to Web modules		0					
Step 5: Summary	Select	Module	Bean	URI	Resource Reference	Target Resource JNDI Name	Login configuration
		OFSAAI Web Application		AAIB0.war,WEB- INF/web.xml	jdbc/OFSALMINFO	jdbc/OFSALMINFO Browse	Resource authorization: Container Authentication method: None
	•	OFSAAI Web Application		AAIB0.war,WEB- DNF/web.xml	jdbc/FICMASTER	jdbo/FICMASTER Browse	Resource authorization: Container Authentication method: None
		OPSAAI Web Application		AAIB0.war,WEB- INF/web.xml	jdbc/OFSCAPADQINFO	jdbo/OFSCAPADQSNFO Browse	Resource authorization: Container Authentication method: None

- **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 to display the Map Virtual hosts for Web Modules window.

Step 1 Select	Map vi	rtual hosts for Web modules	
Step 2 Map modules to servers Step 3 Map resource references to resources	Specify in your them a P App	y the virtual host where you want to it r application. You can install Web mo among several hosts. ply Multiple Mappings	nstall the Web modules that are contained odules on the same virtual host or disperse
→ Step 4: Map virtual	Select	Web module	Virtual host
hosts for web			

13. Select the Web Application check box and click Next to display the Summary page.

Step 1 Select	Summary		
installation options	Summary of installation options		
<u>Step 2</u> Map modules to servers	Options	Values	
	Precompile JavaServer Pages files	No	
resource references	Directory to install application		
to resources	Distribute application	Yes	
Step 4 Map virtual	Use Binary Configuration	No	
hosts for Web	Deploy enterprise beans	Yes	
modules	Application name	AAI80	
Step 5: Summary	Create MBeans for resources	Yes	
	Override class reloading settings for Web and EJB modules	No	
	Reload interval in seconds		
	Deploy Web services	No	
	Validate Input off/warn/fail	warn	
	Process embedded configuration	No	
	File Permission	.*\.dll=755#.*\.so=755#.*\.a=755#.*\.sl=755	
	Application Build ID	Unknown	
	Allow dispatching includes to remote resources	No	
	Allow servicing includes from remote resources	No	
	Business level application name		
	Asynchronous Request Dispatch Type	Disabled	
	Allow EJB reference targets to resolve automatically	No	
	Deploy client modules	No	
	Client deployment mode	Isolated	
	Validate schema	No	
	Cell/Node/Server	Click here	

- **14.** Click **Finish** and deploy the Infrastructure Application on WebSphere.
- **15.** On successful installation, a message is displayed. Click **Save** and save the master file configuration. The details are displayed in the Master File Configuration window.

To start the application:

1. Expand Applications > Application Type > WebSphere enterprise applications to display the Enterprise Applications window.

Enterprise	e Applications	? _
Enterp Use th	rise Applications is page to manage installed applications. A single application can be dep ferences	loyed onto multiple servers.
Star	t Stop Install Uninstall Update Rollout Update Re	move File Export DDL Export File
	∎ # <i>¥</i>	
Select	Name 🗘	Application Status Q
You c	an administer the following resources:	
	AAI80	8
	DefaultApplication	*
	ivtApp	\$
	guery	•
Total	4	

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 File on WebLogic

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

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

```
./startWebLogic.sh -d64 file
```

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

**Note:** Ensure that you have started Infrastructure Server by executing "./reveleusstartup.sh" as mentioned in Start Infrastructure section.

4. Log on to the WebLogic Server by entering the user credentials having privileges to deploy the EAR file.

5. From the **Domain Structure** LHS menu, click **Deployments** to display the **Summary of Deployments** window.

ORACLE WebLogic Server®	Administrati	ion Console	0				0
Change Center	Home Home	Log Out Pre	ferences 🐼 Record Hei	p	Q	Welcome, upg72	273 Connected to
View changes and restarts							upg7273
Configuration editing is enabled. Future	Home >Se	ammary of De	eployments				
changes will automatically be activated as you modify, add or delete items in this domain.	Summary of Deployments						
	Control	Monitoring					
Services     Security Realms     Theroperability     Diagnostics	To instal	I a new application in the second sec	Ication name and using the ation or module for deploys Ne	e controls on this page ment to targets in this	l. I domain, dick th	e Install button.	
		Name 谷			state Health	Type De	ployment
How do L		🖲 🗖 ofsaai	ii		kctive VOK	Enterprise Application 100	0
System Status 🔹	Install	Update D	Delete Start + Stop +	1	1	Showing 1 to 1 of 1 Pr	revious   Next

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

#### **Explode EAR File**

To explode EAR, follow the below steps:

1. Create the "applications" folder under domain name. For example:

/Bea/user\_projects/domains/ <Domain \_name>/applications.

- 2. Create <context name>.ear folder under "applications" folder.
- 3. Copy the <\$FIC\_WEB\_HOME/<context\_name>.ear file to <WEBLOGIC\_INSTALL\_DIR>/Bea/user\_projects/ domains/<DOMAIN NAME>/applications/<context name>.ear
- 4. Explode the <context\_name>.ear file by executing the command:

jar -xvf <context\_name>.ear

- 5. Delete the <context>.ear and <context>.war files (recently created) <WEBLOGIC\_INSTALL\_DIR>/Bea/ user projects/domains/<DOMAIN NAME>/applications/<context name>.ear
- 6. Create a directory <context\_name>.war under <WEBLOGIC\_INSTALL\_DIR>/Bea/user\_projects/ domains/<DOMAIN\_NAME>/applications/<context\_name>.ear
- 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

#### **Install Application**

To install the Application:

1. Open the Install Application Assistant.

Esck Next Frish Ca	ncel
Locate deployment to ins	tall and prepare for deployment
Select the file path that repre- the application directory or file	sents the application root directory, archive file, exploded archive directory, or application module descriptor that you want to install. You can also enter the path or In the Path field.
Note: Only vald file paths are	displayed below. If you cannot find your deployment files, upload your file(s) and/or confirm that your application contains the required deployment descriptors.
Path:	/oradata2/w11035/Oracle/Middleware/user_projects/domains/upg7273/applications
Recently Used Paths:	/oradata2/wi1035/Orade/Mddleware/user_projects/domains/upg7273/applications
Comment I acations	10.184.134.147 / oradata2 / wl1035 / Oracle / Middleware / user_projects / domains / upg7273 / applications
Current Location:	
O To upg7273.ear (ope	n directory)

#### 2. Click Next.

Install Application Assistant
Back Next Finish Cancel
Choose targeting style
Targets are the servers, clusters, and virtual hosts on which this deployment will run. There are several ways you can target an application.
Install this deployment as an application
The application and its components will be targeted to the same locations. This is the most common usage.
Install this deployment as a library
Application libraries are deployments that are available for other deployments to share. Libraries should be available on all of the targets running their referencing applications
Back Next Finish Cancel

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

Base: In mail   Control Setting:   To can modify these settings or accept the defaults   Control   Control   Control   Security   In the security model do you want to use with this application?   In the security model do you want to use with this application?   In the security model do you want to use with this application?   In the security model do you want to use with this application?   In the security model do you want to use with this application?   In the security model do you want to use with this application?   In the security model do you want to use with this application?   In the security model do you want to use with this application?   In the security model do you want to use with this application?   In the security model do you want to use with this application?   In the security model do you want to use with this application?   In the security model do you want to use with this application console; use policies that are defined in the deployment   In the security model do you want to use with this application console; use policies that are defined in the deployment   In the security model do you want to use with this application console;   In the security model do you want to use with this application console;   In the defaults defined by the deployment's targets   In the defaults defined by the deployment's targets   In the deployment, the files will be copied automatically to the managed servers to which the application is targets.   In the deployment, the files will be copied automatically to the managed servers to which the applic	nstall Application A	ssistant
Optional Settings           You can modify these settings or accept the defaults           General           What do you want to mame this deployment?           Name:         ugg7273           Security         ugg7273           Security         Do Donly: Use only roles and policies that are defined in the deployment descriptors.           O Do Donly: Use only roles and policies that are defined in the deployment descriptors.         O Costom Roles: Use roles that are defined in the Administration Console; use policies that are defined in the deployment.           O custom Roles: Use roles that are defined in the Administration Console; use policies that are defined in the deployment.         O custom Roles: Use roles that are defined in the Administration Console; use policies that are defined in the deployment.           O custom Roles and Policies: Use only roles and policies that are defined in the Administration Console;         O custom Roles and Policies: Use only roles and policies that are defined in the Administration Console.           O custom Roles and Policies: Use only roles and policies that are defined in the Administration Console.         O custom Role and Policies: Use only roles and policies that are defined on the realm's configuration page.           Source accessibility         O count accessibility         O count accessibility           O use the defaults defined by the deployment's targets         O count accessibility         O count accessibility           O count accessibility         O count accessibity         O	Back Next Fin	an Cancel
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Back Next Finah Cancel	Provide the location fi reach the location.	on where all targets will access this application's files. This is often a shared directory. You must ensure the application files exist in this location and that each target can
	Back Next Fin	sh. Cancel

- 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 and display the Deployment Summary window.

istall Application A	ssistant	
Back Hiert Fin	ah Cancel	
Review your choic	ces and click Finish	
Click Finish to comple	te the deployment. This may take a few moments to complet	e.
- Additional config	uration	
In order to work succe	essfully, this application may require additional configuration.	Do you want to review this application's configuration after completing this assistant?
<ul> <li>Yes, take me t</li> <li>No, I will revie</li> </ul>	to the deployment's configuration screen.	
Summary		
Deployment	/oradata2/wl1035/Oracle/Middleware/user_projects/do	mains/upg7273/applications/upg7273.ear
Deployment: Name:	/oradata2/wl1035/Oracle/Middleware/user_projects/do upg72733	rains/upg7273/applications/upg7273.ear
Deployment: Name: Staging mode:	/oradata2/n11035;Orade,Middleware/user_projects/do upg72733 Use the defaults defined by the chosen targets	reins/upg7273/epolications/upg7273.ear
Deployment: Name: Staging mode: Security Hodek	/oradeta2/w1035;Orade,Middleware/user_projects/do upg72733 Use the defaults defined by the chosen targets DOON/v: Use only roles and policies that are defined in	nans/upg7273/applications/upg7273.ear
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8. Select the option Yes, take me to the deployment's configuration screen option and click Finish to display the Settings for <Deployment Name> window.

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verview	Deployment Plan	Configuration	Security	Targets	Control	Tesong	Monitoring	Notes			
Save											
Use this pag the end of t	e to view the gener he page lists the mo	al configuration o idules (such as W	of an Enterp eb application	rise applications and E38	ion, such a s) that are	s its name, contained in	the physical p the Enterpris	ith to the application	e application files, the associated deployment plan, and so on. The table at tion. Click on the name of the module to view and update its configuration.		
lame:		upg7273							The name of this Enterprise Application. More Info		
Path:		/ oradata2/ wl1035/ Orade/ Middeware/ user_projects/ domains/ upg7273/ applications/ upg7273. ear						The path to the source of the deployable unit on the Administration Server. More $\inf \Omega_{\rm con}$			
Deployment Plan:		(no plan specified)						The path to the deployment plan document on Administration Server. Mo Info			
Staging Mode:		(not specified)						The mode that specifies whether a deployment's files are copied from a source on the Administration Server to the Managed Server's staging area during application preparation. More Info			
Security Mo	odek	DDOnly							The security model that is used to secure a deployed module. More Info		
🔁 Deployr	ment Order:	100						An integer value that indicates when this unit is deployed, relative to other deployable units on a server, during startup. More Info			
E Deployment Principal						A string value that indicates what principal should be used when deploying the file or archive during startup and shutdown. This principal will be used set the current subject when calling out into application code for interfaces such as Application/lifecycleListener. If no principal name is specified, then the anonymous principal will be used. More Infig					
Save Hodules ar	nd Components										
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E Mod	ules										
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E Web	Services										

- **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** to display the **Summary of Deployments** window.

mmary	of Deployments							
ontrol	Monitoring							
This page (redepion To install Custom Deployn	e displays a list of Ja yed), or deleted fro I a new application o size this table ments	va EE applications and stand-alone application modules the the domain by first selecting the application name and us ir module for deployment to targets in this domain, click the	It have been installed to th ing the controls on this pag Install button.	is domain. Ins je,	tailed applications and module	s can be started, stopped, updated		
install	Update Delete	Start V Stop V			9	howing 1 to 1 of 1 Previous   Next		
	lame 🍣	Servicing all requests Servicing only administration requests	State	Health	Туре	Deployment Order		
	E Cupg7273		Active CK Enterprise Application 100					
Install	Update Delete	Start - Stop -			9	howing 1 to 1 of 1 Previous   Next		

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

nmary (	of Deployments				
introl	Monitoring				
To install	a new application or module for deployment to targets in this	domain, dick the Install button.			
To install Customi eploym install	a new application or module for deployment to targets in this table sents	domain, dick the Install button.		s	having 1 to 1 of 1 Previous   1
Customi eploym Instal	a new application or module for deployment to targets in this size this table sents Update Delete Start - Stop - tame -	domain, dick the Install button.	Health	5 Туре	howing 1 to 1 of 1 Previous   / Deployment Order

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

## **Deploying WAR Files on Tomcat**

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

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

1. Copy the <context-name>.war from *\$FIC\_WEB\_HOME/<context-name.war>* to <Tomcat Installation Directory>/webapps/directory.

Home Document	tation Configuration E	xamples Wiki Mailing Lists			Find Hel	
pache Tomo	at/7.0.57		And and a second	he Apach	e Software Foundation p://www.apache.org/	
	If you're seeing this,	you've successfully insta	lled Tomca	at. Congra	itulations!	
	Recommended Read	ding:			Server Status	
	Security Consideration	ns HOW-TO			Manager App	
	Manager Application H	IOW-TO			manager rep.	
	Clustering/Session Re	plication HOW-TO			Host Manager	
eveloper Quick	Start					
omcat Setup	Realms & AAA	Examples		Se	rvlet Specifications	
irst Web Application	JDBC Data Sou	irces		Tomcat Versions		
estricted. Users are d \$CATALINA_HOME/c in Torncat 7.0 access upplication is split beth Read more Release Notes Changelog Migration Guide Security Notices	lefined in: conf/tomcat-users.xml to the manager ween different users.	Tomcat 7.0 Configuration Tomcat Wiki Find additional important configuration information in: \$CATALINA_HOME/RUNNING.txt Developers may be interested in: Tomcat 7.0 Buc Database Tomcat 7.0 JavaDoca Tomcat 7.0 SVII Repository	n	The followin tomcat-and Important: vulnerabilit tomcat-user User suppor tandits-user User suppor tomcat-dev Developmen	ng mailing lists are available: sunce announcements, releases, security ty notifications. (Low volume). a t and discussion t and discussion for <u>Apache Tagliba</u> t mailing list, including commit messages	
Other Downloads	Other Documentation	Get Involved	Miscellane	ous	Apache Software Foundation	
omcat Connectors	Tomcat Connectors	Overview	Contact		Who We Are	
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agibs	Tomcat Native	Mailing Lists	Sponsorship	2	Apache Home	
leployer	Deployer	Wiki	Thanks		Resources	

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.

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Shoca	None specified	Torncal Decumentation	5.00		Expire sessions with ide a 30	minutes					
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	Copyright († 1999-2014, Apuntie Sottware Foundation										

- 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. For more information, see Starting Infrastructure Services.
# Accessing the OFSAA Application

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

To access the OFSAA application:

The OFSAA login window is displayed as below:

ORACLE <sup>®</sup> Financial Services Analytical Ap	plications		■ <u>About</u>
3			
	Language	US-English	
	User ID		
	Password		
		Login	
	Version 8.0.6.0.0 Copyright © 1993, reserved.	, 2018 Oracle and/or its affiliates. All rights	

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

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

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

# OFSAA Landing Page for CA Administrator

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



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

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

The following tabs are available in the Landing Page:

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

#### Applications tab

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

#### **Object Administration tab**

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

#### System Configuration & Identity Management tab

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

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

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

## RCA and PFT Pack-on-Pack Installation

If you are installing OFS PFT Pack Release v.8.0.7.0.0 on OFA RCA Release v.8.0.6.0.0, then the following tables should be dropped after backup. After that, re-sync the date from the backup of PFT after installation:

- DIM\_ORG\_UNIT\_ATTR
- DIM\_ORG\_UNIT\_B
- DIM\_ORG\_UNIT\_TL
- DIM\_GENERAL\_LEDGER\_HIER
- DIM\_COMMON\_COA\_ATTR
- FSI\_ACCOUNT\_TYPE\_CD
- DIM\_GENERAL\_LEDGER\_TL
- DIM\_GENERAL\_LEDGER\_ATTR
- DIM\_GENERAL\_LEDGER\_B
- DIM\_COMMON\_COA\_B
- DIM\_COMMON\_COA\_TL
- DIM\_PRODUCTS\_B
- DIM\_PRODUCTS\_TL
- DIM\_PRODUCTS\_ATTR

# **User Group Mapping**

Application specific User Group mappings:

- RCA:
  - Application Administrator
  - o Application Analyst
  - o Application Auditor
  - o Big Data Administrator
  - o Big Data BI Analyst
  - o Big Data Data Analyst

Additionally, the following user groups are introduced for GDPR compliance:

- **Data Controller**: This group has the privileges to maintain the PII list and Redaction policies against them. This group also has the privilege to ensure the Right to be Forgotten.
- **Data Security Group**: This group has the privileges to see the PII in un-redacted manner when the reports are accessed through OBIEE.

# Create and Deploy the Application Pack Web Archive

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

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

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

# Patching Your OFS CA Pack Installation

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

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

## Excel Upload Mapping and Template

To migrate, follow these steps:

- 1. Copy the ExcelUpload directory present in \$FICHOME/CIRCA/ExcelUpload.
- 2. Change the name of directory named as infodom in ExcelUpload to respective infodom name.
- 3. Copy the ExcelUpload directory to ftpshare/STAGE directory.
- 4. Create STAGE directory in <TOMCAT\_HOME>.
- 5. Copy the ExcelUpload directory to STAGE directory in <TOMCAT\_HOME>.

# CHAPTER 6 – RPD/ CATALOG DEPLOYMENT FOR OBIEE 11G

This chapter includes the following topics:

- Deploying Customer Analytics Pack Dashboards and Analytics
- HTML5 Compliance of OBIEE Reports in IE11

## **Deploying Customer Analytics Pack Dashboards and Analytics**

This section covers the following topics:

- Installing OBIEE Server
- Installing OBIEE Windows Administration Client
- Deploying Customer Analytics Pack Report Analytics

#### Installing OBIEE Server

To install Oracle Business Intelligence Enterprise Edition (OBIEE) server, see the Oracle Fusion Middle ware Installation Guide for Oracle Business Intelligence11g Release 1 (11.1.1.9.5). After installing Oracle Business Intelligence Enterprise Edition (OBIEE) server, get the Enterprise Manager URL, username, password, and OBIEE installed directory from the System Administrator.

**Note:** From the OFS CA Release 8.0.3.0.0 onwards, the OBIEE version 11.1.1.7.1 will not have support and enhancements. All the existing reports work same as the previous versions, but the new developments will not function in 11.1.1.7.1 version of OBIEE.

#### Installing OBIEE Windows Administration Client

To install OBIEE repository administration client for Windows machine, see the Oracle® Fusion Middle ware Installation Guide for Oracle Business Intelligence11g Release 1 (11.1.1.9.0).

#### **Deploying Customer Analytics Pack Report Analytics**

To deploy Analytic Reports, follow these steps:

- 1. Copy CIRCA.rpd and CIRCA.catalog files from *\$FIC\_HOME/CIRCA/OBIEE/11.1.1.x.x/* of Web layer to windows machine where the OBIEE windows administration client is installed and deploy. For the more information on deployment, refer to your OBIEE 11g documentation.
- 2. Open the CIRCA.rpd file online with default password as Admin123.
- **3.** Configure the Connection Pool details according to the atomic schema.
- 4. Click File menu and then click Save.
- 5. Click Yes on the pop-up message Do you want to check global consistency?
- **6.** Click **OK**, on the pop-up message Consistency check didn't find any errors, warning or best practices violations.

Note: Warnings on consistency check can be ignored.

# HTML5 Compliance of OBIEE Reports in IE11

Perform the following steps in order to verify the HTML5 compliance of OBIEE reports in IE11:

- 1. Remove the compatibility settings for analytics.
- Change the instanceconfig.xml file to make all the chart views to be shown in HTML5 by default. You can find the instanceconfig.xml file in the following location:

OBIEE\_HOME/instances/instance1/config/OracleBIPresentationServicesComponent/ coreapplication\_obips1

```
<Charts>
<DefaultWebImageType>html5</DefaultWebImageType>
</Charts>
```

- 3. Enable Mapviewer and D3 reports (to ensure that these reports show up as is).
- 4. Verify all the BI reports by removing the default chart view setting (to ensure that these reports show up as usual irrespective of HTML5 or flash web Image formats).

#### Details on OBIEE11.1.9.5

In a browser that does not support the html5 format, the image renders in the flash format instead (which is also interactive).

# CHAPTER 7 – RPD/ CATALOG DEPLOYMENT FOR OBIEE12C

This chapter includes the following topics:

• Deploying Pack Dashboards and Analytics

#### **Deploying Pack Dashboards and Analytics**

This section covers the following tooics:

- Installing OBIEE Server
- Installing OBIEE Windows Administration Client
- Deploying Customer Analytics Application Pack Report Analytics

#### Installing OBIEE Server

To install Oracle Business Intelligence Enterprise Edition (OBIEE) server, see the Oracle Fusion Middle ware Installation Guide for Oracle Business Intelligence Release 12.2.1.3.0. After installing Oracle Business Intelligence Enterprise Edition (OBIEE) server, get the Enterprise Manager URL, username, password, and OBIEE installed directory from the System Administrator.

**Note:** From the OFS CA Release 8.0.6.0.0 onwards, the OBIEE version 12.2.1.2.0 will not have support and enhancements. All the existing reports work same as the previous versions, but the new developments will not function in 12.2.1.2.0 version of OBIEE.

Once the OBIEE server is installed, it should be upgraded to the version as mentioned in the Environment section.

#### Installing OBIEE Windows Administration Client

To install OBIEE repository administration client for Windows machine, see the Oracle® Fusion Middle ware Installation Guide for Oracle Business Intelligence Release 12.2.1.3.0.

## Deploying Customer Analytics Application Pack Report Analytics

To deploy Customer Analytics Application Pack Analytic Reports, follow these steps:

- 1. Copy CIRCA.rpd and CIRCA.catalog files from *\$FIC\_HOME/CIRCA/OBIEE/12.2.1.3.0/* of Web layer to windows machine where the OBIEE windows administration client is installed and deploy. For the more information on deployment, refer to your OBIEE 12c documentation.
- 2. Open the CIRCA.rpd file online with default password as Admin123.
- **3.** Configure the Connection Pool details according to the atomic schema.
- 4. Click File menu and then click Save.
- 5. Click Yes on the pop-up message Do you want to check global consistency?
- **6.** Click **OK**, on the pop-up message Consistency check didn't find any errors, warning or best practices violations.

Note: Warnings on consistency check can be ignored.

#### Post Installation Changes

Do the following changes in the instanceconfig.xml file as post installation changes:

1. Backup and edit the instanceconfig.xml file located at:

\$ORACLE\_HOME/user\_projects/domains/bi/config/fmwconfig/biconfig/OBIPS

Tag to be changed	Changes
<views></views>	<views></views>
	<charts></charts>
	<defaultwebimagetype>flash</defaultwebimagetype>
<security></security>	<security></security>
	<checkurlfreshness>false</checkurlfreshness>
	<enablesavingcontentwithhtml>true<!--</td--></enablesavingcontentwithhtml>
	EnableSavingContentWithHTML>

- 2. Save and exit the file.
- **3.** To make Marketing Triggers to work, copy the *mktgjob* folder from *\$FIC\_HOME/CIRCA/OBIEE/12.2.1.3.0* folder and replace it in your server where OBIEE is installed as given below:

\$ORACLE\_HOME/user\_projects/domains/bi/bidata/service\_instances/ssi/metadata/content/
catalog/root/system

4. Restart the presentation server for the changes to take effect.

# APPENDIX A - INSTALLATION OF R AND ORACLE R ENTERPRISE (ORE)

This is an optional step and required only if you intend to use Term Structure Parameter Estimation functionality under Rate Management - Interest Rates, for computing term structure parameters. Both Funds Transfer Pricing and Asset Liability Management applications require term structure parameters for all monte carlo engine based calculations (OAS, VaR and EaR).

Following are the prerequisites:

- Install R and Oracle R Enterprise Server on the Oracle Database server. See
- https://docs.oracle.com/cd/E57012\_01/doc.141/e57007.pdf
- ORE version supported Oracle R Enterprise (Server) version 1.4.1

#### Dependencies

R code of the application requires dependent packages to be installed before the Reporting Line Forecast batch is executed. Usage of the predictive model requires installation of packages - tseries, lattice, and R Oracle. Verify that lattice and R Oracle are compatible with each other.

Package installation instructions can be found at:

http://cran.r-project.org/doc/manuals/r-release/R-admin.html#Installing-packages

#### Configuration for Oracle R Enterprise

Grant the RQADMIN role to atomic schema.

You can grant the rgadmin role in SQL\*Plus by logging in to the database with DBA privileges and provide the following privilege to Atomic Schema:

RQADMIN by executing the command:

GRANT RQADMIN TO < atomic schema>;

# 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.

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

o 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 AAAI Runner Package

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

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

OFSAAIRunner package (OFSAAIRunner\_1.0.0.tar.gz) is available under \$FIC\_DB\_HOME/lib.

#### Prerequisite

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

Use the following procedure to install OFSAAIRunner package:

- 1. Log in to the OFSAA Server. Navigate to the folder *\$FIC\_DB\_HOME/lib*.
- 2. Copy the file OFSAAIRunner\_1.0.0.tar.gz in Binary mode to the Oracle Database Server.
- 3. Log in to the Oracle Database Server with the user using which Oracle Database Server installation is done.
- 4. Navigate to the directory where the file OFSAAIRunner 1.0.0.tar.gz is copied.
- 5. Install the package by executing the command:

```
ORE CMD INSTALL OFSAAIRunner_1.0.0.tar.gz
Successful installation is indicated in the installation log as:
* DONE (OFSAAIRunner)
Making packages.html ... done
```

**Note:** The OFSAAIRunner package is installed in /usr/lib64/R/library.

6. Navigate to the directory *\$ORACLE\_HOME/R/library* and check whether OFSAAIRunner package is listed there by executing the command:

ls -l

## Uninstalling OFSAAIRunner Package

Use the following procedure to uninstall the OFSAAIRunner package:

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

#ORE

3. Enter the following command to save workspace image:

>remove.packages("OFSAAIRunner")

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

q()

- 5. Navigate to the directory \$ORACLE\_HOME/R/library and verify the package is not listed there by executing the command:
- 6. Save workspace image? [y/n/c]: y

ls -l

#### Configurations for ORE Execution

Follow this step:

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

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

## **Configuring Tomcat**

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

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

- 1. Navigate to tomcat/conf directory.
- 2. Edit web.xml file as follows:

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

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

# **APPENDIX A - ADDITIONAL CONFIGURATION**

The following topics provide detailed module specific post installation configurations.

This appendix includes the following topics:

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

# **Configuring FTP/SFTP**

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

#### Adding FTP/SFTP Configuration for File Transfer

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

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

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

To generate private key, enter the commands as shown:

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

In case, you are generating SFTP Private key for Hive server, append the content of /home/ofsaapp/.ssh/ id\_rsa.pub to Hiveserver authorized\_keys file located at \$HOME\_DIR\_HIVE/.ssh folder.

Ensure the following permissions exist for the given folders:

- Permission of .ssh should be 700
- Permission of .ssh/authorized\_keys should be 640
- Permission of .ssh/id\_rsa should be 400
- Permission of Unix user created should be 755

#### Configure Infrastructure Server Memory

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

#### Infrastructure Application Server Memory Settings

You can configure the Infrastructure Application Memory settings as follows:

- 1. Locate .profile file.
- **2.** Edit X\_ARGS field in this file for customizing memory settings and garbage collector settings depends on the hardware configuration.

This has a default value X\_ARGS="-Xms200m"

X\_ARGS=" "\$X\_ARGS" \$DELIM -Xmx2048m"

**Note:** Modify X\_ARGS\_APP variable in the .profile file to customize Java Memory Settings for Model Upload based on the Data Model size.

For Run and Rule executions, the following value is recommended: X\_ARGS\_RNEXE="-Xms1g -Xmx1g XX:+UseAdaptiveSizePolicy -XX:MaxPermSize=512M -XX:+UseParallelOldGC -XX:+DisableExplicitGC"

X\_ARGS\_RLEXE="-Xms1g -Xmx1g -XX:+UseAdaptiveSizePolicy -XX:MaxPermSize=512M XX:+UseParallelOldGC -XX:+DisableExplicitGC"

#### Internet Explorer Settings

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

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

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

internet Options ? X	Website Data Settings
General Security Privacy Content Connections Programs Advanced Home page To create home page tabs, type each address on its own line. about:blank Use gurrent Use default Use new tab Stachin	Temporary Internet Files       History       Caches and databases         Internet Explorer stores copies of webpages, images, and media for faster viewing later.       Check for newer versions of stored pages:            © Every time I visit the webpage        Every time I visit the webpage             © Every time I start Internet Explorer        Automatically             © Never        Never
Start with tabs from the last session  Start with tabs from the last session  Start with home page Tabs Change how webpages are displayed in tabs.  Browsing history Delete temporary fles, history, cookies, saved passwords, and web	Disk space to use (8-1024MB) (Recommended: 50-250MB)     250 +       Current location:     C: Users \shwwail\AppData\Local\Microsoft\Windows\Temporary Internet Files\       Move folder     View objects     View files
form information.  Delete browsing history on exit  Delete  Qelete  Cglors Languages Fonts Accessibility	OK Cancel
OK Cancel Apply	

4. In the Internet Options window, select the **Security** tab and select the **Internet option** under **Select a zone to view or change the security** settings.

5. Click Default Level under Security level for this zone.



6. Click OK to save.

7. In the Internet Options window, select the Privacy tab and select the Turn on Pop-up Blocker option under Pop-up Blocker settings.



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

#### **Retrieving Patch Information**

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

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

# **OLAP Data Server Configuration**

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

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

Example:

**Process Memory Limit** 

Max Thread Stack Size

Max Number of Threads per Process

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

#### Changing IP/ Host name, Ports, Deployed Paths of the OFSAA Instance

For information on this section, see the OFS Analytical Applications Infrastructure Administration User Guide.

## **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 SFIC HOME.
- 2. Enter the command:

java -jar SetupInfo.jar

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

## **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
```

3. A confirmation message is displayed after execution.

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

#### Infrastructure LDAP Configuration

For more information on LDAP configuration, see the OFS Analytical Applications Infrastructure Administration User Guide.

#### **Configure OFSAAI Web Services**

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

#### Configure DynamicWSConfig.xml File

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

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

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

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

#### This template is given below:

PACKAGENAME="\$PACKAGENAME"> <INPUT ORDER="\$ORDER" PARAMNAME="\$PARAMNAME" ARGTYPE="\$ARGTYPE" CLASSNAME="\$CLASSNAME"/> <OUTPUT PARAMNAME="\$PARAMNAME" RETURNTYPE="\$RETURNTYPE" CLASSNAME="\$CLASSNAME"/> </OPERATION> </WEBSERVICE>

#### </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 web service 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 (web-services) to be accessed. The stub class specified must implement the "com.iflex.Oracle Reveleus.execution.webservice.EXEWebIF" interface.

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

#### Attributes for WEBSERVICE tag

## Attributes for OPERATION tag

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

Placeholder	Description
\$CODE	Should be unique within the Web service 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.

#### Attributes for INPUT tag

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

## Attributes for OUTPUT tag

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.

#### web.xml Entries

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

- 1. 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>
```

#### **Proxy Settings**

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

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

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

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

## **OFSAAI Home Entry**

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

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

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

#### DynamicWSConfig.xml

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

## **Deploy OFSAAI Web Services**

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

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

./ant.sh

- 3. This will trigger the EAR/WAR file creation, which is required for the deployment.
- 4. Deploy the generated EXEWebService.EAR/EXEWebService.WAR file into the Web Server.

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 Web Server profile.

## Configuration to Enable Parallel Execution of DML Statements

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

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

## Configure Message Details in Forms Designer

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

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

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

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

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

# **Clearing Application Cache**

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

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

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

# **Configuring Password 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
```

./stopofsaai.sh

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

./startofsaai.sh

At the prompt, enter System Password. Enter the "new Config schema" password. The service will start and initialize itself if it is able to successfully connect to the DB.

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

## **OFSAA Infrastructure Atomic Schema Password Modification**

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

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

- From the Database Master window, select the connection whose password you want to modify and click button from the tool bar.
- o Click button corresponding to the Alias Name. The Alias Details window is displayed.
- o Modify the password in the Auth String field.
- 4. If you are using Apache Tomcat as Web server, update the <Context> -> Resource tag details in Server.xml file from the \$CATALINA\_HOME/conf folder. (In case of Tomcat only Atomic <Resource> will exist).
- 5. If you are using WebSphere as Web server:
  - a. Login to the WebSphere Administration Console, from the left side menu.
  - **b.** Navigate to Resources >JDBC >Data Sources. A list of data sources will be populated on the right side.
  - **c.** Select the appropriate Data Source and edit the connection details. (In this case, both Config and Atomic data sources will need to be modified).
- 6. If you are using WebLogic as Web server:
  - a. Login to the WebLogic Administration Console, from the left side menu.
  - **b.** Under Domain Structure list box, expand the appropriate Domain and navigate to Services > JDBC >Data Sources. A list of data sources will be populated on the right side.
  - **c.** Select the appropriate Data Source and edit the connection details. (In this case, both Config and Atomic data sources need to be modified).
- 7. Restart the OFSAAI services.

## **Configuring Java Virtual Machine**

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

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

## Configure Internal Service (Document Upload/ Download)

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

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

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

- 1. Create the folders download, upload, TempDocument and Temp in the local path of Web application server and provide Read/Write permission.
  - To find the exact location, execute the following query in CONFIG schema: select localpath from web server info
  - To create folders with Read/Write permission, execute the command:

mkdir -m 777 download upload TempDocument Temp

2. Create DocStorage folder in the FTPSHARE location of APP tier and provide Read/Write permission.

o 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 775 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.

# **APPENDIX A - CLONING OF AN OFSAA INSTANCE**

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

# **APPENDIX A - POST DEPLOYMENT CONFIGURATION**

This chapter covers the following topics:

- Logging as System Administrator
- Creating Application Users
- Mapping Application User(s) to User Group
- Change ICC Batch Ownership
- Mapping ICC Batch Execution Rights to User
- Saving Post- Load Change Transformations
- Internet Explorer Settings

## Logging as System Administrator

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

#### System Administrator

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

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

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

#### Function Maintenance

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

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

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

#### Role Maintenance

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

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

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

#### Segment Maintenance

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

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

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

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

You can access Segment Maintenance by expanding System Administrator section within the tree structure of LHS menu. The Segment Maintenance window displays a list of available segments with details such Domain, Segment Code, Segment Name, Segment Description, Segment/Folder Type, Owner Code, and the number of Users Mapped to the segment. You can view, create, modify, and delete segments within the Segment Maintenance window.

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

#### Holiday Maintenance

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

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

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

#### **Restricted Passwords**

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

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

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

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

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

## **Creating Application Users**

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

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

For more information refer user creation section from the Oracle Financial Services Analytical Applications Infrastructure User Guide.

## Mapping Application User(s) to User Group

Starting the OFSAA 8.0 release, with installation of Customer 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.

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 on seeded User Groups, refer to User Group Mapping.

## Change ICC Batch Ownership

All the seeded Batches in Customer Analytics Applications Pack will be automatically assigned to SYSADMN user during Installation. If one user who wants to see the Batches in Batch Maintenance Menu, He needs to execute the following Queries in Config Schema of the Database.

Syntax:

```
begin
AAI_OBJECT_ADMIN.TRANSFER_BATCH_OWNERSHIP ('fromUser','toUser','infodom');
end;
OR
begin
AAI_OBJECT_ADMIN.TRANSFER_BATCH_OWNERSHIP ('fromuser','touser');
end;
```

Where from User indicates the user who currently owns the batch, to User indicated the user to which the ownership has to be transferred. Infodom is optional parameter, if specified the ownership of batches pertaining to that Infodom will be changed.
#### Example:

```
begin
AAI_OBJECT_ADMIN.TRANSFER_BATCH_OWNERSHIP ('SYSADMN','CIRCAOP','OFSCIRCAINFO');
end;
```

#### Mapping ICC Batch Execution Rights to User

Login as SYSADMN and navigate to **Identity Management > System Administrator > Function-Role Map**. Map the User-Batch Execution Mapping Screen function to RLCIRCAADMIN role.

Now any user who is mapped under CAAdmin User Group will have the access to the **Batch execution rights** Menu under **Operations** list.

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		OFSEFNDINFO_ALMBL_T2T	QUARANTEES	T2T For ALMBI Guarantees			2		
		OFSEFNDINFO ALMEL T21	INVESTMENTS	T2T For ALMBI Investments T2T For ALMBI Leasen Contracts			2		
		OPSEPNDINPO_ALMEL_T21	LEASES				7		
		OFSERNDINFO ALMER TH	LOAN COMMIT	T2T For ALMBI Loan Commitments			3		
		OFSEFNDINFO_ALMEL_T21	Loans	T2T for ALMBI Lo	un Contracta		V		
		OFSEFNDINFO_ALMEL_T2T	MM_CONTRACTS	T2T For ALMBLM	M Contracts		9		
		OFSEFNDINFO_ALMBI_T2T	OD ACCOUNTS	T2T Fer ALMBI O	O Accounts or Credit Lines		V.		
		OFSBENDINFO_ALMBI_T2T	OPTIONS	T2T For ALMBI O	pliens or Capitoons				

### Saving Post- Load Change Transformations

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

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

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

### Internet Explorer Settings

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

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

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

4. In the Internet Options window, select the **Security** tab and select the **Internet option** under **Select a zone** to view or change the security settings.

5. Click Default Level under Security level for this zone.



6. Click OK to save.

7. In the Internet Options window, select the Privacy tab and select the Turn on Pop-up Blocker option under Pop-up Blocker settings.

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

# APPENDIX A - 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.



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

The entries in the .profile file will have to be removed manually.

The files/ folders under the file system staging area (ftpshare) have to be deleted manually.

All the Database objects from Atomic Schemas have to be dropped manually.

### 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.

inter Ise ti Pre	prise Applications his page to manage installed applications. A single applicati eferences	ion can be deployed onto multiple servers.				
Star	rt Stop Install Uninstall Update Rollout Update	Remove File Export DDL Export File				
C	<b>• • •</b>					
Select	t Name 🔿	Application Status 👲				
You	can administer the following resources:					
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	ivtApp	+				
	suery	+				
	<u>upgs73</u>	*				

- 4. Select the check box adjacent to the application to be uninstalled and click Stop.
- 5. Click Uninstall to display the Uninstall Application window.

Click QK to remove the following appli to the previous page.	cation(s). If you do not want to remove the applications, click Cancel to retur
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- 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 to display the Summary of Deployments screen.

ontrol	Monitoring					
This pag (redeplo To insta Custon	pe displays a list of Java EE appl yeed), or deleted from the doma il a new application or module fo nize this table	cations and stand-alone application modules that have been in by first selecting the application name and using the cont r deployment to targets in this domain, click the Install butts	ninstalled to the rols on this pay	his domain. In ge.	stalled applications and module	is can be started, stopped, updat
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install	Mame A	Stop V When work completes Force Stop Now Stop, but continue servicing administration requests	State Active	Health V OK	S Type Enterprise Application	howing 1 to 1 of 1 Previous   N Deployment Order 100

- 4. Select the check box 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.

✓ Selec	ted Deployments have been requested to stop.				
Summary	of Deployments				
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install			_		owing 1 to 1 of 1 Previous   Next
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	Name 🔗	State Prepared	Health VOK	Type Enterprise Application	Deployment Order

- 6. Select the check box 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:

- a. Login to the "Unix server" through a terminal emulator.
- **b.** Navigate to *\$catalina\_home/bin* directory.
- c. Stop the tomcat services using the following command:

./shutdown.sh

d. Start the tomcat services using the following 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.

Soft	ware Found	che ation		X
		Tomca	t Web Appl	lication Manager
Manager				
List Applications		HTML Mana	ger Help	Manager Help Server Status
Applications				
Path	Display Name	Running	Sessions	Commands
£	Welcome to Tomcat	true	2	Start Stop Reises Understart Expire sessions with die a 30 minutes
doca	Temcat Documentation	true	٩	Start Stop Reinad Undeploy Expire sessions with idle a 30 minutes
(examples	Serviet and JSP Examples	true	٩	Start Stop Reload Underboy Expire sessions won die a 30 minutes
(host-manager	Terroat Manager Application	true	٩	Start <u>Stop</u> <u>Beload</u> <u>Undeploy</u> Expire sessions with site a 30 minutes
(manager	Temcat Manager Application	true	٩	Start Stop Reload Undeploy           Expire sessions         wen die 2 30         minutes
(ofseeid	Reveleus web Application	true	1	Start Stop Reload Undeploy

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

# APPENDIX A - UPGRADING AN EXISTING OFSAA 8.0.X JAVA 7 INSTANCE TO JAVA 8

This appendix explains the configurations required to upgrade an existing OFSAA 8.0.x Java 7 instance to Java 8. It consists of the following topics:

- Prerequisites
- Steps for upgrading OFSAA 8.0.x Java 7 instance to Java 8
- Web Application Server Configurations
- OFSAA Generic Configurations
- OFSAA Configurations for New Web Application Server Installation

#### Prerequisites

The following are the prerequisites for upgrading OFSAA 8.0.x Java 7 instance to Java 8:

- Java 8 should be installed on the OFSAA server and Web Application Server.
- Oracle WebLogic Server should be 12.1.3.0 or above. Download and install patch 18729264 from http:// support.oracle.com/.

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

#### Steps for upgrading OFSAA 8.0.x Java 7 instance to Java 8

To upgrade OFSAA 8.0.x Java 7 instance to Java 8, follow these steps:

- 1. Configure Web Application Server to Java 8. For more information, see Configuring Web Application Server.
- Configure the OFSAA instance to Java 8. For more information, see OFSAA Generic Configurations. For a newly installed Web Application Server, see OFSAA Configurations for New Web Application Server Installation.
- 3. Restart the OFSAA services. For more information, see Start/Stop OFSAA Infrastructure Services section.
- 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, see Creating EAR/WAR File and Deploying EAR/WAR File sections.

### Web Application Server Configurations

This section describes the changes to be made in the Web Application Server. Following are the two options to perform Web Application Server Configurations which are listed as follows:

- Upgrade the existing Web Application Server installation to Java 8
- Install a new instance of the Web Application Server with Java 8

This section consists of the following topics:

- Oracle WebLogic Server Updates
- Apache Tomcat Server Updates

#### Oracle WebLogic Server Updates

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

- 1. Navigate to <WLS\_HOME>/Middleware/Oracle\_Home/wlserver.
- 2. Edit the product.properties file. Set JAVA\_HOME, WLS\_JAVA\_HOME, JAVAHOME properties to the new Java path and java.vm.version to the new Java version. For example:

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

3. Navigate to <wls\_HOME>/Middleware/Oracle\_Home/user\_projects/domains/<domain>/bin. Update SUN\_JAVA\_HOME, DEFAULT\_JAVA\_HOME, JAVA\_HOME in the setDomainEnv.sh file to point to the new Java path. For example:

```
SUN_JAVA_HOME="/usr/java/jrel.8.0_45"
DEFAULT_SUN_JAVA_HOME="/usr/java/jrel.8.0_45"
JAVA HOME="/usr/java/jrel.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 want 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, see Configure Resource Reference in WebLogic Application Server.

**Note:** While creating WebLogic Domain, the Listen Port should be set same as that of the existing Domain. Note down the new Domain path to perform OFSAA Configurations.

#### Apache Tomcat Server Updates

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

- 1. Login to the Apache Tomcat Server as a non-root user.
- 2. Edit the user.profile. Update the value for JAVA\_HOME from JRE 1.7 to JRE 1.8. For Example: JAVA HOME=/usr/java/jre1.8.0 45
- 3. Clear the Application cache. Navigate to the following path and delete the files: <Tomcat installation folder>/work/Catalina/localhost/<Application name>/org/apache/jsp

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

- 1. Install Apache Tomcat Server 8 with Java 8.
- 2. Perform the configurations for the newly installed Tomcat server. For more information, see Configure Resource Reference in Tomcat Application Server.

**Note:** Update the Connector Port in /apache-tomcat-8.0.21/conf/server.xml file to that of the existing Tomcat instance. Note down the new deployment path to perform OFSAA Configurations.

#### **OFSAA Generic Configurations**

#### User .profile Settings

Perform the following configurations:

- 1. Login to the OFSAA Server as a non-root user.
- 2. Edit the user .profile. Update the value for PATH variable from JRE 1.7 to JRE 1.8. For Example,

PATH=/usr/java/jre1.8.0\_45/jre JAVA\_BIN=/usr/java/jre1.8.0\_45/jre/bin LD\_LIBRARY\_PATH=\$LD\_LIBRARY\_PATH:/usr/java/jre1.8.0\_45/jre/lib/amd64/server

### **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

# **APPENDIX A - JDBC JAR FILES**

The ojdbc<version>.jar file should be copied based on Database and Java version. Refer to the following table for details:

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

JDBC Jar Files

# APPENDIX A - CONFIGURING APPLICATION PACK XML FILES

This appendix explains configuration of the application pack specific xml files.

This section includes the following topics:

- Configuring OFS\_CA\_PACK.xml
- Configuring OFS\_CA\_SCHEMA\_IN.xml
- Configuring OFS\_CA\_SCHEMA\_BIGDATA\_IN.XML

# Configuring OFS\_CA\_PACK.xml

The OFS\_CA\_PACK.xml file holds details on the various products that are packaged together in OFS CA Application Pack.

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

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

```
<APP PACK CONFIG>
   <APP PACK ID>OFS CA PACK</APP PACK ID>
   <APP PACK NAME>Financial Services Customer Analytics Applications Pack</APP PACK NAME>
   <APP PACK DESCRIPTION>Applications for Customer Analytics for Retail Customers</APP PACK DESCRIPTION>
   <VERSION>8.0.6.0.0</VERSION>
   <APP>
       <APP ID PREREQ="" DEF SEL FLG="YES" ENABLE="YES">OFS AAI</APP ID>
       <APP NAME>Financial Services Analytical Applications Infrastructure</APP NAME>
       <APP DESCRIPTION>Base Infrastructure for Analytical Applications</APP DESCRIPTION>
       <VERSION>8.0.6.0.0</VERSION>
   </APP>
   <APP>
       <APP ID PREREQ="OFS AAI" ENABLE="YES">OFS AAAI</APP ID>
       <APP NAME>Financial Services Enterprise Modeling</APP NAME>
       <APP DESCRIPTION>Financial Services Enterprise Modeling</APP DESCRIPTION>
       <VERSION>8.0.6.0.0</VERSION>
   </APP>
   <APP>
       <APP ID PREREQ="OFS AAAI" ENABLE="YES">OFS RCA</APP ID>
       <APP NAME>Financial Services Retail Customer Analytics</APP NAME>
       <APP DESCRIPTION>Application for Retail Customer Analytics</APP DESCRIPTION>
       <VERSION>8.0.6.0.0</VERSION>
   </APP>
</APP PACK CONFIG>
```

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
APP_PACK_ID	Unique Application Pack Identifier	Y	Unique Seeded Value	Do not modify this value.
APP_PACK_NAME	Unique Application Pack Name	Y	Unique Seeded Value	Do not modify this value.
APP_PACK_DESCRI PTION	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.
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. <b>Note:</b> Application/ Product once enabled cannot be disabled. However, Application/ Product not enabled during installation can be enabled later through the Administration UI.
APP_NAME	Unique Application/ Product Name	Y	Unique Seeded Value	Do not modify this value.

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

# Configuring OFS\_CA\_SCHEMA\_IN.xml

Creating database schemas, objects within schemas and assigning appropriate grants are the primary steps in the installation process of OFSAAApplications. The OFS\_CA\_SCHEMA\_IN.xml file contains details on the various application schemas that should be created prior to the Application Pack installation.

Note: This file should be configured only if OFS CA Application Pack installation for RDBMS ONLY target.

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.

<ul> <li>Seeded unique ID pb</li> <li>Seever ID</li> <li>Seev</li></ul>	Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<pre><jdbc_url> Enter the JDBC URL, Note: You can enter RAC/NON-RAC enabled database connectivity URL.  Y Example: jdbc:oracle:thin:0/(HOS or jdbc:oracle:thin:0/(HOS T)[:PORT]/SERVICE or jdbc:oracle:thin:0/(HOS T)[:PORT]/SERVICE Or jdbc:oracle:thin:0/(DORESS_LIST=(ADRESS=(FROT OCCI=TCP)(HOST=(HOST))(ADD RESS=(PROTOCOL=TCP) (HOST=(HOST))(DORT=[ PORT])(LOAD BRLANCE=yes)(FALLOV ER=yes)(CONNECT_ DATA=(SERVICE]))) For example: jdbc:oracle:thin:0//dbhos t.server.com:1521/service 1 or jdbc:oracle:thin:0/DSCRI FTION=(ADDRESS_(IROT OCCI=TCP)(HOST=thin:0/DSCRI jdbc:oracle:thin:0/DSCRI is erver.com:1521/service 1 or jdbc:oracle:thin:0/DSCRI FTION=(ADDRESS_(IROT OCCI=TCP)(HOST=dbhos st.server.com)(port=1521) )(ADDRESS=(IROT OCCI=TCP)(HOST=dbhos st1.server.com)(PORT=1521))( LOAD_BALANCE=yes)(FALLOV ERVER.S)(FALLOV ERVER.S)(FALOV ERV</jdbc_url></pre>	<app_pack_i D&gt;</app_pack_i 	Seeded unique ID for the OFSSAA Application Pack	Y	Seeded	Do not modify this value.
DATA=(SERVICE_ NAME=service1)))	<jdbc_url></jdbc_url>	Enter the JDBC URL. Note: You can enter RAC/ NON-RAC enabled database connectivity URL.	Y	<pre>Example: jdbc:oracle:thin:@&lt; DBSERVER IP/HOST/ IP&gt;:<port>:<sid> or jdbc:oracle:thin:@//[HOS T][:PORT]/SERVICE or jdbc:oracle:thin:@(DESCRI PTION=(ADDRESS_ LIST=(ADDRESS=(PROT OCOL=TCP)(HOST=[HO ST])(port=[PORT]))(ADD RESS=(PROTOCOL=TCP) (HOST=[HOST])(PORT=[ PORT]))(LOAD_ BALANCE=yes)(FAILOV ER=yes))(CONNECT_ DATA=(SERVICE]))) For example: jdbc:oracle:thin:@//dbhos t.server.com:1521/service 1 or jdbc:oracle:thin:@(DESCRI PTION=(ADDRESS_ LIST=(ADDRESS=(PROT OCOL=TCP)(HOST=dbho st1.server.com)(port=1521)) )(ADDRESS=(PROTOCO L=TCP)(HOST=dbhost2.s erver.com)(PORT=1521))( LOAD_BALANCE=yes)(FAILOV ER=yes))(CONNECT_ DATA=(SERVICE_ NAME=service])))</sid></port></pre>	Ensure to add an entry (with SID/ SERVICE NAME) in the thsnames.ora file on the OFSAA server. The entry should match with the SID/ SERVICE NAME used in the JDBC URL.

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<jdbc_drive R&gt;</jdbc_drive 	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></host>	Enter the Host name/ IP Address of the system on which you are installing the OFSAA components.	Y	Host Name/ IP Address	
<setupinfo>/ PREFIX_SCHE MA_NAME</setupinfo>	Identifies if the value specified in <setupinfo>/ NAME attribute should be prefixed to the schema name.</setupinfo>	N	YES or NO	Default value is YES.
<setupinfo>/ NAME</setupinfo>	Enter the acronym for the type of implementation. This information will be displayed in the OFSAA Home Page. <b>Note:</b> On executing the schema creator utility, this value will be prefixed with each schema name. For example: dev_ofsaaconf, uat_ofsaatm.	Y	Accepts strings with a minimum length of two and maximum of four. Example: DEV, SIT, PROD	This name would appear in the OFSAA Landing Page as "Connected To: xxxx". The schemas being created would get this prefix. For example, dev_ofsaaconf, uat_ofsaaconf, etc.

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<password>/ DEFAULT*</password>	Enter the password if you want to set a default password for all schemas.	N	The maximum length allowed is 30 characters. Special characters are not allowed.	
	Note: You also need to set APPLYSAMEFOR ALL attribute as Y to apply the default password for all the schemas.			
<password>/ APPLYSAMEF ORALL</password>	Enter as Y if you want to apply the password specified in DEFAULT attribute for all the schemas. If you enter as N, you need to provide individual passwords for all schemas. <b>Note:</b> In case you have entered Y in APPLYSAMEFOR	Y	Default - N Permissible - Y	<b>Note:</b> Setting this attribute value is mandatory, if DEFAULT attribute is set.
	ALL attribute and also have specified individual passwords for all the schemas, then the specified individual passwords will take precedence.			

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

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<schema>/ PASSWORD</schema>	Enter the password of the schema to be created. <b>Note:</b> If this attribute is left blank, then the password specified in the <password>/ DEFAULT attribute</password>	N	The maximum length allowed is 30 characters. Special characters are not allowed.	Note: You need to mandatorily enter the password if you have set the <password>/ APPLYSAMEFORALL attribute as N.</password>
	is applied as the Schema Password.			
<schema>/ APP_ID</schema>	By default, the Application ID is seeded based on the Application Pack. <b>Note:</b> Do not edit this attribute value.	Y	Unique Seeded Value	Identifies the Application/ Product for which the schema is being created. Do not modify this value.
<schema>/ DEFAULTTABL ESPACE</schema>	Enter the available default tablespace for DB User. <b>Note:</b> If this attribute is left blank, then USERS is set as the default tablespace.	N	Default - USERS Permissible - Any existing valid tablespace name.	Modify this value to associate any valid tablespace with the schema.
<schema>/ TEMPTABLESP ACE</schema>	Enter the available temporary tablespace for DB User. Note: If this attribute is left bank, TEMP is set as the default tablespace.	Ν	Default - TEMP Permissible - Any existing valid temporary tablespace name.	Modify this value to associate any valid tablespace with the schema.

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<schema>/ QUOTA</schema>	Enter the quota to be set on DEFAULTTABLES PACE attribute for the schema/ user. By default, the quota size is set to 500M. Minimum: 500M or Unlimited on default Tablespace.	Ν	Example: 600M/ m 20G/ g UNLIMITED/ unlimited	Modify this value to grant the specified quota on the mentioned tablespace to the user.
<schema>/ INFODOM</schema>	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.	Ν	Permissible length is 16 characters and only alphanumeric characters are allowed. No special characters are allowed.	
<adv_sec_o PTIONS&gt;/</adv_sec_o 	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_o PTIONS&gt;/TDE</adv_sec_o 	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>
<adv_sec_o PTIONS&gt;/ DATA_REDACT</adv_sec_o 	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></adv_sec_options>

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<tablespace S&gt;</tablespace 	Parent tag to hold <tablespace> elements</tablespace>	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.</tablespaces>
<tablespace &gt;/ NAME</tablespace 	Logical Name of tablespace to be created.	Y		Name if specified should be referred in the <schema DEFAULTTABLESPACE= "##NAME##"&gt; attribute. Note the ## syntax.</schema 
<tablespace &gt;/ Value</tablespace 	Physical Name of the tablespace to be created.	Y	NA	Value if specified will be the actual name of the TABLESPACE.
<tablespace &gt;/ DATAFILE</tablespace 	Specifies the location of the data file on the server	Y	NA	Enter the absolute path of the file to be created.
<tablespace &gt;/ AUTOEXTEND</tablespace 	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 &gt;/ ENCRYPT</tablespace 	Specifies if the tablespace(s) should be encrypted using TDE.	Y	ON or OFF	Set to ON to ensure that the tablespaces when created are encrypted using TDE.

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

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

```
<ADV SEC OPTIONS>
   <OPTION NAME="TDE" VALUE="FALSE"/>
   <OPTION NAME="DATA REDACT" VALUE="FALSE" />
</ADV SEC OPTIONS>
<TABLESPACES>
   <TABLESPACE NAME="OFS AAI TBSP 1" VALUE="TS USERS1" DATAFILE="/scratch/ora12c/app/
   oracle/oradata/OFSPQA12CDB/ts users1.dbf" SIZE="500M" AUTOEXTEND="ON" ENCRYPT="ON" /
   >
   <TABLESPACE NAME="OFS AAI TBSP 2" VALUE="TS USERS2" DATAFILE="/scratch/ora12c/app/
   oracle/oradata/OFSPQA12CDB/ts_users2.dbf" SIZE="500M" AUTOEXTEND="ON" ENCRYPT="ON" /
</TABLESPACES>
<SCHEMAS>
   <SCHEMA TYPE="CONFIG" NAME="ofsaaconf" PASSWORD="" APP ID="OFS AAI"</pre>
   DEFAULTTABLESPACE="##OFS AAI TBSP 1##" TEMPTABLESPACE="TEMP" QUOTA="unlimited"/>
   <SCHEMA TYPE="ATOMIC" NAME="ofsaaatm" PASSWORD="" APP_ID="OFS_AAAI"
   DEFAULTTABLESPACE="##OFS AAI TBSP 2##" TEMPTABLESPACE="TEMP" QUOTA="unlimited"
   INFODOM="OFSAAAIINFO"/>
```

</SCHEMAS>

#### Configuring OFS\_CA\_SCHEMA\_BIGDATA\_IN.XML

Creating HIVE schemas, objects within the schemas are the primary steps in the installation process of OFSAA Applications. The OFS\_CA\_SCHEMA\_BIGDATA\_IN.xml file contains details on the various application schemas that should be created/ referred prior to the Application Pack installation.

**Note:** This file should be configured only in case of OFS AAAI Application Pack installation for HDFS ONLY target. This file is not required to be configured for an RDBMS ONLY target installation.

The following table provides details about the various tags/ parameters available in the file and the values that have to be updated.

Prior to executing the schema creator utility, it is mandatory to update this file.

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<app_pack_ ID&gt;</app_pack_ 	Seeded unique ID for the OFSAA Application Pack	Y	Seeded	DO NOT modify this value.
<jdbc_url></jdbc_url>	Enter the JDBC URL Note: You can enter RAC/ NON- RAC enabled database connectivity URL.	Y	<pre>Example, jdbc:oracle:thin:@<host <br="">IP&gt;:<port>:<sid> or jdbc:oracle:thin:@//[HOS T][:PORT]/SERVICE or jdbc:oracle:thin:@(DESCRI PTION=(ADDRESS_ LIST=(ADDRESS=(PROT OCOL=TCP)(HOST=[HO ST])(port=[PORT]))(ADD RESS=(PROTOCOL=TCP) (HOST=[HOST])(PORT=[ PORT]))(LOAD_ BALANCE=yes)(FAILOV ER=yes))(CONNECT_ DATA=(SERVICE]))) For example, jdbc:oracle:thin:@//dbhos t.server.com:1521/service 1 or jdbc:oracle:thin:@(DESCRI PTION=(ADDRESS_ LIST=(ADDRESS=(PROT OCOL=TCP)(HOST=dbho st1.server.com)(port=1521)) )(ADDRESS=(PROTOCO L=TCP)(HOST=dbhost2.s erver.com)(PORT=1521))( LOAD_ BALANCE=yes)(FAILOV ER=yes))(CONNECT_ DATA=(SERVICE_ NAME=service1)))</sid></port></host></pre>	In case of an HDFS ONLY target installation, this URL should be of the RDBMS instance that hosts the Application's METADOM.

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<jdbc_ DRIVER&gt;</jdbc_ 	By default this driver name is seeded. <b>Note:</b> Do not edit this attribute value.	Y	Example, oracle.jdbc.driver.OracleD river	Only JDBC Thin Driver is supported. DO NOT modify this value.
<host></host>	Enter the Hostname/ IP Address of the system on which you are installing the OFSAA components.	Y	Host Name/ IP Address	
<setupinfo>/ PREFIX_ SCHEMA_ NAME</setupinfo>	Identifies if the value specified in <setupinfo>/ NAME attribute should be prefixed to the schema name.</setupinfo>	Ν	YES or NO	Default value is YES.
<setupinfo>/ NAME</setupinfo>	Enter the acronym for the type of implementation. This information will be displayed in the OFSAA Home Page. <b>Note:</b> On executing the schema creator utility, this value will be prefixed with each schema name. For example: dev_ ofsaaconf, uat_ofsaaatm.	Y	Accepts strings with a minimum length of two and maximum of four. Example, DEV, SIT, PROD	This name would appear in the OFSAA Landing Page as "Connected To: xxxx" The schemas being created would get this prefix. For example, dev_ofsaaconf, uat_ofsaaconf etc.

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<password>/ DEFAULT*</password>	Enter the password if you want to set a default password for all schemas. <b>Note:</b> You also need to set APPLYSAMEFOR ALL attribute as Y to apply the default password for all the schemas.	Ν	The maximum length allowed is 30 characters. Special characters are not allowed.	Applies only to the RDBMS type METADOM schema(s).
<password>/ APPLYSAMEF O RALL</password>	Enter as Y if you want to apply the password specified in DEFAULT attribute for all the schemas. If you enter as N, you need to provide individual passwords for all schemas.	Y	Default - N Permissible - Y or N	<b>Note:</b> Setting this attribute value is mandatory, If DEFAULT attribute is set. Applies only to the RDBMS type METADOM schema(s).
	Note: In case you have entered Y in APPLYSAMEFOR ALL attribute and also have specified individual passwords for all the schemas, then the specified individual passwords will take precedence.			

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<schemas>/ TYPE=RDBMS</schemas>	Identifies the RDBMS schema details.	Y	Default names for schemas within the pack would be derived in absence of any value specified.	In an HDFS ONLY target installation, the Application's METADOM (that hosts the metadata) for an application is stored in RDBMS schema and the data model entities of the application are stored in the DATADOM (which would be on Hive).
<schema>/ TYPE</schema>	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. <b>Note:</b> Do not edit this attribute value.	Y	ATOMIC/CONFIG/SAN DBOX/ ADDON Note: SANDBOX AND ADDON schemas are not applicable for OFS AAAI Application Pack.	Only One CONFIG schema can exist in the file. This schema identifies as the CONFIGURATION schema that holds the OFSAA setup details and other metadata information. Multiple ATOMIC/ SANDBOX/ ADDON schemas can exist in the file. ATOMIC schema refers to the METADOM within the Information Domain schema. SANDBOX schema refers to the SANDBOX schema. ADDON schema refers to other miscellaneous schema (not applicable for this Application Pack).

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<schema>/ NAME</schema>	By default, the schemas names are seeded based on the Application Pack. You can edit the schema names if required. <b>Note:</b> The Schema Name will have a prefix of the SETUPINFO/ NAME attribute.	Y	The permissible length is 15 characters and only alphanumeric characters allowed. No special characters allowed except underscore '_'.	SETUPINFO/ NAME attribute value would be prefixed to the schema name being created. For example, if name is set as 'ofsaaatm' and setupinfo as 'uat' then schema being created would be 'uat_ofsaaatm'. NAME should be same where APP_GRP=1 for all SCHEMA tags (Not applicable for this Application Pack).
	SCHEMA NAME must be same for all the ATOMIC Schemas of applications within an Application Pack.			
<schema>/ PASSWORD</schema>	Enter the password of the schema to be created. <b>Note:</b> If this attribute is left blank, then the password specified in the <password>/ DEFAULT attribute is applied as the Schema Password.</password>	Ν	The maximum length allowed is 30 characters. Special characters are not allowed.	<b>Note:</b> You need to mandatorily enter the password if you have set the <password>/ APPLYSAMEFORALL attribute as N.</password>
<schema>/ APP_ID</schema>	By default, the Application ID is seeded based on the Application Pack. <b>Note:</b> Do not edit this attribute value.	Y	Unique Seeded Value	Identifies the Application/ Product for which the schema is being created. DO NOT modify this value.

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<schema>/ DEFAULTTABL ESPACE</schema>	Enter the available default tablespace for DB User. Note: If this attribute is left blank, then USERS is set as the default tablespace.	Ν	Default - USERS Permissible - Any existing valid tablespace name.	Modify this value to associate any valid tablespace with the schema.
<schema>/ TEMPTABLESP ACE</schema>	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</schema>	Enter the quota to be set on DEFAULTTABLES PACE attribute for the schema/ user. By default, the quota size is set to 500M. Minimum: 500M or Unlimited on default Tablespace.	N	Example, 600M/m 20G/g UNLIMITED/unlimited	Modify this value to grant the specified quota on the mentioned tablespace to the user.
<schema>/ INFODOM</schema>	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.	Ν	Permissible length is 16 characters and only alphanumeric characters allowed. No special characters allowed.	
<schemas>/ TYPE=HDFS</schemas>	Type of schemas being created.	Y		Refers to the DATADOM of the Application Pack being installed.

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<hive_ SERVER_ HOST&gt;</hive_ 	IP/HostName of the server where HIVE is installed	Y		
<hive_lib_ PATH&gt;</hive_lib_ 	Folder path where HIVE related drivers/jar files are copied	Y		Should contain the list of jars mentioned in the section Copying Jars to OFSAA Installation Folder and krb5.conf, keytab files. Manually copy the preceding listed files from CDH distribution to this identified folder.
<schema>/ NAME</schema>	By default, the schemas names are seeded based on the Application Pack.	Y	The permissible length is 20 characters and only alphanumeric characters allowed.	Schema Name should not be the same as Schema Name specified for Schema Type ATOMIC.
	You can edit the schema names if required.			
	Note: The Schema Name will have a prefix of the SETUPINFO/ NAME attribute.			
<schema>/ TYPE</schema>	Identifies the type of schema where the data model entities would reside.	Y	By default, the TYPE attribute in this tag is set to DATADOM.	DO NOT modify this value.
<schema>/ DB TYPE</schema>	Identifies the type of driver to be used for connection.	Y	By default, the only supported type is HIVE in this release.	In the upcoming releases, the type value can be HIVE/ IMPALA etc.
<schema>/<p ROPERTY&gt;/CO MMENT</p </schema>	COMMENTS for HIVE schema	N		
<schema>/<p ROPERTY&gt;/LO CATION</p </schema>	You can optionally specify a location for the table data	N		
<connectio N_ PROPERTIES&gt; /<property>/ J DBC_DRIVER</property></connectio 	HIVE JDBC driver details	Y	com.cloudera.hive.j dbc4.HS2Driver	The default cloudera HiveServer 2 driver name.

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<connectio N_ PROPERTIES&gt; /<property>/ J DBC_URL</property></connectio 	Enter HIVE JDBC URL	Y	Valid Hive JDBC URL to be specified.	Specify the Hive JDBC URL to connect to the Hive Server.
<connectio N_ PROPERTIES&gt; /<property>/ AUTH_TYPE</property></connectio 	Authentication Type	Y	Permissible values: KERBEROS_WITH_ KEYTAB	Only "Kerberos with keytab" based authentication supported in this release.
<connectio N_ PROPERTIES&gt; /<property>/ AUTH_ALIAS</property></connectio 	Alias name for authentication credentials	Y		An Alias name mapping to a principal and password combination specified in the following tags.
<connectio N_ PROPERTIES&gt; /<property>/ PRINCIPAL</property></connectio 	Authentication principal name	Y		Principal name used in authentication to connect to the Hive Server.
<connectio N_ PROPERTIES&gt; /<property>/ PASSWORD</property></connectio 	Authentication password	Y		Password used in authentication to connect to the Hive Server.
<connectio N_ PROPERTIES&gt; /<property>/ KRB_GSSJAAS _ FILE_NAME</property></connectio 	A keytab file containing pairs of Kerberos principals and an encrypted copy of that principal's key.	Y		This file should be copied to the location specified in <hive_lib_path></hive_lib_path>
<connectio N_ PROPERTIES&gt; /<property>/ KRB_REALM_ FILE_NAME</property></connectio 	REALM configuration file	Y		This file should be copied to the location specified in <hive_lib_path></hive_lib_path>
# APPENDIX A - CONFIGURING OFSAAI\_INSTALLCONFIG.XML FILE

To configure the OFS\_InstallConfig.xml file:

- 1. Navigate to OFS CA PACK/OFS AAI/conf/ folder.
- 2. Open the file OFSAAI\_InstallConfig.xml in text editor.

The following screen shot gives a snapshot of Standard Installation.

```
product version="1.0" encoding="UTE-8"?>
vuserInteractions>
vlserInteractions>
vlserInteractions/
vlser
```

#### The following screen shots give the snapshot of Hybrid Installation.

xml version="1.0" encoding="UTF-8"?	
cliserInteractionss	
<laver name="GENERAL"></laver>	
<interactiongroup name="WebServerType"></interactiongroup>	
<pre><interactionvariable name="WEBAPPSERVERTYPE">1</interactionvariable></pre>	
<pre><interactiongroup name="OFSAA Infrastructure Server Details"></interactiongroup></pre>	
<pre><interactionvariable name="DBSERVER IP">whf00azi</interactionvariable></pre>	
<interactiongroup name="Database Details"></interactiongroup>	
<interactionvariable name="ORACLE SID/SERVICE NAME">CIPMDB</interactionvariable>	
<interactionvariable name="ABS DRIVER PATH">/scratch/oracle/app/product/12.1.0/client 1/jdbc/lib</interactionvariable>	ceractionVariable>
<interactiongroup name="OLAP Detail"></interactiongroup>	
<interactionvariable name="OLAP_SERVER_IMPLEMENTATION">0</interactionvariable>	
<interactiongroup name="SFTP Details"></interactiongroup>	
<interactionvariable name="SFTP_ENABLE">1</interactionvariable>	
<pre><interactionvariable name="FILE_TRANSFER_PORT">22</interactionvariable></pre>	
<interactiongroup name="Locale Detail"></interactiongroup>	
<interactionvariable name="LOCALE">en_US</interactionvariable>	
<interactiongroup name="OFSAA Infrastructure Communicating ports"></interactiongroup>	
<pre><interactionvariable name="JAVAPORT">2830</interactionvariable></pre>	
<interactionvariable name="NATIVEPORT">3304</interactionvariable>	
<interactionvariable name="AGENTPORT">4013</interactionvariable>	
<interactionvariable name="ICCPORT">5593</interactionvariable>	
<interactionvariable name="ICCNATIVEPORT">6302</interactionvariable>	
<interactionvariable name="OLAPPORT">13102</interactionvariable>	
<interactionvariable name="MSGPORT">6812</interactionvariable>	
<interactionvariable name="ROUTERPORT">6909</interactionvariable>	
<pre><interactionvariable name="AMPORL">6310</interactionvariable></pre>	
<pre><interactiongroup name="WEB_DETAILS"></interactiongroup></pre>	



3. Configure the OFSAAI\_InstallConfig.xml as mentioned in the below table:

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

InteractionVariable Name	Significance and Expected Value	Mandatory
<layer name="GENERA&lt;/th&gt;&lt;th&gt;L"></layer>	I	
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components would be deployed.	Yes
	The below numeric value should be set depending on the type:	
	Apache Tomcat = 1	
	IBM WebSphere Application Server = 2	
	Oracle WebLogic Server = 3	
	For example, <interactionvariable name="WEBAPPSERVERTYPE"&gt;3</interactionvariable 	
DBSERVER_IP	Identifies the host name or IP address of the system on which the Database Engine is hosted.	Yes
	Note: For RAC Database, the value should be NA.	
	For example, <interactionvariable name="DBSERVER_&lt;br&gt;IP">14.15.16.17</interactionvariable> or	
	<pre><interactionvariable name="DBSERVER_ IP">dbhost.server.com</interactionvariable></pre>	
ORACLE_SID/	Identifies the Oracle DB Instance SID or SERVICE_NAME	Yes
SERVICE_NAME	Note: The Oracle_SID value should be exactly the same as it is mentioned in JDBC_URL.	
	For example, <interactionvariable name="ORACLE_SID/&lt;br&gt;SERVICE_&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;NAME">ofsaser</interactionvariable>	
ABS_DRIVER_PATH	Identifies the directory where the JDBC driver (ojdbc <version>.jar) exists. This would typically be the \$ORACLE_HOME/jdbc/lib</version>	Yes
	For example, <interactionvariable name="ABS_DRIVER_&lt;br&gt;PATH">"&gt;/oradata6/revwb7/oracle </interactionvariable>	
	Note: See JDBC Jar Files for identifying the correct "ojdbc <version>.jar" version to be copied.</version>	
OLAP_SERVER_ IMPLEMENTATION	Identifies if the OFSAA Infrastructure OLAP component needs to be configured depending on whether you intend to use the OLAP feature. The below numeric value should be set depending on the choice:	No
	YES - 1	
	NO - 0	
<b>Note</b> : If value for OLAP_S .profile: ARBORPATH, HY	ERVER_IMPLEMENTATION is set to 1, it checks for following enviro PERION_HOME and ESSBASEPATH.	nment variables are set in

InteractionVariable Name	Significance and Expected Value	Mandatory
SFTP_ENABLE	Identifies if the SFTP (Secure File Transfer Protocol) feature is to be enabled. The below numeric value should be set depending on the choice:	Yes
	SFTP - 1	
	FTP - 0	

**Note**: The default value for SFTP\_ENABLE is 1, which signifies that SFTP will be used. Oracle recommends using SFTP instead of FTP because SFTP is considered more secure. However, a client may choose to ignore this recommendation and to use FTP by setting SFTP\_ENABLE to 0. This selection may be changed later by using the OFSAAI administration interface.

FILE_TRANSFER_POR T	Identifies the port used for the file transfer service. The default value specified is 22 (SFTP). Specify value as 21 or any other PORT value if value for SFTP_ENABLE is 0.	Yes
	For example, <interactionvariable name="FILE_TRANSFER_&lt;br&gt;PORT">21</interactionvariable> .	
LOCALE	Identifies the locale information to be used during the installation. This release of the OFSAA Infrastructure supports only US English.	Yes
	For example, <interactionvariable name="LOCALE">en_US<!--<br-->InteractionVariable&gt;</interactionvariable>	

**Note**: The below ports are used internally by the various OFSAA Infrastructure services. The default values mentioned below are set in the installation. If you intend to specify a different value, update the parameter value accordingly and ensure this port value is in the range of 1025 to 65535 and the respective port is enabled.

JAVAPORT	9999	Yes
NATIVEPORT	6666	Yes
AGENTPORT	6510	Yes
ICCPORT	6507	Yes
ICCNATIVEPORT	6509	Yes
OLAPPORT	10101	Yes
MSGPORT	6501	Yes
ROUTERPORT	6500	Yes
AMPORT	6505	Yes

**Note**: If value for HTTPS\_ENABLE is set to 1, ensure you have a valid certificate available from a trusted CA and the same is configured on your web application server. For more details on configuring your setup for HTTPS.

InteractionVariable Name	Significance and Expected Value	Mandatory
HTTPS_ENABLE	Identifies if the UI should be accessed using HTTP or HTTPS scheme. The default value set is 0. The below numeric value should be set depending on the choice: YES - 1 NO - 0 For example, <interactionvariable name="HTTPS_ENABLE">0<!--<br-->InteractionVariable&gt;</interactionvariable>	Yes
WEB_SERVER_IP	Identifies the HTTP Server IP/ Host name or Web Application Server IP/ Host name, to be used for accessing the UI. This IP would typically be the HTTP Server IP.	No
	If no separate HTTP Server is available, the value should be Web Application Server IP/Host name.	
	For example, <interactionvariable name="WEB_SERVER_&lt;br&gt;IP">10.11.12.13</interactionvariable>	
	or	
	<pre><interactionvariable name="WEB_SERVER_ IP">myweb.server.com</interactionvariable></pre>	
WEB_SERVER_PORT	Identifies the Web Server Port. This would typically be 80 for non SSL and 443 for SSL. If no separate HTTP Server exists, the value should be the port configured for Web Server.	No
	Note: The port value will not be accepted as 80 if HTTPS_ENABLE is 1 and as 443, if HTTPS_ENABLE is 0.	
	For example, <interactionvariable name="WEB_&lt;br&gt;SERVER_PORT">80</interactionvariable>	
CONTEXT_NAME	Identifies the web application context name which will be used to build the URL to access the OFSAA applications. The context name can be identified from a URL as below:	Yes
	<scheme>://<host>:<port>/<context-name>/lo gin.jsp</context-name></port></host></scheme>	
	Sample URL:	
	https://myweb:443/ofsaadev/login.jsp	
	For example, <interactionvariable name="CONTEXT_&lt;br&gt;NAME">ofsaadev</interactionvariable>	

InteractionVariable Name	Significance and Expected Value	Mandatory
WEBAPP_CONTEXT_P ATH	Identifies the absolute path of the exploded .ear file on the web application server. For Tomcat, specify the Tomcat directory path till /webapps, such as /oradata6/revwb7/tomcat/webapps/. For WebSphere, enter the WebSphere path as <websphere directory="" profile="">/installedApps/ <nodecellname>. For example, /data2/test//WebSphere/AppServer/profiles/ <profile_ Name&gt;/installedApps/aix-imfNode01Cell. Where aix-imf is Host name. For WebLogic, provide the WebLogic home directory path as / <weblogic directory="" home="" path="">/bea/wlserver_10.3 Note: For WebLogic, value specified for this attribute is ignored and value provided against attribute WEBLOGIC_DOMAIN_HOME is</weblogic></profile_ </nodecellname></websphere>	Yes
WEB_LOCAL_PATH	considered. 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. User can set this in FTPSHARE location to avoid the confusion. Note: In case of a clustered deployment, ensure this path and directory is same on all the nodes.	Yes
WEBLOGIC_DOMAIN_H OME	Identifies the WebLogic Domain Home. Specify the value only if WEBSERVERTYPE is set as 3 (WebLogic). For example, <interactionvariable name="WEBLOGIC_DOMAIN_&lt;br&gt;HOME">/home/weblogic/bea/user_ projects/domains/mydomain </interactionvariable>	Yes. Specify the value only if WEBSERVERTYPE is set as 3 (WebLogic)
OFSAAI_FTPSHARE_P ATH	Identifies the absolute path to the directory identified as file system stage area. Note: The directory should exist on the same system on which the OFSAA Infrastructure is being installed (can be on a separate mount). The user mentioned in APP_SFTP_USER_ID parameter below should have RWX permission on the directory. For example, <interactionvariable name="APP_FTPSHARE_PATH"&gt;"&gt;/oradata6/revwb7/ftpshare<!--<br-->InteractionVariable&gt;</interactionvariable 	Yes
OFSAAI_SFTP_USER_I D	Identifies the user who has RWX permissions on the directory identified under parameter APP_FTPSHARE_PATH above.	Yes
HIVE_SERVER_PORT	HIVE SFTP Port. Typically, 22	Yes

InteractionVariable Name	Significance and Expected Value	Mandatory
HIVE_SERVER_FTPDRI VE	HIVE SFTP Folder Structure	Yes
HIVE_SERVER_FTP_U SERID	HIVE SFTP User ID	Yes
HIVE_SERVER_FTP_P ROTOCOL	HIVE Server File Transfer Protocol. For example. SFTP	Yes

# APPENDIX A - CONFIGURING RESOURCE REFERENCE IN WEB APPLICATION SERVERS

This appendix includes the following topics:

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

## Configure Resource Reference in WebSphere Application Server

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

This section includes the following topics:

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

## Create JDBC Provider

1. Open the WebSphere admin console in the browser window:

http://<ipaddress>:<administrative console port>/ibm/console. (https if SSL is enabled). The
Login window is displayed.

2. Login with the user ID that has admin rights.

**3.** Expand the Resources option in the LHS menu and click JDBC > JDBC Providers to display the JDBC Providers window.

DBC	providers		
se th nplen uider	is page to edit properties of a mentation class for access to th <u>activity</u> . A guided activity prov	JDBC provider. The JDBC provider object er e specific vendor database of your environ ides a list of task steps and more general	capsulates the specific JDBC driver ment. Learn more about this task in a information about the topic.
\$00	pe: Cell=GX5150REV-Zone2No Scope specifies the level at	vde05Cell. Node=GX5150REV-Zone2Node0	5. Server=server1 r detailed
	Node=GX\$150REV-Zone	is and how it works, <u>see the scope setungs</u> 2Node05. Server=server1 ¥	help.
Pre	ferences		
New	Delete		
B	0 = *		
elect	Name 🗘	Scope 🗘	Description ()
rou c	an administer the following res	ourcesi	
	Derby JDBC Provider	Node=GX\$150REV- Zone2Node05.Server=server1	Derby embedded non-XA JDBC Provider
	FICMASTER	Node=GXS150REV- Zone2Node05.Server=server1	Oracle JDBC Driver
	Oracle 3DBC Driver	Node=GXS150REV- Zone2Node05.Server=server1	Oracle JDBC Driver
	RORFFW	Node=GXS150REV- Zone2Node05,Server=server1	RORFFW
	BOBENC	Node=GX\$150REV- Zone2Node05,Server=server1	RORPNC
	UPGSPFT	Node=GXS150REV- Zone2Node05,Server=server1	UPGSPFT
	UPGSROR	Node=GX\$150REV- Zone2Node05,Server=server1	UPGSROR

- **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.

Step 1: Create JDBC provider	Create new JDBC provider
Step 2: Enter database class information	Set the basic configuration values of a JDBC provider, which encapsulates the specific vendor JDBC driver implementation classes that are required to access the database. The wizard fills in the name and the description fields, but you can type different values.
Step 3: Summa	ry Scope cells:GXS150REV- Zone2Node05Cell:nodes:GXS150REV- Zone2Node05:servers:server1
	Database type     Oracle
	Provider type     Oracle JOBC Driver
	Implementation type     Connection pool date source ♥
	* Name
	Oracle JDBC Driver
	Description
	Oracle JDBC Driver

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

	Step 1: Create new JDBC provider	Enter database class path information
<b>→</b>	Step 2: Enter database class path information Step 3: Summary	Set the environment variables that represent the JDBC driver class files, which WebSphere(R) Application Server uses to define your JDBC provider. This witzard page displays the file names; you supply only the directory locations of the files. Use complete directory paths when you type the JDBC driver file locations. For example: CriSQLLEByava on Windows(R) or / home/doBinstriJcglilb/java on Unux(TM). If a value is specified for you, you may click text to accept the value.
		Class path:
		S(ORACLE_JOBC_DRIVER_PATH)/ojdbc6.jar
		Directory location for "ojdbc6.jar" which is saved as WebSphere variable s(ORACLE_JDBC_ORIVER_PATH)
		/oracle/orajdbc/app/orajdbc/product/11.2.0/client_1/jdbc/lib

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:

- o Oracle Database 11g Release 2 (11.2.0.4) JDBC Drivers
- o 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:** See JDBC Jar Files for identifying the correct ojdbc<version>.jar version to be copied.

After dowloading, you need to place the file in the required folder in your system. While creating the JDBC Provider, ensure that the path to the jar file in the folder is specified in the **Classpath** field in the previous window.

9. Click Next to display the Summary window.

Create a new JDBC Provider		
Step 1: Create new 3DBC provider	Summary	
Step 2: Enter	Summary of actions:	
database class path	Options	Values
-> Step 3: Summary	Scope	cells:GXS150REV-Zone2liode05Cell:nodes:GXS150REV- Zone2liode05:servers:server1
	JDBC provider name	Oracle JDBC Driver
	Description	Oracle JDBC Driver
	Class path	\${ORACLE_JDBC_DRIVER_PATH}/ejdbc6.jar
	s(ORACLE_JDBC_DRIVER_PATH)	/oracle/orajdbc/app/orajdbc/product/11.2.0/client_1/jdbc/lib
	Implementation class name	oracle.jdbc.pool.OracleConnectionPoolDataSource

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

## Create Data Source

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

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.
- Expand the Resources option in the LHS menu and click JDBC > Data sources option to display the Data sources page.

	rces					
Data s	sources					
Jse th object	is page to edit to supplies your ap g. A guided activi	he settings of a datase plication with connecti- ty provides a list of tar	ource that is associated with you ons for accessing the database. sk steps and more general info	Learn more a rmation about	C provider. The o bout this task in the topic.	latasource a <u>guided</u>
3 Sco	pe: Cell=GXS15	0REV-Zone2Node05Ce	II. Node=GX5150REV-Zone2No	de05, Server=s	ierver1	
	Scope specif	ies the level at which t	he resource definition is visible.	For detailed		
	information	on what scope is and h	ow it works, see the scope sett	ings help.		
	Node=GX	S150REV-Zone2Node0	5, Server=server1 💌			
P Pre	ferences					
	l autor ll are	1				
New	Delete Tes	it connection Man	age state			
	D # 9					
Select	Name O	JNDI name ()	Scope ()	Provider O	Description ()	Category (
You	can administer th	e following resources:				
	Default Datasource	DefaultDatasource	Node=GXS150REV- Zone2Node05,Server=server1	Derby JDBC Provider	Datasource for the WebSphere Default Application	
	FICMASTER	Jdbc/FICMASTER	Node=GXS150REV- Zone2Node05.Server=server1	FICMASTER	New JDBC Datasource	
	BOB#FW	jdbc/RORFFW	Node=0X\$150REV- Zone2Node05.Server=server1	RORFFW	New JDBC Datasource	
	ROBPIC	Jdbc/RORPNC	Node=GXS150REV- Zone2Node05.Server=server1	RORPNC	New JDBC Datasource	
	UPGSPET	jdbc/UPGSPFT	Node=GXS150REV- Zone2Node05.Server=server1	UPGSPFT	New JDBC Datasource	

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

5. Click New to display the Create a Data Source window.

Step 1: Enter basic	Enter basic data source information
data source information Step 2: Select JDBC provider Step 3: Enter database specific properties for the data source Step 4: Setup security aliases	Set the basic configuration values of a datasource for association with your JDBC provider. A datasource supplies the physical connections between the application server and the database. Requirement: Use the Datasources (WebSphere(R) Application Server V4) console pages if your applications are based on the Enterprise JavaBeans(TM) (EJB) 1.0 specification or the Java(TM) Servit 2.2 specification. Scope Inelia: GS150REV- Zone 2Node0Sisenversizerver1 Zone 2Node0Sisenversizerver1
	Data source name     AtomT     JNDI name     jdbe/DRYMOCK

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

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

7. Click Next to display the Select JDBC provider window.

Step 1: Enter ba	Select JDBC provider
information Step 2: Select 30 provider	Specify a JDBC provider to support the datasource. If you choose to create a new JDBC provider, it will be created at the same scope as the datasource. If you are selecting an existing JDBC provider, only those providers at the current scope are available from the list.
Step 3: Enter database specifi properties for the data source Step 4: Setup security aliases Step 5: Summar	Create new JDBC provider  Select an existing JDBC provider  Oracle JDBC Driver

8. Select the option Select an Existing JDBC Provider and select the required JDBC provider from the dropdown list. Click Next.

	Step 1: Enter basic data source	Enter database specific	properties for the data source
	information Step 2: Select JDBC provider	Set these database-specifi JDBC driver to support the	c properties, which are required by the database vendor connections that are managed through the datasource.
->	Step 3: Enter	Name	Value
	database specific properties for the data source	+ URL	10.184.108.91:1521:ord11g
	Step 4: Setup security aliases	Data store helper class     Oracle11g data store hel	name per M
	Step 5: Summary	Use this data source	in container managed persistence (CMP)

9. Specify the database connection URL.

For Example: jdbc:oracle:thin:@<DB\_SEREVER\_IP>:<DB\_SERVER\_PORT>:<SID>

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

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

#### For Example:

```
jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)(HOST=10.11.12.13)
(port=1521))(ADDRESS=(PROTOCOL=TCP)(HOST=10.11.12.14)(PORT=1521))(LOAD_BALANCE=no)(FAI
LOVER=yes))(CONNECT_DATA=(SERVICE_NAME=pqadb)))
```

#### 11. Click Next.

Step 1: Enter basic data source information Step 2: Select JDBC provider Step 3: Enter database specific properties for the data source Step 4: Setup servintly alkses	Setup security aliases Select the authentication values for this resource. Component-managed authentication alias [(none)  Container-managed authentication alias [(none)  Con
Step 5: Summary	Note: You can create a new J2C authentication alias by accessing one of the following links: Clicking on a link will cancel the wizard and your current wizard selections will be lost. <u>Global J2C authentication alias</u>

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.

Step 1: Enter basic	Summary	
information	Summary of actions:	
Step 2: Select JOBC	Options	Values
Step 3: Enter database specific properties for the	Scope	cells:GXS150REV-Zone2Node05Cell:nodes:GXS150REV- Zone2Node05:servers:server1
	Data source name	AtomT
data source	JNDI name jdbc/DRYMOCK	
Step 4: Setup security allases	Select an existing JDBC provider	Oracle JDBC Driver
	Implementation class name	oracle.jdbc.pool.OracleConnectionPoolDataSource
	URL	jdbcioracleithin:@10.184.108.91:1521:ord11gr2
	Data store helper class name	com.ibm.websphere.rsadapter.Oracle10gDataStoreHelper
	Use this data source in container managed persistence (CMP)	true
	Component-managed authentication alias	(none)
	Mapping-configuration alias	(none)
	Container-managed	(none)

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.

pecifi	ies a list of user identities and passion	ds for Java(TM) 2 connec	tor security to use.	
<b>v</b> p	refix new alias names with the node na	me of the cell (for compa	atibility with earlier releases)	
Analy	7			
Apply	4			
Pre	ferences			
New	Delete			
B	0 = 9			
elect	Alias 🗘	User ID 🗘	Description ()	
You c	an administer the following resources:			
	GXS150REV- Zone2Node05/FICMASTER	upgsconf	FICMASTER	
	GXS150REV-Zone2Node05/RORFFW	rorffw		
	GXS150REV-Zone2Node05/RORPNC	rorpine		
	GXS150REV-Zone2Node05/UPGSPFT	upgspft	upgspft	
	GXS150REV- Zone2Node05/UPGSPROD	upgsprod	upgaprod	
	GXS150REV- Zone2Node05/UPGSROR	upgsror	upgaror	
	GXS150REV- Zone2Node05/UPGSSAND	upgssand	upgssand	
	GXS1508EV-Zone2Node05/VASTEST	upgsconf	upgsconf	

2. Click New under the Preferences section.

Data sources	2 -
Data sources > Default Datasource > JAAS - J2C authentication	data > New
Specifies a list of user identities and passwords for Java(TM) 2 co	nnector security to use.
General Properties	
+ Alias	
Atm	
• User ID	
upgs73	
Password	
Description	
Atomic Instance	
Apply OK Reset Cancel	

- 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.

# 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 to display the **Data sources** page.
- Click the newly created Data Source \$DATA\_SOURCE\$ and navigate to the path Data sources >
   \$DATA\_SOURCE\$ > Connection pools.

nfiguration			
General Properties		Addi	tional Properties
Scope		-	
cells:ipa26dorNode010	Cell:nodes:ipa26dorNode01:servers:server1		connection pool
+ Connection timeout			properties
þ	seconds		Connection pool
Maximum connections			custom properties
100	connections		
+ Minimum connections			
10	connections		
* Rean time			
100	seconds		
+ Unused timesuit			
1800	seconds		
* Acad Kennut			
• Aged timeout	seconds		
Purge policy			
Engliep 00.	6.4		

- **3.** Set the values for the following:
  - **Connection timeout** to 0 seconds
  - Maximum connections to 100 connections
  - Minimum connections to 10 connections

You can also define Reap Time, Unused Timeout, and Aged Timeout as required.

# Configure Resource Reference in WebLogic Application Server

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

This section includes the following topics:

- Create Data Source
- Create GridLink Data Source
- Configure Multi Data Sources
- Advanced Settings for Data Source
- JDBC Connection Pooling

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

For a Non RAC Database instance, Generic Data Source has to be created. For more information, see Create Data Source.

For a RAC Database instance, Gridlink Data Source has to be created. For more information, see Create GridLink Data Source.

When Load Balancing/Fail over is required, Multi Data Source has to be created. For more information, see Configure Multi Data Sources.

## Create Data Source

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

1. Open the 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 Administrator Username and Password.

WebLogic Server® 11g Administration Console	
112	Welcome Log in to work with the UtebLogs Server domain Username: Password: Login Login
TheRogi Server Tenson 1933.0 Copylyth & DR.2030, Crack and/or to efficienc. All rights merced, Orack is a rightered Sodiomet, of Oracle Corporation and/or to efficien. Other names may be foodereds of the	er regelta gonen,

3. From the LHS menu (Domain Structure), click Services > Data Sources to display the Summary of JDBC Data Sources window.

Non-independencial     Dist-indexed       Chapterin-denty and index houses     Second Andread Secon	Change Center	🗌 None Log-Out Preferences 🔛 Rec	and Help	Welconse, manager Convected to: Mad
Configure services. Notices and services in the feasibility of the f	View changes and restarts	Hote channey of KOC Data feature		
A XE data source an electronic data source an electronic data source and the XE (see educed databases source electronic data source on the XE (see educed databases controls). A XE data source on the XE (see educed databases controls). The source databases controls databases on the XE (see educed databases controls). The source databases controls databases on the XE (see educed databases controls). The source databases controls databases controls databases on the XE (see educed databases controls). The source databases controls databases co	Configuration editing is enabled. Puture thanges will automatically be activated as you modify, add or delete items in the domain.	Summary of XOEC Data Sources		
Stability         Processes         Processes <t< td=""><td>Domain Structure</td><td>A XBC data source is an object bound? borrow a database convection from a do</td><td>to the XES tree that provides database connectivity through a po- atia source.</td><td>d of XIXC connections. Applications can look up a data source on the XIXII tree and then</td></t<>	Domain Structure	A XBC data source is an object bound? borrow a database convection from a do	to the XES tree that provides database connectivity through a po- atia source.	d of XIXC connections. Applications can look up a data source on the XIXII tree and then
Production	RodSd .	This page summarizes the XIX data so	urce abands that have been created in this domain.	
Image: Add Series Andrew How Add Series Andrew How Add Series Andrew How Add Series Andrew How Add La         Image: Add Series How Add Series How Add La         Image: Add Series How Add Series	Deployments 19 Services 19 Messaging 19 XIII:	© Contornize this table Data Sources@Reved - More Colum	uuu Exist)	
Control Shourd Reform     Poll Name     Import	Hult Data Sources	New Order		Showing 1 to 2 of 2. Previous   Next
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4. Click New and select Generic Data Source option to display the Create a New JDBC Data Source window.

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

JDBC Data Source Proper	rties	
The following properties will b	ve used to identify your new 308C data source.	
Indicates required fields		
What would you like to name y	your new 306C data source?	
🔁 * Name:	ATOMSTSOL	
What 3NDI name would you like	e to assign to your new 3DBC Data Source?	
-		
🔁 JNDI Name:		
jdbc/ATOMSTSOL	-	
	8	
What database type would yo	u like to select?	
What database type would yo	u like to select?	

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.
- o JNDI Name is the same as mentioned in web.xml file of OFSAAI Application.
- Required "Database Type" and "Database Driver" should be selected.

eate a new Jube De	La source
Back Next 7700	Cancel
JDBC Data Source	Properties
The following property	es will be used to identify your new JDBC data source.
Database Type:	Orade
What database driver of	rould you like to use to create database connections? Note: * indicates that the driver is explicitly supported by Oracle WebLogic Server.
Database Driver:	*Oracle's Driver (Thin XA) for Instance connections; Versions 9.0.1 and later
Back   Next   Errold	Cannel

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**.

Create a New JDBC Data Source	
Back, Next, Firinh Cancel	
Transaction Options	
You have selected non-XA 308C drive	r to create database connection in your new data source.
Does this data source support global to	ansactions? If yes, please choose the transaction protocol for this data source.
Supports Global Transaction	•
Select this option if you want to enable Recommended in place of Emulate Two	non-XA 200C connections from the data source to pertoceate in global transactions using the Logging Last Resource (LR) transaction optimization. -Phase Commit.
O Logging Last Resource	
Select this option if you want to enable tolerate heuristic conditions.	non-KA 208C connections from the data source to emulate participation in global transactions using JTA. Select this option only if your application can
O Emulate Two-Phase Commit	
Select this option if you want to enable other resources can participate in the	non-XA ZBC connections from the data source to participate in global transactions using the one-phase commit transaction processing. With this option, no global transaction.
One-Phase Commit	
Back Next Frish Cancel	

- 7. Select the Supports Global Transactions checkbox and the One-Phase Commit option.
- 8. Click Next to display the Connection Properties window.

and here and here and here and		
Connection Properties		
Define Connection Properties.		
What is the name of the database you would it	e to connect to?	
Database Name:	fsgbu	
What is the name or IP address of the databas	server?	
Host Name:	10.184.74.80	
that is the port on the database server used	o connect to the database?	
Ports	1521	
//hat database account user name do you war	t to use to create database connections?	
Database User Name:	ssatom	
/hat is the database account password to use	to create database connections?	
Password:	•••••	
Confirm Password:	•••••	

9. Enter the required details such as the **Database Name**, **Host Name**, **Port**, **Oracle User Name**, and **Password**.

10. Click Next to display the Test Database Connection window.

Create a New 3DBC Data Source		
Test Configuration Back Next Finish C	ncei	
Test Database Connection		
Test the database availability and the connection p	pertes you provided.	
What is the full package name of JDBC driver class up	d to create database connections in the connection pool?	
(Note that this driver class must be in the classpath of	arty server to which it is deployed.)	
Driver Class Name:	oracle jdbc.OracleDriver	
What is the URL of the database to connect to? The	rmat of the URL varies by 200C driver.	
URL:	jdbc oracle thin @10.184.1	
What database account user name do you want to u	to create database connections?	
Database User Name:	saatom	
What is the database account password to use to cr	te database connections?	
(Note: for secure password management, enter the	servord in the Pappword field instead of the Properties field below)	
Password:		
Confirm Password:		
Properties User=secon		
The set of driver properties whose values are derived	it runture from the named system property.	
System Properties:		
What table name or SQL statement would you like to	e to test database connections?	
Test Table Name: SQL SELECT 1 FROM DUAL		
Test Configuration Back Next Final C		

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

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

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

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

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

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

and final freed freed	
Select Targets	
You can select one or more targets to deploy your new at a later time.	206C data source. If you don't select a target, the data source will be created but not deployed. You will need to deploy the data so
Servers	
AdminServer	

14. Select the AdminServer option and click Finish.

## Create GridLink Data Source

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

Create a New 3DBC GridLink	Data Source		
Buck Next Front Co	ancel		
JDBC GridLink Data Source	ce Properties		
The following properties will b * Indicates required fields	e used to identify your new 308C Grid.	Link data source.	
What would you like to name y	our new 308C GridLink data source?		
👘 * Name:	xyz		
What 3NDE name would you like	e to assign to your new JDBC GridLink o	data source?	
6 JNDI Name:			
jdbo/xyz			
What database type would yo	u like to select?		
Database Type:	Oracle		
Is this XA driver?			
XA Driver			
Tack Next Front G	ancel		

1. Enter Data Source Name, and JNDI Name.

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

		-
Create a New JDBC GridLink Data Source		
Back Next Trion Cancel		
Connection Properties		
Define Connection Properties.		
Enter Complete 308C URL for GridLink database		
Complete JDBC URL:		
What database account user name do you warn Database User Name: What is the database account password to use	ie to create database connections?	
Present		
Passingera.		
Confirm Password:		
Back Inex. Front Cancel		

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

## **Configure Multi Data Sources**

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

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

1. Open the 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 to display the Summary of JDBC Multi Data Sources window.

b the l	multidata source is an 2xDI tree. Applications to provide the connect	abstraction around a group of data sources that can look up a multi data source on the 2NDL tree is ton.	provides load balancing and fallover between data source and then reserve a database connection from a data sour	es. As with data sources, multi data sources are also b ce. The multi data source determines from which data
ise the	s page to create or vie	m multi data sources in your domain.		
Sec. Bar	mize this table			
luiti D	Data Sources(Filtere	d - Hore Columns Exist)		Showing 1 to 2 of 2 Previous
Net or	Data Sources(Filtere	d - Hore Columns Exist) 3101 Rame	Algorithm Type	Showing 1 to 2 of 2 Previous Targets
New	Name 🖗 Russonos	d - Hore Columns Exist) JHDS Name stoc/FUSD/RHE.	Algorithm Type Load-Balancing	Showing 1 to 2 of 2 Previous   Tangets Administerier

4. Click New to display the New JDBC Multi Data Source screen.

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

reate a New JDBC Hulti Data Sour	æ	
Tecr Next Front Cancel		
Configure the Hulti Data Source	vientify your new THC with data source.	
What would you like to name your new	2080 multi deta source?	
🛃 Name:	JDBC Multi Data Source-0	
What 34DE name would you like to assig	n to your new JOBC multi data source?	
What algorithm type for this 308C Multi	Data Source inculd you like to select?	
🛃 Algorithm Type:	Load-Balancing 👻	
Face Next Frank Cancel		

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

Note: The JNDI Name has to be specified in the format jdbc/infodomname.

JNDI Name of the Data Sources that will be added to new JDBC Multi data source should be different from the JNDI name specified during Multi Data Source.

Same steps needs to be followed to create a mandatory data source pointing to the "configuration schema" of infrastructure with jdbc/FICMASTER as JNDI name for Data Source.

Same steps needs to be followed to create a mandatory data source pointing to the "configuration schema" of infrastructure with jdbc/FICMASTER as JNDI name for Data Source.

JNDI Name provided in multi data source should be the same name that will be mentioned in the web.xml file of OFSAAI Application.

You can select the Algorithm Type as Load-Balancing.

Create a New JDBC Hulti Data Source		
Back Nest Trent Cancel		
Select Targets		
You can select one or more targets to deploy your new 208C Multi	Data Source.	
Servers		
AdminServer		
Back, Next, Fritin Cancel		

6. Select the AdminServer check box and click Next.

reate a New JDBC Hulti Data Source		
Back, Next, Front Cancel		
Select Data Source Type		
Please select type (KA or Non-KA) of data source you would like to add to your new 30	BC Multi Data Source.	
O XA Delver		
Son-XA Driver		
Back Next Trink Cancel		
Back Next Frish Cancel		

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

eate a New JDBC Hulti Dat	a Source		
and the local local			
Add Data Sources			
What 30BC Data Sources would	Id you like to add to your new 30	BC Multi Data Source?	
ata Sources:			
Available	Chosen		
R092 PUSION1 PUSION2 PUSIONRH	* ROR1	-	
Create a New Data Source			
are Think I from I for	at l		
ack rest read card	.0.		

**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 Data Source

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

nfigu	ration Targ	ts Honitorine	Control	Security	Notes		
atisti	cs Testing						
est D	omize this ta Data Source ( Data Source )	ble Filtered - More	Columns Ex	iist)			Showing I to 1 of 1 Previous   N
est D	omize this tai Data Source ( Osta Source Server	ble Filtered - Hore	Columns Ex	iist)		State	Showing 1 to 1 of 1 Previous   Na
rest D	Only Source ( Only Source ) Server OPSAA173	sle Filtered - More	Columns Ex	ist)		State Running	Showing 1 to 1 of 1 Previous   Ne

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

A message is displayed indicating that the test was successful.

- 6. Once the "Data Source" is created successfully, the following messages are displayed:
  - o All changes have been activated. No restart is necessary.
  - o 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.

# Configure Resource Reference in Tomcat Application Server

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

This section includes the following topics:

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

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

Note: See JDBC Jar Files for identifying the correct ojdbc<version>.jar version to be copied.

## Create Data Source

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

**Note:** The User-IDs for configuration/ atomic schemas have the prefix of setupinfo depending on the value set for PREFIX SCHEMA NAME in << APP Pack>> SCHEMA IN.XML file of Schema Creator Utility.

For example: If the value set for <code>PREFIX\_SCHEMA\_NAME</code> is DEV and the schema name was mentioned as <code>ofsaaconf</code>, then the actual schema created in the database would be DEV\_ofsaaconf.

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

<Resource auth="Container"

name="jdbc/FICMASTER"
type="javax.sql.DataSource"
driverClassName="oracle.jdbc.driver.OracleDriver"
username="<user id for the configuration schema>"
password="<password for the above user id>"
url="jdbc:oracle:thin:@<DB engine IP address>:<DB Port>:<SID>"
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"/>
```

#### </Context>

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 to JDBC Jar Files 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 are required for connection pooling.

#### Note the following:

- \$APP DEPLOYED PATH\$ should be replaced by OFSAAI application deployed path.
- \$INFODOM\_NAME\$ should be replaced by Infodom Name.
- \$ATOMICSCHEMA\_USERNAME\$ should be replaced by Atomic schema database user name.
- \$ATOMICSCHEMA PASSWORD\$ should be replaced by Atomic schema database password.
- \$JDBC\_CONNECTION\_URL should be replaced by JDBC connection string
  jdbc:Oracle:thin:<IP>:<PORT>:<SID>. For example, jdbc:oracle:thin 10.80.50.53:1521:soluint
- The User-IDs for configuration/ atomic schemas have the prefix of setupinfo depending on the value set for PREFIX SCHEMA NAME in << APP Pack>> SCHEMA IN.XML file of Schema Creator Utility.

For example: if the value set for <code>PREFIX\_SCHEMA\_NAME</code> is <code>DEV</code> and the schema name was mentioned as <code>ofsaaconf</code>, then the actual schema created in the database would be <code>DEV\_ofsaaconf</code>.

## **Class loader Configuration for Apache Tomcat**

Edit the server.xml available in \$TOMCAT\_HOME/conf/ folder.

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

This configuration is required if Apache Tomcat version is 8.

# APPENDIX A - TDE, DATA REDACTION AND THE CORRESPONDING SETTINGS IN OFSAA

This section provides information to help enable TDE (Transparent Data Encryption), Data Redaction and its corresponding settings in OFSAA. For more details on TDE and Data Redaction, see the Database Advanced Security Guide.

The following sections provide details to enable TDE in the database and run the schema utility.

- Prerequisites
- Creating a Wallet
- Running the Schema Utility with Encryption
- Testing the Encryption

## Prerequisites

- 1. Ensure the required Oracle Database Server versions are installed:
  - Oracle Database Server Enterprise Edition 11g Release 2 (11.2.0.4.0 +) 64 bit RAC/Non-RAC with/ without partitioning option, Advanced Security Option
  - Oracle Database Server Enterprise Edition 12c Release 1 (12.1.0.1.0 +) 64 bit RAC/ Non-RAC with/ without partitioning option, Advanced Security Option
- 2. Ensure the required patches are applied for your respective Oracle DB versions:
  - For Oracle DB Serve 11.2.0.4, the patch 22205607 should have been applied.
  - For Oracle DB Server 12.1.0.1 and 12.1.0.2, the patches 27010930 and 22205607 should have been applied.

# Creating a Wallet

The environment setup for tablespace encryption is the same as that for transparent data encryption. Before creating an encrypted tablespace, create a wallet to hold the encryption key. The search order to find the wallet is described in the following list:

- 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.

1. Add the following entry into the sqlnet.ora file on the server and check if the specified directory is created:

ENCRYPTION\_WALLET\_LOCATION=

(SOURCE=(METHOD=FILE)(METHOD DATA=

(DIRECTORY=/u01/app/oracle/admin/DB11G/WALLET/)))

For RAC-DB or ASM enabled databases, use the following entry:

```
ENCRYPTION_WALLET_LOCATION=
  (SOURCE=
    (METHOD=FILE)
    (METHOD_DATA=
    (DIRECTORY=+DATA/PRODCDB/WALLET)
  )
)
```

2. For ASM Diskgroup, create a relevant directory as defined by ENCRYPTION\_WALLET\_LOCATION using the following instruction:

```
[oracle@server ~]$ echo $ORACLE_SID
+ASM
[oracle@server ~]$ asmcmd
ASMCMD>
ASMCMD> cd +DATA/PRODCDB
ASMCMD> mkdir WALLET
ASMCMD> cd WALLET/
ASMCMD> pwd
+DATA/PRODCDB/WALLET
```

3. Use the following command to create and open the wallet:

CONN sys/password@serviceid AS SYSDBA

ALTER SYSTEM SET ENCRYPTION KEY IDENTIFIED BY "my Password";

 Reopen Wallets after the instance restart and then close it to prevent access to encrypted data using the following command.

ALTER SYSTEM SET ENCRYPTION WALLET OPEN IDENTIFIED BY "my Password";

**Note:** In a CDB, open the Keystore in the ROOT (CDB\$ROOT) container and in all the associated PDBs, where TDE is enabled.

Alternatively, you can create an Auto-Login or Local-Login Keystore to avoid opening the Keystore manually every time. To enable the Keystore to open automatically, use the following command:

ADMINISTER KEY MANAGEMENT CREATE [LOCAL] AUTO\_LOGIN KEYSTORE FROM KEYSTORE 'keystore\_location' IDENTIFIED BY keystore\_password;

# Running the Schema Utility with Encryption

Run the schema creator utility by including the **encrypt=on** option in the Tablespace tag in the Schema in the XML file. You have to perform this procedure manually as it's not a part of the schema template originally.

```
<APPPACKSCHEMA>
   <APP PACK ID>OFS AAAI PACK</APP PACK ID>
   <JDBC URL>jdbc:oracle:thin:@whf00ajn:1521:OFSPQA12CDB</JDBC URL>
   <JDBC DRIVER>oracle.jdbc.driver.OracleDriver</JDBC DRIVER>
   <HOST><HOST NAME></HOST>
   <SETUPINFO NAME="t608" PREFIX SCHEMA NAME="Y"/>
   <PASSWORD APPLYSAMEFORALL="Y" DEFAULT="<password>"/>
   <TABLESPACES>
      <TABLESPACE NAME="OFS AAI TBSP" VALUE="TS USERS1" DATAFILE="<HOME DIR>/ora12c/app/
      oracle/oradata/OFSPQA12CDB/ts users1.dbf" SIZE="500M" AUTOEXTEND="OFF" ENCRYPT="ON"
      />
   </TABLESPACES>
   <SCHEMAS>
      <SCHEMA TYPE="CONFIG" NAME="ofsaaconf" PASSWORD="" APP ID="OFS AAI"
      DEFAULTTABLESPACE="TS USERS1" TEMPTABLESPACE="TEMP" QUOTA="unlimited"/>
      <SCHEMA TYPE="ATOMIC" NAME="ofsaaatm" PASSWORD="" APP ID="OFS AAAI"
      DEFAULTTABLESPACE="TS USERS1" TEMPTABLESPACE="TEMP" QUOTA="unlimited"
      INFODOM="OFSAAAIINFO"/>
      <SCHEMA TYPE="ATOMIC" NAME="ofsaaatm" PASSWORD="" APP ID="OFS IPE"</pre>
      DEFAULTTABLESPACE="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 ENC column:

TABLESPACE_NAME	ENC
SYSTEM	NO
SYSAUX	NO
UNDOTBS1	NO
ТЕМР	NO
USERS	NO
ENCRYPTED_TS	YES

6 rows selected.

# APPENDIX A - DATA PROTECTION IMPLEMENTATION IN OFSAA

This chapter includes sections about Data Protection implemented in OFSAA applications and covers the following sections:

- Right to be Forgotten
- Data Portability
- Pseudonymization
- Notice and Consent
- Data Archival
- Data Redaction

# Right to be Forgotten

This section covers the following sub-sections:

- Introduction to Right to be Forgotten
- Implementation of Right to be Forgotten by OFSAA
- Sample Queries using the AAI\_DRF\_QUERY\_METADATA Metadata table

## Introduction to Right to be Forgotten

Right to be Forgotten is the task of removing PII (Personally Identifiable Information) of a Data Subject for the given Party. The financial institution can delete PII for those Data Subjects who have requested this Right to be Forgotten functionality.

The Data Subjects may have made significant financial transactions, and/or financial information may be required for regulatory or compliance reporting. Deleting the complete record that consists of PII may lead to issues in data reconciliation. In OFSAA, the PII data will be replaced with randomized values and therefore, the complete Data Subject record is retained. As a result, financial information is retained; however, the associated Party PII is removed permanently.

# Implementation of Right to be Forgotten by OFSAA

To implement Right to be Forgotten:

 Use the FSI\_PARTY\_RIGHT\_TO\_FORGET table to collect the input list of Party IDs for which PII must be removed from the system. The financial institution must source this Party ID list into the FSI\_PARTY\_RIGHT\_TO\_FORGET table, and then invoke the batch (<<INFODOM>>\_RightToForget) or schedule it.

**Note:** For sample query, see Sample Query for the FSI\_PARTY\_RIGHT\_TO\_FORGET table.

 Use the AAI table AAI\_DRF\_FUNCTION\_COLUMN\_MAP to store the PII attribute list. During the Right to Forget batch execution, AAI\_DRF\_FUNCTION\_COLUMN\_MAP table is referred to randomize the PII values. See the Data Redaction section in OFSAAI Administration Guide.

- 3. Use the AAI table AAI\_DRF\_QUERY\_METADATA to store the query metadata, which is used during the <<INFODOM>>\_RightToForget batch execution. This is the query metadata table that can lead to two types of queries:
  - **a.** When the table consists of Party Identifier as an attribute, a simple record is required in the metadata query table.

For example:

Select v\_party\_id from Dim\_Party where v\_party\_id='10'

**b.** When the table does not consist of Party Identifier as an attribute, an interrelated set of records are required in the metadata query table AAI\_DRF\_QUERY\_METADATA. Compose these set of records in a systematic way such that, for the selected Party Identifier, the table join procedure can be performed and traversed to reach the required PII attribute.

	() II	V_TABLE_NAME	0 V_COLUMN_NAME	V_CHILD_TABLE_NAME	() V_CHILD_COLUMN_NAME	F_QUERY_FLAG	V_COLUMN_DATA_TYPE	U V_TARGET_COLUMN_NAME	0 V_QUERY_NAME
1		1Dim_Cards_Master	n_card_number_skey	Fct_Card_Acct_Mapping	n_card_number_skey	Y	number	v_d_cust_ref_code	Update_card_number
2		2 Fct_Card_Acct_Mapping	n_acct_skey	Fct_Cards_Summary	n_acct_skey	N	(null)	(null)	Update_card_number
3		3 Fct_Cards_Summary	n_cust_skey	Dim_Customer	n_cust_skey	N	(null)	(null)	Update_card_number
4		4Din_Enail	n_email_skey	Fct_Party_Email_Map	n_email_skey	Y	varchar	v_party_id	Update_dim_email
5		5 Fct_Party_Email_Map	n_party_skey	Dim_Party	n_party_skey	N	(null)	(null)	Update_dim_email
6		6 Dim_Employee	(null)	(null)	(null)	(null)	varchar	v_employee_id	Update_dim_employee
7		7 Dim_Employee_Mls	(null)	(null)	(null)	(null)	varchar	v_employee_id	Update_dim_employee_ml
8		8 Dim_Phone	n_phone_skey	Fct_Party_Phone_Map	n_phone_skey	Y	varchar	v_party_id	Update_dim_phone
9		9 Fct_Party_Phone_Map	n_party_skey	Dim_Party	n_party_skey	N	(null)	(null)	Update_dim_phone
10		Jan marian	a and data about	Pak Missa Badasa Ha	a andreate about			n Andream did	Hadama din makinta

#### Table definition for AAI\_DRF\_QUERY\_METADATA

Column Name	Column Type	Description
ID	Number	This is the Primary Key field. You must enter a numerical value.
V_TABLE_NAME	Varchar	This is the source table name.
V_COLUMN_NAME	Varchar	This is the source column name.
V_CHILD_TABLE_NAME	Varchar	This is the table name, which must be linked to the V_TABLE_NAME. If the same table name is repeated with the same column name V_COLUMN_NAME, then the AND condition is formed with V_CHILD_TABLE_NAME. V_CHILD_TABLE_NAME
V_CHILD_COLUMN_NAME	Varchar	This the column name, which must be linked to the V_COLUMN_NAME.
F_QUERY_FLAG	Varchar	Enter Y or N, which is case sensitive. If the value is Y, then you must form a query from V_TABLE_NAME .V_COLUMN_NAME
V_COLUMN_DATA_TYPE	Varchar	Mention the Data Type of the V_COLUMN_NAME. This is required only if F_QUERY_FLAG = Y.

Column Name	Column Type	Description
V_TARGET_COLUMN_NAME	Varchar	Mention the PARTY_ID column name, which is required only if F_QUERY_FLAG = Y.
V_QUERY_NAME	Varchar	Mention the same query for a set of joining tables and columns. The set of tables and columns under join query are grouped together using the same query name.

#### For example:

Dim\_Cards\_Master table does not consist of n\_cust\_skey (n\_cust\_skey is the required Primary Key for the PII Attribute n\_card\_number\_skey). Therefore, perform the table join procedure similar to the following query:

Select Dim\_Cards\_Master.n\_card\_number\_skey from Dim\_Cards\_Master Dim\_Cards\_Master,
Fct\_Card\_Acct\_Mapping Fct\_Card\_Acct\_Mapping,

Fct\_Cards\_Summary Fct\_Cards\_Summary, Dim\_Customer Dim\_Customer where Dim\_Cards\_Master.n\_card\_number\_skey=Fct\_Card\_Acct\_Mapping.n\_card\_number\_skey and Fct\_Card\_Acct\_Mapping.n\_acct\_skey=Fct\_Cards\_Summary.n\_acct\_skey and Fct Cards Summary.n cust skey=Dim Customer.n cust skey and v d cust ref code='GDPR'



Where Dim\_Customer.n\_cust\_skey is a Number Datatype.

**Note:** For more sample queries generated using the query metadata table, see Sample Queries using the AAI\_DRF\_QUERY\_METADATA Metadata Table.

To arrive at the above-mentioned query, follow these steps:

In first figure, the required table Dim\_Cards\_Master does not consist of Party Identifier. Therefore, perform the table join procedure using the AND condition at the table level.

- i. Search for a table, which consists of the Party Identifier field. In this query, we have searched for the table Dim\_Customer with unique identifier n\_cust\_skey field. This table must be joined with the required table Dim\_Cards\_Master.
- ii. However, the tables Dim\_Cards\_Master and Dim\_Customer do not consist of any common column name to perform the table join operation. Therefore, search for one more table Fct\_Card\_Acct\_Mapping. This table (Fct\_Card\_Acct\_Mapping) consists of common column name (n\_card\_number\_skey) between Dim\_Cards\_Master table and itself.
- iii. Join the Fct\_Card\_Acct\_Mapping table, which consists of common column name (n\_acct\_skey) with another table Fct\_Cards\_Summary.

- iv. Join the Fct\_Cards\_Summary table, which consists of common column name (n\_cust\_skey) with the final table Dim\_Customer.
- v. Now, the Dim\_Cards\_Master table is joined with the Dim\_Customer table.
- c. You must arrive at the skey or equivalent column in the table, which consists of the required PII attributes. Then the <<INFODOM>>\_RightToForget batch uses this key to filter records (For example: Dim\_Cards\_Master) and randomize all the PIIs listed in the AAI\_DRF\_FUNCTION\_COLUMN\_MAP for that table.
- 4. Now, PII attributes can be queried and the values are randomized.

#### Sample Queries using the AAI\_DRF\_QUERY\_METADATA Metadata table

These are the sample queries generated using the AAI\_DRF\_QUERY\_METADATA table:

#### Example 1:

```
select DIM_MANAGEMENT.n_manager_skey from DIM_MANAGEMENT DIM_MANAGEMENT, FCT_CUSTOMER
FCT_CUSTOMER, DIM_CUSTOMER DIM_CUSTOMER where
DIM_MANAGEMENT.n_manager_skey=FCT_CUSTOMER.n_manager_skey and
FCT_CUSTOMER.n_cust_skey=DIM_CUSTOMER.n_cust_skey and DIM_CUSTOMER.v_d_cust_ref_code
in(?,?)
```

#### Example 2:

```
select DIM_EMAIL.n_email_skey from DIM_EMAIL DIM_EMAIL, FCT_PARTY_EMAIL_MAP
FCT_PARTY_EMAIL_MAP, DIM_PARTY DIM_PARTY where
DIM_EMAIL.n_email_skey=FCT_PARTY_EMAIL_MAP.n_email_skey and
FCT_PARTY_EMAIL_MAP.n_party_skey=DIM_PARTY.n_party_skey and DIM_PARTY.v_party_id
in(?,?)
```

#### Example 3:

```
select STG_CLAIM_DETAILS.v_claim_id from STG_CLAIM_DETAILS STG_CLAIM_DETAILS,
STG_CLAIM_CLAIMANT STG_CLAIM_CLAIMANT where
STG_CLAIM_DETAILS.v_claim_id=STG_CLAIM_CLAIMANT.v_claim_id and
STG_CLAIM_CLAIMANT.v_cust_ref_code in(?,?)
```

#### Example 4:

select STG\_CONTACT\_MASTER.v\_contact\_id from STG\_CONTACT\_MASTER STG\_CONTACT\_MASTER, DIM\_CONTACT DIM\_CONTACT where STG\_CONTACT\_MASTER.v\_contact\_id=DIM\_CONTACT.v\_contact\_id and DIM\_CONTACT.v\_customer\_id in(?,?)

#### Example 5:

select DIM\_CARDS\_MASTER.n\_card\_number\_skey from DIM\_CARDS\_MASTER DIM\_CARDS\_MASTER, FCT\_CARD\_ACCT\_MAPPING FCT\_CARD\_ACCT\_MAPPING, FCT\_CARDS\_SUMMARY FCT\_CARDS\_SUMMARY where DIM\_CARDS\_MASTER.n\_card\_number\_skey=FCT\_CARD\_ACCT\_MAPPING.n\_card\_number\_skey and FCT\_CARD\_ACCT\_MAPPING. n\_acct\_skey=FCT\_CARDS\_SUMMARY.n\_acct\_skey and FCT\_CARDS\_SUMMARY.v\_d\_cust\_ref\_code in(?,?)

### Sample Query for the FSI\_PARTY\_RIGHT\_TO\_FORGET table

This is the sample entry for the FSI\_PARTY\_RIGHT\_TO\_FORGET table:

```
Insert into FSI_PARTY_RIGHT_TO_FORGET values (SYSDATE, <<PARTY_ID_FROM_Ur_ENV>>,
'Testing Right2Forget');
```
# Data Portability

According to the Data Protection guidelines, a scenario may occur with a customer in which a Data Subject requests the financial institution to share the PII of that Data Subject stored in the application. To cater to such a scenario, the customer may use T2F (Table to File) functionality provided by AAI. This T2F functionality enables the customer to query the data warehouse and save the attributes to a file.

#### Data Portability Scenario

A sample scenario to apply Data Portability:

1. The DIM\_PARTY table consists of a set of PIIs for multiple Data Subjects.

V_PARTY_NAME	V_PAN_CARD_ID	D_DATE_OF_BIRTH	D_DATE_OF_BIRTH_1	V_ADDRESS_TELE_PH_NO	V_ADDRESS_STATE	V_ADDRESS_STATE_1
1 Aditya Sharma	HSWNJ8291T	09-JAN-93	09-JAN-93	8801283098	Himachal Pradesh	Himachal Pradesh
2 Maria Victor	PCLDS7413N	15-SEP-84	15-SEP-84	9024372784	Karnataka	Karnataka
3 Abdul Mohammed	AHJNS8384F	04-DEC-73	04-DEC-73	9852198762	Orissa	Orissa
4 Vibha Rao	RQSAA7190L	13-MAY-78	13-MAY-78	8962735610	Maharashtra	Maharashtra
5 Sharanya Gupta	EMHPL5167K	29-JAN-90	29-JAN-90	9901838919	Punjab	Punjab

A Data Subject requests the bank to share a copy of the PII data of that Data Subject stored by the bank. For illustration, the Data Subject with V\_PAN\_CARD\_ID EMHPL5167K is used.

- 2. To make a file copy of the PII requested by the Data Subject, the User (bank) must perform T2F data mapping. Follow the Data Mapping procedure. See the *Defining Data Mapping to File (T2F, H2F)* section in the *Data Mapping* part in the OFS AAAI Application Pack Minor Release 8.0.6.0.0 User Guide to:
  - a. Create a T2F definition for the scenario mentioned in step 1. V\_PAN\_CARD\_ID is the V\_PARTY\_ID in the DIM\_PARTY table.

Entity Selection							×
							× O Cancel
- Select Entity							Select
Available Values V., JAARINT, GOUNTRY, CD V., JAARINT, GROUP, JCOD V., JAARINT, GROUP, JOANE V., JAARINT, GROUP, JUANE V., JAARINT, JAARTY, JD V., JAARTY, GROUP, JAARS V., JAARTY, GRONNEL, PREF V., JAARTY, GRONNEL, PREF V., JAARTY, GLONNEL, COOL V., JAARTY, JCL, JAAME V., JAARTY, JCD	CODE		3	elected Values # DM_RMATY (partial) V_RNL_CARD_ID D_DATE_OF_BRITH V_ADDRESS_TATE V_ADDRESS_TATE V_ADDRESS_TBL_PH_ND V_ADDRESS_TBL_CODE V_RARTY_NAME		X X	
Join/Filter							- 1
	ANSI Join Join Filter Group by	v_party_id	ie EMH	P.5167C	-		
- Prescript/Hint							
Source Prescript	7			Target Prescript	r+ +y		

**b.** Create a Batch to run the T2F.

Batch Maintenance			Save Cance	<b>0</b> ^
Batch Name	T2F_DIM_PARTY	Batch Description		Ш
Duplicate Batch		Batch ID	•	Ш
Sequential Batch				•

**c.** Create a Task for the Batch.

ask Definition							0
					Save	Reset	Close
~Task Definition							
Task ID	Task1		Description	<u>T2F</u> dim_party			
Components	EXTRACT DATA	•					
V Dynamic Parameters	List						
Property			Value				
Datastore Type			EDW	•			
Datastore Name			FSDFINFO	•			
Primary IP For Runtime Proc	sesses		10.184.157.123				
Source Name			INF.FSDFINFO	•			
Extract Name			T2F_DIM_PARTY	•			
Default Value			\$RUNSK=1				
~Audit Panel							
Created By:			Creation Date				
Last modified by:			Last Modification Date				

d. Execute the Batch. Verify the progress of batch execution in Batch Monitor.

	ncial Services Data Foundation					US-English *	OFSAD +	U
~ Batch Details								
Batch ID A			Batch Description					
FSDRINFO_BATCH1_Test_loan_com	mitment		Test_loan_commitment					
FSDRINFO_DATA_FOUNDATION_SC	CD		Data Foudation SCD for	Loading Dimensio	on Tables			
FSDRNFO_DATA_FOUNDATION_SC	CD_MLS		Data Foundation SCD fo	r Multi Language	Support Dimensions			
FSDRNFO_DIM_ACCOUNT_SCD			SCD for DIM_ACCOUNT					
FSDRINFO_POP_KEY_DIMENSION;	SCD		SCD for Key Dimension I	Hierarchies of DRI	M Loader			
✓ FSDFINFO_T2F_DIM_PARTY			T2F_DIM_PARTY					
Page 1 of 1 (1-6 of 6 items) K <	K <					,	Records Per Page	15
-Batch Run Details 🗐 Start Moni	toring 🐻 Stop Monitoring 🖱 Reset							
Information Date	20180504 •		Monitor Refresh Rat	te (seconds)	5			
Batch Run ID	FSDFINFO_T2F_DIM_PARTY_20180504_1	•						
- Batch Status								
Batch Run ID			Batch Status					
FSDFINFO_T2F_DIM_RARTY_20180	0504_1		Successful					
~ Task Details								
Task ID A	Task Description	Metadata Value	Col	mponent ID		Task Status	Task Log	
Task1	T2F dim_party	T2F_DIM_PARTY	DO	TRACT DATA		(13314) Successful	View Log	
Page 1 of 1 (1-1 of 1 items) K <	ж					,	lecords Per Page	15
Message ID A Descrip	ption				Severity	Time		
					Convicte E 19	11 2018 Oracle and loc	its affiliates All right	-

#### **1.** The output file path is:

/scratch/ofsaaapp1/ftpshare/FSDFINFO/dmt/def/<T2F\_name>/<Batch\_name>/<batch\_run\_id>/
<information\_date>/<T2Fname>.dat

#### For example:

```
/scratch/ofsaaapp1/ftpshare/FSDFINFO/dmt/def/T2F_DIM_PARTY/
FSDFINFO T2F DIM PARTY 20180504 1 Task1/20180504/ T2F DIM PARTY.dat
```

**Note:** This extracted file consists of PII of a Data Subject that must be encrypted. See the Data Mapping section in Data Management Tools chapter in the OFS AAAI Application Pack Minor Release 8.0.6.0.0 User Guide.

2. T2F output file with the PII details requested by the Data Subject.

T2F_DIM_PARTY.dat - Notepad	X	
File Edit Format View Help		
01-29-1990,Punjab,9901838919,160017,Sharanya Gupta		4 · · · · · · · · · · · · · · · · · · ·
(	•	.ti

# Pseudonymization

## **Overview of Pseudonymization**

Pseudonymization is a process by which PII fields of a record are replaced by one or more artificial identifiers, or pseudonyms. There can be a single pseudonym for a collection of replaced fields or one pseudonym for each replaced field. Therefore, Pseudonymization is a method to substitute PII data with a reversible and consistent value. This decreases the linking ability of a data set with the original identity of a data subject and acts as a Data Security mechanism.

The mapping of pseudonyms to those PIIs that are required for lookups, to retrieve the data subject information, must be stored away from the data warehouse in a secure location. This involves highly restricted access controls and security mechanisms that are defined at the customer environment to suit customer data security needs.

## Implementation of Pseudonymization

OFSDF data model enables its customers to implement Pseudonymization process such that the PII data is separated from transaction data, and this PII data is referenced only by pseudonym. For a wide range of analytical processes, the access to PII data is not necessary.

- 1. Customers can employ Pseudonymization and load the Pseudonymized data into OFSDF.
- 2. When analytical or modeling condition requires the availability of PII data, then care must be taken by the customer to load PII data into those columns that consist of additional data security controls such as Redaction. When the requisite attributes are not part of the seeded PII list, then the customer must:
  - o Extend the PII list
  - o Verify the completeness of the extensions
  - o Verify that Redaction is enabled on the extended PII fields prior to loading sensitive data attributes

To know more about Data Redaction, see OFS Analytical Applications Infrastructure Administration Guide.

**Note:** It is recommended that the PII values must not be added in the account dimension, party dimension, and customer dimension columns where redaction is not applied. For example, PII values must not be added in the v\_account\_number, v\_party\_id, and v\_cust\_id columns. Instead, they must be loaded in the v\_original\_account\_number, v\_orig\_party\_id and v\_orig\_cust\_ref\_code columns respectively, where redaction is applied.

# Notice and Consent

## Introduction to Notice and Consent

According to the Data Protection guidelines, a clear, legal based and accessible Notice must be provided to the Party regarding the Personally Identifiable Information (PII), which is collected from the Party during the onboarding process or during any stage of the workflow where PII of the Data Subject is captured.

After providing a Notice, a clear Consent must be obtained from the Party regarding the usage and handling of PII by the financial institutions. This Consent must be given by the Party, and must be presented to them as their choice with the option of withdrawal from providing Consent at any time. After the Party gives their Consent, their PII can be used in the workflow.

# Populating Consent Purpose Dimension Party Consent and Fact Party Consent

OFSAA is a back office product, and does not have direct interaction with the end user of the bank. Therefore, Notice, and Consent User Interfaces are not applicable. However, Data Model of Data Foundation is enhanced to hold Notice and Consent information as a download from source systems. The bank may further use this feature for the task of processing or reporting.

## Procedure to Populate Consent Purpose Dimension and Fact Party Consent

This section provides information about Consent Purpose Dimension Population and Party Consent Population processes in the Oracle Financial Services Data Foundation application.

# *Overview of Consent Purpose Dimension Population and Fact Party Consent Population*

#### Overview of Consent Purpose Dimension Population

In the Consent Purpose Dimension table (DIM\_CONSENT\_PURPOSE), Consent content is stored. This table can be populated from Stage Consent Purpose Master Entity (STG\_CONSENT\_PURPOSE\_MASTER) using the SCD-468 packaged in FSDF.

#### Overview of Fact Party Consent Population

Fact Party Consent is the table where Consent of the Party is stored. Table to Table seeded definitions are provided for loading data into the target table Fact Party Consent (FCT\_PARTY\_CONSENT):

Source Table Name	Target Table Name	T2T Definition Name
STG_PARTY_CONSENT	FCT_PARTY_CONSENT	T2T_FCT_PARTY_CONSENT

# Executing Consent Purpose Dimension Population and Fact Party Consent Population T2T

#### Executing through Batch

- From Consent Party Master, Consent Purpose Dimension SCD can be executed by executing task present in the SCD batch FSDFINFO\_DATA\_FOUNDATION\_SCD.
- Fact Party Consent T2T can be executed by executing task present in the T2T batch FSDF\_SOURCED\_RUN.

Follow these steps to execute the batch:

- i. Navigate to the Batch Execution screen.
- ii. Select the seeded batch:

FSDFINFO\_DATA\_FOUNDATION\_SCD for Consent Purpose Dimension

FSDF\_SOURCED\_RUN for Fact Party Consent

where Infodom is the information domain where application is installed.

- iii. Select the AS\_OF\_DATE for which source customer information is required to be loaded into the table.
- iv. Click **Execute Batch**.

Monitor the status of the batch in the screen of OFSAAI.

#### Execution of T2T Batch through Run Management

T2T\_FCT\_PARTY\_CONSENT is part of Financial Services Data Foundation Sourced Run. The process can be executed through the Seeded Run Financial Services Data Foundation Execution Run.

**Note:** When executing through Run, the RUNSkey is auto-generated and stamped against each record.

#### Error Messages

In the log file present in the:

- ftpshare/logs/<Run\_Date>/FSDFINFO/RUN EXECUTABLE folder for DIM\_CONSENT\_PURPOSE
- ftpshare/logs/<Run\_Date>/FSDFINFO/LOAD DATA folder for T2T\_FCT\_PARTY\_CONSENT

This is the most common error message:

• **Unique Constraint Violation**: This occurs when attempting re-load or loading existing records for the already executed AS\_OF\_DATE.

#### Checking the Execution Status for Fact Party Consent T2T

The status of execution can be monitored using the Batch Monitor screen.

Note: For a more comprehensive coverage of configuration and execution of a batch, see Oracle Financial Services Analytical Applications Infrastructure Release 8.0.6.0.0 User Guide.

The status messages in Batch Monitor are:

- N Not Started
- O On Going
- F Failure •
- S Success

The execution log can be accessed on the application server in the directory ftpshare/logs/<Run Date>/ FSDFINFO/LOAD DATA. The file name consists of the Batch Execution ID.

This is the error log table in atomic schema:

FCT PARTY CONSENT\$ for T2T FCT PARTY CONSENT

#### Fact Party Consent T2T

T2T definition can be retrieved as an excel document for reference from the metadata browser of the Unified Metadata Manager (UMM) component of OFSAAI.

## Data Archival

## Synopsis for Data Archival

The OFSAA data model, along with the active data stores Personally Identifiable Information (PII) of Data Subjects who are no longer actively using the financial services, which is a liability.

## Implementation of Data Archival by OFSAA

To implement this invisibility of data at row level, Oracle Database 12c has introduced a new feature called Row

Archival.

- The Row Archival feature is simple and effective to use as opposed to the traditional approach, which requires storage and maintenance of historical tables.
- This feature enables to archive records based on a given criteria within the account table. The criteria can be, for example, the Account Close Date of the Data Subject.
- This archived data can be viewed or made hidden by setting a session parameter.

# A Criteria for Data Archival

To archive Party records, which are closed for more than seven years:

1. To enable Row Archival on the DIM\_PARTY table, run this command:

ALTER TABLE DIM\_PARTY ROW ARCHIVAL

**2.** Run the Row Archival Update statement periodically, to search for the account Party records which are closed for more than seven years. Run this command:

```
UPDATE DIM_PARTY SET ora_archive_state='1' where trunc(months between(SYSDATE, d closed date)/12)>7
```

In the above query:

- o ora\_archive\_state is a hidden column which is created after the ROW ARCHIVAL is set on the table.
- SET ora\_archive\_state='1' archives the records which meets the criteria of seven years of account closure.
- Hidden rows are available for Select/Update queries only after ora\_archive\_state is disabled.

## Viewing Archived Rows

• To make hidden rows visible for a session, run this command:

ALTER SESSION SET ROW ARCHIVAL VISIBILITY=ALL;

• To make the rows invisible, run this command:

ALTER SESSION SET ROW ARCHIVAL VISIBILITY=ACTIVE;

## Data Redaction

## **Overview of Data Redaction in OFSAA**

Data Redaction is one of the Data Security features that provides protection of data against unauthorized access and data theft.

In OFSAA, these tables are seeded as part of Data Redaction:

• AAI\_DRF\_FUNCTION\_MASTER

This table holds the Redaction function definitions. Generic logical functions can be address, email, card number, phone number etc.

AAI\_DRF\_FUNCTION\_COLUMN\_MAP

This table holds the Redaction Function- Column mappings. The PII columns will be redacted according to the Function mapping.

V_FUNCTION_CD	V_TABLE_NAME	& V_COLUMN_NAME	V_COLUMN_DATA	TYPE & V_COLUMN_DESC
53 ADDRESS	Dim_Party	v_ADDRESS_city	VARCHAR2 (255)	Current / Residence ADDRESS
54 ADDRESS	Dim_Party	v_ADDRESS_country	VARCHAR2 (255)	Current / Residence ADDRESS
55 ADDRESS	Dim_Party	v_ADDRESS_district	VARCHAR2 (255)	Current / Residence ADDRESS
56 ADDRESS	Dim_Party	v_ADDRESS_line_1	VARCHAR2 (255)	Current / Residence ADDRESS
57 ADDRESS	Dim_Party	v_ADDRESS_line_2	VARCHAR2 (255)	Current / Residence ADDRESS
58 ADDRESS	Dim_Party	v_ADDRESS_line_3	VARCHAR2 (255)	Current / Residence ADDRESS
59 ADDRESS	Dim_Party	v_ADDRESS_off_city	VARCHARZ (255)	Office ADDRESS City
60 ADDRESS	Dim_Party	v_ADDRESS_off_country	VARCHAR2 (255)	Office ADDRESS Country
61 ADDRESS	Dim_Party	v_ADDRESS_off_district	VARCHAR2 (255)	Office ADDRESS District
62 ADDRESS	Dim_Party	v_ADDRESS_off_line_1	VARCHAR2 (255)	Office ADDRESS Line 1
63 ADDRESS	Dim_Party	v_ADDRESS_off_line_2	VARCHAR2 (255)	Office ADDRESS Line 2
64 ADDRESS	Dim_Party	v_ADDRESS_off_line_3	VARCHAR2 (255)	Office ADDRESS Line 3
65 ADDRESS	Dim Party	v ADDRESS off state	VARCHARZ (255)	Office ADDRESS State

#### AAI\_DRF\_TABLE\_ACCESS\_CD\_MAP

This table holds the mapping of tables having columns marked for redaction to the Access codes. These access codes are SMS function codes and are expected to be mapped to the role DATASECURITY. The policy expression will be created based on this role and evaluated to access non-redacted data.

Note: The list of PIIs, on which Data Redaction is applied, is available at My Oracle Support.

## Accessing PII Table and PII Datasheet

- AAI\_DRF\_FUNCTION\_COLUMN\_MAP is the PII table.
- PII Datasheet list can be accessed from My Oracle Support.

## Data Redaction Batch

Execute the Data Redaction seeded Batch ##INFODOM##\_DATA\_REDACTION to execute the Data Redaction Utility if it is available as part of application common metadata. If the Batch is not available, you must create a new Batch as mentioned in the *Creating Batch for Executing Data Redaction Utility* section in the OFS Analytical Applications Infrastructure Administration Guide.

The task in the Batch ##INFODOM##\_DATA\_REDACTION consists of three parameters:

- dataredaction.sh
- true/false
- OFSAA User ID

For more information, see *Data Redaction* section in the OFS Analytical Applications Infrastructure Administration Guide.

## Mapping Roles to User Groups for Data Redaction

Data Controller Group is mapped to DATASECURITYADMIN role:

- Group Code: DATACONTROLLER
- Group Name: Data Controller Group
- Group Description: Data Controller Group
- Role code: DATASECURITYADMIN
- Role Name: Data Security Admin
- Role Description: Data security admin role for executing redaction policies

#### Mapping from individual applications to DATASECURITY role:

- Role code: DATASECURITY
- Role Name: Data Security Viewer
- Role Description: Data Security Viewer role for viewing original (non-redacted) data.
  - **a.** DATASECURITY role must be mapped to those application User Groups which have the privilege to view the data in its originality (un-redacted). Therefore, applications must identify the functions which must be mapped to the DATASECURITY role. These mappings must come as seeded data.
  - **b.** And then, map DATASECURITY role to the respective User groups. This mapping must be done manually from individual applications to the DATASECURITY role.

## Data Redaction Batch Execution Sample

• Data before executing Data Redaction Batch:

	Row 1	Fields	Τ
Þ	N_ACCT_SKEY	6	
	V_ACCOUNT_NUMBER	BC1007	
	V_ACCOUNT_DESC	data redaction desc	
	V_ACCOUNT_MANAGER_CODE	drmc1	
	V_ORIGINAL_ACCOUNT_NUMBER	data redaction original account numb	
			- 1

Data after executing Data Redaction Batch:

	Row 1	Fields
►	N_ACCT_SKEY	6
	V_ACCOUNT_NUMBER	BC1007
	V_ACCOUNT_DESC	
	V_ACCOUNT_MANAGER_CODE	
	V_ORIGINAL_ACCOUNT_NUMBER	