Oracle® Financial Services Analytical Applications Infrastructure



Release 8.1.2.0.0 F79068-04 July 2023

ORACLE

Oracle Financial Services Analytical Applications Infrastructure, Release 8.1.2.0.0

F79068-04

Copyright © 2022, 2023, Oracle and/or its affiliates.

Primary Authors: (primary author), (primary author)

Contributing Authors: (contributing author), (contributing author)

Contributors: (contributor), (contributor)

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software, software documentation, data (as defined in the Federal Acquisition Regulation), or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs (including any operating system, integrated software, any programs embedded, installed, or activated on delivered hardware, and modifications of such programs) and Oracle computer documentation or other Oracle data delivered to or accessed by U.S. Government end users are "commercial computer software," "commercial computer software documentation," or "limited rights data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, reproduction, duplication, release, display, disclosure, modification, preparation of derivative works, and/or adaptation of i) Oracle programs (including any operating system, integrated software, any programs embedded, installed, or activated on delivered hardware, and modifications of such programs), ii) Oracle computer documentation and/or iii) other Oracle data, is subject to the rights and limitations specified in the license contained in the applicable contract. The terms governing the U.S. Government's use of Oracle cloud services are defined by the applicable contract for such services. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle®, Java, and MySQL are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Inside are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Epyc, and the AMD logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

Contents

1 Revision History

2 About This Guide

3 Introduction

Oracle Financial Services Analytical Applications Infrastructure (OFSAAI)	3-2
New Features in Release 8.1.2.0.0	3-2
Components of OFSAAI	3-3
OFSAA Infrastructure High Availability	3-4
Deployment Topology	3-4
Installation Overview	3-4
Introduction	3-5
About Oracle Financial Services Analytical Applications Infrastructure Extension Pack	3-6
Installation and Upgrade Scenarios	3-6
Installation Check List	3-7
Oracle Financial Services Analytical Applications Infrastructure (OFSAAI)	3-10
New Features in Release 8.1.2.0.0	3-10
Components of OFSAAI	3-11
OFSAA Infrastructure High Availability	3-11
Deployment Topology	3-12
Installation Overview	3-12
Introduction	3-13
About Oracle Financial Services Analytical Applications Infrastructure Extension Pack	3-14

4 Hardware and Software Requirements

License Information	4-1
Verify System Environment	4-1



5 Pre-installation Tasks

Oracle Database Instance Settings	5-1
Web Application Server Settings	5-1
Web Server Settings	5-2
Big Data Settings	5-2
Create the Installation, Download, and Metadata Repository Directories	5-2
Configure the OS File System Settings and Environment Settings in the .profile File	5-3
Configure Operating System and File System Settings	5-4
Configure the Environment Settings	5-5
Java Settings	5-6
Oracle Database Server and Client Settings	5-6
TNS entries in the TNSNAMES.ORA file for Non-TCPS and TCPS	5-6
Oracle Wallet Settings for Installation in TCPS Mode	5-9
Oracle Essbase Settings	5-9
Time Zone Settings	5-10
Install Oracle R distribution and Oracle R Enterprise (ORE)	5-10
Download the OFSAAAI Applications Pack Installer and Mandatory Patches	5-10
Extract the Software	5-11

6 Installation Tasks

Configure the OFS_ <app pack="">_PACK.xml File</app>	6-1
Configure the Schema Creator Utility	6-3
Prerequisites	6-4
Configure the Schema Creator Utility for RDBMS Installation	6-4
Configure the OFS_ <app pack="">_SCHEMA_IN.xml File</app>	6-4
Configure the Schema Creator Utility for HDFS Schema	6-19
Configure the <app pack="">_SCHEMA_BIGDATA_IN.xml File</app>	6-19
Execute the Schema Creator Utility	6-29
Execute the Schema Creator Utility	6-30
Execute the Schema Creator Utility in Online Mode	6-30
Execute the Schema Creator Utility in TCPS Mode	6-32
Prerequisites	6-32
Execute the Utility	6-33
Execute the Schema Creator Utility while Installing Subsequent Applications Pack	6-35
Configure the OFSAAI_InstallConfig.xml File	6-37
Set Up the SFTP Private Key	6-65
Install the OFSAAI Application Pack	6-65
Verify the Log File Information	6-69



7 Post-Installation Tasks

Patch OFSAA Infrastructure Installation	7-2
Backup the OFS_ <pack>_SCHEMA_IN.xml and OFS_<pack>_SCHEMA_OUTPUT.xml Files</pack></pack>	7-2
Stop the Infrastructure Services	7-2
Configure Referrer Header Validation	7-3
Create and Deploy the EAR/WAR Files	7-3
Create the EAR/WAR File	7-4
Non-TCPS Installed Setup	7-4
TCPS Installed Setup	7-4
Explode the EAR File	7-5
Install Application	7-6
Deploy the EAR/WAR File	7-10
Clear the Application Cache	7-11
Deploy the EAR/WAR Files on WebSphere	7-11
Deploy the EAR/WAR Files for WebLogic	7-17
Deploy WAR Files on Tomcat	7-18
EAR/WAR File - Build Once and Deploy Across Multiple OFSAA Instances	7-20
Assign Grants for Schemas	7-21
Assign Grants for Atomic Schema	7-21
Assign Grants for Config Schema	7-21
Assign Grants for Config Schema Entities for Atomic Users	7-22
Start the Infrastructure Services	7-26
Start the Web Application Servers	7-27
Access the OFSAA Application	7-28
OFSAA Landing Page	7-28
Masthead	7-29
Navigation Drawer	7-30
Navigate to System Configuration	7-32
Components of System Configuration	7-33
Configure the excludeURLList.cfg File	7-33
Configure Oracle R Distribution and Oracle R Enterprise (ORE)	7-33
Install OFSAAAI Runner Package	7-34
Prerequisites	7-34
Uninstall OFSAAI Runner Package	7-35
Configure ORE Execution	7-35
Configure Tomcat	7-35
Configure Big Data Processing	7-36
Copy Jars to the OFSAA Installation Directory	7-36
Copy KEYTAB and KRB5 Files in OFSAAI	7-37
Enable Big Data	7-37



Enable Financial Services Enterprise Modeling on Another Application Pack	7-38
Create Application Users	7-39
Map Application User(s) to User Group	7-39
Add TNS entries in the TNSNAMES.ORA File	7-40
Configure Transparent Data Encryption (TDE) and Data Redaction in OFSAA	7-40
Prerequisites	7-41
Transparent Data Encryption (TDE)	7-41
Configure a Software Keystore and Encrypted Tablespace Creation	7-42
Test the Encryption	7-48
Data Redaction	7-48

8 Remove OFSAA Infrastructure

Uninstall the OFSAA Infrastructure	8-1
Uninstall the EAR/WAR Files	8-1
Uninstall the EAR Files in WebSphere	8-2
Uninstall the EAR Files in WebLogic	8-3
Uninstall the WAR Files in Tomcat	8-4
Clean Up the Environment	8-5

9 Upgrade

Prepare for Upgrade	9-1
Download the OFSAAAI Applications Pack Installer and Mandatory Patches	9-2
Extract the Software	9-2
Trigger the Installation	9-3
Verify the Log File Information	9-4
Post Installation Steps	9-4
Upgrade OFS AAAI from Linux 7 to Linux 8	9-4

10 Configure the Web Server

Configure WebSphere Application Server for Application Deployment	10-2
Create a New Profile in WebSphere	10-2
Manage IBM WebSphere SDK Java Technology Edition Versions	10-3
Manage Applications in WebSphere	10-5
Configure WebSphere Application Server to Initialize Filters before Initializing Load- On-Startup Servlets and Allowing Empty Servlets Maps	10-7
Configure WebSphere Application Server Persistence to JPA Specification 2.0	10-8
Configure WebSphere Application Server to Use a Load Balancer or Proxy Server	10-8
Delete WebSphere Profiles	10-9
Configure WebSphere HTTPS	10-10



Configure WebLogic Memory Settings	10-10
Configure WebSphere for Rest Services Authorization	10-10
Configure WebLogic for Application Deployment	10-11
Create Domain in WebLogic Server	10-11
Delete Domain in WebLogic	10-17
Configure WebLogic Memory Settings	10-17
Configure Apache Tomcat Server for Application Deployment	10-18
Tomcat User Administration	10-18
Configure Servlet Port	10-18
Configure SSL Port	10-19
Configure Apache Tomcat Memory Settings	10-19
Configure Tomcat for User Group Authorization	10-19
Uninstall the WAR Files in Tomcat	10-20
Additional Configurations for Web Servers	10-21
Configure Application Security in WebSphere	10-22
Configure WebSphere Shared Library to Support Jersey 2x and Jackson 2.9x Libraries	10-22

11 Configure Application Security in WebSphere

Configure Resource Reference in WebSphere Application Server	11-1
Create a JDBC Provider	11-1
Create Data Source	11-2
Create J2C Authentication Details	11-6
Define JDBC Connection Pooling	11-7
Configure Resource Reference in WebLogic Application Server	11-8
Create Data Source	11-9
Create GridLink Data Source	11-14
Configure Multi-data Sources	11-16
Configure Advanced Settings for Data Source	11-18
Configure JDBC Connection Pooling	11-19
Create Workmanager	11-19
Configure Resource Reference in Tomcat Application Server	11-20
Create Data Source	11-20
Define JDBC Connection Pooling	11-21
Configure ClassLoader for Apache Tomcat	11-22

12 Configure Work Manager in Web Application Servers

Configure Work Manager in WebSphere Application Server	12-1
Create Work Manager	12-1
Map Work Manager to OFSAA WebSphere Instance	12-4



13 Additional Configurations for Application Packs

Configurations for Enterprise Modeling	13-1
Sandbox Resave Utility	13-1
Prerequisites	13-2
Model Resave Utility	13-2
Configure Process Modeling Framework	13-3
Generate JSON Utility	13-3
How to Run the Generate JSON Utility	13-4
Execute the Update Constraints Utility	13-5

14 Additional Information

Add FTP/SFTP Configuration for File Transfer	14-1
Configure Infrastructure Server Memory	14-1
Retrieve Patch Information	14-2
Set OLAP Data Server Configuration	14-2
Change IP/ Hostname, Ports, Deployed Paths of the OFSAAInstance	14-2
Set Infrastructure LDAP Configuration	14-3
Configure OFSAAI Web Services	14-3
Configure DynamicWSConfig.xml File	14-3
Configure WSConfig File	14-6
Configure Proxy Settings	14-6
Configure OFSAAI Home Entry	14-7
Configure DynamicWSConfig.xml File	14-7
Deploy OFSAAI Web Services	14-7
Enable Parallel Execution of DML statements	14-8
Configure Message Details in Forms Designer	14-8
Clear the Application Cache	14-9
Configure Password Changes	14-9
Modify OFSAA Infrastructure Config Schema Password in a Non Wallet-Based Setup	14-9
Modify OFSAA Infrastructure Atomic Schema Password in a Non Wallet-Based Setup	14-10
Modify the OFSAA Infrastructure Config Schema Password in a Wallet-Based Setup	14-12
Modify the OFSAA Infrastructure Atomic Schema Password in a Wallet-Based Setup	14-12
Configure Java Virtual Machine	14-13
Configure Internal Service (Document Upload/ Download)	14-13
Update the OFSAA 8.1.2.x Java 8 Instance to Java 11	14-13
Prerequisites	14-14
Update the OFSAA 8.1.2.x Java 8 Instance to Java 11	14-14



Apply OFSAA Generic Configurations	14-14
Configure User '.profile' Settings	14-14
Configure the Web Application Server	14-15
Upgrade Java 8 to Java 11 for Oracle WebLogic Server 14.1.1.0	14-15
Upgrade Java 8 to Java 11 for Apache Tomcat Server	14-16
Configure OFSAA for the New Web Application Server Installation	14-16

15 Migrate Excel Upload Functionality

Prerequisites	15-1
Migrate Excel Upload	15-1

16 Frequently Asked Questions (FAQs) and Error Dictionary

Frequently Asked Questions	16-1
Frequently Asked Questions	16-1
Application Pack 8.1.2.0.0 FAQs	16-17
Error Dictionary	16-20
Access the Error Dictionary	16-21
Error Code Dictionary	16-21

Index



1 Revision History

This log lists significant documentation updates:

Revision Date	Details
March 2023	 Replaced/deleted references to include Apache big data in the relevant sections Updated prerequisite for FICserver in How to Run the Generate JSON Utility Updated the list of files to be HTTPS enabled inFrequently Asked Questions (33841737) test Updated Schema name format details in Configure the OFS_SCHEMA_IN.xml File (34835911)
January 2023	Added Solution for Errors generated while installing one-off patch on TCPS environment (34976170) - FAQ - 83
November 2022	 Updated Configure the excludeURLList.cfg File with correct instructions (Doc 34252585) Updated steps for Deploy the EAR/WAR Files for WebLogic to include steps to activate services after deployment.
April 2022	Updated the Configure Operating System and File System Settings (Doc 33679099).
February 2022	Updated the Configure Password Changes (Doc 33858601).
December 2021	 Updated the Copy Jars to the OFSAA Installation Directory (32391102). Updated the document for 33663417 Mandatory Patch instructions (Doc 33668822). Updated the document for Installer Patch Download Number (Doc 33666242).



2 About This Guide

Refer to Oracle Financial Services Advanced Analytical Application Infrastructure (OFSAAAI) Installation and Configuration Guide, to install and configure OFSAAI.

Audience

This guide is intended for administrators and implementation consultants installing and maintaining the OFSAAI application pack setup.

In order to understand about the OFSAAI Installation and configuration, we recommend to have experience in installing Enterprise components and basic knowledge about the following:

- OFSAAI components
- OFSAA Architecture
- UNIX Commands
- Database Concepts
- Web server or web application server

Documentation Accessibility

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

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

Related Resources

See the OFSAA End User documentation (8.0.x and 8.1.x versions).

Conventions

The following text conventions are used in this document.

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, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.



3 Introduction

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

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

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

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



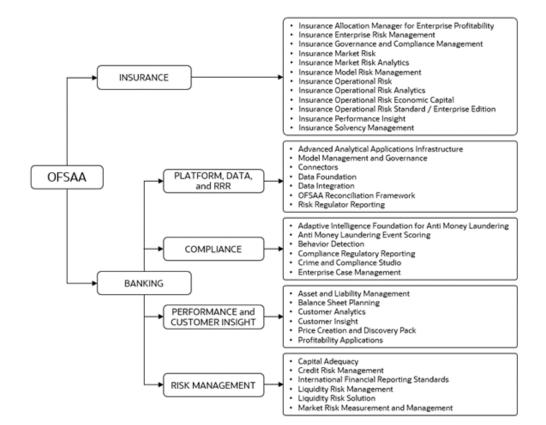


Figure 3-1 Application Packs of OFSAA

Oracle Financial Services Analytical Applications Infrastructure (OFSAAI)

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

Topics:

- Components of OFSAAI
- OFSAA Infrastructure High Availablity
- Deployment Topology
- About OFSAAI Extension Pack

New Features in Release 8.1.2.0.0

This section lists the new features described in this Installation Guide.



Feature	DescriptionThe following commonly used libraries are upgraded in OFSAA for the 8.1.2.0.0 Release:	
Common Library Upgrade		
	• ant 1.10.11	
	• Batik 1.14	
	• guava 2.29.0	
	 spring-xml-3.0.10.RELEASE.jar 	
	 spring-ws-core-3.0.10.RELEASE.jar 	
	 spring-ws-security-3.0.10.RELEASE.jar 	
	• xmlsec 2.2.3	

For more details, see the Oracle Financial Services Advanced Analytical Applications Infrastructure Release 8.1.2.0.0 Readme.

Components of OFSAAI

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

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

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

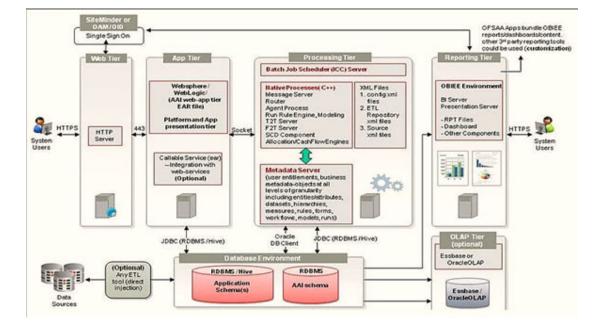


Figure 3-2 Components of OFSAAI



OFSAA Infrastructure High Availability

The current release of the OFSAA Infrastructure supports only the "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 the Active-Passive model of implementation for OFSAAI components. For more information, see Oracle Financial Services Analytical Applications Configuration for High Availability Best Practices Guide.

Deployment Topology

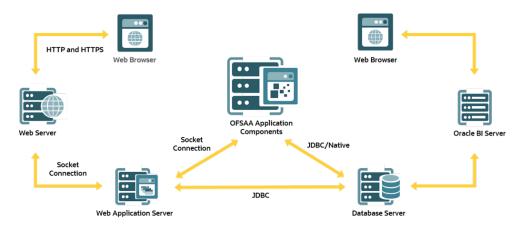


Figure 3-3 The logical architecture implemented for OFSAAAI Application Pack

Installation Overview

Release 8.1.2.0.0 of OFSAA Application Packs support the fresh installation.

The following illustration shows the sequence of steps you need to follow to perform the installation.



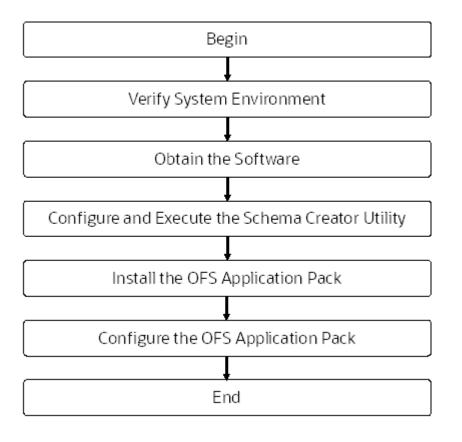


Figure 3-4 Installation Flow of OFSAA Application Packs

Introduction

Oracle Financial Services Advanced Analytical Applications Infrastructure (OFSAAAI) Application Pack provides integrated stress testing and modeling capabilities that you can readily apply across multiple risk areas enabling institutions to devise appropriate enterprisewide and holistic risk and economic capital strategies.

OFSAAAI enables you to comply with regulatory requirements on stress testing, enables advanced customer and portfolio analytics, utilize multiple industry-standard techniques, test and model with complete data integrity.

OFSAAAI Application Pack includes the following applications:

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

Financial Services Enterprise Modeling: This application helps banking institutions to identify the business opportunities and to measure the risk prevailing in the competitive market to safeguard the regulatory and economic capital of banks.



Financial Services Big Data Processing: This option introduces, into the OFSAA platform (OFSAAI), the capability to run analytics on data stored in Hadoop Distributed File System (HDFS).

With the Big Data Processing (BDP) add-on option, all core data management frameworks within OFSAA such as Data Management Framework (T2T/ F2T), Data Quality Framework, and Rules framework are enhanced to operate on both Oracle RDBMS data sources as well as Apache Hive data sources. An OFSAA Run definition can contain tasks that transform data held in the Hive. OFSAA applications that use these platform frameworks for expressing application logic automatically gain the ability to manage data held in the Hive. The OFSAA platform leverages HiveQL and Map Reduce to process data directly in the Hadoop cluster without having to stage data in a relational database.

Financial Services Inline Processing Engine: This application provides real-time monitoring, detection and interdiction of single and complex fraud events across multiple channels and lines of business.

Topics:

- Oracle Financial Services Analytical Applications Infrastructure (OFSAAI)
- Installation Overview

About Oracle Financial Services Analytical Applications Infrastructure Extension Pack

The Oracle Financial Services Analytical Applications Infrastructure Extension (OFS AAIE) Pack adds a set of new advanced features for 8.1.2.0.0 Release across OFSAA applications. This pack can be installed on an OFSAA instance having one or more OFSAA application packs.

The Oracle Financial Services Analytical Applications Infrastructure Extension Pack includes the following advanced features and functionalities:

- Distributed Processing Capabilities
- Analytic Pipeline and Process models
- Attribution Analysis
- Content Management Interoperability Services

Note:

The pack is enabled by procurement of an additional license. For more information, see the OFS AA IE Release Notes and Installation Guide on the Oracle Help Centre.

Installation and Upgrade Scenarios

Release 8.1.2.0.0 of OFSAAI supports various installation and upgrade scenarios. A high-level overview of the possible scenarios is provided in the following table. Detailed procedural steps are provided in the succeeding sections of this document.



Scenario	Installation and Upgrade Instructions	
New Installation	1. Prepare for the Installation.	
Installing Release 8.1.2.0.0 application pack for the first time (new installation).	2. Execute the Schema Creator Utility.	
	3. Install the OFSAAI Application Pack.	
Upgrade Installation Upgrade an already installed application pack from v8.1.1.0.0 or later Example: You are using release v8.1.1.1.0 and now want to upgrade to Release 8.1.2.0.0.	1. Run the Environment Check Utility tool and ensure that the hardware and software requirements are installed as per the Oracle Financial Services Analytical Applications 8.1.2.0.0 Technology Matrix.	
	2. Prepare for Upgrade.	
	3. Download the installer.	
	4. Extract the software.	
	5. Trigger the installation.	
Upgrade OFS AAAI from Linux 7 to Linux 8 If your OFS AAAI instance is on Linux 7 Operating System and you want to install OFS AAAI on Linux	 Clone your existing environment to the Oracle Financial Services Analytical Applications 8.1.2.0.0 Technology Matrix. 	
8.	2. Run the upgrade installer in the cloned environment.	
Upgrade from OFS AAAI Release v8.0.x on AIX or Solaris x86 Operating System	Release v8.1.2.0.0 of OFS AAAI is not certified for IBM AIX and Oracle Solaris x86 Operating Systems. If you are currently running OFSAA v8.0.x on AIX or Solaris x86 Operating Systems and plan to upgrade to Release v8.1.2.0.0, then you must migrate from AIX or Solaris x86 to Oracle Linux or Oracle Solaris SPARC. See the My Oracle Support Doc ID 2700084.1 for details.	

Table 3-1 Release 8.1.2.0.0 Installation and Upgrade Scenarios

Installation Check List

To complete the installation process, you must perform the following steps listed in the Preinstall Checklist. Use this checklist to verify whether these steps are completed or not.

	Table 3-2	Installation	Checklist
--	-----------	--------------	-----------

	SI. No.	Activity
Pre-installation Steps	1	Install all the prerequisite hardware and software as per the Oracle Financial Services Analytical Applications 8.1.2.0.0 Technology Matrix.
	2	Verify the System Environment using the Environment Check Utility.
	3	Configure the Database Instance settings.



	SI. No.	Activity
	4	Install and configure the web application server.
	5	Configure the HTTP settings or the web server.
	6	(Optional) Install and configure for Big Data/Hive.
	7	Create the Installation, Download, and Metadata Repository Directories: Installation directory Temporary directory Staging Area/Metadata
		RepositoryDownload directory
	8	Configure the following Operating System and File System settings:
		File Descriptor
		Total number of processes
		 Port(s) .profile file permissions Add FTP/SFTP configuration for file transfer (to access staging area and metadata directory)
	9	Update the following Environment Settings as require for the installation in the .profile file:
		Java Settings
		 Oracle Database Server an Client Settings
		 Add TNS entries in the TNSNAMES.ORA file
		Oracle Essbase SettingsTime Zone Settings
	10	(Optional) Install and configure Oracle R/ Oracle R Enterprise.
	11	Download the installer kit.
Installation Steps	12	Extract the installer kit.
	13	Configure the OFS_ <app pack="">_PACK.xml file.</app>
	14	Configure the OFS_ <app pack>_SCHEMA_IN.xml file.</app
	15	(Optional) <u>Configure</u> the <app pack>_SCHEMA_BIGDATA_IN. ml file.</app

Table 3-2	(Cont.) Installation Checklist	
-----------	--------------------------------	--



	SI. No.	Activity
	16	Execute the Schema Creator Utility in Online, Offline, or TCPS modes and verify the log file.
	17	Configure the OFSAAI_InstallConfig.xml file.
	18	Trigger the application installation.
Post-Installation Steps	19	Verify the installation logs.
	20	Verify that all patches are successfully installed.
	21	Backup the OFS_ <pack>_SCHEMA_IN .xr I and OFS_<pack>_SCHEMA_OUTI UT.xml files.</pack></pack>
	22	Stop the OFSAA Infrastructure services.
	23	Create and deploy EAR or WAR files.
	24	Assign Grants for schemas.
	25	Start the OFSAA Infrastructure services.
	26	Access the OFSAA Application.
	27	Configure the excludeURLList.cfg file.
	28	(Optional) Configure Big Data Processing.
	29	Create Application Users.
	30	Map Application User(s) to User Groups.
	31	Add TNS entries in the TNSNAMES.ORA file.
	32	Set TDE and Data Redaction in OFSAAI.
	33	Implement Data Protection in OFSAAI.
Additional Configuration	34	Configure the web server.
	35	Configure Resource Reference in web servers.
	36	Configure Work Manager in wel application servers.
	37	Add FTP/SFTP Configuration fo File Transfer.
	38	Configure Infrastructure Server Memory.
	39	Retrieve Patch Information.
	40	Change IP/Hostname, Ports, Deployed Paths of the OFSAA Instance.

Table 3-2 (Cont.) Installation Checklist



SI. No.	Activity
41	Set Infrastructure LDAP Configuration.
42	Configure OFSAAI Web Services.
43	Configure Message Details in Forms Designer.
44	Configure Password Changes.
45	Configure Java Virtual Machine.
46	Configure Internal Service.

Table 3-2	(Cont.) Installation Checklis	t
-----------	-------------------------------	---

Oracle Financial Services Analytical Applications Infrastructure (OFSAAI)

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

Topics:

- Components of OFSAAI
- OFSAA Infrastructure High Availablity
- Deployment Topology
- About OFSAAI Extension Pack

New Features in Release 8.1.2.0.0

This section lists the new features described in this Installation Guide.

Feature	Description
Common Library Upgrade	The following commonly used libraries are upgraded in OFSAA for the 8.1.2.0.0 Release:
	 ant 1.10.11 Batik 1.14 guava 2.29.0 spring-xml-3.0.10.RELEASE.jar spring-ws-core-3.0.10.RELEASE.jar spring-ws-security-3.0.10.RELEASE.jar xmlsec 2.2.3

For more details, see the Oracle Financial Services Advanced Analytical Applications Infrastructure Release 8.1.2.0.0 Readme.



Components of OFSAAI

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

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

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

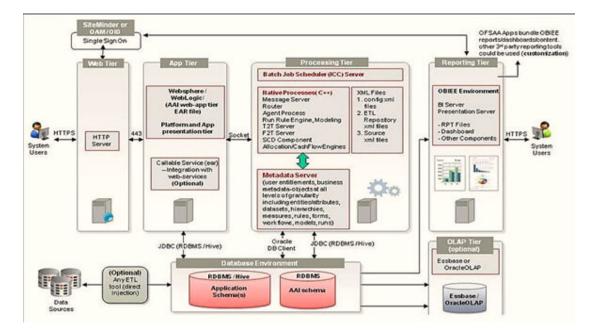


Figure 3-5 Components of OFSAAI

OFSAA Infrastructure High Availability

The current release of the OFSAA Infrastructure supports only the "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 the Active-Passive model of implementation for OFSAAI components. For more information, see Oracle Financial Services Analytical Applications Configuration for High Availability Best Practices Guide.



Deployment Topology

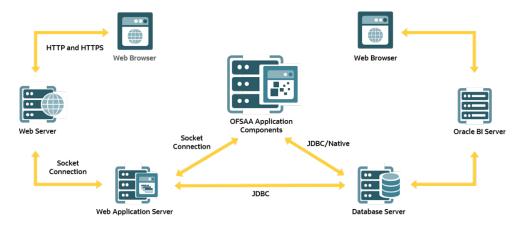


Figure 3-6 The logical architecture implemented for OFSAAAI Application Pack

Installation Overview

Release 8.1.2.0.0 of OFSAA Application Packs support the fresh installation.

The following illustration shows the sequence of steps you need to follow to perform the installation.



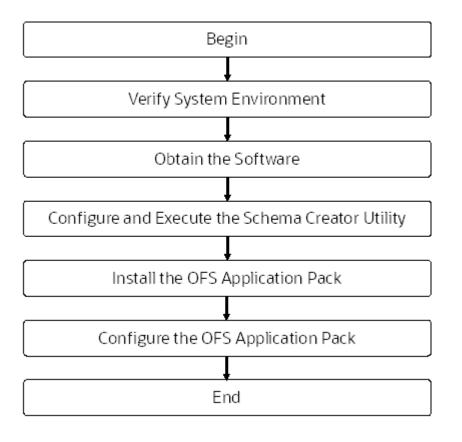


Figure 3-7 Installation Flow of OFSAA Application Packs

Introduction

Oracle Financial Services Advanced Analytical Applications Infrastructure (OFSAAAI) Application Pack provides integrated stress testing and modeling capabilities that you can readily apply across multiple risk areas enabling institutions to devise appropriate enterprisewide and holistic risk and economic capital strategies.

OFSAAAI enables you to comply with regulatory requirements on stress testing, enables advanced customer and portfolio analytics, utilize multiple industry-standard techniques, test and model with complete data integrity.

OFSAAAI Application Pack includes the following applications:

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

Financial Services Enterprise Modeling: This application helps banking institutions to identify the business opportunities and to measure the risk prevailing in the competitive market to safeguard the regulatory and economic capital of banks.



Financial Services Big Data Processing: This option introduces, into the OFSAA platform (OFSAAI), the capability to run analytics on data stored in Hadoop Distributed File System (HDFS).

With the Big Data Processing (BDP) add-on option, all core data management frameworks within OFSAA such as Data Management Framework (T2T/ F2T), Data Quality Framework, and Rules framework are enhanced to operate on both Oracle RDBMS data sources as well as Apache Hive data sources. An OFSAA Run definition can contain tasks that transform data held in the Hive. OFSAA applications that use these platform frameworks for expressing application logic automatically gain the ability to manage data held in the Hive. The OFSAA platform leverages HiveQL and Map Reduce to process data directly in the Hadoop cluster without having to stage data in a relational database.

Financial Services Inline Processing Engine: This application provides real-time monitoring, detection and interdiction of single and complex fraud events across multiple channels and lines of business.

Topics:

- Oracle Financial Services Analytical Applications Infrastructure (OFSAAI)
- Installation Overview

About Oracle Financial Services Analytical Applications Infrastructure Extension Pack

The Oracle Financial Services Analytical Applications Infrastructure Extension (OFS AAIE) Pack adds a set of new advanced features for 8.1.2.0.0 Release across OFSAA applications. This pack can be installed on an OFSAA instance having one or more OFSAA application packs.

The Oracle Financial Services Analytical Applications Infrastructure Extension Pack includes the following advanced features and functionalities:

- Distributed Processing Capabilities
- Analytic Pipeline and Process models
- Attribution Analysis
- Content Management Interoperability Services

Note:

The pack is enabled by procurement of an additional license. For more information, see the OFS AA IE Release Notes and Installation Guide on the Oracle Help Centre.



4 Hardware and Software Requirements

See the Oracle Financial Services Analytical Applications 8.1.2.0.0 Technology Matrix for the hardware and software required.

Operating System	Database	Web Application Server	Web Server
Oracle Linux	Oracle Database	Oracle WebLogic Server/ Apache Tomcat Server	Oracle HTTP Server/ Apache HTTP Server
Oracle Solaris	Oracle Database	Oracle WebLogic Server/ Apache Tomcat Server	Oracle HTTP Server/ Apache HTTP Server

Table 4-1 Recommended Software Combination

Topics:

- Third-Party Licensing Information
- Verify System Environment

License Information

For details on the third-party software tools used, see the OFSAA Licensing Information User Manual Release 8.1.2.0.0.

For information about OFSAA Product Licenses after installation of Application Packs, see the View OFSAA Product Licenses After Installation of Application Pack section in the Oracle Financial Services Advanced Analytical Applications Infrastructure User Guide.

Verify System Environment

To verify your system environment meets the minimum requirements for the installation, a Pre-Install Check utility is available within the Install Kit archive file. This utility can also be obtained separately by contacting My 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 before beginning the installation as part of your organization's "Installation Readiness Verification Process".

For more details on download and usage of this utility, see the Oracle Financial Services Analytical Applications Infrastructure Environment Check Utility Guide.



5 Pre-installation Tasks

Refer to the chapter, to perform the pre-installation steps, before proceeding with the OFSAAI Installation.

Pre-Installation Tasks

- **1.** Install all the prerequisite hardware and software as per the Oracle Financial Services Analytical Applications 8.1.2.0.0 Technology Matrix.
- 2. Verify the System Environment using the Environment Check Utility.
- 3. Configure the Database Instance settings.
- 4. Install and configure the web application server.
- 5. Configure the HTTP settings on the web server.
- 6. (Optional) Install and configure for Big Data/Hive.
- 7. Create the following Installation, Download, and Metadata Repository Directories:
 - Installation directory
 - Temporary directory
 - Staging Area/Metadata Repository
 - Download directory

Oracle Database Instance Settings

Ensure that the following database instance settings are configured:

- NLS_CHARACTERSET to AL32UTF8
- NLS_LENGTH_SEMANTICS to BYTE
- OPEN CURSORS limit to greater than 1000

Web Application Server Settings

Ensure that the web application server is installed and the profile (when using WebSphere) or domain (when using WebLogic) is created.

Note the path values as shown in the following table as you will be prompted to enter the WebSphere Profile path, the WebLogic Domain path, or the Tomcat Deployment path during OFSAAI installation.



Description	Example Value
For WebSphere, specify the WebSphere path as <websphere directory="" profile="">/ installedApps/<nodecellname>.</nodecellname></websphere>	<pre>/data2/test//WebSphere/AppServer/ profiles/<profile_name>/ installedApps/aiximfNode01Cell, where aix-imf is the Host name.</profile_name></pre>
For WebLogic, specify the WebLogic home directory path.	<pre>/<weblogic directory="" home="" path="">/bea/ wlserver_10.3</weblogic></pre>
For Tomcat, specify the Tomcat directory path till /webapps.	/oradata6/ revwb7/tomcat/webapps/

Table 5-1 Web Application Server Settings

Note:

See Configure the Web Server for WebSphere Profile and WebLogic Domain creation.

Web Server Settings

This is an optional requirement. If you have installed an HTTP Server, then configure the appropriate HTTP server settings:

Table 5-2 Web	Server Settings
---------------	-----------------

Description	Example Value
Apache HTTP Server/ Oracle HTTP Server/ IBM HTTP Server	Configure the HTTP Server and note down the IP/ Hostname and Port details as you will be prompted to enter these details during installation.
	Note: See Configure the Web Server for web server configuration.

Big Data Settings

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

Install CDH. For version information, see the Hardware and Software Requirements section. For installation information, see the Cloudera Documentation at Cloudera Documentation.

Create the Installation, Download, and Metadata Repository Directories

To install, create the following directories:



- **OFSAA Download Directory (Optional)**: This is the directory where the downloaded installer/ patches can be copied. Create a download directory and copy the OFSAA Application Pack Installer File (archive). Assign 755 permission to this directory.
- **Temporary Directory**: Default temporary directory where the installation files are stored for a short time to support faster installation. Configure adequate space on the /tmp directory. It is recommended that you allocate more than 10 GB of space. Assign 755 permission to this directory with NOEXEC option disabled.

Note:

If NOEXEC option is enabled, the extraction of files by the installer into the /tmp directory is prevented and the binaries will not execute in the directory, which will fail the installation.

- OFSAA Installation Directory (Mandatory): Create an installation directory where the product binaries are installed. Set the variable FIC_HOME in the .profile file to point to the OFSAA Installation Directory. Assign 755 user permission to the installation directory.
- OFSAA Staging/Metadata Directory (Mandatory): A directory to hold the application metadata artifacts and additionally act as the staging area for the flat files. This directory is also referred to as "FTPSHARE". Create a Staging/Metadata Repository Directory to copy data files, save data extracts, and so on.

The directory must exist on the same system as the OFSAA Installation. This directory can be configured on a different mount or under a different user profile. However, the owner of the installation directory must have RWX (775) permissions to this directory.

Note:

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

Configure the OS File System Settings and Environment Settings in the .profile File

A .profile file is a start-up file of a UNIX user. Create the .profile file at the home directory of the logged-in user if it is not already available. The user must have 755 permission on the file to execute it. This file consists of various parameters for Environment Settings, OS, and File System Settings.

To set the parameters for the .profile file, login as a non-root user, and configure the environment settings.

Note:

Do not modify any other parameters other than the parameters mentioned in the following subsections.



Topics:

- Configure Operating System and File System Settings
- Configure the Environment Settings

Configure Operating System and File System Settings

Parameter	Configuration Action	
Installation Directory	In the .profile file, set the variable FIC_HOME to point to the OFSAA Installation Directory.	
File Descriptor Settings	In the sysctl.conf file, to change the number of file descriptors, do the following as the root user:	
	 Edit the following line in the /etc/ sysctl.conf file: fs.file-max = <value> where <value> is greater than 15000</value></value> 	
	 Apply the change by running the following command: # /sbin/ sysctl -p 	
	Note: The value specified here is the minimum value to be set for the installation process to go forward. For other modules, this value may depend on the available resources and the number of	

processes executed in parallel.

Parameter	Configuration Action
Total Number of Process Settings	In the sysctl.conf File set the value to greater than 15000.
	Note: The value specified here is the Minimum Value to be set for the Installation Process to go forward. For other modules, this value may depend on the available resources and the number of processes executed in parallel.
Port Settings	Default port numbers to be enabled on the system are 6500, 6501, 6505, 6507, 6509, 6510, 6666, 9999, and 10101.

Configure the Environment Settings

This section covers the following topics:

- Java Settings
- Oracle Database Server and Client Settings
- TNS entries in the TNSNAMES.ORA file for Non-TCPS and TCPS
- Oracle Wallet Settings for Installation in TCPS Mode
- Oracle Essbase Settings
- Time Zone Settings



Java Settings

Description	Example Value
In the .profile file, set PATH to include the Java Runtime Environment (JRE) absolute path. Ensure that SYMBOLIC links to JAVA installation are not set in the PATH variable.	For example: PATH=/usr/java/ jre1.8.0_221/bin:\$ORACLE_ HOME/ bin:\$PATH export PATH
	✓ Note: OFSAA does not support OpenJDK and JRE.
In the .profile file, set PATH to include the Java Runtime Environment bin path.	JAVA_BIN=/scratch/ < <version>>/jre/bin</version>
	For example: PATH=/usr/java/jre1.8.0 221/
	bin:\$ORACLE_ HOME/bin:\$PATH
Enable unlimited cryptographic policy for Java.	For more information, see the section <i>Enabling</i> <i>Unlimited Cryptographic Policy</i> from the OFS Analytical Applications Infrastructure Administration Guide.

Oracle Database Server and Client Settings

Description	Example Value
In the .profile file, set TNS_ADMIN pointing to the appropriate tnsnames.ora file.	TNS_ADMIN=\$HOME/tns
In the .profile file, set ORACLE_HOME pointing to the appropriate Oracle Client installation.	ORACLE_HOME=/scratch/oraofss/ app_client18c/product/ 18.0.0/client_1
In the .profile file, set PATH to include the appropriate \$ORACLE_HOME/bin path.	PATH=\$JAVA_HOME/ bin:\$ORACLE_HOME/bin

TNS entries in the TNSNAMES.ORA file for Non-TCPS and TCPS

This section covers the following topics:

- Non-TCPS
- TCPS



Non-TCPS

Description	Example Value
Ensure that an entry (with SID/ SERVICE NAME) is added in the tnsnames.ora file on the OFSAA server.	<pre><sid_name> = DESCRIPTION =(ADDRESS_LIST = (ADDRESS = (PROTOCOL = TCP)(HOST = <host_name>.in.oracle.com) (PORT = 1521)))(CONNECT_DATA = (SERVICE_NAME = <sid_name>)))<atomic_schema_name> = (DESCRIPTION =(ADDRESS_LIST = (ADDRESS = (PROTOCOL = TCP)(HOST = <host_name>.in.oracle.com)(PORT = 1521))) (CONNECT_DATA = (SERVICE_NAME = <sid_name>)))</sid_name></host_name></atomic_schema_name></sid_name></host_name></sid_name></pre>
<sid name=""> =</sid>	
(DESCRIPTION =	
(ADDRESS_LIST =	
(ADDRESS = (PROTOCOL = TCP)(H NAME>)(PORT = <port number="">))</port>	OST = <host< td=""></host<>
)	
(CONNECT_DATA =	
(SERVICE_NAME = <sid name="">)</sid>	
)	
)	
<atomicschemaname> =</atomicschemaname>	
(DESCRIPTION =	
(ADDRESS_LIST =	
(ADDRESS = (PROTOCOL = TCP)(H NAME>)(PORT = <port number="">))</port>	OST = <host< td=""></host<>
)	
(CONNECT_DATA =	



Note:

The ATOMIC SCHEMA NAME must be the same as defined in the OFS_<App Pack>_SCHEMA_IN.xml file.

TCPS

Table 13: TNS entries in the TNSNAMES.ORA file for TCPS

Description	Example Value
Ensure that an entry (with SID/ SERVICE NAME) is added in the tnsnames.ora file on the OFSAA server.	<pre><sid_name> = DESCRIPTION =(ADDRESS_LIST = (ADDRESS = (PROTOCOL = TCPS)(HOST = <host_name>.in.oracle.com)(PORT = 1521)))(CONNECT_DATA = (SERVICE_NAME) = <sid_name>)))<atomic_schema_name> = (DESCRIPTION =(ADDRESS_LIST = (ADDRESS = (PROTOCOL = TCPS)(HOST = <host_name>.in.oracle.com)(PORT = 1521)))(CONNECT_DATA = (SERVICE_NAME = <sid_name>))) (security=(ssl_server_cert_dn=CN=<host_n AME>))))</host_n </sid_name></host_name></atomic_schema_name></sid_name></host_name></sid_name></pre>
Ensure that an entry (with WALLET_HOME and wallet parameters) is added in the sqlnet.ora file on the OFSAA server must be same as Oracle database server running with TCPS.	NAMES.DIRECTORY_PATH= (TNSNAMES, EZCONNECT)WALLET_LOCATION = (SOURCE = (METHOD = FILE) (METHOD_DATA = (DIRECTORY = <path to<br="">WALLET DIRECTORY>)))SQLNET.WALLET_OVERRID E = TRUE SSL_CLIENT_AUTHENTICATION = FALSE SQLNET.AUTHENTICATION_SERVICES = (TCPS,NTS,BEQ) SSL_CIPHER_SUITES = (SSL_RSA_WITH_AES_256_CBC_SHA, SSL_RSA_WITH_3DES_EDE_CBC_SHA)</path>

```
<SID NAME> =
    (DESCRIPTION =
    (ADDRESS_LIST =
        (ADDRESS = (PROTOCOL = TCPS) (HOST = <HOST NAME>) (PORT =
<PORT
        NUMBER>))
    )
    (CONNECT_DATA =
        (SERVICE_NAME = <SID NAME>)
    (security=(ssl_server_cert_dn=CN=<HOST NAME>))
    )
    (ATOMICSCHEMANAME>=
        (DESCRIPTION =
        (ADDRESS_LIST =
(ADDRESS = (PROTOCOL = TCPS) (HOST = <HOST NAME>) (PORT = <PORT</pre>
```

Note:

The ATOMIC SCHEMA NAME must be the same as defined in the OFS_<App Pack>_SCHEMA_IN.xml file, which also includes prefix without underscore. For example, DEVOFSAAATM.

Oracle Wallet Settings for Installation in TCPS Mode

In the .profile file, set the following parameters for Oracle Wallet if you want to run the installer in the TCPS mode:

```
OFS_ORA_WAL_ENABLED=TRUE
```

export OFS_ORA_WAL_ENABLED

WALLET HOME=<PATH TO THE DIRECTORY WHERE WALLET RELATED FILES EXIST>

```
export WALLET HOME
```

Note:

- Installation in TCPS mode with Oracle Wallet requires Config and Atomic Schema credentials in Oracle Wallet along with certificates.
- If you do not configure this variable, the system defaults to OFS ORA WAL ENABLED=FALSE.
- For information on Creating and Managing Oracle Wallet, see https:// blogs.oracle.com/dev2dev/ssl-connection-to-oracle-db-using-jdbc,-tlsv12,-jksor-oracle-wallets and https://blogs.oracle.com/weblogicserver/weblogic-jdbcuse-of-oracle-wallet-for-ssl

Oracle Essbase Settings

In the .profile file, set the following parameters if you want to use Oracle Hyperion Essbase OLAP features.

Description

Example Value

ARBORPATH to point to an appropriate Oracle Essbase Client installation.

PATH=\$PATH:\$ARBORPATH/bin



Description	Example Value
ESSBASEPATH to point to an appropriate Oracle Essbase Client installation.	ESSBASEPATH=/scratch/essps3/Oracle/ MiddlewareHome/EPMSystem11R1/common/ EssbaseRTC-64/11.1.2.0
	export ESSBASEPATH
HYPERION_HOME to point to an appropriate Oracle Essbase Client installation.	HYPERION_HOME=/scratch/essps3/Oracle/ MiddlewareHome/EPMSystem11R1/common/ EssbaseRTC-64/11.1.2.0
	export HYPERION_HOME

Time Zone Settings

In the $\tt.profile$ file, set the Time Zone parameter to indicate the time zone of your region/ location.

Description	Example Value
Time Zone	TZ=Asia/Calcutta

Install Oracle R distribution and Oracle R Enterprise (ORE)

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

Install Oracle R Distribution and Oracle R Enterprise (Server Components) on the Oracle Database server. See the Oracle R Enterprise Installation and Administration Guide for Linux and Solaris in the Oracle R Enterprise Documentation Library. For supported versions of ORD and ORE, see the Oracle Financial Services Analytical Applications 8.1.2.0.0 Technology Matrix.

Note:

If you use ORE 1.4.1 with 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 the session time zone in scripts registered within OFS EM by using the Sys.env(TZ=<time zone>) R function.

Download the OFSAAAI Applications Pack Installer and Mandatory Patches

To download the OFSAAAI Applications Pack Installer Release 8.1.2.0.0, follow these steps:

1. Log in to My Oracle Support and search for 32791983 in the Patches & Updates Tab.



2. Download the installer archive and copy (in Binary mode) to the download directory that exists in the OFSAAAI installation setup.

Note:

Select the required archive files for either Solaris SPARC or Linux based on the operating system of your OFSAAAI.

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

Note:

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

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

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

Extract the Software

You must be logged in to the UNIX operating system as a non-root user to perform the following steps. To extract the software, follow these steps:

 Download the unzip utility (OS-specific) unzip_<os>.Z and copy it in Binary mode to the directory that is included in your PATH variable.

If you already have an unzip utility to extract the contents of the downloaded archive, skip this step. Uncompress the unzip installer file with the command:

```
uncompress unzip <os>.Z
```

Note:

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

 Assign execute (751) to the file with the following command: chmod 751 unzip_<OS> For example:

chmod 751 unzip sparc

3. Extract the contents of the OFSAAAI Application Pack Release 8.1.2.0.0 installer archive file in the download directory with the following command:

```
unzip OFS_AAAI_PACK.zip
```

4. Navigate to the download directory and assign execute permission to the installer directory with the following command:



chmod -R 750 OFS_AAAI_Pack

6 Installation Tasks

Refer to the chapter, to install OFSAAI Application Pack.

Installation Tasks

- 1. Configure the OFS_<App pack>_PACK.xml file.
- 2. Configure the OFS_<App pack>_SCHEMA_IN.xml file.
- 3. (Optional) Configure the <App pack>_SCHEMA_BIGDATA_IN.xml file.
- 4. Execute the Schema Creator Utility in Online, Offline, or TCPS modes and verify the log file.
- 5. Configure the OFSAAI_InstallConfig.xml file.
- 6. Trigger the application installation.

Configure the OFS_<App pack>_PACK.xml File

The OFS_<APP PACK>.xml file holds details on the various products that are packaged together in OFS <App pack>.

To configure the xml file, follow these steps:

- 1. Navigate to the OFS_<APP PACK>/conf directory and configure the OFS_<APP PACK>.xml file in a text editor as mentioned in the following table.
- 2. Save the file.

Figure 6-1 Sample OFS_AAAI_PACK.xml File





Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Comments
APP_PACK_ID	Unique Application Pack Identifier	Y	Unique Seeded Value. Do not modify this value.
IS_OPT_INSTALL VALUE="TRUE"	Unique Application Entry	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 modify this value.
APP_ID	Unique Application Identifier	Y	Unique Seeded Value. Do not modify this value.
APP_ID/ PREREQ	Prerequisite Application/ Product	Υ	Unique Seeded Value. For most applications, OFSAAAI is the prerequisite set. For all other applications, the default Application ID is set to none. You can set it for the applications you want to install. Do not modify this value.
APP_ID/ DEF_SEL_FLAG	Default Selected Flag	Υ	In all Application Packs, Infrastructure requires this value to be set to "YES". Do not modify this value.

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Comments
APP_ID/ ENABLE	Enable Application/ Product	Ŷ	 Default YES for Infrastructure NO for Others Set this attribute-value to YES against every APP_ID which is licensed and must be enabled for use.
			Note: The Application/ Product cannot be disabled once enabled.
			Only Applications/ Products which are enabled are installed. In order to enable other licensed Applications/Products, you must reinstall by making the flag as Y for the App_ID.
			However, in case of a reinstallation, to enable the other Applications/Products, skip the execution of the schema creation utility if it does not include any additional sandboxes to be created.
APP_NAME	Unique Application/ Product Name	Y	Unique Seeded Value. Do not modify this value.
APP_DESCRIPTION	Unique Application/ Product Name	Y	Unique Seeded Value. Do not modify this value.
VERSION	Unique release version	Y	Unique Seeded Value. Do not modify this value.

Configure the Schema Creator Utility

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

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



Prerequisites

Ensure you have the following before configuring the Schema Creator Utility:

- Oracle User ID/Password with SYSDBA privileges
- JDBC Connection URL for RAC/Non RAC database
- The HOSTNAME/IP of the server on which OFSAA is getting installed.

In the case of the HIVE installation, you must also have the following:

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

Configure the Schema Creator Utility for RDBMS Installation

If the installation is being performed for RDBMS, provide the Pack specific schema details in the OFS_<App Pack>_SCHEMA_IN.xml file.

- CONFIG: This schema holds the entities and other objects required for OFSAA setup configuration information. 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. There can be multiple ATOMIC schemas per OFSAA Instance.

Configure the OFS_<App Pack>_SCHEMA_IN.xml File

This section describes how to create database schemas, objects within schemas, and assigning appropriate grants.

Specify the database schemas required for the installation in the OFS_<APP PACK>_SCHEMA_IN.xml file. Update the values of the various tags and parameters available in this file before executing the schema creator utility.

This file must be configured only if the database is RDBMS.

To configure the <APP PACK> SCHEMA IN.xml file, follow these steps:

- **1.** Log in to the system as a non-root user.
- 2. Navigate to the <APP PACK>/schema_creator/conf directory and configure the <APP PACK> SCHEMA IN.xml file as described in the following table.
- 3. Save the file.



Tag Name/ Attribute Name	Descriptio n	Mandato ry	Default Value/ Permissible Value	Comments
<app_pac K_ID></app_pac 	Seeded unique ID for the OFSSAA Application Pack	Y	Seeded	Do not modify this value.
<is_tcps></is_tcps>	Enter if the TCPS configurati on is required.	Y	Seeded, with FALSE as the default value.	Modify this to TRUE if you require the installer to uptake the configuration.

Table 6-1	OFS_ <app pack=""></app>	_SCHEMA	_IN.xml File Parameters
-----------	--------------------------	---------	-------------------------



Tag Name/ Attribute Name	Descriptio n	Mandato ry	Default Value/ Permissible Value	Comments
<jdbc_ur L></jdbc_ur 	Enter the JDBC URL.	Y	Example: jdbc:oracle:thin:@ <dbserver IP/HOST/IP>:<port>:<sid> or jdbc:oracle:thin:@//[HOS T] (PORT]/SERVICE or jdbc:oracle:thin:@(DESCRI PTIDN=(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]))) a For_example: jdbc:oracle:thin:@//dbhos t.senver.com:1521/scan-1 or t gdbc:oracle:thin:@(DESCRI PTION=(ADDRESS_ LIST=(ADDRESS=(PROT OCOL=TCP) (HOST=dbhost1.server.com) (pod=1521)) (ADØRESS=(PROTOCOL=TCP) (HOST=dbhost1.server.com) (pod=1521)) (ADØRESS=(PROTOCOL=TCP) (HOST=dbhost2.s erver.com) (PORT=1521)) (LQAD_BALANCE=yes)(FAILOV ER=yes))(CONNECT_ DATA=(SERVICE_NAME=service1))) B or C <jdbc_url>jdbc:oracle:thin:@(DESCRI PTION=(ADDRESS= (PROTOCOL=TCP)(HOST = dbhost.server.com)(PORT = 2484)) (CONNECT_DATA =(SERVICE_NAME=SERVICEID)) (security=(ssl_server_cert_dn=CN =dbhost)))</jdbc_url></sid></port></dbserver 	Ensure to add an entry (with SID/ SERVICE NAME) in th Insnames.ora file on the OFSAA server. The entry must match with the SID/ SERVICE NAME used in the JDBC URL. Ensure that you have configured: 1. The correct Oracle Wallet with the credentials for stored Sys, Config, and Atomi Users. 2. The JDBC URL as follows: jdbc:oracle:thin:/@ For more information on how to configure Oracle Wallets for OFSAA Installation and Data Sources, see the OFS Analytical Applications Infrastructure Administration Guide.

Table 6-1 (Cont.) OFS_<APP PACK>_SCHEMA_IN.xml File Parameters

or



Tag Name/ Attribute Name	Descriptio n	Mandato ry	Defau	lt Value/ Permissible Value	Comments
-				acle:thin:/@	
			1.		

Table 6-1 (Cont.) OFS_<APP PACK>_SCHEMA_IN.xml File Parameters

Tag Name/ Attribute Name	Descriptio n	Mandato ry	Default Value/ Permissible Value	Comments
			1	
			Ν	
			0	
			Ν	
			- R	
			A	
			С	
			e	
			n a	
			b	
			1	
			e	
			d d	
			a	
			t	
			a	
			b	
			a s	
			e	
			С	
			0	
			n n	
			e	
			C	
			t	
			i	
			v i	
			ť	
			у	
			U R	
			R	
			L p r	
			0	
			V :	
			i d	
			e	
			e d	
			t	
			h	
			e <	

Table 6-1 (Cont.) OFS_<APP PACK>_SCHEMA_IN.xml File Parameters

Tag Name/ Attribute Name	Descriptio n	Mandato ry	Defau	It Value/ Permissible Value	Comments
			3.	IS TCPS>tagyalueisTRUE. WalueisTRUE. Wallet. enabledJDBCURL.	

Table 6-1 (Cont.) OFS_<APP PACK>_SCHEMA_IN.xml File Parameters



Tag Name/ Attribute Name	Descriptio n	Mandato ry	Default Value/ Permissible Value	Comments
<jdbc_dr IVER></jdbc_dr 	This driver's name is seeded by default.	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 component s.	Y	Host Name/ IP Address	
<setupin FO>/ PREFIX_S CHEMA_N AME</setupin 	Identifies whether the value specified in <setupin FO>/ NAME attribute must be prefixed to the schema name.</setupin 	Ν	YES or NO	The default value is YES.

Table 6-1 (Cont.) OFS_<APP PACK>_SCHEMA_IN.xml File Parameters



Tag Name/ Attribute Name	Descriptio n	Mandato ry	Default Value/ Permissible Value	Comments
<setupin FO>/NAME</setupin 	Enter the acronym for the type of implement ation. This information is displayed in the OFSAA Home Page. On executing the schema creator utility, this value is prefixed with each schema name. For example: dev_ofsaa conf, uat_ofsaat m.	Y	Accepts strings with a minimum length of two and a maximum of four. Example: DEV, SIT, PROD	This name appears in the OFSAA Landing Page as "Connected To: xxxx". The schemas that are created get this prefix. For example, dev_ofsaaconf, uat_ofsaaconf, and so on.
<passwo RD>/ DEFAULT*</passwo 	Enter the password if you want to set a default password for all schemas. You also must set the APPLYSA ME- FORALL 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.	On successful execution of the utility, the entered password in the OFS_ <app PACK>_SCHEMA_IN.xmI file is cleared.</app

Table 6-1 (Cont.) OFS_<APP PACK>_SCHEMA_IN.xml File Parameters



Tag Name/ Attribute Name	Descriptio n	Mandato ry	Default Value/ Permissible Value	Comments
<passwo RD>/ APPLYSAM EFORALL</passwo 	If you have entered Y in APPLYSA ME- FORALL attribute and also have specified individual passwords for all the schemas, then the specified individual passwords will take precedenc e.	Y	Default N Permissible: Y or N Enter Y if you want to apply the password specified in the DEFAULT attribute for all the schemas. If you enter as N, you must provide individual passwords for all schemas.	Setting this attribute value is mandatory if the DEFAULT attribute is set.
<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.	Y	ATOMIC/CONFIG/SANDBOX/ ADDON SANDBOX and ADDON schemas do not apply to OFSAAI.	Only One CONFIG schema can exist in the file. Do not edit this attribute value. This schema identifies as the CONFIGURATION schema that holds the OFSAA setup detains and other Metadata information. Multiple ATOMIC/ SANDBOX/ADDON schemas can exist in the file.

Table 6-1 (Cont.) OFS_<APP PACK>_SCHEMA_IN.xml File Parameters



Tag Name/ Attribute Name	Descriptio n	Mandato ry	Default Value/ Permissible Value	Comments
<schema >/NAME</schema 	The schemas' names are seeded based on the Application Pack by default. You can edit the schema names if required. The Schema Name will have a prefix of the SETUPINF O/ NAME attribute. SCHEMA NAME must be the same for all the ATOMIC Schemas of the application s within an Application Pack.	Y	The permissible length is 15 characters and only alphanumeric characters are allowed except underscore '_'.	SETUPOINFO/NAME attribute value is prefixed to the schema name being created. For example, if a name is set as 'ofsaatm' and setupinfo as 'uat', then schema being created is 'uat_ofsaatm'. NAME must be the same where APP_GRP=1 for all SCHEMA tags (Not applicable for this Application Pack).

Table 6-1 (Cont.) OFS_<APP PACK>_SCHEMA_IN.xml File Parameters



Tag Name/ Attribute Name	Descriptio n	Mandato ry	Default Value/ Permissible Value	Comments
<schema >/ PASSWOR D</schema 	Enter the password of the schema to be created.	N	The maximum length allowed is 30 characters. Special characters are not allowed.	It is mandatory to enter the password if you have set the <password>/ APPLYSAMEFORALL attribute as N.</password>
	If this attribute is left blank, then the password specified in the <passwo RD>/ DEFAULT attribute is applied as the Schema Password.</passwo 			
<schema >/APP_ID</schema 	The Application ID is seeded based on the Application Pack by default.	Y	Unique Seeded Value	Identifies the Application/ Product for which the schema is being created. Do not edit this attribute value. Do not modify this value.
<schema >/ DEFAULTT ABLESPAC E</schema 		Ν	Default USERS Permissible Any existing valid tablespace name.	Modify this value to associate any valid tablespace with the schema.

Table 6-1 (Cont.) OFS_<APP PACK>_SCHEMA_IN.xml File Parameters



Tag Name/ Attribute Name	Descriptio n	Mandato ry	Default Value/ Permissible Value	Comments
<schema >/ TEMPTABL ESPACE</schema 	Enter the available temporary tablespace for DB User. If this attribute is left bank, 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 the DEFAULTT ABLESPA CE 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.

Table 6-1 (Cont.) OFS_<APP PACK>_SCHEMA_IN.xml File Parameters



Tag Name/ Attribute Name	Descriptio n	Mandato ry	Default Value/ Permissible Value	Comments
<schema >/ INFODOM</schema 	Enter the name of the Information Domain to associate this schema. The schema creator utility automatica Ily 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 _OPTIONS >/</adv_sec 		Ν		Uncomment the tag and edit if you want to add security options. For example, TDE and Data Redact. For details, see the example in the comments for the <tablespace>/ENCRYPT tag.</tablespace>
<adv_sec _OPTIONS >/TDE</adv_sec 	Tag to enable/ disable TDE.	Ν	The 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 _OPTIONS >/ DATA_RED ACT</adv_sec 	Tag to enable/ disable the Data Redaction feature.	Ν	The default is FALSE. To enable DATA_REDACT, set this to TRUE	Ensure this tag is not commented if you have uncommented <adv_sec_o PTIONS></adv_sec_o

Table 6-1 (Cont.) OFS_<APP PACK>_SCHEMA_IN.xml File Parameters



Tag Name/ Attribute Name	Descriptio n	Mandato ry	Default Value/ Permissible Value	Comments
<tablesp ACES></tablesp 	Parent tag to hold <tablesp ACE></tablesp 	N	NA	Uncomment the tag and edit. ONLY if tablespaces are to be created as part of the installation.
	elements			For details, see the example following the table.
				When TDE is TRUE in ADV_SEC_OPTIONS,
				then it is mandatory for the <tablespaces> tag to be</tablespaces>
<tablesp ACE>/</tablesp 	Logical Name of	Y		present in the XML file. Name, if specified, must be referred in the
NAME	the tablespace to be			<schema DEFAULTTABLESPACE= "##NAME##"> attribute.</schema
	created.			Note the ## syntax.
<tablesp ACE>/ VALUE</tablesp 	Physical Name of the tablespace to be created.	Y	NA	Value, if specified, is the actual name of the TABLESPACE.
<tablesp ACE>/ DATAFILE</tablesp 	Specifies the location of the data file on the server.	Y	ΝΑ	Enter the absolute path of the file to be created.
<tablesp ACE>/ AUTOEXTE ND</tablesp 	Specifies if the tablespace must be extensible or have a hard limit.	Υ	ON or OFF	Set to ON to ensure that the tablespace does not run out of space when full.

Table 6-1 (Cont.) OFS_<APP PACK>_SCHEMA_IN.xml File Parameters



Tag Name/ Attribute Name	Descriptio n	Mandato ry	Default Value/ Permissible Value	Comments
<tablesp ACE>/ ENCRYPT</tablesp 	Specifies if the tablespac	Y	ON or OFF	Set to ON to ensure that the tablespaces when created are encrypted using TDE.
	e(s) must be encrypted using TDE.			Note: Encryption of tablespaces requires enabling Transparent Data Encryption (TDE) on the Database Server.
				Example: The following snippet shows that TDE is enabled and hence the tablespace is shown with encryption ON.
				<adv_sec_options> <option <br="" name="TDE">VALUE="FALSE"/></option></adv_sec_options>
				<pre><option name="DATA_REDACT" value="FALSE"></option></pre>
				<tablespaces></tablespaces>
				<tablespace NAME="OFS_AAI_TBSP_7 VALUE="TS_USERS1" DATAFILE="/</tablespace
				scratch/ora19c/app/oracle/ oradata/OFSPQA19cDB/ ts_users1.dbf" SIZE="500M AUTOEXTEND="ON" ENCRYPT="ON" />
				<tablespace NAME="OFS_AAI_TBSP_2 VALUE="TS_USERS2" DATAFILE="/</tablespace
				scratch/ora19c/app/oracle/ oradata/OFSPQA19cDB/ ts_users2.dbf" SIZE="500M AUTOEXTEND="ON" ENCRYPT="ON" />
				<schemas> <schema TYPE="CONFIG" NAME="ofsaaconf" PASSWORD="" APP_ID="OFS_AAI" DEFAULTTABLESPACE="# OFS_AAI_TBSP_1##"</schema </schemas>

Table 6-1 (Cont.) OFS_<APP PACK>_SCHEMA_IN.xml File Parameters



Tag Name/ Attribute Name	Descriptio n	Mandato ry	Default Value/ Permissible Value	Comments
				TEMPTABLESPACE="TEMP "
				QUOTA="unlimited"/>
				<schema <br="" type="ATOMIC">NAME="ofsaaatm" PASSWORD="" APP_ID="OFS_AAAI" DEFAULTTABLESPACE="## OFS_AAI_TBSP_2##" TEMPTABLESPACE="TEMP " QUOTA="unlimited" INFODOM="OFSAAAIINFO" /></schema>

Table 6-1 (Cont.) OFS_<APP PACK>_SCHEMA_IN.xml File Parameters

Configure the Schema Creator Utility for HDFS Schema

If the installation is being performed for Big Data, provide the Pack specific schema details in the <APP Pack>_SCHEMA_BIGDATA_IN.xml file.

The types of schemas that you can configure are:

- CONFIG: This schema holds the entities and other objects required for OFSAA setup configuration information. 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. 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. There can be multiple DATADOM schemas per OFSAA Instance.

Configure the <APP Pack>_SCHEMA_BIGDATA_IN.xml File

Creating HIVE schemas and objects within the schemas are the primary steps in the installation process of OFSAA Applications.

The <APP PACK>_SCHEMA_BIGDATA_IN.xml file contains details of the various application schemas. Update the values of the various tags and parameters available in this file before executing the schema creator utility.

This file must be configured only if the installation is for HDFS. This file is not required to be configured for an RDBMS ONLY target installation.



Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<app_pack_ ID></app_pack_ 	Seeded unique ID for the OFSAA Application Pack	Y	Seeded	DO NOT modify this value.
<is_tcps></is_tcps>	Enter if the TCPS configuration is required.	Y	Seeded, with FALSE as the default value.	Modify this to TRUE if you require the installer to uptake the configuration.

Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments		
<jdbc_url></jdbc_url>	Enter the JDBC	Y	Example:			
	URL Note: You can enter RAC/ NON- RAC enabled		jdbc:oracle:thin: @ <host <br="">IP>:<port>:<si D></si </port></host>			
	database		or	Comments		
	connectivity URL.		jdbc:oracle:thin: @//[HOS T] [:PORT]/ SERVICE For an HDFS ONLY target			
			or jdbc:oracle:thin: @(DESCRI PTION=(ADDRE			
			SS_ LIST=(ADDRESS =(PROT OCOL=TCP) (HOST=[HO ST]) (port=[PORT])) (ADD RESS=(PROTOC OL=TCP) (HOST=[HOST]) (PORT=[PORT])) (LOAD_ BALANCE=yes) (FAILOV ER=yes)) (CONNECT_ DATA=(SERVICE			
			NAME=[SERVIC E]))) For example, jdbc:oracle:thin: @// dbhos t.server.com:1521 /service 1			
			or			
			jdbc:oracle:thin: @//dbsho			



Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
			st.server.com:152 1/scan-1	
			or jdbc:oracle:thin: @(DESCRI PTION=(ADDRE SS_ LIST=(ADDRESS =(PROT	
			OCOL=TCP) (HOST=dbhost1. server.co	
			m)(port=1521)) (ADDRESS=(PR OTO-	
			COL=TCP) (HOST=dbhost2. s erver.com) (PORT=1521)) (LOAD_ BALANCE=yes) (FAILOV ER=yes)) (CONNECT_ DATA=(SERVICE	
			_ NAME=service1)))	
<jdbc_ DRIVER></jdbc_ 	By default, this driver's name is seeded.	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 must be prefixed to the schema name.</setupinfo>	Ν	YES or NO	The default value is YES.



Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<setupinfo>/ NAME</setupinfo>	Enter the acronym for the type of implementation. This information is displayed in the OFSAA Home Page.	Y	Accepts strings with a minimum length of two and a maximum of four. Example, DEV, SIT, PROD	This name appears in the OFSAA Landing Page as "Connected To: xxxx" Note: On executing the schema creator utility, this value is prefixed with each schema name. For example: dev_ ofsaaconf, uat_ofsaaatm.
<password>/ DEFAULT*</password>	Enter the password if you want to set a default password for all schemas. Note: You also must set the APPLYSAMEFO RALL attribute as Y to apply the default password for all the	Ν	The maximum length allowed is 30 characters. Special characters are not allowed.	Applies only to the RDBMS type METADOM schema(s).

schemas.



Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<password>/ APPLYSAMEFO RALL</password>	Enter as Y if you want to apply the password specified in the DEFAULT attribute for all the schemas. If you enter as N, you must provide individual passwords for all schemas. Note: If you have entered Y in the APPLYSAME- FORALL attribute and also have specified individual passwords for all the schemas, then the specified individual passwords will take precedence.	Υ	Default N Permissible Y or N	Setting this attribute value is mandatory If the DEFAULT attribute is set. Applies only to the RDBMS type METADOM schema(s).
<schemas>/ TYPE=RDBMS</schemas>	Identifies the RDBMS schema details.	Y	Default names for schemas within the pack are 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 are on Hive).

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

Table 6-2	(Cont.) <app pack=""></app>	_SCHEMA_BIGDATA	_IN.xml file Parameters
-----------	-----------------------------	-----------------	-------------------------



T N		M		2
Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<schema>/ DEFAULTTABLE SPACE</schema>	Enter the available default tablespace for DB User.	Ν	Default USERS Permissible Any existing valid	Modify this value to associate any valid tablespace with the schema.
	Note: If this attribute is left blank, then USERS is set as the default tablespace.		tablespace name.	
<schema>/ TEMPTABLESPA CE</schema>	Enter the available temporary tablespace for the DB User. Note: If this attribute is left blank, then 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.
<schema>/ QUOTA</schema>	Enter the quota to be set on DEFAULTTABLE SPACE 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	Ν	Permissible length is 16 characters and only alphanumeric characters allowed. No special characters allowed.	
	if no value is specified for this attribute.			

Table 6-2	(Cont.) <app pack="">_</app>	SCHEMA_BIGDATA	IN.xml file Parameters
-----------	------------------------------	----------------	------------------------



Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<schemas>/ TYPE=HDFS</schemas>	Type of schemas being created.	Y		Refers to the DATADOM of the Application Pack being installed.
<hive_ SERVER_ HOST></hive_ 	IP/HostName of the server where HIVE is installed.	Y		
<hive_lib_ path></hive_lib_ 	The directory path where the HIVE related drivers/jar files are copied.	Υ		Manually copy the jars mentioned in the Copy_Jars_to_O FSAA_Installation _Folder and Copy_KEYTAB_a nd_KRB5_Files_i n_OFSAAI sections.
				Note: Select the appropriate versions of the files.
<schema>/ NAME</schema>	By default, the schema names are seeded based on the Application Pack. You can edit the schema names if required. Note: The Schema Name will have a prefix of the SETUPINFO/ NAME attribute.	Υ	The permissible length is 20 characters and only alphanumeric characters allowed.	The Schema Name must not be the same as the Schema Name specified for the ATOMIC Schema Type.
<schema>/ TYPE</schema>	Identifies the type of schema where the data model entities 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 the connection.	Y	By default, the only supported type is HIVE in this release.	In upcoming releases, the type value can be HIVE/ IMPALA, etc.
<schema>/ <property>/ COMMENT</property></schema>	COMMENTS for the HIVE schema.	Ν		
<schema>/ <property>/ LOCATION</property></schema>	You can optionally specify a location for the table data.	Ν		



Tag Name/ Attribute Name	Description	Mandatory (Y/ N)	Default Value/ Permissible Value	Comments
<connection_ PROPERTIES>/ <property>/ JDBC_DRIVER</property></connection_ 	HIVE JDBC driver details.	Y	com.cloudera.hiv e.j dbc4.HS2Driver	The default cloudera HiveServer 2 driver name.
<connection_ PROPERTIES>/ <property>/ JDBC_URL</property></connection_ 	Enter the HIVE JDBC URL.	Y	Valid Hive JDBC URL to be specified.	Specify the Hive JDBC URL to connect to the Hive Server.
<connection_ PROPERTIES>/ <property>/ AUTH_TYPE</property></connection_ 	Authentication Type.	Y	Permissible values: KERBEROS_WIT H_ KEYTAB	Only "Kerberos with keytab" based authentication supported in this release.
<connection_ PROPERTIES>/ <property>/ AUTH_ALIAS</property></connection_ 	Alias name for authentication credentials.	Y		An Alias name mapping to a principal and password combination specified in the following tags.
<connection_ PROPERTIES>/ <property>/ PRINCIPAL</property></connection_ 	Authentication principal name	Y		Principal name used in authentication to connect to the Hive Server.
<connection_ PROPERTIES>/ <property>/ PASSWORD</property></connection_ 	Authentication password	Y		Password used in authentication to connect to the Hive Server.
<connection_ PROPERTIES>/ <property>/ KRB_GSSJAAS_ FILE_NAME</property></connection_ 	A keytab file containing pairs of Kerberos principals and an encrypted copy of that principal's key.	Y		This file must be copied to the location specified in <hive_lib_path >.</hive_lib_path
<connection_ PROPERTIES>/ <property>/ KRB_REALM_FI LE_NAME</property></connection_ 	REALM configuration file.	Y		This file must be copied to the location specified in <hive_lib_path >.</hive_lib_path

Execute the Schema Creator Utility

Depending on the option selected to run the OFSAA Application Pack installer, you must select the appropriate schema creator utility execution option from the following options:

Execute the Schema Creator Utility in Offline Mode



- Execute the Schema Creator Utility in Online Mode
- Execute the Schema Creator Utility in TCPS Mode
- Execute the Schema Creator Utility while Installing Subsequent Applications Pack

After creating the schema, proceed to Configure the OFSAAI_InstallConfig.xml File.

Execute the Schema Creator Utility

Depending on the option selected to run the OFSAA Application Pack installer, you must select the appropriate schema creator utility execution option from the following options:

- Execute the Schema Creator Utility in Offline Mode
- Execute the Schema Creator Utility in Online Mode
- Execute the Schema Creator Utility in TCPS Mode
- Execute the Schema Creator Utility while Installing Subsequent Applications Pack

After creating the schema, proceed to Configure the OFSAAI_InstallConfig.xml File.

Execute the Schema Creator Utility in Online Mode

In Online mode, the utility connects to the database and executes the DDLs for Users, Objects, and Grants. If you have SYSDBA privileges you can execute the Schema Creator Utility in Online mode and thereby create the Users, Objects, and Grants during the execution process. To execute the utility in the Online mode, you must connect as "<User> AS SYSDBA".

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

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

- Edit the file OFS_AAAI_PACK/schema_creator/conf/OFS_<APP PACK>_SCHEMA_IN.xml in a text editor. See Configure OFS_<App Pack>_SCHEMA_IN.xml for values to modify in the XML file.
- 2. Execute the utility with -s option. For Example: ./osc.sh -s



Figure 6-2 Schema Creation in Online Mode



- The following message is displayed: You have chosen ONLINE mode. Triggering the utility in ONLINE mode will execute the DDLs directly on the Database. Do you wish to proceed? (Y/y or N/n).
- 4. Enter Y to proceed.

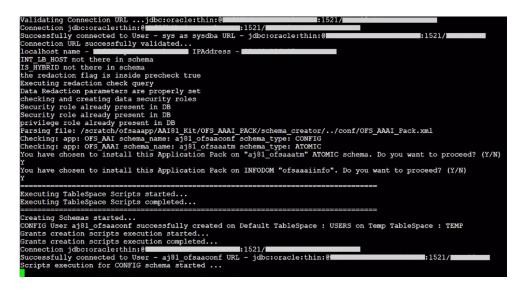
Figure 6-3 Schema Creation in Online Mode – DDL Execution



- The following message is displayed: You have chosen to install this application pack on INFODOM "<INFODOM_NAME>". Do you wish to proceed? (Y/y or N/n).
- 6. Enter Y to proceed.







 After Schema creation is successful, proceed to Configure the OFSAAI_InstallConfig.xml File.



Creating Schemas started	
CONFIG User aj81_ofsaaconf successfully created on Default TableSpace : USERS on Temp	TableSpace : TEMP
Grants creation scripts execution started	
Grants creation scripts execution completed	
Connection jdbc:oracle:thin:@documents.com/:1521/	
Successfully connected to User - aj81_ofsaaconf URL - jdbc:oracle:thin:@ddfdddddddddddddddddddddddddddddddddd	:1521/
Scripts execution for CONFIG schema started	
Scripts execution for CONFIG schema completed	
User aj81_ofsaaconf details updated into the dbmaster table	
User aj81_ofsaaconf details updated into the I18NMASTER table	
User aj81_ofsaaconf details updated into the aai_db_detail table	
User aj81_ofsaaconf details updated into the aai_db_auth_alias table	
User aj81_ofsaaatm details updated into the dbmaster table	
User aj81_ofsaaatm details updated into the I18NMASTER table	
User aj81_ofsaaatm details updated into the aai_db_detail table	
User aj81_ofsaaatm details updated into the aai_db_auth_alias table	
User aj81_ofsaaatm is successfully created on Default TableSpace : USERS on Temp Table	eSpace : TEMP
Creating Schemas completed	
Roles creation scripts execution started	
Roles creation scripts execution completed	
the value of redaction flag in atomic schema istrue	
Grants creation scripts execution started	
the value of redaction flag in atomic schema istrue	
Adding datasec grant file to suffixlist for app name other than AAI	
Grants creation scripts execution completed	
Schemas Creation Completed	
Schema Creator executed Successfully.Please proceed with the installation.	
/scratch/ofsaaapp/AAI81 Kit/OFS AAAI PACK/schema creator/bin>	
actacen, or stataspy wires _ tree, or s_word_rwin, schema_creator, bins_	

Execute the Schema Creator Utility in TCPS Mode

If you intend to run the OFSAAAI Application Pack Installer in TCPS mode, it is mandatory to execute the schema creator utility with -s option and in online mode.

Prerequisites

The following are the prerequisites for this configuration:

- 1. UNIX user credentials with which OFSAA was installed.
- UNIX user credentials with which Web Application Server (Oracle WebLogic (WLS)/Apache Tomcat/ IBM WebSphere) was installed.



- 3. OFSAAI version should be 8.1.2.0.0 and later.
- Ensure OFSAA installed and deployed is having JAVA 8 (Java version must support Java unlimited cryptographic policy. Java version 1.8.0_161+ supports unlimited cryptographic policy.)
- Create Oracle Wallet on the OFSAA processing tier. For information on Creating and Managing Oracle Wallet, see https://blogs.oracle.com/ dev2dev/ssl-connection-to-oracle-db-using-jdbc,-tlsv12,-jks-or-oracle-wallets and https:// blogs.oracle.com/weblogicserver/weblogic-jdbc-use-of-oracle-wallet-for-ssl.
- 6. Configure the Oracle Wallet with trusted certificates between the database server with TCPS configured and the database client to enable communication through the SSL protocol.For example, all the database utils such as sqlplus, thsping, and sqlldr must work between the Client and the Server.
- Configure OFSAA to Store Config Schema, Atomic Schema, and SysDBA Credentials with Oracle Wallet. For details, see the Configure OFSAA to Store Config Schema, Atomic Schema, and SysDBA Credentials with Oracle Wallet section.

Configure OFSAA to Store Config Schema, Atomic Schema, and SysDBA Credentials with Oracle Wallet

To configure the OFSAA to store the Config and Atomic schema credentials with Oracle Wallet, follow these steps:

- 1. Log in as a UNIX user with the permission to modify the Oracle Wallet.
- 2. Execute the following command to configure Config Schema credentials. Enter the password to store the credentials in the Wallet when prompted.

\$ORACLE_HOME/bin/mkstore -wrl <WALLET_HOME> -createCredential -nologo CONFIG <CONFIG_DATABASE_USERNAME> <CONFIG_DATABASE_PASSWORD>

3. Execute the following command to configure the Atomic Schema credentials, Enter the password to store the credentials in the Wallet when prompted.

\$ORACLE_HOME/bin/mkstore -wrl <WALLET_HOME> -createCredential -nologo
<ATOMICALIASNAME> <ATOMIC DATABASE USERNAME> <ATOMIC DATABASE PASSWORD>

 Configure SysDBA credentials. Execute the following command to configure SysDBA Schema credentials. Enter the password to store the credentials in the Wallet when prompted.

\$ORACLE_HOME/bin/mkstore -wrl <WALLET_HOME> -createCredential -nologo SYS
<SYS DATABASE USERNAME> <SYS DATABASE PASSWORD>

Note:

ATOMICALIASNAME value is a TNS alias for Atomic Schema and must not contain underscores.

For example, if the Atomic Schema Name is PROD_OFSAAATM, then the value for ATOMICALIASNAME must be entered as PRODOFSAAATM.

Execute the Utility

To execute the utility, follow these steps:



- 1. Edit the file OFS_AAAI_PACK/schema_creator/conf/OFS_AAAI_SCHEMA_IN.xml in the text editor. See the tables in Configure OFS_<App Pack>_SCHEMA_IN.xml for values to modify in the XML file.
- **2.** Execute the utility with -s option.

```
./osc.sh -s TCPS <WALLET_HOME> For example: $ ./osc.sh -s TCPS /scratch/
oraofss/wallet
```

Figure 6-6 Schema Creation in the TCPS Mode

/scratch/aai91ssl>cd /scratch/aai91ssl/OFS ANAI PACK/schema creator/bin
/scratch/aai81ss1/OFS AAAI PACK/schema creator/bin/./osc.sh TCPS/scratch/aai81ss1/wallet
Error: - Please provide proper arguments
/scratch/aai81ss1/OFS AAAI PACK/schema creator/bin>./osc.sh -s TCPS /scratch/aai81ss1/wallet
-5
TCPS
/scratch/aai81ss1/wallet
-Doracle.net.tns admin=/scratch/aai81ss1 -Doracle.net.wallet location=(SOURCE=(METHOD=file)(METHOD DATA=(DIRECTORY=/scratch
h/aai81ss1/wallet))) -Doracle.net.ss1_server_dn_match=true -Djavax.net.ss1.trustStoreType=SSO -Djavax.net.ss1.trustStore=c
wallet.sso -Doracle.net.ssl_version=1.2
exporting wallet FALSE
#Entries created by schema creator ##
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):

3. The following message is displayed:

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

- 4. Enter Y to proceed.
- 5. The following message is displayed:

You have chosen to install this application pack on "<ATOMIC_SCHEMA_NAME>" ATOMIC schema. Do you wish to proceed? (Y/y or N/n).

0430:	58	8D	05	B 2	02	0F	2D	01	0C	00	00	00	00	00	00	04	X
0460:	00	00	00	00	02	05	7B	00	19	4E	52	41	2D	30	31	34	ORA-014
0470:	30	33	3A	20	6E	6F	20	64	61	74	61	20	66	6F	75	6E	03: no data foun
0480:	64	0A	61	1D	D5	6D	51	10	60	C1	A6	85	B4	88	52	OF	d.amQ.`R.
0490:	A4	F8	CA	1B	2C	F2	09	09	09	09	09	09	09	09	09	09	
You h	ave	ch	oser	a te	o i	nst	a11	this	App	pli	cat	ion	Pa	ck (on	"t81	s_ofsaaatm" ATOMIC schema. Do you want to proceed? (Y/N)

- 6. Enter Y to proceed.
- 7. After Schema creation is successful, proceed to Configure the OFSAAI_InstallConfig.xml File.

Figure 6-8 Schema Creation in the TCPS Mode

0060: Grant:											09	09	09	0i.Y.#
				1	Schen	tas (Crea	atio	on (Com	olet	ted		



The result of this task is that the <PACK>_SCHEMA_OUT.XML file is generated. Do not modify this file.

Execute the Schema Creator Utility while Installing Subsequent Applications Pack

When executing the schema creator utility during the installation of a subsequent Applications Pack, you can choose to install the pack either on the same Information Domain /Atomic Schema of the existing application pack or on a new Information Domain / Atomic Schema. You can execute the schema creator utility either in Online or Offline mode.

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

- Edit the file OFS_<APP_PACK>/schema_creator/conf/OFS_<APP_PACK>_SCHEMA_IN.xml in a text editor. See Configure OFS_<App Pack>_SCHEMA_IN.xml for values to modify in the XML file.
- 2. Execute the utility with -s option. For Example: ./osc.sh -s -o

Figure 6-9 Execute the Schema Creator Utility to Install Subsequent Applications Pack



After successful schema creation, execute the sysdba_output_scripts.sql file



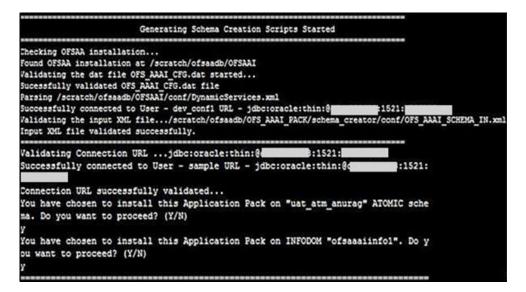
Figure 6-10 Install Subsequent Applications Pack– Execute sysdba_output_scripts.sql

INT_LO_HOIT not three in schema [STURED not three in schema] Parsing file: /scratch/test31075_AAI_PACK/schema_creator//cosf/OFS_AAAI_PA Exabled applies: [DTS_AAIS, GTS_AAI] Exabled applies: [DTS_AAIS, GTS_AAI] Checking: app: OTS_AAI schema_name: UNY_ofsaasoof schema_type: CONTO Checking: app: OTS_AAI schema_name: UNY_ofsaasoof schema_type: ATORIC You have chosen to install this Application Fack on "uavy_ofsaastm" ATOMIC sch Tou have chosen to install this Application Fack on INFOGOM "ofsaasinfo". Do Y	ema. Do you want to proceed? (Y/N)
Generating TableSpace creation Scripts started Generating TableSpace creation Scripts completed	
Constraints Schema creation script started CONTIO User wavy_ofsacoof creation script generated successfully on Default T Generation of grants creation scripts tarted Constraints creation scripts completed Scripts Generation for Control Schema Started User usey_ofsacoof details updated into the dimaster table User usey_ofsacoof details updated into the 108005TE table User usey_ofsacoof details updated into the Schematt table User usey_ofsacoof details updated into the Schematt table User usey_ofsacoof details updated into the sai db detail table User usey_ofsacoof details updated into the sai db detail table User usey_ofsacoof details updated into the Schematt table User usey_ofsacoof details updated into the Schematt table User usey_ofsacat details updated into the Schematt table User usey_ofsacat details updated into the Schematt table User usey_ofsacat details updated into the side.table User usey_ofsacat details user user user user user user user use	
Generating Roles creation Scripts started Generating Roles creation Scripts completed the value of reduction flag in storic schema isfalse	
Generating Grants creation scripts started Generating Grants creation scripts completed	
Generating Schema Creation Scripts Completed	
Schema Creator executed Successfully.Please execute /scratch/test81/OFS_AMA1_P stics. /scratch/test81/OFS_AMA1_PMCH/schema_creator/bin2	ACK/schema_creator/sysdba_output_scripts.sql before proceeding with the install

Note: You must use the same config schema user name as the previous Application Pack.

- 3. The utility identifies the Application Packs that are already installed on the current OFSAA setup and displays the following on the console:
 - Atomic schema of the existing Application Pack
 - Information Domain Name of the existing Pack
 - List of Installed Application Packs

Figure 6-11 Install Subsequent Applications Pack– Select Atomic Schema and Infodom





- 4. Enter Y or y to start the schema creation.
- 5. If you enter N or n, the list of Atomic Users is displayed.
- 6. Select the Atomic User on which you want to install the Application Pack.

Figure 6-12 Install Subsequent Applications Pack– Select Atomic Schema and Infodom

		cleithin: # manadada 1952; manadada	
	nnected to User - sys successfully validated	as sysdba URL - jdbc:oracle:thin:{ dimension :1521:1 0000000	
		lready installed in this OFSAA setup:	
dev_atml-	INFOTR-	"OFS_TR_PACK"	
You have select	ed to install this App	lication Fack on "dev_atm3" ATOMIC schema. To proceed enter (Y/y). To change the selection, enter	(8/a
Choose the AICK	IC schema from the bel	ow list on which you wish to install this Application Pack:	
1. dev_atml- 2. dev_atm3	INFOTR-	"OFS_IR_PACK"	
Enter the optio	a number:2		
	eSpace creation Script eSpace creation Script		
Skipping the cr User dev_atm3 d User dev_atm3 c User dev_atm3 c Generating Scher	etails updated into th reation script generat reation is skipping as ma creation scripts co	<pre>dew_conf1 as OFSNAI is already installed on dew_conf1 e dEmaster table ed successfully on Default TableSpace : USERS on Temp TableSpace : TEMP the user is already created.</pre>	
Generating Role	s creation Scripts sta s creation Scripts com	rted	
	ts creation scripts st ts creation scripts co	mpleted	
***********	Generating	Schema Creation Scripts Completed	
		<pre>Please execute /scratch/ofsaadb/OFS_AAAI_PACK/schema_creator/sysdba_output_scripts.sql con.</pre>	

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

Success. Please proceed with the installation

Note:

- a. See the log file in OFS_<APP_PACK>/schema_creator/ logs directory for execution status.
- b. See the log file sysdba_output_scripts.log for execution status if executed in offline mode. This log will be empty if there are no errors in the execution.
- c. If there are any errors, contact My Oracle Support.

Configure the OFSAAI_InstallConfig.xml File

To configure the OFS_InstallConfig.xml file, follow these steps:



- 1. Navigate to the OFS_<APP_PACK>_PACK/OFS_<APP_PACK>/conf/ directory.
- 2. Open the OFS<APP_PACK>_InstallConfig.xml file and configure it as described in the following table.

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

Table 6-3 OFSAA Infrastructure Installation Tasks and Descriptions

InteractionVariable Name	Significance and Expected Value	Mandatory
<layer name="GENERAL"></layer>		
InteractionGroup name="We	ebServerType"	
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components are deployed.	Yes
	Set the following numeric value depending on the type of web application server:	
	 Apache Tomcat = 1 IBM WebSphere Application Server = 2 Oracle WebLogic Server = 3 	
	For example, <interactionvariablenam e="WEBAPPSERVERTYPE">3< /InteractionVari able></interactionvariablenam 	

InteractionGroup name="OFSAA Infrastructure Server Details"



InteractionVariable Name	Significance and Expected Value		Mandatory	
DBSERVER_IP	Identifies the host nar address of the system which the Database E hosted.	n on	Yes	
	hosted.	N O t e : F o r R A C D a t a b a s e , t h e v a I u e mu u e mu u e mu u e mu u e		
		s t b e N A F o r e x		



InteractionVariable Name	Significance and Expected Value	Mandatory	
	а		
	m a		
	p		
	е		
	,		
	< I		
	n		
	t		
	e		
	r		
	a		
	С		
	t		
	i		
	0		
	n V		
	a		
	r		
	i		
	a		
	b		
	1		
	е		
	n		
	a m		
	e		
	=		
	"		
	D		
	В		
	S E		
	E		
	R V		
	V E		
	R		
	ī		
	P "		
	> 1 4 1		
	1		
	4		
	•		
	1		



InteractionVariable Name	Significance and Expected Value	Mandatory
	5	
	5	
	. 1	
	6	
	1	
	7	
	< /	
	/ I	
	n	
	t	
	e	
	r	
	a	
	c t	
	i	
	0	
	n	
	V	
	a	
	r	
	a	
	b	
	1	
	e	
	>	
	0	
	r	
	<interactionvariable< td=""><td></td></interactionvariable<>	
	<pre>name="DBSERVER_ IP">dbhost.server.com<!--</pre--></pre>	
	InteractionVariable>	
	tabase Details"	

ORACLE

InteractionVariable Name	Significance and Exp Value	ected	Mandatory
ORACLE_SID/ SERVICE_NAME	Identifies the Oracle D Instance SID or SERVICE_NAME	В	Yes
		N N	
		ο	
		t	
		е	
		:	
		T h	
		e O	
		r a	
		c I	
		e	
		S	
		l D	
		v a	
		l u	
		e m	
		u s	
		t b	
		e e	
		х	
		a c tl y t h	
		y t	
		h e	
		e s a m	
		m	
		e a	

InteractionVariable Name	Significance and E Value	xpected	Mandatory	
		S		
		it		
		i		
		S		
		m		
		е		
		n		
		ti		
		0		
		n		
		e		
		d		
		i		
		n J		
		D		
		B C		
		C		
		Ū		
		R		
		L		
		•		

For example,

<InteractionVariable
name="ORACLE_SID/
SERVICE_NAME">ofsaser</
InteractionVariable>



InteractionVariable Name	Significance and Expected Value		Mandatory
ABS_DRIVER_PATH	Identifies the directory the JDBC driver (ojdbc <version>.jar) e This is typically the \$ORACLE_HOME/ jdbc/lib directory. For example, <interactionvaria name="ABS_DRIVER PATH">">/oradata@ revwb7/ oracle <!--<br-->InteractionVaria</interactionvaria </version>	able 6/	Yes
		× N	
		0	
		t	
		е	
		:	
		S	
		e e	
		H a	
		r d w	
		a r	
		e a	
		n d	
		S 0	
		ft w	
		a r	
		e R	
		e q u	
		u ir	
		e m	
		e n	

InteractionVariable Name	Significance and Expected Value	Mandatory
	t	
	S	
	t	
	o i	
	d	
	e	
	n	
	ti	
	f	
	y t	
	h	
	e	
	с	
	o r	
	r	
	е	
	С	
	t	
	o j	
	d	
	b	
	С	
	<	
	v e	
	r	
	S	
	i	
	o n	
	>	
	.j	
	a	
	r fi	
	TI I	
	e	
	e v	
	е	
	r	
	S	
	e r s i O	
	n	
	t o b e	
	0	
	D	
	C	

Table 6-3	(Cont.) OFSAA I	Infrastructure Installation	Tasks and Descriptions
-----------	-----------------	-----------------------------	------------------------



InteractionVariable Name	Significance and Expected Value	Mandatory
	c o p i e d	

InteractionGroup name="OLAP Detail



InteractionVariable Name	Significance and I Value	Expected	Mandatory
OLAP_SERVER_ IMPLEMENTATION	Identifies whether the Infrastructure OLAF component must be configured. It dependent whether you intend OLAP feature. The numeric value must depending on the content of the YES: 1.	nds on to use the following be set	No
		💉 N	
		0	
		t	
		е	
		:	
		lf t	
		h e	
		v a	
		l u	
		e f	
		o r	
		0 L	
		A P	
		s	
		E R	
		V E	
		R	
		Ī	
		M P	
		L E	
		М	

Table 6-3	(Cont.) OFSAA	Infrastructure	Installation	Tasks and	Descriptions
-----------	---------------	----------------	--------------	-----------	--------------



InteractionVariable Name	Significance and Expected Value	Mandatory
	E	
	N	
	Т	
	A	
	Т	
	I	
	0	
	N :	
	i s	
	S	
	е	
	t	
	t	
	0 1	
	, , , , , , , , , , , , , , , , , , ,	
	t	
	h	
	e	
	i n	
	S	
	t	
	а	
	e r	
	C	
	h	
	е	
	C	
	k s	
	if	
	t	
	h	
	e f	
	o II	
	0	
	w	
	i n	
	g e n	
	n	
	v ir o	
	ir	
	0	

Table 6-3	(Cont.) OFSAA	Infrastructure Installation	Tasks and Descriptions
-----------	---------------	-----------------------------	------------------------

InteractionVariable Name	Significance and Expected Value	Mandatory
	n m e n t v a ri a b l e s a r e s e t i n t h e p r o f i i l e fi l e	
InteractionGroup name="SF SFTP_ENABLE	e : ARBORPATH HYPERION_HOME ESSBASEPATH TP Details'' Identifies if the SFTP (Secure File Transfer Protocol) feature is to be enabled. The following numeric value must be set depending on the choice: SFTP: 1 FTP: 0	Yes



InteractionVariable Name	Significance and Expected Value	Mandatory
Th SI be re ca	ote: ne default value for SFTP_ENABLE FTP is used. Oracle recommends ecause SFTP is more secure. How commendation and use FTP by se an change this selection later from terface.	using SFTP instead of FTP ever, you can ignore this etting SFTP_ENABLE to 0 . You
Set SFTP_ENABLE to -1 to co OFSAAI server.	nfigure ftpshare and weblocal path	n as a local path mounted for th
FILE_TRANSFER_PORT	Identifies the port used for the file transfer service. The default value specified is 22 (SFTP). Specify the value as 21 or any other PORT value if the value for SFTP_ENABLE is 0. For example, <interactionvariable name="FILE_TRANSFER_ PORT">21<!--<br-->InteractionVariable></interactionvariable 	Yes
InteractionGroup name="L	Identifies the locale information to be used during the installation. This release of the OFSAA Infrastructure supports only US English. For example, <interactionvariable name="LOCALE">en_US<!--<br-->InteractionVariable></interactionvariable 	
InteractionGroup name="0	FSAA Infrastructure Communic	ating ports"
Th In th th	ote: ne following ports are used interna frastructure services. The default v e installation. If you intend to spec e parameter value accordingly, ens e range 1025 to 65535, and the re	values mentioned are set in ify a different value, update sure that the port value is in

Table C 2	(Cont) OFCAA	Infractructure Installation	Tooko and Decerintiana
Table 0-5	(COIIL) OFSAP	Infrastructure Installation	Tasks and Descriptions

JAVAPORT9999YesNATIVEPORT6666Yes

InteractionVariable Name	Significance and Expected Value	Mandatory
AGENTPORT	6510	Yes
ICCPORT	6507	Yes
ICCNATIVEPORT	6509	Yes
OLAPPORT	10101	Yes
MSGPORT	6501	Yes
ROUTERPORT	6500	Yes
AMPORT	6505	Yes
InteractionGroup name="We	eb Details"	
_	NABLE is set to 1 , ensure that yound it is configured on your web ap	
HTTPS_ENABLE	<pre>Identifies whether the UI must be accessed using HTTP or HTTPS scheme. The default value is set to 0. The numeric value must be set depending on the following options: • YES: 1 • NO: 0 For example, <interactionvariable name="HTTPS_ENABLE">0<!--<br-->InteractionVariable></interactionvariable </pre>	Yes
WEB_SERVER_IP	Identifies the HTTP Server IP/ Host name or Web application server IP/ Host name, to be used to access the UI. This IP is typically the HTTP Server IP	
	If a separate HTTP Server is not available, then the value must be Web application server IP/Host name.	
	For example, <interactionvariable name="WEB_SERVER_ IP">10.11.12.13<!--<br-->InteractionVariable></interactionvariable 	
	or	
	<interactionvariable name="WEB_SERVER_ IP">myweb.server.com<!--<br-->InteractionVariable></interactionvariable 	



InteractionVariable Name	Significance and Expected Value	Mandatory
WEB_SERVER_PORT	Identifies the Web Server Port, which is typically 80 for non SSL and 443 for SSL. If a separate HTTP Server exists, the port value must be the value configured for the Web Server.	No
	Warning: The installer will not accept the port value as:	
	 80, if the HTTPS_ENABLE variable is 1 	
	 443, if the HTTPS_ENABLE variable is 0 	
	For example, <interactionvariable name="WEB_ SERVER_PORT">80<!--<br-->InteractionVariable></interactionvariable 	
CONTEXT_NAME	Identifies the web application context name which is used to build the URL to access the OFSAA application. You can identify the context name from the following URL format:	Yes
	<scheme>:// <host>:<port>/<context- name>/ login.jsp</context- </port></host></scheme>	
	The following is an example: https://myweb:443/ ofsaadev/login.jsp	
	For example, <interactionvariable name="CONTEXT_ NAME">ofsaadev<!--<br-->InteractionVariable></interactionvariable 	

InteractionVariable Name	Significance and Expected Value	Mandatory
WEBAPP_CONTEXT_PATH	<pre>Identifies the absolute path of the exploded EAR file on the web application server. • For Tomcat, specify the Tomcat directory path till / webapps. For example, / oradata6/ revwb7/ tomcat/webapps/. • For WebSphere, specify the WebSphere path as <websphere profile<br="">directory>/ installedApps/ <nodecellname>. For example, / data2/ test//WebSphere/ AppServer/profiles/ <profile_name>/ installedApps/ aiximfNode01Cell, where aix-imf is the Host name. • For WebLogic, specify the WebLogic home directory path. For example, / <weblogic home<br="">directory path>/bea/ wlserver_10.3</weblogic></profile_name></nodecellname></websphere></pre>	Yes



InteractionVariable Name	Significance and Expected Value	Mandatory
	t	
	h	
	e	
	V	
	a	
	1	
	u	
	e	
	s p	
	e	
	C	
	if	
	i	
	e	
	d	
	f o	
	r	
	t	
	h	
	i	
	S	
	а	
	tt	
	ri b	
	u	
	ť	
	e	
	i	
	S	
	i	
	g n	
	0	
	r	
	е	
	d	
	a	
	n d	
	t	
	h	
	e	
	e v	
	a	
	u e p r	
	e	
	p r	

InteractionVariable Name	Significance and Expected Value	Mandatory
	0	
	v i	
	d e	
	d	
	a g	
	a	
	n	
	s t	
	t	
	h e	
	a tt	
	ri	
	b u	
	t	
	e W	
	E	
	B	
	0	
	G	
	С	
	D	
	О М	
	A I N	
	H O	
	M	
	E :	
	S	
	M E s c o n s i	
	n	
	S	



InteractionVariable Name	Significance and Expecte Value	d Mandatory
		d
		e r
		e
		d

InteractionVariable Name	Significance and Expected Value	Mandatory
WEB_LOCAL_PATH	Identifies the absolute path t any directory on the web application server that can hold temporary files, which a uploaded as part of the usag of the application. Set this in the FTPSHARE location.	are
	C	•
	t	
	е	
	:	
	C u	
	ri n	
	g a	
	c I	
	u s	
	t e	
	r e	
	d	
	e p	
	l o	
	y m	1
	e n	
	t, e	
	n s	
	u	
	r e t	
	h	

InteractionVariable Name	Significance and Expect Value	ted Mandatory
		а
		t
		t
		h
		i
		S
		р
		а
		t
		h
		a
		n d
		t
		h
		e
		d
		ir
		е
		С
		t
		0
		r
		У
		a r
		e
		t
		h
		е
		S
		а
		m
		e
		0
		n
		a II
		t
		h
		e
		n
		0
		d
		e
		S

InteractionGroup name="Weblogic Setup Details"

InteractionVariable Name	Significance and Expected Value	Mandatory
WEBLOGIC_DOMAIN_HOME	Identifies the WebLogic	Yes.
	For example, <interactionvariable name="WEBLOGIC_DOMAIN_H OME">/home/ weblogic/bea/user_ projects/ domains/ mydomain <!--<br-->InteractionVariable></interactionvariable 	Specify the value only if WEBAPPSERVERTYPE is set as 3 (WebLogic)

InteractionGroup name="OFSAAI FTP Details"



InteractionVariable Name	Significance and Ex Value	cpected	Mandatory
OFSAAI_FTPSHARE_PATH	Identifies the absolute the directory that is in as the file system sta	dentified	Yes
		• N	
		ο	
		t	
		е	
		:	
		T h	
		e d	
		ir	
		e c	
		t o	
		r y	
		m u	
		S	
		t e	
		x i	
		s t	
		o n	
		t	
		h e	
		e s a	
		m	
		s	
		e s y s t e m o n w	
		t e	
		m o	
		n	
		W	

Table 6-3	(Cont.) OFSAA Infrastructure Installation Tasks and Descriptions	
-----------	--	--



InteractionVariable Name	Significance and Expected Value	Mandatory
	p a r a t e m o u n t)	
	The user mentioned in the APP_SFTP_USER_ID parameter in the following example must have RWX permission on the directory. For example, <interactionvariable name="APP_FTPSHARE_PATH ">">/oradata6/revwb7/ ftpshare<!--<br-->InteractionVariable></interactionvariable 	
OFSAAI_SFTP_USER_ID	Identifies the user who has RWX permissions on the directory identified for the parameter APP FTPSHARE PATH.	Yes
OFSAAI_SFTP_PRIVATE_KE Y	Identifies the SFTP private key for OFSAAI. For example, <interactionvariable name="OFSAAI_SFTP_PRIVA TE_KEY">/home/ ofsaapp/.ssh/id_rsa<!--<br-->InteractionVariable></interactionvariable 	No
	By default, the value is NA , which indicates that, for authentication, you are prompted to enter the password for the user <ofsaai_sftp_user_ id="">. For more information on how to generate an SFTP Private key, see the Set Up SFTP Private Key section.</ofsaai_sftp_user_>	

Table 6-3	(Cont.) OFSA/	Infrastructure Installation Tasks and Descriptions
-----------	---------------	--

	Significance and Expected Value	Mandatory
OFSAAI_SFTP_PASSPHRAS E	Identifies the passphrase for the SFTP private key for OFSAAI.	No
	For example,	
	<pre>InteractionVariable name="OFSAAI_SFTP_PASSP HRASE">enter a pass phrase here<!-- InteractionVariable--></pre>	
	By default, the value is NA.	
	If the OFSAAI_SFTP_PRIVATE_KEY value is given and the OFSAAI_SFTP_PASSPHRASE value is NA , then the passphrase is identified as	
	empty.	
InteractionGroup name="Hiv The default value set for the inf	re Details" teraction variables under this gro	up is NA.
💉 No The	te: following values are required on	ly for Hive Configuration
		ly for thise configuration.
HIVE_SERVER_PORT	Identifies the port used for the file transfer service. The default value is 22 (SFTP). To use this port for FTP, set this value to 21. For example, <interactionvariable name="HIVE_SERVER_PORT" >22<!--</td--><td>-</td></interactionvariable 	-
HIVE_SERVER_PORT	Identifies the port used for the file transfer service. The default value is 22 (SFTP). To use this port for FTP, set this value to 21 . For example, <interactionvariable name="HIVE_SERVER_PORT"</interactionvariable 	-
HIVE_SERVER_PORT	Identifies the port used for the file transfer service. The default value is 22 (SFTP). To use this port for FTP, set this value to 21. For example, <interactionvariable name="HIVE_SERVER_PORT" >22<!--</td--><td>-</td></interactionvariable 	-



InteractionVariable Name	Significance and Expected Value	Mandatory
HIVE_SERVER_FTP_USERI D	Identifies the user who has RWX permissions on the directory identified under the parameter HIVE_SERVER_FTPDRIVE.	Yes
	For example,	
	<pre><interactionvariable name="HIVE_SERVER_FTP_U SERID">ofsaa<!-- InteractionVariable--></interactionvariable></pre>	
HIVE_SERVER_FTP_PROTO COL	If the HIVE_SERVER_PORT is 21, then set the value to FTP. If not, set it to SFTP.	Yes
	For example,	
	<pre><interactionvariable name="HIVE_SERVER_FTP_P ROTOCOL">SFTP<!-- InteractionVariable--></interactionvariable></pre>	
HIVE_SFTP_PRIVATE_KEY	Identifies the SFTP private key for the HIVE server.	
	For example,	
	<pre><interactionvariable name="HIVE_SFTP_PRIVATE _ KEY">/scratch/ testuser/.ssh/id_rsa<!-- InteractionVariable--></interactionvariable></pre>	
	By default, the value is NA, which indicates that, for authentication, you are prompted to enter the password for the user <hive_server_ftp_userid >.</hive_server_ftp_userid 	
	For more information on generating SFTP Private key, see the Set Up SFTP Private Key section.	

 Table 6-3
 (Cont.) OFSAA Infrastructure Installation Tasks and Descriptions



InteractionVariable Name	Significance and Expected Value	Mandatory
HIVE_SFTP_PASSPHRASE	Identifies the passphrase for the SFTP private key for HIVE.	
	For example,	
	<interactionvariable name="HIVE_SFTP_ PASSPHRASE">NA<!--<br-->InteractionVariable></interactionvariable 	
	By default, the value is NA .	
	If the HIVE_SFTP_PRIVATE_KEY value is NA , then the passphrase is identified as empty.	

Set Up the SFTP Private Key

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

To generate a private key, enter the commands as shown:

```
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
```

Ensure the following permissions exist for the given directories:

- permissions of .ssh must be 700
- permissions of .ssh/authorized_keys must be 640
- permission of .ssh/id_rsa must be 400
- Permission of UNIX User created must be 755

Install the OFSAAI Application Pack

Before you begin the installation, configure and execute the following files:



Note:

- Configure the OS File System Settings and Environment Settings in the .profile File
- Configure OFS_<App pack>_PACK.xml File
- Configure OFS_<App Pack>_SCHEMA_IN.xml File
- Configure <APP Pack>_SCHEMA_BIGDATA_IN.xml File
- Configure OFSAAI_InstallConfig.xml File (Do not configure this file if an installation of OFSAAI 8.1 already exists.)
- Execute the Schema Creator Utility

To install the OFSAAI Application Pack, follow these steps:

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

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

export FIC HOME

- 3. Execute the user .profile file.
- 4. Navigate to the OFS AAAI PACK directory.
- 5. Rename the

OFS_AAAI_PACK/schema_creator/conf/OFS_AAAI_SCHEMA_IN.xml.Template file to OFS AAAI PACK/schema creator/conf/OFS AAAI SCHEMA IN.xml.

- 6. If the installation is for Big Data, then rename the OFS_AAAI_ PACK/ schema_creator/conf/OFS_AAAI_SCHEMA_BIGDATA_IN.xml.Template file to OFS AAAI PACK/schema creator/conf/OFS AAAI_SCHEMA_BIGDATA_IN.xml.
- 7. Enter the following command in the console. This will execute the application pack installer in Silent mode.

./setup.sh SILENT

8. The installer proceeds with Pre-Installation Checks.





<pre>/scratch/test01/OFS_AAAI_PACK/bin>./setup.sh SILENT Current OS Type SunOS FIC_HOME : /scratch/test01/OFSAAI_01FULL Environment check utility started</pre>
Java Validation Started Java found in : /scratch/oraofss/jdkl.8.0_202/bin JCE IS true JAVA Version found : 1.8.0_202 JAVA Bit Version found : 64-bit Java Validation Completed. Status : SUCCESS
Environment Variables Validation Started ORACLE_HOME : /scratch/oraofss/app/product/18.3.0/client_1 TNS_ALMIN : /scratch/test81 Environment Variables Validation Completed. Status : SUCCESS
OS specific Validation Started Checking en_US.utf8 locale. Status : SUCCESS Unix shell found : /bin/ksh. Status : SUCCESS Hardware Architecture - SPARC. Status : SUCCESS Time zone is configured properly. Current value : asia/kolkatta. Status : SUCCESS OS version : 5.11. Status : SUCCESS OS specific Validation Completed. Status : SUCCESS
DB specific Validation Started Oracle Client version : 18.0.0.0.0. Status : SUCCESS client version 18.0 Successfully connected to schema uavy_ofsaaatm. Status : SUCCESS CREATE SESSION has been granted to user. Status : SUCCESS CREATE PROCEDURE has been granted to user. Status : SUCCESS CREATE TRIGGER has been granted to user. Status : SUCCESS CREATE TRIGGER has been granted to user. Status : SUCCESS CREATE TRIGGER has been granted to user. Status : SUCCESS CREATE MATERIALIZED VIEW has been granted to user. Status : SUCCESS CREATE MATERIALIZED VIEW has been granted to user. Status : SUCCESS CREATE SEQUENCE has been granted to user. Status : SUCCESS SELECT privilege is granted for NLS_INSTANCE PARAMETERS view. Current value : READ. Status : SUCCESS NLS_LENGTH_SEMANTICS : BYTE. Current value : BYTE. Status : SUCCESS SELECT privilege is granted for V_Sparameter view. Current value : SELECT. Status : SUCCESS SELECT privilege is granted for V_Sparameter view. Current value : SUCCESS SELECT privilege is granted for USER TS QUOTAS view. Current value : READ. Status : SUCCESS Open cursor value is greater than 1000. Current value : 6000. Status : SUCCESS SELECT privilege is granted for USER TS QUOTAS view. Current value : READ. Status : SUCCESS Open a status : SUCCESS SELECT privilege is granted for USER TS QUOTAS view. Current value : READ. Status : SUCCESS Open cursor value is greater than 1000. Current value : 6000. Status : SUCCESS SELECT privilege is granted for USER TS QUOTAS view. Current value : READ. Status : SUCCESS SCHEME is granted with at least 500 MB table space. Current value : Unlimited. Status : SUCCESS Oracle db version 18

9. Enter the OFSAA Processing Tier FTP/SFTP password value and proceed, when prompted in the command prompt.



Figure 6-14 OFSAA Processing Tier FTP/SFTP Password Prompt

TNS ADMIN : /scratch/test81 Environment Variables Validation Completed. Status : SUCCESS	
OS specific Validation Started Checking en US.utf8 locale. Status : SUCCESS Unix shell Found : /bin/Kah. Status : SUCCESS Hardware Architecture - SPARC. Status : SUCCESS Time zone is configured properly. Current value : asia/kolkatta. Status : SUCCESS OS version : 5.11. Status : SUCCESS OS specific Validation Completed. Status : SUCCESS	
DB specific Validation Started Oracle Client version 18.0 Successfully connected to schema uavy_ofsaaatm. Status : SUCCESS CREATE SESSION has been granted to user. Status : SUCCESS CREATE PROCEDURE has been granted to user. Status : SUCCESS CREATE PROCEDURE has been granted to user. Status : SUCCESS CREATE TRIGGER has been granted to user. Status : SUCCESS CREATE TRIGGER has been granted to user. Status : SUCCESS CREATE TRIGGER has been granted to user. Status : SUCCESS CREATE TRIGGER has been granted to user. Status : SUCCESS CREATE MATERIALIZED VIEW has been granted to user. Status : SUCCESS CREATE TABLE has been granted to user. Status : SUCCESS CREATE TABLE has been granted to user. Status : SUCCESS SLECT privilege is granted for NLS INSTANCE_PARAMETERS view. Current value : READ. Status : SUCCESS NLS CHEARCTERSET : AL32UTF8. Current value : AL32UTF8. Status : SUCCESS SLECT privilege is granted for V_\$parameter view. Current value : SELECT. Status : SUCCESS SLECT privilege is granted for USER TS_QUOTAS view. Current value : READ. Status : SUCCESS Shema is granted with at least 500 MB table space. Current value : Unlimited. Status : SUCCESS Scale db version 18 Oracle db R2 version 18.0 Oracle Server version Current value : 18.0.0.0.0. Status : SUCCESS DB specific Validation Completed. Status : SUCCESS	
Environment check utility Status : SUCCESS	
* Welcome to Oracle Financial Services Analytical Applications Infrastructure (OFS AAI) Installation * Checking Infrastructure installation status Infrastructure installation does not exist. Proceeding with Infrastructure installation Triggering Infrastructure installation	
Please enter Infrastructure FTP/SFTP password :	

10. The process displays the OFSAA License. Enter **Y** and proceed.

Figure 6-15 Accept the OFSAA License Agreement

Triggering Infrastructure installation
<pre>Plaze entar infrastructure PTP/SPTP password : log5(1WANY No agenders could be found for logger (org.agache.commons.vfs2.impl.StandardFileSystemManager). log5(1WANY Nease initialize the log9() system properly. log5(1WANY Meen http://log10.impachm.org/log15/1.2/faq.html#noconfig for more info. bottame is interficient number of arguments find; inerficient number of arguments find; i=1 +2) publist predicate=11st current dir is /acrato/icenti/OF_ANAL_PACK/bin</pre>
OFINA APPLICATION FACE LICENSE AGREEMENT
 Gracie Financial Services Analytical Applications (OFSA) application packs are groups of OFSAA products packaged together into a single installer. Each ap Dissilos pack contains OFSAA applications that Address results demains.
* Every application pack also includes the following OFBAM infrastructure application options which are sutomatically installed by every application pack installer: taller:
1. Grade Financial Services Analytical Applications Infrastructure 2. Grade Financial Services Enterprise Modeling
 Oracle Financial Services Big Data Processing Oracle Financial Services Analytical Applications Infrastructure (OFS AAI) is the base infrastructure for all OFSAA applications and is therefore automat
ically installed and enabled by the application pack installer. ⁴ The splication pack installer always installs or accele Financial Services Enterprise Modeling, Oracle Financial Services En-line Processing Engine and Ora- cle Financial Services Big Data Processing application options along with the application pack applications, but enables them only if any application that requires their functionality is enabled. ⁴
• Any OFSA application that is enabled must be licensed for use. Oracle Financial Services Analytical Applications Infrastructure, Oracle Financial Services Exterprise Modeling, Gracle Financial Services In-line Processing Engine and Gracle Financial Services Big Data Processing are individually licensable app licetion ordines.
<pre>Application products once enabled cannot be disabled. Application products not enabled on installation, may later be enabled using the "Manage OFSMA Frod uot License(s)" feature of the platform."</pre>
Are you accepting the terms and conditions mentioned above? [Y/N]:
logi;WANN Ho appenders could be found for logger (org.apache.commons.vfsl.impl.StandardFileSystemManager). logi;WANN Flames initialize the logdi system properly.
logi (#XXX) See http://loging.apuche.org/logi/1.2/faq.html#eoconfig for more info. bottame (
botname isoracle.com Starting installation Preparing to install
Property of installation resources from the installer archive

11. The installer installs the AAI application.



tallerr	
1. Oracle Financial Services Analyt	
2. Oracle Financial Services Enterp 3. Oracle Financial Services Big Da	
 Oracle Financial Services Analytic 	al Applications Infrastructure (OFS AAI) is the base infrastructure for all OFSAA applications and is therefore automat
ically installed and enabled by the	application pack installer.*
 The application pack installer als cle Financial Services Big Data Proc requires their functionality is enabled 	ays installs Oracle Financial Services Enterprise Modeling, Oracle Financial Services In-line Processing Engine and Ora easing application options along with the application pack applications, but enables them only if any application that ind.*
* Any OFSAA application that is enab	led must be licensed for use. Oracle Financial Services Analytical Applications Infrastructure, Oracle Financial Services Ial Services In-lise Processing Engine and Oracle Financial Services Big Data Processing are individually licensable app
 Application products once enabled oct License(s)[*] feature of the platf 	cannot be disabled. Application products not enabled on installation, may later be enabled using the "Manage GPSAA Pro- orm."
Are you accepting the terms and cond	Itions mentioned above? [Y/N]:
log4j:WARN Flease initialize the log	s from the installer archive
Launching installer	
Preparing SILENT Node Installation	
OFSAAInfrastructure	(created with InstallAnywhere)
Installing	
1	

Figure 6-16 OFS AAAI Silent Mode Installation

Data Model Upload may take several hours to complete. You can check the installation logs in the following location: OFS_AAAI_PACK/OFS_AAI/logs

12. A post-install check is performed automatically after the successful installation of the product.

Preparing SILENT Mode Installation		
pack_installsilent	(created with InstallAnywhere)	
Installing		
[
	- []	
test diverses from the second		
Installation Complete. failurecount 0		
Core Installation completed successful		
Fack Name found is: OFS AAAI PACK	·7	
[DynamicServiceManager][GlobalFaramete:	en TSMERIFALM	
FIC HOME:/scratch/test81/OFSAAI 81FULL		
Pack ID got for Synch is OFS ANAI PACK		
SLF4J: Failed to load class "org.slf4j	impl.StaticLoggerBinder",	
SLF4J: Defaulting to no-operation (NOP)		
	html#StaticLoggerBinder for further details.	
configConnection : 1935122449, URL=jdb		OFSAACONF, UserName- OFSAACONF, Oracle JDBC driver
configConnection : 872826668, URL=jdbc		OFSAACONF, Oracle JDBC driver
	ACK_AUDIT_TRAIL where V_APP_PACK_ID= ? and D	D_ENABLE_DATE is not null packID : OFS_AAAI_PACK
APP ID OFS ANAI		
appLat OFS AAAI	croraclerthin: # www.oracle.com:1521/	OperName- OFSAACONF, Oracle JDBC driver
configConnection : 1534755892, URL-jdbo Pack ID got for synchPackData is OFS AJ		Obername- OFSAACONF, Oracle JUBG driver
configConnection 343563528, URL=jdbc		CFSAACONF, Oracle JDBC driver
[decryptDATFile]Error: Dat file does no		or present of present of a started
getPreReg fr OFS AMAI	te entre tot bary oth teat	
configConnection : 1142347343, URL=jdb	croracle:thin: #	UserName- OFSAACONF, Oracle JDBC driver
appList.size 2		
Final appl0s OFS_AAI		
Final applDs OFS AAAI		
configConnection : 1581078471, URL=jdb		OFSAACONF, Oracle JDBC driver
configConnection : 332699949, URL-jdbc	coracle:thin:#	OFSAACONF, Oracle JDBC driver
Utility triggered for XML files		

Figure 6-17 Installation Complete

Congratulations! Your installation is complete.

Verify the Log File Information

See the following logs files for more information:



- Infrastructure installation log files in the OFS_AAAI_PACK/OFS_AAI/logs/ directory.
- OFSAAInfrastucture_Install.log file in the \$FIC_HOME directory.

After the installation OFSAAAI 8.1.2.0.0 is successful, complete the required Post-installation steps.

7 Post-Installation Tasks

After installing the OFSAAI Application pack, proceed with the following post-installation tasks.

- **1.** Verify the installation logs.
- 2. Verify that all patches are successfully installed.
- 3. Backup the OFS_<PACK>_SCHEMA_IN .xml and OFS_<PACK>_SCHEMA_OUTPUT.xml files.
- 4. Stop the OFSAA Infrastructure services.
- 5. Create and deploy EAR or WAR files.
- 6. Assign Grants for schemas.
- 7. StartAccess the OFSAA Application.
- 8. Configure the excludeURLList.cfg file.
- 9. (Optional) Configure Big Data Processing.
- 10. Create Application Users.
- **11.** Map Application User(s) to User Groups.
- **12.** Add TNS entries in the TNSNAMES.ORA file.
- 13. Set TDE and Data Redaction in OFSAAI.
- 14. Implement Data Protection in OFSAAI.
- **15.** Configure the web server.
- 16. Configure Resource Reference in web servers.
- 17. Configure Work Manager in web application servers.
- 18. Add FTP/SFTP Configuration for File Transfer.
- 19. Configure Infrastructure Server Memory.
- 20. Retrieve Patch Information.
- 21. Change IP/Hostname, Ports, Deployed Paths of the OFSAA Instance.
- 22. Set Infrastructure LDAP Configuration.
- 23. Configure OFSAAI Web Services.
- 24. Configure Message Details in Forms Designer.
- 25. Configure Password Changes.
- 26. Configure Java Virtual Machine.
- 27. Configure Internal Service.



Patch OFSAA Infrastructure Installation

We recommend to install the latest available patch for the various releases of the OFSAA products.

After the installation of OFSAAAI 8.1.2.0.0, apply the mandatory patch 33663417.

Note:

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

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

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

For patch download information, see the relevant sections for a new installation or an upgrade.

See My Oracle Support for more information on the latest release.

Backup the OFS_<PACK>_SCHEMA_IN.xml and OFS_<PACK>_SCHEMA_OUTPUT.xml Files

Backup the OFS_<PACK>_SCHEMA_IN.xml, OFS_<PACK>_SCHEMA_OUTPUT.xml files to reuse these files in the future to upgrade existing Apps, or to install new Apps.

Table 7-1	Directory	of Files	to Backup
-----------	-----------	----------	-----------

File Name	Directory
OFS_ <pack>_SCHEMA_IN.xml</pack>	<pre><ofs_aaai_pack>/schema_creator/conf</ofs_aaai_pack></pre>
OFS_ <pack>_SCHEMA_OUTPUT.xml</pack>	<pre><ofs_aaai_pack>/schema_creator/</ofs_aaai_pack></pre>

Stop the Infrastructure Services

To stop Infrastructure services, follow these steps:

- On the machine where the Infrastructure Application components are installed, navigate to the \$FIC_APP_HOME/common/FICServer/bin directory, and execute the following command: ./stopofsaai.sh
- To stop the ICC server on the machine where the Infrastructure Default Application components are installed, navigate to the \$FIC_HOME/ficapp/icc/bin directory, and execute the following command:

./iccservershutdown.sh



Note:

Only the Infrastructure Default Application Server will hold the ICC component.

 To stop the Back-end server on the machine where the Infrastructure database components are installed, navigate to the \$FIC_DB_HOME/bin directory, and execute the following command: ./agentshutdown.sh

Configure Referrer Header Validation

Referrer Header Validation protects against CSRF attacks by allowing validated host URLs.

- 1. Navigate to the web.xml file in the \$FIC HOME/ficweb/webroot/WEB-INF/ directory.
- 2. Add the following tag:

```
<filter>
<filter-name>FilterServlet</filter-name>
<filter-class>com.iflex.fic.filters.FilterServlet</filter-class>
<init-param>
<param-name>AllowHosts</param-name>
<param-value><URL1>/ <URL2>/</param-value>
</init-param>
</filter>
```

Note:

- a. Separate <URL1> and <URL2> with a single space. Adding the URLs without a space between them or adding two or more spaces between them results in errors. Make sure that <URL> ends with a forward slash (/).
- b. If you choose to set **Referrer-Policy no-referrer**, then follow these steps. The above steps to configure Referrer Header validation are not required.
 - i. Open the web.xml file in the \$FIC_HOME/ficweb/webroot/WEB-INF/ directory. The REFERRER_POLICY_FLAG is set to TRUE by default in the web.xml file as shown in the following tag:

```
<context-param>
<param-name>REFERRER_POLICY_FLAG</param-name>
<param-value>TRUE</param-value>
</context-param>
```

ii. Modify the referrer policy in the web.xml file to FALSE.

Create and Deploy the EAR/WAR Files

EAR/WAR files are used for deploying the OFSAAI application to a production server.

Refer to the following topics, to create and deploy EAR/WAR files



- Create the EAR/WAR File
- Explode the EAR File
- Deploy the EAR/WAR File

Create the EAR/WAR File

The EAR/WAR files are automatically generated during the new installation. If you have to create EAR/WAR files after installation or upgrade, refer to the following topics.

- Non-TCPS Installed Setup
- TCPS Installed Setup

Non-TCPS Installed Setup

To create the EAR/WAR File in a non-TCPS installed setup, follow these steps:

- 1. Navigate to the \$FIC_WEB_HOME directory on the OFSAA Installed server.
- 2. Execute the . /ant.sh command to trigger the creation of the EAR/WAR file.
- 3. The EAR/WAR (<contextname>.ear/ .war) is created.

The "BUILD SUCCESSFUL" and "Time taken" message is displayed.

Figure 7-1 Creating EAR/ WAR File



Note:

- The <contextname> is the name given during installation. This process overwrites any existing version of the EAR file that exists in the path.
- For OFSAA configured on Tomcat installation, <contextname>.war file is created.
- Ignore ANT warning(s) for the tools.jar file while executing ./ ant.sh command.

TCPS Installed Setup

To create the EAR/WAR File in a TCPS installed setup, follow these steps:



- 1. Navigate to the \$FIC_WEB_HOME/webroot/WEB-INF/lib directory on the OFSAA Installed
 server and delete the ojdbc7.jar file if it exists in the directory.
- 2. Navigate to the \$FIC_HOME/utility/AppPckMastSynch/bin directory and execute the
 App Pack Mast Sync utility by running the AppPckMastSynch.sh command.
- 3. Navigate to the \$FIC_WEB_HOME directory and execute the ./ant.sh command to trigger
 the creation of the EAR/WAR file.
- 4. The EAR/WAR (<contextname>.ear/ .war) is created.

The "BUILD SUCCESSFUL" and "Time taken" message is displayed.

Figure 7-2 Creating EAR/ WAR File

```
Buildfile: /scratch/test81/OFSAAI_81FULL/ficweb/build.xml
Trying to override old definition of datatype resources
existtest:
    [echo] Checking for file /scratch/test81/OFSAAI_81FULL/ficweb/test81.war existense
createwar:
    [echo] Creating /scratch/test81/OFSAAI_81FULL/ficweb/test81.war freshly..
    [war] Building war: /scratch/test81/OFSAAI_81FULL/ficweb/test81.war
BUILD SUCCESSFUL
Total time: 1 minute 8 seconds
```

Note:

- The <contextname> is the name given during installation. This process overwrites any existing version of the EAR file that exists in the path.
- For OFSAA configured on Tomcat installation, <contextname>.war file is created.
- Ignore ANT warning(s) for the tools.jar file while executing ./ant.sh command.

Explode the EAR File

To explode the EAR file, follow these steps:

1. Create the "applications" directory under the domain name directory.

For example, "/Bea/user projects/domains/ <Domain name>/applications".

- 2. Create the <context name>.ear directory under the applications directory.
- 3. Copy the <\$FIC_WEB_HOME/<context_name>.ear file to the <WEBLOGIC_INSTALL_DIR>/ Bea/user_projects/domains/<DOMAIN_NAME>/applications/<context_name>.ear directory.
- 4. Explode the <context name>.ear file by executing the following command:

jar -xvf <context name>.ear

5. Delete the <context>.ear and <context>.war files <WEBLOGIC_INSTALL_DIR>/Bea/ user_projects/domains/<DOMAIN_NAME>/applications/ <context_name>.ear



- 6. Create a directory <context_name>.war under the <WEBLOGIC_INSTALL_ DIR>/Bea/ user_projects/domains/<DOMAIN_ NAME>/applications/ <context>.ear./<context>.war directory.
- 7. Copy the <\$FIC_WEB_HOME/<context_name>.war file to <WEBLOGIC_INSTALL_ DIR>/ Bea/user_projects/domains/<DOMAIN_NAME>/applications/<context_ name>.ear/<context_name>.war directory.
- 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, follow these steps:

1. Select Install Application Assistant from the Navigation Tree to display the window.

Figure 7-3 Install Application Assistant

nstall Application Assistant	
Back Next Finish	bancel
Locate deployment to inst	tall and prepare for deployment
Select the file path that repre the application directory or fil	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 of e in the Path field.
Note: Only valid file paths an	e 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:	/scratch/ofsaadb/Oracle/Middleware/Oracle_Home/user_projects/domains/AAAIGKG/applications/ofsa81.ear
Recently Used Paths:	(none)
Current Location:	"In.oracle.com / scratch / ofsaadb / Oracle / Middleware / Oracle_Home / user_projects / domains / AAAIGKG / applications
💿 🛅 ofsa81.ear (open o	Sirectory)
Back Next Finish C	Cancel

2. Click Next.

Figure 7-4 Install Application Assistant

Install Application Assistant
Back Next Finish Cancel
Choose installation type and scope
Select if the deployment should be installed as an application or library. Also decide the scope of this deployment.
The application and its components will be targeted to the same locations. This is the most common usage.
Install this deployment as an application
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.
Install this deployment as a library
Select a scope in which you want to install the deployment.
Scope: Global v
Back Next Cancel

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



Install Applicatio	an Assistant
Back Next	Finish Cancel
Optional Setti	ngs
	these settings or accept the defaults.
* Indicates requir	ed helds
— General —	
What do you war	it to name this deployment?
* Name:	ofsa81
— Security —	
What security mo	odel do you want to use with this application?
DD Only: Us	e only roles and policies that are defined in the deployment descriptors.
C DD Olliy. Os	e uny ruies and purcles that are defined in the deproyment descriptors.
Custom Rol	es: Use roles that are defined in the Administration Console; use policies that are defined in the deployment descriptor.
Custom Rol	es and Policies: Use only roles and policies that are defined in the Administration Console.
	Jse a custom model that you have configured on the realm's configuration page.
- Source Acces	suourty
How should the s	ource nies be made accessibler
Use the def	aults defined by the deployment's targets
Recommended s	election.
Conv this a	uplication onto every target for me
During deployme	nt, the files will be copied automatically to the Managed Servers to which the application is targeted.
I will make	the deployment accessible from the following location
Location:	/scratch/ofsaadb/Oracle/Middleware/Oracle Home/user proje
Provide the locat reach the location	ion from 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 n.
— Plan Source	Accessibility
How should the p	Jan source files be made accessible?
Use the same	a accessibility as the application
Recommended s	election.
Copy this pl	an onto every target for me
During deployme	nt, the plan files will be copied automatically to the Managed Servers to which the application is targeted.
Do not copy	this plan to targets
You must ensure	the plan files exist in the shared location and that each target can reach the location.
Back Next	[Finish] Cancel

Figure 7-5 Optional Settings

- 4. Enter a Name for the deployment if required.
- 5. Under the Security section, select the DD Only: Use only roles and policies that are defined in the deployment descriptors option.
- 6. Select I will make the deployment available from the following location under the Source accessibility section.
- 7. Click Next to display the Deployment Summary window.



Figure 7-6 Deployment Summary

Install Application	Assistant	
Back Next	Finish	
Review your che	pices and click Finish	
Click Finish to con	plete the deployment. This may take a few moments to complete.	
— Additional Con	figuration	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
In order to work su	ccessfully, this application may require additional configuration. Do you want to review this a	oplication's configuration after completing this assistant?
• Yes, take me	to the deployment's configuration screen.	
	ew the configuration later.	
- Summary		
Deployment:	/scratch/ofsaadb/Oracle/Middleware/Oracle_Home/user_projects/domains/AMIGKG/applice	ations/ofsa81.ear
Name:	ofsa81	
Staging Mode:	I will make the deployment accessible at /scratch/ofsaadb/Oracle/Middleware/Oracle_Home/user_projects/domains/AAAIGKG/applice	ations/ofsa81.ear
Plan Staging Mode:	Use the same accessibility as the application	
Security Model:	DDOnly: Use only roles and policies that are defined in the deployment descriptors.	
Scope:	Global	
Target Summary		
Components 🔗		Targets
ofsa81.ear		AdminServer
Back Next	Finish] [Cancel]	

- 8. Select **Yes**, take me to the deployment's configuration screen.
- 9. Click **Finish** to display the Settings for <Deployment Name> window.



Dealerment (lan Canfinumbian	Constitute	Truncha	Control	Testing		Blakes	1	
verview Deployment P	Plan Configuration	Security	Targets	Control	Testing	Monitoring	Notes		
ave									
								he application files, the associated deployment plan, and so on ication. Click on the name of the module to view and update its	
lame:	ofsa806							The name of this enterprise application. More Info	
cope:	Global							Specifies if this enterprise application is accessible within the partition, or a resource group template. More Info	domain, a
ath:	/ scratch/ ofsaaapp/ AAI806/ applications			iracle_Hom	e/ user_pr	ojects/ domain	5/	The path to the source of the deployable unit on the Adminis Server. More Info	tration
eployment Plan:	(no plan specified)							The path to the deployment plan document on the Administra Server. More Info	ation
taging Mode:	nostage							Specifies whether a deployment's files are copied from a sour Administration Server to the Managed Server's staging area of application preparation. More Info	
lan Staging Mode:	(not specified)			N				Specifies whether an application's deployment plan is copied on the Administration Server to the Managed Server's staging application preparation. More Info	
ecurity Model:	DDOnly							The security model that is used to secure a deployed module	. More Info
🖞 Deployment Order:	100							An integer value that indicates when this unit is deployed, red deployable units on a server, during startup. More Info	lative to othe
🗄 Deployment rincipal Name:	_							A string value that indicates the principal that should be used the file or archive during startup and shutdown. This principa set the current subject when calling out into application code such as ApplicationLifecycleListener. If no principal name is s the anonymous principal will be used. More Info	I will be used for interface
Save Modules and Componen	ts								
								Showing 1 to 1 of 1	Previous N
Name 🚕									Туре
⊡ ofsa806									Enterpri Applicat
🗆 E)Bs									
None to display									
⊟ Modules									
/ofsa806									Web Applicat
Web Services									
None to display									

Figure 7-7 Settings for Deployment Name

- **10.** 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.
- **11.** Click **Save** to update the changes, if any.
- **12.** From the navigation tree, click **Deployments** to display the **Summary of Deployments** window.

Figure 7-8 Summary of Deployments

nfiguration	Control	Monitoring												
his page dis	plays the list	of Java EE ap	plication	ns and sta	tandalone	e applicatio	on modules In	nstalled to this d	domain.					
ou can start	and stop ap	plications and	modules	s from th	he domai	in by selec	ting the ched	kbox next to the	ie applic	ation name	and then using the co	ntrols on this pa	ge.	
ustomize t	his table													
eployments												Sho	wing 1 to	1 of 1 Previous N
Start St	s top v requests	fm tion requests						5	State	Health	Туре	Sho Targets	wing 1 to Scope	1 of 1 Previous No

- **13**. Select the newly deployed Infrastructure application.
- 14. Click Start and then select Servicing all requests.



Figure 7-9 Summary of Deployments

onfiguration	Control	Monitoring												
This page disp	lays the list	of Java EE app	lications ar	and stan	andalone	ne applicat	tion modules	installed to this	s domain.					
rou can upda	e (redeploy)) or delete inst	alled applic	cations	s and m	modules fro	om the doma	ain by selecting	the check	box next to t	he application	name and	then using the control	ls on this page.
lo install a ne	w application	n or module fo	r denlovme	ent to t	targets	s in this do	omain, click 1	Install						
	application		acpiojine		ungeto	0 11 0 10 00	onitionity chere a							
Customize t	nis table													
Customize t														
eployments		ete											Showing 1 to	1 of 1 Previous N
eployments	iate Dele	ste						State	Health	Туре	Targets	Scope	Showing 1 to Domain Partitions	

15. The state of the deployed application is displayed as Active if started successfully.

Deploy the EAR/WAR File

This section covers the following topics:

- Clear Application Cache
- Deploy the EAR/WAR Files on WebSphere
- Deploy the EAR/WAR Files on WebLogic
- Deploy the WAR File on Tomcat



Clear the Application Cache

Ensure to clear the application cache before the deployment of Applications Pack Web Archive. This applies to all Web Servers (WebSphere, WebLogic, and Tomcat).

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

Tomcat

<Tomcat installation directory>/work/Catalina/localhost/<Application name>/org/apache/jsp

WebLogic

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

WebSphere

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

Deploy the EAR/WAR Files on WebSphere

To deploy the Infrastructure application in WebSphere, follow these steps:

- 1. Navigate to the "/<Websphere_Installation_ Directory>/ IBM/WebSphere/AppServer/ profiles/<Profile Name>/bin/" directory
- 2. Start the WebSphere Profile by executing the following command:

./startServer.sh server1

3. Open the following URL in a browser to display the *Login* window:

```
http://<ipaddress>:<Administrative Console Port>/ibm/console (https, if SSL
is enabled)
```

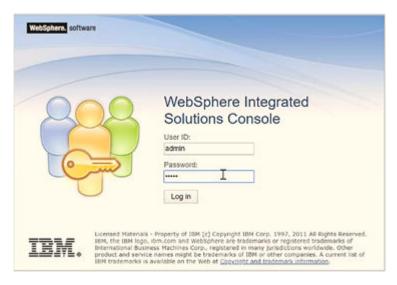


Figure 7-10 WebSphere Login Window

4. Enter the user credentials with administrator rights and click Log in.



5. From the Navigation Tree, select **Applications**, and then select New Application to display the **New Application** window.

Figure 7-11 New Application

New Application	12
New Application	
This page provides links to create new applications of different types,	
Install a New Application	
Jieu Enteronse Arelication	
- Inex Dusiness Level Acolication	
- Dem Asser	

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

Figure 7-12 Preparing for the application installation

Path to the new	application	
Local file syst	m	
Full path		
Laurencessessessesses	No file chosen	
Remote file sy	stem	
Full path	WebSphere/AppServer/profiles/AppSrv01/install	

- 7. Select the Remote File System and click Browse.
- 8. Select the EAR file (generated for OFSAAI) to upload and install. Click Next.

Figure 7-13 Installation Options

you want to install the application? Path - Prompt only when additional information is required. illed - Show all installation options and parameters.
iled - Show all installation options and parameters.
to generate default brioings and mappings
to generate default bindings and mappings

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

•	Step 1: Select installation options	Select installation options
	Step 2 Hap modules	Specify the various options that are available for your application.
	to servers Step 3 Map resource	Precompile JavaServer Pages files
	references to resources	Directory to install application
	Step_1 Map virtual hosts for Web modules	Distribute application Use Binary Configuration
	Step 5 Summary	Deploy enterprise beans
		Application name ofs81w9
		Create MBeans for resources
		Override class reloading settings for Web and EIB modules Reload interval in seconds
		Deploy Web services
		Validate Input off/warn/fail
		Process embedded configuration
		File Permission
		Allow all files to be read but net written to Allow executebles to execute Allow HTML and image files to be read by everyone \forall
		[*\dl=755#.*\.s0=755#.*\.a=755#.*\.sl=755
		Application Build ID Unknown
		Allow dispatching includes to remote resources
		Allow servicing includes from remote resources Business level application name
		Create New BLA Asynchronous Request Dispatch Type
		Disabled T
		Allow EI8 reference targets to resolve automatically Deploy client modules
		Clement modules Clement deployment mode Isolated •
		Uzlidate schema

Figure 7-14 Install New Application

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



Figure 7-15	Map Me	odules	to	Servers
-------------	--------	--------	----	---------

Step 1 Select installation options	Map mod	lules to serv	vers	
Step 2: Map modules to servers Step 3 Map resource references to resources Step 4 Map virtual hosts for Web modules	container servers, configura Clusters WebSp	d in your apple Also, specify t tion file (plug and servers: here:cell=whf	cation. Modules can he Web servers as ta in-cfg.xml) for each	or clusters of application servers where you want to install the modules that are be installed on the same application server or dispersed among several application grets that serve as routers for requests to this applications. The plag- in web server is generated, based on the applications that are routed through, de=whl00cywNode01,server=server1
Step 5 Summary	Selec	t Module	URI	Server
	8	OFSAAI Web Application	ofs81w9.war,WEB- INF/web.xml	WebSphere:cell=whf00cywNode01Cell,node=whf00cywNode01,server=server1

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

Figure 7-16 Map Resource References to Resources

	installation options Step 2 Map modules to servers	Each reso.	arce referenc	e that	is defined	d in your ap	plication must	be ma	pped to a resou	irce.		
		commonj.work.WorkHanager										
	Step 3: Map resource references	Set Multiple JNDI Names *										
	to resources Step 4 Map virtual	Ø	0									
	hosts for Web modules	Select	Module		Bean	URI			ource	Target Resource	JNDI Name	
	Step 5 Summary	٥	OFSAAI Web Application			ofs81w9.war,WEB- INF/web.xml		wim	/WorkManager	wm/WorkManager Browse		
		javaxa	uqLDataSour	œ								
		Set Multiple INDI Names							xd			
		Ø	0									
		Select	Module	Bean	URI		Resource Reference		Target Resource	e JNDI Name	Login configuration	
			OFSAAI								Resource authorization:	
					destruct	9.war.WEB-		jdbc/FIC/		TER	Container	
			Web Application	Web Application		o.xml	jdbc/FICMASTER		Browse		Authentication method: None	
					1				5.0		Resource authorization:	
			OFSAAI		dian.				jdbc/OFSAAA	IINFO	Container	
		0	Web Application		INF/wet		idbc/OFSAAAIIN		INFO Browse		Authentication method: None	

- **12.** Map each resource defined in the application to a resource JNDI name defined earlier.
- **13.** Click Modify Resource Authentication Method and specify the authentication method created earlier.



Note: Specify "config" for FICMASTER resource or "atomic" for the atomic resource as the authentication method.

14. Select OFSAAI Web Application and click Next to display the Map Virtual hosts for Web Modules window.

Figure 7-17 Map Virtual host for Web Modules

	Step 1 Select installation options	Maj	Map virtual hosts for Web modules						
	Step 2 Map modules to servers Step 3 Map resource	We	Specify the virtual host for the Web modules that are contained in your application. You can install Web modules on the same virtual host or disperse them among several hosts. Apply Multiple Mappings						
	references to resources		0 0						
>	Step 4: Map virtual hosts for Web		Select	Web module	Virtual host				
	modules Step.5 Summary		3	OFSAAI Web Application	default_host ¥				

15. Select OFSAAI Web Application and click **Next** to display the **Summary** window.

	Step 1 Select installation options	Summary						
		Summary of installation options						
	Step 2 Map modules to servers	Options	Values					
	Step 3 Map resource	Precompile JavaServer Pages files	No					
	references to	Directory to install application						
	resources Step <u>4</u> Map virtual hosts for Web modules	Distribute application	Yes					
		Use Binary Configuration	No					
		Deploy enterprise beans	No					
÷	Step 5: Summary	Application name	ofs81w9					
		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					

Figure 7-18 Summary

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

Start the Application

To start the application, follow these steps:

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



Use ti	rprise Applications his page to manage installed appli references	cations. A single application can be deployed or	nto multiple servers.		
_	art Stop Install Uninstall	Update Rollout Update Remove File	Export DDL Export File Liberty Advisor •		
-	t Name O	Application Status	Liberty Advisor Summary 🙅		
You	can administer the following resou	rces:			
0	DefaultApplication	*	0		
0	ixtApp	+	0		
	ofs81w9	8	0		
		1000	0		

Figure 7-19 Enterprise Applications Window

2. Select the installed application and click Start.

Note:

- <profile name> is the name given during the WebSphere profile creation.
- <cell name> is the cell name given during profile creation.
- <contextname> is the context name given during installation.

Deploy the EAR/WAR Files for WebLogic

To deploy the OFSAAI EAR (ofaai and tflt) files, follow these steps:

1. Navigate to the <WebLogic Installation directory>/user_ projects/domains/<domain name>/bin directory in the machine in which WebLogic is installed.

(Optional) <Enter a step example.>

2. Start WebLogic by executing the command:

./startWebLogic.sh

3. Open the following URL in a browser window:

http://<ipaddress>:<admin server port>/ console (https, if SSL is enabled).

The Login window of the WebLogic Server Administration Console is displayed.

Note:

Ensure that you have started the Infrastructure Server by executing "./ startofsaai.sh" as mentioned in the Start the Infrastructure Services section.

4. Log in to the WebLogic Server by entering the user credentials with privileges to deploy the EAR file.



5. From the Domain Structure navigation tree, click **Deployments** to display the **Summary of Deployments** window.

Change Center	A Home Log D	ut Preferences 🐼 Record Help	Q					Welcome, weblogi	Connected to: AAAIG	
View changes and restarts	Home > Summar	y of Deployments								
Configuration editing is enabled. Future	Sonmary of Deployments									
changes will automatically be activated as you modify, add or delete items in this domain.	Configuration Control Huntoring									
Denais Stucture AAXXXX 3F Donish PartXivns 3F Environment Deploymmenth 3F Services 3F Services 3F Environmenth 3F Intercoperability 3F Depresents	This page displays the list of Java III applications and standalone application modules installed to this domain. You can spake (solubles) or delate installed applications and modules from the domains by soluting the doddoor next to the application neare and then using the controls on this page. To install a new application or module for displayment to targets in this domain, click Lestall . Fourthermite this table Deployment Dep									
	Name da		State	Health	Туре	Targets	Scope	Domain Partitions	Deployment Order	
	and the second second		Attue	≠ ox	Enterprise	Adminiserver	Clobal		300	
Haw do I8	B S Boys	d1.or	re une	19412111						

Figure 7-20 Summary of Deployments

- 6. Click Install to display the Install Application Assistant window.
- 7. Navigate to the location where the Exploded EAR directory exists and select it.
- 8. Click Next.

After the installation is complete, proceed with the following steps to enable your deployment.

- 9. Go to Summary of Deployments, click Control tab
- 10. Select Deployment and click "Servicing all requests"

This will enable the Deployment and set it to **ACTIVE** status from **PREPARED** status.

Deploy WAR Files on Tomcat

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

To deploy Infrastructure application on the machine that hosts Tomcat, follow these steps:

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



Home Documentati	on Configuration	Examples Wiki	i Mailing Lists		Find He	
pache Tomca	t/9.0.24			💋 АРА	CHE hoptmans rounds	
(f you're seeing thi	s, you've succe	essfully installed Tor	mcat. Congratulations		
	Recommended Re				Server Status	
	Security Consideration	and the state of the state of the			Manager App	
	Clustering/Session I		0		Host Manager	
Inst Web Application	JDBC Datas	Documentat	lion	Getting Help		
Managing Tomcat For security, access to the <u>manager webaop</u> is restricted. Users are defined in: SCATALINA_HOME/conf/towcat-users.xml In Tomcat 9.0 access to the manager application is split between different users. Read more		Tomcat 9.0 Do Tomcat 9.0 Co	cumentation	FAQ and Mailing Lists The following mailing lists are available:		
		Tomcat Wiki Find additional im information in:	portant configuration	tomcat-announce Important announceme vulnerability notificatio	ents, releases, security ons. (Low volume).	
Release Notes		\$CATALINA_HOME/RE Developers may b	be interested in:	User support and discus taglibs-user User support and discus		
Aigration Guide Security Notices		Tomcat 9.0 Bug Dat Tomcat 9.0 JavaDo Tomcat 9.0 SVN Re	63	tomcat-dev Development mailing list messages	, including commit	

Figure 7-21 Tomcat Home window

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

Figure 7-22 Tomcat Web Application Manager

Apache Tomcae? 8	57 180,45000	Dra woodshawa wo	Childs.	20.0000001111	0040.005,04	Rudda .	etsa225354.w.erade.com	10 104 1
		Sue Monocusterna Inc.	Citur .	263940021114	A 101 101 101	andia	A state of the sta	
Tomcat Version	JVM Version	JAW Yendor	OS Name	OS Vers	-	OS.Architecture	Robate	17 Add
lerver Information								
Find search	The displosite theo	x will tropper a full garbage collection. Use	Exilit ediana caulos or	production systems.				
herit to see if a web appl	cation has caused a memory b	wak on stop, netoad or undeploy						
Nagnostics								
		Ceptite						
		Select rivel field upited		(Browne				
WAR like to deploy								
			(DwpAre)					
		Vivil or D	radiny URL SalestMO	OK30HOME Rowshiftsall w	2			
		368, Configural	ton the URL					
		Curled Pu	A reared when					
wpiky devocary or VIAR B	e located on somer							
Deploy								
						Egen session att de s 3	0 minutes	
manager	None specified	Tampat Manager Application		7.0	1	Dat She Relat Underlay		
						Expre sessions with side a 2	0 Handes	
historian	None specified	Terricat Healt Manager Application		Tot .		Start (Dop) (Annual) Undepty		
						Eque sessions um de + 3		
International Internationa International International Internationa International International Inte	Alone apecified	Servet and JSP Examples		710	2		11-Participant - Participant -	
						Start (Stop) (Ramat) Undepic	of American Concession in Conces	
2503	None specified	Tempal Decementation		210	8	Expre sessions um ide a 3		
						Start Dist Reload Undeplo		

4. In the Deploy section, enter the Context Path provided during the installation as "/ <context- name>".



- Enter the path where the <context-name>.war file resides (by default \$FIC_WEB_HOME/<context-name.war>) in WAR or Directory URL and click Deploy. On successful application deployment, a confirmation message is displayed.
- 6. Start the Tomcat server. For more information, see Start the Infrastructure Services.

EAR/WAR File - Build Once and Deploy Across Multiple OFSAA Instances

OFSAA 8.1.2.0.0 supports a single archive deployment model. You can build the EAR/WAR file once and deploy it across multiple OFSAA instances on the same release version.

Prerequisites:

- **1**. The web server type must be the same across all OFSAA instances.
- 2. The information domain must be the same across all OFSAA instances.

The following updates are done for this feature:

- 1. The path of the deployed area log files is in the AAI_SETUP_PROPS database table in the Config Schema.
- 2. The following parameters are moved from the FICWEB.cfg file to the AAI_SETUP_PROPS table with tier as WEB. The file is removed and the respective parameters are set in the servlet context.
 - FIC_SERVLET_PORT
 - ICC_SERVER_PORT
 - CSS_LOGGER_PATH
- 3. The following values for the AAI servlet config parameters in the web.xml file is moved to the AAI_SETUP_PROPS table:
 - FIC_WEBPROTOCOL
 - FIC_PHYSICAL_HOME_LOC
 - FIC WEBSERVER PORT
 - FIC HOME
 - FIC_WEBSERVER_IP
- 4. OFSAA environment details used to establish communication between the web and app layer now moved from the LookupServices.xml and DynamicServices.xml file to the following database tables:
 - aai_dyn_svcs_params
 - aai_dyn_svcs_servers
 - aai lkp svcs servers



Note:

This change to the configuration XML files is done only at the web layer deployment location.

Assign Grants for Schemas

This section discusses the various grants required for the Atomic and Sandbox schemas.

Topics:

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

Assign Grants for Atomic Schema

Atomic Schema creation requires certain grants for object creation present in the <code>\$FIC_HOME/</code> privileges_atomic_user.sql file.

To assign grants for the Atomic Schema, follow these steps by executing in the SQL Plus console:

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

Assign Grants for Config Schema

Config Schema creation requires certain grants for object creation present in the \$FIC_HOME/ privileges_config_user.sql file.



To assign grants for the Config Schema, follow these steps by executing in the SQL Plus console:

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

Assign Grants for Config Schema Entities for Atomic Users

Atomic Schema creation requires certain grants for config schema object access present in the \$FIC_HOME/config_table_privileges_for_atomic_user.sql file. To assign grants for the Config Schema entities for Atomic Users, execute the following commands in the SQL tool console:

grant select on CSSMS_USR_PROFILE to &database_username
/
grant select on CSSMS_ROLE_MAST to &database_username
/
grant select on CSSMS_GROUP_MAST to &database_username
/
grant select on CSSMS_USR_GROUP_MAP to &database_username
/
grant select on CSSMS_USR_GROUP_DSN_SEG_MAP to &database_username
/
grant select on CSSMS_ROLE_FUNCTION_MAP to &database_username
/
grant select on CSSMS_GROUP_ROLE_MAP to &database_username
/
grant select on CSSMS_USR_DSN_SEG_MAP to &database_username
/
grant select on CSSMS_ROLE_FUNCTION_MAP to &database_username
/
grant select on CSSMS_ROLE_FUNCTION_MAP to &database_username
/
grant select on CSSMS_USR_DSN_SEG_MAP to &database_username
/
grant select on CSSMS_USR_DSN_SEG_MAP to &database_username
/
grant select on CSSMS_USR_ROLE_MAP to &database_username
/
grant select on CSSMS_USR_ROLE_MAP to &database_username
/
grant select on CSSMS_USR_DSN_SEG_MAP to &database_username
/
grant select on CSSMS_USR_DSN_SEG_MAP to &database_username
/
grant select on CSSMS_USR_ROLE_MAP to &database_username
/



/ grant select on BATCH RUN to &database username grant select on PR2 FILTERS to &database username grant select on PR2 TASK FILTER to &database username grant select on PR2 TASK FILTER DETAIL to &database username grant select on ST STRESS MASTER to &database username grant select on ST SCENARIO MASTER to &database username grant select on ST SHOCK MASTER to &database username grant select on BATCH MASTER to &database username grant select on ICC MESSAGELOG to &database username grant select on PR2 MASTER to &database username grant select on PR2 RUN REQUEST to &database username grant select on MF MODEL SCRIPT MASTER to &database username grant select on MF INPUT VALUES to &database username grant select on MF MODEL OUTPUT VALUES to &database username grant select on DB MASTER to &database username grant select on DSNMASTER to &database username grant select on pr2 rule map to &database username grant delete on pr2 rule map pr to &database username grant insert on pr2 rule map pr to &database username grant update on pr2 rule map pr to &database username grant select on pr2 rule map pr to &database username grant delete on pr2 rule map pr tmp to &database username grant insert on pr2 rule map pr tmp to &database username grant update on pr2 rule map pr tmp to &database username grant select on pr2 rule map pr tmp to &database username grant select on pr2 rule map exclude to &database username grant delete on pr2 rule map exclude pr to &database username



grant insert on pr2 rule map exclude pr to &database username grant update on pr2 rule map exclude pr to &database username grant select on pr2 rule map exclude pr to &database username grant delete on pr2 rule map exclude pr tmp to &database username grant insert on pr2_rule_map_exclude_pr_tmp to &database username grant update on pr2 rule map exclude pr tmp to &database username grant select on pr2 rule map exclude pr tmp to &database username grant select on pr2 run object to &database username grant select on pr2 run object member to &database username grant select on pr2 run map to &database username grant select on pr2 run execution b to &database username grant select on pr2 run execution filter to &database username grant select on pr2 firerun filter to &database username grant select on pr2 filters to &database username grant select on configuration to &database username grant select on batch parameter to &database username grant select on component master to &database username grant select on MDB OBJECT TYPE ATT LAYOUT to &database username grant select on REV OBJECT ATTRIBUTE DTL to &database username grant select on FORMS LOCALE MASTER to $\& \mbox{database}$ username grant select on mdb object dependencies to &database username grant select on mdb execution details to &database username grant select on REV STAT DATA to &database username grant select on REV OBJECT REPOSITORY B to &database username grant select on REV OBJECT REPOSITORY TL to &database username grant select on REV OBJECT ATTRIBUTE DTL MLS to &database username grant select on REV OBJECT APPLICATION MAP to &database username grant select on MDB OBJ EXPR DETAILS to &database username



/ grant select on MDB EXECUTION DETAILS to &database username grant select on REV OBJECT TYPES CD to &database username grant select on REV OBJECT TYPES MLS to &database username grant select on REV APPLICATIONS CD to &database username grant select on REV APPLICATIONS MLS to &database username grant select on METADATA BROWSER LOCALE to &database username grant select on MDB STAT DATA to &database username grant select on MDB OBJECT TYPE LAYOUT to &database username grant select on ofsa md id ref to &database username grant select on MDB ETL MAPPING to &database username grant select on setupinfo to &database username grant select on LOCALEREPOSITORY to &database username grant select on MF MODEL MASTER to &database username grant select on MF SANDBOX MASTER to &database username grant select on MF VARIABLE MASTER to &database username grant select on MF TECHNIQUE MASTER to &database username grant select on MDB RULE SOURCE HEADER to &database username grant select on MDB RULE TARGET HEADER to &database username grant select on MDB_RULE_TARGET_MEMBER_HEADER to &database username grant select on MDB RULE GRID DATA to &database username grant select on MDB MODEL MAPPING to &database username grant delete on AAI MAP MAPPER to &database username grant insert on AAI MAP MAPPER to &database username grant update on AAI MAP MAPPER to &database username grant select on AAI MAP MAPPER to &database username grant select on RTI UI EXCLUDE PDM LISTto &database username grant select on RTI VIR PHY TBL NAMEto &database username



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

Start the Infrastructure Services

Start the infrastructure servers after the installation and the post-installation steps are completed. Log on to each machine and execute the .profile file. Start all the servers mentioned from the same shell encoding.

Note:

The servers mentioned in this section 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.

 On the machine where the Infrastructure Application components are installed, navigate to the \$FIC_APP_HOME/common/FICServer/bin directory, and execute the following command to start the Infrastructure Server: ./startofsaai.sh

Note:

- a. You can also start the Infrastructure Server by executing the command "nohup ./ startofsaai.sh &". Starting the process using "nohup" and "&" returns the command prompt without having to wait until the process completes. However, this command cannot be used when you are starting the server for the first time or starting after changing the user password in the configuration database schema.
- b. When you start the server, the following error is displayed: java.io.FileNotFoundException:

/ftpshare/<INFODOM>/erwin/fipxml/<INFODOM>_DATABASE.XML (No such file or directory)

Ignore this error.

2. Start the ICC server.

On the machine where the Infrastructure Default Application components are installed, navigate to the \$FIC_HOME/ficapp/icc/bin directory, and execute the following command to start the "ICC server":

./iccserver.sh

Note:

Only the Infrastructure Default Application Server holds the ICC component.

3. Start the Backend Services using one of the following options:



• On the machine where Infrastructure Database components are installed, navigate to the \$FIC_DB_HOME/bin directory, and execute the following command to start the
"Agent server":

 $./{\tt agentstartup.sh}$

• Using nohup execute the following command: nohup ./agentstartup.sh &

Note:

This agent internally starts the Router, Message Server, OLAP Data Server, and AM Services.

Start the Web Application Servers

Start the Web application server depending on the type from the following table:

Startup Option	Description
Start WebSphere Profile	On the machine where WebSphere is installed:
	 Navigate to the [Webshpere_Installation_Directory] / AppServer/<profiles>/<profile name="">/bin directory.</profile></profiles>
	2. Execute the following command:
	./startServer.sh server1
Start WebLogic Domain	On the machine where WebLogic is installed:
	 Navigate to the <weblogic installation<br="">Directory>/user_ projects/domains/ <domain name="">/bin directory</domain></weblogic>
	2. Execute the following command:
	startWebLogic.sh -d64
	Note: If WebLogic is already running, access the WebLogic Admin Console. Stop and start the application <context name>.ear file.</context

 Table 7-2
 Start the Web Application Servers



Startup Option	Description			
Start Tomcat Application	On the machine where Tomcat is installed:			
	 Navigate to the <tomcat_install_ Directory>/bin directory.</tomcat_install_ 			
	2. Execute the following command: ./catalina.sh run			

Table 7-2	(Cont.)	Start the	Web A	pplication Ser	vers
-----------	---------	-----------	-------	----------------	------

Access the OFSAA Application

To access the OFSAA application, follow these steps:

1. Open a browser and enter the URL in the following format:

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

For example, https://192.0.2.2/ofsaa/login.jsp

The OFSAA Login window is displayed.

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

- SYSADMN System Administrator
- SYSAUTH System Authorizer

The SYSADMN and SYSAUTH users are configured with a default password, which you will require to login for the first time. See the MOS Doc ID 2691681.1 for the password.

2. Log in to the application using the "SYSADMN" User ID and the default password. After the first login, you are prompted to change the password.

Note:

The password change is required only for a new installation scenario and not for upgrade scenarios.

OFSAA Landing Page

On successful login, the OFSAA Landing screen is displayed.



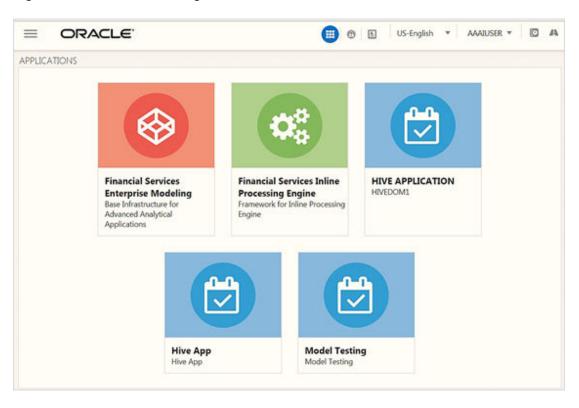


Figure 7-23 OFSAA Landing screen

OFSAA Landing screen shows the available Applications as tiles, for which a user has access to. Clicking the respective Application tile launches that particular Application. You can change the landing page based on your preference.

Masthead

Hamburger Icon	Applications Icon Administration Reports
	🜐 🖱 🗈 US-English 🔻 AAAIUSER 🕶 🖾
	Language Menu
	User Menu
	Last Login Details

Figure 7-24 User Interface Components

- **Hamburger Icon** This icon is used to trigger the Application Navigation Drawer.
- **Application Icon** This icon is used to show the available Applications installed in your environment at any time.
- Administration Icon- This icon is used to go to the Administration window. The Administration window displays modules like System Configuration, Identity



Management, Database Details, Configure Email Configuration, Manage OFSAA Product Licenses, Create New Application, Information Domain, Translation Tools, and process Modelling Framework as Tiles.

- **Reports Icon** This icon is used to launch various User Reports such as user Status Report, User Attribute Report, User Admin Activity Report, User Access Report, and Audit Trial Report.
- Language Menu- It displays the language you selected in the OFSAA Login Screen. The language options displayed in the Language Menu are based on the language packs installed in your OFSAA instance. Using this menu, you can change the language at any point in time.
- User Menu- Clicking this icon displays the following menu:

X Preferences
🔳 About
Change Password
🗭 Log Out

Figure 7-25 User Menu

- **Preferences** To set the OFSAA Landing Page.
- Change Password- To change your password. For more information, see the Change Password section in the OFS AAI User Guide. This option is available only if SMS Authorization is configured.
- Log Out- To log out from OFSAA applications.
- Last Login Details This displays the last login details as shown:



Last Login Date : 05/13/2018 20:28:46 PM
Last Failed Login Date : 05/11/2018 09:27:26
AM

Navigation Drawer

1. Click Hamburger Icon to launch the Navigation Drawer as shown:

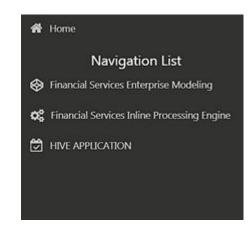


Figure 7-27 Navigation Drawer

 Clicking an item in the menu displays the next level sub-menu and so on. For example, to display Data Sources, click Financial Services Enterprise Modeling>Data Management>Data Management Framework>Data Management Tools>Data Sources.



<	Data	Mana	gemen	t Tools	i i	1
Data	Sources					
Data	Mapping	9				
Post	Load Ch	anges				
User	Defined	Functions				
DMT	Configu	rations				

3. Click Hierarchical Menu to display the navigation path of the current sub-menu as shown:

Figure 7-29 Navigation Submenu



4. The RHS Content Area shows the Summary page of Data Sources. Click anywhere in the Content Area to hide the Navigation Drawer. To launch it back, click the Hamburger icon .



5. Click **Home** to display the OFSAA Landing Screen.

Navigate to System Configuration

Click ⁽⁶⁾ from the header to display the Administration tools in the Tiles menu.
 Click System Configuration from the Tiles menu to view a submenu list.

Note:

After you have accessed a tool from the submenu, the options are also available in the Navigation List to the left. Click button to access the Navigation List.

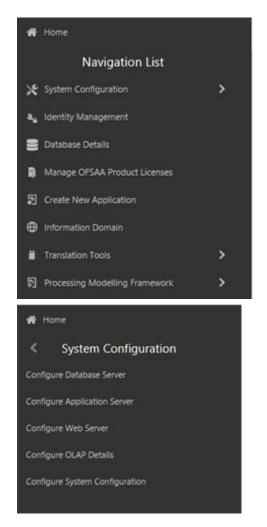


Figure 7-30 System Configuration Submenu



You (System Administrator) must have full access rights to ftpshare directory with appropriate User ID and password to add and modify the server details.

Components of System Configuration

System Configuration consists of the following sections.

- Database Server
- Application Server
- Web Server
- Database Details
- OLAP Details
- Email Configuration
- View OFSAA Product Licenses
- Information Domain
- Configuration
- Create Application

Configure the excludeURLList.cfg File

To configure the excludeURLList.cfg file, follow these steps:

- 1. Go to \$FIC_WEB_HOME/webroot/conf.
- 2. Create a backup of the file excludeURLList.cfg.
- 3. Edit the following details in excludeURLList.cfg file:
 - [SQLIA]./dataIntegrator/ to [ALL]./dataIntegrator/
 - [SQLIA]./ETLExtractionServlet to [ALL]./ETLExtractionServlet
- 4. Go to \$FIC_WEB_HOME.
- 5. Backup the existing ear/war files.
- 6. Delete <app>.ear and <app>.war files.
- 7. Re-create the ear/war files by running ant.sh.
- 8. Use the new ear/war files and re-deploy them.
- 9. Re-start the OFSAA environment.

Configure Oracle R Distribution and Oracle R Enterprise (ORE)

This section is applicable only if OFS Enterprise Modeling is licensed and enabled in your OFSAA instance.

 Install OFSAAIRunner Package. For more information, see Install OFS_AAAI_Runner_Package. If you have already installed the OFSAAIRunner package (as part of a previous installation), uninstall it. (For more information, see Uninstall_OFSAAI_Runner_Package, and reinstall the latest available OFSAAIRunner package.



2. Log in to the database with dba privileges and provide the following privilege to Configuration Schema:

RQADMIN by executing the command:

GRANT RQADMIN TO <config schema>;

3. Log in to the database with dba privileges and provide the following privileges to Atomic Schema:

CREATE UNLIMITED TABLESPACE privilege by executing the command: GRANT CREATE UNLIMITED TABLESPACE TO <atomic schema>;

CREATE MINING MODEL privilege (to execute the Data Mining models) by executing the command:

GRANT CREATE MINING MODEL TO <atomic schema>;

Install OFSAAAI 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 in the <code>\$FIC_DB_HOME/lib</code> directory.

Prerequisites

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

Refer to the following instructions to install OFSAAIRunner package:

- 1. Log in to the OFSAA Server. Navigate to the directory \$FIC_DB_HOME/lib.
- 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 the /usr/lib64/R/library directory.

7. Navigate to the directory \$ORACLE_HOME/R/library and check whether OFSAAIRunner package is listed thereby executing the command: >library(OFSAAIRunner)>OFSAAIRunner:: and press TAB twice.

This lists out all the functions.

Uninstall OFSAAI Runner Package

Perform the following instructions to uninstall the OFSAAIRunner package:

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

#ORE

>remove.packages("OFSAAIRunner")

3. To save the workspace image, enter the command:

>q()

- 4. Enter y when prompted to save the workspace image. Save workspace image? [y/n/c]: y
- 5. Navigate to the directory \$ORACLE_HOME/R/library and verify the package is not listed thereby executing the command:

ls -l

Configure ORE Execution

Perform the following step: to configure ORE execution:

 Add a TNS entry in the tnsnames.ora file with tns name same as that of the value set for ORACLE_SID in the database server.

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

Configure Tomcat

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

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

- 1. Navigate to tomcat/conf directory.
- 2. Edit the web.xml file as follows:
- 3. 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>
```

Configure Big Data Processing

This section is not applicable if you have enabled Financial Services Big Data Processing during the installation of OFSAAI 8.1.2.0.0 full installer. Follow instructions in this section if you intend to enable Big Data Processing.

Topics:

- Copy Jars to OFSAA Installation Directory
- Copy KEYTAB and KRB5 Files in OFSAAI
- Enable Big Data

Copy Jars to the OFSAA Installation Directory

- 1. Download the supported Cloudera HIVE JDBC Connectors and copy the following Jars to the location \$FIC_HOME/ext/lib and \$FIC_WEB_ HOME/webroot/WEB-INF/ lib. For the latest supported versions, see OFSAA Technology Matrix 8.1.2.0.0.
 - hive_service.jar
 - hive_metastore.jar
 - HiveJDBC4.jar
 - zookeeper-3.4.6.jar
 - TCLIServiceClient.jar

Note:

If the Hive JDBC version is 2.5.x, then copy the log4j-1.2.17.jar File to the \$FIC_WEB_HOME/webroot/WEB-INF/lib and \$FIC_HOME/ext/lib Directory locations.

 Copy the following Jars <Cloudera Installation Directory>/jars directory based on the CDH version to the location \$FIC_HOME/ext/lib and \$FIC_WEB_HOME/webroot/ WEB-INF/lib:

CDH v5.13.0:

```
commons-collections-3.2.2.jar
commons-configuration-1.7.jar
commons-io-2.4.jar
commons-logging-1.2.jar
hadoop-auth-2.6.0-cdh5.13.0.jar
hadoop-cormon-2.6.0-cdh5.13.0.jar
hadoop-core-2.6.0-mr1-cdh5.13.0.jar
hive-exec-1.1.0-cdh5.13.0.jar
httpclient-4.3.jar
httpcore-4.3.jar
libfb303-0.9.3.jar
```



```
libthrift-0.9.3.jar
slf4j-api-1.7.5.jar
slf4j-log4j12-1.7.5.jar
```

CDH v6.3.0:

```
commons-collections-3.2.2.jar
commons-configuration2-2.1.1.jar
commons-io-2.6.jar
commons-logging-1.2.jar
hadoop-auth-3.0.0-cdh6.3.0.jar
hadoop-common-3.0.0-cdh6.3.0.jar
hive-exec-2.1.1-cdh6.3.0.jar
httpclient-4.5.3.jar
httpcore-4.4.6.jar
libfb303-0.9.3.jar
slf4j-api-1.7.25.jar
slf4j-log4j12-1.7.25.jar
stax2-api-3.1.4.jar
woodstox-core-5.0.3.jar
```

Copy KEYTAB and KRB5 Files in OFSAAI

A Keytab is a file containing pairs of Kerberos principals and encrypted keys (these are derived from the Kerberos password). The krb5.conf file contains Kerberos configuration information, including the locations of KDCs and admin servers for the Kerberos realms of interest, defaults for the current realm, and Kerberos applications, and mappings of hostnames onto Kerberos realms.

If the Authentication is configured as KERBEROS_WITH_KEYTAB for the Hive database, then you must use the Keytab file to login to Kerberos. The Keytab and Kerberos files must be copied to \$FIC_HOME/conf and \$FIC_WEB_ HOME/webroot/conf of the OFSAAAI installation directory.

Generate the application EAR/WAR file and redeploy the application onto your configured web application server.

Restart the Web application server and the OFSAAAI Application Server. For more information, see the Start the Infrastructure Services section.

Enable Big Data

To enable Big Data option, follow these steps:

- 1. Download the OFSAAAI Applications Pack Installer
- 2. Extract the Software
- 3. Configure OFS_<App pack>_PACK.xml File
- 4. Enable the option as YES for the App ID OFS_AAIB as shown in the following illustration:





Figure 7-31 Enable Big Data

5. Install the OFSAAI Application Pack

Enable Financial Services Enterprise Modeling on Another Application Pack

To enable Enabling Financial Services Enterprise Modeling on another Application Pack, follow these steps:

- 1. Download the OFSAAAI Applications Pack Installer
- 2. Extract the Software
- 3. Configure OFS_<App pack>_PACK.xml File
- 4. Enable the option as YES for the App ID OFS_AAAI as shown in the following illustration:

Figure 7-32 Enable Financial Services Enterprise Modeling



5. Install the OFSAAI Application Pack



Create Application Users

Create the application users in the OFSAA setup before use. For more information, see the User Administrator section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

Note:

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

Map Application User(s) to User Group

Starting the OFSAA 8.1 release, with the installation of every OFSAA Application Pack, preconfigured application user groups are seeded. These user groups are unique to every OFSAA Application Pack and have application roles pre-configured.

User Groups seeded with the OFSAAAI Application Pack are listed in the Seeded User Groups Table

Name	Description
Modeler Group	A user mapped to this group has access to all the menu items for Enterprise modeling but does not have authorization rights for sandbox population, model deployment, and modeling technique authorization.
Modeling Administrator Group	A user mapped to this group has access to all the menu items for Enterprise modeling and has authorization rights for the sandbox population, model deployment, and modeling technique authorization.
Business Administrator	A user mapped to this group has access to all the menu items and actions for the advanced operations of metadata objects.
Business Authorizer	A user mapped to this group has access to all the menu items and actions for authorization of changes to metadata objects.
Business Owner	A user mapped to this group has access to all the menu items and actions for read and write of metadata objects
Business User	A user mapped to this group has access to all the menu items and actions for access and read of metadata objects.
Identity Administrator	A user mapped to this group has access to all the menu items for managing User entitlements, User Group Entitlements, and Access Management configurations.

Table 7-3 Seeded User Groups



Name	Description
Identity Authorizer	A user mapped to this group has access to all the menu items for authorizing User entitlements, User Group Entitlements, and Access Management configurations.
System Administrator	A user mapped to this group has access to all menu items for managing the setup configurations.
Object Administrator	A user mapped to this group has access to all menu items for managing object migration and metadata traceability using the metadata browser.
Guest Group	A user mapped to this group has access to certain menu items with only access privileges.

Table 7-3 (Cont.) Seeded User Groups

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

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

Add TNS entries in the TNSNAMES.ORA File

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

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

- 1. Log in to the application using System Administrator privileges.
- 2. Navigate to System Configuration & Identity Management tab.
- Click Administration and Configuration, select System Configuration, and click Database Details.
- 4. Expand Name to get the list of TNS entry names.

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

```
select dbname from db master where dbname !='CONFIG'
```

Configure Transparent Data Encryption (TDE) and Data Redaction in OFSAA

Two features comprise of Oracle Advanced Security: Transparent Data Encryption and Oracle Data Redaction.

This section details the configurations required in case you want to enable TDE or Data Redaction in OFSAA applications.

- Prerequisites
- Transparent Data Encryption (TDE)



Data Redaction

Prerequisites

Ensure the required Oracle Database Server versions are installed:

- Oracle Database Server Enterprise Edition 18c Release 3 64 bit RAC/Non-RAC with/ without partitioning option, Advanced Security Option.
- Oracle Database Server Enterprise Edition 19c Release 3 64 bit RAC/Non-RAC with/ without partitioning option, Advanced Security Option.

Transparent Data Encryption (TDE)

Transparent Data Encryption (TDE) enables you to encrypt sensitive data, such as Personally Identifiable Information (PII), that you store in tables and tablespaces. After the data is encrypted, this data is transparently decrypted for authorized users or applications when they access this data. To prevent unauthorized decryption, TDE stores the encryption keys in a security module external to the database, called a Keystore. For more details on TDE, see the Database Advanced Security Guide.

TDE tablespace encryption enables you to encrypt all of the data stored in a tablespace. To control the encryption, you use a Keystore and TDE master encryption key. Oracle Database supports both software keystores and hardware, or HSM-based, keystores. A software keystore is a container for the TDE master encryption key, and it resides in the software file system.

To configure TDE for OFSAA, follow these steps:

- Create a new PDB (19c)/ instance (18c) on the same or different Database Server for TDE. For more information, see Configure Software Keystore and Encrypted Tablespace Creation.
- 2. Shutdown the OFSAAI Services.
- **3.** Export all Configuration, Atomic, and Sandbox Schemas as per the applications installed in your OFSAA instance.

For example:

expdp SYSTEM/oracle@OFSA19c2DB DIRECTORY=data_pump_dir DUMPFILE=ofsaaconf_ ofsaaatm_%U.dmp filesize=2G SCHEMAS=ofsaaconf,ofsaaatm LOGFILE=ofsaaconf_ ofsaaatm_exp.log

Note:

The above command will create data dumps as files of 2GB size each (multiples). Any other commands/ tools as appropriate may be used to archive the schemas.

Import all schemas that are exported using the above command, into the new DB instance.

For example:

impdp SYSTEM/oracle@OFSA12nDB DIRECTORY=data_pump_dir DUMPFILE=ofsaaconf_ ofsaaatm_%U.dmp SCHEMAS=ofsaaconf,ofsaaatm LOGFILE=ofsaaconf_ofsaaatm_ imp.log



Note:

- Restoring the exported dumps creates Configuration and Atomic Schema(s) with the same user credentials as that of the source, along with the existing grants.
- If schemas are restored using a tool/ mechanism other than as mentioned in Steps 1 and 2, retain the user credentials of Configuration and Atomic Schemas the same as in the Source environment, along with the Schema grants.
- 5. Provide select grants on sys.V_\$parameter to view Configuration and Atomic Schemas of Target Environment database.

For example:

```
Log in as sys user:
SQL> GRANT SELECT ON SYS.V_$PARAMETER TO ofsaaconf;
Grant succeeded
SQL> GRANT SELECT ON SYS.V_$PARAMETER TO ofsaaatm;
Grant succeeded
```

- 6. Update .profile for ORACLE_SID environment variable with new ORACLE_SID.
- Update JDBC URL by executing Port Changer utility. For details on how to execute Port Changer utility, see Changing IP/Hostname, Ports, Deployed paths, Protocol of the OFSAA Instance section under Generic Configurations chapter in OFS Analytical Applications Infrastructure Administration Guide.
- 8. Navigate to the \$FIC_WEB_HOME directory and execute the following command to trigger the creation of the EAR/WAR file:

./ant.sh

- 9. The EAR/WAR file <contextname>.ear/.war is created in the \$FIC_WEB_HOME directory.
- On completion of the EAR/WAR file creation, the message "BUILD SUCCESSFUL" is displayed.
- **11.** Edit the existing Connection Pool settings to point to the new JDBC URL and verify connections.
- **12.** Clear the webserver cache and redeploy the application onto your configured web application server.
- **13.** Restart the OFSAA Services. For more information, see Start the Infrastructure Services.

Configure a Software Keystore and Encrypted Tablespace Creation

A software keystore is a container for the TDE master encryption key, and it resides in the software file system. You must define a location for the key in the sqlnet.ora file so that the database locates the keystore (one per database) by checking the keystore location in the sqlnet.ora file. After defining the location, create the keystore and open it. Set the TDE master key after opening it and then encrypt the data.

To find whether a wallet is already existing, check the following entries:



- 1. The location specified by the ENCRYPTION_WALLET_LOCATION parameter in the sqlnet.ora file.
- 2. The location specified by the WALLET_LOCATION parameter in the sqlnet.ora file.

Encrypted tablespaces can share the default database wallet. However, Oracle recommends that you use a separate wallet for transparent data encryption functionality by specifying the ENCRYPTION_WALLET_LOCATION parameter in the sqlnet.ora file.

Note:

You must have the required privileges to perform the following actions.

To configure the software keystore, follow the instructions in the following sections:

- Set the Software Keystore Location in the sqlnet.ora File
- Create the Software Keystore
- Open the Software Keystore
- Set the Software TDE Master Encryption Key
- Encrypting your Data
- Test the Encryption

Set the Software Keystore Location in the sqlnet.ora File

The first step is to designate a location for the software keystore in the sqlnet.ora file. The Oracle Database will check the sqlnet.ora file for the directory location of the keystore to determine whether it is a software keystore or a hardware module security (HSM) keystore.

Note:

- Ensure that the directory location which you want to set for software keystore exists beforehand. Preferably, this directory must be empty.
- In a multitenant environment, the keystore location is set for the entire multitenant container database (CDB), not for individual pluggable databases (PDBs).
- By default, the sqlnet.ora file is located in the ORACLE_HOME/network/admin directory or the location set by the TNS_ADMIN environment variable. Ensure that you have properly set the TNS_ADMIN environment variable to point to the correct sqlnet.ora file.

To create a software keystore on a regular file system, use the following format when you edit the sqlnet.ora file:

```
ENCRYPTION_WALLET_LOCATION= (SOURCE=(METHOD=FILE) (METHOD_DATA=(DIRECTORY=<<pre>path
to keystore>>)))
```

Examples:

For a regular file system in which the database name is orclb:



ENCRYPTION_WALLET_LOCATION= (SOURCE=(METHOD=FILE)
(METHOD DATA=(DIRECTORY=/etc/ORACLE/WALLETS/orcl)))

- When multiple databases share the sqlnet.ora file: ENCRYPTION_WALLET_LOCATION= (SOURCE=(METHOD=FILE) (METHOD_DATA=(DIRECTORY=/etc/ORACLE/WALLETS/orcl)))
- When Oracle Automatic Storage Management (ASM) is configured: ENCRYPTION_WALLET_LOCATION= (SOURCE=(METHOD=FILE) (METHOD DATA=(DIRECTORY=+disk1/mydb/wallet)))
- For ASM Diskgroup: ENCRYPTION_WALLET_LOCATION= (SOURCE=(METHOD=FILE) (METHOD_DATA=(DIRECTORY=+ASM_file_path_of_the_diskgroup)))

Create the Software Keystore

There are three types of Software Keystores:

- Password-based Software Keystores
- Auto-login Software Keystores
- Local Auto-login Software Keystores

Perform the following steps to create a software keystore:

- 1. Log in as sysdba or user with ADMINISTER KEY MANAGEMENT or SYSKM privilege.
- 2. Use the following command to create password-based software keystore: CONN sys/password@serviceid AS SYSDBA

ADMINISTER KEY MANAGEMENT CREATE KEYSTORE 'keystore_location' IDENTIFIED BY

software_keystore_password;

- keystore_location is the path of the keystore directory you want to create
- software_keystore_password is the password of the keystore that you want to create.

For example, to create the keystore in the /etc/ORACLE/WALLETS/orcl directory:

ADMINISTER KEY MANAGEMENT CREATE KEYSTORE /etc/ORACLE/WALLETS/orcl' IDENTIFIED BY password;

After you run this statement, the ewallet.p12 file, which is the keystore, appears in the keystore location.

- Alternatively, you can create an Auto-Login or Local-Login Keystore to avoid opening the Keystore manually every time. Use the following command: ADMINISTER KEY MANAGEMENT CREATE [LOCAL] AUTO_LOGIN KEYSTORE FROM KEYSTORE 'keystore location' IDENTIFIED BY keystore password;
- LOCAL enables you to create a local auto-login software keystore. Otherwise, omit this clause if you want the keystore to be accessible by other computers. After you run this statement, the cwallet.sso file appears in the keystore location.



Note:

It is important to remember the master key password (<keystore_password>) used during the creation of the keystore. There are no ways to retrieve the password if forgotten.

Open the Software Keystore

Depending on the type of keystore you create, you must manually open the keystore before you can use it.

You must not manually open auto-login or local auto-login software keystores. These keystores are automatically opened when it is required, that is when an encryption operation must access the key. If necessary, you can explicitly close any of these types of keystores. You can check the status of whether a keystore is open, closed, open but with no master key, or open but with an unknown master key by querying the STATUS column of the V\$ENCRYPTION_ WALLET view.

After you open a keystore, it remains open until you manually close it. Each time you restart a database instance, you must manually open the password keystore to re-enable encryption and decryption operations.

Perform the following steps to open the software wallet:

- 1. Log in as sysdba or user with ADMINISTER KEY MANAGEMENT or SYSKM privilege.
- 2. Use the following command to open password-based software keystore: CONN sys/password@serviceid AS SYSDBA

```
ADMINISTER KEY MANAGEMENT SET KEYSTORE OPEN IDENTIFIED BY software_keystore_password [CONTAINER = ALL | CURRENT];
```

- software_keystore_password is the same password that you used to create the keystore in "Step 2: Create the Software Keystore".
- CONTAINER is for use in a multitenant environment. Enter ALL to set the keystore in all of the PDBs in this CDB, or CURRENT for the current PDB.

Note:

- In a CDB, open the Keystore in the ROOT (CDB\$ROOT) container and in all the associated PDBs, where TDE is enabled.
- You must not manually open auto-login or local auto-login software Keystores.

Set the Software TDE Master Encryption Key

Once the keystore is open, you can set a TDE master encryption key for it. The TDE master encryption key is stored in the keystore. This key protects the TDE table keys and tablespace encryption keys. By default, the TDE master encryption key is a key that Transparent Data Encryption (TDE) generates.

In a multitenant environment, you can create and manage the TDE master encryption key from either the root or the PDB.



Ensure that the database OPEN_MODE is set as READ WRITE. To find the status for a non-multitenant environment, query the OPEN_MODE column of the V\$DATABASE dynamic view. If you are using a multitenant environment, then query the V\$PDBS view. (If you cannot access these views, then connect as SYSDBA and try the query again. To connect as SYSKM for this type of query, you must create a password file for it. See Oracle Database Administrator's Guide for more information.)

Perform the following steps to set the encryption key:

- Log in as sysdba or user with ADMINISTER KEY MANAGEMENT or SYSKM privilege.
- 2. Use the following command to set the encryption key: CONN sys/password@serviceid AS SYSDBA

ADMINISTER KEY MANAGEMENT SET KEY [USING TAG 'tag'] IDENTIFIED BY password [WITH BACKUP [USING 'backup_identifier']] [CONTAINER = ALL | CURRENT];

- tag is the associated attributes and information that you define. Enclose this setting in single quotation marks (' ').
- password is the mandatory keystore password that you created when you created the keystore in Create the Software Keystore.
- WITH BACKUP creates a backup of the keystore. You must use this option for password-based keystores. Optionally, you can use the USING clause to add a brief description of the backup. Enclose this description in single quotation marks ('). This identifier is appended to the named keystore file (for example, ewallet_time_stamp_emp_key_backup.p12, with emp_key_backup being the backup identifier). Follow the file naming conventions that your operating system uses.
- CONTAINER is for use in a multitenant environment. Enter ALL to set the key in all of the PDBs in this CDB, or CURRENT for the current PDB. For example,

ADMINISTER KEY MANAGEMENT SET KEY IDENTIFIED BY password WITH BACKUPUSING 'emp key backup';

Encrypt your Data

After completing the keystore configuration, encrypt the data. You can encrypt individual columns in a table or entire tablespaces. OFSAA recommends encrypting entire tablespaces and the description in this section covers encrypting entire tablespaces.



Note:

The following restrictions on using Transparent Data Encryption when you encrypt a tablespace:

- Transparent Data Encryption (TDE) tablespace encryption encrypts or decrypts data during read and write operations, as compared to TDE column encryption, which encrypts and decrypts data at the SQL layer. This means that most restrictions that apply to TDE column encryption, such as data type restrictions and index type restrictions, do not apply to TDE tablespace encryption.
- To perform import and export operations, use Oracle Data Pump.

Encrypting data involves the following steps:

- Set the COMPATIBLE Initialization Parameter for Tablespace Encryption
- Set the Tablespace TDE Master Encryption Key
- Create the Encrypted Tablespace

Set the COMPATIBLE Initialization Parameter for Tablespace Encryption

Prerequisite: You must set the COMPATIBLE initialization parameter for the database to 12.2.0.0 or later. Once you set this parameter to 12.2.0.0, the change is irreversible.

To set the COMPATIBLE initialization parameter, follow these steps:

- 1. Log in to the database instance. In a multitenant environment, log into the PDB.
- 2. Check the current setting of the COMPATIBLE parameter. For example:

SHOW PARAMETER COM	PATIBLE		
NAME	TYPE	VALUE	
compatible	string	12.0.0.0	
noncdbcompatible	BOOLEAN	FALSE	

- 3. If you want to change the COMPATIBLE parameter, perform the following steps:
 - Locate the initialization parameter file for the database instance.
 UNIX systems: This file is in the ORACLE_HOME/dbs directory and is named initORACLE_SID.ora (for example, initmydb.ora).
 - In SQL*Plus, connect as a user who has the SYSDBA administrative privilege, and then shut down the database.
 For example:

CONNECT /AS SYSDBA

SHUTDOWN

• Edit the initialization parameter file to use the correct COMPATIBLE setting. For example:

COMPATIBLE = 12.2.0.0

 In SQL*Plus, ensure that you are connected as a user who has the SYSDBA administrative privilege, and then start the database.



For example:

CONNECT /AS SYSDBA

STARTUP

 If tablespace encryption is in use, then open the keystore at the database mount. The keystore must be open before you can access data in an encrypted tablespace.
 STARTUP MOUNT;

ADMINISTER KEY MANAGEMENT SET KEYSTORE OPEN IDENTIFIED BY password; ALTER DATABASE OPEN;

Set the Tablespace TDE Master Encryption Key

Make sure that you have configured the TDE master encryption key as shown in the Set the Software TDE Master Encryption Key .

Create the Encrypted Tablespace

After you have set the COMPATIBLE initialization parameter, you are ready to create the encrypted tablespace.

Test the Encryption

Test the encryption by checking if a tablespace is encrypted or not. Execute the following query to check:

SELECT tablespace name, encrypted FROM dba tablespaces;

The following result is displayed, which indicates whether the TABLESPACE is encrypted or not in the ENCRYPTED column.

TABLESPACE_NAME	ENCRYPTED
SYSTEM	NO
SYSAUX	NO
UNDOTBS1	NO
TEMP	NO
USERS	NO
ENCRYPTED_TS	YES

Table 7-4 Testing the Encryption

The above example indicates TABLESPACE ENCRYPTED_TS is created with Encryption ON.

Data Redaction

OFSAA is enhanced to enable masking of sensitive data and Personal Identification Information (PII) to adhere to Regulations and Privacy Policies. Oracle Data Redaction provides selective, on-the-fly redaction of sensitive data in database query results before display by applications so that unauthorized users cannot view the sensitive data. The stored data remains unaltered, while displayed data is transformed into a pattern that does not contain any identifiable information.

To enable Data Redaction, perform the following steps:



- **1.** Log in as SYSDBA into the database.
- 2. Execute the \$FIC_HOME/utility/data_security/scripts/create_data_sec_
 roles.sql file only once per database (PDB in case of 18c/19c).
- Execute the following SQL statement to find out the list of atomic users from the table: select v_schema_name from aai_db_detail where V_DB_NAME <> 'CONFIG' AND V_DB_TYPE = 'ORACLE'
- 4. Execute the \$FIC_HOME/utility/data_security/scripts/grant_data_sec_roles.sql
 file for all atomic users found in the previous step.
- 5. From the Configuration window in the System Configuration module, select the Allow Data Redaction checkbox.
- 6. Run the Data Redaction utility.

For more details on enabling Data Redaction, see the *Data Redaction* section in the *Data Security and Data Privacy* topic in the OFS Analytical Applications Infrastructure Administration Guide.



8 Remove OFSAA Infrastructure

Refer to the following topics, to remove the OFSAAI installation from a setup.

- Uninstall the OFSAA Infrastructure
- Uninstall the EAR Files, from WebSphere, WebLogic, and Tomcat application server
- Clean Up the Environment

Uninstall the OFSAA Infrastructure

To uninstall the OFSAA Infrastructure, follow these steps:

Before you start the uninstallation process, ensure that no open connections exist to the OFSAA Infrastructure Config and Atomic Schemas and Stop the Infrastructure Services.

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

./Uninstall.sh

3. Enter the password for the OFSAAI Configuration Schema when prompted:

Figure 8-1 OFSAAI Configuration Schema Prompt



Uninstall the EAR/WAR Files

This topic covers the instructions to uninstall the EAR/WAR files from the web application servers.

- Uninstall the EAR Files associated with a deployed application, from a WebSphere application server
- Uninstall the EAR Files in WebLogic associated with a deployed application, from a WebLogic server
- Uninstall the WAR Files in Tomcat associated with a deployed application, from a Tomcat server.



Uninstall the EAR Files in WebSphere

To uninstall a previously deployed application from a WebSphere application server, follow these steps:

- 1. Open the URL in a browser window: http://<ipaddress>:<Administrative Console Port>/ibm/console (https if SSL is enabled). The login window for the WebSphere Application Server Administration Console is displayed.
- 2. Log in with the user ID that has admin rights.
- 3. From the Navigation Tree, select **Applications**, select **Application Types**, and then select **WebSphere enterprise applications**. The Enterprise Applications window with all the previously deployed applications is displayed.

Figure 8-2 Enterprise Applications Window - Previously Deployed Applications

Use thi	orise Applications is page to manage installed appli ferences	cations. A single application can be deployed o	onto multiple servers.
Star	t Stop Install Uninstall	Update Rollout Update Remove File	Export DDL Export File Liberty Advisor •
0	6 # 9		
Select	Name 0	Application Status 🙅	Liberty Advisor Summary 🕏
You ci	an administer the following resou	roes:	
	DefaultApplication	*	0
۵	bdApp	•	0
	ofs81w9	*	0
0	query	*	0

- Select the check box adjacent to the application that you want to uninstall and click Stop.
- 5. Click **Uninstall** to display the Uninstall Application window.

Figure 8-3 Uninstall Application window

Application(s) with	Started or Unavailable status.
Name	
ofs81w9	
	e application(s). If you do not want to remove the

6. Click OK to confirm.



7. Click Save to save the master file configuration.

Uninstall the EAR Files in WebLogic

To uninstall a previously deployed application from the WebLogic application server, follow these steps:

1. Open the URL in a 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. Log in with the WebLogic user credentials having administrator privileges.
- **3.** From the Navigation Tree for Domain Structure, select **Deployments** to display the Summary of Deployments window.

Figure 8-4 Summary of Deployments Window

onfiguration	Control	Monitoring							
				tion modules installed to this domain acting the checkbox next to the appli		e and then using the con	trols on this pa	ge.	
Customize	this table								
Customize (Deployment Start • 8							Sho	swing 1 to	1 of 1 Previous Ne
Start V S	s top v Vhen work o			State	Health	Туре	Sho Targets	owing 1 to Scope	In the second second
Start V S Nam	s top v When work o orce stop no	w	inistration requests	State Active	Health	Type Enterprise Application	Constants.	Scope	I management

- 4. Select the check box adjacent to the application that you want to uninstall, click Stop, and then select Force Stop Now.
- 5. Click Yes in the confirmation dialog to stop the selected deployment.

Figure 8-5 Stop the Selected Deployment

mmary of D	eployment	6										
Configuration	Control	Monitoring	ŝ.									
You can star	t and stop ap	plications and	modules	from the	domain by sel	lecting the checkbox new	of to the applicati	on name	and then using the contr	rols on this pag	18.	
You can star Customize Deploymen	this table	pications an	modules	from the	e domain by so	ecting the checkbox nov	of to the applicat	on name	and then using the contr	rols on this pag	je.	
Customize	this table s	plications an	modules	from the	e domain by so	lecting the checkbox new	od to the applicat	ion name	and then using the contr			Lof 1 Previous Ne
Customize Deploymen	this table s	plications an	modules	from the	e domain by so	ecting the checkbox new	od to the applicati	on name Health	and then using the contr Type		wing 1 to	t of 1 Previous Ne Domain Partitions

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.

Uninstall the WAR Files in Tomcat

To uninstall a previously deployed application from Tomcat server, follow these steps:

 Comment out the Context path section from the server.xml file in the \$CATALINA_HOME/conf directory to avoid conflict during undeploying and redeploying the WAR file.

- 2. To restart the Tomcat service, follow these steps:
 - a. Log in to the "UNIX server" through a terminal emulator.
 - b. Navigate to the \$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
```

3. Open the URL in a browser window:

```
http://<IP address>:<Tomcat server port> (https if SSL is enabled)
```

The **Tomcat home** window is displayed.

- 4. Click Manager App to display the Connect to window.
- 5. Log in with the user credentials having admin rights. The Tomcat Web Application Manager window is displayed with the list of all applications deployed in Tomcat.



Securi State
Server Statu

Figure 8-6 Tomcat Web Application Manager Window

6. Click the Undeploy link corresponding to the deployed Infrastructure application. A confirmation message is displayed.

Clean Up the Environment

To clean up the Infrastructure environment, follow these steps:

- **1.** Uninstallation does not remove the Infrastructure application from the Web application server. Manually remove the Infrastructure application.
- 2. Remove the entries in the .profile file.
- 3. Navigate to the ftpshare directory and delete the infodom files and directories under the file system staging area (ftp share) by executing the following command:

```
$ rm -rf <INFODOM>
```

4. Drop config and atomic schemas from the database. Drop all the database objects from the Atomic Schemas manually.



9 Upgrade

In this scenario, you are upgrading the application pack from Release 8.1.1.0.0 or later to Release 8.1.2.0.0.

Example: You are on release 8.1.1.0.0 and now want to upgrade to Release 8.1.2.0.0.

- Run the Environment Check Utility tool and ensure that the hardware and software requirements are installed as per the Oracle Financial Services Analytical Applications 8.1.2.0.0 Technology Matrix.
- Trigger the installation.

Note:

If you want to upgrade from Release v8.0.x of OFS AAAI on AIX or Solaris x86 Operating System, skip the other upgrade topics in this guide and see the instructions in the Migration Guide.

Prepare for Upgrade

Before you plan to install/upgrade any of your application packs to Release 8.1.2.0.0, ensure that all the application packs in your current OFSAA instance are available in the Release 8.1.2.0.0 version. Contact My Oracle Support or more information about the release version details.

Note:

The minimum supported version is 8.0.6.1.0. If you are upgrading from a release before v8.0.6.1.0, then first upgrade to v8.0.6.1.0 or later. After this step, you can upgrade to v8.1.2.0.0 or later.

- **1.** Backup the following in the OFS AAAI environment:
 - The Database
 - The following environment files from the <OFS_AAAI_PACK>/schema_creator/conf directory:
 - OFS_<App pack>.xml
 - OFS_<PACK>_SCHEMA_IN.xml
 - OFSAAI_InstallConfig.xml
- 2. See the Oracle Financial Services Analytical Applications 8.1.2.0.0 Technology Matrix for the hardware and software required to upgrade to OFS AAAI Release 8.1.2.0.0.



- 3. Enable unlimited cryptographic policy for Java. For more information, see the Enabling Unlimited Cryptographic Policy section in the OFS Analytical Applications Infrastructure Administration Guide.
- 4. Clone your environment. For more information, see the OFSAA Cloning Reference Guide.
- 5. Execute the following SQL query on the Atomic Schema:

Download the OFSAAAI Applications Pack Installer and Mandatory Patches

To download the OFSAAAI Applications Pack Installer Release 8.1.2.0.0, follow these steps:

- 1. Log in to My Oracle Support and search for 32791983 in the Patches & Updates Tab.
- 2. Download the installer archive and copy (in Binary mode) to the download directory that exists in the OFSAAAI installation setup.

Note:

Select the required archive files for either Solaris SPARC or Linux based on the operating system of your OFSAAAI.

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

Note:

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

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

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

Extract the Software

You must be logged in to the UNIX operating system as a non-root user to perform the following steps. To extract the software, follow these steps:

 Download the unzip utility (OS-specific) unzip_<os>.Z and copy it in Binary mode to the directory that is included in your PATH variable.

If you already have an unzip utility to extract the contents of the downloaded archive, skip this step. Uncompress the unzip installer file with the command:



uncompress unzip_<os>.Z

Note:

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

2. Assign execute (751) to the file with the following command: chmod 751 unzip_<OS> For example:

```
chmod 751 unzip_sparc
```

3. Extract the contents of the OFSAAAI Application Pack Release 8.1.2.0.0 installer archive file in the download directory with the following command:

```
unzip OFS_AAAI_PACK.zip
```

4. Navigate to the download directory and assign execute permission to the installer directory with the following command:

```
chmod -R 750 OFS AAAI Pack
```

Trigger the Installation

1. Enter the following command in the console to execute the application pack installer with the Silent option.

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

- 2. The installer proceeds with the pre-installation checks and starts the upgrade installation process.
- 3. The OFS AAAI installation begins.

Figure 9-1 OFS AAAI Silent Mode Installation





Data Model Upload may take several hours to complete. You can check the installation logs in the following location: OFS_AAAI/OFS_AAAI/logs

4. The OFSAA Infrastructure installation performs a post-install check automatically on the successful installation of the product.

reparing SILENT Mode Installation		
ack_installsilent	(created with InstallAnywher	(a)
stalling	******	
stallation Complete.		
ilurecount 0 re Installation completed succes	and 111	
ck Name found is: OFS AAAI PACH	K	
<pre>ynamicServiceManager][GlobalPara C_NOME:/scratch/test01/OFSAAI_03</pre>	IFULL/	
ck ID got for Synch is OFS_AAAI F4J: Failed to load class "org.:		
F43: Defaulting to no-operation F43: See http://www.alf41.org/co	(NOP) logger implementation odes.html#StaticLoggerBinder for further det	aile.
nfigConnection : 1935122449, URL nfigConnection : 872826668, URL-	L-jdbc:oracle:thin:?	521/Manufactor, UserName- OFSAACONF, Oracle JDBC drive
pQuery select V_APP_1D from AAI_		and D_ENABLE_DATE is not null packID : OFS_AAAI_FACK
APP ID OFS AAAI pLat OFS AAAI		
nfigConnection : 1534755892, URI ck ID got for synchPackData is C		521/ Oracle JDBC drive
figConnection : 343563528, URL- cryptDATFile]Error: Dat file do		21/ OFSAACONF, Oracle JDBC drive
tPreReq fr OFS_AAAI nfigConnection : 1142347343, URI		521/ OperName- OFSAACONF, Oracle JDBC drive
List.size 2	A STATISTICS AND A STAT	Lorandony, dracte bled dram
nal appIDs OFS_AAI nal appIDs OFS_AAAI		
nfigConnection : 1581078471, URL	.oracle.com:1	521/ OFSAACONF, Oracle JDBC drive

Figure 9-2 Silent Mode Installation In Progress

Congratulations! Your installation is complete.

Verify the Log File Information

See the ${\tt Pack_Install.log}$ file in the <code>OFS_AAI/logs/</code> directory for installation status and errors.

Ignore the error codes ORA-00001, ORA-00955, ORA-01430, and ORA-02292 in the log file. For any other error, contact My Oracle Support.

Post Installation Steps

After removing the OFSAAI Application pack, proceed with the following postinstallation tasks.

For completing the post installation steps, refer to Post Installation Tasks.

Upgrade OFS AAAI from Linux 7 to Linux 8

If your OFS AAAI instance is on Linux 7 Operating System and you want to install OFS AAAI on Linux 8.

To upgrade the OFS AAAI environment from Linux 7 to Linux 8, follow these steps:

1. Clone your existing environment to the Oracle Financial Services Analytical Applications 8.1.2.0.0 Technology Matrix.



- 2. Run the upgrade installer in the cloned environment.
- **3.** For detailed steps, see the sections 8.2 to 8.6.



10 Configure the Web Server

If a web server is already installed, skip this section, and proceed to the next step.

The prerequistes section provides information about the web servers supported.

Depending on the web server you choose to install, use its product documentation to install and configure the web server.

Note:

- See the Oracle Financial Services Analytical Applications Infrastructure Security Guide for configurations to secure your web server.
- You must enable a sticky session/affinity session configuration on the web server. See the respective product-specific Configuration Guide for more details. Additionally, you also must enable the sticky session/ affinity session configuration at the Load Balancer level if you have configured a Load Balancer in front of the web server.
- Configure WebSphere Application Server for Application Deployment
- Configure WebLogic for Application Deployment
- Configure Apache Tomcat Server for Application Deployment
- Additional Configurations for Web Servers

Note:

- Make a note of the IP Address/ Hostname and Port of the webapplication server. This information is required during the installation process (required if the 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 the OFSAA Secure Configuration Guide/ Security Guide mentioned in the Related Documents section for additional information on securely configuring your web server.



Configure WebSphere Application Server for Application Deployment

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

This section covers the following topics:

- Create a New Profile in WebSphere
- Manage IBM WebSphere SDK Java Technology Edition Versions
- Manage Applications in WebSphere
- Configure WebSphere Application Server to Initialize Filters before Initializing Load-On Startup Servlets
- Configure WebSphere Application Server Persistence to JPA Specification 2.0
- Configure WebSphere Application Server to Use a Load Balancer or Proxy Server
- Delete WebSphere Profiles
- Configure WebSphere HTTPS
- Configure WebSphere Memory Settings
- Configure WebSphere for Rest Services Authorization

Create a New Profile in WebSphere

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

Use the following command to create a profile without admin security through the command line:

"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 Profilein 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
baseport>" which specifies the starting port number to generate and assign allports for the profile. For more information on using these ports, refer to WebSphere manageprofilescommand.

Manage IBM WebSphere SDK Java Technology Edition Versions

Follow these steps to check the Java version and set it to 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. Log in with your administrator user ID and password.
- 3. From the LHS menu, click **Servers** to expand and view the menu.
- 4. Click Server Types to expand the menu further and then click WebSphere Enterprise Application Servers to view the Application servers window.
- 5. On the **Application servers** window, click the required Application Server link. For example, server1 in the following figure:



Configuration	
General Properties	Container Settings
Name	 Session management
server1	SIP Container Settings
Node name	Web Container Settings
whf00aqnNode01	Portlet Container Settings
Run in development mode	EJB Container Settings
Parallel start	Container Services
Start components as needed	Business Process Services
Access to internal server classes	Applications
Allow T	Installed applications
Server-specific Application Settings	Server messaging
Classicader policy Multiple V Class loading mode Classes loaded with parent class loader first	Messaging engine Messaging engine Messaging engine inbound transports WebSphere MQ link inbound transports SIB service
	Server Infrastructure
Apply OK Reset Cancel	Java and Process Management

Figure 10-1 Application Server Java SDKs

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

Figure 10-2 Application Server List of Java SDKs

licatio	n servers				7
This pa	ation servers > servers ope lists the software ferences		re installed on the server. These SDKs are available	a to the servers.	
Mak	e Default				
D	0#9				
Select	Name 🔿	Version 🗘	Location 🗘	Bits ()	Default (
You c	an administer the fol	lowing resources:			
۲	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
۲	1.8_64	1.8	\${WAS_INSTALL_ROOT}/java_1.8_64	64	true
Total	3				

Bits C

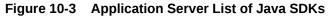
64

Default 🗘

true

Application servers
Application servers > server1 > Java SDKs
This page lists the software development kits (SDKs) that are installed on the server. These SDKs are available to the servers.

Preferences
Make Default



Version C

8.0

7. Select 8.0_64.

Total 1

Select Name 🗘

8.0 64

You can administer the following resources:

- 8. Click Make Default and save to master repository.
- **9.** Restart the WebSphere Application Server to apply the changes to the IBM application profile.

Location C

\${WAS_INSTALL_ROOT}/java/8.0

Manage Applications in WebSphere

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

1. Open the administrator console using the following URL:

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

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

Note:

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

The Integrated Solutions Console Login window is displayed.



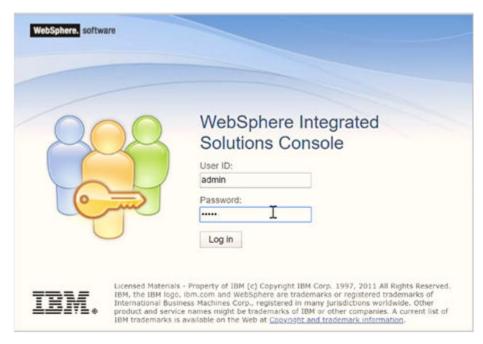


Figure 10-4 Integrated Solutions Console Login

- 2. Log in with the User ID provided with admin rights.
- 3. From the LHS menu, expand the **Applications > Application Type> WebSphere** Enterprise Applications to display the Enterprise Applications window.

Figure 10-5 Enterprise Applications

Sta	rt Stop Install Uninstall	Update Rollout Update Remove File	Export DDL Export File Liberty Advisor *
10	0 = 9		
	Name 0	Application Status 9	Liberty Advisor Summary
You d	an administer the following resou		
٥	DefaultApplication	•	0
0	ixtlep	÷	0

This Enterprise Applications window helps you to:

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

Configure WebSphere Application Server to Initialize Filters before Initializing Load-On-Startup Servlets and Allowing Empty Servlets Maps

The custom configuration information in this section initializes the filters before initializing load-onstartup servlets and allows empty servlet maps when you start an application.

To configure custom properties for filters, follow these steps:

This is a mandatory configuration for OFSAA with WebSphere for both fresh and upgrade installation.

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

Web Container Initialize Filters Before Servlet

Figure 10-6 Web Container Initialize Filters Before Servlet

Use thi interna	ation servers > server1 > Web container > Custor is page to specify an arbitrary name and value pair. The il system configuration properties. ferences		the name and value pair is a string that can set
New	Delete		
0	0 # 9		
Select	Name 🗘	Value 🗘	Description 0
You c	an administer the following resources:		
	com.ibm.ws.webcontainer.emptyServletMappings	true	empty servlet mappings
	com.ibm.ws.webcontainer.initFilterBeforeInitServlet	true	
8	com.ibm.ws.webcontainer.invokeFilterInitAtStartup	true	

7. Click New and enter the following properties:

- com.ibm.ws.webcontainer.initFilterBeforeInitServlet to true.
- com.ibm.ws.webcontainer.invokeFilterInitAtStartup to true.
- com.ibm.ws.webcontainer.emptyServletMappings to true.
- 8. Click **OK** and then click **Save** on the Console to save the customized configurations.
- 9. Restart the WebSphere Application Server to apply the changes.



Configure WebSphere Application Server Persistence to JPA Specification 2.0

The persistence configuration information in this section sets JPA 2.0 specification in WebSphere over the default JPA 2.1 specification.

This is a mandatory configuration for OFSAA with WebSphere for both fresh and upgrade installation.

To set the JPA 2.0 as the default persistence provider, follow these steps:

- Enter the WebSphere URL in the format http://HOST_NAME:PORT_ NUMBER/ibm/console (use https if SSL is enabled.). For example, http:// 192.168.1.0:9000/ibm/console.
- 2. Log in with your administrator user ID and password.
- 3. From the LHS menu, click Servers to expand the menu.
- 4. Click **Server Types** to expand the menu further and then click WebSphere Enterprise Application Servers to view the Application servers window.
- 5. On the Application servers window, click the required Application Server link.
- Click Container Services and then click Default Java Persistence API settings to display the Configuration window:

Figure 10-7	Default Java Persistence Settings JPA Specification 2.0
-------------	---

eral Properties	- Additional Properties
A Specification	Custom erscerties
Default persistence provider	Related Items
Select a default persistence provider that is included with WebSphere Application Server Default persistence provider com.ibm.websphere.persistence.PersistenceProviderImpl	Oata Sources

- From the JPA Specification drop-down, select 2.0 to change the default JPA Specification from 2.1 to 2.0.
- 8. Click **OK** and then click **Save** on the Console to save the customized configurations.
- 9. Restart the WebSphere Application Server to apply the changes.

Configure WebSphere Application Server to Use a Load Balancer or Proxy Server

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

The following steps describe the configuration:



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

Figure 10-8 Application Servers Load Balancer Proxy Server

Use th	cation servers > server1 > Web container > Cus is page to specify an arbitrary name and value pair. T al system configuration properties.		for the name and value pair is a string that can set
	ferences		
New	v Delete		
0	0#19		
Select	Name 🗘	Value 🗘	Description 🗘
You o	an administer the following resources:		
8	com.ibm.ws.webcontainer.extractHostHeaderPort	true	ACLA
0	trusthostheaderport	true	003

- 7. Click New and enter the following properties:
 - com.ibm.ws.webcontainer.extractHostHeaderPort: true
 - Trusthostheaderport: true
- 8. Click **OK** and then click **Save** on the Console to save the customized configurations.
- 9. Restart the WebSphere Application Server to apply the changes.

Delete WebSphere Profiles

To delete a WebSphere profile, follow these steps:

- 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 the profile directory.

<profile_name></profile_name>



6. Execute the command:

manageprofiles.sh -validateAndUpdateRegistry

Configure WebSphere HTTPS

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

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

Note:

Record the https port specified during this process and use it as a servlet port or web server port during OFSAAI installation.

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

Configure WebLogic Memory Settings

To configure the WebLogic Memory Settings, follow these steps:

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

Example 1:

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

Example 2:

```
JAVA_VM=
MEM ARGS="-Xms256m -Xmx1024m"
```

Configure WebSphere for Rest Services Authorization

For more information, see the OFS Analytical Applications Infrastructure Administration Guide.



Configure 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 the WebLogic Application Server.

This section covers the following topics:

- Create Domain in WebLogic Server
- Delete Domain in WebLogic
- Configure WebLogic Memory Settings

Create Domain in WebLogic Server

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

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

The Welcome window of the Configuration Wizard is displayed.

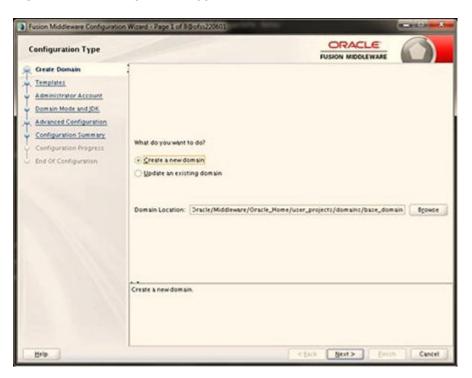


Figure 10-9 Configuration Type

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



Templates	
Create Domain Templates Administrator Account Demain Mode and JDX Advanced Configuration Configuration Summary Configuration Progress Did Of Configuration	Create Domain Using Broduct Templates Template Caregories: All Templates Available Templates Available Templates Basic WebLogic Rover Domain - 12 2 1 2 0 [wiserver]* WebLogic Advanced Web Services for JAX-WS Extension - 12 2 1 2 0 [oracle_common] WebLogic Coherence Cluster Extension - 12 2 1 2 0 [wiserver] WebLogic JAX-WS SOAPJ/MS Extension - 12 2 1 2 0 [oracle_common] WebLogic JAX-WS SOAPJ/MS Extension - 12 2 1 2 0 [oracle_common]
	Create Domain Using Custom Template: Template Monton: [/iorsich/800wit/Oracle/Middleware/Oracle_Nome] Booker

Figure 10-10 Templates

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

Figure 10-11 Administrator Account

Create Domain Tamplatest Administrator Accesses Domain Mode and JOK Advanced Configuration Configuration Summary Configuration Password Confirm Password Confirm Password User name may not contain commast, tabs, or any of the following characters: <>#j670()	Administrator Account			
	Templates Administrator Account Domain Mode and JDK Advanced Configuration Configuration Summary Configuration Progress	Password Confirm Password		

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



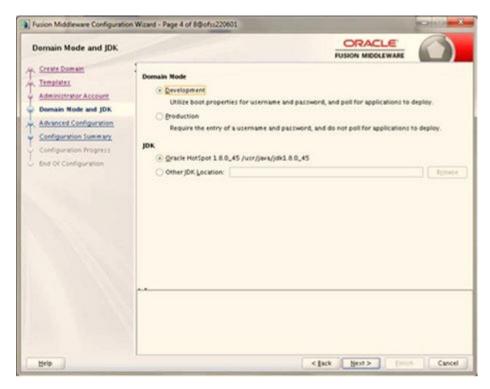


Figure 10-12 Domain Mode and JDK

- 5. Select from the following options:
 - a. In the Domain Mode section, select the required mode (Development or Production).
 - b. 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.





Figure 10-13 Advanced Configuration

6. Select the 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.

Figure 10-14 Administration Server

Administration Server)
Create Domain Template: Administrator Account Domain Mode and JDK Advanced Configuration Administration Server	Server Name AdminServer		
Configuration Summary Configuration Progress End Of Configuration	Usten Address All Local Addresses Usten Port 9091 Enable SSL SSL Usten Port Port number must be between 1 and 65	s 55535, and different from 35L listen port and coherence port.	-



 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.



Figure 10-15 Configuration Summary

Configuration Summary		
Create Domain Templates Administrator Account Domain Mode and JDX Advanced Configuration Administration Server Configuration Server	View Deployment	Name Basic WebLogic Server Domain Description Create a basic WebLogic Server do Author Oracle Corporation Location /scratch/806wts/Oracle/Middlew
Configuration Progress		
	Select Oreale to accept the above options and start creat above configuration before starting Domain Creation, g	
	the left pane, or by using the Back button.	
Help		< Back Boots Create Cancel

 Verify the configuration details of the WebLogic domain and click Create to display the Configuration Progress window with the status indication of the domain creation process.

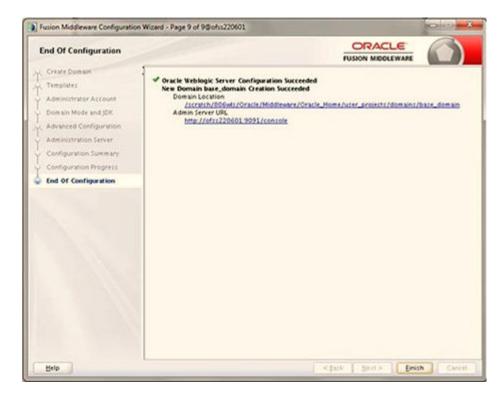


Create Domain Templates Administrator Account Domain Mode and (DR Administration Administration Administration Administration Some svv Configuration Configu	

Figure 10-16 Creating Domain

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

Figure 10-17 End of Configuration





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

Note:

- Record the HTTPS port specified during this process and use it as a servlet port or web server port during OFSAAI Installation.
- To enable https configuration on Infrastructure, assign value 1 to "HTTPS_ENABLE" in OFSAAI_InstallConfig.xml for silent mode OFSAAI installation.
- **11.** Add a java option entry -DUseSunHttpHandler=true in the WLS_HOME/bin/ "setDomainEnv.sh" file (Required only if a self-signed certificate is used).

Delete Domain in WebLogic

To delete a domain in WebLogic, follow these steps:

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

Configure WebLogic Memory Settings

To configure the WebLogic Memory Settings, follow these steps:

- 1. Change the memory setting for Java Heap to -Xms512m -Xms3072m in the setDomainEnv.sh file, which resides in the <DOMAIN_HOME>/bin directory and the CommEnv.sh file which resides in the common/bin directory
- 2. Edit this file for customizing memory settings and garbage collector settings depending on the available hardware configuration.

Example 1:

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

Example 2:

```
JAVA_VM=
MEM ARGS="-Xms256m -Xmx1024m"
```



Configure 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 Servlet Port
- Configure SSL Port
- Configure Apache Tomcat Memory Settings
- Configure Tomcat for User Group Authorization
- Uninstall WAR Files in Tomcat

Tomcat User Administration

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

This file contains an XML <user> for each user that will display the username and password used by the admin to log in to Tomcat and the role names to which the admin user is associated with.

For example, <user name="admin" password="admin" roles="standard,manager" />

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

Configure Servlet Port

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

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

 Navigate to \$CATALINA_HOME/conf. Open server.xml and locate the tag: "Define a non-SSL HTTP/1.1 Connector on port 8080 "

Against this tag, a parameter is specified 'Connector port = "8080". Edit this value to the new port number that was used during the Infrastructure installation process.

2. Save your changes in the server.xml file.



Note:

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

Configure SSL Port

If you must 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 the <Tomcat_installation_directory>/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 is required during the installation of the OFSAA Application Pack.
- To enable https configuration on Infrastructure, assign value 1 to "HTTPS_ENABLE" in the <code>OFSAAI_InstallConfig.xml</code> file for SILENT mode OFSAAI installation.

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

Configure Apache Tomcat Memory Settings

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

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

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

Configure Tomcat for User Group Authorization

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

1. Navigate to the \$CATALINA HOME/conf directory and open the 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.

Uninstall the WAR Files in Tomcat

To uninstall a previously deployed application from Tomcat server, follow these steps:

 Comment out the Context path section from the server.xml file in the \$CATALINA_HOME/conf directory to avoid conflict during undeploying and redeploying the WAR file.

- 2. To restart the Tomcat service, follow these steps:
 - a. Log in to the "UNIX server" through a terminal emulator.
 - b. Navigate to the \$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

3. Open the URL in a browser window:

```
http://<IP address>:<Tomcat server port> (https if SSL is enabled)
```

The Tomcat home window is displayed.

- 4. Click Manager App to display the Connect to window.
- 5. Log in with the user credentials having admin rights. The Tomcat Web Application Manager window is displayed with the list of all applications deployed in Tomcat.



		Tomcal	Web Appl	lication Manager
Manager				
List Applications		HIMLManas	ser.Help	Manageri Help Senet 3
Applications	382			
Path	Display Name	Running	Seasions	Commands
ι	Welcome to Tomcat	tue	٩	Start Store Reside Undersite Expire sessions with die a 20 minutes
0058	Torrical Documentation	tue	٩	Start 2000 Betald Undersity: Expire sessions wen die a 30 minutes
(International	Server and JSP Examples	9 v e	٩	Stan Stop Belas Undeelby Expire sessions with the a 30 minutes
dissi-metapat	Terrcat Manager Application	true	٩	Start Stop Brites Understor Expire sessions with die a 30 minutes
inataoni	Torrcat Manager Application	17.00	2	Start Stop Reces Undeploy Expire sessions with die a 20 minutes
/ofsasict	Reveleva web Application	the	1	Start Stop Recad Undeploy

Figure 10-18 Tomcat Web Application Manager Window

6. Click the Undeploy link corresponding to the deployed Infrastructure application. A confirmation message is displayed.

Additional Configurations for Web Servers

This section provides information for additional configuration required for the web servers on OFSAAAI.

Note:

The instructions in this section are applicable if you are upgrading from an earlier version of OFSAAI to 8.1.2.0.0.

- Configuration for WebSphere: To configure WebSphere, see the Configure WebSphere Application Server for Application Deployment section. Additionally, configure for REST services. For details, see the Configuring WebSphere for REST Services Authorization section in the OFS Analytical Applications Infrastructure Administration Guide.
- Additionally, you must configure the Work Manager in WebSphere and map it to the OFSAA instance. For details, see the Work Manager Configurations section in the OFS Analytical Applications Infrastructure Administration Guide.
- Configuration for WebLogic: To configure WebLogic, see the Configure WebLogic for Application Deployment section. Additionally, configure for REST services. For details, see the Configuring WebLogic for REST Services Authorization section in the OFS Analytical Applications Infrastructure Administration Guide.
- Additionally, you must configure the Work Manager in WebLogic. For details, see the Work Manager Configurations section in the OFS Analytical Applications Infrastructure Administration Guide.



 Configuration for Tomcat: For the successful execution of Data Mapping in Tomcat, perform the configurations mentioned in the Configuration for Tomcat section in the OFS Analytical Applications Infrastructure Administration Guide.
 For additional configurations, see the Configure Apache Tomcat Server for Application Deployment section.

Configure 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.

Configure 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.

onfiguration	
General Properties	
+ Scope	
cells:whf00cywNode01Cell:nodes:whf00cywNode0	01:servers:server1
+ Name	
JERSEY2x	
Description	
shared Lib	
+ Classpath	
/scratch/IBM/WebSphere/AppServer/profiles/AppS	
f00cywNode01Cell/ofs81w9.ear/ofs81w9.war/exte	
- L	
Native Library Path	
Class Loading	
close country	library

Figure 10-19 WebSphere Shared Libraries

- 2. Enter the following details:
 - a. Name: Enter a uniquely 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>/



ficweb/webroot/externallib/WEBINF/lib/ directory after creation of the EAR file.
Another format of representation of the path is <ofsaa_deployed_area_location>/
externallib/WEBINF/lib/.

- 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 figure, ofsa is selected.

Figure 10-20 WebSphere Shared Library References

	ared libraries that the application of scope.	or individual modules reference. These libraries mus	t be defined in the configuration at the
Referen	ce shared libraries		
Select	Application	URI	Shared Libraries
۲	ofs81w9	META-INF/application.xml	
Select	Module	URI	Shared Libraries
	OFSAAI Web Application	ofs81w9.war,WEB-INF/web.xml	

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

Figure 10-21 WebSphere Shared Libraries Mapping Selection

	o one or more modules.		
p libraries to the application or module listed s81w9			
lect the library in the Available list. Move it to vailable:	1	Selected: JERSEY2x	
*		*	

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



1000	ary Mapping for Modules		
	ared libraries that the application of e scope.	or individual modules reference. These libraries mus	t be defined in the configuration at th
Referen	ce shared libraries		
	2		
Select	Application	URI	Shared Libraries
•	ofs81w9	META-INF/application.xml	JERSEY2x
Select	Module	URI	Shared Libraries
	OFSAAI Web Application	ofs81w9.war,WEB-INF/web.xml	JERSEY2x

Figure 10-22 WebSphere Shared Libraries Select Next Application

- 9. Disable the built-in JAX-RS via JVM property.
 - a. Navigate to the WebSphere admin console in Servers > WebSphere Application Servers > yourServerName.
 - In the 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.



11 Configure 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.

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 type is WebSphere.

Topics:

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

Create a JDBC Provider

To create the JDBC Provider in WebSphere Application Server, follow these steps:

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

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

- 2. Log in with the user ID that has admin rights.
- Expand the Resources option in the LHS menu and click JDBC > JDBC Providers to access the JDBC Providers window.
- 4. Select the **Scope** from the drop-down list. The Scope specifies the level at which the resource definition is visible.
- 5. Click **New** to add the new JDBC Provider under the Preferences section. The Create new JDBC Provider window is displayed.
- 6. Enter the following details:
 - a. Database Type: Oracle
 - b. Provider Type: Oracle JDBC Driver
 - c. Implementation Type: Connection pool data source



- d. Name: The required display name for the resource.
- e. Description: The optional description for the resource.
- 7. Click Next.
- Specify the directory location for the ojdbc<version>.jar file. Do not use the trailing slash file separators.

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

- Oracle Database 18cg Release 3 JDBC Drivers
- Oracle Database 19c Release 3 JDBC Drivers

After downloading, you must copy the file in the required directory on the server.

Note:

See Hardware and Software Requirements to identify the correct ojdbc<version>.jar file version to be copied.

- 9. Click Next to display the Summary window.
- 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 following steps apply to both config and atomic data source creation. To create the data source, follow these steps:

- Open the following URL in the browser window: http://<ipaddress>:<administrative console port>/ibm/console (https if SSL is enabled). The Login window is displayed.
- 2. Log in with the user ID that has admin rights.
- Expand the Resources option in the LHS menu and click JDBC > Data sources to display the Data sources window.



2 -

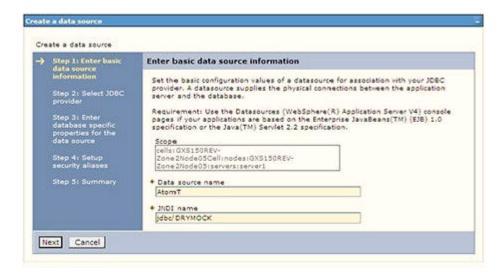
			ource that is associated with you			
			ons for accessing the database. Ik steps and more general info			• <u>suided</u>
Scope: Cell+GXS150REV-Zone2Node05Cell. Node+GXS150REV-Zone2Node05, Server+server1						
	1200000000	erana erana arazoara		1000000		
Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, <u>see the cope settings help</u> .						
	Indentiv	S150REV-Zone2Node01	S Sanaranan M			
	Inconver		C Derrer-gerrers (M)			
g Pre	ferences					
New	Delete Te	t connection Man	age state			
The lot	Sh 101 102					
88	0 # 4					
Select	Name O	3NDI name 0	Scope ()	Provider Ç	Description Q	Category 🗘
You	an administer th	e following resources:				
	Cafault Catagourte	DefaultDatasource	Node=GXS150REV- Zone2Node05.Server#server1	Derby 3DBC Provider	Datazource for the	
	Land Courts		Constructed and Server alerters	- TOTICET	WebSphere	
					Default Application	
	FICMASTER	JODO FICMASTER	Node=0x5150REV-	FICMASTER	New JDBC	
-			Zone2liode05.Server#server1		Datasource	
	BOSERNI	JOBO/RORFFW	Node=0X\$150REV-	RORFFW	New 306C	
-			Zone2Node05.Server=server1		Datasource	
	ADARNO	MOC/RORPHIC	Node+0X5150REV-	RORPHO	New 208C	
-			Zone2Node05.Server=server1		Datasource	
	UPGERFT	jdbc/UPGSPFT	Node=GXS150REV-	UPGSPFT	New JOBC	
4	2012/12/		Zone2Node05.Server#server1		Datasource	
	UPGSROR	Idee/UPGSROR	Node=GXS150REV-	UPGSROR	New JDEC	
			Zone2Node05.Server#server1		Datasource	

Figure 11-1 Data Sources

Data sources

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

Figure 11-2 Create Data Source



- 6. Specify the Data source name and JNDI name for the new "Data Source".
- 7. The **JNDI name** and **Data source name** are case sensitive and ensure that JNDI name is the same as the "Information Domain" name.



8. Click **Next** to display the Select JDBC provider window.



Figure 11-3 Select JDBC provider

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

Figure 11-4 Enter database specific properties

1.1	ate a data source			
	Step 1: Enter basic data source		Enter database specific	properties for the data source
	information Step 2: Select JDBC provider		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	
		+ Data store helper class	name	
	Step 4: Setup security aliases	Oracle11g data store hel	per 💙	
	Step 5: Summary	Use this data source i	in container managed persistence (CMP)	

10. Specify the database connection URL.

For example: jdbc:oracle:thin:@<DB SEREVER IP>:<DB SERVER PORT>:<SID>

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



Example: jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_ LIST=(ADDRESS=(PROTOCOL=TCP)(HOST=10.11.12.13)(port=1521))



```
(ADDRESS=(PRO TOCOL=TCP)(HOST=10.11.12.14)(PORT=1521))(LOAD_ BALANCE=no)
(FAILOVER=yes))(CONNECT_DATA=(SERVICE_NAME=pqadb)))
```

12. Click Next.

Create a data source	
Step 1: Enter basic data source information	Setup security aliases
Step 2: Select JDBC provider	Select the authentication values for this resource. Component-managed authentication alias
Step 3: Enter database specific properties for the data source	(none) Mapping-configuration alias (none)
 Step 4: Setup security allases 	Container managed authentication alias (none)
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 wzard and your current wzard selections will be lost.
	Global J2C authentication alias Security domains

Figure 11-5 Enter Database specific properties

13. 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 data source	Summary	
information	Summary of actions:	
Step 21 Select JOBC	Options	Values
provider Step 3: Enter database specific properties for the data source	Scope	cells:GXS150REV-Zone2Node05Cell:nodes:GXS150REV- Zone2Node05:servers:server1
	Data source name	AtemT
	JNDI name	Jdbe/DRYMOCK
Step 4: Setup security aliases	Select an existing JDBC provider	Oracle JDBC Driver
Step 5: Summary	Implementation class	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 authentication alias	(none)

Figure 11-6 Summary



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

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

Create J2C Authentication Details

The following steps apply to create both config and atomic J2C Authentication. To create J2C Authentication details, follow these steps:

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

1000	sources > Default Datasource > JAAS		
Specifi	ies a list of user identities and passwor	ds for Java(TM) 2 connec	tor security to use.
Apply	refix new alias names with the node na	me of the cell (for compa	tibility with earlier releases)
	Delete		
0	0 .		
Select	Allas 🗘	User ID 🗘	Description 🗘
You	an administer the following resources:		
	GXS150REV- Zone2Node05/FICMASTER	upgsconf	FICMASTER
	GXS150REV-Zone2Node05/RORFFW	rorffw	
	GXS150REV-Zone2Node05/RORPNC	rorphe	
	GXS150REV-Zone2Node05/UPGSPFT	upgspft	upgspft
	OX5150REV- Zone2Node05/UPGSPR.00	upgsprod	upgsprod
	GXS150REV- Zone2hode05/UPGSROR	upgaror	upgaror
	GXS150REV- Zone2Node05/UPGSSAND	upgssand	upgssand
	GXS150REV-Zone2Node05/VASTEST	upgsconf	upgsconf

Figure 11-7 JAASJ2C authentication data

2. Click New under the Preferences section.



Data sources > Default Datasource > JAAS - J2C authentication data > New Specifies a list of user identities and passwords for Java(TM) 2 connector security to use.	
specifies a list of user identities and passwords for Jeva(TM) 2 connector security to use. eneral Properties	
Allag	
Atm	
User ID	
upgs73	
Password	
Description	
Atomic Instance	
Apply OK Reset Cancel	

Figure 11-8 JAASJ2C authentication data New

3. Enter the Alias, User ID, Password, and Description. Verify that the 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 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.

Define 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.

- Expand the Resources option in the LHS menu and click JDBC > Data sources option to display the Data sources window.
- 2. Click the newly created Data Source \$DATA_SOURCE\$ and navigate to the path Data sources > GAFUSION DATA_SOURCE > Connection pools.



ight warrant changing t	application. Consider the default values care hese values.	
onfiguration		
General Properties		Additional Properties
Scope		
cells:ipa26dorNode	01Cell:nodes:ipa26dorNode01:servers:serve	connection pool
+ Connection timeou		properties
p	seconds	 Connection pool custom properties
+ Maximum connecti		
100	connections	
+ Minimum connection		
10	connections	
Reap time		
180	seconds	
+ Unused timeout		
1800	seconds	
+ Aged timeout		
0	seconds	
Purge policy		
EntirePool	M	
EntirePool	M	

Figure 11-9 Connection Pools

- 3. Set the following values:
 - a. Connection timeout: 0
 - b. Maximum connections: 100
 - c. Minimum connections: 10

You can also define Reap time, Unused timeout, and Aged timeout as required.

Configure Resource Reference in WebLogic Application Server

This section applies only when the Web application server type is WebLogic. This section includes the following topics:

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

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

• For a non-RAC Database instance, a Generic Data Source must be created. See Create Data Source.



- For a RAC Database instance, a Gridlink Data Source must be created. See Create GridLink Data Source.
- When Load Balancing/Fail over is required, a Multi Data Source must be created. See Configure Multi Data Sources.

Create Data Source

The following steps apply to both config and atomic data source creation.

1. Open the following URL in the browser window:

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

2. Log in with the Administrator **Username** and **Password**.

DRACLE WebLogic Server Administration Console 12c	
12 ^c	Dy Welcome - Log In Its werk will the Welcome - Mannamer: - Passwort: - Dominion
Nagle Gener Venime (22.2.2.3.5 Nagle 19 196-197, David of the Williams, Al right sound, da a mainter baseman of Cash Disputation and/or in affilians, Other same any to tradimate of their response among.	

Figure 11-10 Welcome

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



Change Center	Rent Log Cut Professions 🕍 Ren	of Help	Websen, manager Con	rected to Marks
Yes sharps and restarts	Note channers of Bill July Server			
Configuration address to added, Puture changes will accordingly be activated as your rectific, add or objects tamp in the domain-	Summary of XBC Data Searces			
Dumain Minachane	A XXX data source a an alaset bound to borrow a database connection from a dat		od of XRC convertient. Applications can look up a data course on the XEC tree	and then
Nultid R-Component Diskonenty Dismons R-Messagny D-2000	⁶ The page science in the EBC data so: § Containing this tiddle But a Source of Bound - Nore Colori 10.000 (1999)	rie daarte faat here jaan ondiel e fin denae. ee faad)		
Pada Searces TRA Data Searces	(Am) (Loon)		Theorem 5 to 5 of 5	Parene Sect
- Data Source Partones - Penaliset Biology	(C) Name in	POI Name	Targets	
Parage ACCProviders	S MATCH	ALCONOV	Abele-a	
- Wold Carlants - 195, Registres - 195, Registres - 195, Roth, Carlies	(.See.) (.Deleter.)	Alter Colle	Port(1)	Pena Sed
Now do L.	1			
Courte 200 data sources Delate 200 data sources				
Typhens Mutura I	1			
Health of Running Servers				
Failed (2) Once (2) One-haded (2) Warring (2)				

Figure 11-11 Summary of JDBC Data Sources

4. Click **New** and select **Generic Data Source** to display the Create a New JDBC Data Source window.

Figure 11-12 Create a New JDBC Data Source

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

Figure 11-13 JDBC Data Source Properties

reate a New JDBC Da		
Back Next From	Cancel	
JOBC Data Source I	roperties	
The following property	s will be used to identify your new X08C data source.	
Database Type:	Orade	
What database driver w	ould you like to use to create database connections? Note: * indicates that the driver is explicitly sup	ported by Oracle WebLogic Server.
Database Driver:	*Oracle's Driver (Thin XA) for Instance connections; Versions 9.0.1 and later	~
Back Next From	Cancel	
Back Next From	Cancel	

- 5. Enter JDBC data source Name, JNDI Name, and select the Database Type from the drop-down list.
- 6. Ensure the following:
 - a. The JNDI Name field must be in the format jdbc/informationdomain
 - **b.** The same steps must be followed to create a mandatory data source pointing to the "configuration schema" of infrastructure with jdbc/FICMASTER as JNDI name.
 - c. JNDI Name is the same as mentioned in the web.xml file of OFSAAI Application.
 - d. Required "Database Type" and "Database Driver" must be selected.

Data sources must be created for atomic and atomiccnf schemas following the same steps.

7. Click Next.

Figure 11-14 Transaction Options

Create a New 306C Data Source
Back Ined Trent Carcel
Transaction Options
You have selected non-XX 2050 driver to preate detablase connection in your new dark source.
Does this data source support global transactions? If yes, please choose the transaction protocol for this data source.
Supports Global Transactions
Select this soliton if you want to enable non-NA. 2000 connections from the data source to periodyste in global transactions using the Lapping Last Assuure SLR) transaction optimization. Recommended in place of Smulate Two-Prese Connet.
O Logging Last Resource
Select this pation if you want to enable non-IKA ZBC connections from the data source to emulate perstopation in global transitions using 274. Select this option only if your application can tolerate heuratic conditions.
O trudate Two Phase Commit
Select this sphon if you want to endoe non-KA 200C connections from the data source to participate in global transactions using the one ghase cannot transaction processing. With this option, other resources can participate in the global transaction.
③ One-Phase Commit
Back Ined Carcel

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



(antica or	
fagtu	
ne?	
10, 184 74 80	
rivect to the database?	
1521	
use to meate database corrections?	
station	
peale detabase porvections?	
······	
	enver?

Figure 11-15 Database Name

- 9. Select the Supports Global Transactions check box and the One-Phase Commit option.
- **10**. Click **Next** to display the Connection Properties window.



Test Configuration Back Next Finan	Cancel	
Test Outabase Connection		
Test the database availability and the connect	n properties you provided.	
that is the full package name of 308C driver da	a used to create database convectors in the convector poo?	
Note that the other clean such the the clean	dhait aire sanar se shich e a Bedroved (
Driver Class Name:	oracle jobo OracleOnier	
that is the URL of the database to connect to?	The format of the URL varies by 2000 driver.	
URL)	jobc eracle thin @10.184	
that database account user name do you want	to use to made detabase correctors?	
Database User Norme	statom	
that is the detailable account personand to use	a peale debbase privectors?	
tale to write period to open the	tré pannon d'ro tre tanon a' fald rohand a ^g tre transvitei fald (altar)	
Fareword		
Conferm Password: What are the properties to provide to the 2000 dri	er when presting debalance permetaine?	
that are the properties to pass to the 2000 driv		
(halans fre properties to pass to the 200 dri Properties) Land "Radia Cott		
Und are the properties to pass to the 2000 ph Inspecters Lange-same con	er when preating delaberer connections?	
Und are the properties to pass to the 2000 ph Inspecteux Life of a set of driver properties whose rokes are do	er when preating delaberer connections?	
Und are the properties to pass to the 2000 ph Inspecteux Life of a set of driver properties whose rokes are do	er when peaking defabuse corrections?	
hat are the properties to pass to the 2000 ph hoperform Learn a part of the set of driver properties whose rokies are to hoperform Properties	er when peaking defabuse corrections?	

Figure 11-16 Database Details

- 11. Enter the required details such as the Database Name, Host Name, Port, Oracle User Name, Password, and Confirm Password.
- **12.** Click **Next** to display the Test Database Connection window.

Figure 11-17 Select Targets

sate a New 308C Data Source	
Select Targets Tou can select one or more targets to deploy your new ZBC data at a later time.	source. If you don't select a target, the data source will be created but not deployed. You will need to deploy the data source
Serven 🕑 Administerver	

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



Figure 11-18 Data Source

Create a New 308C Grahank	Duta Source		
(NU) (sec. (NU) (4	ancel		
308C Gridlank Data Sour	or Properties		
	be used to identify your new 2080 Grid.	L/A dela source.	
* Indicates required fields			
that you'd you'lie to have a	factore and Archird 2002 ver var		
- Namel	(v)z		
What 200 rane vould you in	e to exect to your new 2060 Gridunk (data source?	
A MOL Name:			
2006/004		5	
What detabase type would po	w live to select?		
Dutabase Type:	Oxix		
Is the XA priver?			
3A.Delver			
Terr And Trees 4	ancel		

16. 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.



Figure 11-19	GridLink Data Source
--------------	----------------------

reate a New JDBC GridLink Data So	ce	
Back Next Trian Cancel		
Connection Properties		
Define Connection Properties.		
Enter Complete 306C URL for GridLink d	base.	
Complete JOBC URL:		
What database account user name do y Database User Name:	want to use to preate database connections?	
What is the database account passwort	use to create detabase connections?	
Password		
Confirm Password:		
Back Next First Cancel		
S 8		

1. Enter the Data Source Name and JNDI Name.

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

Create a New JOBC GridLink	Data Source				
Sect And Court C	ander				
308C GridLink Data Source	ce Properties				
The following properties will b * Industries required fields	se used to identify your new 306	C Gridlink data source.			
What would you like to name y	our new 2080 Gridurik data sou	rceit			
A Name:	x)/2		1		
What 3100 name would you in 3000 Name: 3000/Kryz	e to assign to your new 208C Gr	durk deta source?			
What database type would into	ulike to select?				
Database Type:	Oracle				
Is the XA driver?					
XA Driver					
test from G	ancel				

Figure 11-20 JNDI Name

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 a group of data sources can be created for instances running on a set of clustered servers and a JDBC multidata 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.

- 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.

to the J	multidata source is an 2021 tree. Applications to provide the connect	can look up a multi data source on the 3VOC tree	provides load balancing and failover between data source and then reserve a database connection from a data sour	es. As with data sources, multi data sources are also ce. The multi data source determines from which dat	a bourn
se the	s page to create or vier	n multi data sources in your domain.			
	mize this table				
Sea Los					
		d - Hore Columns Exist)			
tulti D		d - Hore Columns Exist)		Showing 1 to 2 of 2 Previous	i l Ne
New	ata Sources(filtere	d - Hore Columns Exist) JHD1 Rame	Algorithm Type	Showing 1 to 2 of 2 Previous Targets	s Ne
New	lata Sources(Filtere (Coller)	1	Algorithm Type Load disianong		s 14

Figure 11-21 Multi Data Sources

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

Serv Next / risk Cancel		
Configure the Hulti Data Source		
The following properties will be used to	i idensfy your new 308C multi data source.	
What would you like to name your new	200C multi data source?	
🔁 Name:	JDBC Multi Data Source-0	
that 3-DI name would you like to assu	n to your new 2060 multi data source?	
🛃 3NDI Name:		
3NDI Name: jdbo/infodomname		
jdbo/infodomname	Data Source would you like to select?	

Figure 11-22 Configure Multi Data Source

Ensure that the Data Sources which must be added to the new JDBC Multi Data Source are created.

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



- The JNDI Name must be specified in the format jdbc/ infodomname.
- The JNDI Name of the Data Sources that is added to the new JDBC Multi data source must be different from the JNDI name specified during Multi Data Source.
- The same steps must be followed to create a mandatory data source pointing to the "configuration schema" of infrastructure with jdbc/ FICMASTER as JNDI name for Data Source.
- The JNDI Name provided in the multi-data source must be the same name that is 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 Next Centre Cancel		
Select Targets You can select one or more targets to deploy your new 2	IBC Multi Data Source.	
Servers		
AdminServer		
Back Next Cencel		

Figure 11-23 Select Targets



6. Select the AdminServer check box and click Next.

Figure 11-24 Select Data Source Type

te a New JDBC Hulti Data Source	
ck Next Front Cancel	
lect Data Source Type	
ase select type (KA or Non-KA) of data source you would like to add to your new 3060 Multi Data So.	urde.
XA Detrer	
Non-XA Driver	
ck Next Cancel	

7. Select the type of data source to add to the new JDBC Multi Data Source. Click Next.

add to your new 306C Multip D	ata Source?		
Chosen			
	-		
	Chosen	Chosen	Chosen

Figure 11-25 Add Data Sources

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

Configure Advanced Settings for Data Source

To configure the advanced setting for the data source, follow these steps:

- Click the new Data Source from the Summary of JDBC Data Sources window to display the Settings for Data Source Name window.
- 2. Select the Connection Pooling tab given under Configuration.
- Navigate to the Advanced option at the bottom of the window, and check the Test Connection of Reserve check box (enables WebLogic Server to test a connection before giving it to a client).

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

4. Select the server and click Test Data Source. A message is displayed indicating that the test was successful.

After the "Data Source" is created successfully, the following messages are displayed: All changes are activated. No restart is necessary.

Settings updated successfully.

If not, follow these same steps to recreate the data source.

Configure JDBC Connection Pooling

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

- 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 following values:
 - a. Initial Capacity: 10
 - b. Maximum Capacity: 100
 - c. Capacity Increment: 1
 - d. Statement Cache Type: LRU
 - e. Statement Cache Size: 10
- 3. Click Save.

Create Workmanager

A Workmanager is used to re-trigger failed messages. To create a Workmanager, follow these steps:

- The Name field must have the value wm/WorkManager-TFLT
- The **Type** field must have the value Work Manager.
- The Targets field must have the value AdminServer
- The Scope field must have the value Global
- The Stuck Thread Action field must have the value Ignore stuck threads Click Save.

Figure 11-26 WorkManager Screen 1

Configuration Targets Notes		
Save		
Use this page to define the request classes and	constraints for the selected Work Manager.	
Name:	am/WorkHanager-TFLT	The user-specified name of this MBean instance. Hore Info
icopes	Global	The scope in which this Work Hanager is created. Hore Info
🔁 Request Class:	(None configured) * New	A request class associated with this Work Manaper. This may be a FairShareRequestClass, ResponseTimeRequestClass, or a ContextRequestClass. Mare Info
🖞 Minimum Threads Constraint:	(None configured) * [New]	The minimum number of threads allocated to resolve deadlocks. More $Info_{rm}$
E Maximum Threads Constraint:	(None configured) • [New]	The maximum number of concurrent threads that can be allocated to execute requests. Here Info.
Capacity Constraint:	(None configured) * New	The total number of requests that can be queued or executing before WebLogic Server begins reject requests. Here Info
Stuck Thread Action:	Ignore stuck threads •	Specify how stuck threads should be detected, and what action to take should they occur. Here $Infe_{int}$
tax Stuck Thread Time:	0	Time after which a executing thread is declared as the k. More left
Back Thread Count:	0	Burdler of stock threads after which the Wachtmanper κ shutdown. Here $Infp_{trans}$
C Resume When Destuck		Whether its resume work exampter over the stack Breads were closered. More Info
C Resume When Distuck		Whether in resume oods example once the stack throads were shored. More Jefo.,



Save				
102.00	asses and thread constraints that manage work per and partition level. You can also define application is		Nays the Work Managers, request	classes and thread constraints defined for this dom
Partition Fair Share:	50	is recommende 100, but it is no to different par	d that the sum of this value for al of strictly enforced. When they do titions based on their relative valu	ion compared to the thread usage by all partitions. It the partness maning in a VKL domain add up to not add up to 100, VKL assigne thread-usage times e. This attribute in firs ser in the global domain on ing partition fair share values for partitions. Here
A				
Save, Customize this table Work Managers, Request Classes and C <u>New</u> [Close, [Close]	oestraints			Showing 1 to 1 of 1 Previous Net
Customize this table Work Managers, Request Classes and C	oostraints Type	Targets	Scope	Showing 1 to 1 of 1 Previous Ner Domain Partitions

Figure 11-27 Workmanager Screen 2

Configure Resource Reference in Tomcat Application Server

This section is applicable only when the Web application server type is Tomcat and includes the following topics:

- Create Data Source
- Define JDBC Connection Pooling
- Configure ClassLoader for Apache Tomcat

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

See Hardware and Software Requirements to identify the correct <code>ojdbc<version>.jar</code> file version to be copied.

Create Data Source

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

Note:

The User-IDs for configuration/ atomic schemas have the prefix of setup info depending on the value set for PREFIX_SCHEMA_NAME in the <<APP Pack>> SCHEMA IN.XML file of the Schema Creator Utility.

For example: If the value set for PREFIX_SCHEMA_NAME is DEV and the schema name is mentioned as ofsaaconf, then the actual schema created in the database is 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>

Note:

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

Define JDBC Connection Pooling

To define the JDBC connection pooling, follow these steps:

1. Copy the \$ORACLE_HOME/jdbc/lib/ojdbc<version>.jar file to the path \$TOMCAT_ DIRECTORY/lib/ directory.

See Hardware and Software Requirements to identify the correct ojdbc<version>.jar file version to be copied.

 Edit the server.xml file present under the \$TOMCAT_DIRECTORY/conf/ directory with the following changes, which is required for connection pooling.

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

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

```
driverClassName="oracle.jdbc.driver.OracleDriver"
username=" $ATOMICSCHEMA_USERNAME$" password="$ATOMICSCHEMA_PASSWORD$"
url="$JDBC_CONNECTION_URL"
```

```
maxTotal="300" maxIdle="30" maxWaitMillis="10000"
removeAbandonedOnBorrow="true" removeAbandonedTimeout="60"
logAbandoned="true"/>
```

</Context>



Note:

- \$APP_DEPLOYED_PATH\$ must be replaced by the OFSAAI application deployed path.
- \$INFODOM_NAME\$ must be replaced by Infodom Name.
- \$ATOMICSCHEMA_USERNAME\$ must be replaced by an Atomic schema database user name.
- \$ATOMICSCHEMA_PASSWORD\$ must be replaced by an Atomic schema database password.
- \$JDBC_CONNECTION_URL must be replaced by JDBC connection string

jdbc:Oracle:thin:<IP>:<PORT>:<SID>.

For example,

- jdbc:oracle:thin
- 192.168.0.1:1521:soluint

The User-IDs for configuration/ atomic schemas have the prefix of setupinfo depending on the value set for PREFIX_SCHEMA_NAME in the <<APP Pack>>_ SCHEMA_IN.XML file of Schema Creator Utility.

For example: if the value set for PREFIX_SCHEMA_NAME is DEV and the schema name is mentioned as ofsaaconf, then the actual schema created in the database is DEV_ofsaaconf.

Configure ClassLoader for Apache Tomcat

To configure the ClassLoader for Apache Tomcat, follow these steps:

- 1. Edit the server.xml file available in \$TOMCAT HOME/conf/ directory.
- Add the tag <Loader delegate="true" /> within the <Context> tag, above before the <Resource> tag. This is applicable only when the web application server is Apache Tomcat 8.



12

Configure Work Manager in Web Application Servers

The process Modelling framework requires creating a Work Manager and mapping it to the OFSAA instance. This configuration is required for WebSphere and WebLogic Web application server types.

Topics:

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

Configure Work Manager in WebSphere Application Server

Topics:

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

Create Work Manager

To create the Work Manager, follow these steps:

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: I 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> .

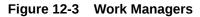
Figure 12-1 WebSphere Login page

2. Log in with the user ID which has admin rights.

Figure 12-2 Home page

View Altanta W	Watshie			
	Halante.		About Mile Integrated Solutions Consula	
· Valueta			Determined Ball-Norm Contacts, 8.3.3.0 Build Survitan: gml319.01 Build Barler 3/14/12	
R Build Activities	Entrepreted Bolutions Console provides a common admining both the anothol autes that can be administered through the	Integrated Bolutons Conside provides a common administrative conside for multiple products. The table tota the product surface that can be administrated through this installation. Detect a product surface to use		
N Servers	more moreaton.	more reformation.		
36 Applications			LICENSED MATERIALS PROMETY OF 18M 5734-305, 5724-33, 5734-498,5734-498, 5635-465 (C) Capunghé bitan distant di sense Statung Com, 1985, 5635-465 (C) Capunghé	
X Seviced	Bulla Rana	Version	Orternational Business Warkines Corp. 1996, 2012	
K Resources	Trabilation, Acatoritor, Denver	4.5.5.0		
X Decerta				
X Encountry				
X Summ administration				
K Use's and Drougs				
X Wonduring and Taking				
K Troubleshooting				
X Service integration				
* upp1				

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



Views (at tasks w)	DemotivationsCol Administration 0					
	Non-managers					telp .
existent S General S Annues R Applications R Annues R Annues R Annues R S Annues R - Schaldure R - Schaldure	With Receiption Technical activity is a point of investor that are based into the Joseph (mill the J					Full help for help help softemation, solid i help help solid help solid the help solid help does be help solid help help help help solid help solid help help help help help help solid help
¥.945						samhand for Just Athen
K JOHC K Adapters	all sector and the se	tes texts				
H Asynchronous beans	R O T Y					
 Tonar managers Work managers 	Select Name ()	3401 name ()	Bridge C	Description ()	Category ()	
R Carbo metanom	You say administer the following	You say adversary the following resources:				
K Mar	SelectionAttacker	antibelault	Sodenut/Stephodels.Seventsevers	WebSphare Default WorkManager	Defeut	
K LAL					Carlos -	
it Resource Decounters	Total 1					
# Encycly						
X Environment						
A System administration						
A Users and Droate						
A Munitoring and Turning						
R Treaklasting						
A Service integration						
# UD05						



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

For example, Node=whf00aqnNode01, Server=server1.

5. Click New in the Preferences section.

Veret at tasks w	Converting Annual Data Annual (2000)	
	Bark Managers	
- educes	Hark-matagery > New	
4 Curiled Activities	Exercises a such manager that contains a pool of threads that are bound only the bangTMU terring and Directory Scherfage (2003).	
S Javan	Carliguration	
H Applications		
A Derivities		
S families	Second Projection	The addressed properties sell not be available until the general properties. For the next are applied or served.
 Scholules Object profit hangest 	* loge	Additional Properties
# 245	(ats of (launs billion rates of (laundal) areas secard)	· Control progetter.
# JOBC	* tare	
X Panturca Adaptare	* 2001 rame	
III Asynchronous beats - Toner monopers	Jan / Burk Manager	
· work material	Generation	
N Cache Instances	1	
8 Mail	0	
A LAL A factors Excession	Ň	
	Servery	
N Security		
if Enumerant	Work Smand	
8 System administration	Bmillaasonda	
N Users and Broops	Work request give a see	
it Montoring and Tarring	3 work stants	
R Treaklashooting	Table of the second sec	
8 Service Integration		
ik ubbe	Service names	
	Driemationalization	
	Application Profiling Service (deprecated)	
	C Security	
	C Workham	
	Thread pool properties	
	* Sumber of electro threads	
	2 Presis	
	* Monoral Automatic of Strends	
	* Maximum number of threads	
	B Brands	
	* Thrand Drugsty	
	9 priority	
	2 transite	
	57563-4757-45	
	Appro OK Amost Canoal	

Figure 12-4 New Work Managers

- 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.



without software		Welcome
Views (All tasks V)	Celmintophiadocal avaluation	
 boliche K Godel Antoines K Soviel K		61
X Environment	Description	
IF System administration IF Users and Groups IF Monitoring and Tuning	0	
# Trubleshooting	Çanaşarı	
If Service Integration		
x v001	work formand milliseconds B work request system B work request system B work request fut action B sork objects B work request fut action B sork objects B work request fut action	

Figure 12-5 Configure Work Managers

9. Click Save.

Figure 12-6 Work Managers Preferences

Westgebern Antonin						Welcome add
Vent Altaska 🗸	Callmanter	April Add Date Public Holds	564 [°]			
* mature	Work(ma	nagara				
 Balance Barrow Saven Applications Resource Resource Confidentian Confidentian Savet Savet Resource 	Speed In Sec	ge: Cell-ahf00ag4Node020	Cell, Node-web/00ageNode01, 5 at which the resource definition excess petition help.	bound into the Java[14] feaming and Directory inversessments is visible. For detailed information on what prop		
W Resource Adapters	D	079				
B Asynchronous basis	and a state of the	Name C	201 name C	Seape C	Description C	Category C
 Work managers 		an administer the following				
N Cache Instances N Mat N CR.		DefaultWorkHanaser	idefault	Node+xM00agxNode03.Server+server3	WebSphere Default WorkManaper	Defeult
N Assource Environment	0	10	wm/WorkManager	Node=shf00aqnfiode01.Server+perver3		
A Security	Total	2				
* Environment						
X System administration						
# Users and Groups						
it Mandoring and Turking						
# Troubleshooting						
K Service integration						
* ucos						

After creating the work manager, you must map it to an OFSAA instance.

Map Work Manager to OFSAA WebSphere Instance

To map the Work Manager to an OFSAA WebSphere Instance, follow these steps:

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



withdraw address		Walsona adv
Viewi [At tasks V]	Cal-Addrephantical India-Bittictory	
	Enterprise Applications	
 Balance R Duiled Activities 	Enterprise Applications Use this page to manage installed applications. A single	
# Severa	 Use this page to manage metalled applications. A single . 2: Preferences 	application can be deployed onto multiple servers.
S Applications	Contraction of the second seco	evil Update Remove File Expert Expert DDs. Expert File
Anne Application Application Application Tapes Autophysics applications	00;Y	
· Business fevel applications	Select Name 2	Application Status Q
· Assets	You can administer the following resources:	*
 Onhal deployment settings 	D Defaultisation	*
X Services	SK CERNI	•
 Annument Annument 	D Semamasaar	+
 Object pool managers 	and a start of the	
H 2HS	D 10000	*
IF 200C IF Resource Adapters	C) SKAD	*
III Asymphotous bears	Total 5	
 Total managers Work managers 		
R Cache instances		
R wet		
3 URL		
X Rassyrca Druissman		
8 Security		
X Environment		
X System administration		
It Veers and Occupe		
K Manifesting and Turing		
8 Trublashouting		
8 Service integration		
il uppt		

Figure 12-7 Enterprise Applications

2. Click OFSAAI instance hyperlink.

Figure 12-8 OFSAAI

neral Properties	Madalas • Manasa Modules • Disalay module build lida
Issue warnings	Web Hodule Properties
Detail Properties	Sassion managament Context Root For Web Modules Initalize parameters for web Modules Initalize parameters Virtual hosts Enterprise Java Base Properties Cafe/it messasing projecties Cleast Hodule Properties Cleast module deployment mode Database Profiles
Ensource references Shared library references Shared library relationships Appy OK Reset] Cancel	 SOLLersfeet, and averQuery, bind files

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



	jurch WorkNanager		182		1.1 20				
	Set Multiple JNDI N	ames *	18						
0	0								
	Module		Bean	URL .		Resour	ce Reference	Target Resource	MOI Name
	OFSAAL Web Apple	-		OFSAAL war, WEB	Dif/web.xml				Browse
6	-	-							
8	0								
lefect.	Module	Bean	URI		Resource Reference		Target Resource	e JNDI Name	Login configuration
	OFSAAI Web Application			N. war, WEB- ab. cond	J656/YICMAS	TEA	jdbc/VICMAST Branke	ER	Resource authorization: Container Authentication method: None
0	OFSAAI Web Application			AL mar, Will- eb.aml	proc/orseos	cowo	Блы/огзаско Влоняе	ciwo	Resource authorization: Container Authentication method: None

Figure 12-9 Resource References

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

Figure 12-10 Available Resources

s dete	rmined by the targets to which that module	e is mapped. Resources	Resources shown here are only those availa a available to a module can come from a hie will override the parent. The overridden resou	rarchical scope of a bean. If resources at
Appl	y Cancel			
*	9			
Select	Name 0_	JNDI name () _	Scope 0.	Description
0	AsyncRequestDispatcherWorkManager	wm/ard	Node=whf00agnNode01	
~	DefaultWorkManager	wm/default	Node=whf00aqnNode01.Server+server1	WebSphere Default WorkManager
0				

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



and a first street		-					Retorns adver-	relp Logest
Veren (all taulus 🐨	Catholic Cat	12040.0000000000000000000000000000000000						Close .
	Citaconte Apolice	Core :						in the second se
N Gurbal Activities			Resource refletences					Full help For Fall help information, sale
A Samera	Recourse refer							a field label or foil marker whe me help-cursor is displayed.
1 Applications			had in your application must	be maximit to a recruit	ie.			Face help
a Ann Application	Concession of the local diversion of the loca	Makfunger	and the second		0.00			Ware information about the
H Application Toper		subple (N)1 barbas 4						anat .
 Malifyhan arangesa appleatore Beatrans beat appleatore Asses 	0.0							
· distai tepitutere settinge	Select Hud.	6	Been URI	Reaso	una Kelewica	Target Researce 3	NO Name	
T Services	0 010	AC their Application	OFSAML HER WERE	ation with	and the second second	[an/maximanag	e Bront	
II Rassurgas								
* Educations	person and Party					na ana taona	Sarah and Sarah	
 Other part exception Just 	Contract of the local distance of the local	-	i mudile fas	oute Authentication Met	nat.	Related Proje	(Test	
N DAG	1000						(0.1-5-5)/1	
X Resource Adapters	0.0							
William Contract States	Datest Made		av. 1982	Assouts	Target Resource	a Mill Barris	Lage configuration	
* Work management	inclusion in the			Reference			per a la company de	
R (pela induces R Ref R Vel, R Factoria Discontinget		the strate	(PTML nat. HTB) 247 mile and	мытонета	(pts., V)(host Brown, (*)		Basiurus autorization: Contactor Autoritication method	
A Security			1				Rora	
8 Brunnant							Assource authorization	
R Bysten administration		and streets	OFTAKI ANI ATTA		Service Sealor	040	Cortaner	
R lowers and drowps	C Apph	uation.	EMTWEATS	Ner/Okteck/One0	\$10.00 ···		Authentication	
K Munitering and Turking							method: Note	
# Triublashiping			-	-			1014	
E Sanica Integration								
# upor								

Figure 12-11 Select Work Manager

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



rise Applications	
 Messages Changes have been made to your lot <u>Save</u>, directly to the master configurat <u>Society</u> changes before saving or disc The server may need to be restarted 	ion. anding.
terorise Applications > OFSAA1 this page to configure an enterprise application. Click the live infiguration	nks to access pages for further configuring of the application or its modules.
General Properties	Hodyles
> Name OFEAA1 Application reference validation [Issue warnings [V]	Manage Modules Disolar module build Ids Web Hodule Properties
Detail Properties Tarcet specific application status Status bahavior deplication binaries Class loading and update detection Results dispatcher properties JADE provider Sustam properties Xess Peologment Descriptor Last participant support extension	Context Root For Web Modules Context Root For Web Modules Context Root For Web Modules Context Root Server Servers Context Root Servers Context Root Servers Context Root Root Servers Chest Module Properties Clast Module Respondent mode Database Profiles
References Resource references	Database Profiles * SQU2 profiles and pureQuery bind files
Shared library references Shared library relationships	

7. Click Save.



2 10 **Enterprise Applications** Use this page to manage installed applications. A single application can be deployed onto multiple servers · Preferences Start Stop Install Uninstall Update Rollout Update Remove File Export Export DOL Export File 2077 Select Name C Application Status Q. You can administer the following resources -DefaultApplication OFSAAL . formamanagar ٠ + https:/ . SVEC Total 5

Figure 12-13 Enterprise Applications Preferences

Configure Work Manager in WebLogic Application Server

To create the Work Manager in WebLogic application server, follow these steps:

 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.

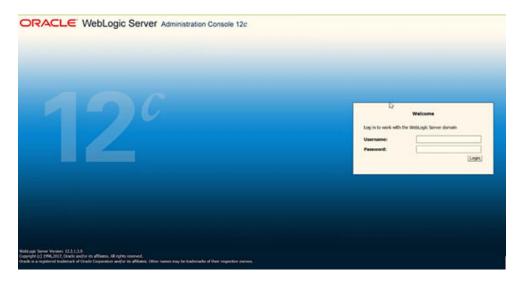


Figure 12-14 WebLogic Login page

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



ORACLE WebLopic Serve	Administration Conscie 10x		
Change Coaline	Renar Lug Dut References 22 Record Pally	1.4	Welcome, weldings: Connected for GMCM
Yane changes and restarts	Harra Liferenera of Work Hanagers		
Configuration withing is another, future through will automatically be activated as on models, will an ablete family in the domain.		el contrarte that manage work performed to thebuget beine instances. The	ange displack the picket third Managers, required classes and thread cardinarits defined for the distance.
Remain Wrivefaire PCRUB Processorial Proc	A Child York Herages an Orline of the Arran land. N A 2 Contension the Solid Child Work Honopera, Engand Cases and Conten	e ion also Sefere application level and mobile-level Work Managers.	
- Machines - Webuilt Hoste	(me) (dow) (here)		During (1):1:073 Printing (1):
Work Hatabard 20thg and Shuttoni Count	C men	Tar.	Targets
Caluments # Service		There are to same to	fight
Solutio featre Intergenetativ	- Teel (1944) (2006)		(Reading (16.5 of) Product (New

Figure 12-15 Work Manager

4. Click **New** to create a new Work Manager component.

Figure 12-16 New Work Manager

Create 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	
O Context Request Class	
O Maximum Threads Constraint	
O Minimum Threads Constraint	
Capacity Constraint	
Back Next Cancel	

5. Select the Work Manager and click Next.

Figure 12-17 Work Manager

🏠 Home Log Out Preferences 🖂	lecord Help	
Home >Summary of Work Managers		
Create a New Work Manager Comp	ment	
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 ner	Work Manager?	
* Name:	wm/WorkManager ×	
Back Next Finish Cancel		

6. Enter the Name as 'wm/WorkManager' and click **Next**.



ate a New Work Hanager Component	
Select deployment targets	
ou can target the Work Manager to any of these WebLo	pc Server instances or Ousters. Select the same targets on which you will deploy applications that reference the Work Manager.
ailable targets :	
allable targets :	
enen	
vallable targets : envers Ø Administerver	

Figure 12-18 Select Deployment Targets

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

Figure 12-19 Summary of Work Managers

Hume Lap Out Preferences Record Help	9			Welcome, weblogic	Convected to: GRC8013
home - Summary of Work Hanagers					
Ressages					
I All changes have been activated. No restarts are necessary.					
S Work Manager created successfully					
Summary of Work Hanagers					
A trick Manager defines a set of request classes and thread co	rutrants that manage work performed by WebLo	gic Server instances. This page displays	the global Work Managers, request classes and thread co	netraints defined for this d	inin.
Global Work Managers are defined at the domain level. You can	also define application-level and module-level vi	iok Managers.			
p Customize this table					
Global Work Hanagers, Request Classes and Constraints					
New Chile Onleir			1.1.1		1 of 1 Previous Next
D Name in	Type	e.	Targets		
um/WorkManager	Work	Naraper	Administrative		
(Area) (Clarke) (Colorie)				Showing 1 to	1 of 1 Previous Next



13 Additional Configurations for Application Packs

This section provides information for additional configurations required for the OFSAA application packs.

Topics:

- Configurations for Enterprise Modeling
- Configurations for Process Modeling Framework

Configurations for Enterprise Modeling

This section is applicable only if OFS Enterprise Modeling is licensed and enabled in your OFSAA instance. See the OFS Analytical Applications Infrastructure Administration Guide for information on additional configurations.

Perform the following configurations before you start using Enterprise Modeling framework:

- Install the OFSAAAI Runner package in the database server to execute ORE models. This is a mandatory step and you can find the Runner package in the \$FIC_HOME/ ficdb/lib directory. For more information, refer to the section Install OFSAAAI Runner Package.
- Configure ORE 1.5 to load the Cairo library in Oracle Linux/RHEL 7 by creating a symbolic link from libtiff.so.3 to libtiff.so.5 for the ORE executions to succeed. Follow the steps given below to create a symbolic link:
 - a. Log in as root and change directory to /usr/lib64.
 - b. Execute the following command: ln -s libtiff.so.5 libtiff.so.3

Note:

Contact My Oracle Support if you require further assistance on ORE 1.5

c. Execute Variable Migration Utility to migrate the variables defined in previous versions to 8.1.2.0.0 version. For more details, see the Variable Migration utility section in OFS Analytical Applications Infrastructure Administration Guide.

Sandbox Resave Utility

A utility is provided to regenerate the CONSTRAINTS.XML as per the changes done as part of Update Constraints utility. The constraint XML is required for the sandbox data population which will store the foreign key names of all the tables.

The XML files to be regenerated are:



ftpshare/<SANDBOXINFODOM>/erwin/scripts/sandbox/CONSTRAINTS.xml

ftpshare/<SANDBOXINFODOM>/erwin/scripts/sandbox/<TABLE NAME>.xml

Prerequisites

Update Constraints utility must be run successfully on all the sandbox and production Infodoms.

How to Run the Utility

To run the utility:

- Navigate to the \$FIC_HOME/utility/sandboxutil/bin directory and grant RWX (755) permissions for all executables (.sh files).
- 2. Execute the utility using the following command:

./updatesandbox.sh

- 3. Verify logs from the \$FIC HOME/utility/sandboxutil/logs/Update.log directory.
- 4. If the process is successful, verify the following references for new constraint names:

ftpshare/<SANDBOXINFODOM>/erwin/scripts/sandbox/CONSTRAINTS.xml

ftpshare/<SANDBOXINFODOM>/erwin/scripts/sandbox/<TABLE NAME>.xml

- 5. In case of failure, refer the utility's log and restore the backups for the file system.
- 6. Execute the utility for the failed infodoms one by one using the following command:

\$FIC HOME/utility/sandboxutil/bin/updatesandbox.sh \$INFODOM.

Note:

The utility does the backup of ftpshare/<SANDBOXINFODOM>/erwin/ scripts/sandbox directory as ftpshare/<SANDBOXINFODOM>/erwin/ scripts/sandbox_bkp, but restore is not done. Restore must be done manually in case of any failure. The backup directory will be created in the app ftpshare area. In case of any failure, the backup has to be replaced in the database ftpshare area also. For queries, contact My Oracle Support.

Model Resave Utility

If you upgrade OFSAAI to 8.1.2.0.0 from an older version, you have to resave all ORE based models. To resave, you have to use the utility modelresave.sh, which is available in the directory <code>\$FIC DB HOME/bin</code>.



Note:

You cannot trigger the model resave utility if the RQADMIN role is not granted to Configuration Schema. For more information on granting the role, refer to the section Configure Oracle R distribution and Oracle R Enterprise (ORE).

To run the utility from the console:

- 1. Navigate to the \$FIC_DB_HOME/bin directory and grant RWX (755) permissions for all executables (.sh files).
- Execute the utility using the following command: ./modelresave.sh

This will resave all the available ORE models.

Provide the following parameter if you want to resave ORE models that are present in a
particular information domain:
 INFODOM - Specify the information domain name if you want to resave the models only
in a particular information domain.

For example, ./modelresave.sh <infodom>

Note:

You can find the logs in \$FIC_DB_HOME/log/migration.log

Configure Process Modeling Framework

See the OFS Analytical Applications Infrastructure Administration Guide for information on configuration for the Process Modeling Framework.

Generate JSON Utility

The JSON Utility reads the Object Registration tables and generates entity-wise JSONs that are registered into the **AAI_DMM_METADATA** table.

From the OFS AAI v8.1.2.0.0 release, the model upload processing is done through the JSON format.

Note:

The JSON utility is triggered as part of the OFSAA Application upgrade installation.

The generation of JSONs is done automatically during an upgrade installation. Run this utility only in the event of a failure to generate the JSONs during an upgrade installation.



For information on how it is used in the application, see the Model Upload Using JSON section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

How to Run the Generate JSON Utility

Refer for steps to run the Generate JSON Utility.

To run the Generate JSON Utility, follow these steps:

Before running the JSON utility, ensure that the FICServer is up and running.

- 1. Navigate to the \$FIC_HOME/utility/GenerateJSON/bin/ directory and grant RWX
 (755) permissions to all the executables (.sh files).
- 2. Run the utility for each of the failed information domains as follows:

\$FIC_HOME/utility/GenerateJSON/bin/generatejson.sh \$INFODOM Where the
Infodom name in the ./generatejson.sh file is as shown in the following:
./generatejson.sh <INFODOM NAME>

- **3.** After executing the utility for all information domains successfully, verify the following references for the JSON files:
 - All the entity JSONs are generated in the ftpshare/<INFODOM>/json/fipjson directory.
 - **b.** The **AAI_DMM_METADATA** table must be registered with all the generated JSON.
 - c. The V_FLAG_VALUE parameter in the AAI_DMM_UTIL_UPDATE_JSON table in the Config Schema is updated to Y for the selected Infodom.

Note:

- a. If the Utility fails to generate, check the Utility's log and identify the cause of the failure. Resolve the issues and run the Utility again.
- **b.** If the Utility fails to generate because the Table Version is empty and the Entities were created (Tables created through Batches) outside the Model, update the Version to 0 and re-run the utility.
- c. If the JSON Utility fails to generate because of the inconsistent constraints present in the existing environment, run the Update Constraints Utility and make the constraints consistent before running the JSON Utility again. Refer toExecute the Update Constraints Utility for more details.

For any queries, contact Oracle Support Services.



Execute the Update Constraints Utility

Execute the Update Constraints Utility to make the constraints consistent before running the JSON Utility again after it fails.

Note: This Utility applies only in an Upgrade Scenario.

To execute the Update Constraints Utility, follow these steps:

- Update the aai_mu_util_update_cons.v_flag_value to N for the Problematic Infodom in the Config Schema.
- 2. Drop the following Tables (if they exist) from the Atomic Schema. These Tables were created previously by the Update Constraints Utility.
 - rev_tab_constraints_u
 - rev_tab_ref_constraints_u
 - rev_tab_constraint_columns_u
- 3. Create a backup of the existing db.xml file.
- Insert a dummy record into the aai_table_uid_map Table with n_table_id as maxvalue + 1.
- 5. Create a backup of the **aai_table_uid_map** Table and truncate the data except for the dummy record.
- 6. Execute execute .sh for the specific Infodom as follows:

```
cd $FIC HOME/utility/UpdateConstraints/bin
```

./execute.sh <infodom name>

 Verify the log files generated in the \$FIC_HOME/utility/UpdateConstraints/logs directory.



14 Additional Information

Add FTP/SFTP Configuration for File Transfer

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

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

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

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

This will add an entry into the "known_hosts" file.

4. A confirmation message is displayed:

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

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 in the following section. These settings are the bare minimum and have to be incremented considering the deployment metrics into account. The increments are usually handled in multiples of 128 MB for heap and 64 MB for the stack.

You can configure the Infrastructure Application Memory settings as follows:

- **1.** Locate the .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"
```

Retrieve Patch Information

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

- 1. Log in 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/Platforms.

Set 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 must be specified based on the expected load at each implementation site.

For example:

- Process Memory: Limit Max Thread Stack Size
- Max Number of Threads per Process
- Sort Buffer settings: This must be set at the Essbase application level appropriate to the anticipated load.
- Shutdown and Restart: During the shutdown of the 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 based
 on the load the system is subjected to, before restarting the Data Services
 subsystem.

Change IP/ Hostname, Ports, Deployed Paths of the OFSAAInstance

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



Set Infrastructure LDAP Configuration

For more information on LDAP configuration, see OFS Analytical Applications Infrastructure Administration 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 following configuration steps are to be done only if you are using the Web Services feature of OFSAAI.

Topics:

- Configure DynamicWSConfig.xml File
- Configure WSConfig File
- Configure Proxy Settings
- Configure OFSAAI Home Entry
- Configure DynamicWSConfig.xml File
- Deploy OFSAAI Web Services

Configure DynamicWSConfig.xml File

For each third-party web service that must 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 servers, that is, WebSphere, WebLogic, or Tomcat.

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

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

This template is as follows:

<XML>

<WEBSERVICES>

<WEBSERVICE CODE="\$CODE"

```
ENDPOINT="$ENDPOINT" TARGETNAMESPACE="$TARGETNAMESPACE" XMLNS_XSD="$XMLNS_XSD"
ENCODINGSTYLE="$ENCODINGSTYLE" SERVICENAME="$SERVICENAME"
PORTTYPENAME="$PORTTYPENAME"
SESSION_MAINTAIN_PROPERTY="$SESSION_MAINTAIN_PROPERTY" USERNAME="$USERNAME"
```

```
PASSWORD="$PASSWORD" STYLE="$WEBSERVICESTYLE"
STUBIMPLEMENTATION="$STUBIMPLEMENTATION">
```



<OPERATION CODE="\$CODE" NAME="\$NAME" SOAPACTION="\$SOAPACTION"
STYLE="\$STYLE" PACKAGENAME="\$PACKAGENAME">

<INPUT ORDER="\$ORDER" PARAMNAME="\$PARAMNAME" ARGTYPE="\$ARGTYPE" CLASSNAME="\$CLASSNAME"/>

<OUTPUT PARAMNAME="\$PARAMNAME" RETURNTYPE="\$RETURNTYPE"
CLASSNAME="\$CLASSNAME"/>

</OPERATION>

- </WEBSERVICE>
- </WEBSERVICES>

</XML>

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

Attributes of WEBSERVICE tag

Placeholder	Description
\$CODE	A 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 can be given as "" also.
\$USERNAME	User name to access web services. Enter "" if no user name is required.
\$PASSWORD	The 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 of OPERATION tag

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

ORACLE

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

Attributes of the INPUT tag

Placeholder	Description
\$ORDER	The sequential number of the INPUT tag. It must 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	The input parameter name to be called by the wsdl file.
\$ARGTYPE	Input Parameter Data Type. If the input argument type is a complex object, specify \$ARGTYPE as "xmlstring".
\$CLASSNAME	Represents the class name of the input object parameter.

Attributes of OUTPUT tag

Placeholder	Description
\$PARAMNAME	The 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 the class name of the output object parameter.

Adding 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 the \$FIC_HOME/webroot/WEB-INF/ and edit the web.xml file. Set parameter value DOCSERVICEAPP to EXEWebServiceAXIS.
- 2. Navigate to the <OFSAAI Installation Directory>/EXEWebService/<WebServer>/ROOT/ WEB-INF/ and edit the web.xml file as follows:



Configure WSConfig File

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

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

<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>

Configure Proxy Settings

Replace the following <param-value> text in the 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>
```

Configure OFSAAI Home Entry

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

Replace <code>\$FIC_HOME\$</code> in the following block of text in the <code>web.xml</code> file 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 Directory-->
</context-param>
<description>OFSAAI Web Home</description>
<param-name>FIC_PHYSICAL_HOME</param-name>
<param-value>$FIC_HOME$</param-value>
<!--OFSAAI Installation Directory-->
</context-param>
```

Configure DynamicWSConfig.xml File

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

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.
- Navigate to <OFSAAI Installation Directory>/EXEWebService/<WebServer> and execute the command:

./ant.sh

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

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

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



Enable Parallel Execution of DML statements

A configuration file, OracleDB.conf is introduced to accommodate any configurable parameter related to operations on the 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 that 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 the mail server in the NotificationConfig.cfg file that resides in the path <code>\$FIC_APP_HOME/common/FICServer/conf.</code>

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

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

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

 Table 14-1
 NotificationConfig.cfg File Attributes



Clear the Application Cache

Ensure to clear the application cache before the deployment of Applications Pack Web Archive. This applies to all Web Servers (WebSphere, WebLogic, and Tomcat).

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

```
    Tomcat
```

<Tomcat installation directory>/work/Catalina/localhost/<Application name>/org/apache/jsp

WebLogic

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

WebSphere

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

Configure Password Changes

This section explains about how to modify the OFSAA Infrastructure Config Schema and Atomic Schema passwords for non Wallet-based and Wallet-based setups.

Topics:

- Modify OFSAA Infrastructure Config Schema Password in a Non Wallet-Based Setup
- Modify OFSAA Infrastructure Atomic Schema Password in a Non Wallet-Based Setup
- Modify the OFSAA Infrastructure Config Schema Password in a Wallet-Based Setup
- Modify the OFSAA Infrastructure Atomic Schema Password in a Wallet-Based Setup

Modify OFSAA Infrastructure Config Schema Password in a Non Wallet-Based Setup

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

1. Shutdown the OFSAAI App service:

cd \$FIC_APP_HOME/common/FICServer/bin

```
./stopofsaai.sh
```

- 2. Change the Config Schema User Password in the database.
- 3. Delete the \$FIC_HOME/conf/Reveleus.SEC file.
- 4. Navigate to the <code>\$FIC_HOME/utility/updateatomicpwd/bin</code> Directory and execute the Utility as shown in the following:

Syntax:

```
./rotateAtomicDBPwd.sh <CONFIG/ATOMICALIASNAME> <DB_USER> <DB_PASS>
```

For example,

```
./rotateAtomicDBPwd.sh CONFIG acte_ofsaaconf password123
```



The execution of the Utility generates the Reveleus.SEC File in the <code>\$FIC_HOME/conf/</code> Directory and a new Encrypted Schema Password is reflected in the **DB_MASTER** and **AAI_DB_AUTH_ALIAS** Tables in the row which displays the Config Schema.

Note:

If you do not delete the existing <code>Reveleus.SEC</code> File, then a backup of the file is saved with the <code>Reveleus.SEC_cfgbkp</code> name before generating the <code>new</code> <code>Reveleus.SEC</code> File.

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

If you are using WebSphere as a Web Server:

- a. Log in to the WebSphere Administration Console, from the left side menu.
- **b.** Navigate to Resources >JDBC >Data Sources. A list of data sources are 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 must be modified).

If you are using WebLogic as a Web Server:

- a. Log in 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 are 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 must be modified).
- **7.** Post successful startup of the service, if required, the Infrastructure Server may be shut down and restarted in the background using nohup mode.

Modify OFSAA Infrastructure Atomic Schema Password in a Non Wallet-Based Setup

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

- **1.** Change the Atomic schema User Password in the database.
- 2. Log in to the application from the browser using the SYSADMN account or any user id, which has a System Administrator role mapped.
- Navigate to System Configuration > Database Details window. Modify the password as explained in the following steps:
 - a. From the Database Master window, select the connection whose password you want to modify and click the button from the toolbar.
 - **b.** Click the button corresponding to the Alias Name. The Alias Details window is displayed.



c. Modify the password in the Auth String field.

Alternatively, the steps 1, 2, and 3 can be done using the rotateAtomicDBPwd.sh Utility with the Servers down.

4. Shutdown the OFSAAI App service:

```
cd $FIC_APP_HOME/common/FICServer/bin
```

./stopofsaai.sh

- 5. Change the Atomic Schema User Password in the database.
- 6. Navigate to the \$FIC_HOME/utility/updateatomicpwd/bin Directory and execute the Utility as shown in the following:

```
./rotateAtomicDBPwd.sh <CONFIG/ATOMICALIASNAME> <DB USER> <DB PASS>
```

For example,

./rotateAtomicDBPwd.sh acteofsaaatm acte ofsaaatm password123

A new Encrypted Schema Password is reflected in the **DB_MASTER** and **AAI_DB_AUTH_ALIAS** Tables in the row which displays the Atomic Schema.

Note:

ATOMICALIASNAME value is a TNS alias for Atomic Schema and must not contain underscores.

For example, if the Atomic Schema Name is PROD_OFSAAATM, then the value for ATOMICALIASNAME must be entered as PRODOFSAAATM.

After you have completed either of the methods mentioned above, proceed with the following steps:

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

If you are using WebSphere as Web server:

- a. Log in to the WebSphere Administration Console, from the left side menu.
- b. Navigate to Resources >JDBC >Data Sources. A list of data sources are 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 must be modified).

If you are using WebLogic as Web server:

- a. Log in 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 are 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 must be modified).
- 3. Restart the OFSAAI services.



Modify the OFSAA Infrastructure Config Schema Password in a Wallet-Based Setup

To change the Config Schema Password in a Wallet-Based setup, follow these steps:

- 1. Shutdown all the OFSAAI Services and Web Servers.
- 2. Change the Config Schema User Password in the Database.
- 3. Log in as a UNIX user with the permission to modify the Oracle Wallet.
- 4. Execute the following command to configure Config Schema credentials.

\$ORACLE_HOME/bin/mkstore -wrl <WALLET_HOME> -modifyCredential -nologo CONFIG <CONFIG_DATABASE_USERNAME> <CONFIG_DATABASE_NEWPASSWORD>

- 5. Enter the password to store the credentials in the Wallet when prompted.
- 6. Start all the OFSAAI Services excluding Web Servers.
- 7. If you use Apache Tomcat, WebSphere, or WebLogic as the Web Server, update the associated Wallet Directory with the new Config Schema User Password.
- 8. Start the associated Web Servers.

Modify the OFSAA Infrastructure Atomic Schema Password in a Wallet-Based Setup

To change the Atomic Schema Password in a Wallet-Based setup, follow these steps:

- 1. Shutdown all the OFSAAI Services and Web Servers.
- 2. Change the Atomic Schema User Password in the Database.
- 3. Log in as a UNIX user with the permission to modify the Oracle Wallet.
- 4. Execute the following command to configure the Atomic Schema credentials.

```
$ORACLE_HOME/bin/mkstore -wrl <WALLET_HOME> -modifyCredential -nologo
<ATOMICALIASNAME> <ATOMIC_DATABASE_USERNAME>
<ATOMIC DATABASE NEWPASSWORD>
```

Note:

ATOMICALIASNAME value is a TNS alias for Atomic Schema and must not contain underscores. For example, if the Atomic Schema Name is PROD_OFSAAATM, then the value for ATOMICALIASNAME must be entered as PRODOFSAAATM.

- 5. Enter the password to store the credentials in the Wallet when prompted.
- 6. Start all the OFSAAI Services excluding Web Servers.
- 7. If you use Apache Tomcat, WebSphere, or WebLogic as the Web Server, update the associated Wallet directory with the new Atomic Schema User Password.
- 8. Start the associated Web Servers.



Configure Java Virtual Machine

While running several database intensive tasks in parallel, fetching the database connection from the 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 must 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 changed 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 directories download, upload, TempDocument, and Temp in the local path of the Web application server and provide Read/Write permission.
 - To find the exact location, execute the following query in the CONFIG schema: select localpath from web_server_info
 - To create directories with Read/Write permission, execute the command: mkdir -m 777 download upload TempDocument Temp
- 2. Create DocStorage directory in the FTPSHARE location of APP tier and provide Read/ Write permission.
 - To find the exact location, execute the query in the CONFIG schema: select ftpdrive from app server info
 - To create a directory with Read/Write permission, execute the command: mkdir -m 777 DocStorage

By default, the parameter DOCUMENT_SERVICE_TYPE_EXTERNAL value is set to FALSE in the Configuration table in CONFIG schema and hence the application "ExeWebService" will not be used. It is recommended that the value 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 the EAR/WAR file EXEWebService.ear/.war. The
EAR/WAR file EXEWebService.ear/.war is created in the \$FIC_HOME/EXEWebService/
<WEBSERVER_TYPE> directory of WEB tier. Redeploy the generated EAR/WAR file onto your
configured web application server.

Update the OFSAA 8.1.2.x Java 8 Instance to Java 11

This section explains the configurations required to update an existing OFSAA 8.1.2.x Java 8 instance to Java 11.



Topics:

- Prerequisites
- Update the OFSAA 8.1.2.x Java 8 Instance to Java 11
- Apply OFSAA Generic Configurations
- Configure the Web Application Server
- Configure OFSAA for the New Web Applications Server Installation

Prerequisites

The following prerequisites must be matched before you can update the OFSAA 8.1.2.x Java 8 instance to Java 11:

- Java 11 must be installed on the OFSAA server and Web Application Server.
- OFS AAI Release 8.1.2.0.0. must be the minimum version installed.

Update the OFSAA 8.1.2.x Java 8 Instance to Java 11

To update the OFSAA 8.1.2.x Java 8 instance to Java 11, follow these steps:

- 1. Configure the OFSAA instance to Java 11. See Apply OFSAA Generic Configurations.
- 2. Configure Web Application Server to Java 11. See Configure the Web Application Server.

Note:

For a newly installed Web Application Server, see Configure OFSAA for the New Web Application Server Installation.

3. Generate the application EAR/WAR file and redeploy the application on your configured Web Application Server.

For more information on generating and deploying EAR/WAR files, see Create and Deploy the EAR/WAR Files.

4. Restart the OFSAA services. See Start the Infrastructure Services.

Apply OFSAA Generic Configurations

This section consists of the following topics:

- Configure User '.profile' Settings
- Configure Java 11 (Java Virtual Machine)

Configure User '.profile' Settings

Perform the following configurations:

1. Log in to the OFSAA server as a non-root user.

(Optional) <Enter a step example.>



 Edit the user .profile. Update the value for the PATH variable from JRE 1.8 to JDK 11. For example,

```
PATH=/usr/java/ jdk-11.0.11
JAVA_BIN=/usr/java/ jdk-11.0.11/bin
LD LIBRARY PATH=$LD LIBRARY PATH:/usr/java/jdk-11.0.11/lib/server
```

Configure the Web Application Server

This section describes the changes that are to be made in the Web Application Server. The following are the options to configure Web Application Server Configurations:

- Update the existing Web Application Server installation to Java 11
- Install a new instance of the Web Application Server with Java 11

This section consists of the following topics:

- Upgrade Java 8 to Java 11 for Oracle WebLogic Server 14.1.1.0
- Upgrade Java 8 to Java 11 for Apache Tomcat Server

Upgrade Java 8 to Java 11 for Oracle WebLogic Server 14.1.1.0

To upgrade Java 8 to Java 11 for WebLogic Server 14.1.1.0, follow these steps:

1. Navigate to the <WLS_HOME>/Middleware/Oracle_Home/user_projects/domains/ <domain>/bin directory.

Update SUN_JAVA_HOME, DEFAULT_SUN_JAVA_HOME, JAVA_HOME in the setDomainEnv.sh file to point to the new Java path.

SUN_JAVA_HOME="/usr/java/jdk-11.0.11"

DEFAULT_SUN_JAVA_HOME="/usr/java/jdk-11.0.11"

JAVA_HOME="/usr/java/jdk-11.0.11"

(Optional) <Enter a step example.>

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

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

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

- a. Install Oracle WebLogic Server 14.1.1.0 and later on Java 11.
- b. Perform the configurations for the newly installed WebLogic server.

For more information, see Configure Resource Reference in WebLogic Application Server.



Note:

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

Upgrade Java 8 to Java 11 for Apache Tomcat Server

To upgrade Java 8 to Java 11 for Apache Tomcat Server, follow these steps:

- 1. Log in to the Apache Tomcat Server as a non-root user.
- 2. Update the value for JAVA_HOME from JRE 1.8 to JRE 1.11 in the user .profile. For Example,

JAVA_HOME=/usr/java/ jdk-11.0.11

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

- a. Install Apache Tomcat Server 9.0.x with Java 11.
- b. 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-9.0.24/conf/server.xml file to that of the existing Tomcat instance.
- Note down the new deployment path to perform OFSAA Configurations.

Configure OFSAA for the New Web Application Server Installation

The configuration in this section is required only if you have freshly installed Oracle WebLogic 14.1.1.0 and later, or Apache Tomcat Server 9.0.x.

To configure, follow these steps:

- Modify the following parameters in the Configuration Table present in the Config Schema with the new Domain Path if the webserver is WebLogic or with the new deployment path if the webserver is Tomcat:
 - DeFiHome
 - REV_IMG_PATH
 - EMBEDDED_JSP_JS_PATH
- 2. Modify the following parameters in the AAI_SETUP_PROPS Table present in the Config Schema with the new Domain Path if the webserver is WebLogic or with the new deployment path if the webserver is Tomcat:



- FIC_PHYSICAL_HOME_LOC
- FIC_HOME
- CSS_LOGGER_PATH
- LOG_HOME_PATH

15 Migrate Excel Upload Functionality

This section provides detailed instructions to migrate excel upload functionality.

Topics:

- Prerequisites
- Migrate Excel Upload

Prerequisites

The following are the prerequisites for migration.

- The data model in ATOMIC schemas must be the same on the source and target setups.
- OFSAAI (platform) patch level version must be the same on the source and target setups.
- PL/SQL Developer to connect and query the database.
- WinSCP to connect and access the server file system.

Migrate Excel Upload

To migrate, follow these steps:

- 1. Open PL/SQL Developer and logon to the source setup's configuration (CONFIG) schema by entering the appropriate username and password.
- 2. In a new SQL window, query the data of table EXCEL_MAPPING_MASTER.
- **3.** Open a new session in the PL/SQL developer and logon to the target setup's configuration (CONFIG) schema by entering the appropriate username and password.
- 4. Insert the records from Step 1 into this table.
- 5. In the V_INFODOM column of the EXCEL_MAPPING_MASTER table, update the infodom name with the target infodom name.

Note:

If all the mappings can work out of the single target Infodom, update the same Infodom value across all rows. If only a few mappings will work out of the target infodom, update the infodom value for selective records. Excel upload mappings will work only if the target infodom has the same data model entities as used in the mappings defined on the source setup.

6. Update the V_CREATED_BY column with the name of any user present in the target setup that has appropriate roles to perform Excel Upload tasks.



Note:

It is mandatory to update values for V_INFODOM and V_ CREATED_BY columns.

- 7. Open WinSCP and log in a new session by entering the host name, port number, user name, and password to access the source setup.
- 8. Navigate to the directory referred to as FTPSHARE.
- **9.** Copy the excel-entity mapping xml file(s) which are located in this directory according to their directory structure on to your desktop.

```
For example: /ftpshare/STAGE/
ExcelUpload/$SOURCE_INFODOM_NAME/$EXCEL_FILE_NAME.xml
```



The actual file name of the Excel Sheet is mentioned in the V_EXCEL_ NAME column of the EXCEL_MAPPING_MASTER table.

10. Copy the excel templates (.xls/ .xlsx) file(s) which are located in this directory according to their directory structure on to your desktop. For example:

/ftpshare/STAGE/ExcelUpload/TEMPLATE/*.xls or *.xlsx

Note:

xls/.xlsx files must be copied to the path as per the local path given in your webserverinfo table of config schema. Ignore this step if files are not present at the location.

- **11.** Log into a new session in WinSCP by entering the host name, port number, user name, and password to access the target setup.
- 12. Copy the XML file(s) from Step 3 to the following location in the target setup.

For example: /ftpshare/STAGE/ ExcelUpload/\$TARGET_INFODOM_NAME/\$EXCEL_FILE_NAME.xml.

Note:

\$TARGET_INFODOM_NAME must be target setup infodom in which you have uploaded the appropriate data model and the name must be the same as the V_INFODOM column value updated in EXCEL_MAPPING MASTER table.

13. Copy the xls/ xlsx file(s) from Step 3 to the following location in target setup.

For example: /ftpshare/STAGE/ExcelUpload/TEMPLATE/*.xls or *.xlsx.





16

Frequently Asked Questions (FAQs) and Error Dictionary

This section consists of resolution to the frequently asked questions and error codes noticed during OFSAAI installation.

- Frequently Asked Questions
- Error Dictionary

Frequently Asked Questions

You can refer to the Frequently Asked Questions which is developed with the interest to help you resolve some of the OFSAAI Installation and configuration issues. This intends to share the knowledge of problem resolution to a few of the known issues. This is not an official support document and just attempts to share the knowledge of problem resolution to a few of the known issues.

Frequently Asked Questions

- What are the different components that get installed during OFSAAI? The different components of OFSAAI are illustrated in Components of OFSAAI.
- 2. What are the different modes of OFSAAI installation? OFSAAI can be installed only in Silent Mode.
- Can the OFSAA Infrastructure components be installed on multi-tier? No.

OFSAA Infrastructure components (ficapp, ficweb, ficdb) cannot be installed on multi-tier. By default, they are installed on a single-tier. However, OFSAA Infrastructure can be deployed within the n-Tier architecture where the Database, Web Server, and Web application server is installed on separate tiers.

4. Is the JDK (Java Development Kit) required during the installation of OFSAA? Can it be uninstalled after the OFSAA installation? JDK is not required during the installation of OFSAA and only a runtime is needed. For details, see Hardware and Software Requirements.

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

- How do I know what are the Operating system, web servers, and other software versions that OFSAA supports? See the Oracle Financial Services Analytical Applications 8.1.2.0.0 Technology Matrix.
- 6. What are the different files required to install OFSAAI? The following files are required:
 - setup.sh.
 - envCheck.sh



- preinstallcheck.sh
- VerInfo.txt
- OFSAAInfrastructure.bin
- validatedXMLinputs.jar
- MyResources_en_US.properties
- log4j.xml
- OFSAAI InstallConfig.xml
- privileges config user.sqlprivileges atomic user.sql
- What should I do if I get the following error message during installation: "Execute Permission denied"? Check whether all the files provided for OFSAAI installation has execute permissions.

To give execute permissions, navigate to the directory path where the Installation files are extracted and execute the following command:

chmod -R 755 OFS AAAI PACK

8. "No Java virtual machine could be..."

If the error message reads "No Java virtual machine could be found from your PATH environment variable. You must install a VM before running this program", then

- Check whether the "java path" is set in the PATH variable. See the Hardware and Software Requirements section in this document.
- Check whether sufficient temporary space is available.
- Ensure that the movement of OFSAAI Installer text files to the target system is done in the Text mode so that the setup.sh file does not contain control line feed characters ([^]M).
- 9. What should I do if I get the following error message during installation, "OracleDriver Files Not Found, Please Choose the Right Path To Continue"? Check whether the provided path for Oracle Driver files is correct and whether the user has permission to access the files.
- The installation of OFSAAI was completed successfully! What next? Post the successful completion of the OFSAAI installation, one has to perform the Post Installation steps. See Post-installation.
- 11. What is to be done when OFSAAI Installation is unsuccessful? OFSAAI installer generates the log file OFSAAInfrastructure_Install.log in the Infrastructure Installation Directory. There are also other log files created in the directories:
 - < directory path where the Installation files are extracted >/ OFS_AAAI_PACK/logs
 - < directory path where the Installation files are extracted >/ OFS AAAI PACK/OFS AAI/logs

If the logs of any of these reported Warnings, Non Fatal Errors, Fatal Errors, or Exceptions, they must be brought to the notice of the OFSAAI My Oracle Support. It is recommended not to proceed until the reported problems are adequately addressed.

12. How do I completely uninstall OFSAAI?



OFSAAI can be completely uninstalled by performing the steps provided in the Uninstall OFSAA Infrastructure section in this guide.

- Can OFSAAI config and atomic schemas be on different databases? OFSAAI requires both config and atomic schemas to be present on the same database instance.
- 14. How do I grant privileges if a new information domain is created? If you are creating a new information domain, provide a set of privileges (database permissions) to the new Atomic schema.
 - a. Log into the database as sys and connect as sysdba user.
 - Execute the privileges_atomic_user.sql file available under the \$FIC_HOME directory.
 - c. Enter the database schema for which you want to grant privileges.
- **15.** When should I run the MLS utility? See the Multiple Language Support (MLS) Utility section in the OFS Analytical Applications Infrastructure Administration Guide.
- **16.** What should I do if I get the following error message on the UNIX System terminal while executing ./setup.sh, "Insert New Media. Please insert Disk1 or type its location"?
 - a. Log in as root user on the UNIX machine where OFSAAI is getting installed.
 - b. Navigate to the path /etc/security/.
 - c. Edit the file limits.conf to add/edit a row for the UNIX user installing OFSAA: <Unix User> soft nofile 15000
 - After saving the changes, log in as UNIX user with which OFSAAI is getting installed and execute the command: ulimit -n
 - e. The command must return the value 15000.
- 17. How do I verify if the system environment is ready for OFSAAI installation? To verify the system environment meets the minimum requirements for the installation, a Pre-Install Check utility is available within the Install Kit archive file. This utility can also be obtained separately by contacting My Oracle Support.

See Verifying System Environment section for additional information.

- 18. How do I know if the installation is completed successfully? The OFSAA Infrastructure installation performs a post-install health check automatically on the successful installation of the product.
- 19. What should I do if there are any exceptions or errors in installation and how to proceed?
 - a. See the Verify the Log File Information section for log file information.
 - **b.** Backup the installation logs.
 - c. Share the backup logs with My Oracle Support.
- 20. What should I do if I get the following error message during OFSAAI installation on Solaris 11 system?

```
"Error: OFSAAI-1108
ORA-00604: error occurred at recursive SQL level 1
ORA-01882: timezone region not found"
Or
```



"Time zone cannot be set as null or 'localtime' "

This happens if the time zone is not set, that is NULL or it is set as 'localtime'. Set the environment variable TZ to a valid time zone region in the .profile file. For example,

TZ=Asia/Calcutta

export TZ

- 21. What should I do if the installation process is abruptly terminated or aborted? If the installation process is abruptly terminated, then the installation is incomplete. To recover from this, follow these steps:
 - a. Drop the DB objects in the config and atomic schemas created by OFSAAI installation.
 - b. Open the .profile and remove the entries made by the OFSAAI installation which are made between the comment statements, #Beginning of entries by OFSAA Infrastructure installation, and #End of entries by OFSAA Infrastructure installation.
 - c. Delete the OFSAA install and FTP Share directories created by the OFSAAI installer.
 - d. Perform the OFSAAI installation again. See Pre-installation
- 22. Does OFSAA support any other web server types, other than the ones stated in the Oracle Financial Services Analytical Applications 8.1.2.0.0 Technology Matrix and Installation Guide? No, all the supported software and versions are stated in the Oracle Financial Services Analytical Applications 8.1.2.0.0 Technology Matrix
- 23. What should I do if the database connection from the connection pool displays the following error message, "java.sql.SQLRecoverableException: IO Error: Connection reset"?

This happens while running several database intensive tasks in parallel. To correct this error, add the line securerandom.source=file:/dev/./urandom in the java.security configuration file available in \$JAVA_HOME/jre/lib/security/ path.

Note:

This must be configured on all the machines or VMs where the OFSAAI components are installed.

If the issue is not resolved even with the preceding settings, check the MTU(Maximum Transmission Unit) settings on the Linux box. For details on MTU settings and updating them, contact your system administrator.

- 24. What should I do when I get syntax errors/file not found error messages while invoking setup.sh file from my install archive? This can mostly happen due to the following reasons:
 - When the installer is not extracted correctly or corrupted during the unzip utility process.
 - setup.sh file which resides within the install archive is not transferred in ASCII or text mode, which can corrupt the file.

To correct this, follow the steps:



- a. Copy the installer (in BINARY mode) to the system on which the OFSAA Infrastructure components will be installed.
- b. Unzip the installer using the command: unzip <OFSAAI_Installer>.zip

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

- a. Log in to the server where the installer is copied.
- b. Navigate to the directory < directory path where the Installation files are extracted >/OFS AAAI PACK/bin.
- c. Open the setup.sh file in the vi editor using the command: vi setup.sh.
- d. Inside vi editor in Esc mode, type: %s/^M//g

Note:

To enter ^M, hold the CTRL key then press V and M in succession.

- e. Save the setup.sh file by typing: wq!
- 25. What should I do if I get the following error message while executing ./startofsaai.sh file on the UNIX System terminal "./startofsaai.sh: /java: Execute permission denied"?
 - Ensure the JAVA_BIN environment variable path is set on the "UNIX user" terminal from where the startofsaai.sh file is invoked.
 - Ensure that the .profile file, where the environment/ path settings are made, is executed successfully.
- 26. What should I do if the OFSAAI Application Server does not proceed even after providing the system password? Ensure that, the System Password provided when prompted during installation is correct. Also, check whether the connection to the "configuration schema" can be established through sqlplus.
- 27. Although the OFSAAI installation has completed successfully, when OFSAAI servers are started, and the application URL is accessed, it gives an error message "the page cannot be found or displayed" or "Could not retrieve the list of languages from Server. Please contact the system administrator". What should one do? Ensure OFSAAI servers are started and are running successfully. For details on startup parameter options, see Start the Infrastructure Services section.

For more details on the issue, refer to the logs under \$FIC HOME /logs directory.

- 28. Is it necessary to provide the specified grants to the Oracle schema user before installation? If yes, can it be revoked after completing the installation? The "Oracle schema" user requires the necessary grants specified before, during, and after the installation process. Grants provided must never be revoked as the application makes use of these grants all the time.
- 29. Can we have a distributed OFSAAI Application Server for load balancing? OFSAAI Application server can be scaled out/distributed across different JVM's (machines) based on the various services and Information Domains, in other words, Load balancing can be achieved with the distribution of services.
- **30.** Why do we need FTPSHARE on all the layers? Can we have ftpshare on another server other than the server where OFSAAI is installed?



FTPSHARE is a Metadata Repository directory. All the metadata related files used in Infrastructure are stored in the FTPSHARE directory. The ftpshare contains directories for each Information Domain, with each Information Domain directories holding Erwin, log, and scripts directory. The transfer of data among the Web, Application, and Database servers in Infrastructure takes place through FTP/ SFTP.

You must configure FTP/SFTP and enable communication between the servers by providing App server's FTP/SFTP credentials to the Web server and DB server users.

Yes, you can have FTPSHARE as a common local storage mount point which can be mounted where OFSAAI is installed.

31. Is it mandatory to provide the FTP/SFTP password? Yes, OFSAAI needs credentials of the user who has complete permissions on the FTPSHARE directory, and the user must be able to independently log in to the UNIX server.

For more information, see the Configure OFSAAI_InstallConfig.xml File section.

32. What are the permissions required for FTPSHARE and when should I give them? It is recommended to provide permissions on FTPSHARE in case of installations done across different machines or VMs (multitier installation).

In the case of a single-tier installation, 770 permissions can be provided if the UNIX users of OFSAAI and web servers belong to the same UNIX group.

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

33. How to modify the port number currently being used by the Infrastructure application?

Port Changer utility can be used to have the Port number modified, which is currently being used by the Infrastructure application. For more information, refer to the Change IP/ Hostname, Ports, Deployed Paths of the OFSAA Instance section in the OFS Analytical Applications Infrastructure Administration User Guide.

- 34. Are there any in-built system administration users within OFSAAI Application? The two in-built system administration users are provided to configure and setup OFSAAI.
 - SYSADMN
 - SYSAUTH
- **35.** Does OFSAAI Application support both FTP and SFTP? OFSAAI supports both FTP and SFTP configuration.
- 36. Is it necessary to enable the FTP/SFTP services to use the OFSAAI? Yes, enabling of FTP/SFTP services and its ports is a pre-requisite step towards using the OFSAAI.
- 37. OFSAAI Configuration: Unable to save the server details?
 - Ensure the input User ID, Password, and Share Name are correct.
 - Ensure FTP/SFTP services are enabled.
 - Have a test FTP/SFTP connection made and confirm if they are successful.
- **38.** What should I do if I get the following message while creating Information Domain, "Please create a database and then create the information domain"?



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

- 39. What should I do if I get the following message during the startup of the backend engine message server, "ConnectToDatabase: FatalError, could not connect to the DB server"?
 - Verify whether a connection to the Configuration Schema can be established through SQL*PLUS.
 - Verify the Configuration Schema password is modified post-installation.
 - Ensure Oracle Database Alias Name created for Oracle Instance and Oracle Service Name are the same.
- 40. What should I do if I get the following message during the startup of the backend engine message server, "Fatal Error, failed to get the user ID from LibSmsConnect"? Ensure the Reveleus.SEC file exists under the \$FIC_HOME/conf directory where the Database components are installed.
- **41.** Does OFSAAI Application support LDAP authentication? OFSAAI supports LDAP configuration and authentication.
- **42.** Does OFSAAI support multiple languages? Yes, OFSAAI supports multiple languages.
- 43. Does OFSAAI provide any data back-up features? OFSAAI does not have a built-in backup facility. External Storage Infrastructure is recommended for back-up.
- 44. What kind of security features does the OFSAAI provide? See the Security Guide for more information.
- **45.** Does OFSAAI have the ability to enforce periodic password change? OFSAAI provides configurable parameters to define the number of days after which the user password must expire and then the user is forced to change the password after the expiration period.
- **46.** What is the password policy followed in OFSAAI? OFSAAI enforces a minimum password length with a combination of Upper and Lower case characters and alphanumeric strings.
- **47.** Which version of Erwin Data Modeller does OFSAAI support? See the Hardware and Software Requirements section for more information.
- **48.** Does OFSAAI provide the mechanism to upload Business Data model? OFSAAI provides two mechanisms for business data model upload:
 - Easy to use GUI based Model upload mechanism to upload the Business Data Model through Data Model Management -->Data Model Maintenance --> Import Model.
 - OFSAAI also provides a model upload utility "upload.sh" for uploading the business data model through the command line parameter by executing this shell script file under the path <FIC_HOME>/ficapp/common/FICServer/bin.

For more details, see the Model Upload Utility section of the OFS Analytical Applications Infrastructure User Guide.

49. How do I apply the incremental change to the existing model when the Business Data model changes?

The modified data model can be uploaded into the system and OFSAAI can compare the changes within the data model concerning the one already present in the system and enables propagation of incremental changes in a consistent manner.

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



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

- 51. Can the OFSAAI Configuration Schema password be modified post-installation? The OFSAAI Configuration Schema password can be modified post-installation. OFSAAI application stores the password in the database and few configuration files, thus any changes to the Configuration Schema password will require updating in those files. For more information, see Modify OFSAAInfrastructure Config Schema Password.
- 52. Can the OFSAAI Atomic Schema password be modified? The OFSAAI Atomic Schema password can be modified. OFSAAI application stores the atomic schema password in the database and few configuration files, thus any change to the atomic schema password will require updating those files.

To change the Atomic Schema password, follow the steps:

- a. Log in to OFSAA.
- **b.** Navigate to System Configuration > Database Details window. Select the appropriate connection, provide the modified password, and save.
- c. Based on the Web Server installed, follow the steps:
 - If you are using Apache as Web server:
 - Update the <Context> -> Resource tag details in the server.xml file from the \$CATALINA_HOME/conf directory. (In case of Tomcat only Atomic <Resource> will exist).
 - If you are using WebSphere as Web server:
 - Log in to the WebSphere Administration Console from the left side menu.
 - Navigate to Resources >JDBC > Data Sources. A list of data sources are populated on the right side.
 - Select the appropriate Data Source and edit the connection details. (In this case, both Config and Atomic data sources must be modified).
 - If you are using WebLogic as Web server:
 - Log in to the WebLogic Administration Console from the left side menu.
 - Under Domain Structure list box, expand the appropriate Domain and navigate to Services > JDBC >Data Sources. A list of data sources are populated on the right side.
 - Select the appropriate Data Source and edit the connection details. (In this case, both Config and Atomic data sources must be modified).
- d. Restart the OFSAAI services

Note:

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

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

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

54. Why do the Business Metadata Management screens (Business Processors screen) in User Interface take more time to load than other screens?

The Log file in DynamicServices.xml which resides in the <code>\$FIC_HOME/conf</code> directory is continuously being updated/refreshed to cache metadata. This can be observed when you are starting startofsaai.sh and if any of the log files (For example, SMSService.log) in DynamicServices.xml is being continuously refreshed for a longer time.

By default, the Metadata Logfile cache size is set to 1000. If in case the log is being updated beyond this limit, retrospectively the preceding entries are overwritten. For example, the 1001st entry is overwritten by deleting the first entry. This results in the application window taking a longer time to load.

Increase the cache size limit in Dynamicservices.xml located at <FIC_HOME>/conf, depending on the currently logged count for the specific metadata.

a. Generate the Log report by executing the following query in the config schema. select count(1), t.metadata_name, m.dsn_id from metadata_master m, metadata type master t where m.metadata type = t.metadata type

group by t.metadata name, m.dsn id

- **b.** The preceding query returns a list of codes with their respective metadata count. You can refer to the "metadata_type_master" table to identify the metadata name.
- c. View the log report to identify the metadata which is being updated/refreshed beyond the specified cache size limit. Accordingly, increase the cache size limit in Dynamicservices.xml depending on the currently logged count for the specific metadata.

For example, if the "MEASURE_CACHE_SIZE" is set to 1000 and the total measure reported in the log is 1022, increase the limit to 2000 (approximately).

- d. Restart Reveleus/OFSAAI servers (Web and APP) and check the issue.
- **55.** What should I do if I get OutOfMemoryError while deploying the EAR file in the WebSphere application server?

The Java memory must be increased in the <code>ejbdeploy.sh</code> file which is present under <WebSphere Install directory>/AppServer/deploytool/itp. For example,

\$JAVA CMD \

-Xbootclasspath/a:\$ejbd bootpath \ Xms256m -Xmx1024m \

56. What is the default memory setting configured by the installer? During OFSAAI installation, the X_ARGS_APP parameter in the .profile file is set as given:

```
X_ARGS_APP="-Xms200m -Xmx8g -XX:+UseAdaptiveSizePolicy -XX:MaxPermSize=1024M
-XX:+UseParalleloldGC -XX:+DisableExplicitGC
```

During the application installation, if 10 times the data model size (data model size*10) is greater than the default Xmx value of 8g (8GB), the installer automatically updates the Xmx value to 10 times the data model size.

57. What configurations should I ensure if my data model size is greater than 2GB? Ensure the Xmx value in the X_ARGS_APP parameter in the .profile file is set as 10 times the data model size.

For example, if it is 2GB, set it as:



X_ARGS_APP="-Xms200m -Xmx20g -XX:+UseAdaptiveSizePolicy -XX:MaxPermSize=1024M -XX:+UseParallelOldGC -XX:+DisableExplicitGC

Then execute the .profile file.

- 58. What should I do if my Hierarchy filter is not reflecting correctly after I make changes to the underlying Hierarchy? In some cases, the Hierarchy Filters do not save the edits correctly if the underlying Hierarchy is changed. This can occur in hierarchy maintenance, where you have moved a member to another hierarchy branch, and that member is explicitly selected in the Filter and is now a child of a node that is already selected in the Filter.
- Can I install an Application Pack on an existing Atomic schema/ Information Domain created manually? No, you cannot install an Application Pack on existing Atomic schema/Information Domain created manually. Application Packs can be installed only on Atomic Schemas/Information Domain created using schema creator utility and/ or the Application Pack installer.
- 60. What should I do if I get the following exception while trying to view the model outputs in Model Outputs screen, "Exception ->Local Path/STAGE/Output file name (No such file or directory)"? Ensure you have created a directory "STAGE" under the path mentioned as "Local Path" in the web server details window. This directory must be created under the local path on every node, in case of web application server clustering.
- 61. What should I do if I get the following exception during OFSAA services startup, "Exception in thread "main" java.lang.UnsatisfiedLinkError: net (Not a directory)"? Ensure the JRE referred in .profile is not a symbolic link. Correct the path reference to point to a physical JRE installed.
- **62.** How do you turn off unused Information Domains (Infodoms) from caching? Follow these steps to turn off unused infodoms from caching:
 - Navigate to \$FIC_HOME/conf in the APP layer of your OFSAAI installation.
 - In the DynamicServices.xml file, identify the section for <Service code="20">.
 - Modify the value of parameter CACHE_ON_STARTUP to 0 (default is 1).
 - Update the same details in the table Aai_Dyn_Svcs_Params of Config Schema for the parameter CACHE_ON_STARTUP. Set the value as 0 and commit the change.
 - Restart the OFSAAI Services (APP and WEB). For more information, refer to the Start the Infrastructure Services section.

Note:

This setting helps cache the Infodom metadata only for the infodoms that are accessed after the user login. Infodoms which are not accessed, are not cached.

Sample code is as follows:

<SERVICE



```
CODE="20"CLASS="com.iflex.fic.metadata.services.MetadataServiceProvider"
          NAME="BMD"SERVERID="DEFAULT" PATH=" "
          LOGGERNAME="UMMLOGGER" LOGGERLEVEL="10">
          <PARAMETERS>
          PARAMETER NAME="CACHE ON STARTUP" VALUE="0" />
          <PARAMETER NAME="BACKUP XML" VALUE="1" />
          <parameter NAME="MAX BACKUP XML" VALUE="2" />
          PARAMETER NAME="PC NONBI BI SWITCH" VALUE="2048" />
          <PARAMETER NAME="HIERARCHY NODE LIMIT" VALUE="2000" />
          PARAMETER NAME="ALIAS CACHE SIZE" VALUE="1000" />
          PARAMETER NAME="DATASET CACHE SIZE" VALUE="2000" />
          PARAMETER NAME="MEASURE CACHE SIZE" VALUE="2000" />
          <PARAMETER NAME="HIERARCHY CACHE SIZE" VALUE="2000" />
          <PARAMETER NAME="DIMENSION CACHE SIZE" VALUE="2000" />
          <PARAMETER NAME="HIERARCHYATTRIBUTE CACHE SIZE" VALUE="1000" />
          PARAMETER NAME="CUBE CACHE SIZE" VALUE="1000" />
          <parameter Name="RDM CACHE SIZE" VALUE="1000" />
          center name="businessprocessor cache size" value="2000" />
          <PARAMETER NAME="DERIVEDENTITY CACHE SIZE" VALUE="1000" />
          <PARAMETER NAME="LOG GET METADATA" VALUE="false" />
          PARAMETER NAME="METADATA PARALLEL CACHING" VALUE="0" />
          </PARAMETERS>
          </SERVICE>
```

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

Check if the version of the browser and JRE Plugin are as mentioned in the Hardware and Software Requirements section of this manual. If not, use the qualified versions as mentioned.

- **64.** Can multiple OFSAA Infrastructure instances share the same Config Schema? No, only one OFSAA environment can be installed using one Config Schema.
- 65. Can Atomic Schema be shared? Yes, it can be shared between two OFSAA instances.

While setting a firewall, which ports must be opened for communication between the Web Server (Apache HTTP Server/ Oracle HTTP Server/ IBM HTTP Server) and the Web application server (WebSphere/ WebLogic/ Tomcat) for OFSAAI to operate properly?

The OFSAA Servlet port which is the same as the Web server port must be open. Also, the web application port must be open.

- **66.** Can I install an already installed application in a different infodom? No, it is not possible to install the same application in two different infodoms.
- 67. How can I configure the OFSAA application for High Availability? OFSAA can have active-passive high availability. For more details, refer Configuration for High Availability- Best Practices Guide.
- 68. During OFSAA installation should I provide a web application server's IP /Hostname and port or web server's IP/Hostname and port, if the Apache HTTP Server/ Oracle HTTP Server/ IBM HTTP Server are configured? In case the web server is configured, you must enter the Web Server IP Address/ Hostname and Port details during OFSAA installation. Here the Servlet port must be the same as the Web Server port.



If Web Server is not configured, the Web application server's IP Address/ Hostname and Port are required during the installation process. Here the Servlet port must be the same as the Web application server port.

69. Is "ReveleusAdminConsoleAgent" applicable for OFSAAI 8.1.2.0.0 and higher versions?

No, ReveleusAdminConsoleAgent is not applicable starting OFSAAI 7.3.3.0.0. There is a change in the way agentservers are managed through agentstartup.sh and agentshutdown.sh.

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

This error is displayed due to the following reasons:

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

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

- a. Delete the \$FIC_HOME/conf/Reveleus.SEC file.
- b. Shutdown the OFSAAI App service: cd \$FIC_APP_ HOME/common/ FICServer/bin ./stopofsaai.sh
- c. Start the Infrastructure Server in foreground directly on the server or through XWindows software using the command: ./startofsaai.sh
- d. Enter System Password.
- e. Enter the new Config schema password. The service starts and initializes if it can successfully connect to the DB and generates the Reveleus.SEC file.
- f. Post successful startup of the service, if required, the Infrastructure server may be shut down and restarted in the background using nohup mode.
- 71. What is the mechanism of log file sizing, changing the log file path, and creating backups of the log files? OFSAAI Log files created under \$FIC_APP_HOME/common/FICServer/logs and COESAAL DEBLOXED_APEA>/cCONTEXTwar>/logs is configurable in

<OFSAAI_DEPLOYED_AREA>/<CONTEXT.war>/logs is configurable in RevLog4jConfig.xml.

The default size of the log files (MaxFileSize) is set to 5000kb and the number of maximum backup log files (MaxBackupIndex) retained is set to 5, both of which are configurable. Increasing these parameters to a higher value must depend on the server hardware configurations and may reduce the performance.

To configure the Logs file size on the OFSAA Application server, follow these steps:

- a. Navigate to \$FIC HOME/conf where OFSAA is installed.
- b. Edit the following parameters in the RevLog4jConfig.xml file:
 - param name="fileName" : Enter the path where the Logs are to be generated.



- param name="size" : Provide the required file size.
- param name="max" : Provide the required number of backup files to be created. Example:

```
<RollingFile name="REVSERVERAPPENDER" fileName="<Path exists>/logs/
RevAppserver.log"
             filePattern="<Path exists>/logs/RevAppserver-
%i.log">
                <PatternLayout>
                   <Pattern> [%d{dd-MM-yy HH:mm:ss,SSS zzz aa}{GMT}]
[%-5level] [APP] [REVELEUS] %m%n</Pattern>
                </PatternLayout>
                <Policies>
                     <SizeBasedTriggeringPolicy size="5000"
KB"/>
                </Policies>
                <DefaultRolloverStrategy max="5"> <!-- number of
backup files -->
                </DefaultRolloverStrategy>
          </RollingFile>
```

- c. Navigate to \$FIC_HOME/ficweb/webroot/conf and configure the deployed area logs. Edit the following parameters in the RevLog4jConfig.xml file:
 - param name="file": Do not change this value.
 - param name="MaxFileSize" : Provide the required file size.
 - param name="MaxBackupIndex" : Provide the required number of backup files to be created.

Example:

```
<RollingFile name="REVSERVERAPPENDER" fileName="${sys:LOG HOME}/logs/
RevAppserver.log"
            filePattern="${sys:LOG HOME}/logs/RevAppserver-
%i.log">
             <PatternLayout>
              <Pattern> [%d{dd-MM-yy HH:mm:ss,SSS zzz aa}{GMT}]
[%-5level] [WEB] [REVELEUS]%m%n</Pattern>
             </PatternLayout>
             <Policies>
                     <SizeBasedTriggeringPolicy size="5000"
KB"/>
             </Policies>
             <DefaultRolloverStrategy max="5"> <!-- number of backup
files -->
             </DefaultRolloverStrategy>
          </RollingFile>
```

To configure the deployed area log file path, modify the value in the LOG_HOME_PATH parameter in the aai_setup_props table.

72. Can I point the environment with HTTP enabled to HTTPS after installation and vice versa?
Follow these steps:

Follow these steps:

- a. Create SSL related certificates and import to respective servers.
- **b.** Enable SSL on a desired Port (example 9443) on your existing and already deployed web application servers.
- c. Replace the protocol as https and new ssl port (FIC_SERVLET_PORT) configured and in all the URLs specified on the following files:
 - \$FIC HOME/ficapp/common/FICServer/conf/FICWeb.cfg
 - \$FIC_HOME/ficapp/icc/conf/WSMREService.properties
 - \$FIC HOME/ficdb/conf/MDBPublishExecution.properties
 - \$FIC HOME/ficdb/conf/ObjAppMap.properties
 - \$FIC HOME/utility/Migration/conf/WSMigration.properties
 - \$FIC_HOME/utility/WSExecution/conf/WSExecution.properties
- d. Replace XML attribute/Node values as specified on the following files:
 - \$FIC HOME/ficweb/webroot/WEB-INF/web.xml
 - FIC WEBSERVER PORT=9443
 - FIC WEBPROTOCOL=https
 - \$FIC_HOME/conf/LookUpServices.xml and \$FIC_
 - HOME/ficweb/webroot/conf/LookUpServices.xml
 - PORT="9443" PROTOCOL="https:"
- e. Log in to Config Schema and execute the following SQL command to replace protocol and SSL port.
 - SQL> update configuration cn set cn.paramvalue='9443' where cn.paramname='SERVLET ENGINE PORT';
 - SQL> update configuration cn set cn.paramvalue=replace(cn.paramvalue,'http:','https:') where cn.paramname='FormsManagerCacheReload';
 - SQL> update web_server_info ws set ws.servletport='9443',ws.servletprotocol='https';
- f. Create EAR/WAR file and Re-Deploy.
- **73.** What should I do if my HIVE connection fails with the following exception: java.sql.SQLException: [Cloudera][HiveJDBCDriver](500164) Error initialized or created transport for authentication:

[Cloudera][HiveJDBCDriver](500168) Unable to connect to server: GSS initiate failed.

com.ibm.security.krb5.KrbException, status code: 37

message: PROCESS_TGS at com.ibm.security.krb5.KrbTgsRep.<init>(KrbTgsRep.java:20)

This happens if there is clock skew between the client and the KDC server. To resolve this, there are two solutions:

Solution 1:

Synchronize the clocks between the servers. For more information, refer http://docs.oracle.com/cd/E19253-01/816-4557/setup-192/index.html

Solution 2:



- Set clock skew parameter on the server side (KDC) krb5.conf file and replace the same file in the HIVE_LIBRARY_PATH directory. Parameter value must be decided based on the time difference between the two machines.
- Get the epoch time on the two servers by firing "date +%s" on the command line.
- Clock skew param value must be chosen as a value sufficiently larger than the difference of the preceding two calculated values.
- Set "clock skew = <value>" in the /etc/krb5.conf on the KDC server.
- Restart Kerberos services.
- 74. What should I do if my schema creator log has the following exception: Failed to detect a valid hadoop home directory java.io.IOException: HADOOP_HOME or hadoop.home.dir are not set. at org.apache.hadoop.util.Shell.checkHadoopHome(Shell.java:302)

at org.apache.hadoop.util.Shell.<clinit>(Shell.java:327) at org.apache.hadoop.util.StringUtils.<clinit>(StringUtils.java:79) at org.apache.hadoop.security.Groups.parseStaticMapping(Groups.java:130) at org.apache.hadoop.security.Groups.<init>(Groups.java:94) at org.apache.hadoop.security.Groups.<init>(Groups.java:74) at org.apache.hadoop.security.Groups.getUserToGroupsMappingService(Groups.java:30 3) at org.apache.hadoop.security.UserGroupInformation.initialize(UserGroupInformation.ja va:283) at org.apache.hadoop.security.UserGroupInformation.setConfiguration(UserGroupInfor mation.java:311) at HdfsDbUtil.connect(HdfsDbUtil.java:162) at SchemaParserUtil.validateHiveConnection(SchemaParserUtil.java:1359) at SchemaParserUtil.checkAllPreChecks(SchemaParserUtil.java:1011) at Main.execute(Main.java:317) at Main.main(Main.java:145) This occurs when HADOOP_HOME environment variable is not set.

You can ignore this exception since we do not mandate to install HIVE where OFSAA is installed.

75. What should I do if the sliced data model upload takes a long time to complete? If the metadata cache size is set to a lower value than the actual count of each metadata type (hierarchy, dataset, dimension etc), then it gets into performance degrade issues. We have to increase the cache size for each metadata type according to the count in the environment.

Following are the parameters in DynamicServices.xml to be configured depends on the metadata count in your environment.

<PARAMETER NAME="HIERARCHY_NODE_LIMIT" VALUE="2000"/>
<PARAMETER NAME="ALIAS_CACHE_SIZE" VALUE="1000"/>
<PARAMETER NAME="DATASET_CACHE_SIZE" VALUE="2000"/>
<PARAMETER NAME="MEASURE_CACHE_SIZE" VALUE="3000"/>
<PARAMETER NAME="HIERARCHY_CACHE_SIZE" VALUE="2000"/>
<PARAMETER NAME="DIMENSION_CACHE_SIZE" VALUE="2000"/>
<PARAMETER NAME="CUBE_CACHE_SIZE" VALUE="1000"/>
<PARAMETER NAME="BUSINESSPROCESSOR_CACHE_SIZE" VALUE="2000"/>
<PARAMETER NAME="DERIVEDENTITY_CACHE_SIZE" VALUE="1000"/>

Metadata count can be derived based on the following queries:



select count(1) from metadata_master where metadata_version=0 --- for all metadata

select count(1) from metadata_master where metadata_version=0 and metadata_type=1 --- for measure

select count(1) from metadata_master where metadata_version=0 and metadata_type=2 --- for Dimension

select count(1) from metadata_master where metadata_version=0 and metadata_type=3 --- for HCY

select count(1) from metadata_master where metadata_version=0 and metadata_type=4 --- for DATASET

select count(1) from metadata_master where metadata_version=0 and metadata_type=59 --- for BP's

select count(1) from metadata_master where metadata_version=0 and metadata_type=54 --- for Alias

select count(1) from metadata_master where metadata_version=0 and metadata_type=5 --- for CUBES

select count(1) from metadata_master where metadata_version=0 and metadata_type=856 --- for Derived Entity

76. For LDAP authentication, which server connects with the LDAP server, the Application server (where ofsaai is installed), or Web application server (where EAR is deployed)? For LDAP authentication, the Application server (ficapp) connects with the LDAP

server.77. The LDAP server in the setup listens on secure protocol ldaps (port 636). I have

The LDAP server in the setup listens on secure protocol daps (port 636). Thave the root certificate of the LDAP server for SSL, and would like to know where to offload this certificate? You must import the certificate into the JDK/JVM used by Reveleus server in

ficapp layer.

78. How to relocate FTPSHARE directory, change IP HOST name, and deployed area in OFSAA?
You can run the PortC.jar utility. For more details, refer Change IP/ Hostname, Ports, Deployed Paths of the OFSAA Instance section in the OFS Analytical

Applications Infrastructure Administration Guide

- **79.** How do we identify the list of ports that are used by/configured in an OFSAA environment?
 - Navigate to \$FIC HOME directory on Target.
 - Refer to the PortsDef.log file.
- 80. What should I do if I get the following error message, "Error while fetching open cursor value Status : FAIL"? This error occurs while executing envCheck.sh because the user does not have

access to the V\$parameter. This error does not occur due to sysdba or non sysdba privileges provided they have access/grants to the V\$parameter.

- **81.** What should I do when an entity containing many attributes (>100 columns) is selected as a Source entity and the Data Mapping (T2T definition) save operation takes longer than expected with the hourglass in the UI continuously rotating?
 - a. Locate the webserver deployed area webroot/conf/excludeURLList.cfg file.



b. Modify the following entries:

[SQLIA]./dataIntegrator/ to [ALL]./dataIntegrator/

[SQLIA]./ETLExtractionServlet to

[ALL]./ETLExtractionServlet

- c. Save the changes and restart the webserver.
- d. Resave the definition.
- 82. What should I do if I get the following error message when I try to start the OLAP server: ./olapdataserver: error while loading shared libraries: libessapinu.so:

```
cannot open shared object file: No such file or directory FATAL ERROR :- OLAP DATA SERVER start up failed.
```

This error occurs when the OLAP component is not configured and the OLAP feature in OFSAA is not used. However, this error can be ignored.

83. What should I do if I get the error "FATAL ERROR-Problem with OFSAA Service" during the OFS_AAAI_PACK installation?

Increase the sleep counter (default value is 80) to a higher value in the following section of the OFS_AAAI_PACK/OFSAAIUpdate.sh file:

```
if [ $count -eq 0 ] ; then sleep 80;
count=` grep -i "FICServer Initialization Complete"
$FIC_HOME/ficapp/common/FICServer/bin/nohup.out|wc -l ` fi
if [[ $count -gt 0 ]] ; then echo OFSAA Service - OK
else
fi
echo FATAL ERROR-Problem with OFSAA Service exit 1
```

Application Pack 8.1.2.0.0 FAQs

- 1. What is an Application pack? An Application Pack is a suite of products. For more information, refer to Introduction.
- 2. Can I get a standalone installer for OFSAAI 8.1? No. AAI is part of every application pack and installs automatically.
- Where can I download OFSAA 8.1.2.0.0 Application Pack? You can download the OFSAAI 8.1.2.0.0 Application Pack from Oracle Software Delivery Cloud (OSDC).
- 4. What are the minimum system and software requirements for the OFSAA 8.1 Application Pack? Refer to Hardware and Software Requirements for more information.
- 5. Is my environment compatible with OFSAA 8.1.2.0.0 Application Pack? Environment Check utility performs the task. It is part of the install and can also be run separately.
- 6. Does the OFSAA 8.1.2.0.0 Application Pack support all Operating systems? Refer to the Hardware and Software Requirements section.
- 7. How can I install the OFSAA 8.1.2.0.0 Application Pack? Refer to Oracle Financial Services Advanced Analytical Infrastructure Installation And Configuration Guide.



- 8. Does this installation require any Third-party Softwares? For details on the third-party software tools used, see the OFSAA Licensing Information User Manual Release 8.1.2.0.0 available in the OHC Documentation Library.
- 9. What languages are supported during the OFSAA 8.1.2.0.0 Application Pack installation?

US English is the language supported.

10. What mode of installations OFSAA Application Pack supports? [that is., Silent, GUI]

OFSAA Application Packs support only Silent Mode.

- 11. Does OFSAA 8.1.2.0.0 Application Pack support Multi-tier Installations? OFSAA 8.1.2.0.0 supports only a single-tier installation. For more information refer to the OFS AAI FAQssection.
- Does this Application Pack validate all prerequisites required for this installation like Memory, Disk Space, and so on? Yes. The pre-requisite checks are done by the respective application pack installer.
- 13. What happens if it aborts during the installation of any application/products within an Application pack? You must restore the system and retrigger the installation
- 14. Does this Application pack 'Roll Back' if any application installation fails due to errors?

The rollback of installation is not supported.

- 15. Does the Application pack install all applications bundled? Only Application pack system which are enabled are installed. In order to enable other licensed Applications, you need to reinstall by making the flag as Y. See the Table 15: OFS_<APP PACK>.xml File Parameters, APP_ID/ ENABLE attribute for information on how to enable. However, in case of reinstallation to enable the other Applications, execution of the schema creation utility must be skipped if it does not include any additional sandboxes to be created.
- **16. Can I re-install any of the Application Packs?** You can retrigger in case of failure.
- **17.** Does this Application pack allow enabling/disabling any of the applications installed?

Yes, you can enable but you cannot disable once the product is enabled in an environment.

18. I have installed one application in an Application pack, can I install any of the new applications within the Application pack later?

Yes, the installation of additional applications is done by setting the flag as Y. See the Table 15: OFS_<APP PACK>.xml File Parameters, APP_ID/ ENABLE attribute for information on how to enable. However, in case of a reinstallation, to enable the other Applications, skip the execution of the schema creation utility if it does not include any additional sandboxes to be created.

19. How many OFSAA Infrastructures can be installed in a single server? There are no issue in installing separate OFSAAI installations, each with their own PFT/FTP installations and separate associated database instances and separate Web Server installations on the same server as long as adequate memory is allocated for each instance and as long as each OFSAAI installation is installed using a separate UNIX user and profile. Care must be taken when running multiple OFSAAI installations on a single server. Adequate memory is required for each



installation as several OFSAAI processes (model upload, DEFQ services, etc) take significant amounts of memory. So it depends on your server's memory.

- 20. Is it possible to install OFSAA 8.1.2.0.0 Application pack on an existing 'Infodom' where another OFSAA 8.1.2.0.0 application is installed? Yes. However, the Behavioral Detection Application Pack and Compliance Regulatory Reporting Application pack are the exceptions. They must be installed in a different Infodom.
- **21. Can I select an Infodom for the Application pack during installation?** Yes. You can select or change the required infodom.
- 22. Can I install all Application Packs in a 'Single Infodom'? Yes. But, the Behavioral Detection Application Pack and Compliance Regulatory Reporting Application Pack are the exceptions. They must be installed in a different Infodom.
- 23. Is it possible to install applications on different Infodom within the Application pack? (For example, I want to install LRM and MR in two infodoms) Applications within the application pack have to be installed in the same information domain in the same environment.
- 24. How many Infodoms can be created over a single OFSAA Infrastructure of 8.1.2.0.0?

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

25. Is the 'Data Model' bundled specifically to an Application pack or an individual application?

A merged data model for all applications within the application pack is bundled and uploaded.

26. Is it possible to install OFS Enterprise Modeling later? OFS Enterprise Modeling is a separate product and can be enabled as an option later

from any application pack that bundles Enterprise Modeling. For more information, see Enable Financial Services Enterprise Modeling on Another Application Pack.

27. Does the Application pack create a sandbox automatically for the required applications?

Yes, Sandbox creation is part of the application install process.

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

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

- **29. Can I upgrade AAI only?** Yes, you can upgrade AAI alone.
- 30. Can I upgrade one application within the Application Pack? (For example, I want to upgrade LRM in the Treasury Application pack, but not MR.) No, an upgrade is applied to all applications in the application pack.
- **31.** Is it possible to uninstall any Application from the Application pack? No, it is not possible to uninstall any Application from the Application Pack.
- **32. Can I uninstall the entire Application Pack?** No, you cannot uninstall the Application Pack.
- **33.** Is it possible to uninstall only the application and retain AAI in the installed environment?

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



- **34. Does Application Pack contain all Language Packs supported?** Language Packs must be installed on the application packs.
- 35. Can I install an Application Pack over another Application Pack (that is the same infodom or different infodom)? Yes, you can install an Application Pack over another Application Pack in the same information domain or different information domain. But Behavioral Detection Application Pack and Compliance Regulatory Reporting Application Pack, Asset Liability Management Application Pack, and Profitability Application Pack are the exceptions. They must be installed in a different Infodom.
- 36. What should I do if I get the following error message while running the schema creator utility, "HostName in input xml is not matching with the local hostname"?

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

37. What are the Java versions supported in OFSAAAI Application Pack version 8.1.2.0.0?

See the Hardware and Software Requirements section.

38. Is OFSAAAI Application Pack version 8.1.2.0.0 supported on Java 9 and Java 11?

For information about supported Java versions, see the Hardware and Software Requirements section.

39. What should I do when I get "[ERROR] - Error : APP Setup bin file failed." message during OFS_Application_PACK installation?

This is a generic error message that appears during application installation failure. You must check the installation log files for more information about what failed the installation.

However, if the message is displayed and the log files are not generated, this can be a temp directory issue. The resolution is that your UNIX administrator has to disable the NOEXEC option. The installers extract the installation files into the /tmp directory, and if NOEXEC is enabled, the execution of binaries will not happen in the directory and the installation fails. Re-run the installer after the configuration is changed. For detailed information, see the support note at https:// support.oracle.com/epmos/faces/DocumentDisplay?id=2340045.1.

Error Dictionary

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

OFSAAI installer performs all the pre-requisite validation check during installation. Any errors encountered in the process is displayed with an appropriate Error Code. You can refer to the Error Dictionary to find the exact cause and resolution to rectify the error.

This section includes the following topics:

- Access the Error Dictionary
- Error Code Dictionary



Access the Error Dictionary

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

- With the Installation pdf open, press Ctrl+F or select Edit > Find. The Find dialog is displayed as indicated.
- 2. Enter the error code that is displayed on the screen during Infrastructure installation.
- 3. Press Enter. The search results are displayed and highlighted.
- 4. View the details of the issues, its cause, and resolution specific to the error code. Repeat the step to find an answer to any other errors that you notice during installation. If you are not able to resolve the issue even after following the steps provided in the resolution, you can contact support.oracle.com along with log files and appropriate screenshots.

Error Code Dictionary

Error Code	Cause	Resolution
OFSAAI-1001	UNIX shell is not "korn" shell.	Change the shell type to "korn". Use the chsh UNIX command to change the SHELL type.
		Shell type can also be changed by specifying the shell path for the UNIX user in the /etc/passwd file.
		Note: The chsh command is not available in Solaris OS.
OFSAAI-1002	No proper arguments are available	Provide proper arguments. Invoke the Setup.sh file using SILENT.
		Example: ./Setup.sh SILENT
OFSAAI-1004	File .profile is not present in \$HOME.	Create the .profile file in the \$HOME directory, that is, in the home directory of the user.
OFSAAI-1005	OFSAAInfrastructure.bin file is not present in the current directory.	Copy the OFSAAInfrastructure.bin file into the installation kit directory.
OFSAAI-1006	CustReg.DAT file is not present in the current directory.	Copy the CustReg.DAT file into the installation kit directory.
OFSAAI-1007	OFSAAI_InstallConfig.xml file is not present in the current directory.	Copy the OFSAAI_InstallConfig.xml file into the installation kit directory.
OFSAAI-1008	validateXMLInputs.jar file is not present in the current directory.	Copy the validateXMLInputs.jar file into the installation kit directory.
OFSAAI-1009	log4j.xml file is not present in the current directory.	Copy the log4j.xml file into the installation kit directory.

Table 16-1 Error Code Dictionary



Error Code	Cause	Resolution
OFSAAI-1010	An unknown error occurred.	Make sure to provide a proper argument (SILENT) to the Setup.sh file.
OFSAAI-1011	XML validation failed.	Check the InfrastructurePreValidati ons.Log file for more details.
OFSAAI-1012	Property file with locale name does not exist.	Copy the MyResources_en_US.propert ies file to the setup kit directory and keep en_US in the LOCALE tag of the OFSAAI_InstallConfig.xml file.
OFSAAI-1013	OFSAAI_InstallConfig.xml/ OFSAAI_PostInstallConfig. xml file not found.	Copy the OFSAAI_InstallConfig.xml/ OFSAAI_PostInstallConfig. xml file to the setup kit directory.
OFSAAI-1014	XML node value is blank.	Make sure all node values except SMTPSERVER, PROXYHOST, PROXYPORT, PROXYUSERNAME, PROXYPASSWORD, NONPROXYHOST, or RAC_URL are not blank.
OFSAAI-1015	XML is not well-formed.	Execute the command dos2unix OFSAAI_InstallConfig.xml file to convert a plain text file from DOS/MAC format to UNIX format. OR Ensure that the
		OFSAAI_InstallConfig.xml file is valid. Try to open the file through a web browser for a quick way to check validity. If it is not getting opened, create a new OFSAAI_InstallConfig.xml file using the XML_Utility.jar file.
OFSAAI-1016	The user installation directory contains blank spaces.	Provide an installation path that does not contain spaces. Check the tag USER_INSTALL_DIR in the OFSAAI_InstallConfig.xml file. This path must not contain any spaces.

Table 16-1	(Cont.)	Error	Code	Dictionary
------------	---------	-------	------	------------



Error Code	Cause	Resolution
OFSAAI-1017	The user installation directory is invalid.	Provide a valid installation path. Check if you can create the directory mentioned in the USER_INSTALL_DIR tag value of the OFSAAI_InstallConfig.xml file.
		See the My Oracle Support reference document for a workaround on this issue: https:// mosemp.us.oracle.com/epmos/ faces/DocumentDisplay? _afrLoop=192791484383909&id =2412630.1&_afrWindowMode= 0&_adf.ctrl-state=u2t2m1rei_4.

Table 16-1	(Cont.)	Error Co	de Dictionary
------------	---------	----------	---------------



Index

