Oracle Financial Services Market Risk Measurement and Management

Installation Guide

Release 8.1.1.0.0

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ORACLE
Financial Services

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OFS Market Risk Measurement and Management Installation Guide

Document Control

Table 1: Document Version Control

Version Number	Revision Date	Change Log
1.0	March 2021	Created the document with instructions for the installation of the OFS MRMM Release 8.1.1.0.0.
2.0	March 2021	Replaced mandatory post-installation patch 32501347 with 32548944
3.0	September 2021	Added section - View OFSAA Product Licenses after Installation of Application Pack
4.0	December 2021	Added information about the log4j patch release.
5.0	November 2023	Updated Java tool options to be included in the .profile file for all versions JDK 11.0.20 and above updates (36018169).

Table of Contents

1 Preface

This section provides supporting information for the Oracle Financial Services Market Risk Measurement and Management Pack Installation Guide.

You can find the latest copy of this document in the OHC Documentation Library which includes all the recent additions or revisions (if any) done to date.

Before you begin the installation, ensure that you have access to My Oracle Support with the required login credentials to quickly notify us of any issues at any stage.

Topics:

1.1 Intended Audience

The OFS MRMM Installation Guide is intended for administrators, business users, strategists, data analysts, and implementation consultants who are responsible for installing and maintaining the application pack components.

This document assumes that you have experience installing enterprise components and basic knowledge of the following:

- Oracle Financial Services Market Risk Measurement and Management Pack components
- OFSAA architecture
- UNIX commands
- Database concepts
- Web server or web application server

1.2 Related Documents

We strive to keep this document and all other related documents updated regularly; visit the OHC Documentation Library to download the latest version available. The list of related documents is provided here:

- OHC Documentation Library **for OFS Market Risk Measurement and Management:**

  For existing customers of OFS Market Risk Measurement and Management (MRMM):

  - *OFS Market Risk Measurement and Management Application Pack 8.1.1.0.0 Release Notes*
  - *OFS Market Risk Measurement and Management Application Pack 8.1.1.0.0 Installation Guide*
  - *OFS Market Risk Measurement and Management Release 8.1.1.0.0 User Guide*

- OHC Documentation Library **for OFS AAAI Application Pack:**
  - *OFS Advanced Analytical Applications Infrastructure (OFS AAAI) Application Pack Installation and Configuration Guide*
  - *OFS Analytical Applications Infrastructure User Guide*
  - *OFS Analytical Applications Infrastructure Administration Guide*
  - *Oracle Financial Services Analytical Applications Infrastructure Environment Check Utility Guide*
- **Additional documents:**
  - OFSAA Licensing User Manual, Release 8.1.1.0.0
  - OFS Analytical Applications Technology Matrix8.1.1.0.0
  - OFS Analytical Applications Infrastructure Security Guide
  - OFS MRMM Security Guide Release 8.1.x
  - Oracle Financial Services Analytical Applications Infrastructure Cloning Guide
  - OFS MRMM Cloning Guide release 8.0.x
  - OFS MRMM Cloning Guide Release 8.1.x

1.3 Conventions

The following text conventions are used in this document.

Table 2: Document Conventions

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 need to update specific values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, file names, text that appears on the screen, or text that you enter.
Hyperlink	Hyperlink type indicates links to external websites and internal document links to sections.

1.4 Abbreviations

The following table lists the abbreviations used in this document.

Table 3: Abbreviations

Abbreviation	Meaning
BDP	Big Data Processing
DBA	Database Administrator
DDL	Data Definition Language
DEFQ	Data Entry Forms and Queries
DML	Data Manipulation Language
EAR	Enterprise Archive
EJB	Enterprise JavaBean
ERM	Enterprise Resource Management
FTP	File Transfer Protocol
HDFS	Hadoop Distributed File System
HTTPS	Hypertext Transfer Protocol Secure
J2C	J2EE Connector
J2EE	Java 2 Enterprise Edition
JCE	Java Cryptography Extension
JDBC	Java Database Connectivity
JDK	Java Development Kit
JNDI	Java Naming and Directory Interface
JRE	Java Runtime Environment
JVM	Java Virtual Machine
LDAP	Lightweight Directory Access Protocol
LHS	Left Hand Side
MFA	Multi-Factor Authentication
MOS	My Oracle Support
OFSAA	Oracle Financial Services Analytical Applications
OFSAAI	Oracle Financial Services Analytical Application Infrastructure
OFSAAAI	Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack
OFS MRMM	Oracle Financial Services Market Risk Measurement and Management
OHC	Oracle Help Center
OLAP	On-Line Analytical Processing

Abbreviation	Meaning
OLH	Oracle Loader for Hadoop
ORAAH	Oracle R Advanced Analytics for Hadoop
OS	Operating System
RAM	Random Access Memory
RDBMS	Relational Database Management System
RHEL	Red Hat Enterprise Linux
SFTP	Secure File Transfer Protocol
SID	System Identifier
SSL	Secure Sockets Layer
TNS	Transparent Network Substrate
URL	Uniform Resource Locator
VM	Virtual Machine
WAR	Web Archive
XML	Extensible Markup Language

Part I

Topics:

2 Introduction

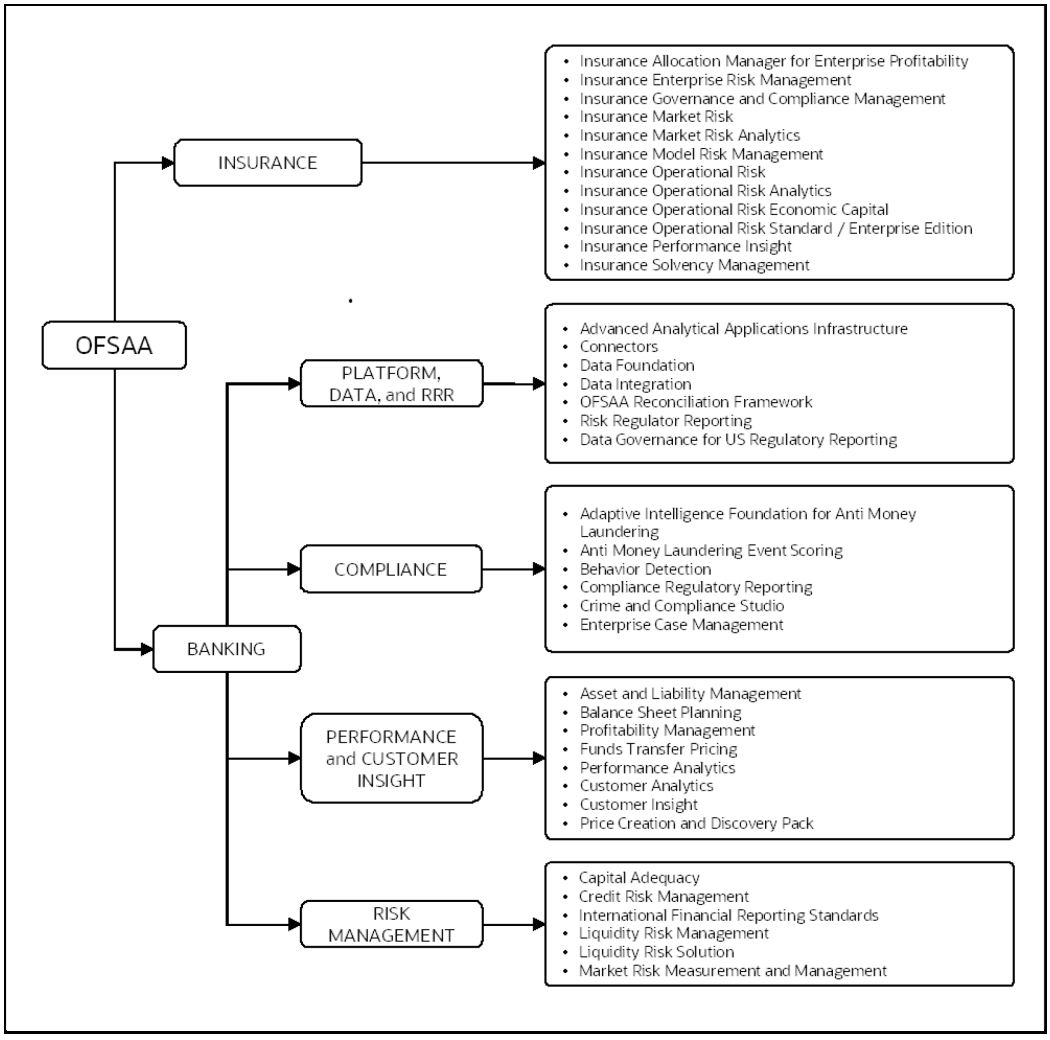
In today's turbulent markets, financial institutions require a better understanding of their risk-return, while strengthening competitive advantage and enhancing long-term customer value. Oracle Financial Services Analytical Applications (OFSAA) enable financial institutions to measure and meet risk-adjusted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

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

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

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

Figure 1: Application Packs of OFSAA



Topics:

2.1 Oracle Financial Services Analytical Applications Infrastructure (OFS AAI)

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

Topics:

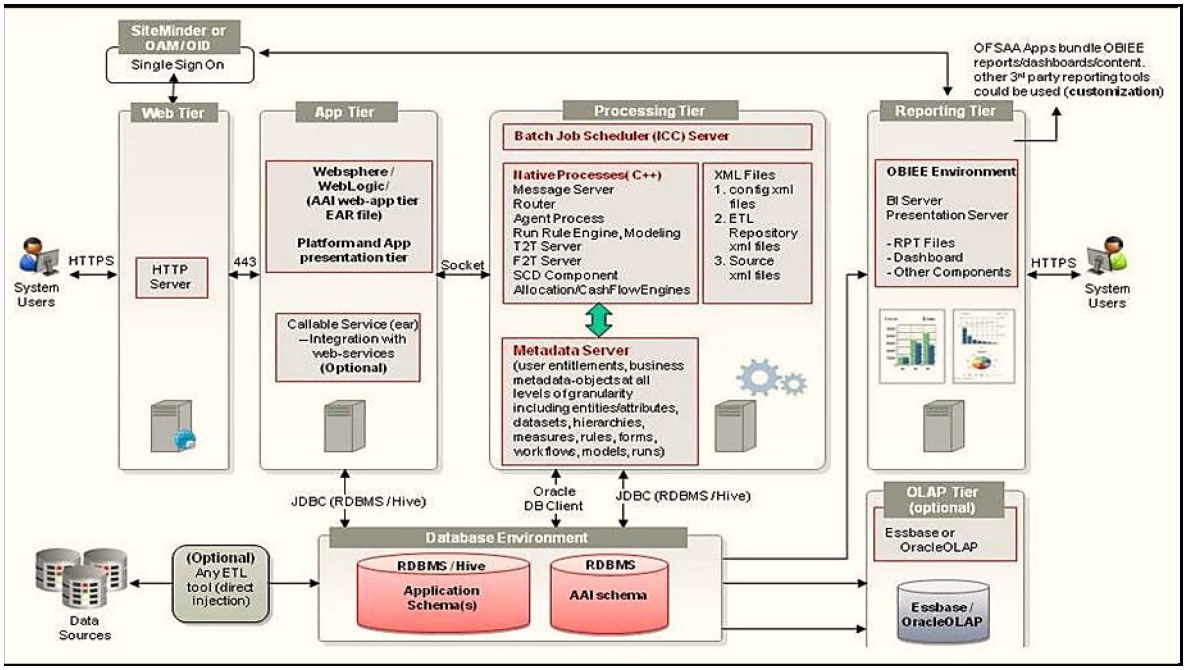
2.1.1 Components of OFSAA Infrastructure

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 run on the other. The UI and presentation layer are deployed on any of the supported J2EE Servers.

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

Figure 2: Components of OFSAAI



2.1.2 OFSAA Infrastructure High Availability

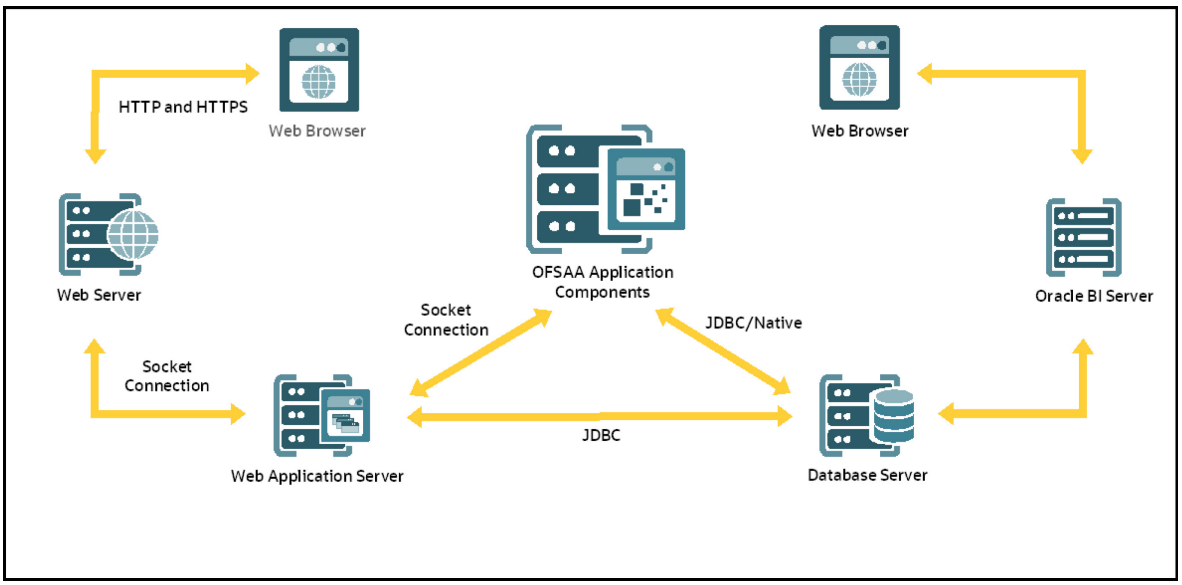
The current release of the OFSAA Infrastructure supports only the *Single Instance* installation for the Infrastructure components. However, the High Availability (HA) for the Database Server and/ or the Web application server clustering and deployment is supported in this release.

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.

2.1.3 Deployment Topology

The following figure illustrates the deployment topology of OFSAA application packs.

Figure 3: The logical architecture implemented for OFSAA Application Packs



2.2 About OFS Market Risk Measurement and Management Application Pack

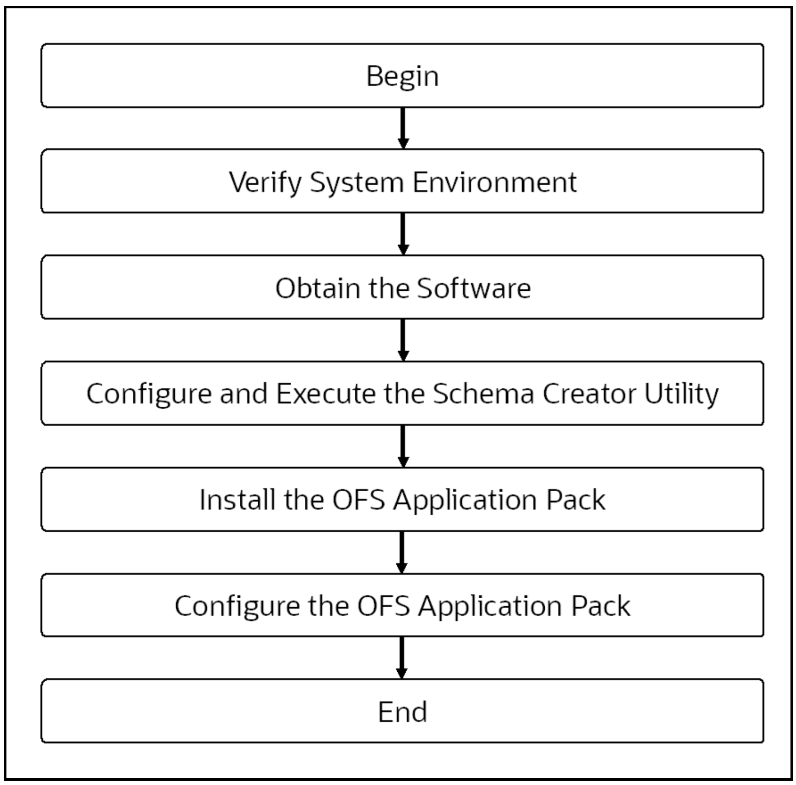
This application delivers extensive and robust computations, to enable financial institutions to effectively evaluate and manage market risk across the enterprise. OFS MRMM enables financial institutions to accurately measure, evaluate, monitor and manage market risk. Additionally, it enables financial institutions to proactively comply with the regulatory requirements of capital calculation as per the Internal Models Approach (IMA), and the latest market risk capital regulations such as Fundamental Review of Trading Book (FRTB). The application comes with pre-built reports and dashboards using OBIEE tool which enables financial institutions to monitor and track risk. It works as starter kit which can be utilized by users to further develop their own analytics.

2.3 Installation Overview

Users and Administrators who wish to install an OFS MRMM application pack 8.1.1.0.0 instance should download this installer. The following figure shows the order of procedures you must follow to install a new OFS MRMM Pack 8.1.1.0.0 instance.

> **NOTE** This installer supports both upgrade (from OFS MRMM 8.1.0.1.0 onwards) and fresh installation of OFS MRMM 8.1.1.0.0.

Figure 4: Installation Flow



2.4 OFS AAI Extension Pack

The Oracle Financial Services Analytical Applications Infrastructure Extension (OFS AAIE) Pack adds a set of new advanced features for 8.1.1.0.0 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 AAIE Release Notes and Installation Guide on the OHC Documentation Library.

2.5 Installation and Upgrade Scenarios

Release 8.1.1.0.0 of OFS MRMM 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.

Table 4: Release 8.1.1.0.0 Installation and Upgrade Scenarios

Scenario	Installation and Upgrade Instructions
New Installation	
Installing Release 8.1.1.0.0 application pack for the first time (new installation).	1. Prepare for the Installation. 2. Execute the Schema Creator Utility. 3. Install the OFS MRMM Application Pack.
Install OFS MRMM Application Pack v8.1.1.0.0 on an Existing OFSAA Instance You have already installed an application pack from release 8.1.1.0.0 and now you want to install another application pack from Release 8.1.1.0.0. Example: OFS ALM Pack is already installed and now you want to install OFS MRMM Pack.	1. Run the schema creator utility ONLY for the new pack. 2. Update the `OFS_MRMM_PACK.xml` file for the newly licensed pack. 3. Update the `Silent.props` file of the newly licensed pack. 4. Trigger the Release 8.1.1.0.0 installation.
Upgrade Installation	
Upgrade an already installed application pack from OFS MRMM 8.1.0.1.0 You are upgrading the application pack from Release 8.1.0.1.0 or later to Release 8.1.1.0.0. Example: You are on release 8.1.0.1.0 and now want to upgrade to Release 8.1.1.0.0.	1. Update the `Silent.props` file. 2. Trigger the Release 8.1.1.0.0 installation. 3. Update the .profile file.

2.6 Compatibility Matrix

This table lists the applications or app-combinations that must not be installed on a single infodom.

Table 5: MRMM 8.1.1 Application Compatibility Matrix

If you are installing	Do not Install the Listed Application in the Same Environment
OFS_MRMM_PACK	None

NOTE If you are upgrading the OFSAA Application Pack to release v8.1.1.0.0, you must upgrade the other packs installed in the same environment to release v8.1.1.0.0, to ensure successful deployment.

3 Complete Installation Checklist

For a successful installation, perform the steps listed in the Complete Installation Checklist. You can use this checklist to have a quick glance at everything that you will be doing to install this application. The link provided in each step takes you to a section either within this document or to another referenced document.

Table 6: Complete Installation Checklist

Sl. No.	Pre-installation Activity
1	Install all the prerequisite hardware and software given in the OFS Analytical Applications 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	Create the Installation, Download, and Metadata Repository directories: • Installation directory • Temporary directory • Staging Area/Metadata Repository directory • Download directory
7	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
8	Update the following Environment Settings required for the installation in the `.profile` file: • Java settings • Oracle Database Server and Client settings • Add TNS entries in the `tnsnames.ora` file • Oracle Essbase settings • Time Zone settings
9	Download the installer kit.
10	Extract the installer kit.

Sl. No.	Installation Activity
1	Configure the `OFS_MRMM_PACK.xml` file.
2	Configure the `OFS_MRMM_SCHEMA_IN.xml` file.
3	Execute the Schema Creator Utility in Online, Offline modes and verify the log file.
4	Configure the `Silent.props` file.
5	Configure the `OFSAAI_InstallConfig.xml` file.
6	Trigger the application installation.
7	Verify the installation logs.

Sl. No.	Post-installation Activity
1	Verify that all patches are successfully installed.
2	Back up the `OFS_MRMM_SCHEMA_IN.xml`, `OFS_MRMM_SCHEMA_OUTPUT.xml`, and `Silent.props` files.
3	Stop the OFSAA Infrastructure services.
4	Start the OFSAA Infrastructure services.
5	Configure the webserver.
6	Configure the Resource Reference in web application servers.
7	Configure the Work Manager in the web application servers.
8	Create and deploy EAR/WAR files.
9	EAR/WAR File - Build Once and Deploy Across Multiple OFSAA Instances.
10	Access the OFSAA application.
11	Configure excludeURLList.cfg file.
12	Configure Tomcat.
13	Change the ICC batch ownership.
14	Add TNS entries in the `tnsnames.ora` file.
15	Update OBIEE URL.
16	Create and Deploy the Application Pack Web Archive.
17	Set Data Redaction in OFS MRMM.
18	Implement Data Protection in OFSAA.
19	Install Numerix.
20	Start Numerix Servers.
19	Post-deployment Configuration. • OBIEE Configuration – Deploy OFS MRMM Analytics. • Logging as System Administrator.

Sl. No.	Post-installation Activity
	• Create Application Users. • Map the Application User (or Users) to User Groups. • MRMM Pack User Groups.

Sl. No.	Additional COnfiguration Activity
1	Add FTP/SFTP Configuration for File Transfer
2	Configure the Infrastructure Server Memory.
3	Retrieve Patch Information.
4	Set OLAP Data Server Configuration.
5	Change IP or Hostname, Ports, Deployed Paths of the OFSAA Instance.
6	Configure the Infrastructure LDAP Configuration.
7	Configure and deploy the OFSAAI web services.
8	Enable Parallel Execution of DML statements
9	Configure the Message Details in the Forms Designer.
10	Clear the application cache.
11	Configure password changes.
12	Configure Java Virtual Machine.
13	Configure Internal Service (Document Upload or Download).

4 Hardware and Software Requirements

For a list of all the hardware and software requirements including operating systems, database, web servers, and web application server versions for which this release of the OFS MRMM Applications Pack is qualified can be found in the OFS Analytical Applications Technology Matrix.

Topics:

> **NOTE** OFS MRMM Application Pack installation can be performed on both Virtual and Physical servers.

OFS MRMM application pack recommends the following software combinations for deployment.

Table 7: Recommended Software Combination

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

> **NOTE** OFS MRMM Release 8.1.1 is not compatible with the Internet Explorer web browser.

4.1 Third-party Licensing Information

For more information about the third-party software tools used in OFS MRMM, see the OFSAA Licensing Information User Manual Release 8.1.1.0.0.

4.2 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 information about downloading and using this utility, see the OFSAA Environment Check Utility Guide.

5 Pre-installation

This chapter provides the necessary information to review before installing the OFS MRMM Pack 8.1.1.0.0.

Topics:

> **NOTE** When merging the lower version of an application with an integrated data model, retain the larger size of column length.

5.1 Pre-Installation Checklist

You can use this checklist to have a quick glance at everything that you will be doing prior to installing this application. The link provided in each step takes you to a section either within this document or to another referenced document.

The Installer Environment Check utility notifies you if any requirements are not met.

Table 8: Pre-Installation Checklist

Sl. No.	Pre-Installation Activity
1	Install all the prerequisite hardware and software given in the OFS Analytical Applications 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	Create the Installation, Download, and Metadata Repository directories: • Installation directory • Temporary directory • Staging Area/Metadata Repository directory • Download directory

Sl. No.	Pre-Installation Activity
7	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
8	Update the following Environment Settings as required for the installation in the `.profile` file: • Java settings • Oracle Database Server and Client settings • Add TNS entries in the `tnsnames.ora` file • Oracle Essbase settings • Time Zone settings
9	Download the installer kit.
10	Extract the installer kit.

5.2 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

5.3 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 installation.

Table 9: Web Application Server Settings

Description	Example Value
For WebSphere, specify the WebSphere path as `<WebSphere profile directory>/installedApps/<NodeCellName>`.	`/data2/test//WebSphere/AppServer/profiles/<Profile_Name>/installedApps/aiximfNode01Cell`, where aix-imf is the Host name.
For WebLogic, specify the WebLogic home directory path.	`/<WebLogic home directory path>/bea/wlserver_10.3`

Description	Example Value
For Tomcat, specify the Tomcat directory path till `/webapps`.	`/oradata6/ revwb7/tomcat/webapps/`

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

5.4 Web Server Settings

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

Table 10: Web Server Settings

Description	Example Value
Apache HTTP Server/ Oracle HTTP Server/ IBM HTTP Server	Configure the HTTP Server and note down the IP or 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.

5.5 Create the Installation, Download, and Metadata Repository Directories

To install OFS MRMM, 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.

5.6 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.

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

Topics:

5.6.1 Configure Operating System and File System Settings

The following table displays the required settings for operating system and file system.

Table 11: 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.

Parameter	Configuration Action

File Descriptor Settings	In the `sysctl.conf` file, to change the number of file descriptors, do the following as the root user:
	1. Edit the following line in the `/etc/sysctl.conf` file:
	`fs.file-max = <value>`
	where `<value>` is greater than 15000
	2. 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.

Total Number of Process Settings	In the `sysctl.conf` file, set the value to greater than 4096. **NOTE:** The value specified here is the minimum value to be set for the installation process to go forward. For other modules, this value may depend on the available resources and the number of processes executed in parallel.
Port Settings	Default port numbers to be enabled on the system are 6500, 6501, 6505, 6507, 6509, 6510, 6666, 9999, and 10101.
.profile permissions	You must have 755 permission on the `.profile` file.
OS Locale	**Linux**: en_US.UTF-8 To check the locale installed, execute the following command: `locale -a | grep -i en_US.utf`

5.6.2 Configure the Environment Settings

This section provides information to configure the environment settings before installation.

Topics:

5.6.2.1 Java Settings

The following table displays the Java settings required for installation.

Table 12: 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.	`JAVA_HOME=/scratch/jdk<<version>>/jre` For example: `PATH=/usr/java/jre1.8.0_221/bin:$ORACLE_HOME/bin:$PATHJAVA_HOME=/scratch/jdk<<version>>/jre`
In the .profile file, set the Java tool options for all versions JDK 11.0.20 and above updates	JAVA_TOOL_OPTIONS="Djdk.util.zip.disableZip64ExtraFieldValidation=true"

In the `.profile` file, set PATH to include the Java Runtime Environment bin path.	`JAVA_BIN=/scratch/<<version>>/jre/bin`
	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 *Enabling Unlimited Cryptographic Policy* section from the OFS Analytical Applications Infrastructure Administration and Configuration Guide.

5.6.2.2 Oracle Database Server and Client Settings

The following table displays the Oracle Database server and client settings required for installation.

Table 13: 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`

Description	Example Value
OFSAA Processing Server	ORACLE_HOME must be set in the `.profile` file and point to appropriate Oracle DB Client installation. PATH in the .profile file must be set to include the appropriate `$ORACLE_HOME/bin` path. Ensure that an entry (with SID/ SERVICE NAME) is added in the `tnsnames.ora` file.

5.6.2.3 TNS entries in the tnsnames.ora File

The section includes information about the TNS entries in the `tnsnames.ora` file.

Table 14: TNS entries in the tnsnames.ora File

Description	Example Value
Ensure that an entry (with SID or SERVICE NAME) is added in the `tnsnames.ora` file on the OFSAA server.	`<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> =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = <HOST NAME>)(PORT = <PORT
NUMBER>))
    )
    (CONNECT_DATA =
      (SERVICE_NAME = <SID NAME>)
    )
  )

<ATOMICSCHEMANAME> =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = <HOST NAME>)(PORT = <PORT
NUMBER>))
    )
    (CONNECT_DATA =
      (SERVICE_NAME = <SID NAME>)
    )
  )
```

NOTE The ATOMIC SCHEMA NAME must be the same as defined in the `OFS_MRMM_SCHEMA_IN.xml` file.

5.6.2.4 Oracle Essbase Settings

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

Table 15: Oracle Essbase Settings

Description	Example Value
ARBORPATH to point to an appropriate Oracle Essbase Client installation.	`PATH=$PATH:$ARBORPATH/bin`
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/MiddlewareHo me/EPMSystem11R1/common/EssbaseRTC-64/11.1.2.0` `export HYPERION_HOME`

5.6.2.5 Time Zone Settings

In the `.profile` file, set the Time Zone parameter to indicate the time zone of your region or location.

Table 16: Time Zone Settings

Description	Example Value
Time Zone	TZ=Asia/Calcutta

5.6.2.6 Mandatory Patches

The following table includes information about the mandatory patches that must be applied.

Table 17: Mandatory Patches

One-Off Patch	Description
32548944	Download this mandatory OFSAAI One-off patch from My Oracle Support (MOS). This is a mandatory post-installation patch.

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

5.7 Download the OFS MRMM Application Pack Installer and Erwin Data Model

To download the OFS MRMM Applications Pack Installer Release 8.1.1.0.0 (Bug Number: **32457594**), follow these steps:

1. Log in to the My Oracle Support (MOS) with a valid Oracle account.
2. Enter Oracle Financial Services Market Risk Measurement and Management in the search box.
3. Download the installer archive and copy (in Binary mode) to the download directory that exists in the OFS MRMM installation setup.

> **NOTE** Download the OFS MRMM erwin data model patch **32457611** from My Oracle Support. You can search for the patch number in the **Patches and Updates** tab and download.

> **ATTENTION** On the 10th of December 2021, Oracle released Security Alert CVE-2021-44228 in response to the disclosure of a new vulnerability affecting Apache Log4J 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.

5.8 Extract the Software

You must be logged in to the UNIX operating system as a non-root user to perform the following software extraction steps:

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

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

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

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

3. Assign execute (751) to the file using the following command:

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

For example: `chmod 751 unzip_sparc`

4. Extract the contents of the OFS MRMM Application Pack Release 8.1.1.0.0 installer archive file in the download directory using the following command:

   ```
   unzip OFS_MRMM_8.1.1.0.0_LINUX.zip
   ```

5. Navigate to the download directory and assign execute permission to the installer directory using the following command:

   ```
   chmod -R 755 OFS_MRMM_PACK
   ```

6 Installation

This section provides detailed steps to install the OFS MRMM Application Pack.

Topics:

6.1 Installation Checklist

You can use this checklist to have a quick glance at everything that you will be doing to install this application. The link provided in each step takes you to a section either within this document or to another referenced document.

Table 18: Installation Checklist

Sl. No.	Installation Activity
1	Configure the `OFS_MRMM_PACK.xml` file.
2	Configure the `OFS_MRMM_SCHEMA_IN.xml` file.
3	Execute the Schema Creator Utility in Online, Offline modes and verify the log file.
4	Configure the `Silent.props` file.
5	Configure the `OFSAAI_InstallConfig.xml` file.
6	Trigger the application installation.
7	Verify the installation logs.

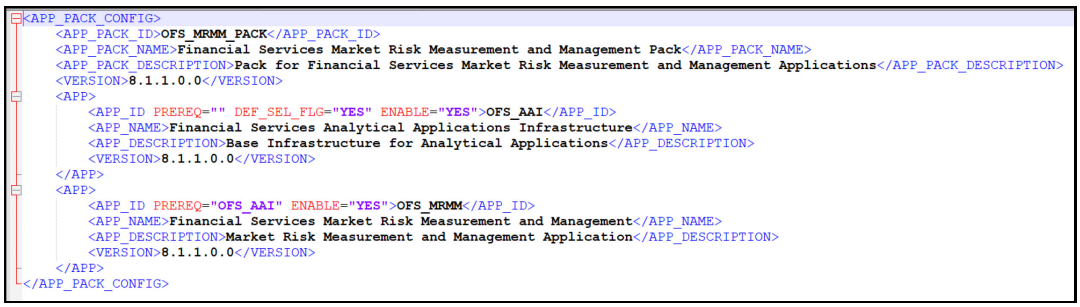
6.2 Configure the OFS_MRMM_PACK.xml File

The `OFS_MRMM_PACK.xml` file contains details on the various products that are packaged in the MRMM Application Pack. This section details the various tags and parameters available in the file and the values that must be updated. Before installing the MRMM Application Pack, it is mandatory to update this file.

To configure the `OFS_MRMM_PACK.xml` file, follow these steps:

1. Navigate to the `OFS_MRMM_PACK/conf` directory.
2. Open the `OFS_MRMM_PACK.xml` file in a text editor.

Figure 5: Sample OFS_MRMM_PACK.xml File



```
<APP_PACK_CONFIG>
    <APP_PACK_ID>OFS_MRMM_PACK</APP_PACK_ID>
    <APP_PACK_NAME>Financial Services Market Risk Measurement and Management Pack</APP_PACK_NAME>
    <APP_PACK_DESCRIPTION>Pack for Financial Services Market Risk Measurement and Management Applications</APP_PACK_DESCRIPTION>
    <VERSION>8.1.1.0.0</VERSION>
    <APP>
        <APP_ID PREREQ="" DEF_SEL_FLG="YES" ENABLE="YES">OFS_AAI</APP_ID>
        <APP_NAME>Financial Services Analytical Applications Infrastructure</APP_NAME>
        <APP_DESCRIPTION>Base Infrastructure for Analytical Applications</APP_DESCRIPTION>
        <VERSION>8.1.1.0.0</VERSION>
    </APP>
    <APP>
        <APP_ID PREREQ="OFS_AAI" ENABLE="YES">OFS_MRMM</APP_ID>
        <APP_NAME>Financial Services Market Risk Measurement and Management</APP_NAME>
        <APP_DESCRIPTION>Market Risk Measurement and Management Application</APP_DESCRIPTION>
        <VERSION>8.1.1.0.0</VERSION>
    </APP>
</APP_PACK_CONFIG>
```

3. Configure the `OFS_MRMM_PACK.xml` file as mentioned in the following table.

Table 19: OFS_MRMM_PACK.xml File Parameters

Tag Name or Attribute Name	Description	Mandatory (Y or 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_DESCRIPTION	Unique Application Pack Description	Y	Unique Seeded Value. Do not modify this value.
VERSION	Unique release version	Y	Unique Seeded Value. Do not modify this value.
APP	Unique Application Entries	Y	Unique Seeded Value. Do not modify this value.
APP_ID	Unique Application Identifier	Y	Unique Seeded Value. Do not modify this value.
APP_ID/ PREREQ	Prerequisite Application/ Product	Y	Unique Seeded Value. For most applications, the prerequisite that is set is OFSAAAI. 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.

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Comments
APP_ID/ DEF_SEL_FLAG	Default Selected Flag	Y	In all Application Packs, Infrastructure requires this value to be set to YES. Do not modify this value.
APP_ID/ ENABLE	Enable Application or Product	Y	• 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 or Product cannot be disabled once enabled. Only Applications/Products which are enabled are installed. In order to enable other licensed Applications/Products, you need to reinstall by making the flag as Y for the App_ID. However, in case of reinstallation to enable the other Applications/Products, execution of the schema creation utility must be skipped if it does not include any additional sandboxes to be created.
APP_NAME	Unique Application or Product Name	Y	Unique Seeded Value. Do not modify this value.
APP_DESCRIPTION	Unique Application or Product Name	Y	Unique Seeded Value. Do not modify this value.
VERSION	Unique release version	Y	Unique Seeded Value. Do not modify this value.

6.3 Configure the Schema Creator Utility

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

> **NOTE** The Schema creator job needs to be run first, if you are doing MRMM fresh installation in a different infodom. It will append the new artifacts in the existing instance.

Configure and execute the schema creator utility before installing the OFSAA Application Pack.

Topics:

- Configure Schema Creator Utility for RDBMS Installation

6.3.1 Prerequisites

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

- Oracle User ID and Password with SYSDBA privileges
- JDBC Connection URL for RAC or Non-RAC database
- The HOSTNAME or IP of the server on which OFSAA is being installed.
- It is recommended to set the PGA_AGGREGATE_LIMIT database-parameter value sufficiently when Oracle 18c or 19c is installed.
- You must add a TNS entry before the installation.
- You must create a directory named `ftpshare`.

6.3.2 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_MRMM_SCHEMA_IN.xml` file.

You can configure the following types of schemas:

- **CONFIG**: This schema holds the entities and other objects required for OFSAA setup configuration information. Only one CONFIG schema per OFSAA instance is permitted.
- **ATOMIC**: This schema holds the data model entities. One ATOMIC schema is attached to one Information Domain. You can have multiple ATOMIC schemas for a single OFSAA instance.

6.3.2.1 Configure the OFS_MRMM_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_MRMM_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 `MRMM_SCHEMA_IN.xml` file, follow these steps:

1. Log in to the system as a non-root user.
2. Navigate to the `OFS_MRMM_PACK/schema_creator/conf` directory.

Figure 6: Sample OFS_MRMM_SCHEMA_IN.xml File

```
<APPPACKSCHEMA>
    <APP_PACK_ID>OFS_MRMM_PACK</APP_PACK_ID>
    <IS_TCPS>FALSE</IS_TCPS>
    <JDBC_URL></JDBC_URL>
    <JDBC_DRIVER>oracle.jdbc.driver.OracleDriver</JDBC_DRIVER>
    <HOST></HOST>
    <SETUPINFO NAME="DEV" PREFIX_SCHEMA_NAME="N" />
    <PASSWORD APPLYSAMEFORALL="Y" DEFAULT="" />
    <ADV_SEC_OPTIONS>
        <OPTION NAME="TDE" VALUE="FALSE"/>
        <OPTION NAME="DATA_REDACT" VALUE="TRUE" />
    </ADV_SEC_OPTIONS>
    <SCHEMAS>
        <SCHEMA TYPE="CONFIG" NAME="ofsaaconf" PASSWORD="" APP_ID="OFS_AAI" DEFAULTTABLESPACE="USERS" TEMPTABLESPACE="TEMP" QUOTA="10G"  />
        <SCHEMA TYPE="ATOMIC" NAME="ofsaaatm" PASSWORD="" APP_ID="OFS_MRMM" APP_GRP="1" DEFAULTTABLESPACE="USERS" TEMPTABLESPACE="TEMP"
        INFODOM=""  QUOTA="10G"/>
    </SCHEMAS>
</APPPACKSCHEMA>
```

3. Edit the `OFS_MRMM_SCHEMA_IN.xml` file using a text editor and configure the values as mentioned in the following table.
4. Save the file.

> **NOTE** On successful execution of the utility, the passwords entered in the `OFS_MRMM_SCHEMA_IN.xml` file are nullified.

Table 20: OFS_MRMM_SCHEMA_IN.xml file Parameters

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Default Value or Permissible Value	Comments
<APP_PACK_ID>	Seeded unique ID for the OFSSAA Application Pack	Y	OFS_MRMM_PACK	Do not modify this value.
<IS_TCPS>	Enter if the TCPS configuration is required.	Y	Seeded, with FALSE as the default value.	Do not modify this value.
<JDBC_URL>	Enter the JDBC URL. **NOTE:** You can enter the following JDBC URL type: RAC or NON-RAC enabled database connectivity 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 PTION=(ADDRESS_ LIST=(ADDRESS=(PROT OCOL=TCP)(HOST=[HO ST])(port=[PORT]))(ADD RESS=(PROTOCOL=TCP) (HOST=[HOST])(PORT=[PORT]))(LOAD_ BALANCE=yes)(FAILOV ER=yes))(CONNECT_ DATA=(SERVICE_ NAME=[SERVICE]))) For example: jdbc:oracle:thin:@//dbhos t.server.com:1521/service 1 or jdbc:oracle:thin:@//dbsho st.server.com:1521/scan-1 or jdbc:oracle:thin:@(DESCRI PTION=(ADDRESS_ LIST=(ADDRESS=(PROT OCOL=TCP)(HOST=dbhost1.server.com) (port=1521))(ADDRESS=(PROTOCOL=TCP)(H OST=dbhost2.s erver.com)(PORT=1521))(	Ensure that you add an entry (with SID or SERVICE NAME) in the `tnsnames.ora` file on the OFSAA server. The entry must match the SID or SERVICE NAME used in the JDBC URL. Ensure that you have configured the JDBC URL as follows: `jdbc:oracle:thin:/@`

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Default Value or Permissible Value	Comments
			LOAD_BALANCE=yes)(FAILOVER=yes))(CONNECT_DATA=(SERVICE_NAME=service1))) or jdbc:oracle:thin:/@	
<JDBC_DRIVER>	The name of the driver is seeded.	Y	**Example**: oracle.jdbc.driver.OracleDriver	Only JDBC Thin Driver is supported. Do not modify this value.
<HOST>	Enter the Hostname or IP Address of the system on which you are installing the OFSAA components.	Y	Hostname or IP Address	
<SETUPINFO>/PREFIX_SCHEMA_NAME	Identifies whether the value specified in <SETUPINFO>/NAME attribute must be prefixed to the schema name.	N	YES or NO	The default value is YES.
<SETUPINFO>/NAME	Enter the acronym for the type of implementation. 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_ofsaaconf, uat_ofsaatm.	Y	Seeded, with REG PREFIX_SCHEMA_NAME="N as the default value. Accepts strings with a minimum length of two and a maximum of four. **Example**: DEV, SIT, PROD	This message 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.

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Default Value or Permissible Value	Comments
<PASSWORD>/ DEFAULT*	Enter the password if you want to set a default password for all schemas. You also must set the APPLYSAMEFORALL attribute as Y to apply the default password for all the schemas.	N	The maximum length allowed is 30 characters. Special characters are not allowed.	On successful execution of the utility, the entered password in the `OFS_<APP PACK>_SCHEMA_IN.xml` file is cleared.
<PASSWORD>/ APPLYSAMEFORALL	If you have entered Y in APPLYSAMEFORALL attribute and also have specified individual passwords for all the schemas, then the specified individual passwords will take precedence.	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 N, provide individual passwords for all schemas.	Setting this attribute value is mandatory if the DEFAULT attribute is set.
<SCHEMA>/TYPE	The types of schemas supported in this release are ATOMIC, CONFIG, SANDBOX, and ADDON. By default, the schemas types are seeded based on the Application Pack.	Y	ATOMIC or CONFIG	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 details and other Metadata information. Multiple ATOMIC schemas can exist in the file.

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Default Value or Permissible Value	Comments
<SCHEMA>/NAME	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 SETUPINFO/ NAME attribute. SCHEMA NAME must be the same for all the ATOMIC Schemas of the applications within an Application Pack.	Y	Seeded, with OFSAACONF and OFSAAATM as the default value. The permissible length is 15 characters and only alphanumeric characters are allowed. No special characters 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 created is 'uat_ofsaatm'. NAME must be the same where APP_GRP=1 for all SCHEMA tags (Not applicable for this Application Pack).
<SCHEMA>/PASSWORD	Enter the password of the schema to be created. If this attribute is left blank, then the password specified in the <PASSWORD>/DEFAULT attribute is taken as the Schema Password.	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.
<SCHEMA>/APP_ID	The Application ID is seeded based on the Application Pack.	Y	Unique seeded values are: OFS_AAI OFS_MRMM	Identifies the Application or Product for which the schema is being created. Do not modify this attribute value.
<SCHEMA>/DEFAULTTABLESPACE	Enter the available default tablespace for DB User. If this attribute is left blank, then USERS is set as the default tablespace.	N	Seeded, with USERS as the default value. Any existing valid tablespace name is Permissible.	Modify this value to associate any valid tablespace with the schema.

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Default Value or Permissible Value	Comments
<SCHEMA>/TEMPTABLESPACE	Enter the available temporary tablespace for DB User. If this attribute is left bank, TEMP is set as the default tablespace.	N	Seeded, with TEMP as the default value. Any existing valid temporary tablespace name is Permissible.	Modify this value to associate any valid tablespace with the schema.
<SCHEMA>/QUOTA	Enter the quota to be set on the DEFAULTTABLESPACE attribute for the schema or user. By default, the quota size is set to 500M. Minimum: 500M or Unlimited on default Tablespace.	N	Seeded, with 10G as the default value. **Example**: 600M/m 20G/g UNLIMITED/unlimited	Modify this value to grant the specified quota on the mentioned tablespace to the user.
<SCHEMA>/ INFODOM	Enter the name of the Information Domain to associate this schema. The schema creator utility automatically derives an Information Domain Name based on the Application Pack if no value is specified for this attribute.	N	Permissible length is 16 characters and only alphanumeric characters are allowed. No special characters are allowed.	
<ADV_SEC_OPTIONS> /	Parent tag to hold Advance Security Options.	N		Uncomment the tag and edit if you want to add security options. For example, TDE and Data Redact. For details, see the example in the comments for the <TABLESPACE>/ENCRYPT tag.
<ADV_SEC_OPTIONS> /TDE	Tag to enable or disable TDE.	N	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> /DATA_REDACT	Tag to enable or disable the Data Redaction feature.	N	The default is TRUE. To disable DATA_REDACT, set this to FALSE.	Ensure this tag is not commented if you have uncommented<ADV_SEC_OPTIONS>.

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

<TABLESPACE>/ENCRYPT	Specifies if the tablespace (or tablespaces) must be encrypted using TDE	Y	ON or OFF	Set to ON to ensure that the tablespaces when created are encrypted using TDE.
				NOTE: Encryption of tablespaces requires 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 NAME="TDE" VALUE="FALSE"/>`
				`<OPTION NAME="DATA_REDACT" VALUE="FALSE" />`
				`</ADV_SEC_OPTIONS>`

Tag Name or Attribute Name	Description	Mandatory (Y or N)	Default Value or Permissible Value	Comments
				<TABLESPACES> <TABLESPACE NAME="OFS_AAI_TBSP_1" VALUE="TS_USERS1" DATAFILE="/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="/scratch/ora19c/app/oracle/oradata/OFSPQA19cDB/ts_users2.dbf" SIZE="500M" AUTOEXTEND="ON" ENCRYPT="ON" /> </TABLESPACES> <SCHEMAS> <SCHEMA TYPE="CONFIG" NAME="ofsaaconf" PASSWORD="" APP_ID="OFS_AAI" DEFAULTTABLESPACE="##OFS_AAI_TBSP_1##" TEMPTABLESPACE="TEMP" QUOTA="unlimited"/> <SCHEMA TYPE="ATOMIC" NAME="ofsaaatm" PASSWORD="" APP_ID="OFS_AAAI" DEFAULTTABLESPACE="##OFS_AAI_TBSP_2##" TEMPTABLESPACE="TEMP" QUOTA="unlimited" INFODOM="OFSAAAIINFO"/> </SCHEMAS>

6.4 Execute the Schema Creator Utility

Depending on the option selected, select the appropriate schema creator utility execution option.

Topics:

> **NOTE** If upgrading in an App on App scenario, you must provide the same schema details you provided earlier.

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

6.4.1 Execute the Schema Creator Utility in Offline Mode

In the Offline mode, the utility generates an SQL script with all the required DDLs for Users, Objects, and Grants. This script must be executed by the DBA on the appropriate database identified for OFSAA usage. If you do not have the SYSDBA privileges, you can execute the Schema Creator Utility in Offline mode and generate the script file that contains the Schemas, Objects, and Grants information. Subsequently, an SYSDBA user can execute the script file manually. To run the OFSAA Application Pack installer in Silent mode, it is mandatory to execute the schema creator utility with -s option.

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

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

> **NOTE** Explicit Grants to the user are required. Grants assigned through Roles are not supported.

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

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

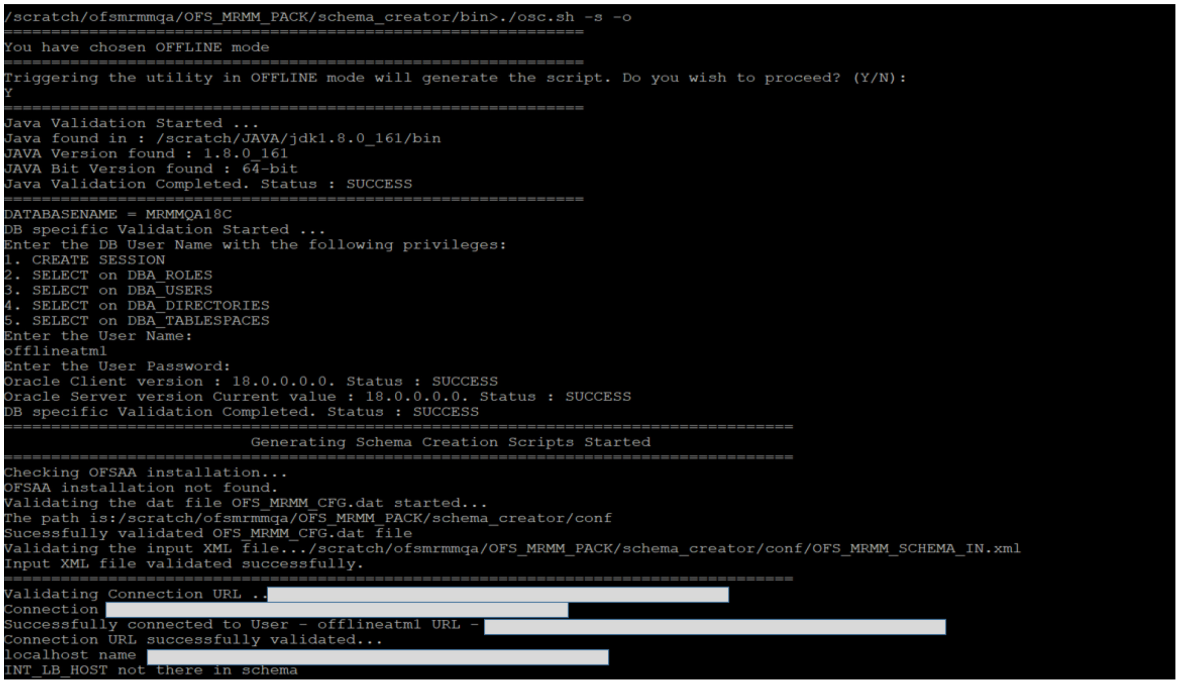
   ```
   ./osc.sh -s -o
   ```

The following message is displayed:

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

4. Enter `Y` to proceed.
5. Enter the DB Username with SELECT privileges.
6. Enter the User Password.

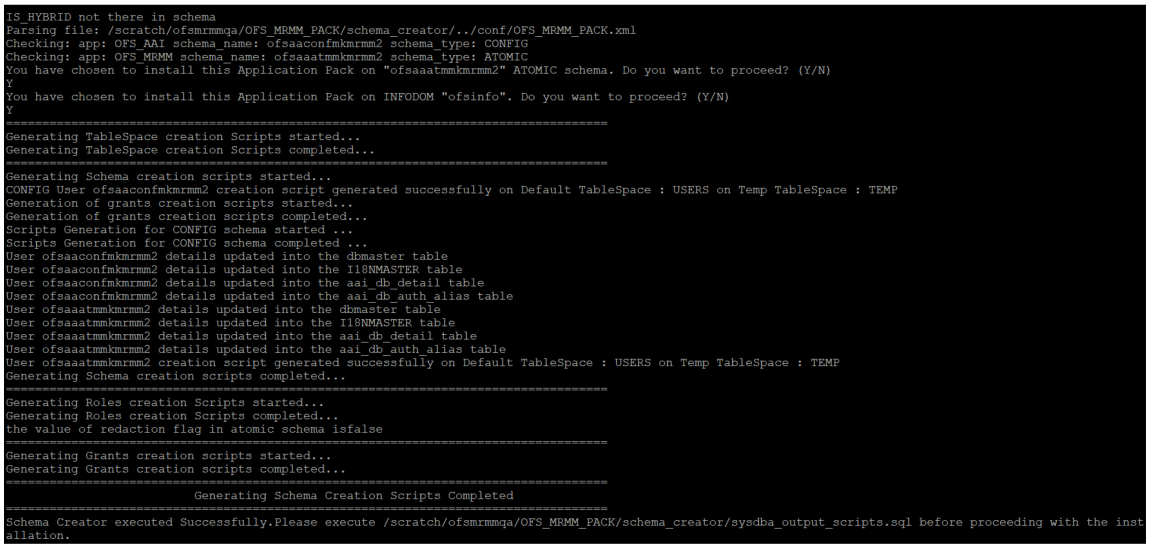
Figure 7: Schema Creation in Offline Mode



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

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

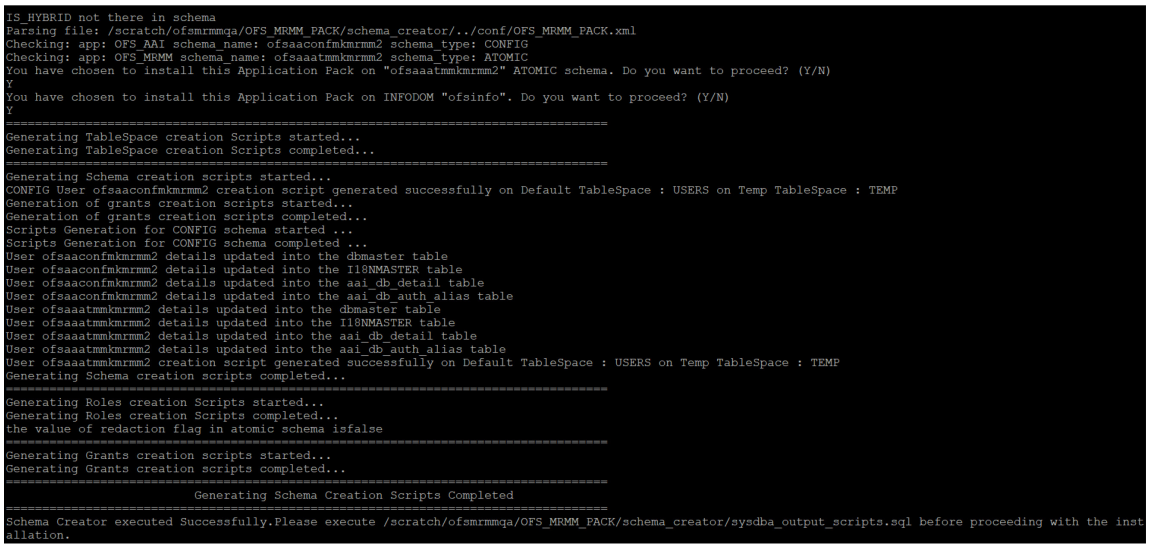
Figure 8: Schema Creation in Offline Mode Script Generation



8. Enter `Y` to start the script generation. The following message is displayed:

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

Figure 9: Schema Creation in Offline Mode Successful



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

Schema Creator executed successfully. Execute the `scratch/ofsaaapp/OFS_MRMM/schema_creator/sysdba_output_scripts.sql` file before proceeding with the installation.

> **NOTE** If there are any errors during the SQL script execution, reconfigure the `OFS_MRMM SCHEMA_IN.xml` and repeat steps in this procedure to execute the utility. This regenerates the scripts with the correct information.

9. Navigate to the `OFS_MRMM_PACK/schema_creator` directory.
10. Log in to SQLPLUS as a user having SYSDBA Privileges.
11. Execute the `sysdba_output_scripts.sql` file using the following command:

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

    Alternatively, you can copy the `sysdba_output_scripts.sql` file and `SQLScripts` directory to a remote server and execute the `sysdba_output_scripts.sql` file, after providing appropriate execute permissions.
12. Make a TNS entry for the new users created. For details, see Add the TNS entries in tnsnames.ora File section.

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

The result of this task is that the `OFS_MRMM_SCHEMA_OUTPUT.XML` file is generated. Do not modify this file.

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

6.4.2 Execute the Schema Creator Utility in Online Mode

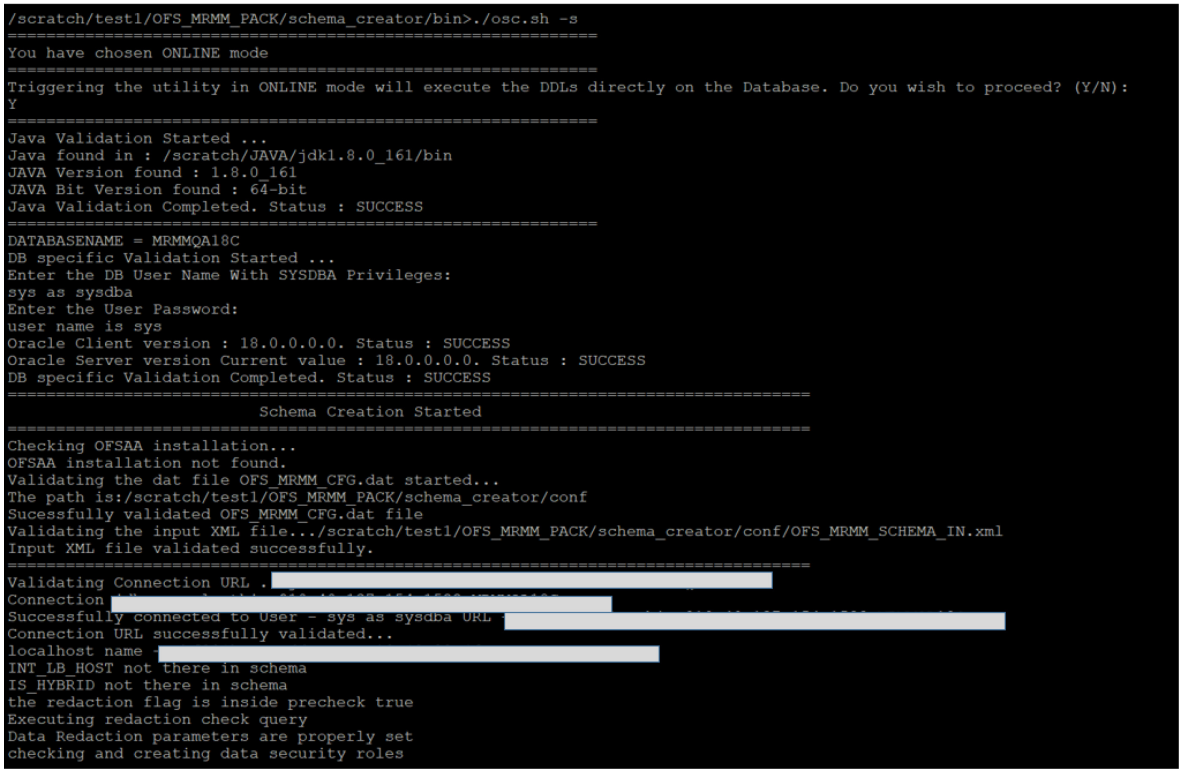
In Online mode, the utility connects to the database and executes the DDLs for Users, Objects, and Grants. If you have SYSDBA privileges you can execute the Schema Creator Utility in Online mode and thereby create the Users, Objects, and Grants during the execution process. To execute the utility in 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:

1. Edit the file `OFS_MRMM_PACK/schema_creator/conf/OFS_MRMM_SCHEMA_IN.xml` in a text editor. See Configure the OFS_MRMM_SCHEMA_IN.xml File section for values to modify in the XML file.
2. Execute the utility with -s option. For Example: `./osc.sh -s`
3. Make a TNS entry for the new users created. See Add the TNS entries in TNSNAMES.ORA file. section for details.

Figure 10: Schema Creation in Online Mode

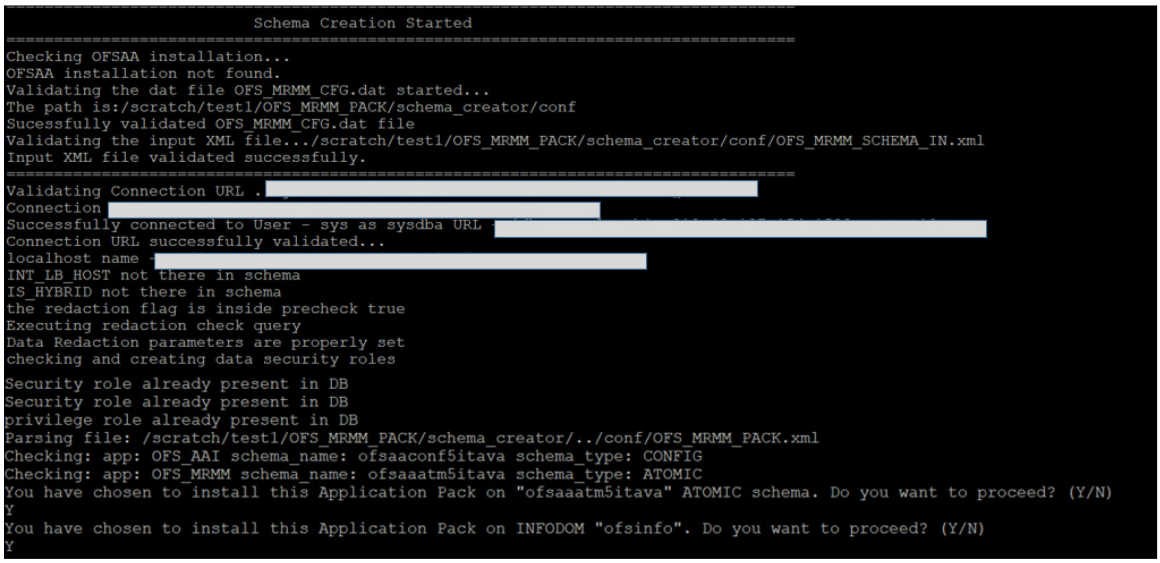


The following message is displayed:

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 11: Schema Creation in Online Mode – DDL Execution

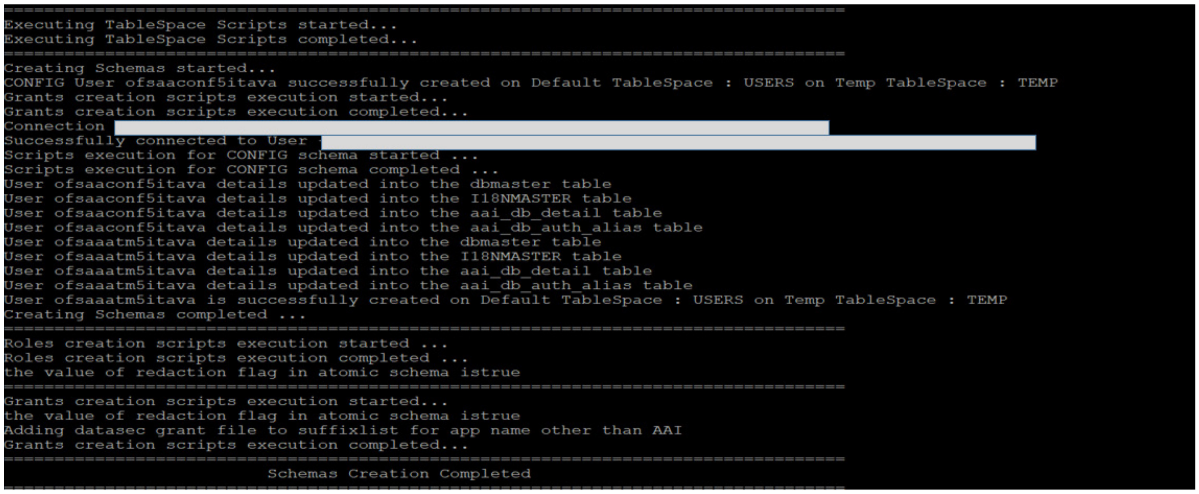


The following message is displayed:

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

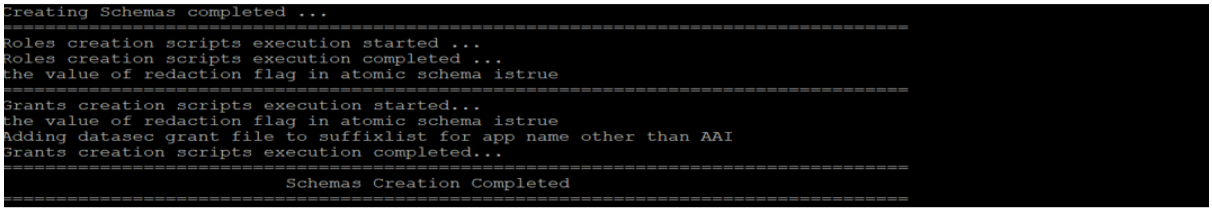
5. Enter `Y` to proceed.

Figure 12: Schema Creation in Online Mode – Infodom Confirmation



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

Figure 13: Schema Creation in Online Mode –Successful



The result of this task is that the `OFS_MRMM_SCHEMA_OUTPUT.XML` file is generated. Do not modify this file.

6.4.3 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 or Atomic Schema of the existing application pack or on a new Information Domain or Atomic Schema. You can execute the schema creator utility either in Online or Offline mode.

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

1. Edit the file `OFS_MRMM/schema_creator/conf/OFS_MRMM_SCHEMA_IN.xml` in a text editor. See Configure the OFS_MRMM_SCHEMA_IN.xml File section for values you must modify in the XML file.

2. Execute the utility with -s option. For Example: `./osc.sh -s -o`

Figure 14: Execute the Schema Creator Utility to Install Subsequent Applications Pack

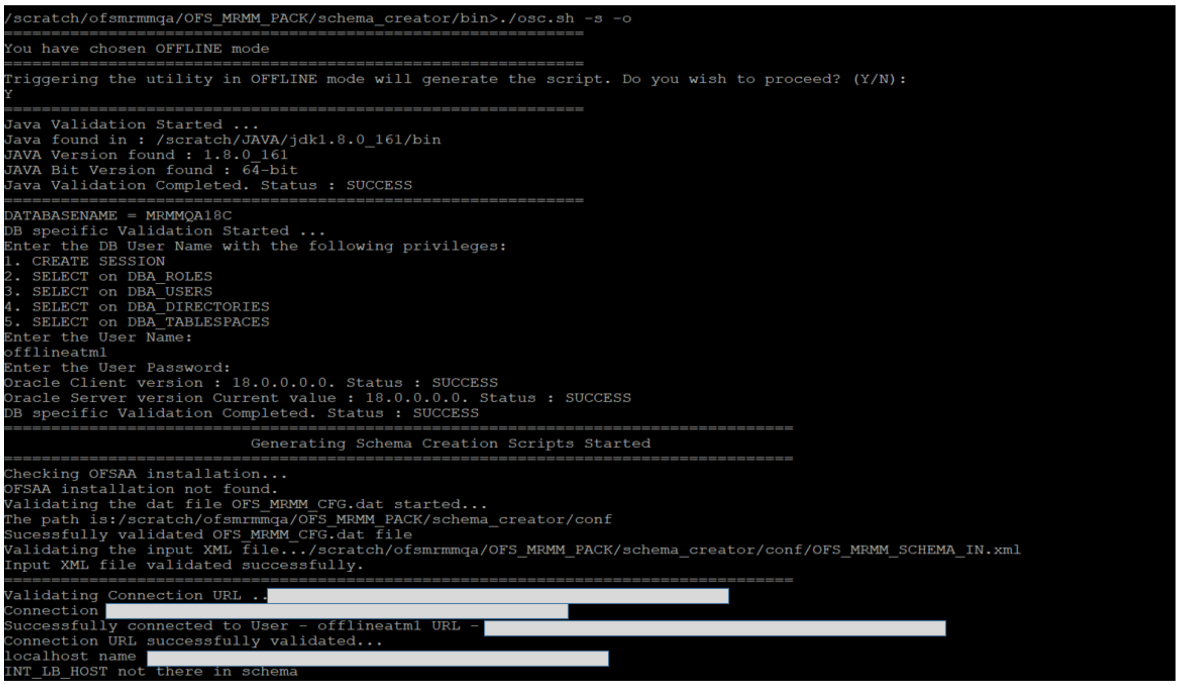
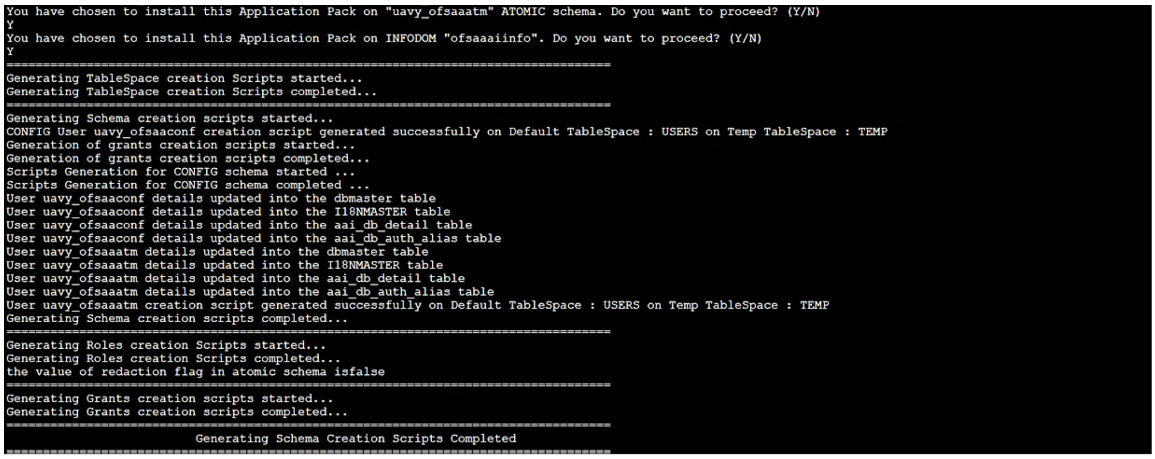


Figure 15: Schema Creation Completed



3. After successful schema creation, execute the `sysdba_output_scripts.sql` file.

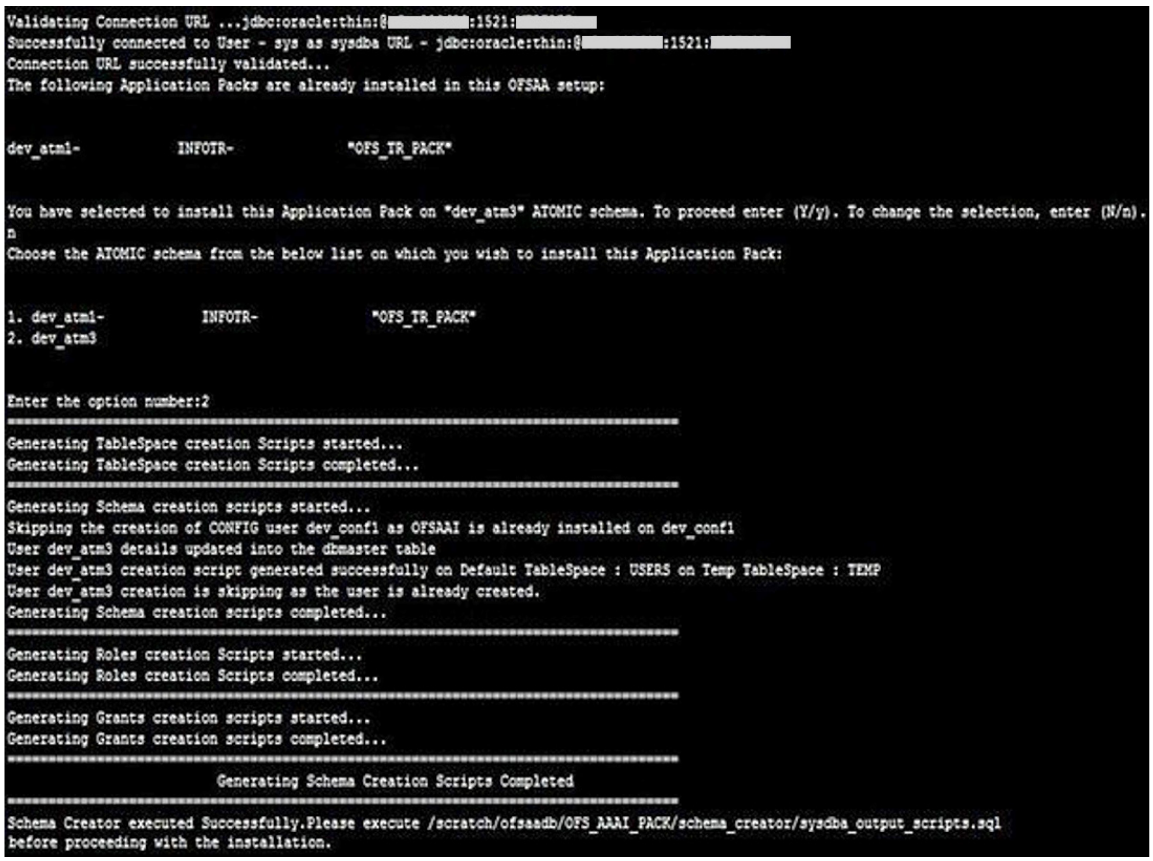
> **NOTE** You must use the same config schema user name as the previous Application Pack.

4. 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 16: Install Subsequent Applications Pack– Select Atomic Schema and Infodom

5. Enter Y or y to start the schema creation.
6. If you enter N or n, the list of Atomic Users is displayed.
7. Select the Atomic User on which you want to install the Application Pack.
8. Make a TNS entry for the new users created. For details, see Add TNS entries in tnsnames.ora File section.

Figure 17: Install Subsequent Applications Pack– Select Atomic Schema and Infodom



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

Success. Please proceed with the installation.

NOTE

1. See the log file in `OFS_MRMM_PACK/schema_creator/logs` directory for execution status.
2. 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.
3. If there are any errors, contact My Oracle Support.

6.5 Configure the OFSAAI_InstallConfig.xml File

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

1. Navigate to the `OFS_MRMM_PACK/OFS_AAI/conf/` directory.
2. Open the `OFSAAI_InstallConfig.xml` file in a text editor.
3. Configure the `OFSAAI_InstallConfig.xml` file as mentioned 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 21: OFSAAI_InstallConfig.xml file Parameters

InteractionVariable Name	Significance and Expected Value	Mandatory
<Layer name="GENERAL">		
InteractionGroup name="WebServerType"		
WEBAPPSERVERTYPE	Identifies the web application server on which the OFSAA Infrastructure web components are deployed. 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, `<InteractionVariable name="WEBAPPSERVERTYPE">3</InteractionVari able>`	Yes
InteractionGroup name="OFSAA Infrastructure Server Details"		
DBSERVER_IP	Identifies the hostname or IP address of the system on which the Database Engine is hosted. **NOTE:** For RAC Database, the value must be NA. For example, `<InteractionVariable name="DBSERVER_IP">14.15.16.17</InteractionVariable>` or `<InteractionVariable name="DBSERVER_IP">dbhost.server.com</InteractionVariable>`	Yes
InteractionGroup name="Database Details"		
ORACLE_SID/SERVICE_NAME	Identifies the Oracle DB Instance SID or SERVICE_NAME **NOTE:** The `Oracle_SID` value must be the same as it is mentioned in `JDBC_URL`. For example, `<InteractionVariable name="ORACLE_SID/SERVICE_NAME">ofsaser</InteractionVariable>`	Yes
ABS_DRIVER_PATH	Identifies the directory where the JDBC driver (`ojdbc<version>.jar`) exists. This is typically the `$ORACLE_HOME/jdbc/lib` directory. For example, `<InteractionVariable name="ABS_DRIVER_PATH">">/oradata6/revwb7/ oracle </InteractionVariable>` **NOTE:** See Hardware and Software Requirements to identify the correct `ojdbc<version>.jar` file version to be copied.	Yes

InteractionVariable Name	Significance and Expected Value	Mandatory
InteractionGroup name="OLAP Detail"		
OLAP_SERVER_ IMPLEMENTATION	Identifies whether the OFSAA Infrastructure OLAP component must be configured. It depends on whether you intend to use the OLAP feature. The following numeric value must be set depending on your choice: • YES: 1 • NO: 0 **NOTE:** If the value for `OLAP_SERVER_IMPLEMENTATION` is set to 1, the installer checks if the following environment variables are set in the `.profile` file: • ARBORPATH • HYPERION_HOME • ESSBASEPATH	No
InteractionGroup name="SFTP Details"		
SFTP_ENABLE	Identifies if the SFTP (Secure File Transfer Protocol) feature is to be enabled. The following numeric value must be set depending on your choice: • SFTP: 1 • FTP: 0	Yes
NOTE: The default value for `SFTP_ENABLE` is **1**, which signifies that SFTP is used. Oracle recommends using SFTP instead of FTP because SFTP is more secure. However, you can ignore this recommendation and use FTP by setting `SFTP_ENABLE` to **0**. You can change this selection later from the OFSAAI administration interface. Set `SFTP_ENABLE` to **-1** to configure ftpshare and weblocal path as a local path mounted for the OFSAAI server.		
FILE_TRANSFER_PORT	Identifies the port used for the file transfer service. The default value specified is **22** (SFTP). Specify a value as **21** or any other PORT value if the value for `SFTP_ENABLE` is **0**. For example, `<InteractionVariable name="FILE_TRANSFER_ PORT">21</InteractionVariable>`	Yes
InteractionGroup name="Locale Detail"		
LOCALE	Identifies the locale information to be used during the installation. This release of the OFSAA Infrastructure supports only US English. For example, `<InteractionVariable name="LOCALE">en_US</InteractionVariable>`	Yes
InteractionGroup name="OFSAA Infrastructure Communicating ports" **NOTE:** The following ports are used internally by the various OFSAA Infrastructure services. The default values mentioned are set in the installation. If you intend to specify a different value, update the parameter value accordingly, ensure that the port value is in the range 1025 to 65535, and the respective port is enabled.		
JAVAPORT	9999	Yes
NATIVEPORT	6666	Yes
AGENTPORT	6510	Yes

InteractionVariable Name	Significance and Expected Value	Mandatory
ICCPORT	6507	Yes
ICCNATIVEPORT	6509	Yes
OLAPPORT	10101	Yes
MSGPORT	6501	Yes
ROUTERPORT	6500	Yes
AMPORT	6505	Yes
InteractionGroup name="Web Details" **NOTE:** If the value for `HTTPS_ENABLE` is set to **1**, ensure that you have a valid certificate available from a trusted CA and it is configured on your web application server.		
HTTPS_ENABLE	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</InteractionVariable>`	Yes
WEB_SERVER_IP	Identifies the HTTP Server IP or Hostname or web application server IP or Hostname, 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 or Hostname. For example, `<InteractionVariable name="WEB_SERVER_IP">10.11.12.13</InteractionVariable>` or `<InteractionVariable name="WEB_SERVER_IP">myweb.server.com</InteractionVariable>`	No
WEB_SERVER_PORT	Identifies the web server port, 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. **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</InteractionVariable>`	No

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:
	`<scheme>://<host>:<port>/<context-name>/login.jsp`
	For example:
	`https://myweb:443/ofsaadev/login.jsp`
		Yes

InteractionVariable Name	Significance and Expected Value	Mandatory
	For example, <InteractionVariable name="CONTEXT_ NAME">ofsaadev</InteractionVariable>	
WEBAPP_CONTEXT_PATH	Identifies the absolute path of the exploded EAR file on the web application server. • For Tomcat, specify the Tomcat directory path till `/webapps`. For example, `/oradata6/ revwb7/tomcat/webapps/`. • For WebSphere, specify the WebSphere path as `<WebSphere profile directory>/installedApps/<NodeCellName>`. For example, `/ data2/test//WebSphere/AppServer/profiles/<Profile_Name>/installedApps/aiximfNode01Cell`, where aix-imf is the Hostname. • For WebLogic, specify the WebLogic home directory path. For example, `/<WebLogic home directory path>/bea/wlserver_10.3` **NOTE:** For WebLogic, the value specified for this attribute is ignored and the value provided against the attribute `WEBLOGIC_DOMAIN_HOME` is considered.	Yes
WEB_LOCAL_PATH	Identifies the absolute path to any directory on the web application server that can hold temporary files, which are uploaded as part of the usage of the application. Set this in the FTPSHARE location. **NOTE:** During a clustered deployment, ensure that this path and the directory are the same on all the nodes.	Yes
InteractionGroup name="Weblogic Setup Details"		
WEBLOGIC_DOMAIN_HOME	Identifies the WebLogic Domain Home. For example, `<InteractionVariable name="WEBLOGIC_DOMAIN_HOME">/home/weblogic/bea/user_ projects/ domains/mydomain</InteractionVariable>`	Yes. Specify the value only if WEBAPPSERVERTYPE is set as 3 (WebLogic)
InteractionGroup name="OFSAAI FTP Details"		
OFSAAI_FTPSHARE_PATH	Identifies the absolute path of the directory that is identified as the file system stage area. **NOTE:** The directory must exist on the same system on which the OFSAA Infrastructure is being installed (can be on a separate mount). 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</ InteractionVariable>`	Yes
OFSAAI_SFTP_USER_ID	Identifies the user who has RWX permissions on the directory identified for the parameter APP_FTPSHARE_PATH.	Yes

InteractionVariable Name	Significance and Expected Value	Mandatory
OFSAAI_SFTP_PRIVATE_KEY	Identifies the SFTP private key for OFSAAI. For example, `<InteractionVariable name="OFSAAI_SFTP_PRIVATE_KEY">/home/ofsaapp/.ssh/id_rsa</InteractionVariable>` By default, the value is **NA**, which indicates 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.	No
OFSAAI_SFTP_PASSPHRASE	Identifies the passphrase for the SFTP private key for OFSAAI. For example, `InteractionVariable name="OFSAAI_SFTP_PASSPHRASE">enter a pass phrase here</InteractionVariable>` By default, the value is **NA**. If the `OFSAAI_SFTP_PRIVATE_KEY` value is given and the `OFSAAI_SFTP_PASSPHRASE` value is **NA**, then the passphrase is identified as empty.	No
InteractionGroup name="Hive Details" The default value set for the interaction variables under this group is NA. **NOTE:** The following values are required only for Hive 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</InteractionVariable>`	Yes
HIVE_SERVER_FTPDRIVE	Identifies the absolute path to the directory identified as the file system stage area of the HIVE server. For example, `<InteractionVariable name="HIVE_SERVER_FTPDRIVE">/scratch/ofsaa/ftpshare</InteractionVariable>`	Yes
HIVE_SERVER_FTP_USERID	Identifies the user who has RWX permissions on the directory identified under the parameter `HIVE_SERVER_FTPDRIVE`. For example, `<InteractionVariable name="HIVE_SERVER_FTP_USERID">ofsaa</InteractionVariable>`	Yes

InteractionVariable Name	Significance and Expected Value	Mandatory
HIVE_SERVER_FTP_PROTOCOL	If the HIVE_SERVER_PORT is 21, then set the value to **FTP**. If not, set it to **SFTP**. For example, <InteractionVariable name="HIVE_SERVER_FTP_PROTOCOL">SFTP</InteractionVariable>	Yes
HIVE_SFTP_PRIVATE_KEY	Identifies the SFTP private key for the HIVE server. For example, <InteractionVariable name="HIVE_SFTP_PRIVATE_KEY">/scratch/testuser/.ssh/id_rsa</InteractionVariable> 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>. For more information on generating SFTP Private key, see the Set Up SFTP Private Key section.	
HIVE_SFTP_PASSPHRASE	Identifies the passphrase for the SFTP private key for HIVE. For example, <InteractionVariable name="HIVE_SFTP_PASSPHRASE">NA</InteractionVariable> By default, the value is **NA**. If the HIVE_SFTP_PRIVATE_KEY value is **NA**, then the passphrase is identified as empty.	

6.5.1 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

6.6 Install the OFS MRMM Application Pack

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

1. Configure the OS File System Settings and Environment Settings in the .profile File
2. Configure OFS_MRMM_PACK.xml File
3. Configure OFS_MRMM_SCHEMA_IN.xml File
4. Configure the OFSAAI_InstallConfig.xml File (do not configure this file if an installation of OFSAAI 8.1 already exists)
5. Execute the Schema Creator Utility
6. Ensure that you install the AAI Jan CPU 2022 patch 33578231.

NOTE

- For enabling the Right to be Forgotten, see Right to be Forgotten.
- For enabling Data Redaction, see the Data Redaction section . For more details, see Data Redaction section, under Data Security and Data Privacy chapter in the OFS Analytical Applications Infrastructure Administration and Configuration Guide.

To install the OFS MRMM 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. Add entry for Numerix directory path, license path, and Log4J verson in .profile. The default values are as follows:

```
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$FIC_HOME/ficdb/bin/Numerix/cas-4.1.0-4305-linux64/lib/linux64
export LD_LIBRARY_PATH
NX_LICENSE_DIR=$FIC_HOME/ficdb/bin/Numerix/license
export NX_LICENSE_DIR
LIBPARENTDIR=$FIC_HOME/ficdb/bin/Numerix/cas-4.1.0-4305-linux64
export LIBPARENTDIR
LOGFOURJAPI=log4j-api-2.17.0.jar
export LOGFOURJAPI
LOGFOURJCORE=log4j-core-2.17.0.jar
export LOGFOURJCORE
```

4. Execute the user `.profile` file.
5. Navigate to the `OFS_MRMM_PACK` directory.
6. Edit the `OFS_MRMM_PACK/OFS_AAI/conf/OFSAAI_InstallConfig.xml` file to set the appropriate infrastructure installation attribute values.

> **NOTE** This step can be ignored if any pack already exists. See Configure the OFSAAI_InstallConfig.xml File for details on configuring this XML file.
>
> Ensure that the port numbers used are available.

7. Navigate to the path `OFS_MRMM_PACK/conf/OFS_MRMM_PACK.xml`, and enter YES in the enable tag for OFS_MRMM, OFS_AAI, and OFS_AAAI.
8. Edit the `OFS_MRMM_PACK/schema_creator/conf/OFS_MRMM_SCHEMA_IN.xml` file to set the appropriate attribute values. Include INFODOM = "<Infodom Name>" in OFS_MRMM_SCHEMA_IN.xml file
9. Execute the schema creator utility with `-s` option. This step is mandatory and should be executed before every OFS MRMM Application Pack installation.
10. The installer folder (`OFS_MRMM_PACK/appsLibConfig/conf`) contains a template file `Silent.template`. Create a copy of this file and rename the copy as `Silent.props`.
11. Edit the file `Silent.props` and specify the parameters as per the requirements.

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

Table 22: Parameters for the Silent.props File

Property Name	Description of Property	Permissible values	Comments
LOG_MODE	Specify Log Mode	1 = Debug Mode 0= General Mode	Password will be printed in the log file Password will be printed in the log file. Default is GENERAL.
SEGMENT_1_CODE	Specify the MRMM Segment Code.	User Input	Enter the Segment name in UPPERCASE.
APPFTP_LOG_PATH	Specify the Infodom Maintenance log path(to be created) for the new Infodom. Ignore if you are doing installation on an existing information domain.	User Input	
DBFTP_LOG_PATH	Specify the Infodom Maintenance log path(to be created) for the new Infodom. Ignore if you are doing installation on an existing information domain.	User Input	
UPLOAD_MODEL	Specify whether you want to perform model upload.	0 = If you have already performed Model Upload and want to skip model upload process 1 = If you want to perform Model Upload	
MODEL_TYPE	Specify whether you want to use the released data model or customized data model for model upload process.	# 0 = If you want to upload the released data model # 1 = If you want to upload the customized data model	
DATAMODEL DM_DIRECTORY	Specify the path (DM_DIRECTORY) and file (DATAMODEL) name for the customized data model. Mandatory only if you want to upload the customized data model, if you have specified MODEL_TYPE=1.	User Input	

Property Name	Description of Property	Permissible values	Comments
ETL_APPSRC_TYPE	Please specify if you want to create new ETL App or Src pair or use an existing one.	0 = If you want to create a new ETL App or Src pair 1 = If you want to use an existing pair	
ETL_SRC_1_DESC	ETL Market Risk Trade source description.	STAGE_MR_TRADE	Please give description for the ETL App or Src pair. Mandatory if you want to create new ETL App or Src pair if you have specified ETL_APPSRC_TYPE=0.
ETL_SRC_2_DESC	ETL Market Risk Reference source description.	STAGE_MR_REFERENCE	Please give description for the ETL App or Src pair. Mandatory if you want to create new ETL App or Src pair if you have specified ETL_APPSRC_TYPE=0.
ETL_SRC_3_DESC	ETL Market Risk Processing source description.	MR_PROCESSING	Please give description for the ETL App or Src pair. Mandatory if you want to create new ETL App or Src pair if you have specified ETL_APPSRC_TYPE=0.
ETL_SRC_4_DESC	ETL Market Risk Processing source description.	STAGING	Please give description for the ETL App/Src pair. Mandatory if you want to create new ETL App or Src pair if you have specified ETL_APPSRC_TYPE=0.
ETL_SRC_1_NAME	ETL Market Risk Trade source name.	STAGE_MR_TRADE	Specify the ETL Application and Source Name in the ETL Area Definitions to be deployed.
ETL_SRC_2_NAME	ETL Market Risk Reference source name.	STAGE_MR_REFERENCE	Specify the ETL Application and Source Name in the ETL Area Definitions to be deployed.

Property Name	Description of Property	Permissible values	Comments
ETL_SRC_3_NAME	ETL Market Risk Processing source name.	MR_PROCESSING	Specify the ETL Application and Source Name in the ETL Area Definitions to be deployed.
ETL_SRC_4_NAME	ETL Market Risk Processing source name.	STAGING	Specify the ETL Application and Source Name in the ETL Area Definitions to be deployed.

ATTENTION Do not install the new packs in the same segment if the preinstalled applications use run management functionality of OFSAAI.

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

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

13. The installer proceeds with Pre-Installation Checks.

Figure 18: Silent Mode of Installation

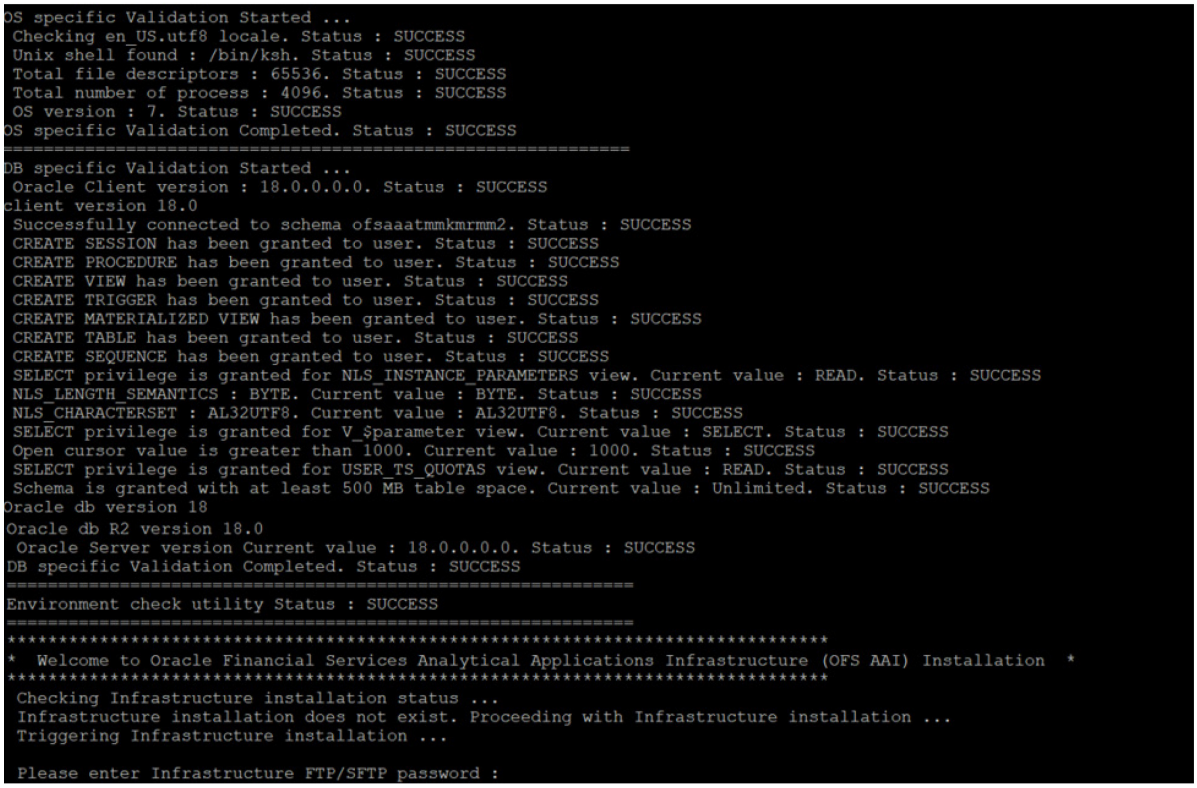
```
/scratch/ofsmrmmqa/OFS_MRMM_PACK/bin>./setup.sh SILENT
Current OS Type ----  Linux
 FIC_HOME : /scratch/ofsmrmmqa/OFSAAI81
Environment check utility started...
===============================================================
Java Validation Started ...
 Java found in : /scratch/JAVA/jdk1.8.0_161/bin
JCE IS true
 JAVA Version found : 1.8.0_161
 JAVA Bit Version found : 64-bit
Java Validation Completed. Status : SUCCESS
===============================================================
Environment Variables Validation Started ...
 ORACLE_HOME : /scratch/oraofss/app/oraofss/product/18.0.0/client_1
 TNS_ADMIN : /scratch/ofsmrmmqa
Environment Variables Validation Completed. Status : SUCCESS
===============================================================
OS specific Validation Started ...
 Checking en_US.utf8 locale. Status : SUCCESS
 Unix shell found : /bin/ksh. Status : SUCCESS
 Total file descriptors : 65536. Status : SUCCESS
 Total number of process : 4096. Status : SUCCESS
 OS version : 7. 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 ofsaaatmmkmrmm2. Status : SUCCESS
 CREATE SESSION has been granted to user. Status : SUCCESS
 CREATE PROCEDURE has been granted to user. Status : SUCCESS
 CREATE VIEW has been granted to user. Status : SUCCESS
 CREATE TRIGGER has been granted to user. Status : SUCCESS
 CREATE MATERIALIZED VIEW has been granted to user. Status : SUCCESS
 CREATE TABLE has been granted to user. Status : SUCCESS
 CREATE SEQUENCE has been granted to user. Status : SUCCESS
 SELECT privilege is granted for NLS_INSTANCE_PARAMETERS view. Current value : READ. Status : SUCCESS
 NLS_LENGTH_SEMANTICS : BYTE. Current value : BYTE. Status : SUCCESS
 NLS_CHARACTERSET : AL32UTF8. Current value : AL32UTF8. Status : SUCCESS
 SELECT privilege is granted for V_$parameter view. Current value : SELECT. Status : SUCCESS
 Open cursor value is greater than 1000. Current value : 1000. Status : SUCCESS
 SELECT privilege is granted for USER_TS_QUOTAS view. Current value : READ. Status : SUCCESS
 Schema is granted with at least 500 MB table space. Current value : Unlimited. Status : SUCCESS
Oracle db version 18
```

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

Table 23: Table 24: Console Prompt: Enter the OFSAA Processing Tier FTP/SFTP Password

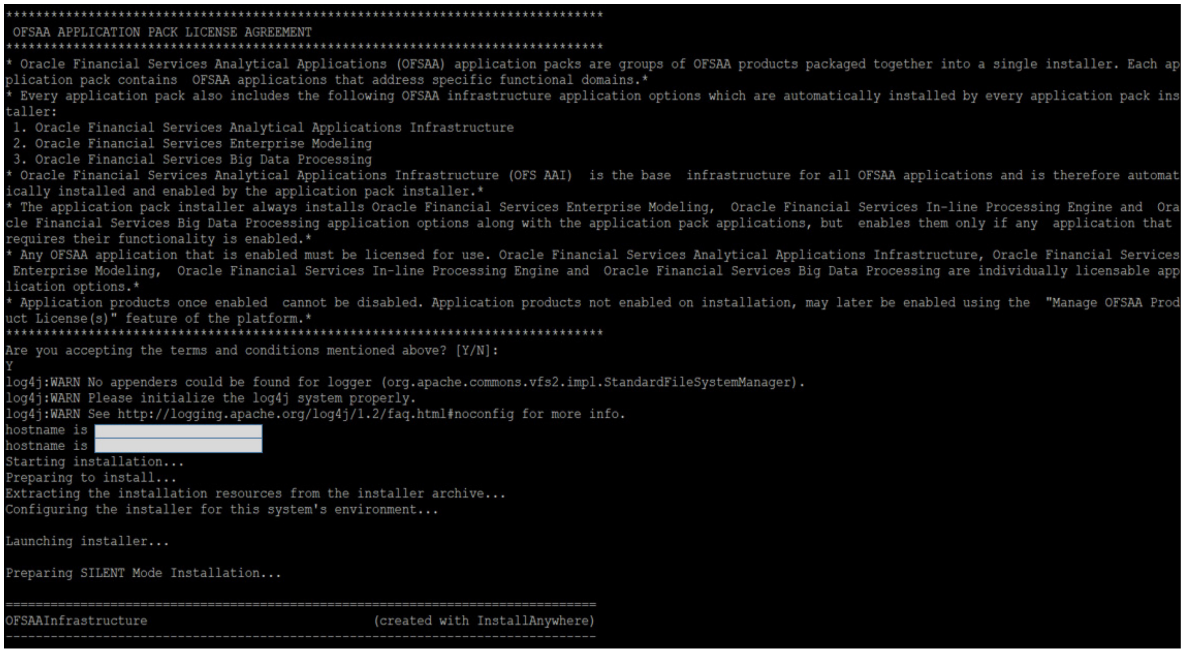
Console Prompts	User Inputs
Please enter OFSAA Processing Tier FTP/SFTP password	Enter the password to access the processing tier in the application server. **NOTE**: If the prompt reads as follows, enter the username and password for accessing the product Staging or Metadata Repository FTPSHARE: • Kerberos username [user] • Kerberos password for user

Figure 19: OFSAA Processing Tier FTP/SFTP Password Prompt



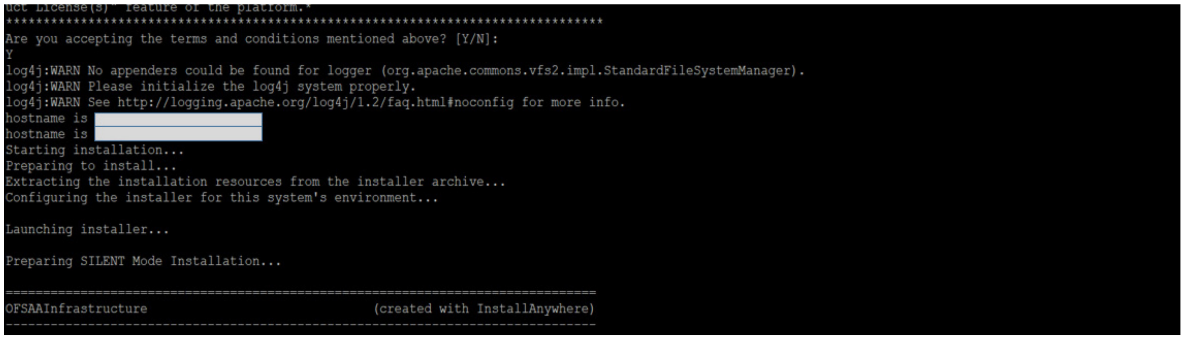
15. The process displays the OFSAA License. Enter **Y** and proceed.

Figure 20: Accept the OFSAA License Agreement



16. The installer installs the OFSAAI application.

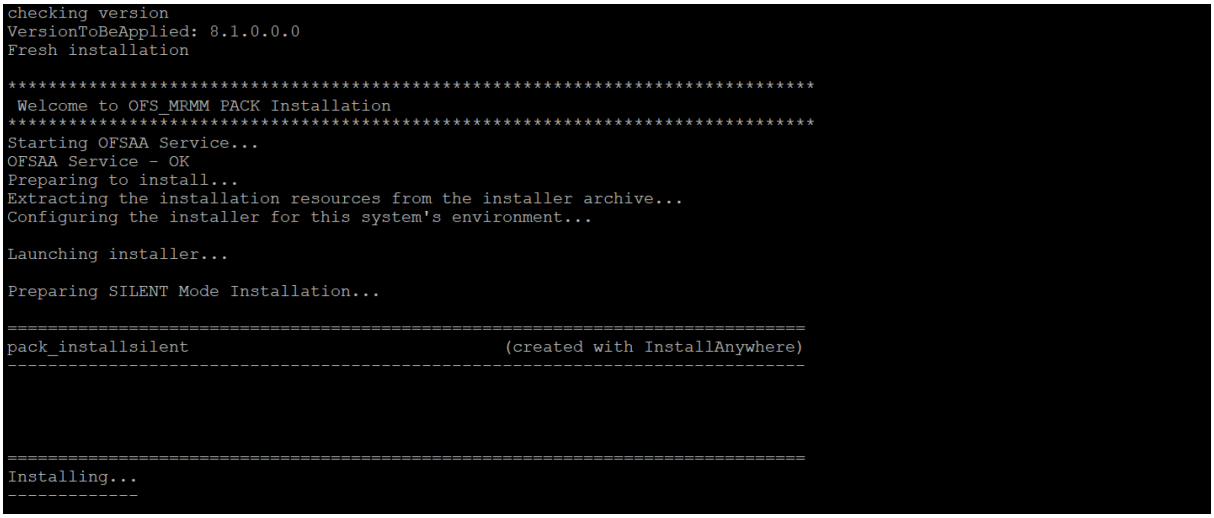
Figure 21: OFSAA Silent Mode Installation



17. After the platform is installed, the OFS MRMM installation begins.

> **NOTE** SYSADMN and SYSAUTH are the two default OFSAAI administrative users created.

Figure 22: MRMM Silent Mode Installation



18. After Data Model Upload is complete, verify the installation logs in the locations mentioned in the Verifying the Log File Information section.

Figure 23: Silent Mode Installation in Progress

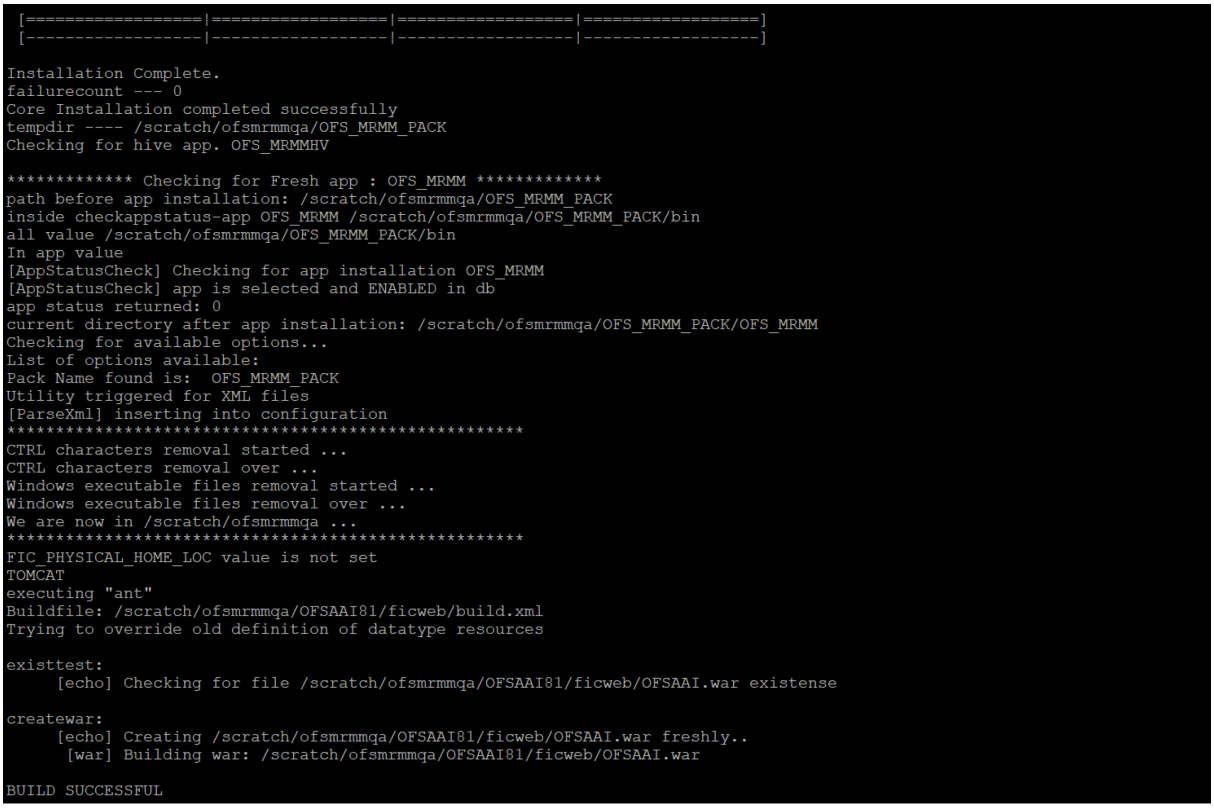
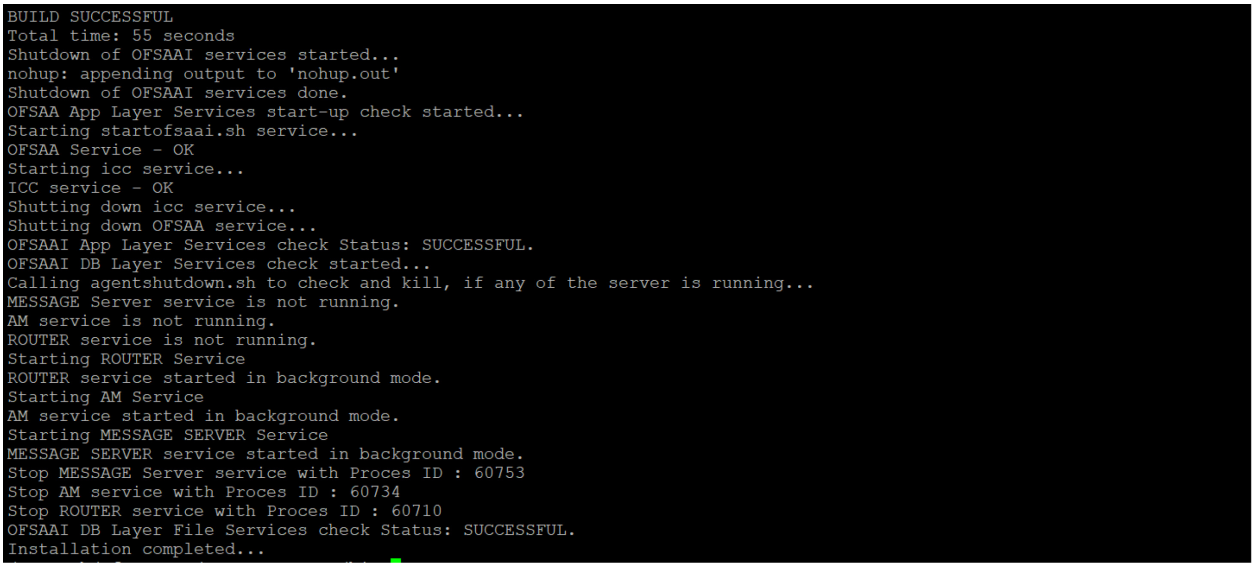


Figure 24: Silent Mode Installation Complete



19. After successful MRMM pack installation, the WAR file is generated, and all the servers are verified and the installation complete message is displayed.
20. The OFSAA Infrastructure installation performs a post-install health check automatically on the successful installation of the product.

    Congratulations! Your installation is complete.
21. On completion of the installation, verify the installation log files. For more information, see the Verifying the Log File Information section.

> **NOTE** Perform steps mentioned in the Post-installation section.

6.6.1 Verify the Log File Information

See the following logs files for more information:

- See the `OFS_MRMM_Installation_Debug.log` and `OFS_MRMM_Installation.log` files in the `OFS_MRMM_PACK/OFS_MRMM/logs/` directory for OFS MRMM Application Pack installation log file.
- Verify the Model Upload log file available in the `ftpshare/<INFODOM>/logs` directory.
- See the log file (or files) in the `OFS_MRMM_PACK/OFS_AAI/logs/` directory for Infrastructure installation log.
- See the `OFSAAInfrastucture_Install.log` file in the `$FIC_HOME` directory for Infrastructure installation log.

After the installation OFS MRMM 8.1.1.0.0 is succesful, complete the required Post-installation steps.

NOTE You can ignore warnings in the installation log. In case of any issues, contact Oracle Support.

For pack on pack installation, you can ignore the following errors that might be logged in the installation log:

- Object already exists
- Table already has a primary key
- Table already has a referential constraint with same name

6.6.2 Post-installation Patch

Download the mandatory OFSAAI One-off patch (ID: 32548944) from My Oracle Support (MOS) and apply the patch.

7 Post-installation

After successful installation of the Oracle Financial Services MRMM application pack, follow the post-installation procedures mentioned in Post-installation Checklist.

> **NOTE** You must clear the application cache before deploying the Application Pack web archive file. This applies to all web servers (WebSphere, WebLogic, Tomcat). For more information, see the Clear Application Cache section.

Topics:

7.1 Post-Installation Checklist

You can use this checklist to have a quick glance at everything that you will be doing post installing this application. The link provided in each step takes you to a section either within this document or to another referenced document.

> **NOTE** See the *Post-installation* section in the OFS AAI Release 8.1.1.0.0 Installation and Configuration Guide to complete the following checklist procedures.

Table 25: Post-installation Checklist

Sl. No.	Post-installation Activity
1	Verify that all patches are successfully installed.
2	Back up the `OFS_MRMM_SCHEMA_IN.xml`, `OFS_MRMM_SCHEMA_OUTPUT.xml`, and `Silent.props` files.
3	Stop the OFSAA Infrastructure services.
4	Start the OFSAA Infrastructure services.
5	Configure the webserver.
6	Configure the Resource Reference in web application servers.
7	Configure the Work Manager in the web application servers.
8	Create and deploy EAR/WAR files.
9	EAR/WAR File - Build Once and Deploy Across Multiple OFSAA Instances.
10	Access the OFSAA application.
11	Configure excludeURLList.cfg file.
12	Configure Tomcat.
13	Change the ICC batch ownership.
14	Add TNS entries in the `tnsnames.ora` file.
15	Update OBIEE URL.
16	Create and Deploy the Application Pack Web Archive.
17	Set Data Redaction in OFS MRMM.
18	Implement Data Protection in OFSAA.
19	Install Numerix.
20	Start Numerix Servers.
19	Post-deployment Configuration. • OBIEE Configuration – Deploy OFS MRMM Analytics.

Sl. No.	Post-installation Activity
	• Logging as System Administrator. • Create Application Users. • Map the Application User (or Users) to User Groups. • MRMM Pack User Groups.

7.2 Patch OFSAA Infrastructure Installation

Oracle strongly recommends installing the latest available patch set to be up-to-date with the various releases of the OFSAA product. For the mandatory patches, see the Mandatory Patches section. Contact My Oracle Support. for more information on the latest release.

7.3 Backup the OFS_MRMM_SCHEMA_IN.xml, OFS_MRMM_SCHEMA_OUTPUT.xml, and Silent.props Files

Backup the `OFS_MRMM_SCHEMA_IN.xml`, `OFS_MRMM_SCHEMA_OUTPUT.xml`, and `Silent.props` files as they can be reused when upgrading existing applications or installing new applications.

Table 26: Directory of Files to Backup

File Name	Directory
`OFS_MRMM_SCHEMA_IN.xml`	`OFS_MRMM_PACK/schema_creator/conf`
`OFS_MRMM_SCHEMA_OUTPUT.xml`	`OFS_MRMM_PACK/schema_creator/`
`Silent.props`	`OFS_MRMM/appsLibConfig/conf`

7.4 Stop the Infrastructure Services

See Stop the Infrastructure Services in OFS AAI Release 8.1.1.0.0 Installation and Configuration Guide for details.

7.5 Start the Infrastructure Services

See Start the Infrastructure Services in OFS AAI Installation Guide for details.

7.6 Configure the Web Server

This step assumes the installation of a web server exists as per the prerequisites. If an installation already exists, skip, and proceed to the next step. Webserver configuration includes the following activities.

See the Configure the Web Server section in the OFS AAI Release 8.1.1.0.0 Installation and Configuration Guide to complete these procedures:

- Configure WebSphere Application Server for Application Deployment
  - 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 WebLogic for Application Deployment
  - Create Domain in WebLogic Server
  - Delete Domain in WebLogic
  - Configure WebLogic Memory Settings
- Configure Apache Tomcat Server for Application Deployment
  - 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

NOTE

- See the Oracle Financial Services Analytical Applications Infrastructure Security Guide for configurations to secure your web server.
- You must enable a sticky session or 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 or affinity session configuration at the Load Balancer level if you have configured a Load Balancer in front of the web server.
- Make a note of the IP Address or Hostname and Port of the web application 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* or *OFSAA Security Guide* mentioned in the Related Documents section for additional information on securely configuring your web server.

7.6.1 Additional Configurations for Web Servers

This section provides information for additional configuration required for the web servers on OFS MRMM. See the *Additional Configurations for Web Servers* section in the OFS AAI Release 8.1.1.0.0 Installation and Configuration Guide to complete these procedures.

7.7 Configure Resource Reference in Web Servers

Configuring resource reference in webservers includes the following activities. See Configure Resource Reference in Web Servers section in the *OFS AAI Release 8.1.1.0.0 Installation and Configuration Guide* to complete these procedures:

- Configure Resource Reference in WebSphere Application Server
  - Create a JDBC Provider
  - Create Data Source
  - Create J2C Authentication Details
  - Define JDBC Connection Pooling
- Configure Resource Reference in WebLogic Application Server
  - Create Data Source
  - Create GridLink Data Source
  - Configure Multi Data Sources
  - Configure Advanced Settings for Data Source

- Configure JDBC Connection Pooling
- Create Work Manager

- Configure Resource Reference in Tomcat Application Server
  - Create Data Source
  - Define JDBC Connection Pooling
  - Configure ClassLoader for Apache Tomcat

7.8 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.

Configuring Work Manager in web application servers includes the following activities. See Configure Work Manager in Web Application Servers section in the *OFS AAI Release 8.1.1.0.0 Installation and Configuration Guide* to complete these procedures:

- Configure Work Manager in WebSphere Application Server
  - Creating a Work Manager
  - Mapping Work Manager to OFSAA WebSphere Instance
- Configure Work Manager in WebLogic Application Server

7.9 Create and Deploy the EAR or WAR Files

See Create and Deploy the EAR or WAR Files in *OFS AAI Release 8.1.1.0.0 Installation and Configuration Guide* for details.

7.10 Build EAR or WAR File Once and Deploy Across Multiple OFSAA Instances

See EAR or WAR File - Build Once and Deploy Across Multiple OFSAA Instances in *OFS AAI Release 8.1.1.0.0 Installation and Configuration Guide* for details.

7.11 Access the OFSAA Application

To access the OFSAA application, follow these steps:

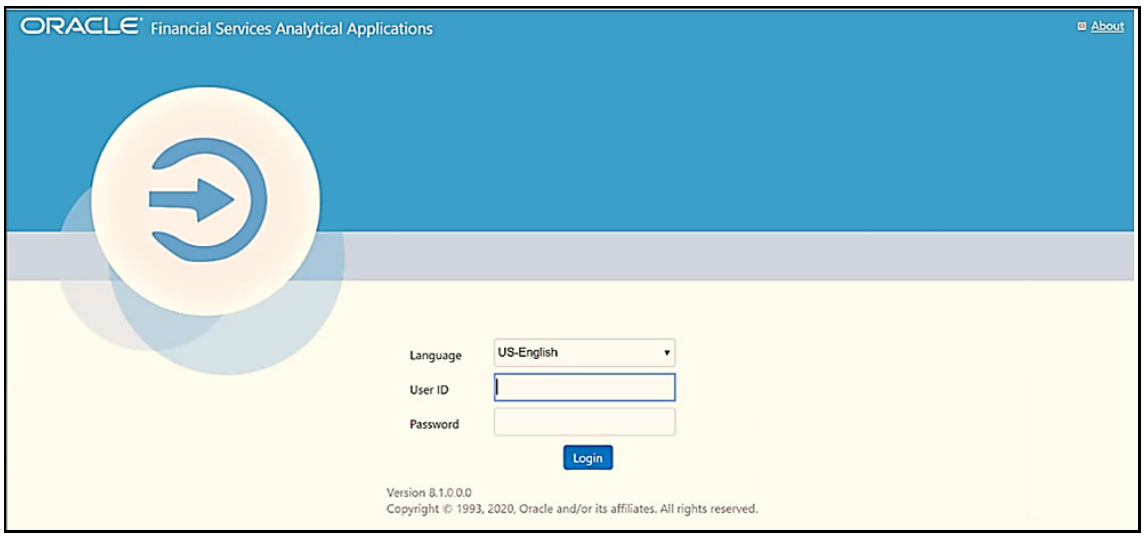
1. Open a browser and enter the URL in the following format:

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

   For example, `https://192.0.2.2:8888/ofsaa/login.jsp`

   The OFSAA Login window is displayed.

Figure 25: OFSAA Login Window



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.

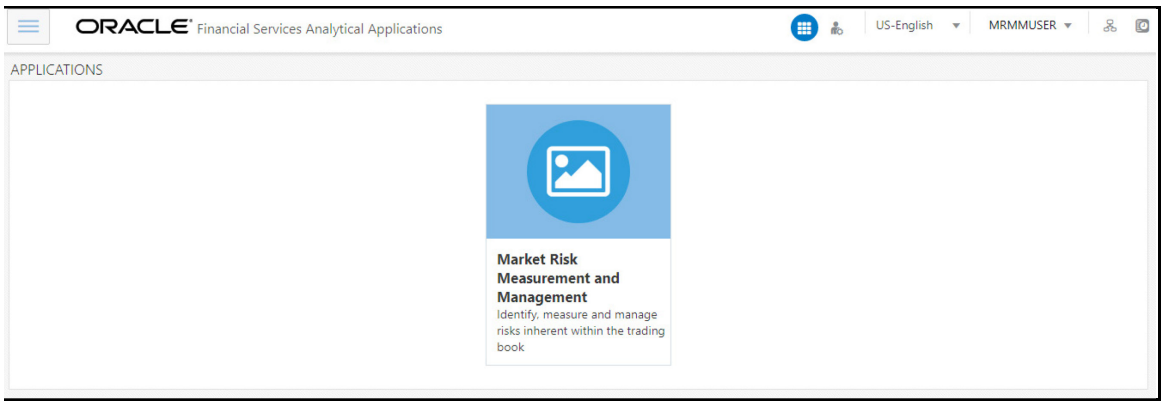
2. Log in to the application using the "SYSADMN" User ID and the default password. After the first login, you are prompted to change the password.

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

7.11.1 OFSAA Landing Page

On successful login, the **OFSAA Landing** page is displayed.

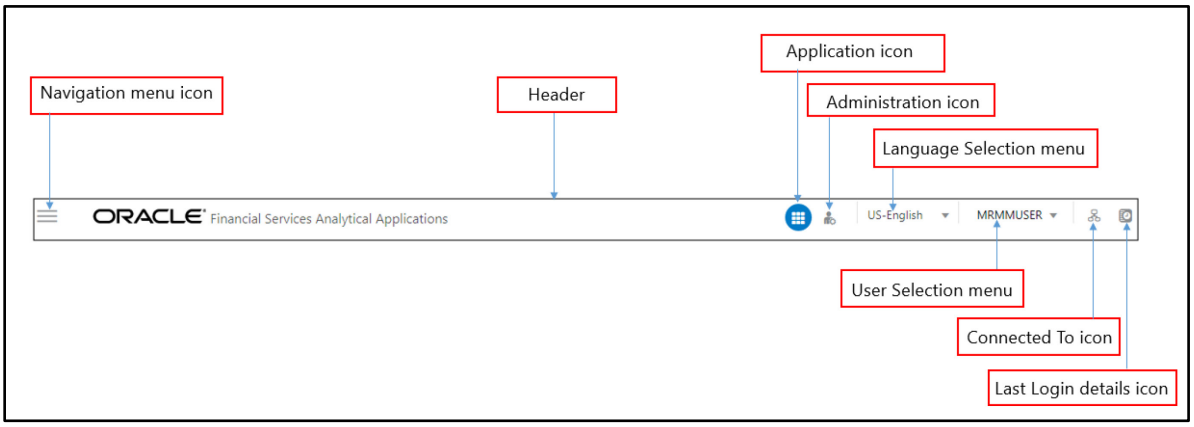
Figure 26: OFSAA Landing Page



OFSAA Landing page 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.

7.11.1.1 Header

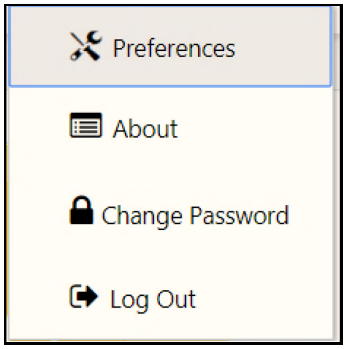
Figure 27: User Interface Components



- **Navigation Menu**: 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, 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.

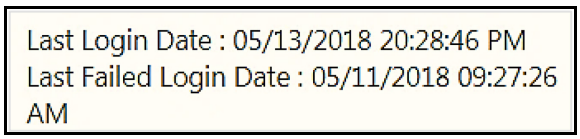
- **User Menu**: Clicking this icon displays the following menu:

Figure 28: 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.

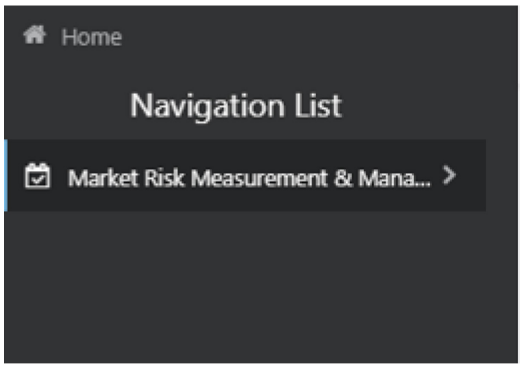
Figure 29: Last Login Details



7.11.1.2 Navigation Drawer

1. Click the **Navigation menu** to launch the Navigation Drawer as shown.

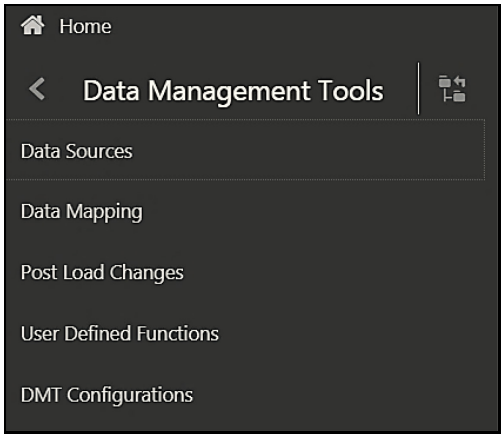
Figure 30: Navigation Drawer



Here the navigation items appear as a list. The First Level menu shows the installed applications. Clicking an application displays the second-level menu with the application name and Common tasks menu. The arrangement of the menu depends on your installed application.

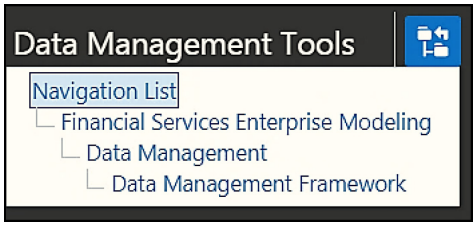
2. Clicking an item in the menu displays the next level sub-menu and so on. For example, to display Data Sources, click **Financial Services Enterprise Modeling**, select **Data Management**, select **Data Management Framework,** select **Data Management Tools**, and then select **Data Sources.**

Figure 31: Navigation Drawer Menus and Submenus



3. Click  **Hierarchical Menu** to display the navigation path of the current submenu as shown.

Figure 32: 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 **Navigation** menu  .
5. Click **Home** to display the OFSAA Landing page.

7.11.1.3 System Configuration

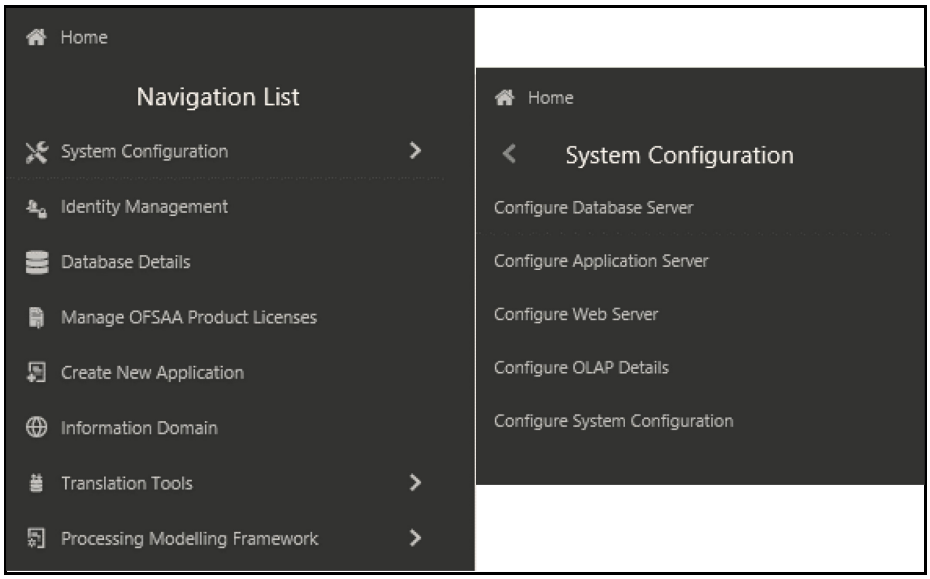
The Administration and Configuration section allows the System Administrators to configure the Server details, Database details, OLAP details, and Information Domain along with the other Configuration process such as segment and metadata mapping, and mapping segment to security. System Configuration is mostly an onetime activity which helps the System administrator to make the Infrastructure system operational for usage.

7.11.1.3.1 Navigate to System Configuration

Click the **Administration Icon** 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 the **Navigation menu** to access the **Navigation List**.

Figure 33: 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.

7.11.1.3.2 Components of System Configuration

System Configuration consists of the following sections.

- Database Server
- Application Server
- Web Server
- Database Details
- OLAP Details
- Information Domain
- Configuration
- Create Application

7.12 Configure the excludeURLList.cfg File

See Configure the excludeURLList.cfg File section in the OFS AAI Installation Guide for details.

7.13 View OFSAA Product Licenses after Installation of Application Pack

In an integrated environment, where you have multiple applications installed on the same domain or infrastructure, OFSAAI allows you to see the other licensed applications through the UI. For more information, see the View OFSAA Product Licenses after Installation of Application Pack in the OFS Analytical Applications Infrastructure User Guide Release 8.1.1.0.0.

7.14 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 the `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>
```

7.15 Change the ICC Batch Ownership

All seeded Batches in the OFS MRMM pack are automatically assigned to the SYSADMN user during installation. To view the batches in the Batch Maintenance menu, you must execute the following query in the Config Schema of the database:

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

Where:

- `fromUser` indicates the user who currently owns the batch.
- `toUser` indicates the user to whom the ownership must be transferred.

- `infodom` is an optional parameter. If specified, the ownership of the batches of that Infodom will be changed.

7.16 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.
3. 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'
   ```

7.17 Update OBIEE URL

To access the respective Business Intelligence Analytics Application, you must update the OBIEE URL in the AAI_MENU_B table after the OBIEE environment is up and running. Use the following command:

```
UPDATE AAI_MENU_B
SET V_MENU_URL = '&obieeURL'
WHERE V_MENU_ID IN ('OFS_MRMM_BI')
/
COMMIT
/
```

7.18 Create and Deploy the Application Pack Web Archive

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

For identifying the location of the generated web archive file and for generating and deploying the web archive file at any time later, see the Create and Deploy the EAR or WAR Files section in the *OFS AAI Installation Guide, Release 8.1*.

7.19 Configure Data Redaction in OFSAA

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

Topics:

- Prerequisites

- Data Redaction
- Enable Data Redaction in case of an Upgrade

7.19.1 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.

7.19.2 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).
3. Execute the following SQL statement to find out the list of atomic users from the table:

   select v_schema_name from aai_db_detail where V_DB_NAME <> 'CONFIG' AND V_DB_ TYPE = 'ORACLE'
4. Execute the `$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**.
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 and Configuration Guide.

7.19.3 Enable Data Redaction for Upgrade

This section details the configurations required in case you want to enable Data Redaction in OFSAA applications after upgrade to OFSAA 8.1.1.0.0 version from a previous version. Additionally, these configurations are required in case you did not enable TDE during OFS MRMM 8.1.1.0.0 installation and want to enable at a later point of time.

Perform the following steps:

1. From the Configuration window in the System Configuration module, select the **Allow Data Redaction** checkbox.
2. 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 and Configuration Guide.

7.20 Data Protection Implementation in OFSAA

Data Protection implementation in OFSAA applications includes the following:

- Right to be Forgotten
- Data Portability
- Pseudonymization
- Notice and Consent
- Data Archival
- Data Redaction

See the OFSDF Data Protection Implementation Guide for details.

7.20.1 Right to be Forgotten

Right to be Forgotten is the task of removing Personally Identifiable Information (PII) of a Data Subject for the given Party. The financial institution can delete PII for those Data Subjects who have requested this Right to be Forgotten functionality.

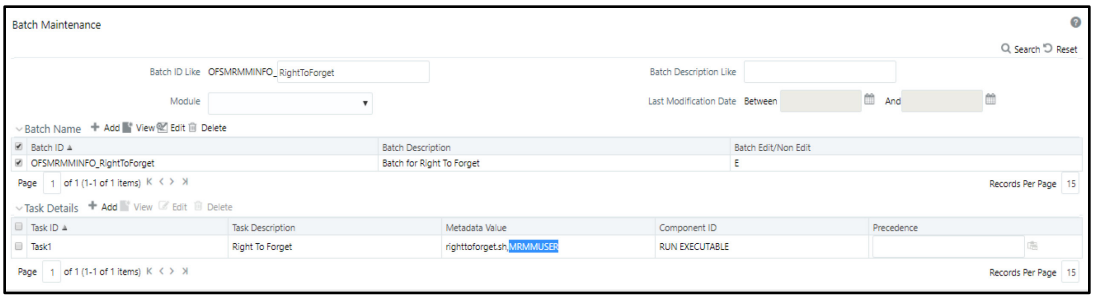
The Data Subjects may have made significant financial transactions, and (or) financial information may be required for regulatory or compliance reporting. Deleting the complete record that consists of PII may lead to issues in data reconciliation. In OFSAA, the PII data will be replaced with randomized values and therefore, the complete Data Subject record is retained. As a result, financial information is retained; however, the associated Party PII is removed permanently.

7.20.1.1 Configuring Right to be Forgotten During OFS MRMM Installation

To configure Right to be Forgotten, follow these steps:

1. Ensure that you assign the role Data Controller to the MRMM user.
2. Edit the task of the batch `<Infodom_name>_RightToForget`. By default the parameter is SYSADMN. Modify the user ID in the Metadata Value field to the MRMM Data Controller user ID from Step 1.

Figure 34: Configure Right to be Forgotten for OFS MRMM



3. Add the party IDs entries for the Right to Forget in the FSI_PARTY_RIGHT_TO_FORGET table.
4. Execute the batch `<Infodom_name>_RightToForget`, for the specific FIC MIS date mentioned in the FSI_PARTY_RIGHT_TO_FORGET table.

7.21 Installing Numerix

This section includes steps to install and configure Numerix.

7.21.1 Configuring Numerix directory

The default Numerix directory is `$FIC_HOME/ficdb/bin/Numerix/cas-4.1.0-4305-linux64`

> **NOTE** Ensure to grant 755 permission to the Numerix directory.

1. Update the following files in the `<Numerix_Directory>/conf/` directory:
   - `cas-server.properties`
     - Modify the database settings "UseBackingStore=true" to "UseBackingStore=false".
   - `cas-common.properties`
     - Check the port number availability for `brokeruri` port. By default, `brokeruri` port is 14900.
     - To point the numerix to a different broker already running, update the IP and port of "`brokerlocation`" value as `brokerlocation=ssl://<broker_machine_ip>:<broker_machine_port>`.

> **NOTE** If you move the Numerix files to a new location, update the Numerix path in the .profile file (as mentioned in Step 3 of Installation), and execute the `.profile` file.

7.21.2 Configuring CHLS

To configure CHLS, follow these steps:

1. Copy the CHLS directory to the Unix machine which will be hosting CHLS. Default CHLS directory is `$FIC_HOME/ficdb/bin/Numerix/CHLS/Numerix-CHLS-2.1.0`
2. Update the configurations:
   - Update the CATALINA_HOME variable in the `<CHLS_Directory> /bin/catalina.sh` file to `<CHLS_Directory>/Numerix-CHLS-2.1.0`
   - Check the port number availability for Connector port value defined in the `<CHLS_Directory>/conf/server.xml` file. Default connector port value is 8080. If the port is already being used, update with a free port number.
3. Start CHLS by executing the startup.sh file located at the `<CHLS_Directory>/bin/` directory.
4. The CHLS URL will be as follows:

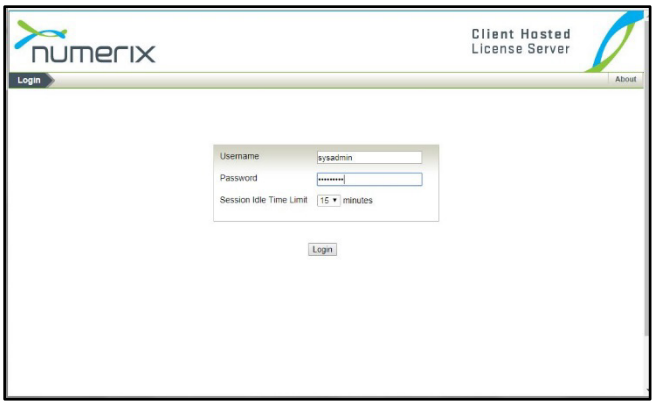
   http://<CHLS_IP>:<Port>/nxchls/chlslogin.jsp

   See the MOS Doc ID: 2691681.1 for an example.

> **NOTE**
>
> `<CHLS_IP>`: IP of the Unix machine hosting CHLS
>
> `<Port>`: Connector port mentioned in `<CHLS_Directory>/conf/server.xml`
>
> There are two user logins available. See the MOS Doc ID: 2691681.1 for more information.

5. Login to CHLS URL as sysadmin user.

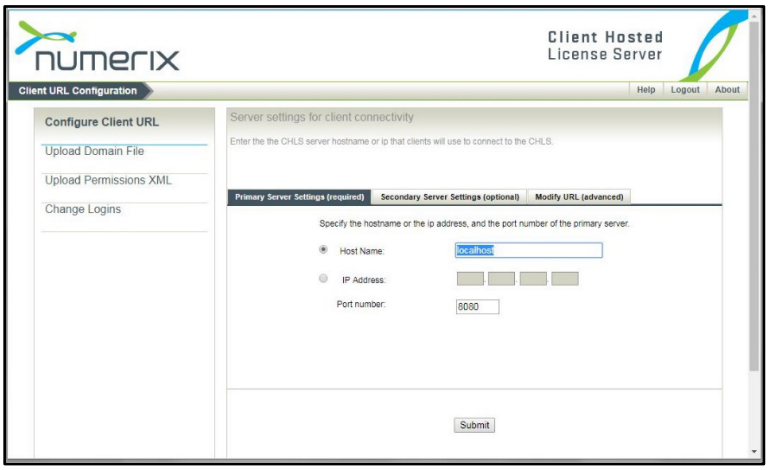
Figure 35: Numerix Login Screen



6. Select **Configure Client URL** tab. Update the hostname from *localhost* to name of the machine hosting CHLS. Alternatively, you can also provide <CHLS_IP>. Also, update the port number to the value provided in the `server.xml` file.

7. Click **Submit**.

Figure 36: Client URL Configuration



7.21.3 Generating Licenses Using CHLS

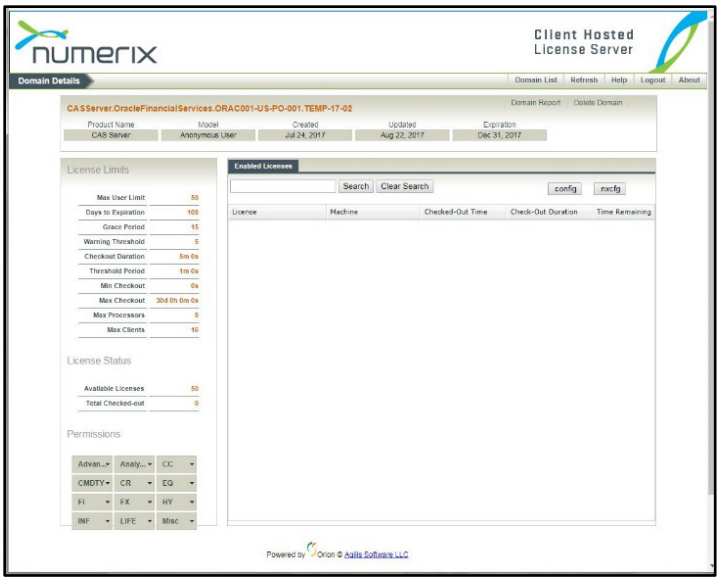
To generate licenses using CHLS, follow these steps:

1. Login to CHLS URL as admin user. The domain list will be displayed.

Figure 37: Domain List

2. Select the domain from the Domain list. The generated license details and status will be displayed.

Figure 38: Domain Details



3. To generate a new license, click **nxcfg**. License will be generated and downloaded.

> **NOTE** Rename the saved license file name to remove blank spaces, if any.

7.21.4 Activating Numerix Trial Licenses

To activate the trial licenses, follow these steps:

1. Copy the license generated using CHLS to the Unix machine where Numerix_Directory is present. By default, `$FIC_HOME/ficdb/bin/Numerix/license` directory is provided for copying the generated license.
2. Navigate to the Numerix lib directory in putty: `<Numerix_directory>/lib/linux64`
3. Install the license by executing the following command:

   ```
   ./nxlm --install <license_path>/<license_file>
   ```

4. Check the status of installed license by executing the following command:

   ```
   ./nxlm --list all
   ```

   The license status will be shown as inactive.
5. Start the Numerix processes (Broker, Server, Compute). The license status will become active. The same is reflected in CHLS UI also.
6. To uninstall a license, execute the following command:

   ```
   ./nxlm --install <license_name>
   ```

   - `<license_name>` is the name of the license displayed when ./nxlm --list all command is executed.

NOTE

The machine in which CHLS is hosted and the machine where numerix is installed should be in the same network.

Before the CHLS License Key expires, contact My Oracle Support for the new CHLS License patch. Details about the license validity period is available in the **Domain Details** section of the CHLS Hosted URL.

Currently the latest CHLS license is packaged as part of the installer, there is no separate patch required.

If the CHLS is to be relocated to a new location, all the licenses should be uninstalled before the CHLS directory is moved.

7.21.5 Setting up Multiple Compute Nodes

To set up multiple compute nodes, follow these steps:

1. Copy the Numerix CAS folder from the primary machine to the secondary machine. The CAS folder is located in the following directory:

   `$FIC_HOME/ficdb/bin/Numerix`

2. Configure the CAS licenses in the secondary machines. See section Configuring CHLS for details.

3. Navigate to the`$FIC_HOME/ficdb/bin/Numerix/cas-4.1.0-4305-linux64/conf` directory and open the `cas-common.properties` file. Change the broker location setting for each secondary machines to the same broker location that is running the Broker process in the primary machine (including the port number).

   For example, if the primary machine named *Comp1* is in the *domain* listening to port 14900, then modify the broker location in each of the secondary machines as in the primary machine such as: `brokerlocation=ssl://Comp1.domain:14900`

4. Navigate to the`$FIC_HOME/ficdb/bin/Numerix/cas-4.1.0-4305-linux64/bin` directory and Run the `runCompute.sh` utility on each secondary machine that is designated as a compute node.

NOTE

Ensure that all the Numerix servers are running in the primary machine before configuring multiple compute nodes on secondary machines.

7.22 Starting Numerix Servers

On the machine in which Numerix is installed, navigate to `<Numerix_Directory>/bin` and start the services in the following order:

1. Start the Broker by executing the following command:

   `./RunBroker.sh &`

2. After the Broker is started successfully, start the Server by executing the following command:

   ```
   ./RunServer.sh &
   ```

3. After the Server is started successfully, start the Compute node by executing the following command:

   ```
   ./RunCompute.sh &
   ```

7.23 Post-deployment Configurations

This section includes the post-deployment configuration steps.

Topics:

7.23.1 OBIEE Configuration - Deploy OFS MRMM Analytics

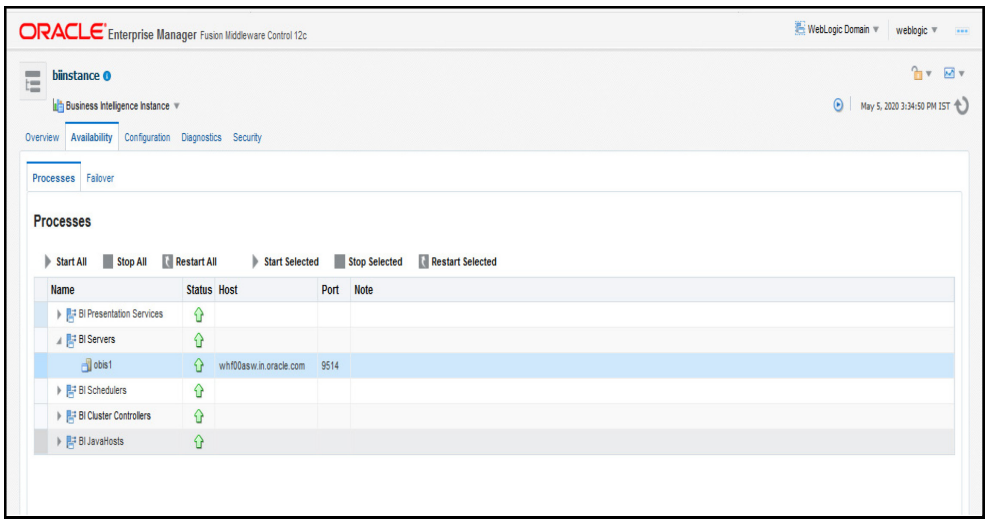
The OFS MRMM Analytics application release 8.1.1.0.0 is based upon a dedicated reporting mart built from the new Fusion Financial Services Data Model. OFS MRMM Analytics 8.1.1.0.0 leverages several components of Oracle Business Intelligence Enterprise Edition (OBIEE) and Oracle Analytics Server (OAS) technology including Dashboards and Answers. It also includes various Dashboards and Reports for the user to carry out various Liquidity Gap based analytics.

Follow these steps to configure the OFS MRMM Analytics:

1. Make sure Oracle Business Intelligence 12.2.1.4.0 or OAS 5.5.0 installation is completed and available. See Installing and Configuring Oracle Business Intelligence 12c (12.2.1.4) (E91876-03)or Installing and Configuring Oracle Analytics Server 5.5.0 (F27232-03), for more details.
2. Configure the ODBC data source to connect to the Oracle BI Server.
   a. Navigate to **Control Panel**, select **Administrative Tools**, and then select **Data Sources (ODBC)**.
   b. Select the **System DSN** tab and click **Add**.
   c. Select a driver-specific to Oracle BI Server 2.2.1.4.0 or OAS 5.5 and click **Finish**.
   d. Enter the **Name** and **Server** details (specify the hostname or IP Address of the BI Server) and click **Next**.
   e. Enter the Oracle BI Server login ID and password (Enter the User Name and Password created at the time of OBIEE or OAS installation). Update the port with the port number available for the BI Server in the **Availability** tab of **Business Intelligence** in the **Enterprise Manager**.

      For example: In the following figure, the port number is 9514.

Figure 39: Update Port Number in the BI Server



f. Click **Next.**

3. Start OBIEE services and login
   - **a.** Log in to Linux server
   - **b.** Navigate to the path `<OBIEE_HOME>/user_projects/domains/bi/bitools/bin`
   - **c.** Run ./start.sh
4. Deploy RPD and webcat file (or files).
   - **a.** Navigate to $`FIC_HOME/MRMM_BI/RPD/` directory which contains `MRMM_BI.rpd` and `$FIC_HOME/MRMM_BI/catalog/` directory which contains `MRMM_BI.catalog`.
   - **b.** RPD Deployment:
     - **i.** Navigate to `$FIC_HOME/MRMM_BI/RPD/` directory which contains `MRMM_BI.rpd` and `$FIC_HOME/MRMM_BI/catalog/` directory which contains `MRMM_BI.catalog`. then copy into local system
     - **ii.** Log in to Linux.
     - **iii.** Copy the rpd from local system to the below path `<OBIEE_HOME>user_projects/domains/bi/tmp`
     - **iv.** Navigate to the path: `<OBIEE_HOME>/user_projects/domains/bi/bitools/bin`
     - **v.** Replace the <rpdLocationPath> with the rpd location where the rpd.(for example : `<OBIEE_HOME>/user_projects/domains/bi/tmp/MRMM_BI.rpd`)
     - **vi.** Provide the analytics username/ password, and execute the below command:

       ```
       ./datamodel.sh  uploadrpd -I <rpdLocationPath>  -SI ssi -U username -P password
       ```

     - **vii.** Enter the RPD Password. See the MOS Doc ID: 2691681.1 for the password. The RPD deployment is complete.

c. Web catalog Deployment:

i. Copy the catalog file from the `$FIC_HOME/MR_BI/catalog/` directory to your local system.

ii. Open the catalog manager, navigate to the File menu and open the catalog online by giving the necessary credentials based on your setup (Type - (online), URL - (`http://<ipaddress>:<port>/analytics-ws`)

iii. Once the catalog is opened, it will display a folder structure on left hand side. Select the catalog root ->Shared folder in the LHS tree structure. Go to **File** menu and select **Un archive**. It will ask for the path for a file.

iv. Browse the path of the archived catalog file saved in your local folder using the 'Browse' button and click **OK.**

v. The catalog must be unarchived in the shared folder for the reports to display. A pop up for successful operation is displayed.

vi. Restart the presentation services once again.

vii. Open the analytics OBIEE URL- (`http://<ipaddress>:<port>/analytics`) Login with credentials based on your setup and verify that catalog is available.

— Click on catalog in OBIEE application right top menu list

— In LHS Navigate to shared folders and verify all the folders are available

5. Configure the `tnsnames.ora` file.

a. Open the `tnsnames.ora` file under the - <`Oracle Home>/network/admin` directory.

b. Make sure an entry is made in the `tnsnames.ora` file to connect to atomic schema of OFSAA application.

c. Save the `tnsnames.ora` file.

6. Configure ODBC data source to connect to Oracle BI Server.

a. Go to **Control Panel**, select **Administrative Tools**, and **then** select **Data Sources** (ODBC).

b. Select the **System DSN** tab and click **Add**.

c. Select a driver specific to (Oracle BI Server 12g) and click **Finish**.

d. Enter **Name** and **Server** details (Specify the Hostname or IP Address of the BI Server) and click **Next**.

e. Enter Oracle BI Server login ID and password (Enter User Name and Password created at the time of OBIEE installation). Click **Next**.

f. Click **Finish**.

7. Modify the connection pool and set the properties.

a. Open the OBI Administration tool.

b. Select **Start** select **Programs** select **Oracle Business Intelligence** then select **BI Administration.**

c. Select **File** select **Open** then select **Online,** and select `MRMM_BI.rpd` file.

d. In the **Open** dialog box, select and open the `MRMM_BI.rpd` file.

e. Enter the Repository password. See the MOS Doc ID: 2691681.1 for the password.

f. In the **Physical** layer, double-click the Connect Pool: **MRMM** to open its properties.

g. In the **General** tab, edit or verify the following entries:

- **Call Interface**: (OCI 10g/11g).
- **Data source name**: <`tnsnames.ora` entry created in the step 5.b connecting to OFSAA atomic schema>.
- **User name**: <enter atomic db user name>.
- **Password**: <enter atomic db user password>.
- Confirm the password and Click **OK** to close the window.

h. Similarly, configure the connection pools for MRMM_IB.

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

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

k. Close the RPD file (File - Exit).

8. Login into OFSMRMM Application using the URL: `http://<Host_IP_Address>:<webport>/analytics`.(Replace the port number based on your setup).

7.23.1.1 Enabling the Auto-Complete Prompt Functionality

To enable the auto-complete prompt functionality, follow these steps:

1. Log in to Linux.
2. Navigate to the `<OBIEE_HOME>/user_projects/domains/bi/config/fmwconfig/biconfig/OBIPS` directory.
3. Open `instanceconfig.xml` file (make a backup of the file prior to making any changes).
4. Add the following code between the `<ServerInstance> ... </ServerInstance> tags`:

```
<Prompts>
<MaxDropDownValues>256</MaxDropDownValues>
<AutoApplyDashboardPromptValues>true</AutoApplyDashboardPromptValues>
<AutoSearchPromptDialogBox>true</AutoSearchPromptDialogBox>
<AutoCompletePromptDropDowns>
<SupportAutoComplete>true</SupportAutoComplete>
<CaseInsensitive>true</CaseInsensitive>
<MatchingLevel>MatchAll</MatchingLevel>
<ResultsLimit>50</ResultsLimit>
</AutoCompletePromptDropDowns>
</Prompts>
```

5. Restart the OBIEE Services.

7.23.1.2 Increasing Maximum Visible Rows in the Table

To increase the maximum visible rows in the table, follow these steps:

1. Log in to Linux
2. Navigate to the `<OBIEE_HOME>/user_projects/domains/bi/config/fmwconfig/biconfig/OBIPS` directory.
3. Open `instanceconfig.xml` file (make a backup of the file prior to making any changes).
4. Add the following code between the `<ServerInstance> ... </ServerInstance> tags`:

```
<Table>
<DefaultRowsDisplayedInDelivery>75</DefaultRowsDisplayedInDelivery>
<DefaultRowsDisplayedInDownload>2500</DefaultRowsDisplayedInDownload>

<MaxCells>1000000</MaxCells>

<MaxVisiblePages>2500</MaxVisiblePages>

<MaxVisibleRows>500000</MaxVisibleRows>

<MaxVisibleSections>5000</MaxVisibleSections>

  </Table>
```

5. Restart the OBIEE Services.

7.23.1.3 Increasing Number Formats to Five Decimals

To increase the number formats to five decimals, follow these steps:

1. Backup and edit the `_datatype_format` file located at the below location:

```
<OBIEE_HOME>user_projects/domains/bi/bidata/service_instances/ssi/metad
ata/content/catalog/root/system/metadata
```

2. Modify the below from

```
<saw:dataFormat minDigits="0" maxDigits="0" commas="true"
negativeType="minus" xsi:type="saw:number"/>
```

   To,

```
<saw:dataFormat minDigits="5" maxDigits="5" commas="true"
negativeType="minus" xsi:type="saw:number"/>
```

3. Save and exit the file
4. Restart the OBIEE Services

7.23.1.4 Post Installation Changes in instanceconfig.xml File

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

1. Backup and edit the instanceconfig.xml file located at:
   `$ORACLE_HOME/user_projects/domains/bi/config/fmwconfig/biconfig/OBIPS`

Table 27: Post Installation Changes in instanceconfig.xml

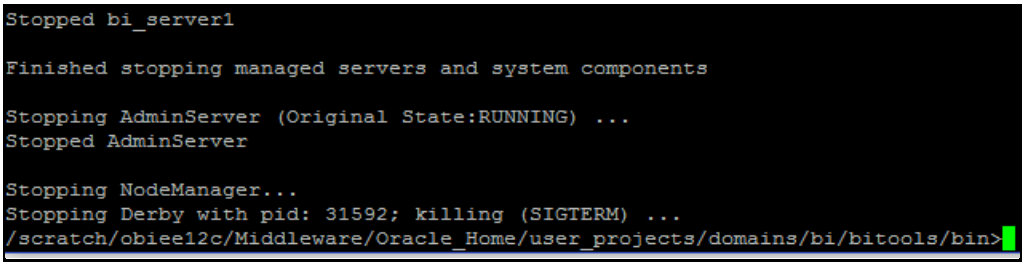
Tag to be changed	Changes
<Views>	<Views> <Charts> <DefaultWebImageType>flash</DefaultWebImageType> </Charts> </Views>
<Security>	<Security> <CheckUrlFreshness>false</CheckUrlFreshness> <EnableSavingContentWithHTML>true</ EnableSavingContentWithHTML> </Security>

2. Save and exit the file.
3. Restart the presentation server for the changes to take effect.

7.23.1.4.1 Starting and Stopping Services in OBIEE

Follow the below steps to start and stop OBIEE services:

1. Connect to the OBIEE server.
2. Navigate to the `/scratch/<mount_name>/Middleware/Oracle_Home/user_projects/domains/bi/bitools/bin` directory.
3. Execute the following commands:
   a. Command to stop service: `./stop.sh`



   b. Command to start service: `./start.sh`

7.23.2 Logging as System Administrator

This section includes provides information about the system administrator roles and privileges.

Topics:

7.23.2.1 Role of an Administrator

There are two types of Administrators as defined by the OFS Analytical Applications Infrastructure: A User Administrator and System Administrator.

- System Administration: refers to a process of managing, configuring, and maintaining confidential data in a multi-user computing environment. A System Administrator creates functions, roles, and mapping functions to specific roles. A System Administrator also maintains segment information, holiday list, and restricted passwords to ensure security within the application. The following are the activities of a System Administrator:
  - Function Maintenance
  - Role Maintenance
  - Function-Role Mapping
- User Administration: is one of the core functions of Security Management which involves administrators to create user definitions, user groups, maintain profiles, authorize users and user groups, and map users to groups, domains, and roles. A User Administrator controls the user privileges in accessing the application and is based on business requirements to provide access to view, create, edit, or delete confidential data.

A User Administrator grants permissions based on user roles and requirements.

The respective roles must be mapped to administrative user SYSADMN:

7.23.2.2 Function Maintenance

For details, see the System Administrator section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

7.23.2.3 Role Maintenance

For details, see the System Administrator section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

7.23.2.4 Function - Role Mapping

For details, see the System Administrator section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

7.23.2.5 User Group Role Map

For details, see the User Group Role Map section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

7.23.3 Creating Application Users

Create the application users in the OFSAA setup before use.

For details, see the User Administrator section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

7.23.4 Mapping Application User (or Users) to User Group

For details, see the User Administrator section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

Starting the OFSAA 8.1.1 release, with the installation of the MRMM application pack, preconfigured Application user groups are seeded. These user groups are unique to every OFSAA Application Pack and have application roles pre-configured.

For more information on seeded User Groups, see MRMM Pack User Group Names.

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

For details, see the *Mapping or Unmapping Users* section in the Oracle Financial Services Analytical Applications Infrastructure User Guide.

8 MRMM Pack User Group Names

The User Group names are seeded as part of the media pack.

To access the MRMM and MRMM Analytics application, created users can be mapped to the following user groups:

- MRMMADMINGRP: Market Risk Measurement and Management Admin Group
- MRMMANALYSTGRP: Market Risk Measurement and Management Analyst Group
- MRMMAPPROVERGRP: Market Risk Measurement and Management Approver Group

The roles defined in OFS MRMM application are as described in the following sections.

8.1 MRMM Group Codes

The following table lists the MRMM Group codes.

Table 28: MRMM Group Codes

Sl. No.	Group Code	Group Name	Group Description
1	MRMMADMINGRP	Market Risk Measurement and Management Admin Group	Group for administrator
2	MRMMAPPROVERGRP	Market Risk Measurement and Management Approver Group	Group for approvers
3	MRMMANALYSTGRP	Market Risk Measurement and Management Analyst Group	Group for business analysts

8.2 MRMM Role Codes

The following table lists the MRMM Role codes.

Table 29: MRMM Role Codes

Sl. No.	Role Code	Role Name	Role Description
1	MRMMADMIN	MRMM Administrator	MRMM Administrator roles.
2	MRMMCURRENCY	Currency Role	Currency role.
3	MRMMHISTSMLNANALYST	MRMM Hist Sim Analyst	MRMM Historical Simulation Analyst roles.
4	MRMMHISTSMLNAPROVER	MRMM Hist Sim Approver	MRMM Historical Simulation Approver roles.
5	MRMMHOLIDAY	Holiday Role	Holiday role.
6	MRMMMDLVALDNANALYST	MRMM Mdl Vldn Analyst	MRMM Model Validation Analyst roles.
7	MRMMMDLVALDNAPROVER	MRMM Mdl Vldn Approver	MRMM Model Validation Approver roles.
8	MRMMMNTCARLOANALYST	MRMM MC Sim Analyst	MRMM Monte Carlo Simulation Analyst roles.
9	MRMMMNTCARLOAPROVER	MRMM MC Sim Approver	MRMM Monte Carlo Simulation Approver roles.
10	MRMMVALNANALYST	MRMM Inst Valn Analyst	MRMM Instrument Valuation Analyst roles
11	MRMMVALNAPROVER	MRMM Inst Valn Approver	MRMM Instrument Valuation Approver roles.

8.3 MRMM Function Codes

The following table lists the MRMM Function codes.

Table 30: MRMM Function Codes

Sl. No.	Function Code	Function Name	Function Description
1	MRBKTAPR	Approve MRMM Bucket Definition details	The user group mapped to this function can approve Bucket Definition details.
2	MRBKTCOPY	Copy MRMM Bucket Definition details	The user group mapped to this function can copy Bucket Definition details.
3	MRBKTDEL	Delete MRMM Bucket Definition details	The user group mapped to this function can delete Bucket Definition details.
4	MRBKTEXP	Export MRMM Bucket Definition details	The user group mapped to this function can export Bucket Definition details.
5	MRBKTNEW	Add New MRMM Bucket Definition details	The user group mapped to this function can Add New Bucket Definition details.

6	MRBKTRJCT	Reject MRMM Bucket Definition details	The user group mapped to this function can reject Bucket Definition details.
7	MRBKTSAVE	Save MRMM Bucket Definition details	The user group mapped to this function can save Bucket Definition details.
8	MRBKTSBMT	Submit MRMM Bucket Definition details	The user group mapped to this function can submit Bucket Definition details.
9	MRCONFIGR	MRMM Business Configuration	The user group mapped to this function can access Business Configuration.
10	MRCONFUPD	Update MRMM Default Configuration	The user group mapped to this function can update Default Configuration Settings.
11	MRDMHCUPD	Update MRMM Dimension and Hierarchy Configuration	The user group mapped to this function can update Default Dimension and Hierarchy Configuration.
12	MRELINK	Manage Run Link	The user mapped to this function can view the manage run link.
13	MRESUM	Manage Run Summary	The user mapped to this function can view the manage run summary.
14	MRHMADDMDL	Add New MRMM Hybrid model	The user group mapped to this function can Add New Hybrid Model.
15	MRHMADDRUL	Add New MRMM Hybrid model Rule	The user group mapped to this function can add new rules to Hybrid Model.
16	MRHMDELMDL	Delete MRMM Hybrid model	The user group mapped to this function can delete Hybrid Model.
17	MRHMDELRUL	Delete MRMM Hybrid model Rules	The user group mapped to this function can delete Hybrid Model Rules.
18	MRHMEDTRUL	Edit saved rules in MRMM Hybrid model	The user group mapped to this function can edit the rules which are already saved for Hybrid Model.
19	MRHMGENXML	Generate xml in MRMM Hybrid model setup	The user group mapped to this function can generate xml in MRMM Hybrid model setup.
20	MRHSADD	Add New MRMM Hist Sim	The user group mapped to this function can add New Historical Simulation Business Approach.
21	MRHSAPR	Approve MRMM Hist Sim Business Definition	The user group mapped to this function can approve Historical Simulation Business Definition.
22	MRHSAPRRET	Approve Retire MRMM Hist Sim Business Definition	The user group mapped to this function can approve retire Historical Simulation Business Definition.
23	MRHSDEL	Delete MRMM Hist Sim	The user group mapped to this function can delete Historical Simulation Business Approach.
24	MRHSEXE	Execute MRMM Hist Sim Business Definition	The user group mapped to this function can execute Historical Simulation Business Definition.
25	MRHSEXP	Export MRMM Hist Sim	The user group mapped to this function can export Historical Simulation Business Approach.
26	MRHSNEWBD	Add New MRMM Hist Sim Business Definition	The user group mapped to this function can add New Historical Simulation Business Definition.

27	MRHSRETIRE	Retire MRMM Hist Sim Business Definition	The user group mapped to this function can retire Historical Simulation Business Definition.
28	MRHSRJCT	Reject MRMM Hist Sim Business Definition	The user group mapped to this function can reject Historical Simulation Business Definition.
29	MRHSRSFTCH	Fetch MRMM Hist Sim Reduced Set Data	The user group mapped to this function can fetch Historical Simulation Reduced Set Data.
30	MRHSRSSAVE	Save MRMM Hist Sim Reduced Set Data	The user group mapped to this function can save Historical Simulation Reduced Set Data.
31	MRHSRSVAL	Validate MRMM Hist Sim Reduced Set Data	The user group mapped to this function can validate Historical Simulation Reduced Set Data.
32	MRHSSAVE	Save MRMM Hist Sim Business Definition	The user group mapped to this function can save Historical Simulation Business Definition.
33	MRHSSBMT	Submit MRMM Hist Sim Business Definition	The user group mapped to this function can submit Historical Simulation Business Definition.
34	MRHSSPEXE	Execute MRMM Hist Sim Stress Period Identification	The user group mapped to this function can execute Historical Simulation Stress Period Identification.
35	MRIVADD	Add New MRMM Inst Valn	The user group mapped to this function can add new Instrument Valuation Business Approach.
36	MRIVAPR	Approve MRMM Inst Valn Business Definition	The user group mapped to this function can approve Instrument Valuation Business Definition.
37	MRIVAPRRET	Approve Retire MRMM Inst Valn Business Definition	The user group mapped to this function can approve retire Instrument Valuation Business Definition.
38	MRIVDEL	Delete MRMM Inst Valn	The user group mapped to this function can delete Instrument Valuation Business Approach.
39	MRIVEXE	Execute MRMM Inst Valn Business Definition	The user group mapped to this function can execute Instrument Valuation Business Definition.
40	MRIVEXP	Export MRMM Inst Valn	The user group mapped to this function can export Instrument Valuation Business Approach.
41	MRIVNEWBD	Add New MRMM Inst Valn Business Definition	The user group mapped to this function can add new Instrument Valuation Business Definition.
42	MRIVRETIRE	Retire MRMM Inst Valn Business Definition	The user group mapped to this function can retire Instrument Valuation Business Definition.
43	MRIVRJCT	Reject MRMM Inst Valn Business Definition	The user group mapped to this function can reject Instrument Valuation Business Definition.
44	MRIVSAVE	Save MRMM Inst Valn Business Definition	The user group mapped to this function can save Instrument Valuation Business Definition.
45	MRIVSBMT	Submit MRMM Inst Valn Business Definition	The user group mapped to this function can submit Instrument Valuation Business Definition.
46	MRMCSADD	Add New MRMM Monte Carlo Simulation	The user group mapped to this function can add new Monte Carlo Simulation.

47	MRMCSAPR	Approve MRMM Monte Carlo Sim Business Def	The user group mapped to this function can approve Monte Carlo Sim Business Definition.
48	MRMCSAPRET	Approve Retire Monte Carlo Sim Business Def	The user group mapped to this function can approve retire Monte Carlo Sim Business Definition.
49	MRMCSDEL	Delete MRMM Monte Carlo Simulation	The user group mapped to this function can delete Monte Carlo Simulation.
50	MRMCSEXE	Execute MRMM Monte Carlo Sim Business Def	The user group mapped to this function can execute Monte Carlo Sim Business Definition.
51	MRMCSEXP	Export MRMM Monte Carlo Simulation	The user group mapped to this function can export Monte Carlo Simulation.
52	MRMCSNEWBD	Add New MRMM Monte Carlo Sim Business Def	The user group mapped to this function can add new Monte Carlo Sim Business Definition.
53	MRMCSRET	Retire MRMM Monte Carlo Sim Business Def	The user group mapped to this function can retire Monte Carlo Sim Business Definition.
54	MRMCSRJCT	Reject MRMM Monte Carlo Sim Business Def	The user group mapped to this function can reject Monte Carlo Sim Business Definition.
55	MRMCSSAVE	Save MRMM Monte Carlo Sim Business Def	The user group mapped to this function can save Monte Carlo Sim Business Definition.
56	MRMCSSBMT	Submit MRMM Monte Carlo Sim Business Def	The user group mapped to this function can submit Monte Carlo Sim Business Definition.
57	MRMDLAPLF	Apply Filters MRMM Modellable Non-Modellable	The user group mapped to this function can apply filters in Modellable Non-Modellable screen.
58	MRMDLEXE	Execute MRMM Modellable Non-Modellable	The user group mapped to this function can execute Modellable Non-Modellable rules.
59	MRMDLRSTF	Reset Filters MRMM Modellable Non-Modellable	The user group mapped to this function can reset filters in Modellable Non-Modellable screen.
60	MRMDLSAVE	Save MRMM Modellable Non-Modellable	The user group mapped to this function can save Modellable Non-Modellable rules.
61	MRMDLSETRL	Set Rules MRMM Modellable Non-Modellable	The user group mapped to this function can set Rules in Modellable Non-Modellable screen.
62	MRMMFUNC	MRMM Web Folder Function	MRMM Web folder Function.
63	MRMMOBJA	MRMM Object Add	MRMM Object Add.
64	MRMMOBJE	MRMM Object Edit	MRMM Object Edit.
65	MRMMOBJV	MRMM Object View	MRMM Object View.
66	MRMVADD	Add New MRMM Mdl Valdn	The user group mapped to this function can add New Model Validation Business Approach.
67	MRMVDEL	Delete MRMM Mdl Valdn	The user group mapped to this function can delete Model Validation Business Approach.

68	MRMVEXP	Export MRMM Mdl Valdn	The user group mapped to this function can export Model Validation Business Approach.
69	MRMVNEWBD	Add New MRMM Mdl Valdn Business Definition	The user group mapped to this function can add New Model Validation Business Definition.
70	MRMVRETIRE	Retire MRMM Mdl Valdn Business Definition	The user group mapped to this function can retire Model Validation Business Definition.
71	MRMVAPR	Approve MRMM Mdl Valdn Business Definition	The user group mapped to this function can approve Model Validation Business Definition.
72	MRMVAPRRET	Approve Retire MRMM Mdl Valdn Business Definition	The user group mapped to this function can approve retire Model Validation Business Definition.
73	MRMVEXE	Execute MRMM Mdl Valdn Business Definition	The user group mapped to this function can execute Model Validation Business Definition.
74	MRMVRJCT	Reject MRMM Mdl Valdn Business Definition	The user group mapped to this function can reject Model Validation Business Definition.
75	MRMVSAVE	Save MRMM Mdl Valdn Business Definition	The user group mapped to this function can save Model Validation Business Definition.
76	MRMVSBMT	Submit MRMM Mdl Valdn Business Definition	The user group mapped to this function can submit Model Validation Business Definition.
77	MRPDAPR	Approve MRMM Portfolio Definition	The user group mapped to this function can approve Portfolio Definition.
78	MRPDAPRRET	Approve Retire MRMM Portfolio Definition	The user group mapped to this function can approve retire Portfolio Definition.
79	MRPDCOPY	Copy MRMM Portfolio Definition	The user group mapped to this function can copy Portfolio Definition.
80	MRPDDEL	Delete MRMM Portfolio Definition	The user group mapped to this function can delete Portfolio Definition.
81	MRPDEDIT	Edit MRMM Portfolio Definition	The user group mapped to this function can edit Portfolio Definition.
82	MRPDEXP	Export MRMM Portfolio Definition	The user group mapped to this function can export Portfolio Definition.
83	MRPDNEW	Configure New MRMM Portfolio Definition	The user group mapped to this function can add new Portfolio Definition.
84	MRPDRETIRE	Retire MRMM Portfolio Definition	The user group mapped to this function can retire Portfolio Definition.
85	MRPDRJCT	Reject MRMM Portfolio Definition	The user group mapped to this function can reject Portfolio Definition.
86	MRPDSAVE	Save MRMM Portfolio Definition	The user group mapped to this function can save Portfolio Definition.
87	MRPDSBMT	Submit MRMM Portfolio Definition	The user group mapped to this function can submit Portfolio Definition.
88	MRPPEXP	Export entries for Pricing Policy screen	The user group mapped to this function can add entries for Pricing Policy .

89	MRPPNEW	Add entries for Pricing Policy screen	The user group mapped to this function can add entries for Pricing Policy .
90	MRPPSAVE	Save entries for Pricing Policy screen	The user group mapped to this function can add entries for Pricing Policy.
91	MRPRCNGDEL	Delete entries for Pricing Policy screen	The user group mapped to this function can add entries for Pricing Policy.
92	MRPRE	MRMM Application Preferences	The user group mapped to this function can access Application Preferences.
93	MRPROCESS	MRMM Business Processes	The user group mapped to this function can access Business Processes
94	MRPRPOLICY	Load data for Pricing Policy screen	The user group mapped to this function can add entries for Pricing Policy.
95	MRRFAPPR	Approve MRMM Risk Factor	The user group mapped to this function can Approve MRMM Risk Factor.
96	MRRFDEL	Delete MRMM Risk Factor	The user group mapped to this function can Delete MRMM Risk Factor.
97	MRRFETAPPR	Approve MRMM Risk Factor Eligibility Test	The user group mapped to this function can Approve MRMM Risk Factor Eligibility Test.
98	MRRFETEXP	Export MRMM Risk Factor Eligibility Test	The user group mapped to this function can Export MRMM Risk Factor Eligibility Test.
99	MRRFETRJCT	Reject MRMM Risk Factor Eligibility Test	The user group mapped to this function can Reject MRMM Risk Factor Eligibility Test.
100	MRRFETSAVE	Save MRMM Risk Factor Eligibility Test	The user group mapped to this function can Save MRMM Risk Factor.
101	MRRFETSBMT	Submit MRMM Risk Factor Eligibility Test	The user group mapped to this function can Submit MRMM Risk Factor Eligibility Test.
102	MRRFEXP	Export MRMM Risk Factor	The user group mapped to this function can Export MRMM Risk Factor.
103	MRRFRJCT	Reject MRMM Risk Factor	The user group mapped to this function can Reject MRMM Risk Factor.
104	MRRFSAVE	Save MRMM Risk Factor	The user group mapped to this function can Save MRMM Risk Factor.
105	MRRFSBMT	Submit MRMM Risk Factor	The user group mapped to this function can Submit MRMM Risk Factor.
106	MRSSAPR	Approve MRMM Stress Scenario details	The user group mapped to this function can approve Stress Scenarios details.
107	MRSSCOPY	Copy MRMM Stress Scenario details	The user group mapped to this function can copy Stress Scenarios details.
108	MRSSDEL	Delete MRMM Stress Scenario details	The user group mapped to this function can delete Stress Scenarios details.
109	MRSSEXP	Export MRMM Stress Scenario details	The user group mapped to this function can export Stress Scenarios details.

110	MRSSNEW	Add New MRMM Stress Scenario details	The user group mapped to this function can Add New Stress Scenarios details.
111	MRSSRJCT	Reject MRMM Stress Scenario details	The user group mapped to this function can reject Stress Scenarios details.
112	MRSSSAVE	Save MRMM Stress Scenario details	The user group mapped to this function can save Stress Scenarios details.
113	MRSSSBMT	Submit MRMM Stress Scenario details	The user group mapped to this function can submit Stress Scenarios details.
114	MRTECHADD	Add entries for technical configuration screen	The user group mapped to this function can add entries for technical configuration .

8.4 MRMM Group Code and Role Code Mapping

The following table lists the MRMM Group code and Role code mapping.

Table 31: MRMM Group Code and Role Code Mapping

Sl. No.	Group Code	Role Code
1	MRMMANALYSTGRP	MRMMHISTSMLNANALYST
2	MRMMANALYSTGRP	MRMMMDLVALDNANALYST
3	MRMMANALYSTGRP	MRMMMNTCARLOANALYST
4	MRMMANALYSTGRP	MRMMVALNANALYST
5	MRMMAPPROVERGRP	MRMMHISTSMLNAPROVER
6	MRMMAPPROVERGRP	MRMMMDLVALDNAPROVER
7	MRMMAPPROVERGRP	MRMMMNTCARLOAPROVER
8	MRMMAPPROVERGRP	MRMMVALNAPROVER
9	MRMMADMINGRP	MRMMADMIN
10	MRMMADMINGRP	MRMMCURRENCY
11	MRMMADMINGRP	MRMMHOLIDAY

8.5 MRMM Role Code and Function Code Mapping

The following table lists the MRMM Role code and Function code mapping.

Table 32: MRMM Role Code and Function Code Mapping

Sl. No.	Role Code	Function Code
1	MRMMHOLIDAY	HOLADD
2	MRMMHOLIDAY	HOLCOPY
3	MRMMHOLIDAY	HOLDEL
4	MRMMHOLIDAY	HOLEDIT
5	MRMMHOLIDAY	HOLRUN
6	MRMMHOLIDAY	HOLVIEW
7	MRMMCURRENCY	CRVW
8	MRMMCURRENCY	CREDIT
9	MRMMCURRENCY	CRADD
10	MRMMCURRENCY	CRDEL
11	MRMMADMIN	OFSMRMM
12	MRMMADMIN	FU_ATR_ADD
13	MRMMADMIN	FU_ATR_CPY
14	MRMMADMIN	FU_ATR_DD
15	MRMMADMIN	FU_ATR_DEL
16	MRMMADMIN	FU_ATR_EDT
17	MRMMADMIN	FU_ATR_HP
18	MRMMADMIN	FU_ATR_VIW
19	MRMMADMIN	FU_HIE_ADD
20	MRMMADMIN	FU_HIE_CPY
21	MRMMADMIN	FU_HIE_DD
22	MRMMADMIN	FU_HIE_DEL
23	MRMMADMIN	FU_HIE_EDT
24	MRMMADMIN	FU_HIE_HP
25	MRMMADMIN	FU_HIE_IGN
26	MRMMADMIN	FU_HIE_LNK
27	MRMMADMIN	FU_HIE_UMM
28	MRMMADMIN	FU_HIE_VIW
29	MRMMADMIN	FU_MEM_ADD
30	MRMMADMIN	FU_MEM_CPY

31	MRMMADMIN	FU_MEM_DD
32	MRMMADMIN	FU_MEM_DEL
33	MRMMADMIN	FU_MEM_EDT
34	MRMMADMIN	FU_MEM_HP
35	MRMMADMIN	FU_MEM_VIW
36	MRMMADMIN	FU_HBR_ADD
37	MRMMADMIN	FU_HBR_DEL
38	MRMMADMIN	MRPROCESS
39	MRMMADMIN	MRCONFIGR
40	MRMMADMIN	MRPRE
41	MRMMADMIN	MRIVADD
42	MRMMADMIN	MRIVDEL
43	MRMMADMIN	MRIVEXP
44	MRMMADMIN	MRIVNEWBD
45	MRMMADMIN	MRIVSAVE
46	MRMMADMIN	MRIVSBMT
47	MRMMADMIN	MRIVAPR
48	MRMMADMIN	MRIVRETIRE
49	MRMMADMIN	MRIVAPRRET
50	MRMMADMIN	MRIVRJCT
51	MRMMADMIN	MRIVEXE
52	MRMMADMIN	MRHSADD
53	MRMMADMIN	MRHSDEL
54	MRMMADMIN	MRHSEXP
55	MRMMADMIN	MRHSNEWBD
56	MRMMADMIN	MRHSSAVE
57	MRMMADMIN	MRHSSBMT
58	MRMMADMIN	MRHSAPR
59	MRMMADMIN	MRHSRETIRE
60	MRMMADMIN	MRHSAPRRET
61	MRMMADMIN	MRHSRJCT
62	MRMMADMIN	MRHSEXE
63	MRMMADMIN	MRHSRSFTCH
64	MRMMADMIN	MRHSRSSAVE
65	MRMMADMIN	MRHSRSVAL

66	MRMMADMIN	MRHSSPEXE
67	MRMMADMIN	MRMVADD
68	MRMMADMIN	MRMVDEL
69	MRMMADMIN	MRMVEXP
70	MRMMADMIN	MRMVNEWBD
71	MRMMADMIN	MRMVSAVE
72	MRMMADMIN	MRMVSBMT
73	MRMMADMIN	MRMVAPR
74	MRMMADMIN	MRMVRETIRE
75	MRMMADMIN	MRMVAPRRET
76	MRMMADMIN	MRMVRJCT
77	MRMMADMIN	MRMVEXE
78	MRMMADMIN	MRPDNEW
79	MRMMADMIN	MRPDDEL
80	MRMMADMIN	MRPDEXP
81	MRMMADMIN	MRPDSAVE
82	MRMMADMIN	MRPDEDIT
83	MRMMADMIN	MRPDCOPY
84	MRMMADMIN	MRPDSBMT
85	MRMMADMIN	MRPDAPR
86	MRMMADMIN	MRPDRETIRE
87	MRMMADMIN	MRPDAPRRET
88	MRMMADMIN	MRPDRJCT
89	MRMMADMIN	MRMDLSETRL
90	MRMMADMIN	MRMDLSAVE
91	MRMMADMIN	MRMDLEXE
92	MRMMADMIN	MRMDLAPLF
93	MRMMADMIN	MRMDLRSTF
94	MRMMADMIN	MRMCSADD
95	MRMMADMIN	MRMCSDEL
96	MRMMADMIN	MRMCSEXP
97	MRMMADMIN	MRMCSNEWBD
98	MRMMADMIN	MRMCSSAVE
99	MRMMADMIN	MRMCSSBMT
100	MRMMADMIN	MRMCSAPR

101	MRMMADMIN	MRMCSRET
102	MRMMADMIN	MRMCSAPRET
103	MRMMADMIN	MRMCSRJCT
104	MRMMADMIN	MRMCSEXE
105	MRMMADMIN	MRCONFUPD
106	MRMMADMIN	MRMMOBJA
107	MRMMADMIN	MRMMOBJV
108	MRMMADMIN	MRMMOBJE
109	MRMMADMIN	MRMMFUNC
110	MRMMADMIN	MRDMHCUPD
111	MRMMADMIN	MRSSSAVE
112	MRMMADMIN	MRSSNEW
113	MRMMADMIN	MRSSSBMT
114	MRMMADMIN	MRSSAPR
115	MRMMADMIN	MRSSRJCT
116	MRMMADMIN	MRSSDEL
117	MRMMADMIN	MRSSCOPY
118	MRMMADMIN	MRSSEXP
119	MRMMVALNAPROVER	OFSMRMM
120	MRMMVALNAPROVER	MRPROCESS
121	MRMMVALNAPROVER	MRCONFIGR
122	MRMMVALNAPROVER	MRPRE
123	MRMMVALNAPROVER	MRIVADD
124	MRMMVALNAPROVER	MRIVDEL
125	MRMMVALNAPROVER	MRIVEXP
126	MRMMVALNAPROVER	MRIVNEWBD
127	MRMMVALNAPROVER	MRIVSAVE
128	MRMMVALNAPROVER	MRIVSBMT
129	MRMMVALNAPROVER	MRIVAPR
130	MRMMVALNAPROVER	MRIVRETIRE
131	MRMMVALNAPROVER	MRIVAPRRET
132	MRMMVALNAPROVER	MRIVRJCT
133	MRMMVALNAPROVER	MRIVEXE
134	MRMMVALNAPROVER	MRPDNEW
135	MRMMVALNAPROVER	MRPDDEL

136	MRMMVALNAPROVER	MRPDEXP
137	MRMMVALNAPROVER	MRPDSAVE
138	MRMMVALNAPROVER	MRPDEDIT
139	MRMMVALNAPROVER	MRPDCOPY
140	MRMMVALNAPROVER	MRPDSBMT
141	MRMMVALNAPROVER	MRPDAPR
142	MRMMVALNAPROVER	MRPDRETIRE
143	MRMMVALNAPROVER	MRPDAPRRET
144	MRMMVALNAPROVER	MRPDRJCT
145	MRMMVALNAPROVER	MRMDLSETRL
146	MRMMVALNAPROVER	MRMDLSAVE
147	MRMMVALNAPROVER	MRMDLEXE
148	MRMMVALNAPROVER	MRMDLAPLF
149	MRMMVALNAPROVER	MRMDLRSTF
150	MRMMVALNAPROVER	MRMMFUNC
151	MRMMVALNAPROVER	MRSSSAVE
152	MRMMVALNAPROVER	MRSSNEW
153	MRMMVALNAPROVER	MRSSSBMT
154	MRMMVALNAPROVER	MRSSDEL
155	MRMMVALNAPROVER	MRSSCOPY
156	MRMMVALNAPROVER	MRSSEXP
157	MRMMVALNAPROVER	MRSSAPR
158	MRMMVALNAPROVER	MRSSRJCT
159	MRMMVALNANALYST	MRPROCESS
160	MRMMVALNANALYST	MRIVADD
161	MRMMVALNANALYST	MRIVDEL
162	MRMMVALNANALYST	MRIVEXP
163	MRMMVALNANALYST	MRIVNEWBD
164	MRMMVALNANALYST	MRIVSAVE
165	MRMMVALNANALYST	MRIVSBMT
166	MRMMVALNANALYST	MRIVRETIRE
167	MRMMVALNANALYST	MRIVEXE
168	MRMMVALNANALYST	MRPDNEW
169	MRMMVALNANALYST	MRPDDEL
170	MRMMVALNANALYST	MRPDEXP

171	MRMMVALNANALYST	MRPDSAVE
172	MRMMVALNANALYST	MRPDEDIT
173	MRMMVALNANALYST	MRPDCOPY
174	MRMMVALNANALYST	MRPDSBMT
175	MRMMVALNANALYST	MRPDRETIRE
176	MRMMVALNANALYST	MRMMOBJA
177	MRMMVALNANALYST	MRMMOBJV
178	MRMMVALNANALYST	MRMMOBJE
179	MRMMVALNANALYST	MRMMFUNC
180	MRMMVALNANALYST	MRSSSAVE
181	MRMMVALNANALYST	MRSSNEW
182	MRMMVALNANALYST	MRSSSBMT
183	MRMMVALNANALYST	MRSSDEL
184	MRMMVALNANALYST	MRSSCOPY
185	MRMMVALNANALYST	MRSSEXP
186	MRMMHISTSMLNAPROVER	OFSMRMM
187	MRMMHISTSMLNAPROVER	MRPROCESS
188	MRMMHISTSMLNAPROVER	MRCONFIGR
189	MRMMHISTSMLNAPROVER	MRPRE
190	MRMMHISTSMLNAPROVER	MRHSADD
191	MRMMHISTSMLNAPROVER	MRHSDEL
192	MRMMHISTSMLNAPROVER	MRHSEXP
193	MRMMHISTSMLNAPROVER	MRHSNEWBD
194	MRMMHISTSMLNAPROVER	MRHSSAVE
195	MRMMHISTSMLNAPROVER	MRHSSBMT
196	MRMMHISTSMLNAPROVER	MRHSAPR
197	MRMMHISTSMLNAPROVER	MRHSRETIRE
198	MRMMHISTSMLNAPROVER	MRHSAPRRET
199	MRMMHISTSMLNAPROVER	MRHSRJCT
200	MRMMHISTSMLNAPROVER	MRHSEXE
201	MRMMHISTSMLNAPROVER	MRHSRSFTCH
202	MRMMHISTSMLNAPROVER	MRHSRSSAVE
203	MRMMHISTSMLNAPROVER	MRHSRSVAL
204	MRMMHISTSMLNAPROVER	MRHSSPEXE
205	MRMMHISTSMLNAPROVER	MRPDNEW

206	MRMMHISTSMLNAPROVER	MRPDDEL
207	MRMMHISTSMLNAPROVER	MRPDEXP
208	MRMMHISTSMLNAPROVER	MRPDSAVE
209	MRMMHISTSMLNAPROVER	MRPDEDIT
210	MRMMHISTSMLNAPROVER	MRPDCOPY
211	MRMMHISTSMLNAPROVER	MRPDSBMT
212	MRMMHISTSMLNAPROVER	MRPDAPR
213	MRMMHISTSMLNAPROVER	MRPDRETIRE
214	MRMMHISTSMLNAPROVER	MRPDAPRRET
215	MRMMHISTSMLNAPROVER	MRPDRJCT
216	MRMMHISTSMLNAPROVER	MRMDLSETRL
217	MRMMHISTSMLNAPROVER	MRMDLSAVE
218	MRMMHISTSMLNAPROVER	MRMDLEXE
219	MRMMHISTSMLNAPROVER	MRMDLAPLF
220	MRMMHISTSMLNAPROVER	MRMDLRSTF
221	MRMMHISTSMLNAPROVER	MRMMOBJA
222	MRMMHISTSMLNAPROVER	MRMMOBJV
223	MRMMHISTSMLNAPROVER	MRMMOBJE
224	MRMMHISTSMLNAPROVER	MRMMFUNC
225	MRMMHISTSMLNAPROVER	MRSSSAVE
226	MRMMHISTSMLNAPROVER	MRSSNEW
227	MRMMHISTSMLNAPROVER	MRSSSBMT
228	MRMMHISTSMLNAPROVER	MRSSDEL
229	MRMMHISTSMLNAPROVER	MRSSCOPY
230	MRMMHISTSMLNAPROVER	MRSSEXP
231	MRMMHISTSMLNAPROVER	MRSSAPR
232	MRMMHISTSMLNAPROVER	MRSSRJCT
233	MRMMHISTSMLNANALYST	OFSMRMM
234	MRMMHISTSMLNANALYST	MRPROCESS
235	MRMMHISTSMLNANALYST	MRHSADD
236	MRMMHISTSMLNANALYST	MRHSDEL
237	MRMMHISTSMLNANALYST	MRHSEXP
238	MRMMHISTSMLNANALYST	MRHSNEWBD
239	MRMMHISTSMLNANALYST	MRHSSAVE
240	MRMMHISTSMLNANALYST	MRHSSBMT

241	MRMMHISTSMLNANALYST	MRHSRETIRE
242	MRMMHISTSMLNANALYST	MRHSEXE
243	MRMMHISTSMLNANALYST	MRHSRSFTCH
244	MRMMHISTSMLNANALYST	MRHSRSSAVE
245	MRMMHISTSMLNANALYST	MRHSRSVAL
246	MRMMHISTSMLNANALYST	MRHSSPEXE
247	MRMMHISTSMLNANALYST	MRPDNEW
248	MRMMHISTSMLNANALYST	MRPDDEL
249	MRMMHISTSMLNANALYST	MRPDEXP
250	MRMMHISTSMLNANALYST	MRPDSAVE
251	MRMMHISTSMLNANALYST	MRPDEDIT
252	MRMMHISTSMLNANALYST	MRPDCOPY
253	MRMMHISTSMLNANALYST	MRPDSBMT
254	MRMMHISTSMLNANALYST	MRPDRETIRE
255	MRMMHISTSMLNANALYST	MRMMOBJA
256	MRMMHISTSMLNANALYST	MRMMOBJV
257	MRMMHISTSMLNANALYST	MRMMOBJE
258	MRMMHISTSMLNANALYST	MRMMFUNC
259	MRMMHISTSMLNANALYST	MRSSSAVE
260	MRMMHISTSMLNANALYST	MRSSNEW
261	MRMMHISTSMLNANALYST	MRSSSBMT
262	MRMMHISTSMLNANALYST	MRSSDEL
263	MRMMHISTSMLNANALYST	MRSSCOPY
264	MRMMHISTSMLNANALYST	MRSSEXP
265	MRMMMDLVALDNAPROVER	OFSMRMM
266	MRMMMDLVALDNAPROVER	MRPROCESS
267	MRMMMDLVALDNAPROVER	MRCONFIGR
268	MRMMMDLVALDNAPROVER	MRPRE
269	MRMMMDLVALDNAPROVER	MRMVADD
270	MRMMMDLVALDNAPROVER	MRMVDEL
271	MRMMMDLVALDNAPROVER	MRMVEXP
272	MRMMMDLVALDNAPROVER	MRMVNEWBD
273	MRMMMDLVALDNAPROVER	MRMVSAVE
274	MRMMMDLVALDNAPROVER	MRMVSBMT
275	MRMMMDLVALDNAPROVER	MRMVAPR

276	MRMMMDLVALDNAPROVER	MRMVRETIRE
277	MRMMMDLVALDNAPROVER	MRMVAPRRET
278	MRMMMDLVALDNAPROVER	MRMVRJCT
279	MRMMMDLVALDNAPROVER	MRMVEXE
280	MRMMMDLVALDNAPROVER	MRPDNEW
281	MRMMMDLVALDNAPROVER	MRPDDEL
282	MRMMMDLVALDNAPROVER	MRPDEXP
283	MRMMMDLVALDNAPROVER	MRPDSAVE
284	MRMMMDLVALDNAPROVER	MRPDEDIT
285	MRMMMDLVALDNAPROVER	MRPDCOPY
286	MRMMMDLVALDNAPROVER	MRPDSBMT
287	MRMMMDLVALDNAPROVER	MRPDAPR
288	MRMMMDLVALDNAPROVER	MRPDRETIRE
289	MRMMMDLVALDNAPROVER	MRPDAPRRET
290	MRMMMDLVALDNAPROVER	MRPDRJCT
291	MRMMMDLVALDNAPROVER	MRMDLSETRL
292	MRMMMDLVALDNAPROVER	MRMDLSAVE
293	MRMMMDLVALDNAPROVER	MRMDLEXE
294	MRMMMDLVALDNAPROVER	MRMDLAPLF
295	MRMMMDLVALDNAPROVER	MRMDLRSTF
296	MRMMMDLVALDNAPROVER	MRMMOBJA
297	MRMMMDLVALDNAPROVER	MRMMOBJV
298	MRMMMDLVALDNAPROVER	MRMMOBJE
299	MRMMMDLVALDNAPROVER	MRSSSAVE
300	MRMMMDLVALDNAPROVER	MRSSNEW
301	MRMMMDLVALDNAPROVER	MRSSSBMT
302	MRMMMDLVALDNAPROVER	MRSSDEL
303	MRMMMDLVALDNAPROVER	MRSSCOPY
304	MRMMMDLVALDNAPROVER	MRSSEXP
305	MRMMMDLVALDNAPROVER	MRMMFUNC
306	MRMMMDLVALDNAPROVER	MRSSAPR
307	MRMMMDLVALDNAPROVER	MRSSRJCT
308	MRMMMDLVALDNANALYST	OFSMRMM
309	MRMMMDLVALDNANALYST	MRPROCESS
310	MRMMMDLVALDNANALYST	MRMVADD

311	MRMMMDLVALDNANALYST	MRMVDEL
312	MRMMMDLVALDNANALYST	MRMVEXP
313	MRMMMDLVALDNANALYST	MRMVNEWBD
314	MRMMMDLVALDNANALYST	MRMVSAVE
315	MRMMMDLVALDNANALYST	MRMVSBMT
316	MRMMMDLVALDNANALYST	MRMVRETIRE
317	MRMMMDLVALDNANALYST	MRMVEXE
318	MRMMMDLVALDNANALYST	MRPDNEW
319	MRMMMDLVALDNANALYST	MRPDDEL
320	MRMMMDLVALDNANALYST	MRPDEXP
321	MRMMMDLVALDNANALYST	MRPDSAVE
322	MRMMMDLVALDNANALYST	MRPDEDIT
323	MRMMMDLVALDNANALYST	MRPDCOPY
324	MRMMMDLVALDNANALYST	MRPDSBMT
325	MRMMMDLVALDNANALYST	MRPDRETIRE
326	MRMMMDLVALDNANALYST	MRMMOBJA
327	MRMMMDLVALDNANALYST	MRMMOBJV
328	MRMMMDLVALDNANALYST	MRMMOBJE
329	MRMMMDLVALDNANALYST	MRMMFUNC
330	MRMMMDLVALDNANALYST	MRSSSAVE
331	MRMMMDLVALDNANALYST	MRSSNEW
332	MRMMMDLVALDNANALYST	MRSSSBMT
333	MRMMMDLVALDNANALYST	MRSSDEL
334	MRMMMDLVALDNANALYST	MRSSCOPY
335	MRMMMDLVALDNANALYST	MRSSEXP
336	MRMMMNTCARLOAPROVER	OFSMRMM
337	MRMMMNTCARLOAPROVER	MRPROCESS
338	MRMMMNTCARLOAPROVER	MRCONFIGR
339	MRMMMNTCARLOAPROVER	MRPRE
340	MRMMMNTCARLOAPROVER	MRMCSADD
341	MRMMMNTCARLOAPROVER	MRMCSDEL
342	MRMMMNTCARLOAPROVER	MRMCSEXP
343	MRMMMNTCARLOAPROVER	MRMCSNEWBD
344	MRMMMNTCARLOAPROVER	MRMCSSAVE
345	MRMMMNTCARLOAPROVER	MRMCSSBMT

346	MRMMMNTCARLOAPROVER	MRMCSAPR
347	MRMMMNTCARLOAPROVER	MRMCSRET
348	MRMMMNTCARLOAPROVER	MRMCSAPRET
349	MRMMMNTCARLOAPROVER	MRMCSRJCT
350	MRMMMNTCARLOAPROVER	MRMCSEXE
351	MRMMMNTCARLOAPROVER	MRPDNEW
352	MRMMMNTCARLOAPROVER	MRPDDEL
353	MRMMMNTCARLOAPROVER	MRPDEXP
354	MRMMMNTCARLOAPROVER	MRPDSAVE
355	MRMMMNTCARLOAPROVER	MRPDEDIT
356	MRMMMNTCARLOAPROVER	MRPDCOPY
357	MRMMMNTCARLOAPROVER	MRPDSBMT
358	MRMMMNTCARLOAPROVER	MRPDAPR
359	MRMMMNTCARLOAPROVER	MRPDRETIRE
360	MRMMMNTCARLOAPROVER	MRPDAPRRET
361	MRMMMNTCARLOAPROVER	MRPDRJCT
362	MRMMMNTCARLOAPROVER	MRMDLSETRL
363	MRMMMNTCARLOAPROVER	MRMDLSAVE
364	MRMMMNTCARLOAPROVER	MRMDLEXE
365	MRMMMNTCARLOAPROVER	MRMDLAPLF
366	MRMMMNTCARLOAPROVER	MRMDLRSTF
367	MRMMMNTCARLOAPROVER	MRMMOBJA
368	MRMMMNTCARLOAPROVER	MRMMOBJV
369	MRMMMNTCARLOAPROVER	MRMMOBJE
370	MRMMMNTCARLOAPROVER	MRMMFUNC
371	MRMMMNTCARLOAPROVER	MRSSSAVE
372	MRMMMNTCARLOAPROVER	MRSSNEW
373	MRMMMNTCARLOAPROVER	MRSSSBMT
374	MRMMMNTCARLOAPROVER	MRSSDEL
375	MRMMMNTCARLOAPROVER	MRSSCOPY
376	MRMMMNTCARLOAPROVER	MRSSEXP
377	MRMMMNTCARLOAPROVER	MRSSAPR
378	MRMMMNTCARLOAPROVER	MRSSRJCT
379	MRMMMNTCARLOANALYST	OFSMRMM
380	MRMMMNTCARLOANALYST	MRPROCESS

381	MRMMMNTCARLOANALYST	MRMCSADD
382	MRMMMNTCARLOANALYST	MRMCSDEL
383	MRMMMNTCARLOANALYST	MRMCSEXP
384	MRMMMNTCARLOANALYST	MRMCSNEWBD
385	MRMMMNTCARLOANALYST	MRMCSSAVE
386	MRMMMNTCARLOANALYST	MRMCSSBMT
387	MRMMMNTCARLOANALYST	MRMCSRET
388	MRMMMNTCARLOANALYST	MRMCSEXE
389	MRMMMNTCARLOANALYST	MRPDNEW
390	MRMMMNTCARLOANALYST	MRPDDEL
391	MRMMMNTCARLOANALYST	MRPDEXP
392	MRMMMNTCARLOANALYST	MRPDSAVE
393	MRMMMNTCARLOANALYST	MRPDEDIT
394	MRMMMNTCARLOANALYST	MRPDCOPY
395	MRMMMNTCARLOANALYST	MRPDSBMT
396	MRMMMNTCARLOANALYST	MRPDRETIRE
397	MRMMMNTCARLOANALYST	MRMMOBJA
398	MRMMMNTCARLOANALYST	MRMMOBJV
399	MRMMMNTCARLOANALYST	MRMMOBJE
400	MRMMMNTCARLOANALYST	MRMMFUNC
401	MRMMMNTCARLOANALYST	MRSSSAVE
402	MRMMMNTCARLOANALYST	MRSSNEW
403	MRMMMNTCARLOANALYST	MRSSSBMT
404	MRMMMNTCARLOANALYST	MRSSDEL
405	MRMMMNTCARLOANALYST	MRSSCOPY
406	MRMMMNTCARLOANALYST	MRSSEXP
407	MRMMMNTCARLOANALYST	MRHMADDMDL
408	MRMMMNTCARLOANALYST	MRHMDELMDL
409	MRMMMNTCARLOANALYST	MRHMADDRUL
410	MRMMMNTCARLOANALYST	MRHMEDTRUL
411	MRMMMNTCARLOANALYST	MRHMDELRUL
412	MRMMMNTCARLOANALYST	MRHMGENXML
413	MRMMADMIN	MRHMADDMDL
414	MRMMADMIN	MRHMDELMDL
415	MRMMADMIN	MRHMADDRUL

416	MRMMADMIN	MRHMEDTRUL
417	MRMMADMIN	MRHMDELRUL
418	MRMMADMIN	MRHMGENXML
419	MRMMADMIN	MRTECHADD
420	MRMMADMIN	MRPRPOLICY
421	MRMMADMIN	MRPPNEW
422	MRMMADMIN	MRPRCNGDEL
423	MRMMADMIN	MRPPSAVE
424	MRMMADMIN	MRPPEXP
425	MRMMVALNANALYST	MRPRPOLICY
426	MRMMVALNANALYST	MRPPNEW
427	MRMMVALNANALYST	MRPRCNGDEL
428	MRMMVALNANALYST	MRPPSAVE
429	MRMMVALNANALYST	MRPPEXP
430	MRMMVALNAPROVER	MRPRPOLICY
431	MRMMVALNAPROVER	MRPPNEW
432	MRMMVALNAPROVER	MRPRCNGDEL
433	MRMMVALNAPROVER	MRPPSAVE
434	MRMMVALNAPROVER	MRPPEXP
435	MRMMADMIN	MRRFSAVE
436	MRMMADMIN	MRRFSBMT
437	MRMMADMIN	MRRFAPPR
438	MRMMADMIN	MRRFRJCT
439	MRMMADMIN	MRRFDEL
440	MRMMADMIN	MRRFEXP
441	MRMMADMIN	MRRFETSAVE
442	MRMMADMIN	MRRFETSBMT
443	MRMMADMIN	MRRFETAPPR
444	MRMMADMIN	MRRFETRJCT
445	MRMMADMIN	MRRFETEXP
446	MRMMVALNANALYST	MRRFSAVE
447	MRMMVALNANALYST	MRRFSBMT
448	MRMMVALNANALYST	MRRFDEL
449	MRMMVALNANALYST	MRRFEXP
450	MRMMVALNANALYST	MRRFETSAVE

451	MRMMVALNANALYST	MRRFETSBMT
452	MRMMVALNANALYST	MRRFETEXP
453	MRMMVALNAPROVER	MRRFSAVE
454	MRMMVALNAPROVER	MRRFSBMT
455	MRMMVALNAPROVER	MRRFAPPR
456	MRMMVALNAPROVER	MRRFRJCT
457	MRMMVALNAPROVER	MRRFDEL
458	MRMMVALNAPROVER	MRRFEXP
459	MRMMVALNAPROVER	MRRFETSAVE
460	MRMMVALNAPROVER	MRRFETSBMT
461	MRMMVALNAPROVER	MRRFETAPPR
462	MRMMVALNAPROVER	MRRFETRJCT
463	MRMMVALNAPROVER	MRRFETEXP
464	MRMMHISTSMLNAPROVER	MRRFSAVE
465	MRMMHISTSMLNAPROVER	MRRFSBMT
466	MRMMHISTSMLNAPROVER	MRRFAPPR
467	MRMMHISTSMLNAPROVER	MRRFRJCT
468	MRMMHISTSMLNAPROVER	MRRFDEL
469	MRMMHISTSMLNAPROVER	MRRFEXP
470	MRMMHISTSMLNAPROVER	MRRFETSAVE
471	MRMMHISTSMLNAPROVER	MRRFETSBMT
472	MRMMHISTSMLNAPROVER	MRRFETAPPR
473	MRMMHISTSMLNAPROVER	MRRFETRJCT
474	MRMMHISTSMLNAPROVER	MRRFETEXP
475	MRMMHISTSMLNANALYST	MRRFSAVE
476	MRMMHISTSMLNANALYST	MRRFSBMT
477	MRMMHISTSMLNANALYST	MRRFDEL
478	MRMMHISTSMLNANALYST	MRRFEXP
479	MRMMHISTSMLNANALYST	MRRFETSAVE
480	MRMMHISTSMLNANALYST	MRRFETSBMT
481	MRMMHISTSMLNANALYST	MRRFETEXP
482	MRMMHISTSMLNAPROVER	MRBKTSAVE
483	MRMMHISTSMLNAPROVER	MRBKTNEW
484	MRMMHISTSMLNAPROVER	MRBKTSBMT
485	MRMMHISTSMLNAPROVER	MRBKTDEL

486	MRMMHISTSMLNAPROVER	MRBKTCOPY
487	MRMMHISTSMLNAPROVER	MRBKTEXP
488	MRMMHISTSMLNAPROVER	MRBKTAPR
489	MRMMHISTSMLNAPROVER	MRBKTRJCT
490	MRMMHISTSMLNANALYST	MRBKTSAVE
491	MRMMHISTSMLNANALYST	MRBKTNEW
492	MRMMHISTSMLNANALYST	MRBKTDEL
493	MRMMHISTSMLNANALYST	MRBKTCOPY
494	MRMMHISTSMLNANALYST	MRBKTEXP
495	MRMMVALNAPROVER	MRBKTSAVE
496	MRMMVALNAPROVER	MRBKTNEW
497	MRMMVALNAPROVER	MRBKTSBMT
498	MRMMVALNAPROVER	MRBKTDEL
499	MRMMVALNAPROVER	MRBKTCOPY
500	MRMMVALNAPROVER	MRBKTEXP
501	MRMMVALNAPROVER	MRBKTAPR
502	MRMMVALNAPROVER	MRBKTRJCT
503	MRMMMDLVALDNAPROVER	MRBKTSAVE
504	MRMMMDLVALDNAPROVER	MRBKTNEW
505	MRMMMDLVALDNAPROVER	MRBKTSBMT
506	MRMMMDLVALDNAPROVER	MRBKTDEL
507	MRMMMDLVALDNAPROVER	MRBKTCOPY
508	MRMMMDLVALDNAPROVER	MRBKTEXP
509	MRMMMDLVALDNAPROVER	MRBKTAPR
510	MRMMMDLVALDNAPROVER	MRBKTRJCT
511	MRMMMDLVALDNAPROVER	MRRFETSAVE
512	MRMMMDLVALDNAPROVER	MRRFETSBMT
513	MRMMMDLVALDNAPROVER	MRRFETAPPR
514	MRMMMDLVALDNAPROVER	MRRFETRJCT
515	MRMMMDLVALDNAPROVER	MRRFETEXP
516	MRMMVALNANALYST	MRBKTSAVE
517	MRMMVALNANALYST	MRBKTNEW
518	MRMMVALNANALYST	MRBKTSBMT
519	MRMMVALNANALYST	MRBKTDEL
520	MRMMVALNANALYST	MRBKTCOPY

521	MRMMVALNANALYST	MRBKTEXP
522	MRMMMDLVALDNANALYST	MRRFETSAVE
523	MRMMMDLVALDNANALYST	MRRFETSBMT
524	MRMMMDLVALDNANALYST	MRRFETEXP
525	MRMMMDLVALDNANALYST	MRBKTSAVE
526	MRMMMDLVALDNANALYST	MRBKTNEW
527	MRMMMDLVALDNANALYST	MRBKTSBMT
528	MRMMMDLVALDNANALYST	MRBKTDEL
529	MRMMMDLVALDNANALYST	MRBKTCOPY
530	MRMMMDLVALDNANALYST	MRBKTEXP
531	MRMMMDLVALDNANALYST	MRRFSAVE
532	MRMMMDLVALDNANALYST	MRRFSBMT
533	MRMMMDLVALDNANALYST	MRRFDEL
534	MRMMMDLVALDNANALYST	MRRFEXP
535	MRMMMDLVALDNAPROVER	MRRFSAVE
536	MRMMMDLVALDNAPROVER	MRRFSBMT
537	MRMMMDLVALDNAPROVER	MRRFAPPR
538	MRMMMDLVALDNAPROVER	MRRFRJCT
539	MRMMMDLVALDNAPROVER	MRRFDEL
540	MRMMMDLVALDNAPROVER	MRRFEXP
541	MRMMADMIN	MRBKTSAVE
542	MRMMADMIN	MRBKTNEW
543	MRMMADMIN	MRBKTSBMT
544	MRMMADMIN	MRBKTDEL
545	MRMMADMIN	MRBKTCOPY
546	MRMMADMIN	MRBKTEXP
547	MRMMADMIN	MRBKTAPR
548	MRMMADMIN	MRBKTRJCT

9 Remove OFSAA Infrastructure

See the Remove OFSAA Infrastructure section in the OFS AAI Release 8.1.1.0.0 Installation and Configuration Guide to complete these procedures:

- Uninstall the OFSAA Infrastructure
- Uninstall the EAR Files
  - Uninstall the EAR Files in WebSphere
  - Uninstall the EAR Files in WebLogic
  - Uninstall the WAR Files in Tomcat
- Clean Up the Environment

Part II

Topics:

10 Upgrade

This section includes the procedures for the various upgrade scenarios supported by OFS MRMM Release 8.1.1.0.0.

Topics:

10.1 Upgrade Scenarios

The possible upgrade scenarios and a high-level sequence of steps to complete the upgrade are summarized in this section.

Table 33: Upgrade Scenarios

Scenario	Upgrade Instructions
Upgrade from OFS MRMM Release 8.1.0.1.0 to OFS MRMM Release 8.1.1.0.0	1. Update the `Silent.props` file present in the Release 8.1.1.0.0 pack. 2. Trigger the Release 8.1.1.0.0 installation. 3. Update the .profile file.

10.2 Prepare for Upgrade

Before you plan to install or upgrade any of your application packs to Release 8.1.1.0.0, ensure that all the application packs in your current OFSAA instance are available in the Release 8.1.1.0.0 version. Contact My Oracle Support for more information about the release version details.

NOTE Ensure to revert any customized data model changes done without performing data model upload before upgrading.

ATTENTION The minimum supported version is 8.1.0.1.0.

1. Backup the following environment files from their respective directories:
   - `OFS_MRMM_PACK.xml`
   - `OFS_MRMM_SCHEMA_IN.xml`
   - `OFSAAI_InstallConfig.xml`

- `Silent.props`

2. See the OFS Analytical Applications Technology Matrix for the hardware and software required to upgrade to OFS MRMM Release 8.1.1.0.0.
3. Enable unlimited cryptographic policy for Java. For more information, see the *Enabling Unlimited Cryptographic Policy* section in the OFS Analytical Applications Infrastructure Administration and Configuration Guide.

10.3 Upgrade from OFS MRMM 8.1.0.1.0

You are upgrading the application pack from OFS MRMM Release 8.1.0.1.0 to Release 8.1.1.0.0.

> **NOTE** Ensure that you install the AAI Jan CPU 2022 patch 33578231 before installing OFS MRMM 8.1.1.0.0.

10.3.1 Initializing the Upgrade

1. Download the OFS MRMM Application Pack Release 8.1.1.0.0 installer (Bug Number: **32457594**) from My Oracle Support.
2. Copy the archive file to your OFSAA server in Binary mode.

   > **NOTE** The archive files are different for RHEL/Oracle Linux.

3. Log in to the OFSAA Server with user credentials that were used to install OFSAA.
4. Shut down all the OFSAAI Services. See the Stop the Infrastructure Services and Start the Infrastructure Services section in the OFS AAI Release 8.1.1.0.0 Installation and Configuration Guide for details.
5. Execute the command:

   ```
   chmod -R 750 $FIC_HOME
   ```

6. If you have Unzip utility, skip to the next step. Download the Unzip utility (OS-specific) and copy it in Binary mode to the directory that is included in your PATH variable, typically `$HOME` path or directory in which you have copied the 8.1.1.0.0 installer.

   Uncompress the unzip installer file using the command:

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

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

7. Give execute permission to the file using the command:

```
chmod 751 OFS_MRMM_81100_<OperatingSystem>.zip.
```

8. Extract the contents of the Oracle Financial Services Market Risk Measurement and Management Application Pack 8.1.1.0.0 in the Download Directory installer archive file using the command:

   ```
   unzip <name of the file to be unzipped>
   ```

9. Give execute permission to the archive file. Navigate to the path where the directory OFS_MRMM_PACK exists and execute the command:

   ```
   chmod –R 755 OFS_MRMM_PACK
   ```

10. Identify a directory for installation and set the same in the user `.profile` file as below:

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

11. Execute the user `.profile`

10.3.2 Update the Silent.props File in Release 8.1.1.0.0 Pack

Update the `Silent.props` file present in the Release 8.1.1.0.0 pack. Most parameters in the `Silent.props` file for 8.1.1.0.0 have default values. Before triggering the installation, ensure that you review them thoroughly and update as required.

1. Navigate to the `OFS_MRMM_PACK/appsLibConfig/conf` directory. The `Silent.template` available in this path is populated with default values.
2. Ensure to modify the template in the directory. Create a copy of this file and rename the copy as `Silent.props`.
3. Edit the `Silent.props` file and specify the parameters as per the requirements.

   SILENT installation is achieved through a properties file (`Silent.props`) that must be updated with proper values, before attempting to install using the silent mode. The following table lists all the properties that need to be specified.
4. Configure the `Silent.props` file as mentioned in the following table. Open the `Silent.props` file and edit only the following parameters.

> **NOTE** Retain the same values in silent.props as in version 8.1.0.1.0.

Table 34: Parameters for the Silent.props File

Property Name	Description of Property	Permissible values	Comments
LOG_MODE	Specify Log Mode	1 = Debug Mode 0= General Mode	Password will be printed in the log file Password will be printed in the log file. Default is GENERAL.
SEGMENT_1_CODE	Specify the MRMM Segment Code.	User Input	Enter the Segment name in UPPERCASE.

Property Name	Description of Property	Permissible values	Comments
APPFTP_LOG_PATH	Specify the Infodom Maintenance log path(to be created) for the new Infodom Please ignore if you are doing installation on an existing information domain.	User Input	
DBFTP_LOG_PATH	Specify the Infodom Maintenance log path(to be created) for the new Infodom Please ignore if you are doing installation on an existing information domain.	User Input	
UPLOAD_MODEL	Specify whether you want to perform Model Upload.	0 = If you have already performed Model Upload and want to skip model upload process 1 = If you want to perform Model Upload	
MODEL_TYPE	Specify whether you want to use the released data model or customized data model for model upload process.	# 0 = If you want to upload the released data model # 1 = If you want to upload the customized data model	
DATAMODEL DM_DIRECTORY	Specify the path (DM_DIRECTORY) and file (DATAMODEL) name for the customized data model Mandatory only if you want to upload the customized data model, if you have specified MODEL_TYPE=1.	User Input	
ETL_APPSRC_TYPE	Please specify if you want to create new ETL App or Src pair or use an existing one.	0 = If you want to create a new ETL App or Src pair 1 = If you want to use an existing pair	

Property Name	Description of Property	Permissible values	Comments
ETL_SRC_1_DESC	ETL Market Risk Trade source description.	STAGE_MR_TRADE	Please give description for the ETL App or Src pair. Mandatory if you want to create new ETL App or Src pair if you have specified ETL_APPSRC_TYPE=0.
ETL_SRC_2_DESC	ETL Market Risk Reference source description.	STAGE_MR_REFERENCE	Please give description for the ETL App or Src pair. Mandatory if you want to create new ETL App or Src pair if you have specified ETL_APPSRC_TYPE=0.
ETL_SRC_3_DESC	ETL Market Risk Processing source description.	MR_PROCESSING	Please give description for the ETL App or Src pair. Mandatory if you want to create new ETL App or Src pair if you have specified ETL_APPSRC_TYPE=0.
ETL_SRC_4_DESC	ETL Market Risk Processing source description.	STAGING	Please give description for the ETL App/Src pair. Mandatory if you want to create new ETL App or Src pair if you have specified ETL_APPSRC_TYPE=0
ETL_SRC_1_NAME	ETL Market Risk Trade source name.	STAGE_MR_TRADE	Specify the ETL Application and Source Name in the ETL Area Definitions to be deployed.
ETL_SRC_2_NAME	ETL Market Risk Reference source name.	STAGE_MR_REFERENCE	Specify the ETL Application and Source Name in the ETL Area Definitions to be deployed.
ETL_SRC_3_NAME	ETL Market Risk Processing source name.	MR_PROCESSING	Specify the ETL Application and Source Name in the ETL Area Definitions to be deployed.

Property Name	Description of Property	Permissible values	Comments
ETL_SRC_4_NAME	ETL Market Risk Processing source name.	STAGING	Specify the ETL Application and Source Name in the ETL Area Definitions to be deployed.

10.3.3 Trigger the Installation

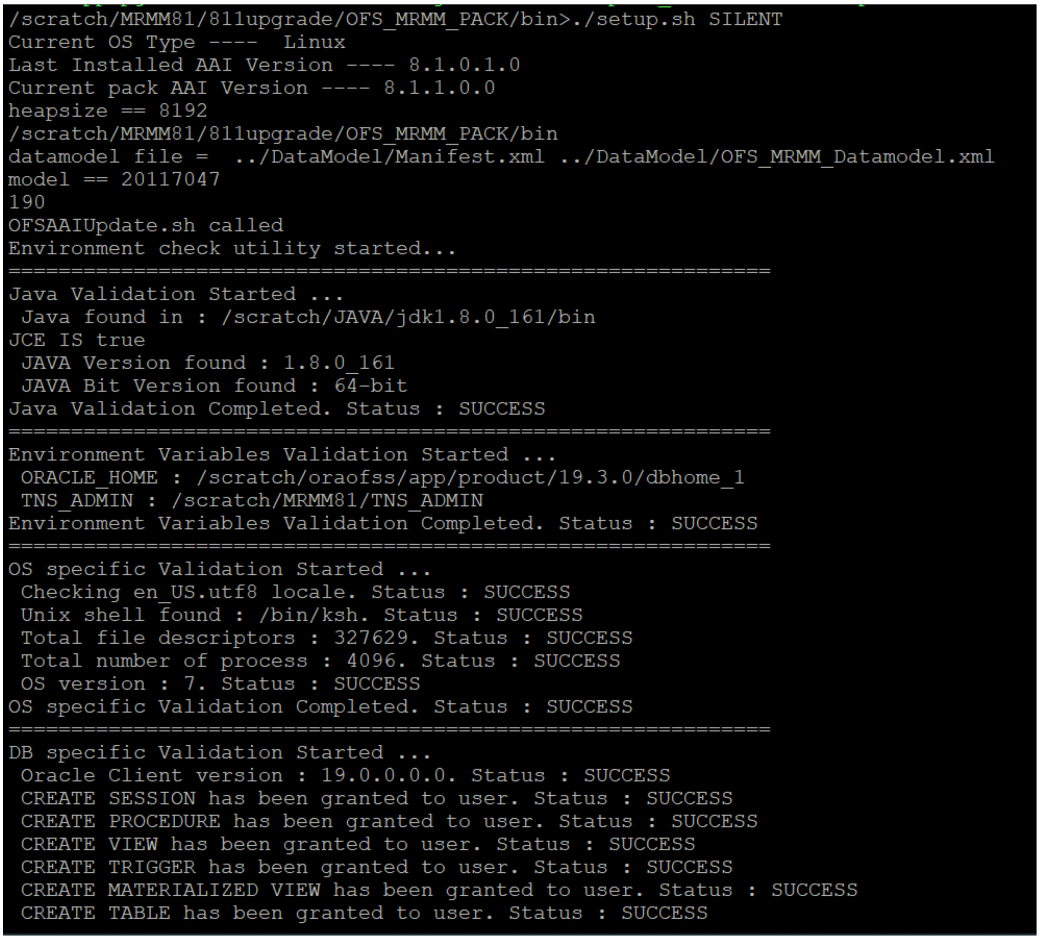
To trigger the installation, follow these steps:

1. Navigate to the path `OFS_MRMM_PACK/bin`, and 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.

Figure 40: Silent Mode of Installation



3. The OFS MRMM installation begins.

4. After Data Model Upload verify the installation logs in the following location:
   `OFS_MRMM_PACK/OFS_MRMM/logs`

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

   Congratulations! Your installation is complete.

10.3.4 Verify the Log File Information for Upgrade

See the following logs files for more information:

- Verify the log files in the locations mentioned in section Verify the Log File Information.
- Verify the Model Upload log file available in the `ftpshare/<INFODOM>/logs` directory.
- Verify if the Data Model is uploaded successfully by checking the log file generated as per the directory or path mentioned in the `Silent.props` file.

> **NOTE** You can ignore warnings in the installation log. In case of any issues, contact Oracle Support.
>
> For pack on pack installation, you can ignore the warnings and following errors that might be logged in the installation log:
>
> - Object already exists
> - Unique constraint violated

10.3.5 Post-installation Patch

Download the mandatory OFSAAI One-off patch (ID: 32548944) from My Oracle Support (MOS) and apply the patch.

10.3.6 Post Installation Steps for Upgrade

After successful installation, follow these steps:

1. Secure your OFSAA Infrastructure. For more information, see the OFSAA Security Guide in the OHC Documentation Library.
2. Clear the application cache. Navigate to the following path depending on the configured web application server and delete the files.
   - **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>/<auto generated directory>/jsp_servlet`

     For WebLogic version 12.2.x.x, delete the directory named `.WL_internal` present in the `<WebLogic installation location>/user_projects/domains/< Domain name >/applications/<context_name>.ear/META-INF/` directory, if it exists.

- **WebSphere**:
  `<WebSphere installation directory>/AppServer/profiles/<Profile name>/temp/<Node name>/server1/<Application name>/<.war file name>`

3. Deploy the RPD and catalog file (or files).

   NOTE: Ensure that OBIEE 12.2.1.4.0 or OAS 5.5.0 is up and running.

- Take a backup of the deployed `MRMM_BI.rpd` and `MRMM_BI.catalog` files from the OBIEE environment.

  a. Navigate to the folder `$FIC_HOME/MRMM_BI/RPD/` which contains `MRMM_BI.rpd` and `$FIC_HOME/MRMM_BI/catalog/` which contains `MRMM_BI.catalog` and copy the files in the server where the BI client tools are installed:

  b. Modify the connection pool and set the properties.

  c. Any customizations performed on the older rpd and web catalog files must be manually carried over to the newer ones post-deployment.

  d. Clear OBIEE cache, if enabled.

  e. For more information on deploying RPD and web catalog files, see OBIEE Configuration - Deploy OFS MRMM Analytics.

4. Add umask 0027 in the `.profile` of the UNIX account which manages the web server to ensure restricted access permissions.
5. Generate the application EAR or WAR file and redeploy the application onto your configured web application server. See Create and Deploy the EAR or WAR Files, for more information on generating and deploying the EAR or WAR files.
6. After the successful installation, restart all the OFSAAI services. See the Stop the Infrastructure Services and Start the Infrastructure Services section for details.

> **NOTE**
>
> - For enabling the Right to be Forgotten, see Right to be Forgotten.
> - For enabling Data Redaction, see the Data Redaction section. For more details, see Data Redaction section, under Data Security and Data Privacy chapter in the OFS Analytical Applications Infrastructure Administration and Configuration Guide.

10.3.6.1 OBIEE Server Configuration Steps

Perform the following OBIEE server configuration steps. You can ignore the steps if OBIEE is already configured in your setup.

1. Perform the following OBIEE presentation server configuration steps

   a. Navigate to the `<Oracle BI Instance Home>/config/OracleBIPresentationServicesComponent/coreapplication_obips1>` directory.

   a. Edit the `instanceconfig.xml` file.

b. Insert the following code within the XML tag <Views> </Views>.

```
<Charts>
<MaxVisibleColumns>50000</MaxVisibleColumns>
<MaxVisiblePages>25000</MaxVisiblePages>
<MaxVisibleRows>10000000</MaxVisibleRows>
<MaxVisibleSections>50000</MaxVisibleSections>
<JavaHostReadLimitInKB>10240</JavaHostReadLimitInKB>
</Charts>
```

c. Insert the following code within the XML tag <Views> </Views>.

```
<Table>
<DefaultRowsDisplayedInDelivery>75</DefaultRowsDisplayedInDelivery>
<DefaultRowsDisplayedInDownload>6500</DefaultRowsDisplayedInDownload
>
<MaxCells>4000000</MaxCells>
<MaxVisibleRows>140000</MaxVisibleRows>
</Table>
<Narrative>
<MaxRecords>500000</MaxRecords>
<DefaultRowsDisplayed>25</DefaultRowsDisplayed>
</Narrative>
```

d. Save the file and restart the BI services.

> **NOTE** Take a backup of the `instanceconfig.xml` file before making any changes.

10.3.6.2 View OFSAA Product Licenses after Installation of Application Pack

In an integrated environment, where you have multiple applications installed on the same domain or infrastructure, OFSAAI allows you to see the other licensed applications through the UI. For more information, see the View OFSAA Product Licenses after Installation of Application Pack in the OFS Analytical Applications Infrastructure User Guide Release 8.1.1.0.0.

10.4 Install OFS MRMM Application Pack v8.1.1.0.0 on an Existing OFSAA Instance

You have already installed an application pack from release 8.1.1.0.0 and now you want to install another application pack from Release 8.1.1.0.0. For example, OFS ALM Pack is already installed and now you want to install OFS MRMM Pack.

> **NOTE** You must check the Compatibility Matrix to see if the new application to be installed is compatible with the installed applications.

10.4.1 Execute the Schema Creator Utility Only for OFS MRMM

To execute the schema creator, follow these steps:

> **NOTE** While defining the schema details for the applications, provide the same schema details given in the previous installation. The output file (`OFS_MRMM_SCHEMA_OUTPUT.xml`) is generated as a result of the schema creation process.

1. Edit the file `OFS_MRMM_PACK/schema_creator/conf/OFS_MRMM_SCHEMA_IN.xml` in a text editor. See Configure OFS_MRMM_SCHEMA_IN.xml for values to modify in the XML file.
2. Execute the utility with -s option.

   For example: `./osc.sh -s`
3. Configuring the `OFSAAI_InstallConfig.xml` file is not required.

10.4.2 Update the OFS_MRMM_PACK.xml File for OFS MRMM Pack

The `OFS_MRMM_PACK.xml` file contains details on the various products that are packaged in the OFS MRMM application pack. This section provides information about the various tags and parameters available in the file and the values that you must update. Before installing OFS MRMM, it is mandatory to update this file.

To configure the `OFS_MRMM_PACK.xml` file, follow these steps:

1. Navigate to the `OFS_MRMM_PACK/conf` directory.
2. Open the `OFS_MRMM_PACK.xml` file in a text editor.
3. Configure the `OFS_MRMM_PACK.xml` file as mentioned in the following table.

Figure 41: Sample OFS_MRMM_PACK.xml File

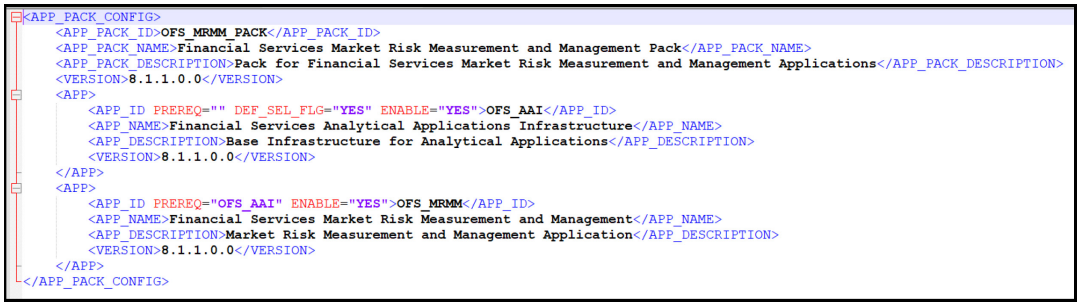


Table 35: OFS_MRMM_PACK.xml File Parameters

Tag Name	Attribute Name	Value you must enter	Comments
APP_ID	ENABLE	• YES for applications you want to install. • NO for applications that are already installed.	Set this attribute-value to YES for every APP_ID which you want to install or upgrade.

10.4.3 Update the Silent.Props File for OFS MRMM

Update the `Silent.props` file present in the Release 8.1.1.0.0 pack. Most parameters in the `Silent.props` file for 8.1.1.0.0 have default values. Before triggering the installation, ensure that you review them thoroughly and update as required.

1. Navigate to the `OFS_MRMM_PACK/appsLibConfig/conf` directory. The `Silent.template` available in this path is populated with default values.
2. Ensure to modify the template in the directory. Create a copy of this file and rename the copy as `Silent.props`.
3. Edit the `Silent.props` file and specify the parameters as per the requirements.

   SILENT installation is achieved through a properties file (`Silent.props`) that must be updated with proper values, before attempting to install using the silent mode. The following table lists all the properties that need to be specified.
4. Configure the `Silent.props` file as mentioned in the following table. Open the `Silent.props` file and edit only the following parameters.

Table 36: Parameters for the Silent.props File

Property Name	Description of Property	Permissible values	Comments
LOG_MODE	Specify Log Mode	1 = Debug Mode 0= General Mode	Password will be printed in the log file Password will be printed in the log file. Default is GENERAL.
SEGMENT_1_CODE	Specify the MRMM Segment Code.	User Input	Enter the Segment name in UPPERCASE.
APPFTP_LOG_PATH	Specify the Infodom Maintenance log path(to be created) for the new Infodom Please ignore if you are doing installation on an existing information domain.	User Input	

Property Name	Description of Property	Permissible values	Comments
DBFTP_LOG_PATH	Specify the Infodom Maintenance log path(to be created) for the new Infodom Please ignore if you are doing installation on an existing information domain.	User Input	
UPLOAD_MODEL	Specify whether you want to perform Model Upload.	0 = If you have already performed Model Upload and want to skip model upload process 1 = If you want to perform Model Upload	
MODEL_TYPE	Specify whether you want to use the released data model or customized data model for model upload process.	# 0 = If you want to upload the released data model # 1 = If you want to upload the customized data model	
DATAMODEL DM_DIRECTORY	Specify the path(DM_DIRECTORY) and file(DATAMODEL) name for the customized data model Mandatory only if you want to upload the customized data model, if you have specified MODEL_TYPE=1.	User Input	
ETL_APPSRC_TYPE	Please specify if you want create new ETL App or Src pair or use an existing one.	0 = If you want to create a new ETL App or Src pair 1 = If you want to use an existing pair	
ETL_SRC_1_DESC	ETL Market Risk Trade source description.	STAGE_MR_TRADE	Please give description for the ETL App or Src pair. Mandatory if you want to create new ETL App or Src pair if you have specified ETL_APPSRC_TYPE=0.

Property Name	Description of Property	Permissible values	Comments
ETL_SRC_2_DESC	ETL Market Risk Reference source description.	STAGE_MR_REFERENCE	Please give description for the ETL App or Src pair. Mandatory if you want to create new ETL App or Src pair if you have specified ETL_APPSRC_TYPE=0.
ETL_SRC_3_DESC	ETL Market Risk Processing source description.	MR_PROCESSING	Please give description for the ETL App or Src pair. Mandatory if you want to create new ETL App or Src pair if you have specified ETL_APPSRC_TYPE=0.
ETL_SRC_4_DESC	ETL Market Risk Processing source description.	STAGING	Please give description for the ETL App/Src pair. Mandatory if you want to create new ETL App or Src pair if you have specified ETL_APPSRC_TYPE=0
ETL_SRC_1_NAME	ETL Market Risk Trade source name.	STAGE_MR_TRADE	Specify the ETL Application and Source Name in the ETL Area Definitions to be deployed.
ETL_SRC_2_NAME	ETL Market Risk Reference source name.	STAGE_MR_REFERENCE	Specify the ETL Application and Source Name in the ETL Area Definitions to be deployed.
ETL_SRC_3_NAME	ETL Market Risk Processing source name.	MR_PROCESSING	Specify the ETL Application and Source Name in the ETL Area Definitions to be deployed.
ETL_SRC_4_NAME	ETL Market Risk Processing source name.	STAGING	Specify the ETL Application and Source Name in the ETL Area Definitions to be deployed.

10.4.4 Trigger the Installation

To trigger the installation, follow these steps:

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

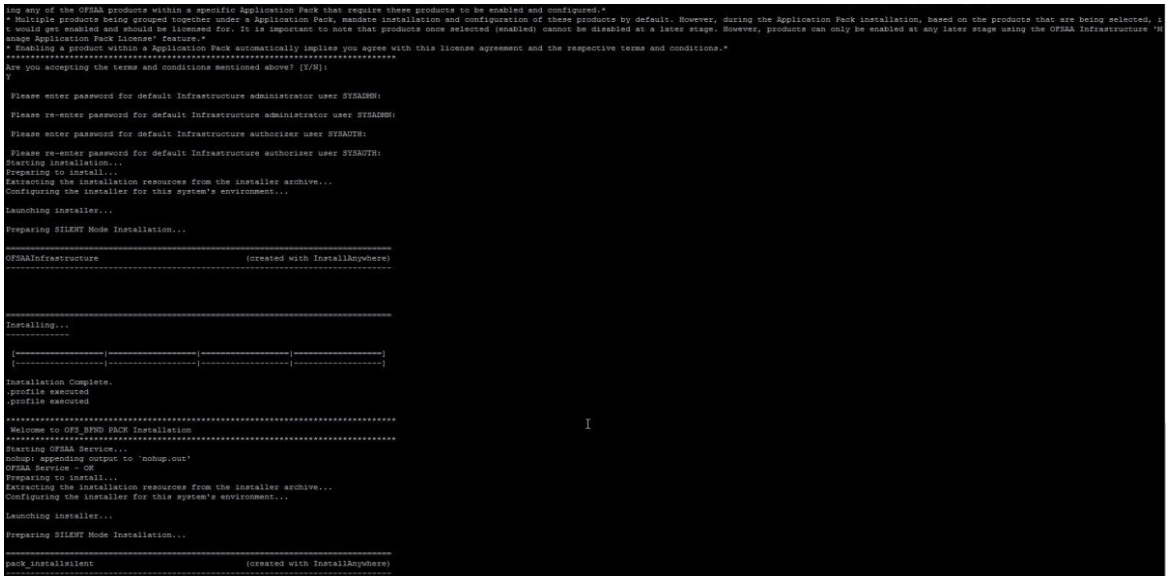
   ```
   ./setup.sh SILENT
   ```

2. The installer proceeds with Pre-installation Checks.

Figure 42: Silent Mode Installation

3. The OFS MRMM installation begins.

Figure 43: OFS MRMM Silent Mode Installation



4. After Data Model Upload verify the installation logs in the following location:
   `OFS_MRMM_PACK/OFS_MRMM/logs`

   Do not close the console until the installation is complete.

Figure 44: Silent Mode Installation in Progress

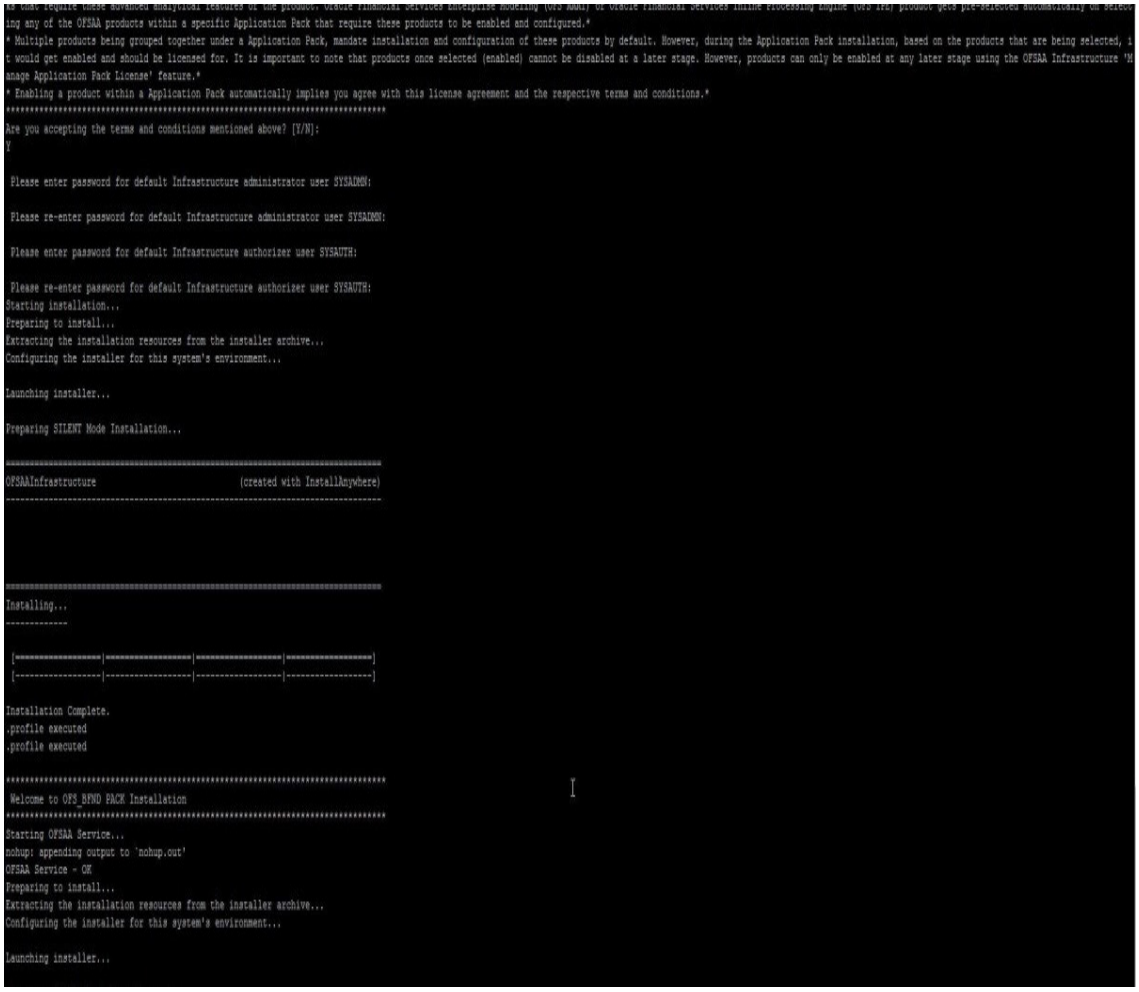


Figure 45: Silent Mode Installation Complete

```
We are now in /scratch/ofsaaapp8 ...
*********************************************************
.profile executed
.profile executed
Executing "ant"
Buildfile: /scratch/ofsaaapp8/OFSAA800/ficweb/build.xml
Trying to override old definition of datatype resources

existtest:
     [echo] Checking for file /scratch/ofsaaapp8/OFSAA800/ficweb/OFSAAI800.war existense

createwar:
     [echo] Creating /scratch/ofsaaapp8/OFSAA800/ficweb/OFSAAI800.war freshly..
      [war] Building war: /scratch/ofsaaapp8/OFSAA800/ficweb/OFSAAI800.war

BUILD SUCCESSFUL
Total time: 1 minute 13 seconds
OFSAA App Layer Services start-up check started...
Starting startofsaai.sh service...
nohup: appending output to `nohup.out'
OFSAA Service - OK
Starting icc service...
nohup: appending output to `nohup.out'
ICC service - OK
Shutting down icc service...
nohup: appending output to `nohup.out'
Shutting down OFSAA service...
nohup: appending output to `nohup.out'
OFSAAI App Layer Services check Status: SUCCESSFUL.
OFSAAI DB Layer Services check started...
checking Router service...
Router Service - OK
checking AM service...
AM Service - OK
Checking MessageServer service...
DEBUG: main started.
DEBUG: TraceFileName = /scratch/ofsaaapp8/OFSAA800/ficdb/log/msg_trace_file.log
DEBUG: OpenFiles done.
MessageServer Service - OK
OFSAAI DB Layer File Services check Status: SUCCESSFUL.
*****************************************************
Installation completed...
*****************************************************
```

Congratulations! Your installation is complete.

10.4.5 Verify the Log File Information

Verify the log files in the locations mentioned in section Verify the Log File Information.

10.4.6 Post Installation Steps

Follow the steps mentioned in the Post Installation Steps section.

Part III

Topics:

11 Additional Configurations

See the Additional Configurations for Application Packs section in the OFS AAI Release 8.1.1.0.0 Installation and Configuration Guide for details about Configurations for Enterprise Modelling and Configurations for Process Modelling Framework.

To complete the configuration process, you may require to perform the following steps listed in the Additional Configuration Checklist. Use this checklist to verify whether these steps are completed or not. See the Additional Information section in the OFS AAAI Release 8.1.1.0.0 Installation and Configuration Guide to complete these procedures.

Table 37: Additional Configuration Checklist

Sl. No.	Additional COnfiguration Activity
1	Add FTP/SFTP Configuration for File Transfer
2	Configure the Infrastructure Server Memory.
3	Retrieve Patch Information.
4	Set OLAP Data Server Configuration.
5	Change IP or Hostname, Ports, Deployed Paths of the OFSAA Instance.
6	Configure the Infrastructure LDAP Configuration.
7	Configure and deploy the OFSAAI web services.
8	Enable Parallel Execution of DML statements
9	Configure the Message Details in the Forms Designer.
10	Clear the application cache.
11	Configure password changes.
12	Configure Java Virtual Machine.
13	Configure Internal Service (Document Upload or Download).

12 Migrate Excel Upload Functionality

See the Migrate Excel Upload Functionality section in the OFS AAAI Release 8.1.1.0.0 Installation and Configuration Guide to complete the procedures.

13 Frequently Asked Questions (FAQs) and Error Dictionary

For FAQs and installation error-related information, see the section Frequently Asked Questions (FAQs) and Error Dictionary in the OFS AAAI Release 8.1.1.0.0 Installation and Configuration Guide.

13.1 Application Pack 8.1.1.0.0 FAQs

You can see the Frequently Asked Questions which is developed with the interest to help you resolve some of the OFS MRMM 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.

1. **What is an Application pack?**

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

2. **Can I get a standalone installer for OFSAAI 8.1.1?**

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

3. **Where can I download OFSAA 8.1.1.0.0 Application Pack?**

   You can download the OFSAAI 8.1.1.0.0 Application Pack from Oracle Software Delivery Cloud (OSDC).

4. **What are the minimum system and software requirements for the OFSAA 8.1.1 Application Pack?**

   See the Hardware and Software Requirements for more information.

5. **Is my environment compatible with OFSAA 8.1.1.0.0 Application Pack?**

   Environment Check utility performs the task. It is part of the install and can also be run separately.

6. **Does the OFSAA 8.1.1.0.0 Application Pack support all Operating systems?**

   See the Hardware and Software Requirements section.

7. **How can I install the OFSAA 8.1.1.0.0 Application Pack?**

   See the OFS AAAI Release 8.1.1.0.0 Installation and Configuration Guide.

8. **Does this installation require any Third-party Software?**

   For details on the third-party software tools used, see the see the OFSAA Licensing Information user Manual *Release 8.1.1.0.0*.

9. **What languages are supported during the OFSAA 8.1.1.0.0 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 8.1.1.0.0 Application Pack support Multi-tier Installations?**

    OFSAA 8.1.1.0.0 supports only a single-tier installation. For more information, see the Frequently Asked Questions (FAQs) and Error Dictionary section.

    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.

12. **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.

13. **Does this Application pack 'Roll Back' if any application installation fails due to errors?**

    The rollback of installation is not supported.

14. **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 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.

15. **Can I re-install any of the Application Packs?**

    You can retrigger in case of failure.

16. **Does this Application pack allow enabling or disabling any of the applications installed?**

    Yes, you can enable but you cannot disable once the product is enabled in an environment.

17. **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 by making the flag as Y. See the Table 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.

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

    There is no issue in installing separate OFSAAI installations, each with their own PFT/FTP installations and separate associated database instances and separate web server installations on the same server as long as adequate memory is allocated for each instance and as long as each OFSAAI installation is installed using a separate UNIX user and profile. Care 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, and so on) take significant amounts of memory. So it depends on your server's memory.

19. **Is it possible to install OFSAA 8.1.1.0.0 Application pack on an existing Infodom where another OFSAA 8.1.1.0.0 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.

20. **Can I select an Infodom for the Application pack during installation?**

    Yes. You can select or change the required infodom.

21. **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.

22. **Is it possible to install applications on different Infodom within the Application pack (for example, I want to install MRMM and MR in two infodoms)?**

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

23. **How many Infodoms can be created over a single OFSAA Infrastructure of 8.1.1.0.0?**

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

24. **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.

25. **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.

26. **Does the Application pack create a sandbox automatically for the required applications?**

    Yes, Sandbox creation is part of the application install process.

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

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

28. **Can I upgrade AAI only?**

    Yes, you can upgrade AAI alone.

29. **Can I upgrade one application within the Application Pack (for example, I want to upgrade MRMM in the Treasury Application pack, but not MR.)?**

    No, an upgrade is applied to all applications in the application pack.

30. **Is it possible to uninstall any Application from the Application pack?**

    No, it is not possible to uninstall any Application from the Application Pack.

31. **Can I uninstall the entire Application Pack?**

    No, you cannot uninstall the Application Pack.

32. **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.

33. **Does Application Pack contain all Language Packs supported?**

    Language Packs must be installed on the application packs.

34. **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.

35. **What should I do if I get the error message: *HostName in the input XML file is not matching with the local hostname* while running the schema creator utility?**

    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.

36. **What are the Java versions supported in OFSAAAI Application Pack version 8.1.1.0.0?**

    See the Hardware and Software Requirements section.

37. **Is OFSAAAI Application Pack version 8.1.1.0.0 supported on Java 9 and Java 11?**

    For information about supported Java versions, see the Hardware and Software Requirements section.

38. **What should I do when I get the message: "*[ERROR] - Error: APP Setup bin file failed.*" 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.

OFSAA Support

Raise a Service Request (SR) in My Oracle Support (MOS) for queries related to the OFSAA applications.

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