Oracle Financial Services Operational Risk

Process Modelling Framework Migration from V8.x.x.x.x to v8.0.4.0.0

Migration Guide

DOCUMENT CONTROL

Version Number	Revision Date	Changes Done
1.0	Created Feb 2017	Document contents have been created and categorized to appropriate sections

Executive Summary

This document details the process of Process modelling framework (PMF) migration of Operational Risk v8.x.x.x.x to 8.0.4.0.0.

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About this Guide

This document describes the procedural execution of Oracle Financial Services Migration Tool to migrate PMF from v8.x.x.x.x to 8.0.4.0.0. It includes detailed information about the migration process, Source and Target data models, and acceptance testing of the Target system.

Acronyms and Terminologies

Acronyms

Acronym	Description
OFSAA	Oracle Financial Services Analytical Applications
OFSAAI	Oracle Financial Services Analytical Applications Infrastructure
OR/GRC	Operational Risk/Governance and Compliance Management
Infodom	Information Domain

Terminologies

- **Source**: The OFSAA environment from which metadata needs to be migrated
- **Target**: The OFSAA environment into which metadata needs to be imported
- Database Schemas:
  - **Config schema:** Refers to the configuration schema used by OFSAA. OFSAA stores various information like users, user-privileges, ICC batches etc, in this schema.
  - **Atomic schema:** Refers to the schema corresponding to each information-domain in OFSAA. This schema stores information like staging, processing, and result data. A few applications also store their metadata within various tables in this schema

Recommendations

- The migration tool may modify the structure of some of the objects present on the Source Schemas. Therefore, you should consider cloning the source OFSAAI environment and then run the migration scripts against the clones.

- You should also consider cleaning up the clone of source (remove any old/obsolete objects you do not wish to migrate) and taking backups of the Source Config and Atomic schema clones. Restore the Source Config and Atomic schemas from the backup and restart the migration.

1 Introduction

1.1 Overview of Migration Tool

The Migration Tool is designed to allow customers to easily carry forward workflow definitions to the Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) v8.0.4.0.0 instance. From OR/GRC v8.0.4.0.0 onwards Workflow Manager is known as Process Modelling Framework.

1.2 Preparing a Migration Plan

Before you execute any migration scripts, the following steps should be taken:

- Become Familiar with the New Release
- Prerequisites
- Choose an Upgrade Method
- Prepare a Backup Strategy
- Develop a Testing Plan
- Test Your Migration Plan on a Test Database

1.2.1 Become Familiar with New Release

To execute acceptance tests, users involved in the migration process will need to be familiar with the architecture, tools, and the user interface of the new release. For more information, see OFSAA User Guides. In particular, users will want to become skilled at accessing similar objects such as business rules, dimensions, users, folders, and hierarchies in both Source and Target installations.

1.2.2 Prerequisites

Following are the prerequisites to run the migration utility.

Software Versions on Source

OFSAAI version must be v8.x.x.x.x.

OR must be 8.x.x.x.x

Software Versions on Target

OR Application Pack v8.0.4.0.0 must be installed.

1.2.3 Upgrade Method

The existing upgrade method uses a manual script-driven process for the Migration Tool, followed by some manual post-migration steps. This process is described in this guide.

As an alternative to using the migration tool, you could also choose to manually reconfigure all of the metadata on a fresh instance of OR Application Pack v8.x.x.x.x.

1.2.4 Prepare a Backup Strategy

The success of your migration depends heavily on the design and execution of an appropriate backup strategy. To develop a backup strategy, consider the following questions:

- How long can the production database remain inoperable before business consequences become intolerable?
- What backup strategy should be used to meet your availability requirements?
- Are backups archived in a safe, offsite location?
- How quickly can backups be restored (including backups in offsite storage)?
- Have recovery procedures been tested successfully?

Backup Procedure

At a minimum take a backup of the CONFIG and ATOMIC schemas. Ensure that the folder has necessary permissions to create dump and log files.

You can use the below command to create a backup:

```
exp <schema name>/<password>@<database sid> file=<export filename>
log=<log filename> full=N
```

1.2.5 Prepare a Testing Plan

You need a series of carefully designed tests to validate all stages of the upgrade process. Executed rigorously and completed successfully, these tests ensure that the process of upgrading the production database is well understood, predictable, and successful. Perform as much testing as possible before upgrading the production database. Do not underestimate the importance of a test program.

The testing plan must include the following types of tests:

- Minimal Testing: Entails moving application from the current database to the new database and running the application without enabling any new features. Minimal testing is a very limited type of testing that may not reveal potential issues that may appear in a "real-world" production environment. However, minimal testing will immediately reveal any application startup or invocation problems.
- Functional Testing: Includes a set of tests in which new and existing functionality of the system are tested after the migration. Functional testing includes all database, networking, and business/application components. The objective of functional testing is to verify that each component in common between the Source and Target systems behaves properly, as well as confirming that new features are working.

- Performance Testing: Compares the performance of various business functions on both the Source and Target systems. Unlike volume or load stress testing, base performance testing is meant to provide a real-world comparison of common usage without the setup and long run times. Successful completion of base performance testing should be considered a prerequisite to volume or load stress testing.

1.2.6 Test Your Migration Plan on a Test Environment

Create a test environment that will not interfere with the current production environment. Practice migration of the application metadata using the test environment. The best test, if possible, is performed on an exact copy of the database to be migrated, rather than on a downsized copy or test data. This will familiarize you with the migration process and minimize unexpected issues.

2 PMF Workflow Migration

2.1 Pre-Migration Activities

2.1.1 For sub process

Add the entries for sub process if any in the below table in atomic schema.

- Table: WFM_SUBPROCESS_MAPPING
- wfm_stg_id: Stage id of the workflow where sub process call is starting
- WFM_TARGET_STG_ID: Target Stage id of the workflow where sub process call is ending
- WFM_MASTER_ID: Master id of the workflow in which sub process is called
- WFM_RULE_ID: Rule Id which needs to be called in the transition to the sub process
- V_TGT_WFM_MASTER_ID: Target master id of the workflow to be called in the sub process. For example, Risk Assessment workflow Id to be called from Challenge workflow as sub process.
- V_OBJECT_ID:The object Id to be passed as parameter in sub process call. For example, 'PARENT_RISK_ID'
- V_OBJECT_TYPE:The object type to be passed as a data field in sub process call. For example, PARENT_RISK_TYPE

After executing the utility, the sub process call can be seen in PMF screen.

2.1.2 For URL mapping

Add the entries for URL for any new workflow if any in the below table in atomic schema. This is required for inbox navigation.

Table :ENTITY_APPLICATION_URL_MAP

V_OBJECT_TYPE:Entity ID

V_DEFINITION_PAGE_URL:URL like 'formsFramework/menu/landingPage.jsp?cssFileName=CSS_OFSAAI&userLocale={WF_LOCALE}&usrLocale={WF_LOCALE}&infodom={V_INFODOM_CODE}&segment={V_SEGMENT_CODE}&userId={ASSIGNEEUSERS}&loadMenuId=107&appId=OFS_OR,OFS_GRC_IA,OFS_GRC_KI,OFS_GRC_QTNR,OFS_GRC_WFM,OFS_GRC_COMMON&dsn={V_INFODOM_CODE}&origin=MAIN&PMF_OBJ_ID={V_OBJECT_ID}&FMINBOXFLAG=TRUE&stdMode=true&stdMode=true'

If it is not added before migrating, you can add the entry after migration in the below table in config schema after migration.

`Table:aai_wf_app_registration`

V_DEFINITION_PAGE_URL:URL

2.2 Preparing for Migration

2.2.1 Activities on the Source

Perform the following activities on the Source:

1. Navigate to the path `$FIC_HOME/utility/Migration/conf`
2. Edit the `OBJECTMIGRATION.xml` to provide the details as follows:

`<USERID>`	Specify the user ID of the OFSAAI user, for whom you are running the Migration Utility. Ensure the user is mapped to the specific source Information Domain/Segment. **NOTE:** For migrating Data Quality definitions, the USERID has be passed in upper case.
`<LOCALE>`	Locale Information. For example, en_US and so on.
`<INFODOM>`	Specify the Information Domain from where objects need to be exported. The information domain name should be provided in capital letters.
`<MODE>`	EXPORT
`<FILE>`	Output dump file name
`<FAILONERROR>`	Fail on any error occurred while archiving metadata. This is only used for importing. Ensure that this field is not empty.
`<OBJECTS TargetFolder="$FOLDER$">`	Specify the Code of the folder/segment to which you need to import objects. This field is optional. The folder value should be provided in capital letters. Note: This is the default target folder if object specific TargetFolder is not provided. However, if both FOLDER and Target Folder are not specified, then source folder available in the exported dump file will be considered as target folder.
`<OBJECT Code="< LIST ID >" Type="170" />`	This type refers to workflow. Code refers to the list ID of the workflow which is required to be migrated

3. Navigate to the folder `$FIC_HOME/utility/Migration/bin`
4. Execute the script `ObjectMigration.sh` inside the folder.
5. An archive folder is created which contains the dump (.dmp file) in the target folder. The target folder location is mentioned inside the root node `<OBJECTS TargetFolder=" "> property`.

2.2.2 Activities on the Target

Perform the following activities on the target

1. Navigate to the path `$FIC_HOME/utility/Migration/conf`
2. Edit the `OBJECTMIGRATION.xml` to provide the details as follows:

`<USERID>`	Specify the user ID of the OFSAAI user, for whom you are running the Migration Utility. Ensure the user is mapped to the specific source Information Domain/Segment. **NOTE:** For migrating Data Quality definitions, the USERID

	has be passed in upper case.
<LOCALE>	Locale Information. For example, en_US and so on.
<INFODOM>	Specify the Information Domain from where objects need to be exported. The information domain name should be provided in capital letters.
<MODE>	IMPORT
<FILE>	Output dump file name
<FAILONERROR>	Fail on any error occurred while archiving metadata. This is only used for importing. Ensure that this field is not empty.
<OBJECTS TargetFolder="$FOLDER$">	Specify the Code of the folder/segment to which you need to import objects. This field is optional. The folder value should be provided in capital letters. Note: This is the default target folder if object specific TargetFolder is not provided. However, if both FOLDER and TargetFolder are not specified, then source folder available in the exported dump file will be considered as target folder.
<OBJECT Code="< LIST ID >" Type="170" />	This type refers to workflow. Code refers to the list ID of the workflow which is required to be migrated

3. Place the dump file (.dmp) created in the source (archive) in the restore folder inside the Target folder (<OBJECTS TargetFolder=)
4. Navigate to the folder $FIC_HOME/utility/Migration/bin
5. Execute the script ObjectMigration.sh inside the folder to restore it.

2.3 Limitation

For every execution of the archive/restore only one *LIST ID* is involved.

NOTE: For any errors please refer to the FUSIONSUBSYSTEMSService.log placed in the location $scratch/ofsaadb/apache-tomcat-7.0.19/webapps/OFSAAI/logs.

3 PMF Data Migration

3.1 Prerequisites

1. Data from fact tables should have been migrated from previous versions for which workflow related data needs to be migrated.
2. The workflow definition of the module which needs to be migrated should have been migrated or defined in pmf.

3.2 Pre Migration Activities

3.2.1 For Tasks and notifications mapping

You can add the tasks and notifications mapping for new workflow definitions or custom workflows which have been migrated in the below table in atomic schema.

- Table: wfm_pmf_task_map
- N_TASK_KEY: Old workflow task/notification Id
- V_TASK_ID:PMF Task/ notification Id
- V_PROCESS_ID: The process Id of the entity
- V_TASK_TYPE: The flag which indicates whether it is task/notification. It is 2 for tasks and 1 for notifications.

3.3 Preparing for Migration

3.3.1 Activities on the Source

Perform the following activities on the Source:

1. Navigate to the path `$FIC_HOME/utility/Migration/conf`

2. Edit the `OBJECTMIGRATION.xml` to provide the details as follows:

<USERID>	Specify the user ID of the OFSAAI user, for whom you are running the Migration Utility. Ensure the user is mapped to the specific source Information Domain/Segment. **NOTE:** For migrating Data Quality definitions, the USERID has be passed in upper case.
<LOCALE>	Locale Information. For example, en_US and so on.
<INFODOM>	Specify the Information Domain from where objects need to be exported. The information domain name should be provided in capital letters.
<MODE>	EXPORT
<FILE>	Output dump file name
<FAILONERROR>	Fail on any error occurred while archiving

	metadata. This is only used for importing. Ensure that this field is not empty.
<OBJECTS TargetFolder="$FOLDER$">	Specify the Code of the folder/segment to which you need to import objects. This field is optional. The folder value should be provided in capital letters. Note: This is the default target folder if object specific TargetFolder is not provided. However, if both FOLDER and TargetFolder are not specified, then source folder available in the exported dump file will be considered as target folder.
<OBJECT Code="< LIST ID >" Type="171" />	This type refers to entity. Code refers to the entity ID of the module which is required to be migrated.

3. Navigate to the folder `$FIC_HOME/utility/Migration/bin`
4. Execute the script `ObjectMigration.sh` inside the folder.
5. An archive folder is created which contains the dump (.dmp file) in the target folder. The target folder location is mentioned inside the root node `<OBJECTS TargetFolder=" "> property`.

3.3.2 Activities on the Target

Perform the following activities on the target

1. Navigate to the path `$FIC_HOME/utility/Migration/conf`
2. Edit the `OBJECTMIGRATION.xml` to provide the details as follows:

<USERID>	Specify the user ID of the OFSAAI user, for whom you are running the Migration Utility. Ensure the user is mapped to the specific source Information Domain/Segment. **NOTE:** For migrating Data Quality definitions, the USERID has be passed in upper case.
<LOCALE>	Locale Information. For example, en_US and so on.
<INFODOM>	Specify the Information Domain from where objects need to be exported. The information domain name should be provided in capital letters.
<MODE>	IMPORT
<FILE>	Output dump file name
<FAILONERROR>	Fail on any error occurred while archiving metadata. This is only used for importing. Ensure that this field is not empty.
<OBJECTS TargetFolder="$FOLDER$">	Specify the Code of the folder/segment to which you need to import objects. This field is optional. The folder value should be provided in capital letters. Note: This is the default target folder if object specific Target Folder is not provided. However, if both FOLDER and TargetFolder are

	not specified, then source folder available in the exported dump file will be considered as target folder.
`<OBJECT Code="< LIST ID >" Type="171" />`	This type refers to entity. Code refers to the entity ID of the module which is required to be migrated.

3. Place the dump file (.dmp) created in the source (archive) in the restore folder inside the Target folder (`<OBJECTS TargetFolder=`)
4. Navigate to the folder `$FIC_HOME/utility/Migration/bin`
5. Execute the script `ObjectMigration.sh` inside the folder to restore it.

3.4 Limitation

For every execution of the archive/restore only one *LIST ID* is involved.

NOTE: For any errors please refer to the `FUSIONSUBSYSTEMSService.log` placed in the location `$scratch/ofsaadb/apache-tomcat-7.0.19/webapps/OFSAAI/logs`.

Appendix A - Troubleshooting and Logging

This section describes the various error messages written to the log files, and the recommended corrective action for resolving the same. In most cases, the error messages should be self-explanatory.

Note: the logs files will be overwritten every time you execute the migration scripts, , so you might want to make a copy before rerunning the scripts.

a. prepare_source.log

Error Message	Meaning / Corrective Action
Cannot change access-permissions for xxxxxxxx. Exiting...	**Meaning:** Unable to set execute permissions for xxxxxx **Action:** Ensure that the unix user executing the migration kit has privileges to change the file-permissions under the migration-kit-home directory.
==No xxxxxx.sql file found. Skipping step.	**Meaning**: There were no pre-scripts found for executing on the configuration or atomic schema **Action**: None
Unable to determine TNS Name for xxxxxx Schema. Please contact your System Administrator. (or) Unable to determine TNS Name for specified Information-Domain. Please contact your System Administrator. (or) Credentials not available for connecting to config schema. Skipping	**Meaning**: The kit was unable to get the login credentials for connecting to the configuration or atomic schema **Action**: This is usually indicative of a more serious problem. Please review the log file for any errors that you may be able to resolve. If you are unable to resolve, please contact Oracle Support, and share this log file.
Error: Could not determine version of AAI/Application.	**Meaning:** The kit was unable to detemine the version of OFSAAI and/or the version of the application. **Action**: The migration kit determines the versions via the file

	scripts/version/version.sql. Any errors while executing this script will also be captured in this log. Resolve any errors and try to execute prepare_source.sh again. Alternately, execute the SELECT statements included in this file via SQL*Plus on the configuration schema to review the errors. Please replace the following placeholders while executing the scripts - ##appid## with the ID of the application. You can get the application-ID from the file conf/application.ID - ##infodom## with the name of the information domain; this would have been passed as a parameter to the prepare_source.sh script.
Version Mismatch: AAI version [xxxxxx] should be >= yyyyyy (or) Version Mismatch: Application version [xxxxxx] should be >= yyyyyy	**Meaning:** There is a version mismatch between the expected and actual versions of OFSAAI and/or the application. **Action:** Please apply the required patches to bring your Source environment to the required state, and then restart the migration.

b. extract_from_source.log

Error Message	**Meaning / Corrective Action**
Error while extracting dimension-ids. Please check the log file for details.	**Meaning:** The kit was unable to detemine the Dimension-IDs of AMHM dimensions. **Action**: The migration kit determines the Dimension-IDs via the file amhm/synchronize_ids/ get_dim_ID.sql. Any errors while executing this script will also be captured in this log. Resolve any errors and try to execute extract_from_source.sh again.
Time-out! Please contact your system administrator.	**Meaning:** The migration kit timed-out while attempting to export the AAI metadata. **Action:**

	- Check if the OFSAA servers are running - If the error persists, please contact Oracle Support.

c. import_from_target.log

Error Message(s)	**Meaning / Corrective Action**
Error - Cannot find ${MIG_APP_ID}_metadata.tar.gz. Cannot proceed further.	**Meaning**: The metadata-export archive that is created by the export_from_source.sh script was not found **Action**: Copy the archive from the Source migraiton-kit folder to the Target migration-kit folder and try again
Error - dim_ID.sql not found. Not synchronizing dimension-ids.	**Meaning:** The migration kit was expecting the dim_ID.sql under amhm/synchronize_ids folder, but the file was not found. **Action:** Re-execute the script extract_from_source.sh, copy the metadata archive file to the Target server and try to run the import_into_target.sh again. If the error persists, please contact Oracle Support.
Error - update_pooling_optimizer.sql not found. Has extract_from_Source.sh been executed?	**Meaning:** The migration kit was expecting the uodate_pooling_optimizer.sql under extract/config folder, but the file was not found. **Action:** Re-execute the script extract_from_source.sh, copy the metadata archive file to the Target server and try to run the import_into_target.sh again. If the error persists, please contact Oracle Support.
==No xxxxxx.sql file found. Skipping step.	**Meaning**: There were no pre-scripts found for executing on the configuration / atomic schema **Action**: None
Time-out! Please contact your system	**Meaning:** The migration kit timed-out while

administrator.	attempting to export the AAI metadata. **Action:** - Check if the OFSAA servers are running - If the error persists, please contact Oracle Support.
Error: Could not determine version of AAI/Application.	**Meaning:** The kit was unable to detemine the version of OFSAAI and/or the version of the application. **Action**: The migration kit determines the versions via the file scripts/version/version.sql. Any errors while executing this script will also be captured in this log. Resolve any errors and try to execute prepare_Source.sh again. Alternately, execute the SELECT statements included in this file via SQL*Plus on the configuration schema to review the errors. Please replace the following placeholders while executing the scripts - ##appid## with the ID of the appllication. You can get the application-ID from the file conf/application.ID - ##infodom## with the name of the information domain; this would have been passed as a parameter to the prepare_source.sh script.
Version Mismatch: AAI version [xxxxxx] should be >= yyyyyy (or) Version Mismatch: Application version [xxxxx] should be >= yyyyy	**Meaning:** There is a version mismatch between the expected and actual versions of OFSAAI and/or the application. **Action:** Please apply the required patches to bring your Source environment to the required state, and then restart the migration.
Cannot change access-permissions for xxxxxxxx. Exiting...	**Meaning:** Unable to set execute-permissions for xxxxxx

	Action: Ensure that the unix-user executing the migration kit has privileges to change the file-permissions under the migration-kit-home directory.

Appendix B - Objects Not Migrated

This utility does not support migartion of below:

1. Data from the Fact tables and Staging tables.
2. OFSAAI Folders (Segments), Groups, Users and their access privileges.
3. Metadata, hierarchies and so on.

Appendix C – Documentation

You can access the following related documents from http://docs.oracle.com

User guides for OFSAA v8.0 / ORGRC v8.0

http://docs.oracle.com/cd/E54637_01/homepage.htm

Appendix D – Limitations

List of special characters allowed in OFSAAI Business Hierarchy:

Following are the restricted characters as per OFSAAI 8.x.x.x.x for member maintenance and rendering

Hierarchy Browser sRendering

Member Name: Single quote, Double Quotes, forward slash, Carriage Return, ampersand

Member maintenance in AMHM

Member Name: Single Quotes , double quotes, ampersand, carriage Return (Respective Ascii Code are 39,34,38,13)

Member Alphanumeric Code also gets displayed in hierarchy tree.

Current list of characters not allowed in Member Alphanumeric Code: Single Quotes , double quotes, ampersand, carriage Return,@,~,+ (Respective Ascii Code are 39,34,38,13,126,64,43)

Member Maintainance in UMM

Member Name: ~, `, !, @, #, $, %, ^, &, *, (,), -, +, =, [,], {, }, |, \, :, ;, '', ', <, >, ?, /, comma

Apart from this, impact would be in all the UIs where platform Hierarchy Browser is consumed, and ALM application specific UIs and utilities around this.

Oracle Financial Services Operational Risk Process Modelling Framework Migration from V8.x.x.x.x to v8.0.4.0.0
Migration Guide

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