Oracle Financial Services Retail Customer Analytics

Cloning Reference Guide

Release 8.1.1.x

Apr 2021

ORACLE
Financial Services

ORACLE

Oracle Financial Services Retail Customer Analytics Cloning Reference Guide

Document Control

Version Number	Revision Date	Change Log
8.1.0.0.0	15-Jun-2020	Created the instructions to set up an OFS Funds Transfer Pricing Application Instance Clone for the 8.1.x release.

Table of Contents

1 Preface

The purpose of this document is to serve as reference material to the OFSAA administrators. This document contains detailed steps to set up an OFSAA Instance Clone for the 8.1.x.x.x releases.

1.1 Background

There is a consistent requirement for a faster and effective procedure to replicate an existing OFSAA instance for further project developments. The procedure is to set up the OFSAA instances that are exact copies of the current OFSAA instance.

1.2 Assumptions

The assumptions made in this document are:

- A working source OFSAA 8.1.x instance exists.

- An appropriate target system exists for the new OFSAA setup.

> **NOTE**　See the Tech Matrix for the hardware and software required for the target system of OFSAAI Release 8.1.1.0.0.

1.3 Audience

This reference guide is for the administrators and implementation consultants responsible for the cloning of an OFSAA instance.

1.4 Conventions

The following text conventions are used in this document.

Conventions	Description
8.1.x	The OFSAA 8.1.x release.
Atomic Schema	The Database Schema where the application data model is uploaded.
Configuration Schema (Config Schema)	The Database Schema which contains setup related configurations and metadata.
Source	The source OFSAA system.
Target	The target OFSAA system.

1.5 Typographic Conventions

The following typographic conventions are used in this document.

Conventions	Description
Boldface	The boldface font type indicates graphical user interface elements associated with an action or terms defined in text or the glossary.
Hyperlink	Hyperlink type indicates the links to external websites, internal document links to sections.
Italic	The italic font type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`Monospace`	The monospace font type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1.6 Abbreviations

The following table lists the abbreviations used in this document.

Abbreviations	Description
OS	Operating System
UI	User Interface of the application

2   Set Up an OFSAA Instance Clone for the 8.1.x Release

This chapter contains information about the prerequisites, cloning, and post-cloning configurations for the 8.1.x release when setting up an OFSAA Instance Clone.

2.1   Prerequisites

To set up an OFSAA Instance Clone for the 8.1.x release, complete the following prerequisites:

1. General Requirements
2. Source System Requirements
3. Target System Requirements

> **NOTE**   Complete the prerequisites and then perform the procedures mentioned in the Cloning Process section.

2.1.1   General Requirements

The following general requirements must be set up before beginning the cloning process:

1. The minimum OFSAA version must be Release 8.1.1.0.0.
2. The FTP/SFTP service is running on the OFSAA target system and the user credentials are available before you begin the cloning activities.

2.1.2   Source System Requirements

In the source system, complete the following requirements:

1. All the OFSAA services are stopped.
2. Database connection details such as the RAC and NON-RAC URL, the SID and Service Name, and the user credentials are available.

2.1.3   Target System Requirements

In the target system, complete the following requirements:

1. All the basic software required for the installation of OFSAA applications (including infrastructure) are installed and working on the machine identified as the Target OFSAA instance. You can use the Environment Check utility to verify system readiness. For details on how to use the Environment Check Utility, see the OFS Analytical Applications Environment Check Utility Guide.

   For details on the software and hardware requirements, see the *Hardware and Software Requirements* section in the OFS AAAI Application Pack Installation and Configuration Guide.

> **NOTE**   Upgrade the Target OS version to the same version as that of the Source OS. Binaries are OS version-specific and the cloning process requires that there is no mismatch of library files.

2. The web server and the web application server are configured. For details on how to configure web servers, see the *Configuring Web Server* section in the OFS AAAI Application Pack Installation and Configuration Guide.

3. The OFSAA installation directory is set as `$FIC_HOME` with the 750 permission.

   For example, `/scratch/ofsaanew/OFSAA`

4. The OFSAA staging or metadata repository directory is set as `ftpshare` with the 775 permission.

   For example, `/scratch/ofsaanew/ftpsharenew`

5. The database connection details such as the RAC and NON-RAC URL, the SID and Service Name, and the user credentials are available.

> **NOTE**   Create a new database instance that is different from the database instance used in the Source OFSAA instance.

6. The web server and the web application server identified for the deployment of the OFSAA applications are installed and configured on the machine which is identified as the web server and web application server.

> **NOTE**   If you intend to use the same web application server, then create a separate profile (in WebSphere) or a domain (in WebLogic).

7. The details of the WebSphere profile or the WebLogic domain or the Tomcat context are available.

> **NOTE**   Before executing the utility, ensure to configure the `RevLog4jConfig.xml` file with the default log paths.

2.2   Cloning Process

Complete the prerequisites and then perform the following procedures.

Before initiating the cloning process, perform these steps to retrieve the schema names:

1. Log in to the Source Config Schema.

2. Execute the following query to retrieve the Config Schema name and Atomic Schema name:

```
select dbuserid from db_master;
```

In the `expdp` and `impdp` database utilities, you can use the schema names in the SCHEMAS attribute.

Subsequent steps for cloning are described in the subsections in this topic and Table 1 acts as a quick start with a summary view of the cloning process.

Table 1: Quick Start for Cloning

Sl. No.	Cloning Process (click the links to go to the specific steps in the document)
1.	Export the complete Configuration and Atomic Schemas from the source environment.
2.	Restore the complete exported schema dumps into the target environment database. • Restore the complete exported schema dumps into the target environment database with a different database user name (schema).
3.	Provide grants and set passwords using the SysDBA user login: 1. Provide the select grants permission on the sys.V_$parameter view to the Config and Atomic Schemas of the target environment database. 2. When you import into different schema names, set the passwords for the Config and Atomic Schemas of the target environment database the same as that of the password in the source.
3.	Copy and restore the OFSAA file system.
4.	Run the Port Changer utility.
5.	Run the `EncryptC.jar` utility to change the key and encryption strings.
6.	Perform the post-cloning configurations.
7.	Create and deploy the .ear/.war files.
8.	Access the UI.

2.2.1 Export the Complete Configuration and Atomic Schemas From the Source Environment

Export all the Configuration and Atomic Schemas from the Source environment.

For example:

```
expdp SYSTEM/oracle@OFSA12C2DB  DIRECTORY=data_pump_dir
DUMPFILE=ofsaaconf_ofsaaatm_%U.dmp filesize=2G SCHEMAS=ofsaaconf,ofsaaatm
LOGFILE=ofsaaconf_ofsaaatm_exp.log
```

NOTE	Running the preceding command creates data dumps in the files in multiples of 2 GB. You can use any other equivalent commands or tools to archive the schemas.

2.2.2 Restore the Complete Exported Schema Dumps Into the Target Environment Database

Restore all the exported dumps into the Target environment database.

For example:

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

> **NOTE**   Restoring the exported dumps creates the Config and Atomic Schemas with the same user credentials as that of the user credentials in the Source, along with the existing grants.

2.2.3 Provide Grants and Set Passwords Using the SysDBA User Login

Restoring the complete exported dumps into the Target environment database with a different database User Name (Schema) does not provide the select grants permission. You must log in with the SysDBA user role to provide the select grants permission and set the passwords. The following subsections provide the instructions to provide grants and set a password using the SysDBA user login.

2.2.3.1 Provide the Select Grants Permission on the `sys.V_$parameter` View to the Config and Atomic Schemas of the Target Environment Database

Provide the select grants permission on the `sys.V_$parameter` view to the Config and Atomic Schemas of the Target environment database.

For example:

Log in as sys user and execute the following SQL commands:

```
GRANT SELECT ON SYS.V_$PARAMETER TO ofsaaconf;
```
```
GRANT SELECT ON SYS.V_$PARAMETER TO ofsaaatm;
```

2.2.3.2 Set the Passwords for the Config and Atomic Schemas of the Target Environment Database with Different Schema Names

When you import the Config and Atomic Schemas into the Target environment database with different schema names, set the passwords for the Config and Atomic Schemas the same as that in the Source environment database.

> **NOTE**   If this step is not applicable, ignore and proceed to the next section.

For example:

Log in as sys user and execute the following SQL commands:

```
ALTER USER newofsaaconf IDENTIFIED BY welcome1;
User Altered
ALTER USER newofsaaatm IDENTIFIED BY welcome1;
User Altered
```

2.2.4 Copy and Restore the OFSAA File System

To copy and restore the OFSAA file system, follow these steps:

1. Navigate to the `$FIC_HOME/utility/Clone/bin` directory in the Source environment and grant the 750 permission to all the files present in the directory.

2. Execute the command:

   ```
   ./OFSAA_Archive.sh
   ```

   This step creates zipped files for the `<FIC_HOME>` and `<FTPSHARE>` directories in their respective locations in the Source.

   For example:

   ```
   <FIC_HOME>.zip
   <FTPSHARE>.zip
   ```

3. Copy the `<FIC_HOME>` and `<FTPSHARE>` archive files in the Binary mode from the Source to the Target in their respective locations, that is, as per the directories created in the `FIC_HOME` and `FTPSHARE` directories. For more information, see Set the OFSAA installation directory as `$FIC_HOME` and set the OFSAA staging/metadata repository directory as ftpshare in the Target System Requirements section.

4. The OFSAA installer creates entries in the `.profile` file of the Source. Copy the entries to the `.profile` file of the Target in the respective location.

5. To extract the archive file, navigate to the directory where the zipped archive file is present in the target environment, and execute the following command:

   ```
   unzip -a <<Zipped_file>>
   ```

   For example:

   ```
   unzip -a ftpshare.zip
   ```

   Perform this step for both the `<FIC_HOME>` and `<FTPSHARE>` archive files to extract the files in their respective locations in the Target environment.

6. Give the 750 permission recursively to the `<FIC_HOME>` directory and the 775 permission to the `<FTPSHARE>` directory extracted in the Target environment.

   For example:

   ```
   chmod -R 750 $FIC_HOME
   chmod -R 775 $FTPSHARE
   ```

7. In the `.profile` file of the Target environment, modify the `FIC_HOME`, `JAVA_BIN`, `PATH`, `ORACLE_HOME`, `TNS_ADMIN`, `ORACLE_SID`, `ES_HOME`, and `OFSAA_LOG_HOME` in the variables entry made by the installer according to the required values of the Target environment.

   For example, change the path of Java Runtime in the `JAVA_BIN` variable according to the Java Runtime installation on the target environment.

8. Execute the `.profile` file in the Target environment.

9. Edit the `tnsnames.ora` file present in the `$TNS_ADMIN` directory to add or edit the connection details to the OFSAA schemas of the Target environment.

2.2.5 Run the Port Changer Utility

Before running the Port Changer utility, complete the following prerequisites:

- You must configure the `RevLog4jConfig.xml` file with the default log paths.

- The Port Changer utility connects to the Config Schema to collect all the configurations. Therefore, in the `$FIC_HOME/conf` directory, you must edit the `DynamicServices.xml` file for the `DEFAULT_CONNECTION_URL` attribute. Ensure that the VALUE is a qualified JDBC URL of the Target database.

To run the Port Changer utility, follow these steps:

1. Navigate to the `$FIC_HOME/utility/PortC/bin` directory in the Target.

2. Run the `PortC.sh` utility using the command:

   ```
   ./PortC.sh DMP
   ```

   This command creates a file with the name `DefaultPorts.properties` in the `$FIC_HOME` directory. The directory contains the information related to the ports, IPs, and paths currently in use.

   > **NOTE**   It is mandatory to run the Port Changer utility using the DMP parameter every time before executing the utility using the UPD command.

3. Make the necessary changes to the ports, IPs, and paths in the `DefaultPorts.properties` file as per the Target environment. Save the changes.

4. Run the `PortC.sh` utility using the command:

   ```
   ./PortC.sh UPD
   ```

   This command changes the ports, IPs, and paths in the `.profile` file (in the home directory), all the files in the `$FIC_HOME` directory, and the database tables according to the values mentioned in the `DefaultPorts.properties` file.

   If the paths are not updated, then update manually in these files.

5. Execute the `.profile` file and create the EAR or WAR file. Then restart the OFSAA services and redeploy to the configured web application server.

2.2.6   Perform the Post-Cloning Configurations

Perform the post-cloning configurations as mentioned in the *Post Installation Configurations* section in the OFS AAAI Application Pack Installation and Configuration Guide.

NOTE	After the Cloning Process is complete, in the `ficdb/bin/righttoforget.sh` file, as per the URL parameter, the IP or Host Name and the Port values need to be changed manually.
	Ensure that you apply the Oracle recommended configuration mentioned in the Configure Referrer Header Validation Section in the Oracle Financial Services Analytical Applications Security Guide, to update the information.

2.2.7   Create and Deploy the .ear or.war files

To create and deploy the `.ear/.war` files, follow these steps:

1. Navigate to the `$FIC_WEB_HOME` directory in the Target environment.

2. Delete the OFSAA application *.war/*.ear file present in this directory.

3. Execute the command:

    `./ant.sh`

4. Copy the generated `.ear/.war` file to the web application server identified for this OFSAA instance.

5. Modify all the database connection resources on the web application server that are mapped to the new JDBC URL and database user credentials. Verify the test connection to validate.

6. Deploy the `.ear/.war` file.

    For more information on creating and deploying the EAR and WAR files, see the *Create and Deploy the EAR or WAR Files* section in OFS AAAI Application Pack Installation and Configuration Guide.

2.2.8   Access the UI

Access the OIPI UI by using the new IP Address/Host Name, the new Port, and the new Context Name.

For example:

`http://<IP ADDRESS/ HOSTNAME>:<PORT>/<CONTEXT NAME>/login.jsp`

3 Appendix A

Manually modify the occurrences of the Source database user name with a new Target database user name (see the REMAP_SCHEMA attribute mentioned in the [Restore the Complete Exported Dumps Into the Target Environment Database](#) section).

1. Manually modify the occurrences of the Source Config database user name with the new Target Config database user name. See the following table for details.

Table 2: Source and Target Config Database User Name Files

Sl. No.	Directory Path	File Name
1.	$FIC_HOME/conf/	Reveleus.SEC
2.	$FIC_HOME/utility/OFSAAGenerateRepository/conf/	Reveleus.SEC
3.	$FIC_HOME/conf/	DynamicServices.xml
4.	$FIC_HOME/MigrationUtilities/Migration_LDAP/conf/	DynamicServices.xml
5.	$FIC_HOME/utility/OFSAAGenerateRepository/conf/	DynamicServices.xml
6.	$FIC_HOME/ficweb/webroot/conf/	DynamicServices.xml
7.	$FIC_HOME/EXEWebService/Tomcat/ROOT/conf/	DynamicServices.xml
8.	$FIC_HOME/EXEWebService/WebSphere/ROOT/conf/	DynamicServices.xml
9.	$FIC_HOME/EXEWebService/weblogic/ROOT/conf/	DynamicServices.xml

> **NOTE**
> - Based on the web application server, choose the relevant directory path from Sl. No. 7, 8, or 9 from Table 2.
> - If any file is not available in the mentioned path, you can ignore it.

2. Log in to the newly imported Atomic Schemas. Perform the following steps on each Atomic Schema to modify the interdependent object:

Execute the following query to verify invalid object status:

```
select object_type, object_name from user_objects
where object_type in ('FUNCTION','PACKAGE','PACKAGE
BODY','PROCEDURE','TRIGGER','VIEW') and status = 'INVALID'
order by object_type , object_name;
```

If the preceding query lists out the objects, then you can compile the invalid objects by following step 2.

3. Run the following anonymous block to compile the invalid objects:

```
BEGIN

  FOR cur_rec IN ( select object_type, object_name from user_objects
```

```
where object_type in ('FUNCTION','PACKAGE','PACKAGE
BODY','PROCEDURE','TRIGGER','VIEW') and status = 'INVALID'

order by object_type , object_name )

  LOOP

    BEGIN

IF cur_rec.object_type = 'PACKAGE BODY' THEN

   EXECUTE IMMEDIATE 'ALTER PACKAGE ' || ' "' || cur_rec.object_name ||
'" COMPILE BODY';

               COMMIT;

                 ELSE

   EXECUTE IMMEDIATE 'ALTER ' || cur_rec.object_type || ' "' ||
cur_rec.object_name || '" COMPILE';

               COMMIT;

    END IF;

    EXCEPTION

      WHEN OTHERS THEN NULL;

    END;

  END LOOP;

END;
```

OFSAA Support

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

Send Us Your Comments

Oracle welcomes your comments and suggestions on the quality and usefulness of this publication. Your input is an important part of the information used for revision.

- Did you find any errors?

- Is the information clearly presented?

- Do you need more information? If so, where?

- Are the examples correct? Do you need more examples?

- What features did you like most about this manual?

If you find any errors or have any other suggestions for improvement, indicate the title and part number of the documentation along with the chapter/section/page number (if available) and contact the Oracle Support.

Before sending us your comments, you might like to ensure that you have the latest version of the document wherein any of your concerns have already been addressed. You can access My Oracle Support site that has all the revised/recently released documents.