OFS Liquidity Risk Solution

Cloning Guide

Release 8.0.x

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OFS Liquidity Risk Solution Cloning Reference Guide

Document Control

Version Number	Revision Date	Change Log
1.0	June 2020	Created the instructions to set up an OFSAA Instance Clone for the 8.0.x release.
2.0	November 2021	Added a step regarding `righttoforget.sh` in the Run the Port Changer Utility section.

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1 Preface

The purpose of this document is to serve as the reference material to the OFSAA administrators. This document contains detailed steps to set up an OFSAA Instance Clone for the 8.0.x.x.x releases.

1.1 Background

There is a consistent requirement for a faster and effective approach of replicating an existing OFSAA instance for further project developments. The approach 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 8.0.x instance is in place.

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

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
8.0.x	The OFSAA 8.0.x release.
Atomic Schema	The Database Schema where the application data model is uploaded.
Boldface	The boldface font type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
Configuration Schema (Config Schema)	The Database Schema which contains setup related configurations and metadata.
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.
Source	The source OFSAA system.

Conventions	Description
Target	The target OFSAA system.

1.5   Abbreviations

The following table lists the abbreviations used in this document:

Abbreviations	Description
OS	Operating System
UI	User Interface of the application

2 Setting Up an OFSAA Instance Clone for the 8.0.x Release

This chapter contains information about the prerequisites, cloning, and post-cloning configurations for the 8.0.x release when setting up an OFSAA Instance Clone. For details, see the following sections:

- Prerequisites
- Cloning Process

2.1 Prerequisites

To set up an OFSAA Instance Clone for the 8.0.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

Complete the following general requirements before beginning the cloning process:

1. The FTP/SFTP service is running on the OFSAA target system and the User credentials are available before you begin the cloning activities.

2. For any specific version of the OFS AAI (platform) application installed on your system, perform the corresponding action mentioned in the following table:

Table 1: Version-Specific Upgrade Information

THE VERSION OF THE OFS AAI APPLICATION IN USE	PERFORM THE FOLLOWING ACTION
8.0.0.0.0	Download the patch **20422514** from My Oracle Support (MOS) and install it in the source system.
8.0.1.0.0	Download the patch **22329222** from My Oracle Support (MOS) and install it in the source system.
8.0.5.0.x	Download the OFS AAI 8.0.5.2.0 ML patch **27552096** from My Oracle Support (MOS) and install it in the source system to upgrade it to version 8.0.5.2.0.

THE VERSION OF THE OFS AAI APPLICATION IN USE	PERFORM THE FOLLOWING ACTION
8.0.5.1.x	Download the OFS AAI 8.0.5.4.0 ML patch **29922464** from My Oracle Support (MOS) and install it in the source system to upgrade it to version 8.0.5.4.0.

2.1.2 Source System Requirements

In the source system, complete the following requirements:

1. All the OFSAA services are brought down.

2. Database connection details such as the RAC/NON-RAC URL, the SID/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) is installed and is 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 Release 8.0.2.0.0 and Release 8.0.7.0.0 of 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 cloning 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 Release 8.0.2.0.0 and Release 8.0.7.0.0 of 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/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/NON-RAC URL, the SID/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 (WebSphere) or a domain (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 file `RevLog4jConfig.xml` with the default log paths.

2.2   Cloning Process

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 the following table is a quickstart with a summary view of the cloning process:

Table 2: Quickstart for Cloning

Sl. No.	Cloning Process (click the links to go to the specified steps in the document)
1.	Export the complete Configuration and Atomic Schemas from the source environment
2.	Restore the complete exported dumps into the target environment database
3.	Provide grants using the SysDBA user login
4.	Copy and restore the OFSAA file system
5.	Run the Port Changer utility • Run the Port Changer utility for the OFS AAI versions 8.0.2.2.0, 8.0.3.3.0, 8.0.4.2.0 to 8.0.4.5.0, 8.0.5.2.0 to 8.0.5.4.0, or 8.0.6.0.0, and higher
6.	Perform the post-cloning configurations

Sl. No.	Cloning Process (click the links to go to the specified steps in the document)
7.	Create and deploy the .ear or .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 2GB. You can use any other equivalent commands/tools to archive the schemas.

2.2.2 Restore the Complete Exported 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 Using the SysDBA User Login

You must log in with the SysDBA user role to provide the select grants permission. The following subsections provide the instructions.

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 the sys user and run the following commands:

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

Grant succeeded

SQL> GRANT SELECT ON SYS.V_$PARAMETER TO ofsaaatm;

Grant succeeded
```

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` path 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 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.

NOTE	Transfer the archives in the BINARY mode.

4. The OFSAA installer made entries in the *.profile* file of the Source. Copy the entries to the *.profile* file of the Target in the respective locations.

5. To unzip, navigate to the directory where the zipped directory 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>` zipped files. Extract both files to 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 variables `FIC_HOME`, `JAVA_BIN`, `PATH`, `ORACLE_HOME`, `TNS_ADMIN`, `ORACLE_SID` and `OFSAA_LOG_HOME` in the entries made by the installer according to the required values of the Target environment.

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

8. Update the cloned FTP shared paths in the `OFSAALogger.xml` file that exists in the following directories:

   ▪ `$FIC_HOME/icc/conf`

   ▪ `$FIC_HOME/ficdb/conf`

   For example:

   ```
   <RollingFile name="OFSAAAppender"
   fileName="/home/ofsa807/ftpshare_new/logs/OFSAA.log"
   filePattern="/home/ofsa807/ftpshare_new/logs/OFSAA-%i.log">
   ```

NOTE	The preceding step applies to OFSAA Releases 8.0.6 and later.

9. Update the OFSA home directory path in the `ICCLog4jConfig.xml` file that exists in the `$FIC_HOME/ficapp/icc/conf/` directory.

   For example:

   ```
   <File name="ICCAppender"
   fileName="/home/ofsa807/OFSAAI_807_NEW/logs/iccserver.log"
   append="false">
   ```

NOTE	The preceding step applies to OFSAA Releases 8.0.6 and later.

10. Execute the *.profile* file in the Target environment.

11. 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:

- Ensure that the `RevLog4jConfig.xml` file is configured with the default log paths.

- This 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.

> **NOTE**　　If your OFS AAI version is 8.0.2.2.0, 8.0.3.3.0, 8.0.4.2.0 to 8.0.4.5.0, 8.0.5.2.0 to 8.0.5.4.0, or 8.0.6.0.0, and higher, ignore the following instructions in this section and go to the section Run the Port Changer Utility for the Versions 8.0.2.2.0, 8.0.3.3.0, 8.0.4.2.0 to 8.0.4.5.0, 8.0.5.2.0 to 8.0.5.4.0, or 8.0.6.0.0, and Higher.

To run the Port Changer Utility, follow these steps:

1. Navigate to the `$FIC_HOME` directory in the Target.

2. Run the **PortC.jar** utility using the command:

   ```
   java -jar PortC.jar DMP
   ```

   Running the above 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 those ports, IPs, and paths in the **DefaultPorts.properties** file as per the Target environment. Save the changes.

   > **NOTE**　　In the properties file, ensure that the JDBC_URL parameter does not contain space(s). Entering the JDBC_URL parameter with space(s) leads to errors in accessing the *System Configuration* window.

4. Run the **PortC.jar** utility using the command:

   ```
   java -jar PortC.jar UPD
   ```

   Running the above 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.

5. 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.

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

NOTE	• The table `batch_parameter` is not updated with the new IP after you run the file `portc.jar`. The table holds the batch execution details of the batches that were executed earlier. The table `batch_parameter_master` holds the new IP after you run `portc.jar`.
	• Check the logs for more information, and contact <u>My Oracle Support (MOS)</u> if you encounter any errors.

2.2.5.1 Run the Port Changer Utility for the OFS AAI Versions 8.0.2.2.0, 8.0.3.3.0, 8.0.4.2.0 to 8.0.4.5.0, 8.0.5.2.0 to 8.0.5.4.0, or 8.0.6.0.0, and Higher

To run the Port Changer Utility for the OFS AAI versions 8.0.2.2.0, 8.0.3.3.0, 8.0.4.2.0 to 8.0.4.5.0, 8.0.5.2.0 to 8.0.5.4.0 or 8.0.6.0.0, and higher, follow these steps:

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

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

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

    Running the above 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 those 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
    ```

    Running the above 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.

5. Execute the `.profile` file and create the EAR/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 versions 8.0.2.0.0 and 8.0.7.0.0 of the <u>OFS AAAI Application Pack Installation and Configuration Guide</u>.

NOTE	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/.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 done 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 using the *Web Application Server Admin Console*.

2.2.7.1 Access the UI

Access the 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
```

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