

# **OFS Insurance IFRS 17 Analyzer**

## **Cloning Reference Guide**

**Release 8.x**

**Dec 2015**



## OFS Cloning Reference Guide

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# Document Control

Version Number	Revision Date	Changes Log
1.0	Created: December 2015	Captured steps to set up an OFSAA instance "Clone" for the 8.0.x.0.0 release.
2.0	Modified: May 2016	Added notes as per Bug 23228276 and 22554485.
3.0	Modified: Jan 2018	Updated the document for Bug 27374642 and 27374657.
4.0	Modified: Nov 2018	<ul style="list-style-type: none"> <li>Added a prerequisite based on Bug 28715332.</li> <li>Updated for Doc 28728073.</li> </ul> Updated for Doc 28929363.
5.0	Modified: Apr 2019	Updated the document for Doc 29722514.
6.0	Updated: May 2019	<ul style="list-style-type: none"> <li>Added OFSAA_LOG_HOME variable in section <a href="#">Copy and restore the OFSAA file system</a> (Doc 29641604 ).</li> <li>Added note for table batch_parameter in section <a href="#">Run Port Changer utility</a> (Doc 29448257).</li> <li>Added note in section <a href="#">Run for 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 Versions</a> for EncryptC.jar (Doc 29419498).</li> </ul>
7.0	Updated: Aug 2019	Updated notes in <a href="#">Run Port Changer Utility</a> and <a href="#">Run EncryptC.jar Utility to Change the Key and Encryption Strings</a> (Doc 29862507).
8.0	Updated: Dec 2019	<ul style="list-style-type: none"> <li>Added information (Doc 30649409) for:               <ul style="list-style-type: none"> <li>Versions 8.0.5.4.0, and 8.0.6.0.0 and higher, in the section <a href="#">General</a>.</li> <li>Added section <a href="#">Provide Grants and Set Passwords using SysDBA User Login</a>.</li> </ul> </li> <li>Updated information for version 8.0.6.0.0 and higher in the section <a href="#">Run for 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 Versions</a> (Doc 30452275).</li> </ul>

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# 1 Preface

The purpose of this document is to serve as a reference material to OFSAA administrators with detailed steps to set up an OFSAA instance “Clone” for the 8.0.x.0.0 release.

## 1.1 Background

There is a consistent need for a faster and effective approach of replicating an existing OFSAA instance for further project developments, that is, setting up OFSAA instances that are exact copies of the current OFSAA instance.

## 1.2 Assumptions

This document assumes a working Source OFSAA 8.0 instance is in place. It also assumes an appropriate Target system exists for the new OFSAA setup that is being created.

## 1.3 Audience

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

## 1.4 Conventions and Acronyms

Conventions	Description
Source	A source OFSAA system
Target	A target OFSAA system
8.0	The OFSAA 8.0.0.0.0 release
Configuration Schema (Config Schema)	Database schema which contains setup related configurations and metadata.
Atomic Schema	Database schema where the application data model is uploaded.

## 2 Setting Up an OFSAA Instance “Clone” for 8.0.x Release

### 2.1 Prerequisites

The documented steps in the subsequent sections should be followed only after the following prerequisites are in place:

#### 2.1.1 General

1. FTP/ SFTP service should be running on the OFSAA Target system. User credentials to be available prior to the subsequent activities.
2. If the OFS AAI (platform) version in use is 8.0.0.0.0, download and install patch **20422514** in Source.
3. If the OFS AAI (platform) version in use is 8.0.1.0.0, download and install patch **22329222** in Source.
4. If the OFS AAI (platform) version in use is 8.0.5.0.x or 8.0.5.1.x, upgrade the source to 8.0.5.2.0 by installing the OFS AAI 8.0.5.2.0 ML patch **27552096**, or by installing the OFS AAI 8.0.5.4.0 ML patch **29922464**.
5. If the OFS AAI (platform) version in use is 8.0.6.0.0 and higher, OFSAA Cloning with different schema names is not supported. You have to keep the user name and password of the schema users same as in the source system.

#### 2.1.2 Source System

1. All OFSAA services are brought down.
2. Database connection details such as RAC/ NON-RAC URL, SID/ Service Name, and User credentials are available.

#### 2.1.3 Target System

1. All 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 the system readiness.

For details on Software and Hardware Requirements, refer to the respective OFSAA Application Pack Installation and Configuration Guide available in [OHC Documentation Library](#).

For details on usage of Environment Check Utility, see [OFS Analytical Applications Environment Check Utility Guide](#).

2. Web Server and Web Application Server are configured. For details on how to configure, see Appendix A in the 8.0.0.0.0 and 8.0.2.0.0 [OFS AAI Application Pack Installation and Configuration Guide](#).

3. OFSAA installation folder is identified as `$FIC_HOME` with permissions 750. For example, `/scratch/ofsaanew/OFSAA`
4. OFSAA staging/ metadata repository folder is identified as "ftpshare" with permissions 775. For example, `/scratch/ofsaanew/ftpsharenew`.
5. Database connection details such as RAC/ NON-RAC URL, SID/ Service Name, and User credentials are available.

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

6. Web Server/ Web Application Server identified for the deployment of OFSAA applications is installed and configured on the machine identified as the Web Server/ Web Application Server.

**NOTE** If you intend to use the same Web Application Server, ensure you create a separate profile (WebSphere) or domain (WebLogic).

7. Details of WebSphere profile/WebLogic Domain/Tomcat context to be available.

**NOTE** Ensure the `RevLog4jConfig.xml` is configured with default log paths before executing the utility.

## 2.2 Cloning Steps

Login to source config schema and execute the following query to get the config and atomic schemas names. You can use schema names in SCHEMAS attribute of **expdp** and **impdp** Database utility.

```
select dbuserid from db_master;
```

Perform the instructions given in the following subsections:

### 2.2.1 Export the complete Configuration and Atomic Schema from Source Environment

For example:

```
expdp SYSTEM/oracle@OFSAA12C2DB DIRECTORY=data_pump_dir
DUMPFILE=ofsaaconf_ofsaaatm_%U.dmp filesize=2G SCHEMAS=ofsaaconf,ofsaaatm
LOGFILE=ofsaaconf_ofsaaatm_exp.log
```

**NOTE**

Using the previous command creates data dumps in files in multiples of 2GB. Any other commands/tools as appropriate may be used to archive the schemas.

## 2.2.2 Restore the complete exported dumps into the Target Environment database

For example:

```
impdp SYSTEM/oracle@OFSAA12nDB DIRECTORY=data_pump_dir
DUMPFILE=ofsaaconf_ofsaaatm_%U.dmp SCHEMAS=ofsaaconf,ofsaaatm
LOGFILE=ofsaaconf_ofsaaatm_imp.log
```

**NOTE**

Restoring the exported dumps creates Config and Atomic Schema(s) with the same user credentials as that of the source, along with the existing grants.

## 2.2.3 In case of restoring the complete exported dumps into the Target Environment database with different database user names (schemas)

For Example:

```
impdp SYSTEM/oracle@OFSAA12nDB DIRECTORY=data_pump_dir
DUMPFILE=ofsaaconf_ofsaaatm_%U.dmp REMAP_SCHEMA=
ofsaaconf:newofsaaconf,ofsaaatm:newofsaaatm
LOGFILE=new_ofsaaconf_ofsaaatm_imp.log
```

**NOTE**

- Restoring the exported dumps creates Config and Atomic Schema(s) with the users mentioned under the *REMAP\_SCHEMA* attribute replaced as of the source, along with the existing grants as in the Source environment.
- Ignore the **ORA-39082** object type create with compilation errors, which will be rectified later in subsequent steps.

## 2.2.4 Provide Grants and Set Passwords using SysDBA User Login

Restoration of the dumps mentioned in the section [In case of restoring the complete exported dumps into the Target Environment database with different database user names \(schemas\)](#) does not provide select grants. You have to login with SysDBA User role to provide the grants and set the passwords, the instructions for which are given in the following subsections.



### 2.2.4.1 Provide Select Grants on `sys.v_$parameter` View to Config and Atomic Schemas of Target Environment Database

For example:

Login as sys user:

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

Grant succeeded

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

Grant succeeded

### 2.2.4.2 Set Passwords for Config and Atomic Schemas of Target Environment Database the Same as in Source If You Have imported into Different Schema Names

For example:

Login as sys user

```
SQL> ALTER USER newofsaaconf IDENTIFIED BY welcome1;
```

User Altered

```
SQL> ALTER USER newofsaaatm IDENTIFIED BY welcome1;
```

User Altered

#### NOTE

This step is applicable only for OFS AAI (platform) versions 8.0.5.2.x to 8.0.5.4.x.

### 2.2.5 Login to Config Schema of Target Environment Database

Update the Config Schema Table values as mentioned in Table 1 of [Appendix A](#).

#### NOTE

This step is applicable only for OFS AAI (platform) versions 8.0.5.2.x to 8.0.5.4.x and if you have imported into different schema names.

### 2.2.6 Copy and restore the OFSAA file system

1. Navigate to `$FIC_HOME/utility/Clone/bin` on Source environment and give 750 permissions to all files present in the folder.
2. Execute `./OFSAA_Archive.sh`.

This step will create zipped files for `$FIC_HOME` and `FTP SHARE` folders in their respective locations on Source. For example, `<FIC_HOME>.zip` and `<FTP SHARE>.zip`.

3. Copy the <FIC\_HOME> and <FTP SHARE> archive files from Source to Target in respective locations, that is, as per the folders created for \$FIC\_HOME and FTP SHARE. (Refer points 2, 3 in the [Target System](#) section.)

**NOTE** Ensure the archives are transferred in BINARY mode.

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

5. To unzip, navigate to the directory where the zipped folder is in *Target* and execute the following command:

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

For example,

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

Perform this step for both <FIC\_HOME> and <FTP SHARE> zipped files. This will unzip both files in their respective locations in the *Target* environment.

6. Give 750 permissions recursively to \$FIC\_HOME and 775 to FTP SHARE folder that have been extracted in the Target environment.

For example:

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

```
chmod -R 775 FTP SHARE
```

7. 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 in *.profile* of the *Target* environment according to the appropriate 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. Execute the *.profile* file in the Target environment.
9. Edit the `tnsnames.ora` file under \$TNS\_ADMIN directory to add/edit the connection details to OFSAA schemas of the Target environment.

## 2.2.7 In case, you have imported into different schemas, modify Files under \$FIC\_HOME

Navigate to \$FIC\_HOME of OFSAAI server, modify values in files as specified in step 2 of [Appendix A](#) and follow subsequent steps.

**NOTE** This step is applicable only for OFS AAI (platform) versions 8.0.5.2.x to 8.0.5.4.x.

## 2.2.8 Run Port Changer Utility

- Ensure RevLog4jConfig.xml is configured with default log paths before executing the utility.
- This utility will connect to config schema to collect all the configurations, hence mandatorily edit the file `DynamicServices.xml` of `$FIC_HOME/conf` directory for the attribute `DEFAULT_CONNECTION_URL`. The VALUE should be qualified jdbc URL of Target Database.

### NOTE

If your OFSAAI 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 next subsection ([Run for 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 Versions](#)) for information on how to run the Port Changer Utility.

1. Navigate to `$FIC_HOME` folder on Target.
2. Run the **PortC.jar** utility using the command:

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

A file with the name **DefaultPorts.properties** will be created under `$FIC_HOME` directory which will contain the ports, Ips, and paths currently being used.

### 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.jar** utility using the command:

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

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

### NOTE

1. The table `batch_parameter` is not updated with the new IP after you run `portc.jar`. This table holds the batch execution details of batches that were executed earlier. The table `batch_parameter_master` holds the new IP after you run `portc.jar`.
2. Refer to logs for more information, and contact Oracle support if you encounter any errors.

### 2.2.8.1 Run for 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 Versions

1. Navigate to `$FIC_HOME/utility/PortC/bin` folder on *Target*.
2. Run the **PortC.sh** utility using the command:

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

A file with the name **DefaultPorts.properties** will be created under `$FIC_HOME` directory which will contain the ports, Ips, and paths currently being used.

#### 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
```

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

### 2.2.9 Run EncryptC.jar Utility to Change the Key and Encryption Strings

#### NOTE

This section is applicable to OFSAAI 8.0.0.0.0 and later versions. However, there are a few versions that are exceptions and the information to run the EncrptC.jar utility for these versions have been dealt in separate sections that are listed in the following:

- [Run EncryptC.sh Utility to Change the Key and Encryption Strings for 8.0.2.2.0, 8.0.4.2.0 to 8.0.4.5.0, and 8.0.5.2.0 to 8.0.5.4.0 Versions](#)
- [Run EncryptC.sh Utility to Change the Key and Encryption Strings for 8.0.6.0.0 and Higher Versions](#)

1. Navigate to `$FIC_HOME` folder on *Target*.
2. Execute the following command:  

```
java -jar EncryptC.jar
```
3. See the `Encrypt_utility.log` file under `$FIC_HOME/utility/EncryptC/bin` folder for log information.

### 2.2.9.1 Run EncryptC.sh Utility to Change the Key and Encryption Strings for 8.0.2.2.0, 8.0.4.2.0 to 8.0.4.5.0, and 8.0.5.2.0 to 8.0.5.4.0 Versions

1. Navigate to `$FIC_HOME/utility/EncryptC/bin` folder on *Target*.
2. Execute the following command:  
`./EncryptC.sh`
3. See the `Encrypt_utility.log` file under `$FIC_HOME/utility/EncryptC/bin` folder for log information.

#### NOTE

`EncryptC.jar` is mainly to maintain new encrypt keys for a new environment, so there will not be an impact if you skip this step.

If you get the error message "Error: Could not find or load main class OFSAAI.AESCrypter" while you execute `./EncryptC.sh`, it is because the required jar file is missing in the lib folder. If you want to execute `EncryptC.jar` in 8.0.4.2.0, update `EncryptC.sh` with the following entry and proceed with execution:

Replace line

```
"JAR_FILELIST=`find ../lib \( -name "*.jar" \)`"
```

"

with

```
"JAR_FILELIST=`find $FIC_HOME \( -name "*.jar" \)`"
```

### 2.2.9.2 Run EncryptC.sh Utility to Change the Key and Encryption Strings for 8.0.6.0.0 and Higher Versions

It is mandatory to change the key and encryption strings for version 8.0.6.0.0 and above. See *Generating new AESCryptKey.ext and updating the keystore* section under the *Key management* section in the [OFS Analytical Applications Infrastructure Administration Guide](#) for more information.

### 2.2.10 Perform Post Cloning Configurations

Perform the post cloning configurations as mentioned in the *Post Installation Configurations* section in the 8.0.0.0.0 and 8.0.2.0.0 [OFS AAI Application Pack Installation and Configuration Guide](#).

### 2.2.11 Create and deploy .ear/ .war

1. Navigate to `$FIC_WEB_HOME` on the *Target*.
2. Delete OFSAA application `*.war/*.ear` file present in this folder.
3. Execute the command:

```
./ant.sh
```

4. Copy the generated .ear/.war file on to the Web Application Server identified for this OFSAA instance.
5. Modify all the Database connection resources done on Web Application Server are mapped to new JDBC URL and Database User Credentials. Verify test connection to validate.
6. Deploy the .ear/.war file using the Web Application Server Admin Console.

## 2.2.12 Access the UI

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

For example:

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

### 3 Appendix A

Manually modify the occurrences of source database username with a new target database username (see REMAP\_SCHEMA attribute given in [Restore the complete exported dumps into the Target Environment database](#) of Cloning Steps).

1. Log in to the newly imported Config Schema and update the Column values as mentioned in the following table (Ignore if there are no rows found):

**Table 1**

Sl no	TABLE NAME	COLUMN NAME
1	DB_MASTER	DBUSERID
2	AAI_DB_AUTH_ALIAS	V_AUTH_USERNAME
3	AAI_DB_DETAIL	V_SCHEMA_NAME
4	AAI_ETL_SOURCE	V_TABLE_OWNER
5	ETLSOURCEDETAILS	V_SCHEMA

2. Manually modify the occurrences of source Config Database username with New Target Config Database username.

**Table 2**

Sl no	Folder Path	File Name
1	\$FIC_HOME/conf/	Reveus.SEC
2	\$FIC_HOME/utility/OFSAAGenerateRepository/conf/	Reveus.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
10	\$FIC_HOME/commonscripts/	ofs_aai_create_atomic.ora

**NOTE**

Based on the Web Application Server, choose the relevant folder path from number 7, 8 or 9 from the previous list.

3. Execute scripts on Atomic Schemas to update new target config database user name as mentioned in the following:
  - a. On the putty console, navigate to `$FIC_HOME/commonscripts/` on OFSAAI Server.
  - b. Create a copy of file `ofs_aai_create_atomic.ora` as `ofs_aai_create_atomic_<INFODOM>.ora`.
  - c. Now replace `$INFODOM` place holder with actual infodom name in the file `ofs_aai_create_atomic_<INFODOM>.ora`.

**NOTE** Enclose the actual infodom name within a single quote.

INFODOM is associated with each atomic schema, hence you have to create individual files for each atomic schema.

You can fetch the INFODOM value associated with each atomic schema by executing the following query logging into the newly modified config schema.

```
SQL> select h.dbuserid, g.dsnid from dsnmaster g, db_master h where  
g.dbname = h.dbname and h.dbname <> 'CONFIG';
```

- d. Connect to Atomic Schemas using sqlplus utility of `$ORACLE_HOME/bin`.
- e. Execute `ofs_aai_create_atomic_<INFODOM>.ora` file and ignore **ORA-00001** and **ORA-02292** errors in the log file. In case, there are other errors, contact Oracle Support Services.

```
SQL> spool aai_create_<INFODOM>.log  
SQL> @ofs_aai_create_atomic_<INFODOM>.ora  
SQL> spool off  
SQL> exit;
```

**NOTE** Repeat this for all the atomic schemas. Once execution is complete, delete all files created as `ofs_aai_create_atomic_<INFODOM>.ora`.

- f. Login into the newly imported Atomic Schemas. Perform the following steps on each Atomic Schema to modify the interdependent object:

Run the following query in each Atomic schema for verification of 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 above query list out the objects,

- i. Run the following anonymous block to compile 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;

```

**ii. Run the following scripts to enable object registration elements:**

```

spool <Validpath>/restore_owner.log
alter table REV_TABLES_TL disable constraint FK_REV_TABLES_TL_1
/
alter table REV_TABLE_CLASS_ASSIGNMENT disable constraint
FK_V_TABLE_CLASS_ASSIGNMENT_2
/
alter table REV_TAB_COLUMNS disable constraint
FK_REV_TAB_COLUMNS_1
/
alter table REV_TABLE_LOG_CLASS_ASMNT disable constraint
FK_V_TABLE_CLASS_LOG_ASMNT_2
/
alter table REV_TAB_CONSTRAINTS disable constraint
FK_REV_TAB_CONSTRAINTS
/
alter table REV_TAB_CONSTRAINT_COLUMNS disable constraint
FK_REV_TAB_CONST_COLUMNS

```

```

/
alter table REV_TAB_INDEXES disable constraint
FK_REV_TAB_INDEXES
/
update FSI_DB_INFO set owner=USER
/
update REV_COLUMN_PROPERTIES set owner=USER
/
update REV_DESCRIPTION_TABLES set owner=USER ,
DESCRIPTION_TABLE_OWNER=USER
/
update REV_TABLES_B set owner=USER
/
update REV_TABLES_TL set owner=USER
/
update REV_TABLE_CLASS_ASSIGNMENT set owner=USER
/
update REV_TAB_COLUMNS set owner=USER
/
update REV_TAB_COLUMNS_MLS set owner=USER
/
update REV_VIRTUAL_TABLES set owner=USER
/
update REV_VIRTUAL_TABLES_MLS set owner=USER
/
update REV_VIRTUAL_TABLES_TL set owner=USER
/
update REV_TAB_CONSTRAINTS set owner=USER
/
update REV_SYNONYMS set table_owner=USER
/
update REV_TABLE_LOG_CLASS_ASMNT set owner=USER
/
update REV_TAB_CONSTRAINT_COLUMNS set owner=USER
/
update REV_TAB_INDEXES set owner=USER
/
update REV_TAB_REF_CONSTRAINTS set owner=USER

```

```
/
alter table REV_TABLE_LOG_CLASS_ASMNT enable constraint
FK_V_TABLE_CLASS_LOG_ASMNT_2
/
alter table REV_TAB_CONSTRAINTS enable constraint
FK_REV_TAB_CONSTRAINTS
/
alter table REV_TAB_CONSTRAINT_COLUMNS enable constraint
FK_REV_TAB_CONST_COLUMNS
/
alter table REV_TAB_INDEXES enable constraint FK_REV_TAB_INDEXES
/
alter table REV_TAB_COLUMNS enable constraint
FK_REV_TAB_COLUMNS_1
/
alter table REV_TABLE_CLASS_ASSIGNMENT enable constraint
FK_V_TABLE_CLASS_ASSIGNMENT_2
/
alter table REV_TABLES_TL enable constraint FK_REV_TABLES_TL_1
/
commit
/
spool off
exit;
```

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- Did you find any errors?
- Is the information clearly presented?
- Do you need more information? If so, where?
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