# **STEP WISE GUIDE FOR DB BACKUP**

# **AND**

# **WORKING WITH OCI-CLI**

This guide will give you setup wise procedure to perform Database Backup using OPC Jar and RMAN to Oracle Storage Container on OCI. You will also be able to access the Storage Containers in OCI using OCI-CLI locally from your desktop and perform multiple operations.

# STEPS TO CREATE STORAGE CONTAINERS IN OCI

1. Sign in to Oracle Cloud Infrastructure
2. Select Storage 🡪 Object Storage
3. Create a standard bucket. Name it whatever you want but for the rest of the tutorial it will be referenced as *<your-standardBucket>*
4. Create an archive bucket. Name it whatever you want but for the rest of the tutorial it will be referenced as *<your-archiveBucket>*

# STEPS TO GENERATE SWIFT KEY

1. In Oracle Cloud Infrastructure, select the Identity tab and select the user you signed in as.
2. In the User Details page, select Swift Passwords in the left menu and click generate password. This will be necessary for connecting your database instance to Oracle Cloud Infrastructure.
3. In this tutorial, the swift key will be referenced as *<your-swift-key>*

# STEPS TO INSTALL OPC JAR:

1. Find the OPC Backup Module zip file download through Oracle <http://www.oracle.com/technetwork/database/availability/oracle-cloud-backup-2162729.html>
2. Run in command prompt as administrator on local machine

unzip opc\_installer.zip

1. Now we will install the OPC Backup Module on the database. This will install RMAN (recovery manager) and it will connect your database to the storage container you specify.

Your Region (ex. us-phoenix-1)

* + Your Tenancy (ex. gsebmcs00003)
  + Your username (ex. demo.user41)
  + Your bucket (ex. HAVI\_Standard)
  + your swift key (ex. +8Bd11KaPJd$rUx)UN+n)

The following command is important so review it carefully:

java -jar opc\_install.jar -host https://swiftobjectstorage*.<your-region>.*oraclecloud.com/v1/*<your-tenancy>* -opcId '*<your-user-id>*' -container '*<your-standardBucket>*' -opcPass '*<your-swift-key>*' -walletDir /u01/app/oracle/product/12.1.0/dbhome\_1/dbs/opc\_wallet -libDir /u01/app/oracle/product/12.1.0/dbhome\_1/lib -libPlatform linux64

# BACKUP THE DATABASE

* Back in your putty window, start rman by running the following command:

rman target /

* To configure RMAN for backups, use the following command:

run {

configure retention policy to recovery window of 30 days;

configure channel device type 'sbt\_tape' MAXPIECESIZE 2 G FORMAT 'alphacloud\_%d\_%U' PARMS 'SBT\_LIBRARY=/u01/app/oracle/product/12.1.0/dbhome\_1/lib/libopc.so, ENV=(OPC\_PFILE=/u01/app/oracle/product/12.1.0/dbhome\_1/dbs/opcORCL.ora)';

configure encryption for database on;

configure device type 'sbt\_tape' parallelism 3 backup type to backupset;

configure backup optimization on;

configure compression algorithm 'basic' as of release 'default' optimize for load true;

configure default device type to sbt\_tape;

}

- Allocate channel for device type SBT\_TAPE with the following command:

run

{

allocate channel c1 device type SBT PARMS='SBT\_LIBRARY=/u01/app/oracle/product/12.1.0/dbhome\_1/lib/libopc.so, ENV=(OPC\_PFILE=/u01/app/oracle/product/12.1.0/dbhome\_1/dbs/opcORCL.ora)';

}

* **FEATURE ENCRYPTION: set encryption with the following command:**

**SET ENCRYPTION IDENTIFIED BY "oracle" ONLY;**

* **FEATURE COMPRESSION:** Configure Compression

**CONFIGURE COMPRESSION ALGORITHM 'HIGH' AS OF RELEASE 'DEFAULT' OPTIMIZE FOR LOAD TRUE ;**

* Backup the database with the following command:

backup as compressed backupset tag 'onprem' database;

* Check to see if your backup succeeded:

list backup summary;

* set a restore point to easily restore database to a specific point in time

create restore point gold preserve;

* If you go to Oracle Cloud Infrastructure, you should see your backup files in the bucket that you created and specified in your OPC backup module installation.

SET OF COMMANDS TO RESTORE THE DATABASE:

rman target /

shutdown immediate;

startup mount;OR startup force

set decryption identified by oracle;

restore database;

recover database to restore point gold;

alter database open resetlogs;

## Checking Backup status on putty CLI or SQLDeveloper

select INPUT\_TYPE, STATUS

,TO\_CHAR(START\_TIME,'mm/dd/yy hh24:mi') start\_time

,TO\_CHAR(END\_TIME,'mm/dd/yy hh24:mi') end\_time

,ELAPSED\_SECONDS/3600 hrs

,INPUT\_BYTES/1024/1024/1024 SUM\_BYTES\_BACKED\_IN\_GB

,OUTPUT\_BYTES/1024/1024/1024 SUM\_BACKUP\_PIECES\_IN\_GB

,OUTPUT\_DEVICE\_TYPE

FROM V$RMAN\_BACKUP\_JOB\_DETAILS --STATUS = 'COMPLETED'

order by SESSION\_KEY DESC;

# Install Oracle Cloud Infrastructure Command Line Interface to allow you to create, delete, upload, download, and more to manipulate your buckets in OCI Object Storage

There are two ways to install the CLI and you can use the one that is best suited for your environment. Use either of the following options:

* Automatically installing the CLI and dependencies with the CLI installer
* Manually installing the CLI and dependencies
* To Install OCI CLI, follow the instructions here:

<https://docs.us-phoenix-1.oraclecloud.com/Content/API/SDKDocs/cliinstall.htm>

* To use OCI CLI Commands you must create a public key and add it to your Oracle Cloud Infrastructure user settings. This can be completed using the following command:

oci setup autocomplete

or..

oci setup keys

* This will add a public and private key to your directory. you can copy the public key by running the following commands:

cd .oci

vi oci\_api\_key\_public.pem

* Now you will need to add it to your OCI user settings. Go to your Oracle Cloud Infrastructure console and click User Settings on the user dropdown in the top right corner.
* Click Add Public Key and add the public key you copied from the command line interface.
* If doing manually and setting up the configuration file, you will need several pieces of information to utilize OCI CLI to its potential:
  + USER OCID
    - located on your user information page in OCI console
  + TENANCY OCID
    - Located in the bottom left of your OCI console
  + NAMESPACE
    - to get this use the following command:

oci os ns get

* + KEY
    - this is the path to your private key that you configured during oci setup
  + COMPARTMENTID
    - you can find this in Identity -> Compartments -> <your-compartment> -> click "Show" under OCID

The configuration file might look like:

[DEFAULT]  
user=ocid1.user.oc1..aaaaaaaavd5fripvquxo7t6db6uicgnbovpgigkfvr4v626swwewqq43k7iq  
fingerprint=4e:df:d1:66:43:9e:19:8d:1e:9f:5f:96:4d:1d:3f:a7  
key\_file=C:\Users\jlacalle\.oci\oci\_home.pem  
tenancy=ocid1.tenancy.oc1..aaaaaaaa2ga2wc6bkwwayxq3vmjhjfieamxaxjudiciobpfk7zwcdoykus4q  
region=us-phoenix-1

# Send your backups in <your-standardBucket> to <your-archiveBucket>

* Here is a list of several OCI commands:
  + Downloading Object

oci os object get -ns *<your-namespace>* -bn *<your-bucketname>* --name *<file-name>* --file *<file-name>*

* + Uploading Object

oci os object put -ns *<your-namespace>* -bn *<your-bucketname>* --name *<file-name>* --file - <<< '*<file name>*'

* + Listing Containers

oci os bucket list -ns *<your-name-space>* --compartment-id *<your-compartment-id>*

* + Listing Objects in Container

oci os object list -bn *<your-bucketname>* -ns *<your-namespace>*