Oracle Database Administartion Services

ORACLE 12c – PDB cloning

Submitted to

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**By**



CIS, Wipro Limited

Document Details

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| Project Name | Innogy SE |
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| Customer Contact Information |  |

Version History

(All revisions made to this document must be listed in chronological order. All revisions must be approved. Review and Approval can be done by an internal source or by the customer)

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| Version | Date of Revision | Description | Author | Reviewed By | Approved By |
| 1.0 | 28-05-2017 | Intial Draft | Balaji Ankalle |  |  |
| 1.1 | 31-05-2017 | Document Completed | Balaji Ankalle | Jiten Pansara | Mahesh Keshatwar |
| 1.2 | **16-11-2017** | **Updated document to Wipro Standard format with header and footer** | Abhishek Kansal | Jiten Pansara | **Mihir Gajjar** |
| 1.3 | **17-12-2018** | **Updated the content** | Sreya Puthukudy | Jiten Pansara | Santosh Badiger |

Document Distribution List

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| **S.No** | **Name and Company** | **Purpose** |
| **1** | RWEIT-ORACLEDBA | **This document is about Oracle 12 C PDB cloning** |
| **2** |  |  |

**Oracle 12c PDB cloning**

There are multiple ways a PDB can be cloned depending on the requirement; size of the database and downtime availability.

One of the option is to put the Source PDB in read only and clone the PDB to another container database/server using DB LINK.

The approach used in this document is uses the Plug/Unplug Method for PDB’s.

Source CDB : MOFFCP (Server : rs282a)

Target CDB : MOFFCT (Server :rs277a)

PDB to be cloned : MOFFP

High level steps for this approach are as below :

1. Shutdown the PDB at Source container Database MOFFCP
2. Unplug the PDB from the source container Database MOFFCP
3. Copy all the PDB related data files from rs282a to rs277a.
4. Plug in MOFFP PDB to CDB- MOFFCT (Server :rs277a)
5. Plug in MOFFP PDB back to CDB- MOFFCP (Server : rs282a)

**rs282a (Source Server)**

SQL> select name from V$database ;

NAME

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MOFFCP

SQL> show pdbs

CON\_ID CON\_NAME OPEN MODE RESTRICTED

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2 PDB$SEED READ ONLY NO

3 MOFFP READ WRITE NO

SQL> select name from v$datafile where con\_ID=3

SQL> select \* from v$recover\_file where con\_id=3;

no rows selected

SQL> select \* from v$backup where status!='NOT ACTIVE' and CON\_ID=3;

no rows selected

SQL> alter pluggable database MOFFP close ;

Pluggable database altered.

SQL> show pdbs;

CON\_ID CON\_NAME OPEN MODE RESTRICTED

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2 PDB$SEED READ ONLY NO

3 MOFFP MOUNTED

SQL> alter pluggable database MOFFP unplug into '/home/oracle/MOFFP12\_PDB.xml';

Pluggable database altered.

Now copy all the PDB data files from rs282a to rs277a

**rs277a (Target Server)**

Copy the xml file from rs282a to rs277a.

SQL> SET SERVEROUTPUT ON

DECLARE

compatible CONSTANT VARCHAR2(3) :=

CASE DBMS\_PDB.CHECK\_PLUG\_COMPATIBILITY(

pdb\_descr\_file => '/home/oracle/MOFFP12\_PDB.xml')

WHEN TRUE THEN 'YES'

ELSE 'NO'

END;

BEGIN

DBMS\_OUTPUT.PUT\_LINE(compatible);

END;

/SQL> 2 3 4 5 6 7 8 9 10 11

YES

PL/SQL procedure successfully completed.

SQL> set linesize 200

col cause for a15

col name for a5

set pages 300

col message for a100 word\_wrapped

select name,cause,type,status, message from PDB\_PLUG\_IN\_VIOLATIONSSQL> SQL> SQL> SQL> where name='MOFFP';

NAME CAUSE TYPE STATUS MESSAGE

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MOFFP OPTION WARNING PENDING Database option APS mismatch: PDB installed version NULL. CDB installed version 12.1.0.2.0.

MOFFP OPTION WARNING PENDING Database option CONTEXT mismatch: PDB installed version NULL. CDB installed version 12.1.0.2.0.

MOFFP OPTION WARNING PENDING Database option DV mismatch: PDB installed version NULL. CDB installed version 12.1.0.2.0.

MOFFP OPTION WARNING PENDING Database option OLS mismatch: PDB installed version NULL. CDB installed version 12.1.0.2.0.

MOFFP OPTION WARNING PENDING Database option ORDIM mismatch: PDB installed version NULL. CDB installed version 12.1.0.2.0.

MOFFP OPTION WARNING PENDING Database option OWM mismatch: PDB installed version NULL. CDB installed version 12.1.0.2.0.

MOFFP OPTION WARNING PENDING Database option SDO mismatch: PDB installed version NULL. CDB installed version 12.1.0.2.0.

MOFFP OPTION WARNING PENDING Database option XML mismatch: PDB installed version NULL. CDB installed version 12.1.0.2.0.

MOFFP OPTION WARNING PENDING Database option XOQ mismatch: PDB installed version NULL. CDB installed version 12.1.0.2.0.

9 rows selected.

* Warnings related to database options can be ignored; fix all other errors or warnings.

SQL> show pdbs;

CON\_ID CON\_NAME OPEN MODE RESTRICTED

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2 PDB$SEED READ ONLY NO

SQL> create pluggable database MOFFP using '/home/oracle/MOFFP12\_PDB.xml'

source\_file\_name\_convert=('/oracle/MOFFP/data01','/oracle/MOFFZ/data01','/oracle/MOFFP/data02','/oracle/MOFFZ/data02','/oracle/MOFFP/data03','/oracle/MOFFZ/data03','/oracle/MOFFP/data04','/oracle/MOFFZ/data04','/oracle/MOFFP/temp','/oracle/MOFFZ/temp') nocopy;

Pluggable database created.

* Source file name convert required as file system structure is different on Source and Target Servers.
* Nocopy is used as the data files are copied manually.

SQL> show pdbs;

CON\_ID CON\_NAME OPEN MODE RESTRICTED

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2 PDB$SEED READ ONLY NO

3 MOFFP MOUNTED

SQL> alter pluggable database MOFFP open ;

Pluggable database altered.

SQL> show pdbs;

CON\_ID CON\_NAME OPEN MODE RESTRICTED

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2 PDB$SEED READ ONLY NO

3 MOFFP READ WRITE NO

**rs282a (to replug the database back)**

SQL> show pdbs;

CON\_ID CON\_NAME OPEN MODE RESTRICTED

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2 PDB$SEED READ ONLY NO

3 MOFFP MOUNTED

SQL> drop pluggable database MOFFP keep datafiles ;

Pluggable database dropped.

SQL> SET SERVEROUTPUT ON

DECLARE

compatible CONSTANT VARCHAR2(3) :=

CASE DBMS\_PDB.CHECK\_PLUG\_COMPATIBILITY(

pdb\_descr\_file => '/home/oracle/MOFFP12\_PDB.xml')

WHEN TRUE THEN 'YES'

ELSE 'NO'

END;

BEGIN

DBMS\_OUTPUT.PUT\_LINE(compatible);

END;

/SQL> 2 3 4 5 6 7 8 9 10 11

YES

PL/SQL procedure successfully completed.

SQL> set linesize 200

col cause for a15

col name for a5

set pages 300

col message for a100 word\_wrapped

select name,cause,type,status, message from PDB\_PLUG\_IN\_VIOLATIONSSQL> SQL> SQL> SQL> where name='MOFFP';

NAME CAUSE TYPE STATUS MESSAGE

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MOFFP OPTION WARNING PENDING Database option XML mismatch: PDB installed version NULL. CDB installed version 12.1.0.2.0.

MOFFP OPTION WARNING PENDING Database option XOQ mismatch: PDB installed version NULL. CDB installed version 12.1.0.2.0.

* Warnings related to database options can be ignored; fix all other errors or warnings.

SQL> show pdbs;

CON\_ID CON\_NAME OPEN MODE RESTRICTED

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2 PDB$SEED READ ONLY NO

SQL> create pluggable database MOFFP using '/home/oracle/MOFFP12\_PDB.xml' nocopy;

Pluggable database created.

SQL> show pdbs;

CON\_ID CON\_NAME OPEN MODE RESTRICTED

---------- ------------------------------ ---------- ----------

2 PDB$SEED READ ONLY NO

3 MOFFP MOUNTED

SQL> alter pluggable database MOFFP open ;

Pluggable database altered.

SQL> show pdbs;

CON\_ID CON\_NAME OPEN MODE RESTRICTED

---------- ------------------------------ ---------- ----------

2 PDB$SEED READ ONLY NO

3 MOFFP READ WRITE NO

MOFFP PDB running on both rs282a and rs277a