**DPP Database Upgrade from 11.2.0.4 to 12.1.0.2**

Application Remedy ticket: **CRQ########**

DBA Remedy ticket: **CRQ######**

This document uses Metalink doc **1503653.1 Complete Checklist for Manual Upgrades to 12cR1** as its basis. Updates specific to the DPP database upgrades are tracked in MS Word. The items that did not apply were not added. If using this document for another application,

the Metalink note will need to be revisited for items that may apply.

**Pre-Upgrade Steps to be done for each database**

**Set env for DB to be upgraded.**

. ~/.profile 🡸 respond with database being upgraded

NOTE: Scripts cannot always be run more than once and get the desired results.

Use a sysdba id for all scripts unless otherwise noted.

1. Send request to App Admin requesting the apps be shut down for this database to begin the upgrade. Note: it is helpful to create an EAE Service request a few days before the upgrade is planned.
2. Copy scripts to new upgrade directory:

From same server only if original directory exist on this box, otherwise do next step first for specific box.

DPPDEV

cd $HOME/aetna/db\_mgmt/upgrade/

scp -rp xpvdbw1d:$HOME/aetna/db\_mgmt/upgrade/upgora12102 .

cp -rp $HOME/aetna/db\_mgmt/upgrade/upgora12102 $HOME/aetna/admin/$ORACLE\_SID/

DPPQA

cd $HOME/aetna/db\_mgmt/upgrade/

scp -rp dppdev:$HOME/aetna/db\_mgmt/upgrade/upgora12102 .

cp -rp $HOME/aetna/db\_mgmt/upgrade/upgora12102 $HOME/aetna/admin/$ORACLE\_SID/

spnode45

cd $HOME/aetna/admin/$ORACLE\_SID/

scp -rp dppdev:$HOME/aetna/db\_mgmt/upgrade/upgora12102 .

## Set up Variables

1. Set variables for database being upgraded

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

#Make change based in this section case $UPGDB in… based on environment.

vi set\_upgrade\_env\_variables.ksh

run => . set\_upgrade\_env\_variables.ksh $ORACLE\_SID

#To make sure check one of variables.

echo $RCATDB

1. **Make sure scripts below present. Also make changes in some scripts below to make sure all necessary environment settings are present in .ksh scripts and correct email address (Scripts were copied from different server originally)**

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

vi upgrade\_db\_to\_12c.ksh

vi archsize.ksh

vi rman\_catlgparms.ksh

vi verify\_psu\_applied.ksh

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102/stats

vi run\_stats.ksh

cd ${HOME}/aetna/db\_mgmt/utility/

vi showall.rman

cd $HOME

ls –altr .${ORACLE\_SID}sys.pw

#if not present create one.

1. Start grid control blackout period for database and listener being upgraded in OEM

Suspend all applicable jobs in OEM

1. Set environment and $ORACLE\_SID to instance being upgraded

. ~/.profile 🡸 respond with database being upgraded

1. Capture RMAN configuration parameters prior to the upgrade

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

rman\_catlgparms.ksh $ORACLE\_SID ${RCATDB} b4ora12102

1. To check for any cron jobs for this database that need to be disabled:

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

crontab -l |grep $ORACLE\_SID|grep -v ^#

Save crontab and edit if changes are required

!! comment out one time 4:45 backup job first

crontab –l > crontab\_` date '+%Y%m%d'`\_b4ora12102upg\_${ORACLE\_SID}

crontab –e

or

crontab -r

See also: [**Note 404238.1**](https://support.oracle.com/oip/faces/secure/km/DocumentDisplay.jspx?id=404238.1): How to Disable an Entry from DBMS\_SCHEDULER [**Note 1335741.1**](https://support.us.oracle.com/oip/faces/secure/km/DocumentDisplay.jspx?id=1335741.1): How To Stop A Running Job Using DBMS\_JOB [**Note 67695.1**](https://support.us.oracle.com/oip/faces/secure/km/DocumentDisplay.jspx?id=67695.1) **:** PROCEDURE DBMS\_JOB.BROKEN Specification

1. Save and update oratab indicator to **N**

cp –p ${ORATAB} oratab\_` date '+%Y%m%d'`\_b4ora12102upg\_${ORACLE\_SID}

vi /etc/oratab

1. For Production only:

Configure RMAN tape channels to 6 before taking backup

rman

connect target /

connect catalog ID/PW@RCATPROD

CONFIGURE DEVICE TYPE 'SBT\_TAPE' PARALLELISM **6** BACKUP TYPE TO BACKUPSET;

show all;

exit

1. Check to see if any backup jobs are in flight and make sure all are

complete before taking the backup.

ps –ef|grep rman|grep –v grep

1. Take a backup of your source database and save

**~~Take fresh Full backup~~**

~~$BKPSCR/dbbackup\_rman ${ORACLE\_SID}~~

Or/and

**Take archivelog backup**

cd $HOME/aetna/scripts

nohup backup\_archlogs.ksh ${ORACLE\_SID} &

**Save backup**

nohup $BKPSCR/savebkp.ksh ${ORACLE\_SID} b4upgora12102

Save backup

DPDEVUG

DPDEVUG backup saved as DPDEVUG\_sbk\_20151209\_05:40:48\_b4upgora12102.rman

DPDEMO91

DPDEMO91 backup saved as DPDEMO91\_sbk\_20160325\_07:54:05\_b4upgora12102.rman

DPDEV91

DPDEV91 backup saved as DPDEV91\_sbk\_20160401\_08:14:01\_b4upgora12102.rman

DPDUAT91

DPUAT91 backup saved as DPUAT91\_sbk\_20160415\_07:52:46\_b4upgora12102.rman

DPPRD01

DPPRD01 backup saved as DPPRD01\_sbk\_20160807\_04:45:00\_b4upgora12102.rman

1. Verify all processes disconnected:

sqlplus “/ as sysdba”

select username from v$session; 🡸 Should only see SYS and DBSNMP users

exit

To kill any lingering processes:

Start and shutdown are time consuming so instead do the following:

sqlplus “/ as sysdba”

select \* from dba\_sys\_privs

where privilege = 'RESTRICTED SESSION'; 🡸 to identify any users or roles with RESTRICTED SESSION granted

should only be DBA

revoke RESTRICTED SESSION from ORATIVOLI;

kill any processes remaining using DBArtisan

Put database in restricted session:

alter system enable restricted session;

select username from v$session;

ALTER USER BENENG ACCOUNT LOCK

/

ALTER USER ORATIVOLI ACCOUNT LOCK

/

ALTER USER SYSADM ACCOUNT LOCK

/

ALTER USER AEAUDIT ACCOUNT LOCK

/

!! Email that step 3 completed and starting step 4

Verify all SYSADM processes disconnected:

sqlplus “/ as sysdba”

Select username from v$session where username = ‘SYSADM’;

exit

1. Alter all system, sysaux datafiles and last TEMP file to be autoextend if needed

sqlplus / as sysdba

@ext\_alter\_system\_datafiles\_autoextend.sql

!view alter\_system\_datafiles\_autoextend.sql 🡸 verify expected

datafiles to be set

to autoextend.

if not, manually modify

alter\_system\_datafiles\_autoextend.sql and

alter\_system\_datafiles\_autoextend\_off.sql

files

@alter\_system\_datafiles\_autoextend.sql

exit

view alter\_system\_datafiles\_autoextend.out 🡸 verify that system, sysaux and temp changed to autoextend if were not already autoextend

1. Run Script to Collect DB Upgrade/Migrate Diagnostic Information (dbupgdiag.sql)

Note 556610.1

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

run => sqlplus / as sysdba

sql => @dbupgdiag\_pv.sql 🡸 respond

$HOME/aetna/admin/$ORACLE\_SID/upgora12102

View .log file make sure all looks Normal

DPDEVUG - db\_upg\_diag\_DPDEVUG\_09\_Dec\_2015\_0859.log

DPDEMO91 - db\_upg\_diag\_DPDEMO91\_25\_Mar\_2016\_0814.log

DPDEV91- db\_upg\_diag\_DPDEV91\_01\_Apr\_2016\_0829.log

DPUAT91 - db\_upg\_diag\_DPUAT91\_15\_Apr\_2016\_0806.log

DPPRD01- db\_upg\_diag\_DPPRD01\_03\_Aug\_2016\_0838.log

1. Check for INVALID database components and objects in the Source database

sqlplus / as sysdba

set pagesize500 linesize 100 trimspool on

spool check\_for\_invalids\_b4\_upgrade.out

select substr(comp\_name,1,40) comp\_name, status, substr(version,1,10) version

from dba\_registry order by comp\_name;

select substr(object\_name,1,40) object\_name,substr(owner,1,15) owner,object\_type

from dba\_objects where status='INVALID' order by owner,object\_type;

select owner,object\_type,count(\*) from dba\_objects

where status='INVALID' group by owner,object\_type order by owner,object\_type ;

exit

If you find invalid objects and/or database components then try to VALIDATE the

invalid objects and/or database components by executing the following steps:

Run $ORACLE\_HOME/rdbms/admin/utlrp.sql to validate the invalid objects in the

database. You can execute the utlrp.sql scripts multiple times to validate the invalid

objects.

${HOME}/aetna/db\_mgmt/utility/run\_utlrp.ksh ${ORACLE\_SID} $ORACLE\_BASE/aetna/admin/$ORACLE\_SID/upgora12102

Or

@?/rdbms/admin/utlrp.sql

select count(\*)

from dba\_objects

where status = 'INVALID';

DPPRD01 - 0

view `ls -lrt utlrp\_\*.out|awk '{print $9}'|tail -1` (view most

recent - file name has timestamp included)

Resolve any invalid object issues

e.g. - alter materialized view DM.DM\_MVW\_ST\_STRUCTURE compile;

run => sqlplus / as sysdba

sql => set trimspool on

sql => spool utluiobj\_b4\_upgrade.out

sql => @?/rdbms/admin/utluiobj.sql

DPDEVUG - None

DPDEMO91 – None

DPDEV91 - None

DPUAT91 - None

DPPRD01 - None

1. Determine hidden parameters and events that need to be commented during upgrade

run > sqlplus / as sysdba

sql => @hidden\_parms\_events.sql

run => view hidden\_parms\_events.out

DPDEVUG

\_unnest\_subquery

DPDEMO91

\_unnest\_subquery

DPDEV91

\_unnest\_subquery

DPUAT91

\_unnest\_subquery

DPPRD01

\_unnest\_subquery

1. Disable custom triggers that would fire before/after DDL and enable them after the

upgrade is complete. Check with DBArtisan

DPDEVUG - None

DPDEMO91 - None

DPDEV91 - None

DPUAT91 – None

DPPRD01 - None

1. Check for database corruption (5 minutes)

run => sqlplus / as sysdba

sql => drop table INVALID\_ROWS;

sql => @?/rdbms/admin/utlvalid.sql

sql => @ext\_analyze.sql

sql => @analyze.sql

sql => exit

run => grep ORA- analyze.out 🡸 should not see any errors

1. Gather dictionary stats

run => sqlplus / as sysdba

sql => EXEC DBMS\_STATS.GATHER\_DICTIONARY\_STATS;

sql => @check\_schema\_stale\_stats.sql

1. Confirm database is in archivelog mode

sql => select name,log\_mode from v$database;

1. Save characterset information

run => sqlplus / as sysdba

sql => set trimspool on

sql => spool characterset.out

select parameter, value

from nls\_database\_parameters

where parameter like '%CHARACTERSET%';

sql => spool off

1. Ensure users SYS and SYTEM have system as default tablespace

sqlplus / as sysdba

SELECT username, default\_tablespace

FROM dba\_users

WHERE username in ('SYS','SYSTEM');

If DEFAULT\_TABLESPACE is anything other than SYSTEM tablespace, modify the

default tablespace for user SYS and SYSTEM to SYSTEM by using the command below:

sql => ALTER user SYS default tablespace SYSTEM;

sql => ALTER user SYSTEM default tablespace SYSTEM;

1. Purge recyclebin

run => sqlplus / as sysdba

sql => @purge\_recyclebin.sql

1. Collect segment statistics prior to upgrading the database

run => cd ${ORACLE\_BASE}/aetna/admin/${ORACLE\_SID}/upgora12102/stats

run => vi run\_stats.ksh 🡸 edit MAILID and uncomment row counts if

desired (for PLNVD001 without row\_counts

took 1 minute, **Caution**: with row counts

can take more than 9 minutes)

run => nohup run\_stats.ksh ${ORACLE\_SID} b4ora12upgrade `pwd` & 🡸 sends

email when complete

run => more \*b4ora12upgrade\*

run => sqlplus / as sysdba

sql => @dbsize.sql b4ora12upgrade

**Take a DBArtisan Report**

**DPDEMO91**

Total size: 77,884 MB

SYSTEM – Used 785.88 MB out of 2000 MB

SYSAUX – Used 609.13 MB out of 1000 MB

**DPDEV91**

Total size: 93,282 MB

SYSTEM – Used 1060 MB out of 1500 MB

SYSAUX – Used 1320 MB out of 6411 MB

**DPUAT91**

Total size: 99059 MB

SYSTEM – Used 1060 MB out of 1061 MB

SYSAUX – Used 1320 MB out of 1122 MB

**DPPRD01**

Total size: 318243 MB

SYSTEM – Used 1215.75 MB out of 6500 MB

SYSAUX – Used 4374.19 MB out of 6500 MB

1. Run 12c preupgrade script

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

run => sqlplus / as sysdba

sql => @preupgrd.sql

DPDEVUG

Log file - /u01/app/oracle/cfgtoollogs/DPDEVUG/preupgrade/preupgrade.log

[Obsolete/Deprecated Parameters]

--> sec\_case\_sensitive\_logon 12.1 DESUPPORTED

[Changes required in Oracle Database init.ora or spfile]

INFORMATION: --> Older Timezone in use

Database is using a time zone file older than version 18.

After the upgrade, it is recommended that DBMS\_DST package

be used to upgrade the 11.2.0.4.0 database time zone version

to the latest version which comes with the new release.

Please refer to My Oracle Support note number 1509653.1 for details.

WARNING: --> job\_queue\_processes set too low

This parameter must be removed or updated to a value greater

than 16 (default value if not defined is 1000) prior to upgrade.

Not doing so will affect the running of utlrp.sql after the upgrade

Update your init.ora or spfile to make this change.

Please review and remove any unnecessary hidden/underscore parameters prior

to upgrading. It is strongly recommended that these be removed before upgrade

unless your application vendors and/or Oracle Support state differently.

Changes will need to be made in the init.ora or spfile.

\_unnest\_subquery = FALSE

END DPDEVUG

DPDEMO91

Log file - /u01/app/oracle/cfgtoollogs/DPDEMO91/preupgrade/preupgrade.log

[Pre-Upgrade Checks]

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WARNING: --> Process Count may be too low

Database has a maximum process count of 75 which is lower than the

default value of 300 for this release.

You should update your processes value prior to the upgrade

to a value of at least 300.

For example:

ALTER SYSTEM SET PROCESSES=300 SCOPE=SPFILE

or update your init.ora file.

INFORMATION: --> Older Timezone in use

Database is using a time zone file older than version 18.

After the upgrade, it is recommended that DBMS\_DST package

be used to upgrade the 11.2.0.4.0 database time zone version

to the latest version which comes with the new release.

Please refer to My Oracle Support note number 1509653.1 for details.

WARNING: --> job\_queue\_processes set too low

This parameter must be removed or updated to a value greater

than 16 (default value if not defined is 1000) prior to upgrade.

Not doing so will affect the running of utlrp.sql after the upgrade

Update your init.ora or spfile to make this change.

Please review and remove any unnecessary hidden/underscore parameters prior

to upgrading. It is strongly recommended that these be removed before upgrade

unless your application vendors and/or Oracle Support state differently.

Changes will need to be made in the init.ora or spfile.

\_unnest\_subquery = FALSE

END DPDEMO91

DPDEV91

Log file - /u01/app/oracle/cfgtoollogs/DPDEV91/preupgrade/preupgrade.log

[Renamed Parameters]

"audit\_trail" old value was "FALSE";

--> new name is "audit\_trail", new value is "NONE"

[Changes required in Oracle Database init.ora or spfile]

[Obsolete/Deprecated Parameters]

--> sec\_case\_sensitive\_logon 12.1 DESUPPORTED

[Changes required in Oracle Database init.ora or spfile]

INFORMATION: --> Older Timezone in use

Database is using a time zone file older than version 18.

After the upgrade, it is recommended that DBMS\_DST package

be used to upgrade the 11.2.0.4.0 database time zone version

to the latest version which comes with the new release.

Please refer to My Oracle Support note number 1509653.1 for details.

WARNING: --> job\_queue\_processes set too low

This parameter must be removed or updated to a value greater

than 16 (default value if not defined is 1000) prior to upgrade.

Not doing so will affect the running of utlrp.sql after the upgrade

Update your init.ora or spfile to make this change.

END DPDEV91

DPUAT91

Log file = /u01/app/oracle/cfgtoollogs/DPUAT91/preupgrade/preupgrade.log

[Renamed Parameters]

"audit\_trail" old value was "FALSE";

--> new name is "audit\_trail", new value is "NONE"

[Changes required in Oracle Database init.ora or spfile]

INFORMATION: --> Older Timezone in use

Database is using a time zone file older than version 18.

After the upgrade, it is recommended that DBMS\_DST package

be used to upgrade the 11.2.0.4.0 database time zone version

to the latest version which comes with the new release.

Please refer to My Oracle Support note number 1509653.1 for details.

WARNING: --> job\_queue\_processes set too low

This parameter must be removed or updated to a value greater

than 24 (default value if not defined is 1000) prior to upgrade.

Not doing so will affect the running of utlrp.sql after the upgrade

Update your init.ora or spfile to make this change.

Please review and remove any unnecessary hidden/underscore parameters prior

to upgrading. It is strongly recommended that these be removed before upgrade

unless your application vendors and/or Oracle Support state differently.

Changes will need to be made in the init.ora or spfile.

\_unnest\_subquery = FALSE

END DPUAT91

DPPRD01

/u01/app/oracle/cfgtoollogs/DPPRD01/preupgrade/preupgrade.log

[Obsolete/Deprecated Parameters]

--> sec\_case\_sensitive\_logon 12.1 DESUPPORTED

END DPPRD01

1. Remove EM database control repository

run => sqlplus / as sysdba

sql => spool emremoval.log

sql => @emremove.sql

View output log emremoval.log

1. Remove or comment out obsolete, hidden, and deprecated initialization parameters

in parameter file in ${NEWOHDIR}/dbs directory

DPDEVUG

#sec\_case\_sensitive\_logon

#\_unnest\_subquery = FALSE

DPDEMO91

#\_unnest\_subquery = FALSE

DPDEV91

#\_unnest\_subquery = FALSE

# sec\_case\_sensitive\_logon

DPUAT91

#\_unnest\_subquery = FALSE

DPPRD01

#\_unnest\_subquery = FALSE

sec\_case\_sensitive\_logon

1. Add/modify parameters specified from preupgrd script

DPDEVUG

#Will need to change from 10 to 17

job\_queue\_processes = 17

#change this parameter to new ORACLE\_BASE

#create new dir if not already there.

cd /orahome/u01/app/oracle/admin

mkdir DPDEVUG

diagnostic\_dest = /orahome/u01/app/admin/DPDEVUG

DPDEMO91

#Will need to change from 10 to 17

job\_queue\_processes = 17

PROCESSES=300

#change this parameter to new ORACLE\_BASE

#create new dir if not already there.

cd /orahome/u01/app/oracle/admin

mkdir DPDEMO91

diagnostic\_dest = /orahome/u01/app/oracle/admin/DPDEMO91

DPDEV91

#Will need to change from 10 to 17

job\_queue\_processes = 17

audit\_trail = NONE

#change this parameter to new ORACLE\_BASE

#create new dir if not already there.

cd /orahome/u01/app/oracle/admin

mkdir DPDEV91

diagnostic\_dest = /orahome/u01/app/oracle/admin/DPDEV91

DPUAT91

#Will need to change from 10 to 17

job\_queue\_processes = 17

audit\_trail = NONE

#create new dir if not already there.

cd /orahome/u01/app/oracle

mkdir admin/DPUAT91

diagnostic\_dest = /orahome/u01/app/oracle/admin/DPUAT91

DPPRD01

job\_queue\_processes = 17

#create new dir if not already there.

cd /orahome/u01/app/oracle

mkdir admin/DPPRD01

diagnostic\_dest = /orahome/u01/app/oracle/admin/DPPRD01

1. Copy parameter file to new $ORACLE\_HOME/dbs directory

Determine if pfile or spfile

SELECT DECODE(value, NULL, 'PFILE', 'SPFILE') "Init File Type"

FROM sys.v\_$parameter WHERE name = 'spfile';

For init.ora

cp -p $ORACLE\_HOME/dbs/init${ORACLE\_SID}.ora /orahome/u01/app/oracle/product/12.1.0.2/${NEWOHDIR}/dbs/init${ORACLE\_SID}.ora

cp -p $ORACLE\_HOME/dbs/init${ORACLE\_SID}.ora /orahome/u01/app/oracle/product/12.1.0.2/${NEWOHDIR}/dbs/init${ORACLE\_SID}.ora\_11204

**Make all necessary changes identified in item #29 and #30 for DB being upgraded.**

cd /orahome/u01/app/oracle/product/12.1.0.2/${NEWOHDIR}/dbs

vi init${ORACLE\_SID}.ora

1. Verify That Materialized View Refreshes Have Completed Before Upgrading

sql => SELECT o.name FROM sys.obj$ o, sys.user$ u, sys.sum$ s

WHERE o.type# = 42 AND bitand(s.mflags, 8) =8;

If the above query returns any row, see Metalink Note 1442457.1

1. Ensure That No Files Need Media Recovery Before Upgrading

sql => SELECT \* FROM v$backup WHERE status != 'NOT ACTIVE';

1. Resolve Outstanding Distributed Transactions Before Upgrading

sql => SELECT \* FROM dba\_2pc\_pending;

If the above sql returns rows run:

sql => SELECT local\_tran\_id FROM dba\_2pc\_pending;

sql => EXECUTE dbms\_transaction.purge\_lost\_db\_entry('');

sql => COMMIT;

1. Note the location of datafiles, redo logs and control files.

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

run => sqlplus / as sysdba

sql => set echo on trimspool on

sql => spool database\_files.out

sql => select name as "Control Files" from v$controlfile;

sql => select file\_name as "Datafiles" from dba\_data\_files order by file\_id;

sql => select group#, member as "Logfiles" from v$logfile order by group#;

sql => exit;

1. Select users and current status

sql => set echo on trimspool on line 200

sql => spool database\_users\_b4upgrade.out

sql => select username, account\_status from dba\_users order by 1;

sql => exit;

sqlplus / as sysdba

set echo on trimspool on line 300 pagesize 999

spool database\_users\_with\_sys\_access\_b4upgrade.out

select grantee,owner,table\_name,grantor,privilege,grantable from dba\_tab\_privs where table\_name in

('DEFAULT\_PWD$','ENC$','LINK$','USER$','USER\_HISTORY$','CDB\_LOCAL\_ADMINAUTH$','XS$VERIFIERS');

select \*

from dba\_sys\_privs

where regexp\_like(grantee, '[ANSZ][0-9]{6}.\*')

and privilege = 'SELECT ANY DICTIONARY';

spool off

exit

1. Run the preupgrade fixup script

cd $HOME/cfgtoollogs/$ORACLE\_SID/preupgrade

sqlplus / as sysdba

sql => @preupgrade\_fixups.sql

run => view preupgrade.log

If message

WARNING: --> Enterprise Manager Database Control repository found in

the database

Run the following to confirm no longer exists

select substr(comp\_name,1,40) comp\_name, status, substr(version,1,10) version

from dba\_registry order by comp\_name;

1. Shutdown the database

sqlplus / as sysdba

sql => select name from v$database;

sql => shutdown immediate;

1. Rename alertlog

cd $BDUMP

mv alert\_${ORACLE\_SID}.log alert\_${ORACLE\_SID}.log\_`date +%m:%d:%Y:Time:%H:%M:%S`

1. Stop the listener

run => lsnrctl stop $ORACLE\_SID

1. Update the oratab to point to the new $ORACLE\_HOME

e.g.

Add new entry DPDEVUG:/orahome/u01/app/oracle/product/12.1.0.2/db\_2:Y

Remove old entry

DPDEVUG:/u01/app/oracle/product/11.2.0.4/db\_2:Y

Add new entry DPDEMO91:/orahome/u01/app/oracle/product/12.1.0.2/db\_1:Y

Remove old entry

DPDEMO91:/u01/app/oracle/product/11.2.0.4/db\_1:Y

Add new entry DPDEV91:/orahome/u01/app/oracle/product/12.1.0.2/db\_1:Y

Remove old entry

DPDEV91:/u01/app/oracle/product/11.2.0.4/db\_1:Y

Remove old entry

DPPRD01:/u01/app/oracle/product/11.2.0.4/db\_1:Y

Add new entry

DPPRD01:/orahome/u01/app/oracle/product/12.1.0.2/db\_1:Y

Remove old entry

DPPRD02:/u01/app/oracle/product/11.2.0.4/db\_1:Y

Add new entry

DPPRD02:/orahome/u01/app/oracle/product/12.1.0.2/db\_1:Y

**Make sure the startup flag is set to Y**

1. Set to new Oracle environment

cd $HOME

. ~/.profile

**!!! If it does not work. Close SSH Terminal session and login back to new one!!!!**

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

run => . set\_upgrade\_env\_variables.ksh $ORACLE\_SID

#To make sure check one of variables.

echo $RCATDB

echo $UPGDB

1. Update the listener.ora to reflect the new $ORACLE\_HOME directory

for the database being upgraded

cd $ORACLE\_HOME/network/admin

vi listener.ora

1. Check for the SQLNET.ALLOWED\_LOGON\_VERSION Parameter Behavior

Starting with Oracle Database 12c, the default value for the

SQLNET.ALLOWED\_LOGON\_VERSION parameter has changed from 8 to 11.

The use of this parameter has been deprecated, and it is now replaced

with the SQLNET.ALLOWED\_LOGON\_VERSION\_SERVER and

SQLNET.ALLOWED\_LOGON\_VERSION\_CLIENT parameters.

If you have not explicitly set the SQLNET.ALLOWED\_LOGON\_VERSION\_SERVER

parameter in the upgraded database, then connections from clients

earlier than release 10g will fail with the error ORA-28040: No

matching authentication protocol. For better security, check the

password verifiers of your database users, and then configure the

database to use the correct password verifier by setting the

SQLNET.ALLOWED\_LOGON\_VERSION\_SERVER and

SQLNET.ALLOWED\_LOGON\_VERSION\_CLIENT parameters.

If you have password-protected roles (secure roles) in your existing

database and if you upgrade to Oracle Database 12c with the default

SQLNET.ALLOWED\_LOGON\_VERSION\_SERVER setting of 11, because those secure

roles only have release 10g verifiers, the password for each secure

role must be reset by the administrator so that the secure roles will

remain usable after the upgrade.

Check for the SQLNET IFILE parameter and set to new location

DPDEVUG – Did not modify sqlnet.ora

DPDEMO91 – Did not modify sqlnet.ora

DPDEV91 – Did not modify sqlnet.ora

DPUAT91 – Did not modify sqlnet.ora

DPPRD01 – Did not modify sqlnet.ora

1. Start or reload the listener

run => lsnrctl start $ORACLE\_SID

~~Create init file if spfile being used~~

**~~If spfile exists for database, rename so it won’t be used~~**

~~Rename pfile if one exists in the directory~~

~~cd $ORACLE\_HOME/dbs~~

~~sqlplus / as sysdba~~

~~CREATE PFILE='$ORACLE\_HOME/dbs/init$ORACLE\_SID.ora' FROM SPFILE;~~

~~mv spfile{ORACLE\_SID}.ora spfile{ORACLE\_SID}.ora\_b412102upg~~

1. Upgrade the database

run => cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

sql => startup UPGRADE

sql => exit

run => nohup upgrade\_db\_to\_12c.ksh ${ORACLE\_SID} &

Logs are written to $HOME/aetna/admin/$ORACLE\_SID/upgora12102/logs

**!!Open new SSH window**

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102/logs

tail –f catupgrd0.log

!! Upon completion you should get email.

View the upgrade summary report

view $ORACLE\_HOME/cfgtoollogs/$ORACLE\_SID/upgrade/upg\_summary.log

Check all applicable logs in all applicable directories

cd $ORACLE\_BASE/cfgtoollogs/sqlpatch

ls -ltr

cd to each applicable directory and run below find command

e.g.

find . -type f -exec grep -i "ORA-" {} \;

Save the output logs (if exists)

cd $ORACLE\_HOME/cfgtoollogs/$ORACLE\_SID/upgrade

cp -p upg\_summary.log $HOME/aetna/admin/$ORACLE\_SID/upgora12102/logs

Check for errors

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102/logs

egrep -i "ora-" \*cat\* |egrep -iv "\-\-|rem|doc|\\*"

View the database alertlog

view $BDUMP/alert\_$ORACLE\_SID.log

These type of messages can be ignored

Some indexes or index [sub]partitions of table SYS.WRI$\_OPTSTAT\_HISTGRM\_HISTORY have been marked unusable

Important: The catuppst.sql script is run as part of the upgrade

process unless the upgrade returns errors during the

process. Check the log file for "BEGIN catuppst.sql" to

verify that catuppst.sql ran during the upgrade process.

If catuppst.sql has not run, then proceed to run

catuppst.sql as shown in this step. Warning messages are

also displayed when running catctl.pl indicating that

catuppst.sql was not run during the upgrade.

Run catuppst.sql, located in the $ORACLE\_HOME/rdbms/admin

directory, to perform upgrade actions that do not require

the database to be in UPGRADE mode.

$ORACLE\_HOME/perl/bin/perl catcon.pl -n 1 -e -b catuppst -d '''.''' catuppst.sql

Check if catuppst.sql was run

grep "catuppst" \*

grep "BEGIN catuppst.sql" \*

Should see things like

catupgrd0.log:catuppst: Dropping library DBMS\_DDL\_INTERNAL\_LIB

catupgrd0.log:catuppst: Dropping view \_CURRENT\_EDITION\_OBJ\_MIG

catupgrd0.log:catuppst: Dropping view \_ACTUAL\_EDITION\_OBJ\_MIG

SQL> Rem BEGIN catuppst.sql

1. Run **catcon.pl** to invoke **utlrp.sql** to recompile any remaining stored PL/SQL and Java code.

Use the following syntax

cd $ORACLE\_HOME/rdbms/admin

run => sqlplus /as sysdba

sql => STARTUP

sql => exit

$ORACLE\_HOME/perl/bin/perl catcon.pl -n 1 -e -b utlrp -d '''.''' utlrp.sql

The log file **utlrp0.log** is generated with the results of the recompilations.

1. Run the post fixup script

run => cd $HOME/cfgtoollogs/$ORACLE\_SID/preupgrade

sqlplus / as sysdba

sql => @postupgrade\_fixups.sql

1. Run the post upgrade status script

run => cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

run => sqlplus /as sysdba

sql => @utlu121s\_pv.sql

sql => exit

Save summary log (if exists)

cd $ORACLE\_HOME/cfgtoollogs/$ORACLE\_SID/upgrade

cp -p upg\_summary.log $HOME/aetna/admin/$ORACLE\_SID/upgora12102/logs

~~Query upgrade summary~~

~~run => sqlplus /as sysdba~~

~~sql => select \* from sys.registry$upg\_summary;~~

1. Run the Jan PSU upgrade script

There may or may not be anything applied as the upgrade may have handled it all

run => cd $ORACLE\_HOME/OPatch

run => datapatch -verbose

**Check log files for any errors:**

cd $ORACLE\_BASE/cfgtoollogs/sqlpatch

ls –ltr

cd to all applicable directories and check for errors

1. Confirm the Jan 2016 PSU applied to the database and check for errors

run => cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

run => verify\_psu\_applied.ksh

run => cd $ORACLE\_BASE/cfgtoollogs/sqlpatch

Check all files in directories created during upgrade time

e.g.

for i in `find . -type d -name '\*2015\_07\_28\*' -print`  
 do  
    grep -i "ORA-" $i/\*  
 done

The datapatch utility will then run the necessary apply scripts to load the modified SQL

files into the database. An entry will be added to the dba\_registry\_sqlpatch view

reflecting the patch application. In the dba\_registry\_sqlpatch view, verify the Status

for the APPLY is "SUCCESS". For any other status, refer to the following My Oracle

Support note for additional information and actions: Document [1609718.1](https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&id=1609718.1) Datapatch

Known Issues.

1. Check for deprecated initialization parameters

SELECT name FROM v$parameter WHERE isdeprecated = 'TRUE' order by name;

Comment or remove any identified that are in use

DPDEVUG –No changes made

DPDDEMO91 –No changes made

DPDEV91 –No changes made

DPUAT91 –No changes made

DPPRD01 – no changes made

1. Run Diagnostic Information (dbupgdiag.sql)

Note 556610.1

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

run => sqlplus / as sysdba

sql => @dbupgdiag\_pv.sql 🡸 respond

$HOME/aetna/admin/$ORACLE\_SID/upgora12102

DPDEVUG - db\_upg\_diag\_DPDEVUG\_09\_Dec\_2015\_1252.log

DPDEMO91 - db\_upg\_diag\_DPDEMO91\_25\_Mar\_2016\_1011.log

DPDEV91 - db\_upg\_diag\_DPDEV91\_01 \_Apr\_2016\_0949.log

DPUAT91 - db\_upg\_diag\_DPUAT91\_15\_Apr\_2016\_0913.log

DPPRD01 - db\_upg\_diag\_DPPRD01\_07\_Aug\_2016\_0645.log

1. Query current state of the dictionary

sql => set echo on trimspool on lines 80 pages 100

sql => spool regInvalid.out

sql => select substr(comp\_id,1,15) comp\_id,substr(comp\_name,1,30)

comp\_name,substr(version,1,10) version,status

from dba\_registry order by modified;

1. Enable any hidden parameters that were disabled

cd $ORACLE\_HOME/dbs

vi init${ORACLE\_SID}.ora

DPDEVUG

\_unnest\_subquery = false

DPDEMO91

\_unnest\_subquery = false

DPDEV91

\_unnest\_subquery = false

DPUAT91

\_unest\_subquery = false

DPPRD01

1. Bounce the database

shutdown immediate;

startup;

1. Create a new password file

run => cd $DBS

**!!!Get latest sys password from eDMZ first!!!**

run => orapwd file=$ORACLE\_HOME/dbs/orapw$ORACLE\_SID password=xxx

entries=20

1. Change password for users with default password

~~select 'alter user ' ||username ||' identified by "Add\_Password\_Here" PASSWORD EXPIRE;' from dba\_users where username in (select username from dba\_users\_with\_defpwd) order by username;~~

select 'alter user ' ||username ||' identified by "Add\_Password\_Here" PASSWORD EXPIRE;' from dba\_users where username in (select username from dba\_users\_with\_defpwd where username not in ('PEOPLE')) order by username;

1. Select users and current status

run => cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

sql => set trimspool on line 200

sql -> col username for a30

sql => spool database\_users\_aftupgrade.out

sql => SELECT username, account\_status FROM dba\_users ORDER BY 1;

sql => exit;

DPDEVUG –No changes made for now

DPDDEMO91 –No changes made for now

DPDEV91 –No changes made for now

DPUAT91 –No changes made for now

DPPRD01 - No changes made for now

Compare to list taken above.

Depending on the release from which you upgraded, there might be new

Oracle-supplied accounts. Oracle recommends that you lock all Oracle

supplied accounts except for SYS and SYSTEM, and expire their

passwords, thus requiring new passwords to be specified when the

accounts are unlocked.

To lock and expire passwords, issue the following SQL statement:

sql => alter user username password expire account lock;

1. Enable custom triggers that were disabled above

DPDEVUG – None

DPDEMO91 – none

DPDEV91 – none

DPUAT91 - none

DPPRD01 – none

1. Check for INVALID database components and objects in the Source database

set pagesize500 linesize 100

spool check\_for\_invalids\_aft\_upgrade.out

select substr(comp\_name,1,40) comp\_name, status, substr(version,1,10) version

from dba\_registry order by comp\_name;

select substr(object\_name,1,40) object\_name,substr(owner,1,15) owner,object\_type

from dba\_objects where status='INVALID' order by owner,object\_type;

select owner,object\_type,count(\*) from dba\_objects

where status='INVALID' group by owner,object\_type order by owner,object\_type ;

If you find invalid objects and/or database components then try to VALIDATE the

invalid objects and/or database components by executing the following steps:

Run $ORACLE\_HOME/rdbms/admin/utlrp.sql to validate the invalid objects in the

database. You can execute the utlrp.sql scripts multiple times to validate the invalid

objects.

${HOME}/aetna/db\_mgmt/utility/run\_utlrp.ksh ${ORACLE\_SID} $HOME /aetna/admin/$ORACLE\_SID/upgora12102

view `ls -lrt utlrp\_\*.out|awk '{print $9}'|tail -1` (view most

recent - file name has timestamp included)

or

@?/rdbms/admin/utlrp.sql

select count(\*)

from dba\_objects

where status = 'INVALID';

Compare to invalid list taken above

To determine new invalid objects

cd $ORACLE\_HOME/rdbms/admin

run => $ORACLE\_HOME/perl/bin/perl catcon.pl -n 1 -e -b utluiobj -d '''.''' utluiobj.sql

This tool lists post-upgrade invalid objects that were not invalid

prior to upgrade (it ignores pre-existing pre-upgrade invalid objects).

DPDEVUG

MASKADMIN – 20 invalids

DPDEMO91 = 0

DPDEV91 =41

DPUAT91 = 0

DPPRD01 –

1. Export RMAN recovery catalog for this schema

Modify highlighted items to reflect the schema and date of the

**For none PROD**

Log on to XORACLDW2D/ Bl0ckhe@d

. $SETUPENV RCATDEV

cd /orahome/u01/app/oracle/admin/${ORACLE\_SID}/exports 🡸 if directory

does not exist

create it

echo $ORACLE\_HOME

echo $ORACLE\_SID

DBNAME=*name-of-db-being-upgraded 🡸* replace with name of database being

upgraded

REASON=*reason-for-backup* 🡸 replace with reason for backup

either

b4upgora12c

**or**

b4dwngora12c

ext\_export\_par\_gen.ksh ${DBNAME} ${REASON} 🡸 this script creates a

base par file for this

schema name

vi exp\_schema\_${DBNAME}\_${REASON}.par (view the par file to verify the

schema name, and file names)

exp parfile=exp\_schema\_${DBNAME}\_${REASON}.par 🡸 enter RMAN schema name

and password for

database being upgraded

verify dump file was created:

ls –l export\_schema\_${DBNAME}\_${REASON}\_`date +'%Y%m%d’`.dmp

compress dump file:

gzip export\_schema\_${DBNAME}\_${REASON}\_`date +'%Y%m%d’`.dmp

Log off XORACLDW2D

**For PROD get oracle password from eDMZ first**

Log on to XORACLDM2P

. $SETUPENV RCATPROD

cd /orahome/u01/app/oracle/admin/RCATPROD/exports 🡸 if directory does

not exist, create

it

echo $ORACLE\_HOME

echo $ORACLE\_SID

DBNAME=*name-of-db-being-upgraded 🡸* replace with name of database

being upgraded

REASON=*reason-for-backup* 🡸 replace with reason for backup either

b4upgora12c

**or**

b4dwngora12c

~~Copy export script from the development cloud server:~~

~~scp –rp xoracldw2d:/orahome/u01/app/oracle/admin/RCATDEV/exports/ext\_export\_par\_gen.ksh .~~

ext\_export\_par\_gen.ksh ${DBNAME} ${REASON} 🡸 this script creates a

base par file for this

schema name

vi exp\_schema\_${DBNAME}.par (verify the par file for the database

name, date and reason for the export)

exp parfile=exp\_schema\_${DBNAME}.par 🡸 enter RMAN schema name and

password for database being

upgraded verify dump file was

created:

ls –l export\_schema\_${DBNAME}\_${REASON}\_`date +'%Y%m%d'`\_b4upgora112.dmp

compress dump file:

gzip export\_schema\_${DBNAME}\_${REASON}`date +'%Y%m%d'`\_b4upgora112.dmp

~~Backup RMAN export file to Planview db server:~~

~~For PLNVP001~~

Log off XORACLDM2P

1. Copy RMAN catalog export dump file to database server

Run below from database server

scp -rp ${RCATSERV}:/orahome/u01/app/oracle/admin/${RCATDB}/exports/exp\*${UPGDB}\_${REASON}\_`date +'%Y%m%d'`\* /u10/oraback/export/${RCATDB}

or

DPDEVUG

Run below from xoracldw2d server

scp -rp export\_schema\_DPDEVUG\_b4upgora12c\_20151209.dmp.gz dppdev:/u10/oraback/export/export\_schema\_DPDEVUG\_b4upgora12c\_20151209.dmp.gz

DPDEMO91

Run below from xoracldw2d server

scp -rp export\_schema\_DPDEVUG\_b4upgora12c\_20151209.dmp.gz dppdev:/u10/oraback/export/export\_schema\_DPDEVUG\_b4upgora12c\_20151209.dmp.gz

DPDEV91

Run below from xoracldw2d server

scp -rp export\_schema\_DPDEV91\_b4upgora12c\_20160401.dmp.gz dppdev:/u10/oraback/export/export\_schema\_DPDEV91\_b4upgora12c\_20160401.dmp.gz

DPUAT91

Run below from xoracldw2d server

scp -rp export\_schema\_DPUAT91\_b4upgora12c\_20160415.dmp.gz dppqa:/u10/oraback/export/export\_schema\_DPUAT91\_b4upgora12c\_20160415.dmp.gz

DPPRD01

Run below from XORACLDM2P server

scp -rp export\_schema\_xxxx\_b4upgora12c\_xxxx.dmp.gz

spnone45: /oracle/backup/oraback/export/export\_schema\_xxx\_b4upgora12c\_xxx.dmp.gz

1. Upgrade RMAN catalog

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

run => . set\_upgrade\_env\_variables.ksh $ORACLE\_SID

run => rman catalog ${ORACLE\_SID}/${ORACLE\_SID}namr@${RCATDB} 2>&1 |tee

rmanupg.out

or

DPDEVUG

rman

connect target /

connect catalog DPDEVUG/xxx@RCATDEV

DPDEMO01

rman

connect target /

connect catalog DPDEMO91/xxx@RCATDEV

DPDEV91

rman

connect target /

connect catalog DPDEV91/xxx@RCATDEV

DPPRD01

rman

connect target /

connect catalog DPPRD01/ DPPRD01namr@RCATPROD

DPPRD02

rman

connect target /

connect catalog DPPRD02/xxx@RCATPROD

Expect this message:

PL/SQL package PLNVD001.DBMS\_RCVCAT version 11.02.00.03 in RCVCAT database is too old

**For all servers and databases:**

RMAN> UPGRADE CATALOG;

Enter again to confirm catalog upgrade

RMAN> UPGRADE CATALOG;

RMAN> exit

Expect output:

recovery catalog upgraded to version 12.01.00.02

DBMS\_RCVMAN package upgraded to version 12.01.00.02

DBMS\_RCVCAT package upgraded to version 12.01.00.02

1. Take a full database backup and save it

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

DPPRD01

rman

connect target /

connect catalog DPPRD01/xxx@RCATPROD

**!! Based on Upgrade Timing may need to adjust 4 to 6**

CONFIGURE DEVICE TYPE 'SBT\_TAPE' PARALLELISM 6 BACKUP TYPE TO BACKUPSET;

CONFIGURE DEFAULT DEVICE TYPE TO DISK; # default

CONFIGURE DEVICE TYPE DISK PARALLELISM 6 BACKUP TYPE TO COMPRESSED BACKUPSET;

nohup $BKPSCR/dbbackup\_rman ${ORACLE\_SID} &

nohup $BKPSCR/savebkp.ksh ${ORACLE\_SID} postupgora12102

DPPRD01 backup saved as DPPRD01\_sbk\_20160807\_07:15:20\_postupgora12102.rman

1. Upgrade the timezone version

Note 1585343.1

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102/dst/DBMS\_DST\_scriptsV1.9

Check for tstz columns

run => sqlplus / as sysdba

sql => set trimspool on

sql => spool timezone\_stats.out

sql => @countstarTSTZ.sql

sql => @countstatsTSTZ.sql

sql => exit

Run checker

run => sqlplus / as sysdba

sql => set trimspool on

sql => spool upgtzv\_check.log

sql => @upg\_tzv\_check.sql

sql => exit

Upgrade files (Note: The database will be bounced twice)

Disconnect all other connections to the database

run => sqlplus / as sysdba

sql => set trimspool on

sql => spool upgtzv\_apply.log

sql => @upg\_tzv\_apply.sql

sql => exit

A successful run will show at the end:

INFO: The RDBMS DST update is successfully finished.

INFO: Make sure to exit this sqlplus session.

INFO: Do not use it for timezone related selects.

Get version

SELECT version FROM v$timezone\_file;

Check database alert log for errors

view $BDUMP/alert\_${ORACLE\_SID}.log

1. Run the post fixup script

run => cd $HOME/cfgtoollogs/$ORACLE\_SID/preupgrade

sql => @postupgrade\_fixups.sql

If the following is returned:

Fixup Returned Information:

INFORMATION: --> Older Timezone in use

then Run

SELECT PROPERTY\_NAME, SUBSTR(property\_value, 1, 30) value

FROM DATABASE\_PROPERTIES  
 WHERE PROPERTY\_NAME LIKE 'DST\_%'

ORDER BY PROPERTY\_NAME;

1. **Upgrade Statistics Tables Created by the DBMS\_STATS Package**

run => sqlplus / as sysdba

select owner, table\_name

from dba\_tab\_cols

where column\_name in ('STATID','TYPE','CH1','CL1')

and owner != 'SYS'

group by owner,table\_name

having count(column\_name) = 4;

If rows returned, run below for each replacing owner and table\_name

EXECUTE DBMS\_STATS.UPGRADE\_STAT\_TABLE('OWNER','TABLE\_NAME');

DPDEVUG – No rows

DPDEMO91 – No rows

DPDEV91 – No rows

DPUAT91 – No rows

DPPRD01 – No rows

1. Alter all system, sysaux datafiles and last TEMP file to autoextend options as

prior to the upgrade

run => cd $HOME/aetna/admin/${ORACLE\_SID}/upgora12102

run => sqlplus / as sysdba

sql => @alter\_system\_datafiles\_autoextend\_off.sql

sql => exit

run => view alter\_system\_datafiles\_autoextend\_off.out 🡸 to ensure no

errors

1. Collect segment statistics after upgrading the database

run => cd ${HOME}/aetna/admin/${ORACLE\_SID}/upgora12102/stats

run => nohup run\_stats.ksh ${ORACLE\_SID} aftora12upgrade `pwd` &

🡸 sends email when complete

run => more \*aftora12upgrade\*

run => sqlplus / as sysdba

sql => @dbsize.sql aftora12upgrade

**Take a DBArtisan Report**

**DPDEMO91**

Total size: 78,195 MB

SYSTEM – Used 890.63 MB out of 2000 MB

SYSAUX – Used 661.19 MB out of 1000 MB

**DPDEV91**

Total size: 93,282 MB

SYSTEM – Used 1090 MB out of 1500 MB

SYSAUX – Used 1380 MB out of 6411 MB

**DPUAT91**

Total size: 99,429 MB

SYSTEM – Used 1092 MB

SYSAUX – Used 1181 MB

1. Fulfill ICR requirement and other security tasks

Starting 12c, the SELECT ANY DICTIONARY privilege no longer permits access to security sensitive data dictionary tables DEFAULT\_PWD$, ENC$, LINK$, USER$, USER\_HISTORY$, and XS$VERIFIERS. This change increases the default security of the database by not allowing access to a subset of data dictionary tables through the SELECT ANY DICTIONARY privilege.

grant select on sys.user$ to ICR\_AUDIT;

~~ALTER USER ORATIVOLI ACCOUNT UNLOCK~~

~~/~~

alter system disable restricted session;

1. To address bug described in (Doc ID 1676376.1) during Full DB export

cd ${HOME}/aetna/admin/${ORACLE\_SID}/upgora12102

run => sqlplus / as sysdba

sql => @exportgrants.sql

1. Update compatible in initialization file and bounce the database

run => vi $DBS/init${ORACLE\_SID}.ora

~~sec\_case\_sensitive\_logon = false~~

~~\_optimizer\_aggr\_groupby\_elim=false~~

~~\_optimizer\_reduce\_groupby\_key=false~~

**~~Required Interim Patches for the Oracle Database with PeopleSoft (Doc ID 1100831.1)~~**

~~\_optimizer\_skip\_scan\_enabled=FALSE~~

~~\_fix\_control='14033181:0'~~

\*.compatible='12.1.0'

# Note: 1909646.1

\*.\_ignore\_desc\_in\_index=TRUE

# Note: 2034610.1

\*.\_optimizer\_aggr\_groupby\_elim=false

\*.\_optimizer\_reduce\_groupby\_key=false

# Peoplesoft Requirement

\*.\_unnest\_subquery=false

# Bug 22044986

\_fix\_control='14033181:0'

# Bug 21293606

optimizer\_adaptive\_features=FALSE

#obsolete parameter

run => sqlplus / as sysdba

sql => select name from v$database;

sql => shutdown immediate;

sql => startup;

sql => show parameter compatible

#its ok. Ignore it.

**ORA-32004: obsolete or deprecated parameter(s) specified for RDBMS instance**

#Add 3rd control file

. ~/.profile DPPRD01

1. cd $ORACLE\_HOME/dbs

sqlplus / as sysdba

**~~#unless pfile still in use~~**

~~create pfile from spfile;~~

shutdown immediate;

2. mkdir /oraredologs/dpu232/DPPRD01

cd $ORACLE\_HOME/dbs

vi initDPPRD01.ora

control\_files = (/oraredologs/dpu230/DPPRD01/control1DPPRD01.ctl,/oraredologs/dpu231/DPPRD01/control2DPPRD01.ctl,/oraredologs/dpu232/DPPRD01/control3DPPRD01.ctl)

3. cp -p /oraredologs/dpu230/DPPRD01/control1DPPRD01.ctl /oraredologs/dpu232/DPPRD01/control3DPPRD01.ctl

4. cd $ORACLE\_HOME/dbs

~~#if spfile exists~~

~~rm -f spfileDPPRD01.ora~~

sqlplus / as sysdba

startup

show parameter control\_files

create spfile from pfile;

shutdown immediate;

startup

. ~/.profile DPPRD02

1. cd $ORACLE\_HOME/dbs

sqlplus / as sysdba

#unless pfile still in use

create pfile from spfile;

shutdown immediate;

2. mkdir /oraredologs/dpu230/DPPRD02

cd $ORACLE\_HOME/dbs

vi initDPPRD02.ora

control\_files = (/oraredologs/dpu232/DPPRD02/control1DPPRD02.ctl,/oraredologs/dpu233/DPPRD02/control2DPPRD02.ctl,/oraredologs/dpu230/DPPRD02/control3DPPRD02.ctl)

3. cp -p /oraredologs/dpu232/DPPRD02/control1DPPRD02.ctl /oraredologs/dpu230/DPPRD02/control3DPPRD02.ctl

4. cd $ORACLE\_HOME/dbs

#if spfile exists

rm -f spfileDPPRD02.ora

sqlplus / as sysdba

startup

show parameter control\_files

create spfile from pfile;

shutdown immediate;

startup

Check alertlog

view $BDUMP/alert\_${ORACLE\_SID}.log

1. ~~If need create SPFILE and restart DB~~. Should be in place from step above.

~~run => sqlplus / as sysdba~~

~~sql => create spfile from pfile;~~

~~sql => shutdown immediate;~~

~~sql => startup;~~

~~sql => show parameter spfile;~~

#Optional.. Just to make sure all there. Run this from DBArtisan

select \* from DBA\_REGISTRY\_SQLPATCH;

1. ~~Remove exit 0 from backup script~~

**~~For production only~~**

~~cd $BKPSCR~~

~~cp –p rman\_general\_purpose\_4upg.ksh rman\_general\_purpose\_oem.ksh~~

1. Log on to appropriate application server

old servers: XPSAPM2D, XPSAPM1Q, XPSAPW1Q, XPSAPM1P, XPSAPW1P

**new servers: xpsdppw2d, xpsdppm1q, xpsdppw1q, xpsdppm1p, xpsdppw1p**

vi /etc/oratab

change oracle home to new 12c

DPDEVUG

old - > DPDEVUG:/orahome/psu01/oracle/product/11.2.0.4/client\_64bit\_dp2:N

new - > DPDEVUG:/orahome/psu01/oracle/product/12.1.0.2/client\_64bit\_dp2:N

DPDEMO91

Old 🡪 DPDEMO91:/orahome/psu01/oracle/product/11.2.0.4/client\_64bit\_dp1:N

New 🡪 DPDEMO91:/orahome/psu01/oracle/product/12.1.0.2/client\_64bit\_dp1:N

DPDEV91

Old 🡪 DPDEV91:/orahome/psu01/oracle/product/11.2.0.4/client\_64bit\_dp1:N

New 🡪 DPDEV91:/orahome/psu01/oracle/product/12.1.0.2/client\_64bit\_dp1:N

DPUAT91

Old 🡪 DPUAT91:/orahome/psu01/oracle/product/11.2.0.4/client\_64bit\_dp1:N

New 🡪 DPUAT91:/orahome/psu01/oracle/product/12.1.0.2/client\_64bit\_dp1:N

DPPRD01

Old 🡪 DPPRD01:/orahome/psu01/oracle/product/11.2.0.4/client\_64bit\_dp1:N

New 🡪 DPPRD01:/orahome/psu01/oracle/product/12.1.0.2/client\_64bit\_dp1:N

DPPRD02

Old 🡪 DPPRD02:/orahome/psu01/oracle/product/11.2.0.4/client\_64bit\_dp1:N

New 🡪 DPPRD02:/orahome/psu01/oracle/product/12.1.0.2/client\_64bit\_dp1:N

#Confirm oracle environment.

. ~/.profile

?

Check sqlplus connectons from App server

sqlplus

system/xxx@DB

1. Make changes in auto\_import\_new.ksh to avoid bug (Doc ID 2021977.1)

A. Right before we invoke SQLplus do the following:

cp confirmdb.sql drop\_sysadm\_obj.sql

and comment (--) the host command

B. In Step 27 make following changes

Comment out-🡪#ERRCNT=`egrep 'error|ORA-|EXP-|IMP-|fatal' $LOGOUT | grep -c -v "No errors."`

Add -🡪ERRCNT=`egrep 'error|ORA-|EXP-|IMP-|fatal' $LOGOUT | egrep -v -c "No errors.|ORA-32004"`

1. Make changes in reapply\_spcl\_permissions.sql to avoid bug (Doc ID 2021977.1)

cd /u01/app/oracle/aetna/db\_admin/db\_DPPRD01/extsecur

Remove🡪 !chmod 640 reapply\_spcl\_permissions.out

cd ${HOME}/aetna/db\_mgmt/extsecur/

vi ext\_spcl\_permissions.sql

Remove🡪 !chmod 640 reapply\_spcl\_permissions.out

add to MONSCR/no\_worries file

WARNING: Heavy swapping observed on system in last 5 mins

PAGESIZE  AVAILABLE\_PAGES  EXPECTED\_PAGES  ALLOCATED\_PAGES  ERROR(s)

1. ~~Make following changes in Reporting Database DPDEVUG or DPPRD02~~

~~To avoid ORA-31693 and ORA-01031 during export Doc ID 1676411.1~~

~~sqlplus / as sysba~~

~~GRANT flashback ON SYS.KU$\_USER\_MAPPING\_VIEW to DPADMIN;~~

~~GRANT flashback ON SYS.FGA\_LOG$FOR\_EXPORT to DPADMIN;~~

~~GRANT flashback ON SYS.AUDTAB$TBS$FOR\_EXPORT to DPADMIN;~~

~~GRANT flashback ON SYS.DBA\_SENSITIVE\_DATA to DPADMIN;~~

~~GRANT flashback ON SYS.DBA\_TSDP\_POLICY\_PROTECTION to DPADMIN;~~

~~GRANT flashback ON SYS.NACL$\_ACE\_EXP to DPADMIN;~~

~~GRANT flashback ON SYS.NACL$\_HOST\_EXP to DPADMIN;~~

~~GRANT flashback ON SYS.NACL$\_WALLET\_EXP to DPADMIN;~~

1. Make following changes

sqlplus / as sysdba

exec dbms\_stats.set\_global\_prefs(pname=>'NO\_INVALIDATE',pvalue=>'FALSE');

select dbms\_stats.get\_param('NO\_INVALIDATE') from dual;

1. DISABLE AUTO STATS IF ENABLED

sqlplus / as sysdba

select client\_name,window\_group,status from dba\_autotask\_client;

-🡪if auto optimizer stats collection returns ENABLED do following

BEGIN

DBMS\_AUTO\_TASK\_ADMIN.DISABLE(

client\_name => 'auto optimizer stats collection',

operation => NULL,

window\_name => NULL);

END;

/

1. Reapply system permissions revoked as a result of 12c upgrade

See outputs to get list of users database\_users\_with\_sys\_access\_b4upgrade.out

Example:

grant select on sys.user$ to AEAUDIT;

grant select on sys.user$ to S058102;

1. Change OCM directories

CREATE OR REPLACE DIRECTORY ORACLE\_OCM\_CONFIG\_DIR AS '/orahome/u01/app/oracle/product/12.1.0.2/db\_1/ccr/state'

/

GRANT READ ON DIRECTORY ORACLE\_OCM\_CONFIG\_DIR TO ORACLE\_OCM

/

GRANT WRITE ON DIRECTORY ORACLE\_OCM\_CONFIG\_DIR TO ORACLE\_OCM

/

CREATE OR REPLACE DIRECTORY ORACLE\_OCM\_CONFIG\_DIR2 AS '/orahome/u01/app/oracle/product/12.1.0.2/db\_1/ccr/state'

/

GRANT READ ON DIRECTORY ORACLE\_OCM\_CONFIG\_DIR2 TO ORACLE\_OCM

/

GRANT WRITE ON DIRECTORY ORACLE\_OCM\_CONFIG\_DIR2 TO ORACLE\_OCM

/

1. REBUILD INDEXES PLACE HOLDER

. ~/.profile 🡸 respond DPPRD01

sqlplus / as sysdba

shutdown immeidate

exit

lsnrctl stop DPPRD01

. ~/.profile 🡸 respond DPPRD02

sqlplus / as sysdba

shutdown immeidate

exit

lsnrctl stop DPPRD02

ps -ef |grep pmon

ps -ef | grep tns

cd $ORACLE\_HOME/slibclean

export PATH=$PATH:$ORACLE\_HOME/OPatch

cd $HOME

cp -rp oraInventory oraInventory\_` date '+%Y%m%d'`\_b4\_12c\_patch\_22341739

cd /orastage/u177/Ora12102\_stage/22341739

opatch prereq CheckConflictAgainstOHWithDetail -ph ./

opatch apply

$ORACLE\_HOME/OPatch/opatch lsinventory -patch | grep "applied on" | sort

. ~/.profile 🡸 respond DPPRD01

sqlplus / as sysdba

startup

exit

lsnrctl start DPPRD01

. ~/.profile 🡸 respond DPPRD02

sqlplus / as sysdba

startup

exit

lsnrctl start DPPRD02

. ~/.profile 🡸 respond DPPRD01

sqlplus / as sysdba

select count(distinct index\_name)

from dba\_ind\_columns

where table\_owner = 'SYSADM'

and table\_name not like 'BIN$%'

and DESCEND = 'DESC';

9545

cd $HOME/tls/idx

Run the following script

create\_scripts.ksh $ORACLE\_SID

This will create a directory with the $ORACLE\_SID name under the current directory and will create some scripts and an output file.

To drop the DESC indexes run.

drop\_desc\_indexes.ksh $ORACLE\_SID

view ${ORACLE\_SID}/drop\_desc\_indexes\_${ORACLE\_SID}.out

view ${ORACLE\_SID}/${ORACLE\_SID}\_index\_info\_b4\_recreate.out

To create the ASC indexes run.

create\_asc\_indexes.ksh ${ORACLE\_SID}

cd $ORACLE\_SID

view create\_asc\_indexes\_${ORACLE\_SID}.out

view altix\_noparallel\_${ORACLE\_SID}.out

view ${ORACLE\_SID}\_index\_info\_aft\_recreate.out

sqlplus / as sysdba

@?/rdbms/admin/utlrp.sql

select count(\*)

from dba\_objects

where status = 'INVALID';

1. Revoke from PUBLIC

REVOKE FLASHBACK ON SYSADM.PS\_DEDUCTION\_TBL FROM PUBLIC;

REVOKE DEBUG ON SYSADM.PS\_DEDUCTION\_TBL FROM PUBLIC;

REVOKE QUERY REWRITE ON SYSADM.PS\_DEDUCTION\_TBL FROM PUBLIC;

REVOKE ON COMMIT REFRESH ON SYSADM.PS\_DEDUCTION\_TBL FROM PUBLIC;

REVOKE REFERENCES ON SYSADM.PS\_DEDUCTION\_TBL FROM PUBLIC;

REVOKE UPDATE ON SYSADM.PS\_DEDUCTION\_TBL FROM PUBLIC;

REVOKE SELECT ON SYSADM.PS\_DEDUCTION\_TBL FROM PUBLIC;

REVOKE INSERT ON SYSADM.PS\_DEDUCTION\_TBL FROM PUBLIC;

REVOKE INDEX ON SYSADM.PS\_DEDUCTION\_TBL FROM PUBLIC;

REVOKE DELETE ON SYSADM.PS\_DEDUCTION\_TBL FROM PUBLIC;

REVOKE ALTER ON SYSADM.PS\_DEDUCTION\_TBL FROM PUBLIC;

1. Take a full database backup –

Change TO DISK –depends on TSM status

Configure RMAN tape channels back to 4

rman

connect target /

connect catalog ID/PW@RCATPROD

CONFIGURE DEVICE TYPE 'SBT\_TAPE' PARALLELISM **4** BACKUP TYPE TO BACKUPSET;

CONFIGURE DEFAULT DEVICE TYPE TO 'SBT\_TAPE';

CONFIGURE DEVICE TYPE DISK PARALLELISM 4 BACKUP TYPE TO COMPRESSED BACKUPSET;

show all;

nohup $BKPSCR/dbbackup\_rman ${ORACLE\_SID} &

nohup $BKPSCR/savebkp.ksh ${ORACLE\_SID} postupgora12102\_tstz

Save backup

cd $BKPSCR

DPDEVUG -

DPDEVUG backup saved as DPDEVUG\_sbk\_20151210\_08:07:22\_postupgora12102\_tstz.rman

DPDEMO91 - DPDEMO91 backup saved as DPDEMO91\_sbk\_20160325\_11:20:35\_postupgora12102\_tstz.rman

DPDEV91 - DPDEV91 backup saved as DPDEV91\_sbk\_20160401\_10:37:00\_postupgora12102\_tstz.rman

DPUAT91 - DPUAT91 backup saved as DPUAT91\_sbk\_20160415\_10:02:07\_postupgora12102\_tstz.rman

DPPRD01 backup saved as DPPRD01\_sbk\_20160807\_09:11:38\_postupgora12102\_tstz.rman

1. For Production only:

Configure RMAN tape channels back to 4

rman

connect target /

connect catalog ID/PW@RCATPROD

CONFIGURE DEVICE TYPE 'SBT\_TAPE' PARALLELISM **4** BACKUP TYPE TO BACKUPSET;

CONFIGURE DEFAULT DEVICE TYPE TO 'SBT\_TAPE';

CONFIGURE DEVICE TYPE DISK PARALLELISM 4 BACKUP TYPE TO COMPRESSED BACKUPSET;

show all;

exit

1. Bounce DB and listener last time prior to release

sqlplus / as sysdba

shutdown immediate;

startup;

exit

lsncrtl stop DPPRD01

lsncrtl start DPPRD01

1. Change $ORACLE\_HOME directory for database and listener in OEM
2. Stop OEM Blackout

**Resume any suspended jobs in OEM**

1. Enable any disabled cron entries

cd $HOME/aetna/admin/$ORACLE\_SID/upgora12102

crontab crontab\_` date '+%Y%m%d'`\_b4ora12102upg\_${ORACLE\_SID}

crontab -e

ALTER USER BENENG ACCOUNT UNLOCK

/

ALTER USER SYSADM ACCOUNT UNLOCK

/

ALTER USER AEAUDIT ACCOUNT UNLOCK

/

1. Send an email to App admin that the database is now at 12.1.0.2 and let them know the OH to use on the db server and the app server

Recompile Cobols

Reconfigure Process scheduler

Start App Servers and Process Schedulers

1. Gather Fixed Objects Statistics with DBMS\_STATS

**A few days after upgrading Oracle Database**, a best practice is to

Gather fixed objects statistics with the

DBMS\_STATS.GATHER\_FIXED\_OBJECTS\_STATS

PL/SQL procedure. This can have a positive impact on overall database

performance. DBMS\_STATS.GATHER\_FIXED\_OBJECTS\_STATS also displays a

recommendation to remove all hidden or underscore parameters and events

from init.ora/spfile. Because of the transient nature of the x$ tables,

it is important that you gather fixed objects statistics when there is a

representative workload on the system. This may not always be feasible on

large systems due to additional resources needed to gather the statistics.

If you cannot do this during peak load, then you should do it after

the system has warmed up and the key types of fixed object tables have

been populated. To gather statistics for fixed objects, run the following

PL/SQL procedure:

SQL> execute dbms\_stats.gather\_fixed\_objects\_stats;

**Backout Procedures**

The below steps can be used for down grading the database from 12.1.0.2 to 11.2.0.4

The assumption here is compatible was changed and a database backup was taken at release level 12.1.0.2

1. Set Oracle Environment for database being downgraded.

cd $HOME

. .profile

**Set up Backout Variables**

1. Set variables for database being downgraded

UPGDB=name\_of\_db\_being\_upgraded 🡸 replace with database name

ORATAB=/etc/oratab

RCATDB=name\_of\_rman\_catalog\_for\_db\_being\_upgraded

REASON=b4dwngora12102 reason\_for\_RMAN\_catalog\_backup

1. Check for cron jobs for this database that need to be disabled during the downgrade:

cd $ORACLE\_BASE/aetna/admin/$ORACLE\_SID/upgora12102

crontab -l |grep $ORACLE\_SID|grep -v ^#

Save crontab and edit if changes are required

crontab –l > crontab\_` date '+%Y%m%d'`\_b4ora12102dwng\_${ORACLE\_SID}

crontab -e

1. Save and update oratab indicator to N to disable cron jobs.

cd $ORACLE\_BASE/aetna/admin/$ORACLE\_SID/upgora12102

cp –p ${ORATAB} oratab\_` date '+%Y%m%d'`\_b4ora12102dwng\_${ORACLE\_SID}

vi /etc/oratab

1. Have app admins shut down all application processes connected to the database

Verify all application processes disconnected:

sqlplus “/ as sysdba”

Select username from v$session;

exit

no rows with user ids should be returned

1. Make sure backup script will not fire

**For production only**

~~vi rman\_general\_purpose.ksh 🡸 Add exit 0 to top of script~~

1. Take RMAN archive log backup (if applicable)

cd $ORACLE\_BASE/aetna/admin/$ORACLE\_SID/upgora12102

~~nohup ${SCRIPTS}/backup/rman\_general\_purpose\_4upg.ksh ${ORACLE\_SID} ${RCATDB} archivelog\_backup\_tape.rman Y > /dev/null 2> /dev/null &~~

cd $HOME/aetna/scripts

backup\_archlogs.ksh $ORACLE\_SID

Email will be sent when complete

ls –lrt $BKPLOG/\* |tail -10 🡸 verify that there is an output log for the current time

view `ls -lrt $BKPLOG/\*log|awk '{print $9}'|tail -1` 🡸 view most recent backup log to verify successful completion

Copy log output to upgrade directory to identify when taken

cp –p `ls -rt ${BKPLOG}/\*archivelog\_backup\_tape.rman.log|tail -1` archivelog\_backup\_b4dwngora12102.log

1. Export RMAN catalog schema from RMAN catalog server (Be sure to change par file

content so previous

info is not overwritten. This was

performed above as part of the upgrade.

See steps above for details).

**Note:** If any RMAN configuration parameters were changed for the upgrade you may want to modify them for the period during the backout and modify them back later.

Need to run export as sysdba

exp \'/ as sysdba\' parfile=some\_parfile\_name.par

1. Collect RMAN catalog parameters before backout

rman\_catlgparms.ksh $UPGDB $RCATDB b4backout

1. Start grid control blackout period for database and listener being downgraded via OEM

Be sure to uncheck jobs running during blackout period box

1. Set environment and $ORACLE\_SID to instance being downgraded

**. $SETUPENV $UPGDB** 🡸 set up environment for the database being downgraded

1. Shutdown listener

***For listeners with only one database:***

*lsnrctl stop* ${LSNRNAME} 🡸replace listener name as appropriate

***For listeners listening for more than one database:***

*set environment for Oracle Home where listener is running – needs to be 12c*

*. $SETUPENV TNS11D 🡸 specify a SID that will set the OH to the listener home*

*cd $TNS\_ADMIN*

*LSNRNAME=*${LSNRNAME}🡸 replace with listener name

*~~cp –p listener.ora listener.ora\_b4${LSNRNAME}dwngrd\_`date +'%Y%m%d`~~*

*~~vi listener.ora 🡸 comment out the entries for the database SID being downgraded~~*

*~~add this parameter if not already in the listener.ora~~*

~~DYNAMIC\_REGISTRATION\_~~*~~PLANVIEWD~~*~~=OFF 🡸 replace with listener name~~

*lsnrctl status ${LSNRNAME} 🡸 see database SID in service list*

*lsnrctl stop* ${LSNRNAME}*;*

*Change $ORACLE\_HOME back to 11.2.0.3 location for database being downgraded*

*lsnrctl start* ${LSNRNAME}*; 🡸 see The command completed successfully*

*lsnrctl status ${LSNRNAME} 🡸 verify that the SID is not in the service list*

1. Set environment and $ORACLE\_SID to instance being downgraded

**. $SETUPENV $UPGDB** 🡸 set up environment for the database being downgraded

1. Shut down the database

sqlplus “/ as sysdba”

shutdown immediate

exit

1. Remove all applicable database files from the database server

data files

control Files

temp files

redo logs

ls –lrt /ora[drt]\*/\*/${ORACLE\_SID}/\* 🡸 verify list of database files that

will be removed

rm /ora[drt]\*/\*/${ORACLE\_SID}/\* 🡸 Takes several minutes on zLinux

1. Update entry in oratab to revert back to 11.2.0.4

vi /etc/oratab

1. Set Oracle environment to 11.2.0.4

cd $HOME

. .profile

1. Confirm $ORACLE\_HOME set to 11.2.0.4

echo $ORACLE\_HOME

**Note: Steps 19-23 are optional. RMAN catalog can stay at 12c**

1. Extract create user statement for RMAN catalog user from RMAN catalog database via **DBArtisan**
2. Drop RMAN catalog user from RMAN catalog database

sql => drop user xxx cascade;

1. Create RMAN catalog user in RMAN catalog database
2. uncompress the RMAN catalog dump file to be imported

gunzip some\_file\_name.gz

1. Import 11.2.0.3 RMAN catalog schema taken prior to upgrade to 12.1.0.2

Sample import parameter file would look something like:

buffer=409600 file=/u01/app/oracle/admin/RCATDEV/exports/export\_schema\_DBNAME\_b4upgora12c.dmp log=/u01/app/oracle/admin/RCATDEV/exports/import\_schema\_DBNAME\_b4upgora12c.log

ignore=Y

commit=Y

fromuser=DBNAME

touser=DBNAME

run => imp parfile=some\_file\_name.par

**Note**: This will invalidate a bunch of views

select object\_name from dba\_objects where owner = 'DBNAME' and status <> 'VALID'; 🡸 replace DBNAME with database being downgraded

The views will need to be recompiled.

e.g.

alter view DBNAME.RC\_UNUSABLE\_BACKUPFILE\_DETAILS compile;

To build the recompile commands run:

select 'alter '||object\_type||' '||owner||'.'||object\_name||' compile;'

from dba\_objects

where owner = 'XXX'

and object\_type <> ‘TYPE BODY’

and status <> 'VALID'; 🡸 replace XXX with database being downgraded

select 'alter TYPE '||owner||'.'||object\_name||' compile BODY;'

from dba\_objects

where owner = 'XXX'

and object\_type = 'TYPE BODY'

and status <> 'VALID'; 🡸 replace XXX with database being downgraded

**Note:** Restoring an RMAN catalog that does not include backups taken after the catalog was exported will result in orphan files that the TSM catalog will be aware of but the RMAN catalog will not. To clean up the TSM files a TDPOSYNC is required.

On Planview Database Server:

1. Start listener

***For listeners with only one database:***

*lsnrctl start* ${LSNRNAME} 🡸replace listener name as appropriate

***For listeners listening for more than one database:***

*set environment for Oracle Home where listener is running – needs to be 12c*

*. $SETUPENV TNS11D 🡸 specify a SID that will set the OH to the listener home*

*cd $TNS\_ADMIN*

*vi listener.ora 🡸 uncomment the entries for the database SID being downgraded and change oracle home to match the oratab oracle home for the database*

*add this parameter if not already in the listener.ora*

~~DYNAMIC\_REGISTRATION\_~~*~~PLANVIEWD~~*~~=OFF 🡸 replace with listener name~~

*lsnrctl status ${LSNRNAME} 🡸 see database SID not in service list*

*lsnrctl stop* ${LSNRNAME}*; lsnrctl start* ${LSNRNAME}*; 🡸 see The command completed successfully*

*lsnrctl status ${LSNRNAME} 🡸 verify that the SID is not in the service list*

1. Set environment and $ORACLE\_SID to instance being downgraded

**. $SETUPENV $UPGDB** 🡸 set up environment for the database being downgraded

1. Rename alertlog

cd $BDUMP

mv alert\_${ORACLE\_SID}.log alert\_${ORACLE\_SID}.log\_`date +%m:%d:%Y:Time:%H:%M:%S`

1. Restore database backup taken prior to upgrade to 12.1.0.2

export NLS\_DATE\_FORMAT='YYYY-MM-DD HH24:MI:SS'

See RMAN commands in saved file or database backup log

1. Review alert log for errors

view $BDUMP/alert\_$ORACLE\_SID.log

1. Confirm database is in archivelog mode (if applicable)

select name, log\_mode from v$database;

1. Collect RMAN catalog parameters after backout

cd $ORACLE\_BASE/aetna/admin/$ORACLE\_SID/upgora12102

rman\_catlgparms.ksh PLNVD001 $RCATDB postbackout

1. Remove obsolete backups prior to running crosscheck further below

run => rman

rman => connect target /

rman => connect catalog $ORACLE\_SID/$ORACLE\_SIDnamr@$RCATDB

rman => report obsolete;

rman => delete noprompt obsolete;

1. Crosscheck to identify and fix any issues

rman

connect target /

connect catalog ID/PW@RCATDEV or RCATPROD 🡸 replace ID and PW and catalog

crosscheck backup;

if encounter:

**validation failed for archived log** 🡸 in backup log

**or**

**crosschecked backup piece: found to be 'EXPIRED'**

then run (may want to note file(s) to determine the sequence of events)

To clean up entries marked as expired:

delete noprompt expired backup;

1. Confirm HeartBeat Timestamp is in the general time frame of the restore point

export NLS\_DATE\_FORMAT='YYYY-MM-DD HH24:MI:SS'

sqlplus /

select \* from aetnadba.rman\_heartbeat order by timestmp;

exit

1. Change $ORACLE\_HOME directory for database and listener in OEM
2. Stop Grid Control Blackout Period via OEM
3. Set environment and $ORACLE\_SID to instance being downgraded

**. $SETUPENV $UPGDB** 🡸 set up environment for the database being downgraded

1. Take a hot backup of database to ensure recoverability

~~cd $ORACLE\_BASE/aetna/admin/$ORACLE\_SID/upgora12102~~

~~nohup ${SCRIPTS}/backup/rman\_general\_purpose\_4upg.ksh ${ORACLE\_SID} ${RCATDB} incremental\_level0\_backup\_tape.rman Y &~~

cd $HOME

nohup $BKPSCR/dbbackup\_rman $ORACLE\_SID &

May encounter errors like

RMAN-03009: failure of Control File Autobackup command on ORA\_SBT\_TAPE\_1

channel at 04/17/2015 16:02:21

ORA-19506: failed to create sequential file, name="c-3762674548-20150417-

ff\_PLNVD001", parms=""

ORA-27027: sbtremove2 returned error

ORA-19511: Error received from media manager layer, error text:

ANU2614E Invalid sequence of function calls to Data Protection for Oracle

If errors encountered, run another backup to ensure all is well

1. For Production only:

Confirm following is set

rman

connect target /

connect catalog ID/PW@RCATPROD

CONFIGURE DEVICE TYPE 'SBT\_TAPE' PARALLELISM **4** BACKUP TYPE TO BACKUPSET;

show all;

exit

1. Unsuspend backup job where applicable

**For production only**

cd $SCRIPTS/backup

cp –p rman\_general\_purpose\_4upg.ksh rman\_general\_purpose\_oem.ksh 🡸 To remove exit 0 from top of script

1. **Turn on cron for this database**

cd $ORACLE\_BASE/aetna/admin/$ORACLE\_SID/upgora12102

crontab crontab\_` date '+%Y%m%d'`\_b4ora11gdwng

crontab –e 🡸 verify the crontab for this database

To check for cron jobs not disabled for this database:

crontab -l |grep $ORACLE\_SID|grep -v ^#

To check for cron jobs for all databases not disabled:

crontab -l |grep -v ^#

1. **Confirm startup indicator set to Y in /etc/oratab for this database**