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| **Roll Forward Physical Standby Using RMAN Incremental Backup in Single Command (Doc ID 2431311.1)**  **Example:**  **HEPYDEV2\_xhepydbw02d - Primary database**  **HEPYDEV2\_xhepydbw04d - Physical standby database**  **Simulate gap by removing some archivelog from primary.**  **From HEPYDEV2\_xhepydbw02d - Primary database**  dgmgrl /  edit database 'HEPYDEV2\_xhepydbw02d' set state='TRANSPORT-OFF';  show database verbose 'HEPYDEV2\_xhepydbw02d';  sqlplus / as sysdba  alter system switch logfile;  . oraenv  +ASM  asmcmd  cd +ARCH/HEPYDEV2\_XHEPYDBW02D/ARCHIVELOG/2025\_01\_03  ls  ARCHIVELOG UNPROT COARSE JAN 03 13:00:00 Y none => thread\_1\_seq\_63546.260.1189432263  ARCHIVELOG UNPROT COARSE JAN 03 13:00:00 Y none => thread\_1\_seq\_63547.258.1189432277  cp thread\_1\_seq\_63546.260.1189432263 thread\_1\_seq\_63546.260.1189432263.BKP\_1  cp thread\_1\_seq\_63547.258.1189432277 thread\_1\_seq\_63547.258.1189432277.BKP\_1  rm -f thread\_1\_seq\_63546.260.1189432263  rm -f thread\_1\_seq\_63547.258.1189432277  dgmgrl /  edit database 'HEPYDEV2\_xhepydbw02d' set state='TRANSPORT-ON';  show database verbose 'HEPYDEV2\_xhepydbw02d';  **From HEPYDEV2\_xhepydbw04d - Physical standby database**  **Should report some gap**  select \* from v$archive\_gap;  dgmgrl /  show configuration | [[To Bottom](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=459773996888718&id=2431311.1&_adf.ctrl-state=1a49bi251o_109)To Bottom](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=459773996888718&id=2431311.1&_adf.ctrl-state=1a49bi251o_109) |  |



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| **In this Document**   |  |  | | --- | --- | |  | [Goal](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=459773996888718&id=2431311.1&_adf.ctrl-state=1a49bi251o_109#GOAL) |  |  |  | | --- | --- | |  | [Solution](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=459773996888718&id=2431311.1&_adf.ctrl-state=1a49bi251o_109#FIX) |  |  |  | | --- | --- | |  | [References](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=459773996888718&id=2431311.1&_adf.ctrl-state=1a49bi251o_109#REF) |   **Applies to:**  Oracle Database Cloud Schema Service - Version N/A and later Oracle Database Cloud Exadata Service - Version N/A and later Oracle Database Cloud Service - Version N/A and later Gen 1 Exadata Cloud at Customer (Oracle Exadata Database Cloud Machine) - Version N/A and later Oracle Database Exadata Express Cloud Service - Version N/A and later Information in this document applies to any platform.  **Goal**  **NOTE: In the images and/or the document content below, the user information and environment data used represents fictitious data from the** **Oracle sample schema(s), Public Documentation delivered with an Oracle database product or other training material.  Any similarity to actual** **environments, actual persons, living or dead, is purely coincidental and not intended in any manner.**  For the purposes of this document, the following fictitious environment is used as an example to describe the procedure:  Standby Name: SBY180 Primary Name:  PRM180 Directory Name:  /u01/app/oracle and all sub-directories    **Note, this procedure is version dependent.  The procedure described in this note is for Oracle 18c and higher.   For 11g see the following procedure:** **11g Steps to perform for Rolling Forward a Physical Standby Database using RMAN Incremental Backup. (**[**Doc ID 836986.1**](https://support.oracle.com/epmos/faces/DocumentDisplay?parent=DOCUMENT&sourceId=2431311.1&id=836986.1)**)  For 12.1 and 12.2, see the following procedure:** **12c How to Roll Forward a Standby Database Using Recover Database From Service (**[**Doc ID 2850185.1**](https://support.oracle.com/epmos/faces/DocumentDisplay?parent=DOCUMENT&sourceId=2431311.1&id=2850185.1)**)**   Typically, when rolling forward a physical standby database using primary incremental backup, multiple steps are required:   1. Identify the Start SCN on Standby for performing incremental backup on primary 2. Perform incremental backup on primary with FROM SCN clause 3. Move the backup-pieces from primary to standby 4. Catalog the backup-piece on Standby 5. Perform recovery on standby using recover database noredo 6. Refresh standby controlfile again from primary   Starting from 12.1, we could use "RECOVER DATABASE FROM SERVICE"command which will automate a few steps like performing incremental backup on primary, transfer the backup-pieces to standby over network and perform recovery on standby. However, we still had to manually refresh the standby controlfile and manually restore newly-added datafiles. These steps required manual efforts and are error prone especially when standby files are physically located in a path different to that of primary.  Starting with 18.1, we can use a single command to refresh the standby with changes made on primary:  RMAN> RECOVER STANDBY DATABASE FROM SERVICE primary\_connect\_identifier;  This command will internally keep track of standby file locations, refresh standby controlfile from primary, update the new standby controlfile with standby file names, perform incremental backup on primary, transfer the backup-pieces over network to standby and perform recovery on standby  **Solution**  1. To refresh the standby, ensure that managed recovery is stopped on standby:  SQL> recover managed standby database cancel;  NOTE: If you do not stop managed recovery, you will get RMAN-05150 error during execution:  RMAN> RECOVER STANDBY DATABASE FROM SERVICE PRM180;  RMAN-03090: Starting recover at 03-AUG-18  RMAN-00571: ===========================================================  RMAN-00569: =============== ERROR MESSAGE STACK FOLLOWS ===============  RMAN-00571: ===========================================================  RMAN-03002: failure of recover command at 08/03/2018 12:33:05  RMAN-05150: Managed Recovery Process must be disabled before running RECOVER STANDBY DATABASE.  NOTE: If using dataguard broker, ensure to stop recovery using broker:  DGMGRL> EDIT DATABASE '<standby\_db>' SET STATE='APPLY-OFF';    **From HEPYDEV2\_xhepydbw04d - Physical standby database**  dgmgrl /  edit database 'HEPYDEV2\_xhepydbw04d' set state='APPLY-OFF';  show database verbose 'HEPYDEV2\_xhepydbw04d';  2.If the standby is RAC with more than one instance, make sure only the instance from which recover standby command will be executed is mounted and all other instances are shutdown to avoid RMAN-05157  Starting recover at 22-FEB-21  RMAN-00571: ===========================================================  RMAN-00569: =============== ERROR MESSAGE STACK FOLLOWS ===============  RMAN-00571: ===========================================================  RMAN-03002: failure of recover command at 02/22/2021 15:18:54  RMAN-05157: The database must not be mounted on any other instance for RECOVER STANDBY DATABASE command.  Starting recover at 22-FEB-21  RMAN-00571: ===========================================================  RMAN-00569: =============== ERROR MESSAGE STACK FOLLOWS ===============  RMAN-00571: ===========================================================  RMAN-03002: failure of recover command at 02/22/2021 15:18:54  RMAN-05157: The database must not be mounted on any other instance for RECOVER STANDBY DATABASE command.  3.Ensure that Oracle Net connectivity is established between the physical standby database and the primary database by adding an entry corresponding to the primary database in the tnsnames.ora file of the physical standby database. In below example, PRM180 is the connect identifier for primary.  **From HEPYDEV2\_xhepydbw02d - Primary database**  tnsping HEPYDEV2\_xhepydbw04d  TNS Ping Utility for Linux: Version 19.0.0.0.0 - Production on 27-DEC-2024 08:17:29  Copyright (c) 1997, 2023, Oracle. All rights reserved.  Used parameter files:  /oradb/app/oracle/product/19.22.0/db\_1/network/admin/sqlnet.ora  Used TNSNAMES adapter to resolve the alias  Attempting to contact (DESCRIPTION = (ADDRESS = (PROTOCOL = IPC)(HOST = xhepydbw04d)(KEY = HEPYDEV2)) (ADDRESS = (PROTOCOL = TCP)(HOS)  OK (0 msec)  **From HEPYDEV2\_xhepydbw04d - Physical standby database**  tnsping HEPYDEV2\_xhepydbw02d  TNS Ping Utility for Linux: Version 19.0.0.0.0 - Production on 27-DEC-2024 08:18:23  Copyright (c) 1997, 2023, Oracle. All rights reserved.  Used parameter files:  /oradb/app/oracle/product/19.22.0/db\_1/network/admin/sqlnet.ora  Used TNSNAMES adapter to resolve the alias  Attempting to contact (DESCRIPTION = (ADDRESS = (PROTOCOL = IPC)(HOST = xhepydbw02d)(KEY = HEPYDEV2)) (ADDRESS = (PROTOCOL = TCP)(HOS)  OK (10 msec)  4. Connect RMAN to standby as target and run "RECOVER STANDBY DATABASE FROM SERVICE" command. Find below an example run for the command:  $ export ORACLE\_SID=SBY180 $ rman target /   RMAN> RECOVER STANDBY DATABASE FROM SERVICE PRM180;  RMAN-03090: Starting recover at 03-AUG-18 RMAN-06009: using target database control file instead of recovery catalog RMAN-06196: Oracle instance started  Total System Global Area 671086904 bytes  Fixed Size 8661304 bytes Variable Size 188743680 bytes Database Buffers 465567744 bytes Redo Buffers 8114176 bytes  RMAN-08161: contents of Memory Script: { restore standby controlfile from service 'PRM180'; alter database mount standby database; } RMAN-08162: executing Memory Script  RMAN-03090: Starting restore at 03-AUG-18 RMAN-08030: allocated channel: ORA\_DISK\_1 RMAN-08500: channel ORA\_DISK\_1: SID=141 device type=DISK  RMAN-08016: channel ORA\_DISK\_1: starting datafile backup set restore RMAN-08169: channel ORA\_DISK\_1: using network backup set from service PRM180 RMAN-08021: channel ORA\_DISK\_1: restoring control file RMAN-08180: channel ORA\_DISK\_1: restore complete, elapsed time: 00:00:01 RMAN-08505: output file name=/u01/app/oracle/oradata/SBY180/control01.ctl RMAN-03091: Finished restore at 03-AUG-18  RMAN-08031: released channel: ORA\_DISK\_1 RMAN-06986: Statement processed RMAN-06958: Executing: alter system set standby\_file\_management=manual  RMAN-08161: contents of Memory Script: { recover database from service 'PRM180'; } RMAN-08162: executing Memory Script  RMAN-03090: Starting recover at 03-AUG-18 RMAN-08030: allocated channel: ORA\_DISK\_1 RMAN-08500: channel ORA\_DISK\_1: SID=149 device type=DISK RMAN-06179: datafile 4 not processed because file is read-only RMAN-08039: channel ORA\_DISK\_1: starting incremental datafile backup set restore RMAN-08169: channel ORA\_DISK\_1: using network backup set from service PRM180 RMAN-08509: destination for restore of datafile 00001: /u01/app/oracle/oradata/SBY180/system01.dbf RMAN-08180: channel ORA\_DISK\_1: restore complete, elapsed time: 00:00:03 RMAN-08039: channel ORA\_DISK\_1: starting incremental datafile backup set restore RMAN-08169: channel ORA\_DISK\_1: using network backup set from service PRM180 RMAN-08509: destination for restore of datafile 00002: /u01/app/oracle/oradata/SBY180/sysaux01.dbf RMAN-08180: channel ORA\_DISK\_1: restore complete, elapsed time: 00:00:07 RMAN-08039: channel ORA\_DISK\_1: starting incremental datafile backup set restore RMAN-08169: channel ORA\_DISK\_1: using network backup set from service PRM180 RMAN-08509: destination for restore of datafile 00003: /u01/app/oracle/oradata/SBY180/undotbs01.dbf RMAN-08180: channel ORA\_DISK\_1: restore complete, elapsed time: 00:00:03  RMAN-08054: starting media recovery  RMAN-08181: media recovery complete, elapsed time: 00:00:00 RMAN-03091: Finished recover at 03-AUG-18 RMAN-06958: Executing: alter system set standby\_file\_management=auto RMAN-03091: Finished recover at 03-AUG-18  **From HEPYDEV2\_xhepydbw04d - Physical standby database**  rman target /  **RECOVER STANDBY DATABASE FROM SERVICE HEPYDEV2\_xhepydbw02d;**  !! Need to test this command  **rman target /**  **run{**  **allocate channel t1 type disk;**  **allocate channel t2 type disk;**  **allocate channel t3 type disk;**  **allocate channel t4 type disk;**  **allocate channel t5 type disk;**  **allocate channel t6 type disk;**  **recover database using compressed backupset section size 10G from service 'HEPYDEV2\_xhepydbw02d';**  **}**  NOTE:  If you face errors about SBT channels during the process, ensure that below is set on Primary (since the controlfile is automatically refreshed from Primary)  RMAN> CONFIGURE DEFAULT DEVICE TYPE TO DISK; RMAN> CONFIGURE CHANNEL DEVICE TYPE SBT CLEAR;  **From HEPYDEV2\_xhepydbw02d - Primary database**  rmanc  ***SPOOL LOG TO*** /tmp/RMAN\_settings.log  ***show all;***  ***spool off***  CONFIGURE DEFAULT DEVICE TYPE TO DISK;  CONFIGURE CHANNEL DEVICE TYPE SBT\_TAPE CLEAR;  CONFIGURE DEVICE TYPE SBT\_TAPE CLEAR;  If your disk channels on primary are configured with CONNECT clause, then, the disk channel allocation won't work on standby. In that case, we need to clear the configuration of DISK channels also on Primary:  RMAN> CONFIGURE CHANNEL DEVICE TYPE DISK CLEAR;  5. After the command is successfully completed, we can clear the online / standby redo logs before starting MRP.  SQL> begin for log\_cur in ( select group# group\_no from v$log ) loop execute immediate 'alter database clear logfile group '||log\_cur.group\_no; end loop; end; /  SQL> begin for log\_cur in ( select group# group\_no from v$standby\_log ) loop execute immediate 'alter database clear logfile group '||log\_cur.group\_no; end loop; end; |

**From HEPYDEV2\_xhepydbw04d - Physical standby database**

begin

for log\_cur in ( select group# group\_no from v$log )

loop

execute immediate 'alter database clear logfile group '||log\_cur.group\_no;

end loop;

end;

/

begin

for log\_cur in ( select group# group\_no from v$standby\_log )

loop

execute immediate 'alter database clear logfile group '||log\_cur.group\_no;

end loop;

end;

/

**From HEPYDEV2\_xhepydbw04d - Physical standby database**

dgmgrl /

edit database 'HEPYDEV2\_xhepydbw04d' set state='APPLY-ON';

show database verbose 'HEPYDEV2\_xhepydbw04d';

**From HEPYDEV2\_xhepydbw02d - Primary database**

sqlplus / as sysdba

alter system switch logfile;

**## update rman configuration back to original**

## get it from /tmp/RMAN\_settings.log

rmanc

CONFIGURE DEFAULT DEVICE TYPE TO 'SBT\_TAPE';

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

CONFIGURE CHANNEL DEVICE TYPE 'SBT\_TAPE' PARMS 'BLKSIZE=1048576,SBT\_LIBRARY=/opt/dpsapps/rmanagent/lib/libddobk.so,ENV=(STORAGE\_UNITora\_dev\_boost0821,BACKUP\_HOST=winpdd0821\_v20.aetna.com,ORACLE\_HOME=/oradb/app/oracle/admin/HEPYDEV2/oracle\_home)' FORMAT './%d/bk\_%\_%I\_%T/%U';

CONFIGURE ARCHIVELOG BACKUP COPIES FOR DEVICE TYPE SBT\_TAPE TO 1; # default

**Things to watch out after…**

### Archivelog backups could be failing because of missing archivelogs.

### Run following on Primary to resolve the issue:

crosscheck archivelog all;

### Double check Standby status

### Run following from either Primary or Standby to make sure Configuration status showing SUCCESS.

dgmgrl /

show configuration

Configuration - HEPYDEV2

Protection Mode: MaxPerformance

Members:

HEPYDEV2\_xhepydbw02d - Primary database

HEPYDEV2\_xhepydbw04d - Physical standby database

Fast-Start Failover: Disabled

Configuration Status:

**SUCCESS** (status updated 24 seconds ago)