**Incremental Rollfoward in Standby Using 19c Single command RECOVER STANDBY DATABASE FROM SERVICE**

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# **Step 1: Check the sync status of the primary and standby site**

**@Primary-**

set feedback off

set serveroutput on size 1000000

set linesize 512

set trimspool on

begin

for x in ( select primary\_current,Standby\_applied, (a.primary\_current - b.Standby\_applied) archive\_gap, DB\_UNIQUE\_NAME, name from

(select max(SEQUENCE#) as primary\_current from v$archived\_log where dest\_id=1) a,

(select max(SEQUENCE#) as Standby\_applied from v$archived\_log where dest\_id=2 and applied='YES') b,

(select DB\_UNIQUE\_NAME from v$archive\_dest where dest\_id=2) c,

(select name from v$database) d )

loop

dbms\_output.put\_line( CHR(13) || CHR(10));

dbms\_output.put\_line( 'Current archivelog on primary '|| x.name ||' : '||x.primary\_current);

dbms\_output.put\_line( 'Applied archivelog on standby '|| upper(x.db\_unique\_name) ||' : '||x.Standby\_applied);

dbms\_output.put\_line( 'Total archive gap : '||x.archive\_gap);

dbms\_output.put\_line( CHR(13) || CHR(10));

end loop;

end;

/

@Standby-

SELECT al.thrd "Thread", almax "Last Seq Received", lhmax "Last Seq Applied", (almax -lhmax ) diff FROM (select thread# thrd, MAX(sequence#) almax FROM v$archived\_log

WHERE resetlogs\_change#=(SELECT resetlogs\_change# FROM v$database) GROUP BY thread#) al, (SELECT thread# thrd, MAX(sequence#) lhmax FROM v$log\_history

WHERE resetlogs\_change#=(SELECT resetlogs\_change# FROM v$database) GROUP BY thread#) lh WHERE al.thrd = lh.thrd;

**Note: We are assuming that standby has huge archivelog gap.**

# **Step 2: Stop the MRP on the Standby database**

SQL> ALTER DATABASE RECOVER MANAGED STANDBY DATABASE CANCEL;

OR: If we are using DGMGRL then follow below steps to stop MRPon the Standby DB

$ dgmgrl /

DGMGRL for Linux: Release 19.0.0.0.0 - Production on Tue May 21 12:18:10 2024

Version 19.22.0.0.0

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Welcome to DGMGRL, type "help" for information.

Connected to "hnoemprd"

Connected as SYSDG.

DGMGRL> show configuration;

Configuration - hnoemprd.ad.corpnet4.net

Protection Mode: MaxAvailability

Members:

hnoemprd - Primary database

hnoemstand - Physical standby database

Fast-Start Failover: Disabled

Configuration Status:

SUCCESS (status updated 57 seconds ago)

DGMGRL> show database hnoemstand;

Database - hnoemstand

Role: PHYSICAL STANDBY

Intended State: APPLY-ON

Transport Lag: 0 seconds (computed 1 second ago)

Apply Lag: 0 seconds (computed 1 second ago)

Average Apply Rate: 36.00 KByte/s

Real Time Query: OFF

Instance(s):

hnoemprd

Database Status:

SUCCESS

DGMGRL> edit database hnoemstand set state=TRANSPORT-OFF;

DGMGRL> show database hnoemstand;

Database - hnoemstand

Role: PHYSICAL STANDBY

Intended State: APPLY-OFF

Transport Lag: 0 seconds (computed 1 second ago)

Apply Lag: 0 seconds (computed 1 second ago)

Average Apply Rate: 36.00 KByte/s

Real Time Query: OFF

Instance(s):

hnoemprd

Database Status:

SUCCESS

# **Step 3: Verify MRP process stopped or not from OS**

$ ps -ef|grep mrp

oracle 18247 4016 0 12:22 pts/1 00:00:00 grep --color=auto mrp

$

# **Step 4: Prepare RMAN script for Incremental Rollfoward in Standby Using Service**

cat restore\_inc.rcv

connect target ;

run

{

allocate channel c1 device type disk;

allocate channel c2 device type disk;

allocate channel c3 device type disk;

allocate channel c4 device type disk;

allocate channel c5 device type disk;

allocate channel c6 device type disk;

allocate channel c7 device type disk;

allocate channel c8 device type disk;

RECOVER STANDBY DATABASE FROM SERVICE hnoemprd; ##  '<primary service>'

release channel c1;

release channel c2;

release channel c3;

release channel c4;

release channel c5;

release channel c6;

release channel c7;

release channel c8;

}

# **Step 5: Run RMAN script in nohup**

$ nohup rman cmdfile=restore\_inc.rcv log=recover.log &

# **Step 6: Check Archivelog gap from Standby DB, after completion**

SELECT al.thrd "Thread", almax "Last Seq Received", lhmax "Last Seq Applied", (almax -lhmax ) diff FROM (select thread# thrd, MAX(sequence#) almax FROM v$archived\_log

WHERE resetlogs\_change#=(SELECT resetlogs\_change# FROM v$database) GROUP BY thread#) al, (SELECT thread# thrd, MAX(sequence#) lhmax FROM v$log\_history

WHERE resetlogs\_change#=(SELECT resetlogs\_change# FROM v$database) GROUP BY thread#) lh WHERE al.thrd = lh.thrd;

**Note: Gap should be resolve after completion incremental roll-forwarding**

# **Step 7: Start MRP on Standby Database or From DGMGRL**

SQL> ALTER DATABASE RECOVER MANAGED STANDBY DATABASE DISCONNECT FROM SESSION;

@DGMGRL:

$ dgmgrl /

DGMGRL for Linux: Release 19.0.0.0.0 - Production on Tue May 21 12:18:10 2024

Version 19.22.0.0.0

Copyright (c) 1982, 2019, Oracle and/or its affiliates. All rights reserved.

Welcome to DGMGRL, type "help" for information.

Connected to "hnoemprd"

Connected as SYSDG.

DGMGRL> show configuration;

Configuration - hnoemprd.ad.corpnet4.net

Protection Mode: MaxAvailability

Members:

hnoemprd - Primary database

hnoemstand - Physical standby database

Fast-Start Failover: Disabled

Configuration Status:

SUCCESS (status updated 57 seconds ago)

DGMGRL> show database hnoemstand;

Database - hnoemstand

Role: PHYSICAL STANDBY

Intended State: APPLY-OFF

Transport Lag: 0 seconds (computed 1 second ago)

Apply Lag: 0 seconds (computed 1 second ago)

Average Apply Rate: 36.00 KByte/s

Real Time Query: OFF

Instance(s):

hnoemprd

Database Status:

SUCCESS

DGMGRL> edit database hnoemstand set state=TRANSPORT-ON;

DGMGRL> show database hnoemstand;

Database - hnoemstand

Role: PHYSICAL STANDBY

Intended State: APPLY-ON

Transport Lag: 0 seconds (computed 1 second ago)

Apply Lag: 0 seconds (computed 1 second ago)

Average Apply Rate: 36.00 KByte/s

Real Time Query: OFF

Instance(s):

hnoemprd

Database Status:

SUCCESS

DGMGRL>

# Reference Log:

$ cat recover.log

Recovery Manager: Release 19.0.0.0.0 - Production on Tue May 21 11:23:07 2024

Version 19.22.0.0.0

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RMAN> connect target \*

2> run

3> {

4> allocate channel c1 device type disk;

5> allocate channel c2 device type disk;

6> allocate channel c3 device type disk;

7> allocate channel c4 device type disk;

8> allocate channel c5 device type disk;

9> allocate channel c6 device type disk;

10> allocate channel c7 device type disk;

11> allocate channel c8 device type disk;

12> RECOVER STANDBY DATABASE FROM SERVICE hnoemprd;

13> release channel c1;

14> release channel c2;

15> release channel c3;

16> release channel c4;

17> release channel c5;

18> release channel c6;

19> release channel c7;

20> release channel c8;

21> }

22>

connected to target database: HNOEMPRD (DBID=4115269603, not open)

using target database control file instead of recovery catalog

allocated channel: c1

channel c1: SID=624 device type=DISK

allocated channel: c2

channel c2: SID=8 device type=DISK

allocated channel: c3

channel c3: SID=132 device type=DISK

allocated channel: c4

channel c4: SID=869 device type=DISK

allocated channel: c5

channel c5: SID=9 device type=DISK

allocated channel: c6

channel c6: SID=133 device type=DISK

allocated channel: c7

channel c7: SID=255 device type=DISK

allocated channel: c8

channel c8: SID=379 device type=DISK

Starting recover at 21-MAY-24

Oracle instance started

Total System Global Area 10032773344 bytes

Fixed Size 13682912 bytes

Variable Size 1543503872 bytes

Database Buffers 8455716864 bytes

Redo Buffers 19869696 bytes

contents of Memory Script:

{

restore standby controlfile from service 'hnoemprd';

alter database mount standby database;

}

executing Memory Script

Starting restore at 21-MAY-24

allocated channel: ORA\_DISK\_1

channel ORA\_DISK\_1: SID=743 device type=DISK

channel ORA\_DISK\_1: starting datafile backup set restore

channel ORA\_DISK\_1: using network backup set from service hnoemprd

channel ORA\_DISK\_1: restoring control file

channel ORA\_DISK\_1: restore complete, elapsed time: 00:00:01

output file name=/u02/app/omr/oradata/HNOEMPRD/control01.ctl

output file name=/u02/app/omr/oradata/HNOEMPRD/control02.ctl

Finished restore at 21-MAY-24

released channel: ORA\_DISK\_1

Statement processed

Executing: alter database rename file '/u02/app/omr/oradata/HNOEMPRD/redo04.log' to '/u03/app/oracle/product/19.0.0/dbhome/dbs/broken0'

Executing: alter database rename file '/u02/app/omr/oradata/HNOEMPRD/redo05.log' to '/u03/app/oracle/product/19.0.0/dbhome/dbs/broken1'

Executing: alter database rename file '/u02/app/omr/oradata/HNOEMPRD/redo06.log' to '/u03/app/oracle/product/19.0.0/dbhome/dbs/broken2'

Executing: alter database rename file '/u02/app/omr/oradata/HNOEMPRD/redo07.log' to '/u03/app/oracle/product/19.0.0/dbhome/dbs/broken3'

Executing: alter database rename file '/u02/app/omr/oradata/HNOEMPRD/redo08.log' to '/u03/app/oracle/product/19.0.0/dbhome/dbs/broken4'

Executing: alter database rename file '/u02/app/omr/oradata/HNOEMPRD/redo09.log' to '/u03/app/oracle/product/19.0.0/dbhome/dbs/broken5'

contents of Memory Script:

{

recover database from service 'hnoemprd';

}

executing Memory Script

Starting recover at 21-MAY-24

Starting implicit crosscheck backup at 21-MAY-24

allocated channel: ORA\_DISK\_1

channel ORA\_DISK\_1: SID=743 device type=DISK

allocated channel: ORA\_DISK\_2

channel ORA\_DISK\_2: SID=744 device type=DISK

allocated channel: ORA\_DISK\_3

channel ORA\_DISK\_3: SID=867 device type=DISK

allocated channel: ORA\_DISK\_4

channel ORA\_DISK\_4: SID=7 device type=DISK

Crosschecked 140 objects

Crosschecked 139 objects

Crosschecked 127 objects

Crosschecked 131 objects

Finished implicit crosscheck backup at 21-MAY-24

Starting implicit crosscheck copy at 21-MAY-24

using channel ORA\_DISK\_1

using channel ORA\_DISK\_2

using channel ORA\_DISK\_3

using channel ORA\_DISK\_4

Crosschecked 1 objects

Crosschecked 2 objects

Crosschecked 2 objects

Crosschecked 2 objects

Finished implicit crosscheck copy at 21-MAY-24

searching for all files in the recovery area

cataloging files...

cataloging done

List of Cataloged Files

=======================

File Name: /u02/app/omr/oradata/hnoemprd/arc/HNOEMSTAND/archivelog/2024\_05\_17/o1\_mf\_1\_30143\_m4f89l34\_.arc

File Name: /u02/app/omr/oradata/hnoemprd/arc/HNOEMSTAND/archivelog/2024\_05\_17/o1\_mf\_1\_30144\_m4f8mm3q\_.arc

File Name: /u02/app/omr/oradata/hnoemprd/arc/HNOEMSTAND/archivelog/2024\_05\_17/o1\_mf\_1\_30145\_m4f95gss\_.arc

using channel ORA\_DISK\_1

using channel ORA\_DISK\_2

using channel ORA\_DISK\_3

using channel ORA\_DISK\_4

RMAN-06900: warning: unable to generate V$RMAN\_STATUS or V$RMAN\_OUTPUT row

RMAN-06901: warning: disabling update of the V$RMAN\_STATUS and V$RMAN\_OUTPUT rows

Oracle error from target database:

ORA-19922: there is no parent row with id 0 and level 2

channel ORA\_DISK\_1: starting incremental datafile backup set restore

channel ORA\_DISK\_1: using network backup set from service hnoemprd

destination for restore of datafile 00001: /u02/app/omr/oradata/HNOEMPRD/system01.dbf

channel ORA\_DISK\_2: starting incremental datafile backup set restore

channel ORA\_DISK\_2: using network backup set from service hnoemprd

destination for restore of datafile 00002: /u02/app/omr/oradata/HNOEMPRD/mgmt\_ecm\_depot1.dbf

channel ORA\_DISK\_3: starting incremental datafile backup set restore

channel ORA\_DISK\_3: using network backup set from service hnoemprd

destination for restore of datafile 00003: /u02/app/omr/oradata/HNOEMPRD/sysaux01.dbf

channel ORA\_DISK\_4: starting incremental datafile backup set restore

channel ORA\_DISK\_4: using network backup set from service hnoemprd

destination for restore of datafile 00004: /u02/app/omr/oradata/HNOEMPRD/undotbs01.dbf

channel ORA\_DISK\_2: restore complete, elapsed time: 00:00:00

channel ORA\_DISK\_2: starting incremental datafile backup set restore

channel ORA\_DISK\_2: using network backup set from service hnoemprd

destination for restore of datafile 00005: /u02/app/omr/oradata/HNOEMPRD/mgmt\_deepdive.dbf

channel ORA\_DISK\_2: restore complete, elapsed time: 00:00:02

channel ORA\_DISK\_2: starting incremental datafile backup set restore

channel ORA\_DISK\_2: using network backup set from service hnoemprd

destination for restore of datafile 00007: /u02/app/omr/oradata/HNOEMPRD/users01.dbf

channel ORA\_DISK\_2: restore complete, elapsed time: 00:00:01

channel ORA\_DISK\_2: starting incremental datafile backup set restore

channel ORA\_DISK\_2: using network backup set from service hnoemprd

destination for restore of datafile 00008: /u02/app/omr/oradata/HNOEMPRD/mgmt.dbf

channel ORA\_DISK\_1: restore complete, elapsed time: 00:00:39

channel ORA\_DISK\_4: restore complete, elapsed time: 00:00:39

channel ORA\_DISK\_3: restore complete, elapsed time: 00:01:39

channel ORA\_DISK\_2: restore complete, elapsed time: 00:03:56

starting media recovery

archived log for thread 1 with sequence 30398 is already on disk as file /u02/app/omr/oradata/hnoemprd/arc/HNOEMSTAND/archivelog/2024\_05\_21/o1\_mf\_1\_30398\_m4s12ob3\_.arc

archived log for thread 1 with sequence 30399 is already on disk as file /u02/app/omr/oradata/hnoemprd/arc/HNOEMSTAND/archivelog/2024\_05\_21/o1\_mf\_1\_30399\_m4s12v9r\_.arc

archived log file name=/u02/app/omr/oradata/hnoemprd/arc/HNOEMSTAND/archivelog/2024\_05\_21/o1\_mf\_1\_30398\_m4s12ob3\_.arc thread=1 sequence=30398

archived log file name=/u02/app/omr/oradata/hnoemprd/arc/HNOEMSTAND/archivelog/2024\_05\_21/o1\_mf\_1\_30399\_m4s12v9r\_.arc thread=1 sequence=30399

media recovery complete, elapsed time: 00:00:01

Finished recover at 21-MAY-24

Finished recover at 21-MAY-24

RMAN-00571: ===========================================================

RMAN-00569: =============== ERROR MESSAGE STACK FOLLOWS ===============

RMAN-00571: ===========================================================

RMAN-03002: failure of release command at 05/21/2024 11:28:19

RMAN-06012: channel: c1 not allocated

Recovery Manager complete.