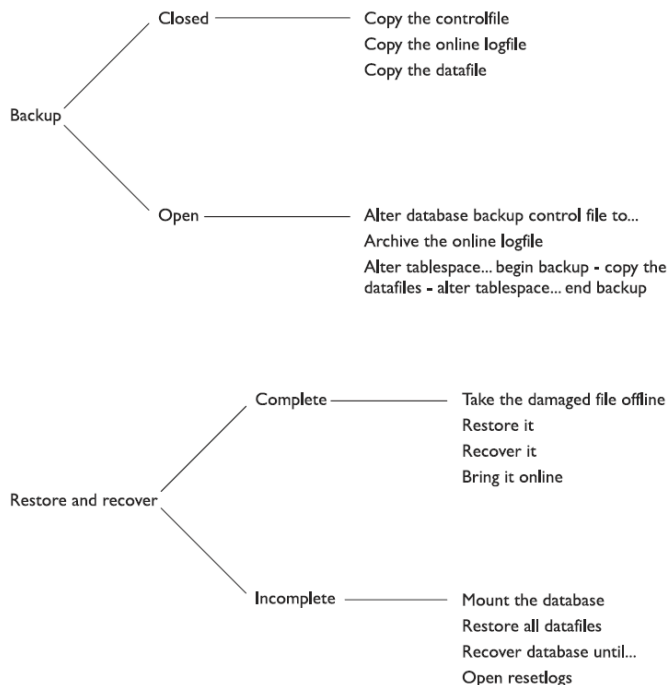


Duplication DB with RMAN

Use RMAN to Backup/Restore Database

The backup tool recommended by Oracle Corporation is RMAN, the Recovery Manager. also User-managed (as opposed to server-managed, meaning RMAN) backup, restore, and recovery techniques are fully supported by Oracle,



SQL commands that will generate a set of UNIX commands to be executed from an operating system prompt to perform a whole backup:

```
select 'cp ' || name || ' /u01/backups' from v$controlfile;
select 'cp ' || name || ' /u01/backups' from v$datafile;
select 'cp ' || name || ' /u01/backups' from v$tempfile;
select 'cp ' || member || ' /u01/backups' from v$logfile;
```

Start up the database and simulate user activity by performing a few log switches.

```
SQL> startup;
SQL> alter system switch logfile;
SQL> alter system switch logfile;
SQL> alter system switch logfile;
```

If a tempfile is damaged, the database will remain open. It can also be opened, if the damage occurred while the database was closed. Users will only become aware of the problem when they attempt to use the tempfile: when their server process finds it necessary to write some temporary data, because of insufficient space in the session's PGA. As a DBA, you should, however, be aware of any such damage: it will be reported in the alert log. To fix a problem with a tempfile, add another tempfile to the temporary

```
tablespace and drop the original:
alter tablespace temp add tempfile '/u01/app/oracle/oradata/orcl/temp02.dbf' size 50m;
alter tablespace temp drop tempfile '/u01/app/oracle/oradata/orcl/temp01.dbf';
```

Connect to the database with the RMAN, the Recovery Manager, using operating system authentication:

```
$rman target /
Recovery Manager: Release 11.2.0.1.0 - Production on Fri Jan 2 11:31:08 2015
Copyright(c) 1982, 2009, Oracle and/or its affiliates. All rights reserved.
connected to target database: ORCL (DBID=1423893973)
RMAN>
```

In another window, connect to the database with SQL*Plus, using operating system authentication:
`$sqlplus / as sysdba (or SQL> connect / as sysdba)`

With SQL*Plus, investigate the number of sessions against the instance:
`SQL> select username,program from v$session order by program;`

You will see that there are two sessions connected as user SYS using the RMAN executable as their user process: these are the default session and the polling session.

RMAN can generate three types of backup:

- A backup set is a proprietary format that can contain several files and will not include blocks of a datafile that are not currently part of a segment.
- A compressed backup set has the same content as a backup set, but RMAN will apply a compression algorithm as it writes out the backup set.
- An image copy is a backup file that is identical to the input file. An image copy is immediately interchangeable with its source, whereas to extract a file from a backup set requires an RMAN restore operation.

RMAN requires a repository in which to store details of all the backups it has made. The repository is a store of metadata about the target database and its backups. It contains details of the physical structure of the database:

- The locations of the datafiles;
- Details of all the backups that have been made;
- RMAN's persistent configuration settings.

RMAN repository, which stores details of all backups, is stored in the `controlfile`. So if the `controlfile` is damaged, the database will crash - but RMAN will not be able to restore it, because the information it needs will not be available. The `controlfile`-based repository will retain data for only the time specified by the instance parameter `CONTROL_FILE_RECORD_KEEP_TIME`. This defaults to just seven days.

RMAN manages space within the `flash recovery area`: it can delete files that are no longer needed according to its configured policies for retaining copies and backups of files, if the flash recovery area space limit has been reached. In an ideal situation, the flash recovery area will be large enough to store a complete copy of the database, plus any archive logs and incremental backups that would be necessary to recover the copy if necessary.

RMAN goes to the default filename in a default location (`recovery_aera`) and extract the `controlfile` from the most recent autobackup. The restore will be to the locations given in the `spfile`. Then mount the database using the restoredIf the `spfile` has also been lost, start the instance with a dummy initialization file: a pfile with just one parameter, `DB_NAME`. Then connect with RMAN, and issue these commands, substituting your DBID number for that given, example: **target database: ORCL (DBID=1423893973)**

These commands rely on `configured defaults` for the destination of the backup (disk or tape library). To simplify ongoing use of RMAN, you can set a number of persistent configuration settings for each database in the Data Guard environment. These settings control many aspects of RMAN behavior, like the names of the backup files generated, the number of server channels to launch to carry out the backup, and the type of backup (image copies of the files, backup sets, or compressed backup sets). To adjust these defaults, use the `CONFIGURE` command.

```

RMAN> show all;
RMAN configuration parameters for database with db_unique_name ORAWIN are:
CONFIGURE RETENTION POLICY TO REDUNDANCY 1; # default
CONFIGURE BACKUP OPTIMIZATION OFF; # default
CONFIGURE DEFAULT DEVICE TYPE TO DISK; # default
CONFIGURE CONTROLFILE AUTOBACKUP OFF; # default
CONFIGURE CONTROLFILE AUTOBACKUP FORMAT FOR DEVICE TYPE DISK TO '%F'; # default
CONFIGURE DEVICE TYPE DISK PARALLELISM 1 BACKUP TYPE TO BACKUPSET; # default
CONFIGURE DATAFILE BACKUP COPIES FOR DEVICE TYPE DISK TO 1; # default
CONFIGURE ARCHIVELOG BACKUP COPIES FOR DEVICE TYPE DISK TO 1; # default
CONFIGURE MAXSETSIZE TO UNLIMITED; # default
CONFIGURE ENCRYPTION FOR DATABASE OFF; # default
CONFIGURE ENCRYPTION ALGORITHM 'AES128'; # default
CONFIGURE COMPRESSION ALGORITHM 'BASIC' AS OF RELEASE 'DEFAULT' OPTIMIZE FOR LOAD TRUE ; #
default
CONFIGURE ARCHIVELOG DELETION POLICY TO NONE; # default
CONFIGURE SNAPSHOT CONTROLFILE NAME TO
'C:\APP\ORACLE\PRODUCT\11.2.0\DBHOME_1\DATABASE\SNCFORAWIN.ORA'; # default

```

There are two ways around this recursive problem: either uses an RMAN catalog database or enable the AUTOBACKUP facility. Having executed this command, every RMAN operation will conclude with an automatic backup of the **controlfile** and the **spfile** into a backup set stored in a well known location (flash recovery area).

```

RMAN> configure controlfile autobackup on;

```

RMAN backup script (c:\backup.rman)

```

run {
shutdown immediate;
startup mount;
backup as backupset database;
alter database open;
}

run {backup database plus archivelog delete all input;
delete obsolete;}

```

```

C:\>rman target / @backup.rman

```

The file types that can be backed up by RMAN are

- Datafiles
- Controlfile
- Archive redo log files
- SPFILE
- Backup set pieces

Files that cannot be backed up by RMAN include

- Tempfiles
- Online redo log files
- **Password file**
- Static PFILE
- Oracle Net configuration files

The restore of a spfile will be to the default location, in \$ORACLE_HOME/dbs for UNIX or %ORACLE_HOME%\database for Windows. Then restart the instance in nomount mode, which will use the restored spfile, and restore the controlfile. Mount the controlfile, and RMAN will then have access to its repository and can locate and restore the datafile backups.

If the flash recovery area parameters are not set, set them now. The directory must be one on which the operating system account that owns the Oracle software has full permissions, and the size should be at least 2GB.

Dummy initialization files (c:\dummy.pfile)

```
db_recovery_file_dest=C:\app\recovery_area
db_recovery_file_dest_size=3852M
db_name=orcl
```

RMAN backup script (c:\restore.rman)

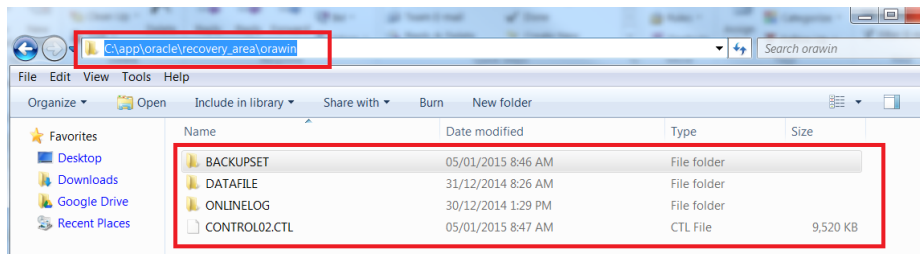
```
run{
startup nomount pfile=dummy.pfile;
set dbid 1423893973;
restore spfile from autobackup;
shutdown abort;
startup nomount;
restore controlfile from autobackup;
alter database mount;
restore database;
recover database;
alter database open resetlogs;
}
```

C:\>rman target / @restore.rman

Create a password file in the Oracle home for the auxiliary database. For example,

c:\>orapwd file=%ORACLE_HOME%\database\PWDorcl.ora password=sys entries=3

The location for all database password files is \$ORACLE_HOME/dbs on UNIX, or %ORACLE_HOME%\database on Windows. The file itself must be named ora<SID> on UNIX, and PWD<SID>.ora on Windows, where <SID> is the new instance name



The database backup routines should also include backing up the flash recovery area to tape, thus implementing a strategy of primary, secondary, and tertiary storage:

- Primary storage is the live database, on disk.
- Secondary storage is a copy of the database plus files needed for fast recovery.
- Tertiary storage is long-term backups in a tape library.

RMAN can manage the whole cycle: backup of the database from primary to secondary, and migration of backups from secondary to tertiary storage. Such a system can be implemented in a fashion that will allow near-instant recovery following a failure, combined with the ability to take the database back in time if this is ever necessary.

The first command will move all existing backups to tape, and the second command will create a new backup of the database and any archive logs, while removing the logs from the LOG_ARCHIVE_DEST_n locations.

Command	Function
RMAN> list backup;	List all your backup sets.

RMAN> list copy;	List all your image copies.
RMAN> list backup of database;	List all your whole database backup sets, whether full or incremental.
RMAN> list backup of datafile 1;	
RMAN> list backup of tablespaceusers;	List the backup sets that include datafile 1 and the backups that include the USERS tablespace.
RMAN> list backup of archivelog all;	List all archive log backup set backups. Use this command or the next to investigate backups of archive logs.
RMAN> list copy of archivelog from time='sysdate - 7';	List all image copies of archive logs generated in the last seven days.
RMAN> list backup of archivelog from sequence 1000 until sequence 1050;	List all backup sets containing archive logs of log switch sequence numbers 1000–1050.
RMAN> report schema;	List the datafiles (but not the controlfile or archived logs) that make up the database.
RMAN> report need backup;	Apply the configured retention policy and list all the datafiles and archive log files that need at least one backup to conform to the policy.
RMAN> report need backup days 3;	List all objects that haven't been backed up for three days. Use this command or the next to ignore the configured retention policy.
RMAN> report need backup redundancy 3;	List all files of which there are not at least three backups.
RMAN> report obsolete;	Will apply the configured retention policy and list all copies and backup sets that are no longer required. Then,
RMAN> delete obsolete;	Will remove the backups deemed surplus to requirements.
RMAN> delete expired;	
RMAN> delete backupset all;	
RMAN> delete copy all;	
RMAN> report obsolete redundancy 2;	List all backups that take the number of backups of an object to three or more. Then to remove the superfluous backups,
RMAN> delete obsolete redundancy 2;	The DELETE command can also be used to remove individual backups, by number or by tag:
RMAN> delete backupset 4;	
RMAN> delete copy of datafile 6 tag file6_extra;	

TIPS: The `LIST` command shows what backups have been made, and the `REPORT` command shows what backups are needed or are redundant. The `flash recovery area` is the default destination for RMAN disk backups. RMAN can automatically delete files considered to be obsolete from the flash recovery area.

RMAN's `repository` is always written to the target database's `controlfile`, but it can also be written out to a schema in a separate Oracle database. This database is known as the `recovery catalog`.

The RMAN executable provides commands for reporting on what backups have been made and what backups are required. The same information can also be obtained through the Database Control interface, or it is possible to query the `RMAN repository` directly by querying various views that are populated from it. If you are using a Recovery Catalog, this is another source of information. RMAN can also physically remove backups from tape and disk. The `RMAN repository` is metadata about backups: the names and locations of the pieces that make up the backup sets, and the files contained within them, and the names and locations of image copies. The repository is the key to automating restore and recovery operations: RMAN reads it to work out the most efficient way of restoring and recovering damaged datafiles. The repository is stored in the `controlfile` of the target database, and optionally in a set of tables created in a catalog database.

The information used by the RMAN commands `REPORT` and `LIST`, and the information displayed in the dynamic performance views, is drawn from the RMAN repository: data stored in the `controlfile` of the target database. It says nothing about reality—whether the backup files actually still exist. To confirm that the backups do exist, use the `CROSSCHECK` command. For example:

```
RMAN> crosscheck backup of database;
```

This command queries the repository to find details of what whole backups have been made of the database, and then goes to the storage device(s) to see if the pieces do in fact exist. For pieces on disk, the disk directory is read and the file header validated; for pieces on tape, only the tape directory is read. Any pieces that no longer exist are flagged in the repository as `EXPIRED`. An expired backup will not be considered by

RMAN when it works out how to carry out a restore and recover operation. In some circumstances (such as if a file system or a tape drive is taken offline), a crosscheck may mark many backups as expired; rerunning the crosscheck when the device is brought back into use will reset their status to `AVAILABLE`.

A related command is

```
RMAN> delete expired;
```

This command will not delete any files from disk. It will, however, remove from the repository all references to backups previously marked `EXPIRED` by a crosscheck. At many installations, the tape library will automatically delete files according to their age: if this is happening, then a crosscheck followed by `DELETE EXPIRED` will update the RMAN repository to make it aware of what has happened.

Using the Data Recovery Advisor

The `Data Recovery Advisor` makes use of information gathered by the Health Monitor to find problems, and then it constructs RMAN scripts to repair them. As with any RMAN-based utility, the instance must be started. To start an instance in nomount mode, all which is required is a parameter file. RMAN is in fact capable of starting an instance without a parameter file, using the `ORACLE_SID` environment variable as a default for the one parameter for which there is no default value: the `DB_NAME` parameter. This ability may mean that is possible to bootstrap a restore and recovery operation from nothing.

The flow for using the DRA is as follows:

- Assess data failures; The Health Monitor, running reactively or on demand, will write error details to the ADR.
- List failures; The DRA will list all failures, classified according to severity.
- Advise on repair; The DRA will generate RMAN scripts to repair the damage.
- Execute repair; Run the scripts.

The commands can be run from the RMAN executable, or through Database Control. The advice will only be generated for errors previously listed and still open. No advice will be generated for additional errors that have occurred since the listing, or for errors fixed since the listing.

```
list failure;
```

```
advise failure;
```

```
repair failure;
```

Recovery catalog database if needed

RMAN's repository is always written to the target database's `controlfile`, but it can also be written out to a schema in a separate Oracle database. This database is known as the recovery catalog. Using RMAN with a recovery catalog enhances its capabilities

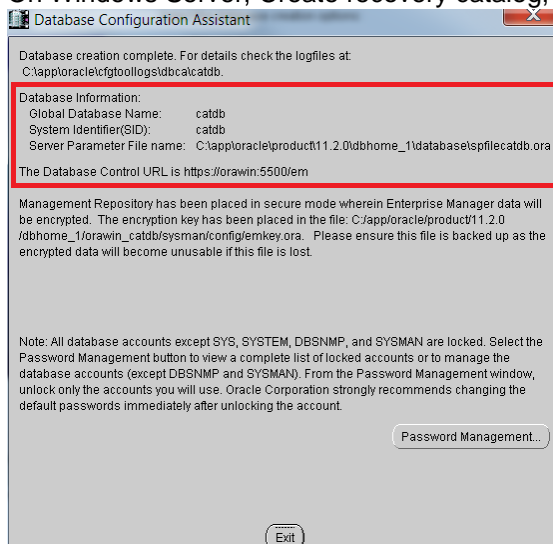
Using RMAN to Create Databases

RMAN's repository is always written to the target database's `controlfile`, but it can also be written out to a schema in a separate Oracle database. This database is known as the recovery catalog. Using RMAN with a recovery catalog enhances its capabilities substantially.

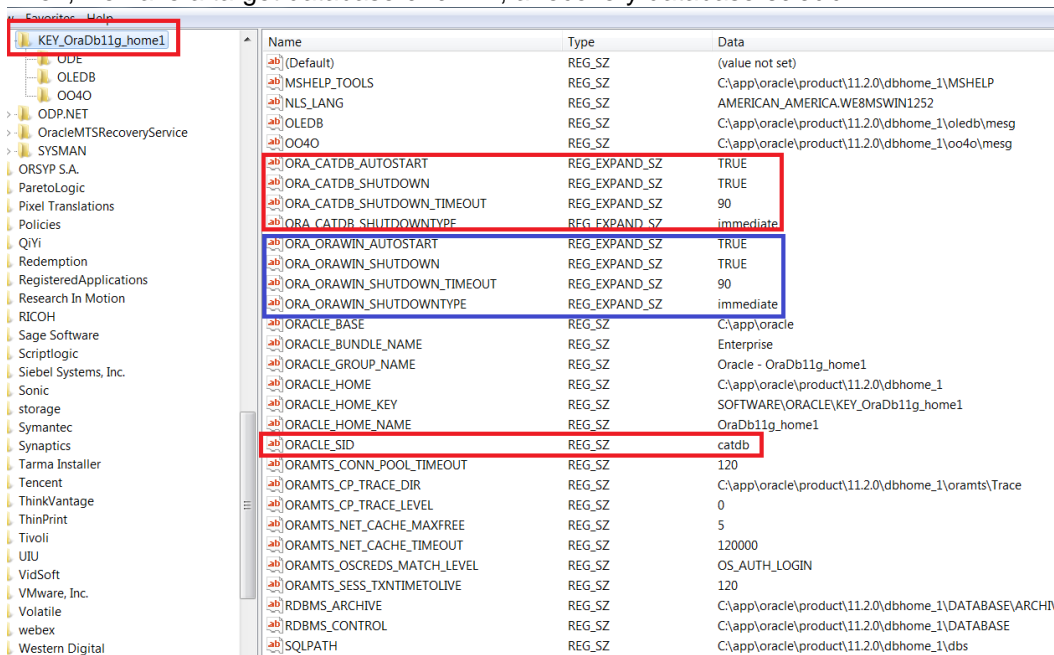
The RMAN executable can connect, concurrently, to up to three database instances. The third database (an auxiliary database) can be created (duplicated) from target database via recovery catalog database:

- A target database, to which a backup or restore and recover operation will be applied
- A recovery catalog database, where metadata describing the target and all available backups is stored
- An auxiliary database, which is a database to be created using backups of the target

On Windows Server, Create recovery catalog, a database `catdb` using DBCA.



Then, we have a target database `orawin`, a recovery database `catdb`



C:\>lsnrctl status

```
LSNRCTL for 32-bit Windows: Version 11.2.0.1.0 - Production on 07-JAN-2015 08:57:21
Copyright (c) 1991, 2010, Oracle. All rights reserved.
```

```
Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=IPC)(KEY=EXTPROC1521)))
STATUS of the LISTENER
```

```
-----
Alias                LISTENER
Version              TNSLSNR for 32-bit Windows: Version 11.2.0.1.0 - Production
Start Date           07-JAN-2015 08:53:23
Uptime               0 days 0 hr. 3 min. 58 sec
Trace Level           off
Security              ON: Local OS Authentication
```

```

SNMP                                OFF
Listener Parameter File  C:\app\oracle\product\11.2.0\dbhome_1\network\admin\listener.ora
Listener Log File       c:\app\oracle\diag\tnslsnr\r9-kpwfz\listener\alert\log.xml
Listening Endpoints Summary...
  (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (PIPENAME=\\.\pipe\EXTPROC1521ipc)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp) (HOST=r9-kpwfz.lii01.livun.com) (PORT=1521)))
Services Summary...
Service "CLRExtProc" has 1 instance(s).
  Instance "CLRExtProc", status UNKNOWN, has 1 handler(s) for this service...
Service "catdb" has 1 instance(s).
  Instance "catdb", status READY, has 1 handler(s) for this service...
Service "catdbXDB" has 1 instance(s).
  Instance "catdb", status READY, has 1 handler(s) for this service...
Service "orawin.lii01.livun.com" has 1 instance(s).
  Instance "orawin", status READY, has 1 handler(s) for this service...
Service "orawinXDB.lii01.livun.com" has 1 instance(s).
  Instance "orawin", status READY, has 1 handler(s) for this service...
The command completed successfully

```

The catalog must be created. This entails identifying (or creating) a database to use and then creating a tablespace where the catalog objects will be stored and a user to whose schema they will belong. The user should be granted the `RECOVERY_CATALOG_OWNER` role, which includes the necessary object privileges. For example, run these commands in the database to be used for the catalog:

```

C:\>set ORACLE_SID=catdb
C:\>sqlplus / as sysdba
SQL*Plus: Release 11.2.0.1.0 Production on Wed Jan 7 09:27:49 2015
Copyright (c) 1982, 2010, Oracle. All rights reserved.
Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 - Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options

SQL> create tablespace rmancat datafile 'rmancat01.dbf' size 200m;
Tablespace created.

SQL> create tablespace rmancat datafile 'C:\app\oracle\oradata\catdb\rmancat01.dbf' size 200m;
Tablespace created.

SQL> create user rman identified by rman default tablespace rmancat quota unlimited on rmancat;
User created.

SQL> grant recovery_catalog_owner to rman;
Grant succeeded.

```

Then creating a catalog and registering a target database:

```

C:\>rman catalog rman/rman@catdb
Recovery Manager: Release 11.2.0.1.0 - Production on Wed Jan 7 09:44:50 2015
Copyright (c) 1982, 2009, Oracle and/or its affiliates. All rights reserved.
connected to recovery catalog database

RMAN> create catalog;
recovery catalog created

RMAN> connect target sys/sys@orawin
connected to target database: ORAWIN (DBID=3679677092)

RMAN> register database;
database registered in recovery catalog
starting full resync of recovery catalog
full resync complete

```

Stored Scripts: RMAN scripts can be stored as operating system files, and invoked from the command line. For example, if these two commands are saved into a file named `rman_script.rman`, run {backup database plus archivelog delete all input; delete obsolete;}

Then the script can be invoked from an operating system prompt as follows:

```

C:\>set ORACLE_SID=orawin

```



```
C:\>rman target / catalog rman/rman@catdb @rman_script.rman
Recovery Manager: Release 11.2.0.1.0 - Production on Wed Jan 7 10:09:10 2015
Copyright (c) 1982, 2009, Oracle and/or its affiliates. All rights reserved.
connected to target database: ORAWIN (DBID=3679677092)
connected to recovery catalog database
```

```
RMAN> run {backup database plus archivelog delete all input;
2> delete obsolete;}
3>
```

```
Starting backup at 07-JAN-15
current log archived
allocated channel: ORA_DISK_1
channel ORA_DISK_1: SID=200 device type=DISK
channel ORA_DISK_1: starting archived log backup set
channel ORA_DISK_1: specifying archived log(s) in backup set
input archived log thread=1 sequence=9 RECID=40 STAMP=868356552
channel ORA_DISK_1: starting piece 1 at 07-JAN-15
channel ORA_DISK_1: finished piece 1 at 07-JAN-15
piece handle =
C:\APP\ORACLE\RECOVERY_AREA\ORAWIN\BACKUPSET\2015_01_07\O1_MF_ANNNN_TAG20150107T100913_BBTM0SJ6_.
BKP tag=TAG20150107T100913 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:01
channel ORA_DISK_1: deleting archived log(s)
archived log file name=C:\APP\ORACLE\ARCHIVE2\ARCH_DB536AA4_1_868272703_9.LOG RECID=40
STAMP=868356552
archived log file name=C:\APP\ORACLE\ARCHIVE1\ARCH_DB536AA4_1_868272703_9.LOG RECID=39
STAMP=868356552
Finished backup at 07-JAN-15
```

```
Starting backup at 07-JAN-15
using channel ORA_DISK_1
channel ORA_DISK_1: starting full datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
input datafile file number=00001 name=C:\APP\ORACLE\ORADATA\ORAWIN\SYSTEM01.DBF
input datafile file number=00002 name=C:\APP\ORACLE\ORADATA\ORAWIN\SYSaux01.DBF
input datafile file number=00003 name=C:\APP\ORACLE\ORADATA\ORAWIN\UNDOTBS01.DBF
```

```
input datafile file number=00004 name=C:\APP\ORACLE\ORADATA\ORAWIN\USERS01.DBF
channel ORA_DISK_1: starting piece 1 at 07-JAN-15
channel ORA_DISK_1: finished piece 1 at 07-JAN-15
piece handle =
C:\APP\ORACLE\RECOVERY_AREA\ORAWIN\BACKUPSET\2015_01_07\O1_MF_NNNDF_TAG20150107T100914_BBTM0TSW_.
BKP tag=TAG20150107T100914 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:25
Finished backup at 07-JAN-15
```

```
Starting backup at 07-JAN-15
current log archived
using channel ORA_DISK_1
channel ORA_DISK_1: starting archived log backup set
channel ORA_DISK_1: specifying archived log(s) in backup set
input archived log thread=1 sequence=10 RECID=42 STAMP=868356580
channel ORA_DISK_1: starting piece 1 at 07-JAN-15
channel ORA_DISK_1: finished piece 1 at 07-JAN-15
piece handle =
C:\APP\ORACLE\RECOVERY_AREA\ORAWIN\BACKUPSET\2015_01_07\O1_MF_ANNNN_TAG20150107T100940_BBTM1NVJ_.
BKP tag=TAG20150107T100940 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:01
channel ORA_DISK_1: deleting archived log(s)
archived log file name=C:\APP\ORACLE\ARCHIVE2\ARCH_DB536AA4_1_868272703_10.LOG RECID=42
STAMP=868356580
archived log file name=C:\APP\ORACLE\ARCHIVE1\ARCH_DB536AA4_1_868272703_10.LOG RECID=41
STAMP=868356580
Finished backup at 07-JAN-15
```

Starting Control File and SPFILE Autobackup at 07-JAN-15
 piece handle =
 C:\APP\ORACLE\RECOVERY_AREA\ORAWIN\AUTOBACKUP\2015_01_07\O1_MF_S_868356582_BBTM1PVX_.BKP
 comment=NONE
 Finished Control File and SPFILE Autobackup at 07-JAN-15

RMAN retention policy will be applied to the command
 RMAN retention policy is set to redundancy 1
 using channel ORA_DISK_1

Deleting the following obsolete backups and copies:

Type	Key	Completion Time	Filename/Handle
Backup Set	103	07-JAN-15	
Backup Piece	106	07-JAN-15	
C:\APP\ORACLE\RECOVERY_AREA\ORAWIN\BACKUPSET\2015_01_07\O1_MF_NNNDP_TAG20150107T095756_BBTLCNJX_.BKP			
Backup Set	118	07-JAN-15	
Backup Piece	123	07-JAN-15	
C:\APP\ORACLE\RECOVERY_AREA\ORAWIN\AUTOBACKUP\2015_01_07\O1_MF_S_868355902_BBTLDGFN_.BKP			
Backup Set	212	07-JAN-15	
Backup Piece	216	07-JAN-15	
C:\APP\ORACLE\RECOVERY_AREA\ORAWIN\BACKUPSET\2015_01_07\O1_MF_ANNNN_TAG20150107T100913_BBTM0SJ6_.BKP			
deleted backup piece			
backup piece handle =			
C:\APP\ORACLE\RECOVERY_AREA\ORAWIN\BACKUPSET\2015_01_07\O1_MF_NNNDP_TAG20150107T095756_BBTLCNJX_.BKP			
RECID=11 STAMP=868355876			
deleted backup piece			
backup piece handle =			
C:\APP\ORACLE\RECOVERY_AREA\ORAWIN\AUTOBACKUP\2015_01_07\O1_MF_S_868355902_BBTLDGFN_.BKP			
RECID=12 STAMP=868355902			
deleted backup piece			
backup piece handle =			
C:\APP\ORACLE\RECOVERY_AREA\ORAWIN\BACKUPSET\2015_01_07\O1_MF_ANNNN_TAG20150107T100913_BBTM0SJ6_.BKP			
RECID=13 STAMP=868356553			
Deleted 3 objects			
Recovery Manager complete.			