Oracle备份

1. archivelog归档模式

归档模式(archivelog)：可以在线|离线备份数据库，可以是全备份或者是部分备份(单个表空间|数据文件) ；

非归档模式(noarchivelog)：只能离线备份而且必须备份所有的数据文件，控制文件，日志文件

[oracle@oracle1 ~]$ sqlplus [system/Siasun2018@oracle-scan.rac.occ/occorcl](mailto:system/Siasun2018@oracle-scan.rac.occ/occorcl)

**SQL>select log\_mode from V$database;**

[oracle@oracle1 ~]$ sqlplus sys/Siasun2018@oracle-scan.rac.occ/occorcl as sysoper

**SQL>alter database archivelog;**

Database altered.

1. 文件夹权限

rman： chown -R oracle:oinstall /u01/datafiles

asmcmd: chown -R grid:asmoper /u01/datafiles

1. 映射网络路径

<https://www.cnblogs.com/liuyisai/p/5992511.html> 参考网址

yum list installed | grep nfs

yum list installed | grep rpcbind

yum -y install nfs-utils rpcbind 大多数系统已经安装

vim /etc/exports

/u01/datafiles 192.168.10.0/24(rw,no\_root\_squash,no\_all\_squash,sync)

#chkconfig --level 35 portmap on  
#chkconfig --level 35 nfs on

#"ntsysv"命令启动服务配置程序，找到"nfs"和"portmap"服务

常见的参数则有：

参数值 内容说明

rw　　ro 该目录分享的权限是可擦写 (read-write) 或只读 (read-only)，但最终能不能读写，还是与文件系统的 rwx 及身份有关。

sync　　async sync 代表数据会同步写入到内存与硬盘中，async 则代表数据会先暂存于内存当中，而非直接写入硬盘！

no\_root\_squash　　root\_squash 客户端使用 NFS 文件系统的账号若为 root 时，系统该如何判断这个账号的身份？预设的情况下，客户端 root 的身份会由 root\_squash 的设定压缩成 nfsnobody， 如此对服务器的系统会较有保障。但如果你想要开放客户端使用 root 身份来操作服务器的文件系统，那么这里就得要开 no\_root\_squash 才行！

all\_squash 不论登入 NFS 的使用者身份为何， 他的身份都会被压缩成为匿名用户，通常也就是 nobody(nfsnobody) 啦！

anonuid　　anongid anon 意指 anonymous (匿名者) 前面关于 \*\_squash 提到的匿名用户的 UID 设定值，通常为 nobody(nfsnobody)，但是你可以自行设定这个 UID 的值！当然，这个 UID 必需要存在于你的 /etc/passwd 当中！ anonuid 指的是 UID 而 anongid 则是群组的 GID 啰。

使配置生效

exportfs -r

挂载目录

mount -t nfs dns:/u01/datafiles /u01/datafiles -o proto=tcp -o nolock

1. 备份操作

方法1：

[oracle@dhcppc1 datafiles]$ pwd

/u01/datafiles

[oracle@dhcppc1 datafiles]$ ls

[oracle@dhcppc1 datafiles]$

[oracle@dhcppc1 ~]$ asmcmd

ASMCMD> ls -lt

State Type Rebal Name

MOUNTED EXTERN N DATA/

MOUNTED EXTERN N DG1/

MOUNTED EXTERN N FRA/

MOUNTED EXTERN N OCR/

ASMCMD> cd dg1

ASMCMD> cd testdb/datafile

ASMCMD> ls -lt

Type Redund Striped Time Sys Name

DATAFILE UNPROT COARSE DEC 31 13:00:00 Y TS1.256.739191187

ASMCMD> cp TS1.256.739191187 /u01/datafiles/ts2.dbf

copying +dg1/testdb/datafile/TS1.256.739191187 -> /u01/datafiles/ts2.dbf

ASMCMD>

[oracle@dhcppc1 datafiles]$ ls -lrt

total 525208

-rw-r—– 1 oracle oinstall 314580992 Dec 31 13:17 ts2.dbf

[oracle@dhcppc1 datafiles]$

方法2：

[oracle@dhcppc1 datafiles]$ pwd

/u01/datafiles

[oracle@dhcppc1 datafiles]$ ls

[oracle@dhcppc1 datafiles]$

SQL> create tablespace ts1 datafile ‘+DG1’ size 20m;

Tablespace created.

SQL> select tablespace\_name,status from dba\_tablespaces where tablespace\_name=’TS1′;

TABLESPACE\_NAME STATUS

————— ———

TS1 ONLINE

SQL> select file\_name,status from dba\_data\_files where file\_id=8;

FILE\_NAME STATUS

————————————————– ———

+DG1/testdb/datafile/ts1.256.739204397 AVAILABLE

[oracle@dhcppc1 datafiles]$ rman target / nocatalog

rman target sys/Siasun2018@occorcl nocatalog

Recovery Manager: Release 11.2.0.1.0 – Production on Fri Dec 31 14:34:15 2010

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connected to target database: TESTDB (DBID=2521935115)

using target database control file instead of recovery catalog

RMAN> copy datafile 8 to ‘/u01/datafiles/ts1.dbf’;

Starting backup at 31-DEC-10

allocated channel: ORA\_DISK\_1

channel ORA\_DISK\_1: SID=31 device type=DISK

channel ORA\_DISK\_1: starting datafile copy

input datafile file number=00008 name=+DG1/testdb/datafile/ts1.256.739204397

output file name=/u01/datafiles/ts1.dbf tag=TAG20101231T143435 RECID=7 STAMP=739204478

channel ORA\_DISK\_1: datafile copy complete, elapsed time: 00:00:03

Finished backup at 31-DEC-10

RMAN>

[oracle@dhcppc1 datafiles]$ ls -lrt

total 525208

-rw-r—– 1 oracle dba 314580992 Dec 31 14:40 ts1.dbf

[oracle@dhcppc1 datafiles]$

1. 备份全量、增量详解

如果指定BACKUP INCREMENTAL,将会创建增量备份，增量备份比全量的备份更小、更快。使用增量备份相对单独使用redo logs也会更快。

level 0：将会备份数据库中所有的块，和full backup是一样的，不同的是，0级备份被认为是增量备份策略的一部分。

level 1:只包含在前一个备份之后更改块的增量备份，如果当前或父数据中不存在0级备份，当运行1级备份时，raman将自动执行0级备份。

当执行还原操作时，rman将首先恢复0级备份，然后自动修改增量的备份。

Note:还原过程费时，并且需要所有的过程的增量备份。

1. 常见故障

ORA-27040: file create error, unable to create file

Linux Error: 13: Permission denied

$ srvctl start database -db crm -startoption mount

https://docs.oracle.com/database/121/RACAD/GUID-4598F8BC-BCB5-4489-81A4-EA52EECA2E86.htm#RACAD5032

1. 摘抄Oracle官方文档

The following example starts RMAN and then connects to a target database through Oracle Net as user sbu, which is created with the SYSBACKUP privilege. RMAN prompts for a password.

% rman RMAN> CONNECT TARGET "sbu@prod AS SYSBACKUP"

target database Password: password

connected to target database: PROD (DBID=39525561)

To quit the RMAN client, enter EXIT at the RMAN prompt:

RMAN> EXIT

Rman语法：

RMAN

[ TARGET connectStringSpec

| { CATALOG connectStringSpec }

| LOG ['] filename ['] [ APPEND ]

.

.

. ]...

connectStringSpec::= ['] [userid] [/ [password]] [@net\_service\_name] [']

The following example appends the output from an RMAN session to a text file at /tmp/msglog.log

% rman TARGET / LOG /tmp/msglog.log APPEND

显示默认配置

RMAN> SHOW ALL;

By default, RMAN creates backups on disk. If a fast recovery area is enabled, and if you do not specify the FORMAT parameter, then RMAN creates backups in the recovery area and automatically gives them unique names.

By default, RMAN creates backup sets rather than image copies. A backup set consists of one or more backup pieces, which are physical files written in a format that only RMAN can access. A multiplexed backup set contains the blocks from multiple input files. RMAN can write backup sets to disk or tape. If you specify BACKUP AS COPY, then RMAN copies each file as an image copy, which is a bit-for-bit copy of a database file created on disk. Image copies are identical to copies created with operating system commands like cp on Linux or COPY on Windows, but are recorded in the RMAN repository and so are usable by RMAN. You can use RMAN to make image copies while the database is open.

|  |  |  |
| --- | --- | --- |
| Option | Description | Example |
| FORMAT | Specifies a location and name for backup pieces and copies. You must use substitution variables to generate unique file names. The most common substitution variable is %U, which generates a unique name. Others include %d for the DB\_NAME, %t for the backup set time stamp, %s for the backup set number, and %p for the backup piece number | BACKUP FORMAT 'AL\_ %d/%t/%s/%p' ARCHIVELOG LIKE '%arc\_dest%'; |
| TAG | Specifies a user-defined string as a label for the backup. If you do not specify a tag, then RMAN assigns a default tag with the date and time. Tags are always stored in the RMAN repository in uppercase. | BACKUP TAG 'weekly\_full\_db\_bkup ' DATABASE MAXSETSIZE 10M; |

数据库运行模式为ARCHIVELOG时，允许在database打开的状态下进行备份。

For example, enter the following command at the RMAN prompt to back up the database and all archived redo log files to the default backup device:

RMAN> BACKUP DATABASE PLUS ARCHIVELOG;

如果运行模式是NOARCHIVELOG，则要求数据库的状态时mounted，

RMAN> SHUTDOWN IMMEDIATE;

RMAN> STARTUP FORCE DBA;

RMAN> SHUTDOWN IMMEDIATE;

RMAN> STARTUP MOUNT;

RMAN> BACKUP DATABASE; #RMAN> BACKUP AS COPY DATABASE; image copy backups

RMAN> ALTER DATABASE OPEN;

* 1. Incremental Backups

The following example creates a level 0 incremental backup to serve as a base for an incremental backup strategy:

BACKUP INCREMENTAL LEVEL 0 DATABASE;

The following example creates a level 1 cumulative incremental backup:

BACKUP INCREMENTAL LEVEL 1 CUMULATIVE DATABASE;

The following example creates a level 1 differential incremental backup:

BACKUP INCREMENTAL LEVEL 1 DATABASE;

* 1. Incrementally Updated Backups
  2. Scripting RMAN Operations

To create and run a command file:

1. Use a text editor to create a command file. For example, create a command file with the following contents:

# my\_command\_file.txt

CONNECT TARGET /

BACKUP DATABASE PLUS ARCHIVELOG;

LIST BACKUP;

EXIT;

2. Start RMAN and then execute the contents of a command file by running the @ command at the RMAN prompt:

@/my\_dir/my\_command\_file.txt

# runs specified command file You can also start RMAN with a command file to run, as shown here:

% rman @/my\_dir/my\_command\_file.txt

通道，可指定也可自动分配

CONFIGURE CHANNEL

1. 实践

https://blog.csdn.net/laven54/article/details/11909183

rman备份脚本：http://blog.csdn.net/laven54/article/details/11892141

实验过程：

1.创建wallet

$ORACLE\_HOME/bin/mkstore -wrl $ORACLE\_HOME/network/admin/wallet -create

Enter password:<输入wallet密码>

2.创建连接串(一个连接串只能对应一个用户)

rman\_connect =

(DESCRIPTION =

(ADDRESS = (PROTOCOL = TCP)(HOST = nascds18.cn.oracle.com)(PORT = 1521))

(CONNECT\_DATA =

(SERVER = DEDICATED)

(SERVICE\_NAME = R10203)

)

)

3. 加入用户认证信息到Wallet

其中db\_utest是前面设置的网路连接串, "oracle"是用户sys的密码.

$ORACLE\_HOME/bin/mkstore -wrl $ORACLE\_HOME/network/admin/wallet -createCredential rman\_connect sys "oracle"

Enter wallet password:<输入wallet密码>

Create credential oracle.security.client.connect\_string1

4. 查看rman用户是否被加入到wallet中

$ORACLE\_HOME/bin/mkstore -wrl $ORACLE\_HOME/network/admin/wallet -listCredential

Enter wallet password:<输入wallet密码>

List credential (index: connect\_string username)

1: rman\_connect sys (显示sys已经被加入到wallet中)

5. 加入Wallet位置信息到sqlnet.ora

$ vi $ORACLE\_HOME/network/admin/sqlnet.ora

WALLET\_LOCATION=(SOURCE=(METHOD=FILE)(METHOD\_DATA=(DIRECTORY=/opt/oracle/products/10.2.0.3/network/admin/wallet)))

SQLNET.WALLET\_OVERRIDE=TRUE

6. 链接测试

[oracle@nascds18 admin]$ rman target /@rman\_connect

Recovery Manager: Release 10.2.0.3.0 - Production on Mon Sep 23 12:52:23 2013

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connected to target database: R10203 (DBID=2226792988)

RMAN> exit

Recovery Manager complete.

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mkstore用法：

dg-primary:/oracle/product/11gR2/db/network/admin> mkstore

Oracle Secret Store Tool : Version 11.2.0.3.0 - Production

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mkstore [-wrl wrl] [-create] [-createSSO] [-createLSSO] [-createALO] [-delete] [-deleteSSO] [-list] [-createEntry alias secret] [-viewEntry alias] [-modifyEntry alias secret] [-deleteEntry alias] [-createCredential connect\_string username password] [-listCredential] [-modifyCredential connect\_string username password] [-deleteCredential connect\_string] [-help] [-nologo]

createCredential 是创建字符串对于的密码

modifyCredential 是修改字符串对于的密码

deleteCredential 是删除字符串对于的密码

listCredential  是列出当前有哪些用户设置了密码

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测试的插曲：

使用rman target /@rman\_connect 没问题，可是换成sqlplus /@rman\_connect 就报错：

dg-primary:/oracle/product/11gR2/db/network/admin> rman target /@rman\_connect2

Recovery Manager: Release 11.2.0.3.0 - Production on Sun Sep 22 22:49:10 2013

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connected to target database: EBAI (DBID=2009644852)

RMAN>

dg-primary:/oracle/product/11gR2/db/network/admin> sqlplus /@rman\_connect2

SQL\*Plus: Release 11.2.0.3.0 Production on Sun Sep 22 22:47:33 2013

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ERROR:

ORA-28009: connection as SYS should be as SYSDBA or SYSOPER

RMAN connections to a database are specified and authenticated in the same way as SQL\*Plus connections to a database. The only difference is that RMAN connections to a target or auxiliary database require the SYSDBA privilege. The AS SYSDBA keywords are implied for target and auxiliary connections and cannot be explicitly specified.

说明，在rman连接数据库时sys用户不需要”显式“指明 ”as SYSDBA“关键字。 但是在sqlplus登陆数据库时，sys用户必须指明，这个是区别，以前看见了但是没有太在意呢

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1. 疑问

Archivelog和redolog