# oracle LogMiner

1.LogMiner介绍

Oracle LogMiner 是Oracle公司从产品8i以后提供的一个实际非常有用的分析工具，使用该工具可以轻松获得Oracle 在线/归档日志文件中的具体内容，特别是该工具可以分析出所有对于数据库操作的DML和DDL语句。  
该工具适用于调试、审计或者回退某个特定的事务。

2.LogMiner作用

LogMiner工具的主要用途有：

1>跟踪数据库的变化：可以离线的跟踪数据库的变化，而不会影响在线系统的性能。

2>回退数据库的变化：回退特定的变化数据，减少point-in-time recovery的执行。

3>优化和扩容计划：可通过分析日志文件中的数据以分析数据增长模式

3.安装说明

安装LogMiner

在使用LogMiner之前需要确认Oracle是否带有进行LogMiner分析包，查看系统中是否存在运行LogMiner所需要的dbms\_logmnr、dbms\_logmnr\_d包，如果没有需要安装LogMiner工具，必须以DBA用户身份运行下面这样两个脚本：

1>$ORACLE\_HOME/rdbms/admin/dbmslm.sql

2>$ORACLE\_HOME/rdbms/admin/dbmslmd.sql

4. 使用说明

1、查看数据库是否为归档模式；(开启LogMiner，数据库必须为归档模式)

a.sqlplus / as sysdba

b.SQL> archive log list

Database log mode        Archive Mode (已经是归档模式)  
Automatic archival        Enabled  
Archive destination        /oradata/oracle/orcl/arch  
Oldest online log sequence     252802  
Next log sequence to archive   252813  
Current log sequence        252813

c.非归档模式改为归档模式

  1>设置归档日志文件路径:SQL>alter system set log\_archive\_dest='/data/arch';

  2>把数据库启动到mount模式：SQL>shutdown immediate;

                             SQL>startup mount;

  3>把数据库设置为归档模式： SQL>alter database archivelog;

  4>再次确认数据库模式：     SQL>archive log list;

  5>启动数据库为open模式：   SQL>alter database open;  
 

2、设置LogMiner字典文件路径等；

   1>创建数据字典文件并设置路径：SQL>create directory utlfile as '/data/oracle/logmnr';

                                 SQL>alter system set utl\_file\_dir='/data/oracle/logmnr' scope=spfile;

  2>开启LogMiner日志补充模式:    SQL>alter database add supplemental log data;（必须要开启，否则无法查询到操作过DDL,DML语句）  
                           
  3>重启数据库验证参数是否生效： SQL>shutdown immediate

                                 SQL>startup  
                                 
                                 SQL>show parameter utl\_file\_dir;

3、创建数据同步用户(如用户名为LOGMINER，该用户拥有DBA权限)；

   1>创建同步用户授予DBA权限:SQL>CREATE USER LOGMINER IDENTIFIED BY LOGMINER;  
                                   
                             SQL>GRANT CONNECT, RESOURCE,DBA TO LOGMINER;

4、分析在线日志；

  1>使用LogMiner读取在线日志例子:  
                             SQL>CONNECT LOGMINER/LOGMINER (在LogMiner用户下建表,进行DML语句操作)

                             SQL>CREATE TABLE AAAAA(field001 varchar2(30));   
      
                             SQL>INSERT INTO AAAAA (field001) values  ('000000');  
    
                             SQL>INSERT INTO AAAAA (field001) values  ('0000010');

                             SQL>commit;

                             SQL>execute dbms\_logmnr\_d.build(dictionary\_filename => 'dictionary.ora', dictionary\_location =>'/data/oracle/logmnr');（建了LogMiner字典文件，用于分析日志）

                             SQL>SELECT group#, sequence#, status, first\_change#, first\_time FROM V$log ORDER BY first\_change#;(查找当前处于联机的日志，确定redo01为active状态)

                                          GROUP#  SEQUENCE# STATUS        FIRST\_CHANGE# FIRST\_TIM  
                                          --------- ---------- ---------------- ------------- ---------  
                                       2  2132 INACTIVE      44378475 20-JUN-17  
                                       3  2133 INACTIVE      44378483 20-JUN-17  
                                       1  2134 CURRENT      44415107 20-JUN-17

SQL>BEGIN  
dbms\_logmnr.add\_logfile(logfilename=>'/data/oradata/REDO01.LOG',options=>dbms\_logmnr.NEW); (加载日志文件,此时的redo01是由上面查询确定的)  
END;  
/

SQL>execute dbms\_logmnr.start\_logmnr(dictfilename=>'/data/oracle/logmnr/dictionary.ora');(开始使用LogMiner进行在线日志分析)

SQL> SELECT sql\_redo, sql\_undo, seg\_owner FROM v$logmnr\_contents WHERE seg\_name='AAAAA' AND seg\_owner='LOGMINER';（通过logmnr\_contents视图查询相关操作日志）

SQL\_REDO  
--------------------------------------------------------------------------------------------------------------------------------------------------------------------  
SQL\_UNDO  
--------------------------------------------------------------------------------------------------------------------------------------------------------------------  
SEG\_OWNER  
--------------------------------  
CREATE TABLE AAAAA(field001 varchar2(100));

LOGMINER

insert into "LOGMINER"."AAAAA"("FIELD001") values ('000000');

LOGMINER

insert into "LOGMINER"."AAAAA"("FIELD001") values ('0000010');

5.使用LogMiner读取归档日志

1>准备测试数据

SQL>CONN LOGMINER/ LOGMINER

SQL>CREATE TABLE EMP  
(EMPNO NUMBER(4) CONSTRAINT PK\_EMP PRIMARY KEY,  
ENAME VARCHAR2(10),  
JOB VARCHAR2(9),  
MGR NUMBER(4),  
HIREDATE DATE,  
SAL NUMBER(7,2),  
COMM NUMBER(7,2),  
DEPTNO NUMBER(2));

SQL>INSERT INTO EMP VALUES (7369,'SMITH','CLERK',7902,to\_date('17-12-1980','dd-mm-yyyy'),800,NULL,20);  
SQL>INSERT INTO EMP VALUES (7499,'ALLEN','SALESMAN',7698,to\_date('20-2-1981','dd-mm-yyyy'),1600,300,30);  
SQL>INSERT INTO EMP VALUES (7521,'WARD','SALESMAN',7698,to\_date('22-2-1981','dd-mm-yyyy'),1250,500,30);  
SQL>INSERT INTO EMP VALUES (7566,'JONES','MANAGER',7839,to\_date('2-4-1981','dd-mm-yyyy'),2975,NULL,20);  
SQL>COMMIT;

2>找出归档日志文件的序号

SQL>conn  / as sysdba

SQL>ALTER SYSTEM SWITCH LOGFILE;

SQL>select sequence#, FIRST\_CHANGE#, NEXT\_CHANGE#,name from v$archived\_log order by sequence# desc;（查档归档日志序号）

 SEQUENCE# FIRST\_CHANGE# NEXT\_CHANGE#  
---------- ------------- ------------  
NAME  
--------------------------------------------------------------------------------  
      2135 44448588     44491093  
/data/oracle/fast\_recovery\_area/ECOLOGY/archivelog/2017\_06\_20/o1\_mf\_1\_2135\_dnknc5ky\_.arc

3>分析归档日志

SQL>CONN / AS SYSDBA

SQL>EXECUTE dbms\_logmnr\_d.build(dictionary\_filename => 'dictionary.ora', dictionary\_location =>'/data/oracle/logmnr');

SQL>BEGIN  
dbms\_logmnr.add\_logfile(logfilename=>'/data/oracle/fast\_recovery\_area/ECOLOGY/archivelog/2017\_06\_20/o1\_mf\_1\_2135\_dnknc5ky\_.arc',options=>dbms\_logmnr.NEW);(此时的归档日志为上一步查询出的文件)  
END;  
/

SQL>EXECUTE dbms\_logmnr.start\_logmnr(dictfilename=>'/data/oracle/logmnr/dictionary.ora');（开始归档日志分析）

4>查询分析结果

SQL> SELECT username,sql\_redo, sql\_undo, seg\_owner FROM v$logmnr\_contents WHERE seg\_name='EMP'AND seg\_owner='LOGMINER';

USERNAME  
------------------------------  
SQL\_REDO  
----------------------------------------------------------------------------------------------------------------------------------  
SQL\_UNDO  
----------------------------------------------------------------------------------------------------------------------------------  
SEG\_OWNER  
--------------------------------  
LOGMINER

CREATE TABLE EMP  
(EMPNO NUMBER(4) CONSTRAINT PK\_EMP PRIMARY KEY,  
ENAME VARCHAR2(10),  
JOB VARCHAR2(9),  
MGR NUMBER(4),  
HIREDATE DATE,  
SAL NUMBER(7,2),  
COMM NUMBER(7,2),  
DEPTNO NUMBER(2));

LOGMINER  
insert into "LOGMINER"."EMP"("EMPNO","ENAME","JOB","MGR","HIREDATE","SAL","COMM","DEPTNO") values ('7369','SMITH','CLERK','7902',TO\_DATE('17-DEC-80', 'DD-MON-RR'),'800',NULL,'20');

LOGMINER  
insert into "LOGMINER"."EMP"("EMPNO","ENAME","JOB","MGR","HIREDATE","SAL","COMM","DEPTNO") values ('7499','ALLEN','SALESMAN','7698',TO\_DATE('20-FEB-81', 'DD-MON-RR'),'1600','300','  
30');

LOGMINER  
insert into "LOGMINER"."EMP"("EMPNO","ENAME","JOB","MGR","HIREDATE","SAL","COMM","DEPTNO") values ('7521','WARD','SALESMAN','7698',TO\_DATE('22-FEB-81', 'DD-MON-RR'),'1250','500','3  
0');

LOGMINER  
insert into "LOGMINER"."EMP"("EMPNO","ENAME","JOB","MGR","HIREDATE","SAL","COMM","DEPTNO") values ('7566','JONES','MANAGER','7839',TO\_DATE('02-APR-81', 'DD-MON-RR'),'2975',NULL,'20  
');