How to Dump Redo Log File Information (Doc ID 1031381.6)

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PURPOSE  
This article explain how to obtain a dump of the header information in the   
online redo log file(s), as well as obtaining selected information from the   
online or archived redo log files.   
  
SCOPE & APPLICATION  
Informational  
  
You are working with Oracle Technical Support. As part of the diagnostic   
process, you have been asked to take a dump of the redo log files. The   
information in the logs is often used to help diagnose corruption issues.   
   
The following commands will be used in this process:   
   
1. The 'alter session' command is used to dump redo headers.   
   
2. Use the 'alter system dump logfile' to dump log file contents.   
   
This command requires 'ALTER SYSTEM' system privilege. The database can be in   
mount, nomount or open state when the command is issued. An online log file   
or an archived log file can be dumped. It is even possible to dump a   
file from another database, as long as the operating systems are the same.   
   
Output from the command is put into the session's trace file.  
  
The following ways of dumping a redo log file are covered:  
  
1. To dump records based in DBA (Data Block Address)  
2. To dump records based on RBA (Redo Block Address)   
3. To dump records based on SCN  
4. To dump records based on time  
5. To dump records based on layer and opcode  
6. Dump the file header information  
7. Dump an entire log file:   
  
  
1. To dump records based on DBA (Data Block Address)   
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This will dump all redo records for the range of data   
blocks specified for a given file # and block # range.   
   
From sqlplus (sqldba or svrmgr for older versions), issue the following command:   
   
ALTER SYSTEM DUMP LOGFILE 'filename'   
 DBA MIN fileno . blockno   
 DBA MAX fileno . blockno;   
   
 Example:   
 ========   
 ALTER SYSTEM DUMP LOGFILE 'u01/oracle/V7323/dbs/arch1\_76.dbf'   
 DBA MIN 5 . 31125   
 DBA MAX 5 . 31150;   
   
This will cause all the changes to the specified range of data blocks to be   
dumped to the trace file. In the example given, all redo records for file #5,   
blocks 31125 thru 31150 are dumped.   
  
Note  
====  
For 10g:  
ALTER SYSTEM DUMP LOGFILE 'u01/oracle/V7323/dbs/arch1\_76.dbf'   
 DBA MIN 5 . 31125 DBA MAX 5 . 31150;  
  
will raise:  
 ORA-01963: Must specify a block number  
  
In 10g we need to skip the dot '.' while doing the redo dumps  
 ALTER SYSTEM DUMP LOGFILE 'u01/oracle/V7323/dbs/arch1\_76.dbf'  
 DBA MIN 5 31125 DBA MAX 5 31150;  
   
  
   
2. To dump records based on RBA (Redo Block Address)   
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This will dump all redo records for the range of redo   
addresses specified for the given sequence number and block number.   
   
Syntax:   
ALTER SYSTEM DUMP LOGFILE 'filename'   
 RBA MIN seqno . blockno   
 RBA MAX seqno . blockno;   
   
Example:   
ALTER SYSTEM DUMP LOGFILE 'u01/oracle/V7323/dbs/arch1\_76.dbf'   
 RBA MIN 2050 . 13255   
 RBA MAX 2255 . 15555;  
  
3. To dump records based on SCN   
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Using this option will cause redo records owning changes within the SCN range   
specified to be dumped to the trace file.   
   
ALTER SYSTEM DUMP LOGFILE 'filename'   
 SCN MIN minscn   
 SCN MAX maxscn;  
   
Example:   
ALTER SYSTEM DUMP LOGFILE 'u01/oracle/V7323/dbs/arch1\_76.dbf'   
 SCN MIN 103243   
 SCN MAX 103294;  
  
If the purpose is to check the dumpfile you can rather do the following,  
SQL> ALTER SYSTEM DUMP LOGFILE 'filename' SCN MIN 1 SCN MAX 1;  
  
If the above completes sucessfully it ensures no issues with the archivelog.  
  
  
4. To dump records based on time.   
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Using this option will cause redo records created within the time range   
specified to be dumped to the trace file.   
   
From sqlplus (sqldba or svrmgr for older versions), issue the following command:   
   
ALTER SYSTEM DUMP LOGFILE 'filename'   
 TIME MIN value   
 TIME MAX value;   
   
 Example:   
 ========   
 ALTER SYSTEM DUMP LOGFILE 'u01/oracle/V7323/dbs/arch1\_76.dbf'   
 TIME MIN 299425687   
 TIME MAX 299458800;   
   
   
 Please Note: the time value is given in REDO DUMP TIME   
   
  
   
   
5. To dump records based on layer and opcode.   
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LAYER and OPCODE are used to dump all log records for a particular type of   
redo record, such as all dropped row pieces.   
   
From sqlplus (sqldba or svrmgr for older versions), issue the following command:   
   
ALTER SYSTEM DUMP LOGFILE 'filename'   
 LAYER value   
 OPCODE value;   
   
 Example:   
 ========   
 ALTER SYSTEM DUMP LOGFILE 'u01/oracle/V7323/dbs/arch1\_76.dbf'   
 LAYER 11   
 OPCODE 3;   
   
  
  
6. Dump the file header information:   
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This will dump file header information for every   
online redo log file.   
   
From sqlplus (sqldba or svrmgr for older versions), issue the following command:   
   
 alter session set events 'immediate trace name redohdr level 10';   
  
For dumping archivelog header,issue the following command:  
  
 ALTER SYSTEM DUMP LOGFILE 'filename' RBA MIN 1 1 RBA MAX 1 1;   
   
7. Dump an entire log file:   
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From sqlplus (sqldba or svrmgr for older versions), issue the following command:   
   
ALTER SYSTEM DUMP LOGFILE 'filename';   
   
 Please note:   
 Fully qualify the filename, and include the single quotes.   
   
  
 Example:   
 ========   
 ALTER SYSTEM DUMP LOGFILE 'u01/oracle/V7323/dbs/arch1\_76.dbf';  
  
  
The dump of the logfile will be written into a trace file in the udump destination.   
Use the command 'show parameters dump' within an sqlplus session.   
The ouput will show the location for the udump destination where   
the trace file exists.  
   
From 11g onwards, we can use ALTER SYSTEM DUMP REDO to dump a merged collection of redo records from multiple logfiles into a single trace file ordered by SCN.   
The database needs to be mounted. This differs from dump logfile in that a file(redolog or archivelog) is specified. The redo record chain can span multiple log files and instances (threads).   
SYNTAX  
  
ALTER SYSTEM DUMP REDO [option] .... [option];  
  
[options] -> scn min [scn] | scn max [scn] |  
 dba min [file#] [block#] | dba max [file#] [block#] |   
 time min [ub4] | time max [ub4] |  
 layer [word] |   
 opcode [word] |  
 objno [word] |  
 xid [undoseg#] [slot#] [wrap#] |  
 validate  
  
If no scn or time is specified then the default is to 12 hours back from current time. The scn should be specified as just the base SCN value, in hex or decimal.  
  
CONSTRAINTS/LIMITATIONS:  
  
1. Database must be mounted ( or opened) .  
ALTER SYSTEM DUMP LOGFILE is not associated with any instance and therefore a database need not be mounted for its operation.   
However, in the case of ALTER SYSTEM DUMP REDO, the system needs to know what the instances are and where the other logfiles are.   
The control file is needed for this lookup and therefore the database must be mounted or opened.  
  
2. DUMP REDO constrained to set of logfiles recognized in Control File  
Because we look up the logfiles and instances in the control file, if there are redo logs that exist that are not referenced in the control file, those redo logs will not be considered in the dump.   
An example of this would be if logfiles were removed, either manually or an instance was removed from the RAC cluster  
  
3. All logfiles must be accessible from the calling instance Though all online redo logs from any instance are stored on the shared disk, the archived logs for each instance need not be.   
In order for ALTER SYSTEM DUMP REDO to read and merge files, the set of files in question must be accessible by the calling instance. (ie. the paths of the logfiles specified in the control file must be recognizable and valid).