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| **IF: ORA-1555 on LOB Data (Doc ID 1950896.1)** | [To Bottom](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=336343307136318&id=1950896.1&_adf.ctrl-state=15lbvnujsb_57%20\o%20To%20Bottom) |  |



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| **In this Document**   |  |  | | --- | --- | |  | [Symptoms](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=336343307136318&id=1950896.1&_adf.ctrl-state=15lbvnujsb_57%20\l%20SYMPTOM) | |  | [Cause](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=336343307136318&id=1950896.1&_adf.ctrl-state=15lbvnujsb_57%20\l%20CAUSE) |  |  |  | | --- | --- | |  | [Solution](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=336343307136318&id=1950896.1&_adf.ctrl-state=15lbvnujsb_57%20\l%20FIX) | |  | [Related Issues:](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=336343307136318&id=1950896.1&_adf.ctrl-state=15lbvnujsb_57%20\l%20aref_section31) |  |  |  | | --- | --- | |  | [References](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=336343307136318&id=1950896.1&_adf.ctrl-state=15lbvnujsb_57%20\l%20REF) |     **APPLIES TO:**  Oracle Database - Enterprise Edition - Version 9.2.0.1 and later  Information in this document applies to any platform.  **SYMPTOMS**  ORA-1555 or snapshot too old error reported on a LOB segment. The error message looks like:  ORA-01555: snapshot too old: rollback segment number with name "" too small   and sometimes followed by ORA-22924 error.  ORA-01555: snapshot too old: rollback segment number  with name "" too small  ORA-22924: snapshot too old  **CAUSE**  LOB data doesn't use the Undo segment for retaining the read consistent images. The old versions are stored in the LOB Segments itself, before any DMLs.  The ORA-01555 on a LOB segment is reported generally in two cases:  a) The query is accessing a LOB segment which is corrupted  OR  b) Read consistent images of the LOB data is not available in the LOB Segment. This happens due to the wrong setting of PCTVERSION / RETENTION attributes of the LOB segment.  **SOLUTION**  1) The first step to resolve ORA-1555 on  LOB column is to check for corruption. This is the most common case.  1.a) Create a dummy table for storing all rowids of the corrupted LOBs. Let's call it "corrupt\_lobs"  SQL> create table corrupt\_lobs (corrupt\_rowid rowid, err\_num number);  1.b) Find the column names containing LOB data. You can DESCRIBE the table encountering the error and note down the columns names with datatype CLOB and BLOB.  SQL> DESC LOBDATA  Name Null? Type  ---------- --------- ------------  ID NOT NULL NUMBER  DOCUMENT BLOB  1.c) Execute the following PL/SQL block to identify the corrupted rows. Ensure to replace <lob Column> and <Table name> with the respective LOB column and table name.  declare  error\_1578 exception;  error\_1555 exception;  error\_22922 exception;  pragma exception\_init(error\_1578,-1578);  pragma exception\_init(error\_1555,-1555);  pragma exception\_init(error\_22922,-22922);  num number;  begin  for cursor\_lob in (select rowid r, &&lob\_column from &table\_owner..&table\_with\_lob) loop  begin  num := dbms\_lob.instr (cursor\_lob.&&lob\_column, hextoraw ('889911')) ;  exception  when error\_1578 then  insert into corrupt\_lobs values (cursor\_lob.r, 1578);  commit;  when error\_1555 then  insert into corrupt\_lobs values (cursor\_lob.r, 1555);  commit;  when error\_22922 then  insert into corrupt\_lobs values (cursor\_lob.r, 22922);  commit;  end;  end loop;  end;  /  After running the above procedure, it prompts for:  Enter value for lob\_column    : EMP\_XML  Enter value for table\_owner   : SCOTT  Enter value for table\_with\_LOB: EMP  1.d)  After executing the above procedure, the table “CORRUPTED\_LOB\_DATA”  will contain the rowids of the corrupted rows.  select \* from corrupted\_lob\_data;  1.e ) If you have multiple LOB columns in the same table or want to check multiple tables, please execute the above steps again.  If there are no corrupted rows found, please skip the next step and go to Step 4.  2) Once the corruption is identified, we need to get rid of it to resolve the ORA-1555 error. Its difficult to identify the cause of the corruption unless we have the steps to reproduce the corruption at will. So, the next steps will be to salvage the data and resolve ORA-1555 error.  2.a) Restore and recover the LOB segment using physical backup.  OR  2.b) Empty the affected LOBs using the UPDATE statement  update <owner>.<tablename>  set    <lob column> = empty\_blob()  where  rowid in (select corrupted\_rowid from   corrupted\_lob\_data);  commit;  Eg:  update LOBDATA set document = empty\_blob() where rowid in (select corrupt\_rowid from corrupt\_lobs);  PS: for BLOB and BFILE columns use EMPTY\_BLOB() and for CLOB and NCLOB columns use EMPTY\_CLOB()   OR  2.c) Export the table without the corrupted row, like:  % expdp system/manager DIRECTORY=my\_dir DUMPFILE=expdp\_satc.dmp LOGFILE=expdp\_satc.log TABLES=tc.lobdata QUERY=\"WHERE rowid NOT IN \(\'<rowid's listed in corrupt\_rowid>\'\)\"  Example using DataPump export:  #> expdp scott/tiger directory=data\_pump\_dir dumpfile=test.dmp logfile=test.log tables=EMP query=\"where rowid not in \(\'AAEWBsAAGAAACewAAC\', \'AAEWBsAAGAAACewAAF\', \'AAEWBsAAGAAACewAAG\'\)\"  Example using conventional export:  #> exp scott/tiger file=test.dmp log=test.log tables=EMP query=\"where rowid not in \(\'AAEWBsAAGAAACewAAC\', \'AAEWBsAAGAAACewAAF\', \'AAEWBsAAGAAACewAAG\'\)\"  This step is helpful to resolve the ORA-1555 error during Export or while taking backup.  OR  2.d) Delete the corrupted rows and then get the data from any other source (like standby database, flat file, or other databases etc) , if its available.  3). After resolving the corruption, upgrade your database to the latest version (or atleast above 10.2.0.4) as there are some bugs reported in the older version, which cause LOB corruption.  If corruption is resolved, you can skip Step 4.  4) If there is no corrupted rows found, then the solution is to ensure the read consistent images are retained in the LOB segment for adequate duration. You can increase either the RETENTION or the PCTVERSION attribute of the LOB column  4.a) Till 11gR1, the RETENTION attribute of the LOB segment will be equal to the UNDO\_RETENTION parameter. Hence we recommend to set UNDO\_RETENTION to the maximum of the duration of the queries in the database. Check the maxquerylen:  SQL> select max(maxquerylen) from v$UNDOSTAT;  and set this value for UNDO\_RETENTION parameter  alter system set UNDO\_RETENTION=<value in seconds>  After increasing the value of UNDO\_RETENTION parameter, ensure to add space to the UNDO tablespace. A higher value for UNDO\_RETENTION means the undo records are retained for longer period (on both LOB segment and the UNDO tablespace)  and hence increased space utilization in the UNDO tablespace.  4.b) From 11gR2 and above, we can set the retention for the LOB column to a value other than the UNDO\_RETENTION parameter:  SQL> alter table <Table with LOBS causing ORa-1555> modify lob(<lobcolumn name>) (retention);  Verify the same:  SQL> select retention from dba\_lobs where table\_name='<Table with LOBS causing ORa-1555>';   OR  3.c) Increase the PCTVERSION attribute of the LOB segment  SQL> alter table <tablename> modify lob(<lob column name>) (pctversion 50);  Higher values of PCTVERSION will ensure the more space is allocated for the old versions of LOB data.      **For more details refer to the troubleshooting guide:**    Troubleshooting ORA-01555 - Snapshot Too Old: Rollback Segment Number "String" With Name "String" Too Small([Doc ID 1580790.1](https://support.oracle.com/epmos/faces/DocumentDisplay?parent=DOCUMENT&sourceId=1950896.1&id=1580790.1))    Troubleshooting ORA-01555/ORA-01628/ORA-30036 During Export and Import([Doc ID 1579437.1](https://support.oracle.com/epmos/faces/DocumentDisplay?parent=DOCUMENT&sourceId=1950896.1&id=1579437.1))    **Related Issues:**    If the ORA-1555 is reported with Query Duration = 0 or a few seconds like Query Duration = 10 , refer to [Doc ID 1950577.1](https://support.oracle.com/epmos/faces/DocumentDisplay?parent=DOCUMENT&sourceId=1950896.1&id=1950577.1)    If the ORA-1555 error message reports an unrealistic high Query Duration (which is far higher than the actual query duration), refer to [Doc ID 1950961.1](https://support.oracle.com/epmos/faces/DocumentDisplay?parent=DOCUMENT&sourceId=1950896.1&id=1950961.1)    For ORA-1555 errors reported on Export, refer to documents [Doc ID 1950937.1](https://support.oracle.com/epmos/faces/DocumentDisplay?parent=DOCUMENT&sourceId=1950896.1&id=1950937.1) and [Doc ID 1950978.1](https://support.oracle.com/epmos/faces/DocumentDisplay?parent=DOCUMENT&sourceId=1950896.1&id=1950978.1). They explain the solution with and without LOB data, respectively.    In other cases where the ORA-1555 is reported refer to the document [Doc ID 1950897.1](https://support.oracle.com/epmos/faces/DocumentDisplay?parent=DOCUMENT&sourceId=1950896.1&id=1950897.1) |

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ORA-01555: snapshot too old: rollback segment number with name too small 
ORA-01555: 8 "_SVSSMU8S') iÄ'J' 
ORA-01555: EiEge 18 "_SVSSMU18S') iÄ'J' 
, PCTVERSION 
UNDO_RETENTION 