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Killing Oracle Sessions (ALTER SYSTEM KILL / DISCONNECT SESSION)

There are a number of ways to kill rogue sessions both within Oracle and externally.

- · ALTER SYSTEM KILL SESSION
- ALTER SYSTEM DISCONNECT SESSION
- ALTER SYSTEM CANCEL SQL (18c+)
- The Windows Approach
- · The UNIX Approach
- · Identify the Session to be Killed

Related articles

- ALTER SYSTEM CANCEL SQL: Cancel a SQL Statement in a Session in Oracle Database 18c (/articles/18c/alter-system-cancel-sql-18c)
- Multithreaded Model using THREADED_EXECUTION in Oracle Database 12c Release 1 (12.1) (/articles/12c/multithreaded-model-using-threaded_execution_12cr1)
- Clearing Down Old Database Sessions (/articles/misc/clearing-down-old-database-sessions)

ALTER SYSTEM KILL SESSION

The basic syntax for killing a session is shown below.

```
SQL> ALTER SYSTEM KILL SESSION 'sid, serial#';
```

In a RAC environment, you optionally specify the INST_ID, shown when querying the GV\$SESSION view. This allows you to kill a session on different RAC node.

```
SQL> ALTER SYSTEM KILL SESSION 'sid, serial#,@inst_id';
```

The KILL SESSION command doesn't actually kill the session. It merely asks the session to kill itself. In some situations, like waiting for a reply from a remote database or rolling back transactions, the session will not kill itself immediately and will wait for the current operation to complete. In these cases the session will have a status of "marked for kill". It will then be killed as soon as possible.

In addition to the syntax described above, you can add the IMMEDIATE clause.

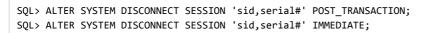
```
SQL> ALTER SYSTEM KILL SESSION 'sid, serial#' IMMEDIATE;
```

This does not affect the work performed by the command, but it returns control back to the current session immediately, rather than waiting for confirmation of the kill.

If the marked session persists for some time you may consider killing the process at the operating system level. Before doing this it's worth checking to see if it is performing a rollback. You can do this by running this script (session_undo.sql (/dba/script.php? category=monitoring&file=session_undo.sql)). If the USED_UREC value is decreasing for the session in question you should leave it to complete the rollback rather than killing the session at the operating system level.

ALTER SYSTEM DISCONNECT SESSION

The ALTER SYSTEM DISCONNECT SESSION syntax is an alternative method for killing Oracle sessions. Unlike the KILL SESSION command which asks the session to kill itself, the DISCONNECT SESSION command kills the dedicated server process (or virtual circuit when using Shared Sever), which is equivalent to killing the server process from the operating system. The basic syntax is similar to the KILL SESSION command with the addition of the POST_TRANSACTION clause. The SID and SERIAL# values of the relevant session can be substituted into one of the following statements.



The POST_TRANSACTION clause waits for ongoing transactions to complete before disconnecting the session, while the IMMEDIATE clause disconnects the session and ongoing transactions are rolled back immediately.

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The POST_TRANSACTION and IMMEDIATE clauses can be used together, but the documentation states that in this case the IMMEDIATE clause is ignored. In addition, the syntax diagram suggests both clauses are optional, but in reality, one or both must be specified or you receive an error.

```
SQL> alter system disconnect session '30,7';
alter system disconnect session '30,7'

*

ERROR at line 1:

ORA-02000: missing POST_TRANSACTION or IMMEDIATE keyword

SQL>
```

This command means you should never need to switch to the operating system to kill sessions, which reduces the chances of killing the wrong process.

ALTER SYSTEM CANCEL SQL (18c+)

The ALTER SYSTEM CANCEL SQL command was introduced in Oracle Database 18c to cancel a SQL statement in a session, providing an alternative to killing a rogue session.

```
ALTER SYSTEM CANCEL SQL 'SID, SERIAL[, @INST_ID][, SQL_ID]';
```

This functionality is discussed in the following article.

ALTER SYSTEM CANCEL SQL: Cancel a SQL Statement in a Session in Oracle Database 18c (/articles/18c/alter-system-cancel-sql-18c)

The Windows Approach

To kill the session on the Windows operating system, first identify the session, then substitute the relevant SID and SPID values into the following command issued from the command line.

```
C:\> orakill ORACLE_SID spid
```

The session thread should be killed immediately and all resources released.

The UNIX Approach

Warning: If you are using the Multithreaded Model in Oracle 12c, you should **not** attempt to kill operating system processes. To know why, read this (/articles/12c/multithreaded-model-using-threaded_execution12cr1#killing-sessions).

To kill the session on UNIX or Linux operating systems, first identify the session, then substitute the relevant SPID into the following command

```
% kill spid
```

If after a few minutes the process hasn't stopped, terminate the session using the following.

```
% kill -9 spid
```

If in doubt check that the SPID matches the UNIX PROCESSID shown using.

```
% ps -ef | grep ora
```

The session thread should be killed immediately and all resources released.

Identify the Session to be Killed

Killing sessions can be very destructive if you kill the wrong session, so be very careful when identifying the session to be killed. If you kill a session belonging to a background process you will cause an instance crash.

Identify the offending session using the [G]V\$SESSION and [G]V\$PROCESS views as follows.

```
SET LINESIZE 100
COLUMN spid FORMAT A10
COLUMN username FORMAT A10
COLUMN program FORMAT A45
SELECT s.inst_id,
       s.sid,
       s.serial#.
       --s.sql id,
       p.spid,
       s.username.
       s.program
FROM
       gv$session s
       JOIN gv$process p ON p.addr = s.paddr AND p.inst id = s.inst id
WHERE s.type != 'BACKGROUND';
   INST_ID
                 SID
                       SERIAL# SPID
                                            USERNAME
                                                       PROGRAM
         1
                  30
                             15 3859
                                            TEST
                                                       sqlplus@oel5-11gr2.localdomain (TNS V1-V3)
         1
                  23
                             287 3834
                                            SYS
                                                       sqlplus@oel5-11gr2.localdomain (TNS V1-V3)
         1
                   40
                             387 4663
                                                       oracle@oel5-11gr2.localdomain (J000)
         1
                   38
                             125 4665
                                                       oracle@oel5-11gr2.localdomain (J001)
SQL>
```

The SID and SERIAL# values of the relevant session can then be substituted into the commands in the previous sections.

For more information see:

- End Session Clauses (Syntax Diagram) (http://docs.oracle.com/cd/E11882_01/server.112/e41084/statements_2014.htm#i2282145)
- End Session Clauses (Description) (http://docs.oracle.com/cd/E11882_01/server.112/e41084/img_text/end_session_clauses.htm)
- ALTER SYSTEM CANCEL SQL: Cancel a SQL Statement in a Session in Oracle Database 18c (/articles/18c/alter-system-cancel-sql-18c)
- Multithreaded Model using THREADED_EXECUTION in Oracle Database 12c Release 1 (12.1) (/articles/12c/multithreaded-model-using-threaded_execution_12cr1)
- Clearing Down Old Database Sessions (/articles/misc/clearing-down-old-database-sessions)

Hope this helps. Regards Tim...

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