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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 Server), 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.

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

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.

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 \(/articles/18c/alter-system-cancel-sql-18c\)](/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](/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.

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```
% 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@oe15-11gr2.localdomain (TNS V1-V3)
1	23	287	3834	SYS	sqlplus@oe15-11gr2.localdomain (TNS V1-V3)
1	40	387	4663		oracle@oe15-11gr2.localdomain (J000)
1	38	125	4665		oracle@oe15-11gr2.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](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](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\_12c1)
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Hope this helps. Regards Tim...

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