Oracle General

What is the ORA-01555 and how do you fix it?

"**snapshot too old**" : Transaction did run out of rollback space.

- Increase the size of the UNDO tablespace.
- Increase the size of the UNDO_RETENTION parameter.

- Optimize the failing query to read less data and take less time.
- Schedule your task when there is less database activity.
- Set the UNDO tablespace in GUARANTEE mode.
- If you are exporting a table, consider exporting with the CONSISTENT=no parameter.

What is a recursive SQL statement?

The data dictionary tables have to be called repeatedly. This is because the dictionary cache is too small.

How do you check the network configuration?

```
$ ifconfig -a
$ ifconfig -a | grep eth
```

How do you check the kernel parameters?

```
$ cat /etc/sysctl.conf
```

What is a mutating table error and how can you get around it?

This happens with triggers. It occurs because the trigger is trying to update a row it is currently using. The usual fix involves either use of views or temporary tables so the database is selecting from one while updating the other.

You see multiple fragments in the system tablespace. What do you do?

Ensure that no user has system as their default or temporary tablespace.

What comprises an Oracle Instance?

System Global Area + Background processes.

Explain the memory structures associated with Oracle?

SGA - System Global Area (shared by all server and background processes):
- Database buffer cache
- Shared pool (Library cache and Data Dictionary cache)
- Redo log buffer
- Large pool
- Java pool

PGA - Program Global Areas (there is one PGA for each process):
- Stack area.
- Data area.
It is used for sorts and joins (e.g. hash-joins , bitmap merge, ...).

How does Oracle keep a read-consistent view of the data?

Rollback Segments keep the before image.

What is a checkpoint?

Event when all modified database buffers are written to the data file.

Name different types of indexes.

- Unique index
- Non-unique index
- Concatenated index

- B-tree index
- Bitmap index
- Function based index

What does the process of PARSING a SQL statement perform?

- Checks for correct syntax.
- Checks for correct access privileges.
- Determines execution path.

- Checks for correct table and column definitions.
- Acquires parse locks on objects.

What actions will end a transaction?

- COMMIT.
- ROLLBACK.
- Executing a DDL statement.

- Disconnecting from Oracle.
- Abnormal termination of a user process

What command or statement will verify the integrity of each block in a table and all of the indexes on that table?

```
ANALYZE TABLE VALIDATE STRUCTURE CASCADE;
```

What is a freelist?

A freelist links (points to) all data blocks below the high water mark that are marked for reuse (empty but used).

Name PL/SQL packages provided by Oracle.

dbms_utility
dbms_sql
dbms_output
dbms_metadata

What happens if the primary key is enabled without specifying the index clause?

The index is created in the users default tablespace and all sizing information is lost. When the constraint was disabled the index was dropped and the information is lost.

A user gets the "ORA-00942: Table not found" error what do you do?

- Grant permissions on table to the user.
- Check if the user has synonyms for the table.

What health checks do you do to insure the database is ok?

- Check if the database and listeners are running
- Check if you can log on remotely
- Check alert log for errors
- Check if backups and batch jobs did run successful

- Check for fragmentation, free space
- Check for invalid objects
- Check all tables and indexes are analyzed

What is a correlated sub-query?

A query with a sub-query where every row of the sub-query relates back to the master query.

What causes a database to hang (or user thinks it hangs)?

- Archive log destination is full.
- Resumable transaction hangs.
    E.g.
    ~ Tables or indexes are not able to extent in a tablespace
    ~ Ssession hangs if auditing is used and aud$ cannot extend.
- User session is waiting for a lock.
- Database is in recovery mode or not open (this causes a hanging logon session).

How do you check the physical memory on a Linux system?

```
cat /proc/meminfo | grep -i memtotal
cat /proc/meminfo | grep -i huge

Huge pages size = <HugePages_Total> * <Hugepagesize>

top
free
```

How would you begin to troubleshoot an ORA-3113 error?

```
ORA-3113: End of file on communication channel reached
```

1. Check for network problems and troubleshoot SQL*Net connectivity.
2. Look in the alert.log file for any errors.
3. Check whether the server process is dead and whether a trace file was generated at failure time.

Which dictionary views would you look at to diagnose a locking issue?

```
v$lock
v$session
```

Table of Contents