1Z0-117Q&As

Oracle Database 11g Release 2: SQL Tuning Exam

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QUESTION 1

Which two statements about In-Memory Parallel Execution are true?

A. It can be configured using the Database Resource Manager.

B. It increases the number of duplicate block images in the global buffer cache.

C. It requires setting PARALLEL_DEGREE_POLICY to LIMITED.

D. Objects selected for In-Memory Parallel Execution have blocks mapped to specific RAC instances.

E. It requires setting PARALLEL_DEGREE_POLICY to AUTO

F. Objects selected for In-Memory Parallel Execution must be partitioned tables or indexes.

Correct Answer: DE

D, E: In-Memory Parallel Execution

When the parameter PARALLEL_DEGREE_POLICY is set to AUTO, Oracle Database decides if an object that is accessed using parallel execution would benefit from being cached in the SGA (also called the buffer cache). The decision to cache an object is based on a well-defined set of heuristics including the size of the object and frequency on which it is accessed. In an Oracle RAC environment, Oracle Database maps pieces of the object into each of the buffer caches on the active instances. By creating this mapping, Oracle Database automatically knows which buffer cache to access to find different parts or pieces of the object. Using this information, Oracle Database prevents multiple instances from reading the same information from disk over and over again, thus maximizing the amount of memory that can cache objects. If the size of the object is larger than the size of the buffer cache (single instance) or the size of the buffer cache multiplied by the number of active instances in an Oracle RAC cluster, then the object is read using direct-path reads.

E: PARALLEL_DEGREE_POLICY specifies whether or not automatic degree of Parallelism, statement queuing, and in-memory parallel execution will be enabled.

AUTO Enables automatic degree of parallelism, statement queuing, and in-memory parallel execution.

Incorrect:

C: LIMITED Enables automatic degree of parallelism for some statements but statement queuing and in- memory Parallel Execution are disabled. Automatic degree of parallelism is only applied to those statements that access tables or indexes decorated explicitly with the PARALLEL clause. Tables and indexes that have a degree of parallelism specified will use that degree of parallelism.

Reference: Oracle Database VLDB and Partitioning Guide 11g, How Parallel Execution Works

QUESTION 2

An application accessing your database got the following error in response to SQL query:

ORA-12827: insufficient parallel query slaves available

View the parallel parameters for your instance:

NAME	TYPE	VALUE
fast_start_parallel_rollback	string	LOW
parallel_adaptive_multi_tuning	boolean	TRUE
parallel_automatic_turing	boolean	FALSE
parallel_degree_limit	string	32
parallel_degree_policy	string	LIMITED
parallel_execution_message_size	integer	16384
parallel_force_local	boolean	FALSE
parallel_io_cap_enabled	boolean	FALSE
parallel_max_servers	integer	128
parallel_min_servers	integer	50
parallel__server	Integer	0
parallel_server_instances	string	AUTO
parallel_server	boolean	1
parallel_servers_target	integer	8
parallel_threads_servers_per_cpu	integer	2

No hints are used and the session use default parallel settings.

What four changes could you make to help avoid the error and ensure that the query executes in parallel?

A. Set PARELLEL_DEGREE_POLICY to AUTO.

B. Increase the value of PARELLEL_MAX_SERVERS.

C. Increase PARELLEL_SERVERS_TARGET.

D. Decrease PARELLEL_MIN_PERCENT.

E. Increase PARELLEL_MIN_SERVERS.

F. Decrease PARELLEL_MIN_TIME_THRESHOLD.

G. Increase PARELLEL__MIN_TIME_THRESHOLD.

Correct Answer: ACDG

C: PARALLEL_SERVERS_TARGET specifies the number of parallel server processes allowed to run parallel statements before statement queuing will be used. When the parameter PARALLEL_DEGREE_POLICY is set to AUTO, Oracle will queue SQL statements that require parallel execution, if the necessary parallel server processes are not available. Statement queuing will begin once the number of parallel server processes active on the system is equal to or greater than PARALLEL_SERVER_TARGET.

By default, PARALLEL_SERVER_TARGET is set lower than the maximum number of parallel server processes allowed on the system (PARALLEL_MAX_SERVERS) to ensure each parallel statement will get all of the parallel server resources required and to prevent overloading the system with parallel server processes.

D: Note: ORA-12827: insufficient parallel query slaves available Cause: PARALLEL_MIN_PERCENT parameter was specified and fewer than minimum slaves were acquired Action: either re-execute query with lower

PARALLEL_MIN_PERCENT or wait until some running queries are completed, thus freeing up slaves

A, G: PARALLEL_MIN_TIME_THRESHOLD specifies the minimum execution time a statement should have before the statement is considered for automatic degree of parallelism. By default, this is set to 30 seconds. Automatic degree of parallelism is only enabled if PARALLEL_DEGREE_POLICY is set to AUTO or LIMITED.

QUESTION 3

Which two statements are true about index full scans?

A. An index fast full scan multi block I/O to read the index structure in its entirely.

B. Index nodes are not retrieved in the index order, and there fore the nodes are not in sequence.

C. An index fast full scan reads the index block by block.

D. An index fast full scan reads the whole index from the lowest value to the higher value.

Correct Answer: AB

A: To speed table and index block access, Oracle uses the db_file_multiblock_read_count parameter (which defaults to 8) to aid in getting full-table scan and full-index scan data blocks into the data buffer cache as fast as possible.

B: The index nodes are not retrieved in index order, the rows will not be sequenced.

Note:

there are some requirements for Oracle to invoke the fast full-index scan.

All of the columns required must be specified in the index. That is, all columns in the select and where clauses must exist in the index.

The query returns more than 10 percent of the rows within the index. This 10 percent figure depends on the degree of multi-block reads and the degree of

parallelism.

You are counting the number of rows in a table that meet a specific criterion. The fast full-index scan is almost always used for count(*) operations.

Reference: index fast full scan tips

QUESTION 4

A database instance is configured in the shared server mode and it supports multiple applications running on a middle tier. These applications connect to the

database by using different services and tracing is enabled for the services. You want to view the detailed tracing setting for particular service.

What would you use to view the tracing information?

A. DBMS_SERVICE package

B. DBMS_MONITOR package

C. DBA_ENABLED_TRACES view

D. Trcsess and tkprof

Correct Answer: C

displays information about enabled SQL traces. DBA_ENABLED_TRACES

Incorrect:

A: The DBMS_SERVICE package lets you create, delete, activate, and deactivate services for a single instance.

B: The DBMS_MONITOR package let you use PL/SQL for controlling additional tracing and statistics gathering.

Reference: Oracle Database Reference, DBA_ENABLED_TRACES

QUESTION 5

Which statement is true about an automatic SQL task?

A. It will attempt to tune the currently running SQL statements that are highly resource intensive.

B. It will automatically implement new SQL profiles for the statements that have existing SQL profiles.

C. It will attempt to tune all-long-running queries that have existing SQL profiles.

D. It will automatically implement SQL profiles if a three-fold benefit can be achieved and automatic profile implementation is enabled.

E. It will tune all the top SQL statements from AWR irrespective of the time it takes to complete the task in a maintenance window.

Correct Answer: D

Optionally, implements the SQL profiles provided they meet the criteria of threefold performance improvement

The database considers other factors when deciding whether to implement the SQL profile. For example, the database does not implement a profile when the objects referenced in the statement have stale optimizer statistics. SQL profiles that have been implemented automatically show type is AUTO in the DBA_SQL_PROFILES view. If the database uses SQL plan management, and if a SQL plan baseline exists for the SQL statement, then the database adds a new plan baseline when creating the SQL profile. As a result, the optimizer uses the new plan immediately after profile creation.

Incorrect:

E: Oracle Database automatically runs SQL Tuning Advisor on selected high-load SQL statements from the Automatic Workload Repository (AWR) that qualify as

tuning candidates. This task, called Automatic SQL Tuning, runs in the default maintenance windows on a nightly basis. By default, automatic SQL tuning runs for

at most one hour.

Note:

After automatic SQL tuning begins, the database performs the following steps:

1. Identifies SQL candidates in the AWR for tuning

Oracle Database analyzes statistics in AWR and generates a list of potential SQL statements that are eligible for tuning. These statements include repeating high-load statements that have a significant impact on the database.

The database tunes only SQL statements that have an execution plan with a high potential for improvement. The database ignores recursive SQL and statements that have been tuned recently (in the last month), parallel queries, DML, DDL, and SQL statements with performance problems caused by concurrency issues.

The database orders the SQL statements that are selected as candidates based on their performance impact. The database calculates the impact by summing the CPU time and the I/O times in AWR for the selected statement in the past week.

2.

Tunes each SQL statement individually by calling SQL Tuning Advisor

During the tuning process, the database considers and reports all recommendation types, but it can implement only SQL profiles automatically.

3.

Tests SQL profiles by executing the SQL statement

4.

Optionally, implements the SQL profiles provided they meet the criteria of threefold performance improvement. The database considers other factors when deciding whether to implement the SQL profile. For example, the database does not implement a profile when the objects referenced in the statement have stale optimizer statistics. SQL profiles that have been implemented automatically show type is AUTO in the

DBA_SQL_PROFILES view.If the database uses SQL plan management, and if a SQL plan baseline exists for the SQL statement, then the database adds a new plan baseline when creating the SQL profile. As a result, the optimizer uses the new plan immediately after profile creation.

Reference: Oracle Database Performance Tuning Guide, Automatic SQL Tuning