1Z0-117^{Q&As}

Oracle Database 11g Release 2: SQL Tuning Exam

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QUESTION 1

You recently gathered statistics for a table by using the following commands:

```
SQL> exec SBMS.SET_TABLE_PREFS ('SH', 'CUSTOMERS', 'PUBLISH', 'TRUE');
SQL> exec DBMS_STATS.GATHER_TABLE_STATS ('SH', 'CUSTOMERS', NULL, 20, FALSE, 'FOR ALLCOLUMNS', 4, 'DEFAULT, TRUE');
```

You noticed that the performance of queries has degraded after gathering statistics. You want to use the old statistics. The optimizer statistics retention period is

default.

What must you do to use the old statistics?

A. Use the flashback to bring back the statistics to the desired time.

B. Restore statistics from statistics history up to the desired time.

C. Delete all the statistics collected after the desired time.

D. Set OPTIMIZER_USE_PENDING_STATISTICS to TRUE.

Correct Answer: B

Whenever statistics in dictionary are modified, old versions of statistics are saved automatically for future restoration. Statistics can be restored using RESTORE procedures of DBMS_STATS package. These procedures use a time stamp as an argument and restore statistics as of that time stamp. This is useful in case newly collected statistics leads to some sub-optimal execution plans and the administrator wants to revert to the previous set of statistics.

Reference: Oracle Database Performance Tuning Guide, Restoring Previous Versions of Statistics

QUESTION 2

Which three statements are true the Automatic Tuning Optimizer (ATO)?

A. It identifies the objects with stale or missing statistics and gathers statistics automatically.

B. It investigates the effect of new or modified indexes on the access paths for a workload and recommends running that statistics through the SQL Access Advisor.

C. It recommends a SQL profile to help create a better execution plan.

D. It picks up resource-intensive SQL statements from the ADDM and recommends the use of materialized views to improve query performance.

E. It identifies the syntactic, semantic, or design problems with structure of SQL statements leading to poor performance and suggests restricting the statements.

F. It identifies resource-intensive SQL statements, runs them through the SQL Tuning Advisor, and implements the recommendations automatically.

Correct Answer: ADF

Under tuning mode, the optimizer can take several minutes to tune a single statement. It is both time and resource intensive to invoke Automatic Tuning Optimizer every time a query must be hard-parsed. Automatic Tuning Optimizer is meant for complex and high-load SQL statements that have nontrivial impact on the database.

Automatic Database Diagnostic Monitor (ADDM) proactively identifies high-load SQL state- ments that are good candidates for SQL tuning. The automatic SQL tuning feature also automati- cally identifies problematic SQL statements and implements tuning recommendations during system maintenance windows as an automated maintenance task.

The Automatic Tuning Optimizer performs the following types of tuning analysis:

Statistics Analysis SQL Profiling Access Path Analysis SQL Structure Analysis Alternative Plan Analysis

Note:

* Oracle Database uses the optimizer to generate the execution plans for submitted SQL state- ments. The optimizer operates in the following modes:

Normal mode The optimizer compiles the SQL and generates an execution plan. The normal mode generates a reasonable plan for the vast majority of SQL statements. Under normal mode, the optimizer op- erates with very strict time constraints, usually a fraction of a second.

Tuning mode

The optimizer performs additional analysis to check whether it can further improve the plan pro- duced in normal mode. The optimizer output is not an execution plan, but a series of actions, along with their rationale and expected benefit for producing a significantly better plan. When running in tuning mode, the optimizer is known as the Automatic Tuning Optimizer.

QUESTION 3

You are administering a database supporting a DDS workload in which some tables are updated frequently but not queried often. You have SQL plan baseline for these tables and you do not want the automatic maintenance task to gather statistics for these tables regularly.

Which task would you perform to achieve this?

A. Set the INCREMENTAL statistic preference FALSE for these tables.

B. Set the STALE_PERCENT static preference to a higher value for these tables.

C. Set the GRANULARITY statistic preference to AUTO for these tables.

D. Set the PUBLISH statistic preference to TRUE for these tables.

Correct Answer: B

With the DBMS_STATS package you can view and modify optimizer statistics gathered for database objects.

STALE_PERCENT - This value determines the percentage of rows in a table that have to change before the statistics on that table are deemed stale and should be regathered. The default value is 10%. Reference: Oracle Database PL/SQL Packages and Types Reference

QUESTION 4

You created a SQL Tuning Set (STS) containing resource-intensive SQL statements. You plan to run the SQL Tuning Advisor.

Which two types of recommendations can be provided by the SQL Tuning Advisor?

A. Semantic restructuring for each SQL statement

B. Gathering missing or stale statistics at the schema level for the entire workload

C. Creating a materialized view to benefit from query rewrite for the entire workload

D. Gathering missing or stale statistics for objects used by the statements.

E. Creating a partition table to benefit from partition pruning for each statement

Correct Answer: AD

The output of the SQL Tuning Advisor is in the form of an advice or recommendations, along with a rationale for each recommendation and its expected benefit. The recommendation relates to collection of statistics on objects (D), creation of new indexes, restructuring of the SQL statement (A), or creation of a SQL profile. You can choose to accept the recommendation to complete the tuning of the SQL statements.

Note:

*

A SQL Tuning Set can be used as input to the SQL Tuning Advisor, which performs automatic tuning of the SQL statements based on other input parameters specified by the user.

*

A SQL Tuning Set (STS) is a database object that includes one or more SQL statements along with their execution statistics and execution context, and could include a user priority ranking. The SQL statements can be loaded into a SQL Tuning Set from different SQL sources, such as the Automatic Workload Repository, the cursor cache, or custom SQL provided by the user.

Reference: Oracle Database Performance Tuning Guide 11g , SQL Tuning Advisor

QUESTION 5

How can you analyze an existing trace file to list the almost resource-intensive statements, aggregation of statistics, and to either exclude recursive call details?

A. By using the DBMS_TRACE package

B. By using the EXPLAIN PLAN command

C. By enabling the SQL_TRACE parameter for the session

D. By using the TKPROF utility

E. By using the TRCSESS utility

Correct Answer: D

D: You can run the TKPROF program to format the contents of the trace file and place the output into a readable output file. TKPROF can also:

*

Create a SQL script that stores the statistics in the database

*

Determine the execution plans of SQL statements

TKPROF reports each statement executed with the resources it has consumed, the number of times it was called, and the number of rows which it processed.

This information lets you easily locate those statements that are using the greatest resource. With experience or with baselines available, you can assess whether

the resources used are reasonable given the work done.

Incorrect:

A: DBMS_TRACE provides subprograms to start and stop PL/SQL tracing in a session. Oracle collects the trace data as the program executes and writes it to

database tables.

A typical session involves:

Starting PL/SQL tracing in session (DBMS_TRACE.SET_PLSQL_TRACE).

Running an application to be traced.

Stopping PL/SQL tracing in session (DBMS_TRACE.CLEAR_PLSQL_TRACE).

E: The trcsess utility consolidates trace output from selected trace files based on several criteria: Session Id Client Id Service name Action name Module name After trcsess merges the trace information into a single output file, the output file could be processed by TKPROF Reference: Oracle Database Performance Tuning Guide, Understanding TKPROF