Parallel Processing in Oracle Database 12c Ed 1

Duration: 1 Day

What you will learn

After completing this seminar, you'll understand the benefits of parallelizing requests in an Oracle 12c database. You'll also be able to use features of parallel processing introduced in Oracle 11g Release 1 and 2.

Learn To:

Optimize SQL statement execution using parallel processing.

Use parallel processing appropriately to derive a benefit over serial processing.

Control the use of parallel processing.

Use a variety of features for parallelizing statements.

Read execution plans of parallelized statements.

Troubleshoot different issues associated with parallel processing.

Use, control and manage parallelization.

Benefits To You

Through focused lessons and hands-on demonstrations, expert Oracle University instructors will teach you when and why parallel processing is relevant and effective. You'll also explore specific configurations like RAC database and Database Machine.

Related Training

Required Prerequisites

Knowledge of database administration

Oracle Database: SQL Tuning for Developers

Course Objectives

Use Database Resource Manager to complement the control of parallel processing usage

Define why and when to use parallel processing

List the SQL statements and data loading utilities that can benefit from parallel processing

Explain the basic concepts and theory associated with parallel execution

Use a variety of parallel execution features with different SQL statements

Read and evaluate execution plans for parallelized statements

Use parallel processing features including Auto DOP

statement-queuing

and in-memory parallel execution

Examine specific configurations such as RAC database to and Database Machine with parallel execution

Troubleshoot parallel processing issues such as no parallel execution

unexpected DOP

or performance decrease

Trace parallel execution to provide information to Oracle customer support

Parallel execution concepts
Benefits of parallel processing
When to use parallel processing?
Query Coordinator and parallel execution (PX) servers
Parallel execution communication
The producer / consumer model
Execution plan basics

Using Manual DOP
Statements that can be parallelized
SELECT with single parallel table scan and the explain plan
SELECT with parallel hash join and the explain plan
Parallelized SELECT with partition wise join and the advantages

Parallelized DML operations

Using Auto DOP
Auto DOP versus manual DOP
Auto DOP parameters
Auto DOP behavior
Impact of Auto DOP on other parameters
SELECT explain plan with Auto DOP
Auto DOP in RAC environment

Using Statement Queuing
Comparing statement queuing to minimal DOP guarantee
Setting parameters
When to choose statement queuing
Using Database Resource Manager with statement queuing
Viewing queued statements

In-Memory Parallel Execution
The goal of In-Memory Parallel Execution
How SELECT works with and without in-memory parallel execution
Set parameters to use In-Memory parallel execution
In-memory PX examples

Parallel Execution and Data Loading
DataPump export / import
SQL*Loader
External tables: applying parallel execution as best practice

Troubleshoot situations when parallel processing does not proceed as desired
When parallel processing does not proceed as desired
When no parallel processing occurs
When Auto DOP computes unexpected DOP
When Statement Queuing starts unexpectedly
When performance decreases due to parallel execution
Tracing parallel execution

Managing a Mixed Workload with DBRM
Take advantage of DBRM to manage concurrent parallel executions with mixed workloads
Use plan directives to manage concurrent parallel executions
How to reject queries
Using dynamic switching
Understanding how directives interact