

ORA1136

Oracle Database 19c: Performance Management and Tuning

Durata: 5 gg

Descrizione

Nel corso Database Oracle 19c: Performance Management and Tuning, si apprende come conoscere le analisi e messa a punto attività di prestazioni previste di un DBA: gestione proattiva attraverso funzionalità integrate di effettuazione delle analisi e strumenti, diagnosi e messa a punto dei componenti istanza di database Oracle, e la diagnosi e messa a punto di problemi di prestazioni relativi a SQL.

OBIETTIVI

Al termine del corso gli allievi saranno in grado di:

- Diagnosticare e problemi di prestazioni sintonizzare grado comuni correlati
- Utilizzare le pagine relative alle prestazioni Enterprise Manager per monitorare un database Oracle
- Utilizzare la metodologia messa a punto di database Oracle
- Utilizzare consiglieri di database per ottimizzare in modo proattivo un'istanza del database Oracle
- Utilizzare gli strumenti basati sul Automatic Workload Repository per ottimizzare il database
- Diagnosticare e problemi di prestazioni sintonizzare comuni SQL correlati

A chi è rivolto?

Amministratori di database ed amministratori di datawarehouse.

Prerequisiti

Per partecipare con profitto a questo corso è necessario che gli allievi possiedano i seguenti prerequisiti:

Prerequisiti obbligatori:

Oracle Database 19c: Administration Workshop

Prerequisiti suggeriti :

Oracle Database 19c: Install and Upgrade Workshop

Contenuti

Introduction

- Course Objectives
- Course Organization
- Course Agenda
- Topics Not Included in the Course
- Who Tunes?
- What Does the DBA Tune?
- How to Tune
- Tuning Methodology

Basic Tuning Diagnostics

- Performance Tuning Diagnostics, Features, and Tools
- DB Time

- CPU and Wait Time Tuning Dimensions
- Time Model
- Dynamic Performance Views
- Statistics
- Wait Events
- Log Files and Trace Files

Using Automatic Workload Repository

- Automatic Workload Repository Overview
- Automatic Workload Repository Data
- Enterprise Manager Cloud Control and AWR
- Snapshots
- Reports
- Compare Periods

Defining the Scope of Performance Issues

- Defining the Problem and Limiting the Scope
- Setting the Priority
- Top SQL Reports
- Common Tuning Problems
- Tuning During the Life Cycle
- ADDM Tuning Session
- Performance Tuning Resource
- Monitoring and Tuning Tools Overview

Using Metrics and Alerts

- Metrics and Alerts Overview
- Limitation of Base Statistics
- Benefits of Metrics
- Viewing Metric History Information
- Viewing Histograms
- Server-Generated Alerts
- Setting Thresholds
- Metrics and Alerts Views

Using Baselines

- Comparative Performance Analysis with AWR Baselines
- Moving Window Baseline
- Baseline Templates
- Creating AWR Baselines
- Baselines Views
- Performance Monitoring and Baselines
- Defining Alert Thresholds Using a Static Baseline
- Configuring Adaptive Thresholds

Using AWR-Based Tools

- Automatic Maintenance Tasks
- ADDM Performance Monitoring
- Active Session History
- Additional Automatic Workload Repository Views

- Real-time ADDM

Real-Time Database Operation Monitoring

- Overview and Use Cases
- Defining a Database Operation
- Database Operation Concepts
- Enabling Monitoring of Database Operations
- Identifying, Starting, and Completing a Database Operation
- Monitoring the Progress of a Database Operation
- Database Operation Views
- Database Operation Tuning

Monitoring Applications

- Service Attributes and Types
- Creating Services
- Using Services with Client Applications
- Using Services with the Resource Manager
- Services and Oracle Scheduler
- Services and Metric Thresholds
- Service Aggregation and Tracing
- Top Services Performance Page

Identifying Problem SQL Statements

- SQL Statement Processing Phases
- SQL Monitoring
- Execution Plans
- DBMS_XPLAN Package
- EXPLAIN PLAN Command
- Reading an Execution Plan
- Using the SQL Trace Facility
- Generating an Optimizer Trace

Influencing the Optimizer

- Functions of the Query Optimizer
- Optimizer Statistics
- Controlling the Behavior of the Optimizer by Using Parameters
- Enabling Query Optimizer Features
- Using Hints
- Access Paths
- Join Operations
- Sort Operations

Reducing the Cost of SQL Operations

- Index Maintenance
- SQL Access Advisor
- Table Maintenance and Reorganization
- Extent Management
- Data Storage
- Migration and Chaining
- Shrinking Segments

- Table Compression

Using SQL Performance Analyzer

- SQL Performance Analyzer Overview
- Real Application Testing Overview and Use Cases
- Capturing the SQL Workload
- Creating a SQL Performance Analyzer Task
- Comparison Reports
- Tuning Regressing Statements
- Guided Workflow Analysis
- SQL Performance Analyzer Views

SQL Performance Management

- Maintaining Optimizer Statistics
- Automated Maintenance Tasks
- Statistics Gathering Options and Preferences
- Deferred Statistics Publishing
- Automatic SQL Tuning
- SQL Tuning Advisor
- SQL Access Advisor
- SQL Plan Management

Using Database Replay

- Database Replay Architecture
- Capture Considerations
- Replay Options
- Replay Analysis
- Database Replay Workflow in Enterprise Manager
- Database Replay Packages and Procedures
- Database Replay Views
- Calibrating Replay Clients

Tuning the Shared Pool

- Shared Pool Architecture
- Latch and Mutex
- Diagnostic Tools for Tuning the Shared Pool
- Avoiding Hard Parses
- Sizing the Shared Pool
- Avoiding Fragmentation
- Data Dictionary Cache
- SQL Query Result Cache

Tuning the Buffer Cache

- Database Buffer Cache Architecture
- Working Sets
- Buffer Cache Tuning Goals and Techniques
- Buffer Cache Performance Symptoms
- Buffer Cache Performance Solutions
- Database Smart Flash Cache
- Flushing the Buffer Cache

Tuning PGA and Temporary Space

- SQL Memory Usage
- Configuring Automatic PGA Memory
- PGA Target Advice Statistics and Histograms
- Automatic PGA and AWR Reports
- Temporary Tablespace Management
- Temporary Tablespace Group
- Monitoring Temporary Tablespaces
- Temporary Tablespace Shrink

Automatic Memory

- Dynamic SGA
- Automatic Shared Memory Management Overview
- SGA Sizing Parameters
- Enabling and Disabling Automatic Shared Memory Management
- SGA Advisor
- Automatic Memory Management Overview
- Enabling Automatic Memory Management
- Monitoring Automatic Memory Management

Tuning I/O

- I/O Architecture
- I/O Modes
- Important I/O Metrics for Oracle Databases
- I/O Calibration
- I/O Statistics
- I/O Diagnostics
- Database I/O Tuning
- Automatic Storage Management (ASM)

Performance Tuning Summary

- Initialization Parameters and their Impact on Performance
- Initial Memory Sizing
- Tuning the Large Pool
- Best Practices for Different Types of Tablespaces
- Block Sizes
- Sizing the Redo Log Buffer and Redo Log Files
- Automatic Statistics Gathering
- Commonly Observed Wait Events